Ontario

Ministry of Natural Resources

Hon. Alan W. Pope
Minister

W.T. Foster
Deputy Minister

ONTARIO GEOLOGICAL SURVEY
Open File Report 5388

Industrial Minerals of Northern Ontario - Supplement 1

by

M.A. Vos, T. Abolins and V. Smith

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This project was funded by the Ontario Ministry of Northern Affairs through the Northern Industrial Minerals (NIMS) Program.

Ontario Geological Survey

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E.G. Pye, Director
Ontario Geological Survey

FOREWORD

Industrial mineral deposits, excluding construction aggregates, in the northwestern part of Ontario, or that part which lies west of longitude 88°00'W, are described in detail. The information contained is a compilation of material collected in 1979-1981 through literary research of publications and files in the Ontario Geological Survey, Toronto offices and Regional and Resident Geologists' offices. This compilation is designed to assist in the search for mineral deposits suitable as targets for industrial mineral development.

E. G. Pye
Director
Ontario Geological Survey

July 1982.

TABLE OF CONTENTS

Introduction 1
Acknowledgments 1
Sources of Information 1
Scope and Methodology 1
Reference Abbreviations 2
Divergent Entries 3
Report Format 3
NTS 52A - Thunder Bay Sheet
Agate 5
Amethyst 6
Arsenic 13
Asbestos 14
Barite 15
Beryl 25
Calcite 25
Chromite 29
Clay 31
Cobaltite 33
Feldspar 35
Hematite 36
Magnetite 36
Marl 37
Peat 37
Pyrite 40
Selenium 41
Shale 42
Stone 43
NTS 52B - Quetico Sheet
Bauxite 46
Beryl 48
Chromite 50
Cobalt 53
Fluorite (Fluorspar) 58
Garnet 59
Goethite 59
Graphite 59
Hematite 60
Lithium 60
Magnetite 63
Peat 64
Pyrite 70
Soapstone 77
Talc 78
NTS 52C - International Falls Sheet
Apatite 79
Bismuth 80
Clay 82
Graphite 83
Lithium 85
Magnetite 85
Peat 88
Pyrite 89
Rutile 94
Soapstone 94
Stone 94
Talc 95
Titanium 96
NTS 52D - Part of Roseau Sheet
Clay 96
Peat 97
NTS 52E - Part of Kenora Sheet
Asbestos 98
Beryl 100
Cobalt 101
Feldspar 102
Graphite 102
Mariposite 103
Mica 103
Silica Sand 104

NTS 52E - Part of Kenora Sheet (continued)
Soapstone 104
Stone 106
Talc 107
NTS 52F Dryden Sheet
Asbestos 108
Beryl 109
Bismuth 111
Cesium 114
Columbium 115
Fluorite 116
Graphite 117
Hematite 121
Lithium 122
Magnetite 124
Malachite 124
Mica 124
Niobium 125
Pyrite 125
Soapstone 130
Stone 134
Talc 137
Tantalite 139
Tourmaline 140
NTS 52G - Ignace Sheet
Asbestos 142
Fluorite 143
Garnet 145
Graphite 146
Magnetite 147
Muscovite 147
Peat 148
Pyrite 150
Stone 155
Tourmaline 157
NTS 52H - Nipigon Sheet
Asbestos 157
Beryl 158
Cesium 161
Chromium 162
Cobalt 162
Hematite 165
Iridium 166
Lime 166
Limonite 167
Lithium 168
Magnetite 173
Marble 174
Marl 175
Pyrite 176
Stone 177
NTS 52I - Armstrong Sheet
Beryl 178
Graphite 184
Hematite 185
Lithium 186
Pyrite 195
Tin 200
NTS 52J - Sioux Lookout Sheet
Beryl 200
Cesium 201
Graphite 202
Lithium 202
Magnetite 205
Pyrite 206
Tourmaline 208
NTS 52K - Lac Seul Sheet
Apatite 208
Beryl 209
Garnet 209
Magnetite 210
Pyrite 210
Silica 211
Tourmaline 211

NTS 52L - Part of Point Du Bois Sheet
Beryl 211
Chromium 212
Cobalt 213
Pyrite 216
Thorium 217
NTS 52M - Part of Carroll Lake Sheet
Asbestos 217
Magnetite 219
Pyrite 219
NTS 52N - Trout Lake Sheet
Asbestos 221
Cobalt 221
Magnetite 222
Pyrite 224
Tin 226
NTS 52O - Lake St. Joseph Sheet
Cobalt 229
Fluorite 231
Goethite 232
Graphite 232
Hematite 242
Magnetite 243
Pyrite 248
Thorium 260
NTS 52P - Miminiska Lake Sheet
Cobalt 261
Graphite 263
Hematite 266
Lithium 269
Magnetite 270
Pyrite 273
Tantalum 279
NTS 53A - Wunnummin Lake Sheet
Apatite 280
Columbium 282
Graphite 282
Magnetite 283
Niobium 283
Pyrite 284
Pyrochlore 287
Vermiculite 287
NTS 53B - North Caribou Lake Sheet
Asbestos 287
Graphite 288
Pyrite 290
NTS 53C - North Spirit Lake Sheet
Asbestos 292
Bismuth 293
Chromium 294
Lithium 295
Pyrite 296
Thorium 296
NTS 53E - Part of Island Lake Sheet
Pyrite 297
NTS 53F - Part of Opasquia Lake Sheet .....
Pyrite 297
NTS 53G - Makoop Lake Sheet
Graphite 299
Pyrite 301
NTS 53H - Asheweig River Sheet
Graphite 302
Pyrite 303
Titanium 305
NTS 53J - Thorne River Sheet
Cerium 306
Columbium 307
Lanthanum 307
Niobium 308
Pyrite 308
Vermiculite 309
NTS 53K - Part of Stull Lake Sheet
Cerium 309
Columbium 310

NTS 53K - Part of Stull Lake Sheet (continued)
Lanthanum 310
Niobium 311
Pyrite 311
Vermiculite 312
Bibliography 313
Maps Cited 328

Figures

1 - Index to Ontario Mineral Potential Preliminary Map Series xv
2 - Regional and Resident Geologist's Areas xvii
3 - National Topographic System (NTS) Indexing Plan xix

Table

Metric Conversion Table xxi

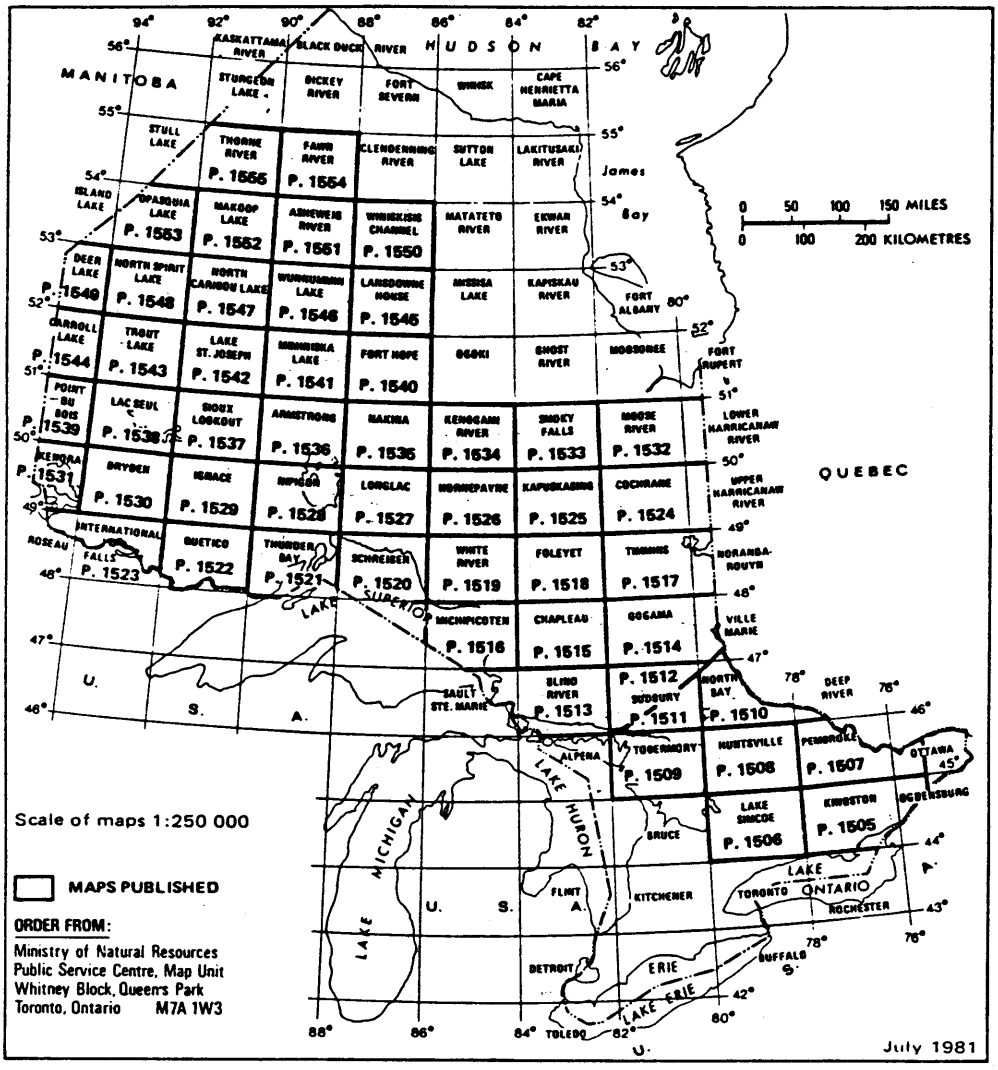
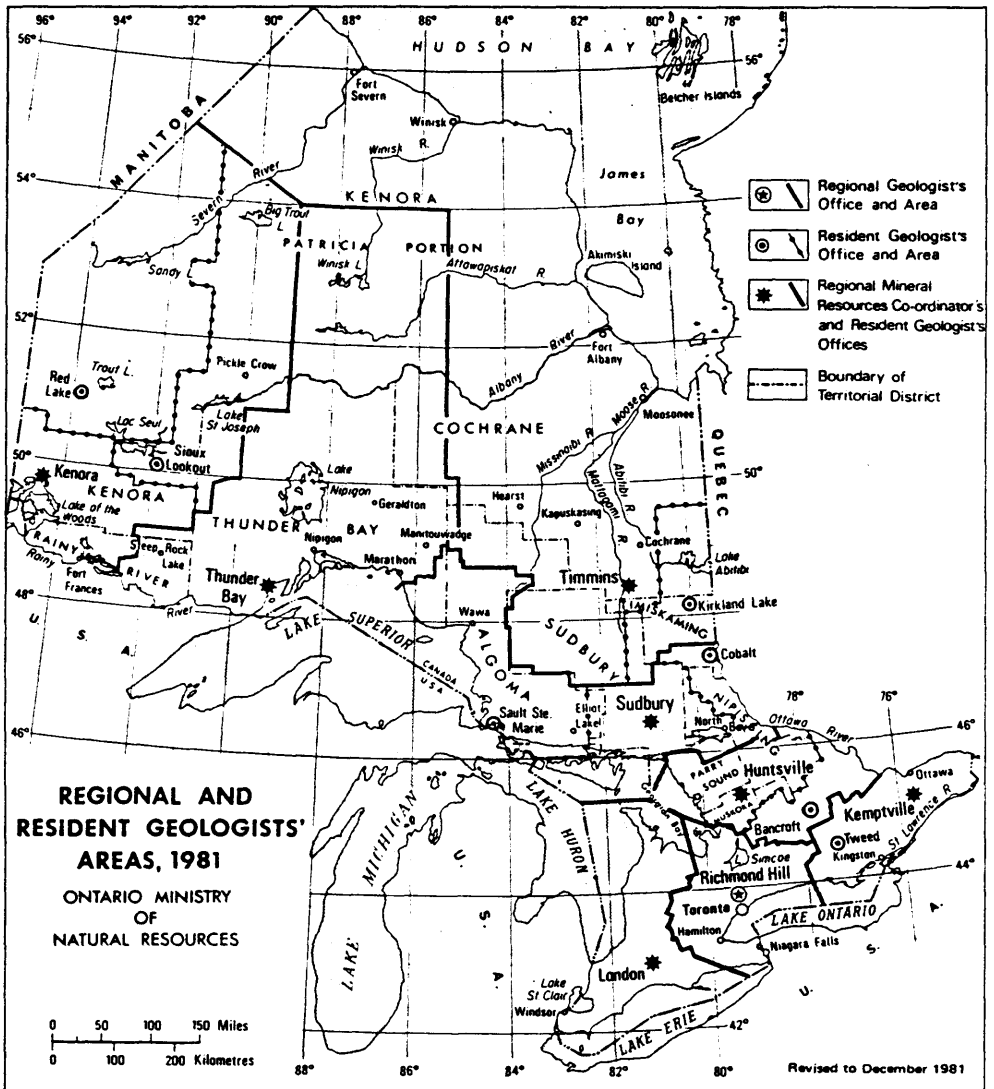


Figure 1-Index to Ontario Mineral Potential Preliminary Map Series



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London	P.A. Palonen	458 Central Av., London N6B 2E5	(519) 433-8431

Figure 2-Regional and Resident Geologist's Areas

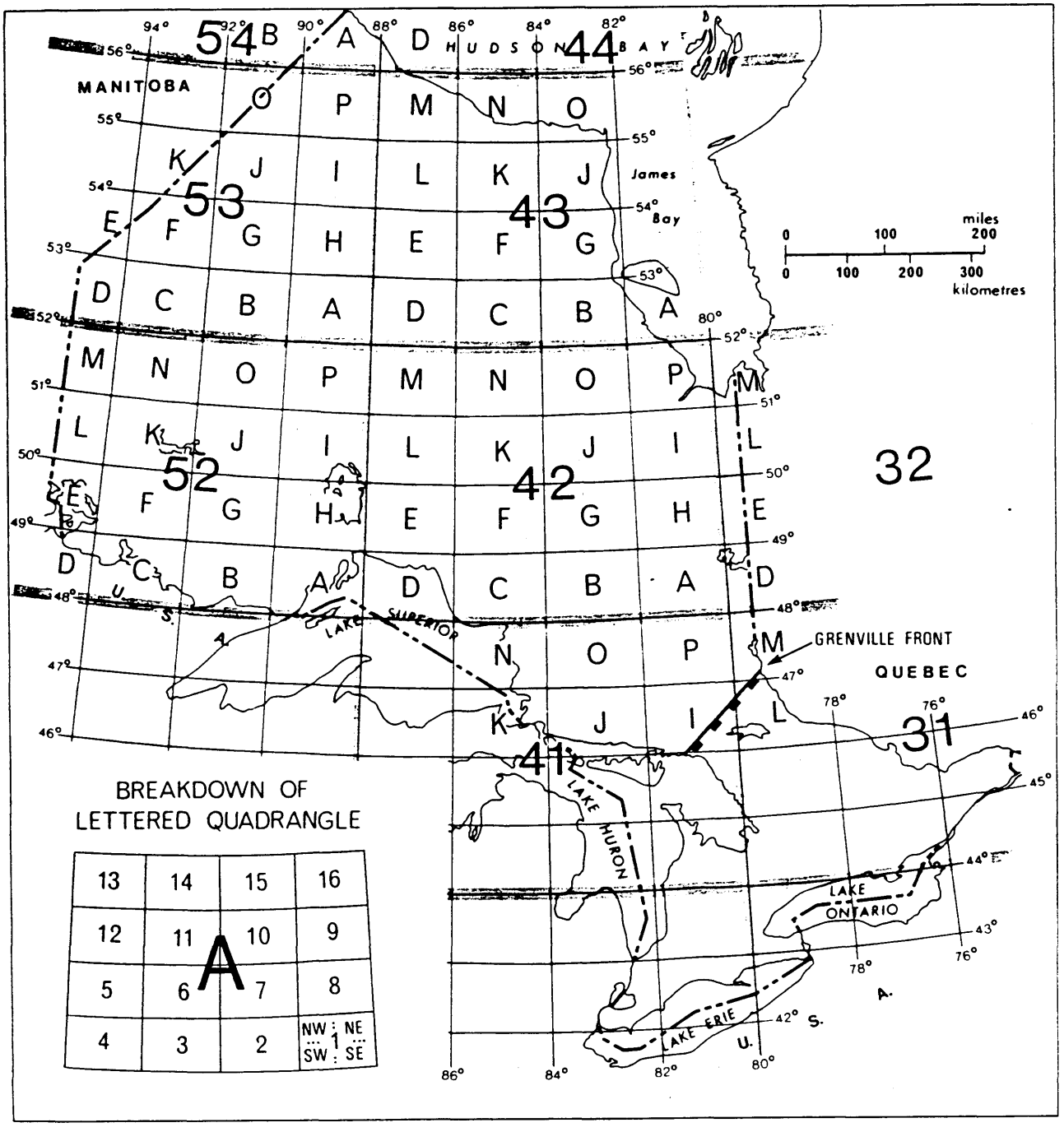

Figure 3-National Topographic System (NTS) Indexing Plan

Table 1.

Conversion Factors for Measurements in Ontario Geological Survey Publications

If the reader wishes to convert imperial units to SI (metric) units or SI units to imperial units the following multipliers should be used:

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)/ton (short)	20.0	pennyweights/ton (short)
1 pennyweight/ton (short)	0.05	ounce (troy)/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 cooperation with the Coal Association of Canada.

INDUSTRIAL MINERALS OF NORTHERN ONTARIO
SUPPLEMENT - Part 1

Parts of Districts of Kenora (Patricia Portion), Thunder Bay and Districts of Kenora and Rainy River

by

M.A. Vos[1], Tanya Abolins[2], and Violet Smith[3]

INTRODUCTION

An inventory of industrial minerals in Northern Ontario was undertaken by staff of the Mineral Deposits Section in cooperation with Regional and Resident Geologists. The project has been funded by the Ministry of Northern Affairs under the Northern Industrial Mineral Study (NIMS) program. The inventory differs from Mineral Deposit Circulars and Open File Reports which have dealt with industrial mineral and metallic ore deposits on a single commodity or ore-association basis. This compilation is intended to complement the Mineral Deposits Circular "Industrial Minerals of Northern Ontario" by M.A. Vos, Tanya Abolins, R.L.W. McKnight and Violet Smith; and, to assist in the search for mineral deposits suitable as targets for industrial mineral development.

The mineral inventory in this Report is a compilation of information describing in detail the industrial rock and mineral deposits of the part of Northern Ontario which lies west of longitude 88°00'W, and of references which the reader may refer to for further information.

ACKNOWLEDGMENTS

The authors wish to acknowledge the contributions made by staff of the Regional and Resident Geologists' offices in Northern Ontario and by contract research staff, particularly Craig D. McConnell, Curtis Smith and Robert J. Stevenato.

SOURCES OF INFORMATION

As a basis for the inventory of industrial minerals as presented in this Open File, the map series "Ontario Mineral Potential, Ontario Geological Survey Preliminary Maps, Mineral Deposits Series", scale 1:250,000 by Dr. J. Springer 1976, 1977 was utilized (see Fig. No. 1). This series of maps is the most recent to cover the province including all known industrial and metallic deposits. Information on the industrial mineral deposits covered in this Report was collected and compiled through research of government publications, information filed with the Geoscience Data Centre, and Assessment File Research Office, Ontario Geological Survey, Toronto and information filed in the Regional and Resident Geologists' offices (see Fig. No. 2).

SCOPE AND METHODOLOGY

All known industrial mineral deposits in Northern Ontario, west of longitude 88°00'W are listed in this Report. Industrial minerals form a large group of commodities. For the purpose of this Report, construction aggregates have been excluded; sand and gravel are dealt with by the Engineering and Terrain Geology Section and the Aggregate Assessment Office of the Ontario Geological Survey. The reader may refer to their publications for information. Listed below are the industrial rocks, minerals and elements, with corresponding abbreviations, found in the relevant part of Northern Ontario:

---

1. Geologist, Mineral Deposits Section, Ontario Geological Survey, Toronto.
2. Project Manager, Northern Industrial Minerals Study, Mineral Deposits Section, Ontario Geological Survey, Toronto.
3. Geological Assistant, Mineral Deposits Section, Ontario Geological Survey, Toronto.

Manuscript accepted for publication by the Chief Geologist, Mineral Deposits Section, Ontario Geological Survey, July 23, 1982.
This report is published with the permission of E.G. Pye, Director, Ontario Geological Survey.

Agate	agate
Amethyst	amy
Apatite	ap
Arsenic	As
Arsenopyrite	asp
Asbestos	asb
Barite	ba
Bauxite	bauxite
Beryl	be
Beryllium	Be
Bismuth	Bi
Bismuthinite	bm
Calcite	calc
Cerium	Ce
Cesium	Cs
Chlorite	chl
Chromite	cr
Chromium	Cr
Clay	clay
Cobalt	Co
Cobaltite	cob
Columbium	Cb
Feldspar	fel
Fluorite (fluorspar)	fl
Garnet	gt
Goethite	gth
Graphite	gf
Hematite	hem
Ilmenite	il
Iridium	Ir
Lanthanum	La
Lime	lime
Limonite	lim
Lithium	Li
Magnetite	mag
Malachite	mc
Mariposite	mp
Marble	mb
Marcasite	mar
Marl	ma
Mica	mi
Muscovite	mus
Niobium	Ni
Peat	peat
Pyrite	py
Pyrochlore	pyl
Rubidium	Rb
Rutile	rt
Selenium	Se
Shale	sh
Silica	si
Soapstone	sps
Stone	st
Sulphur	S
Talc	talc
Tantalite	ta
Tantalum	Ta
Thorium	Th
Tin	Sn
Titanium	Ti
Tourmaline	tour
Uranium	U
Vermiculite	verm

A list of other commodities, and their corresponding abbreviations, which are found in the deposits described herein, follows:

Bornite	bn
Cassiterite	cs
Chalcopyrite	cp
Copper	Cu
Cubanite	cn
Ferromolybdite	fmo
Galena	gn
Gold	Au
Gossan	G
Iron	Fe
Lead	Pb
Molybdenite	mo
Molybdenum	Mo
Niccolite	nc
Nickel	Ni
Pentlandite	pent
Pyrrhotite	po
Silver	Ag
Sphalerite	sp
Titaniferous magnetite	
Tungsten	W
Vanadium	V

REFERENCE ABBREVIATIONS

AFRO	Assessment Files Research Office
Ann.	Annual
BM	Bureau of Mines
CDEMR	Canada Department of Energy, Mines and Resources
CDM	Canada Department of Mines
CDMR	Canada Department of Mines and Resources
CDMTS	Canada Department of Mines and Technical Surveys
CMB	Canada Mines Branch
Can. Min. Jour.	Canadian Mining Journal
C.I.M.	Canadian Institute of Mining and Metallurgy
CPR Dept. Ind. Dev.	Canadian Pacific Railway Company, Department of Industrial Development
Econ. Geol. Rept.	Economic Geology Report
Econ. Geol. Series	Economic Geology Series
GC	Geological Circular
GNHSC	Geological and Natural History Survey of Canada
GAC	Geological Association of Canada
GR	Geological Report, Geoscience Report
GS	Geological Survey

GSB	Geological Survey Branch
GSC	Geological Survey of Canada
IMR	Industrial Mineral Report
Inter. Geol. Cong.	International Geological Congress
MDC	Mineral Deposits Circular
Mem.	Memoir
MINSY	See Report Format
MB	Mines Branch
MGB	Mines and Geology Branch
MP	Miscellaneous Paper
MRC	Mineral Resources Circular
NMI	National Mineral Inventory
No.	Number
ODM	Ontario Department of Mines, Ontario Division of Mines
ODMNA	Ontario Department of Mines and Northern Affairs
OMNR	Ontario Ministry of Natural Resources
OFR	Open File Report
OGS	Ontario Geological Survey
PR	Preliminary Report
Proc.	Proceedings
Pub.	Publication
Rept.	Report
Sum.	Summary
Tech. Bull.	Technical Bulletin

DIVERGENT ENTRIES

Description of minerals and elements which required special treatment in compilation of this Report follows.

Magnetite concentrated in iron-ore deposits is excluded from this inventory as this magnetite is not utilized as an industrial mineral. Pyrite deposits associated with other industrial minerals are recorded fully. If pyrite and magnetite occur in a deposit on their own or with metals, only the name, location, and a reference are provided. Niobium is written up under columbium but a reference is made under niobium. Uranium and thorium deposits of Ontario have been covered by the publications 'Uranium and Thorium Deposits of Northern Ontario' by J.A. Robertson, 1968, and 'Uranium and Thorium Deposits of Northern Ontario' by J.A. Robertson and K. Gould, 1982, and only the major deposits are listed in this Report.

In special cases, the reader will note that several deposits have been grouped together under one description. These deposits are either held by one company or known by one name; or, they are geographically close together and have the same geologic history.

REPORT FORMAT

All deposit descriptions are entered in this Report in NTS numerical order (see Fig. No. 3). Within each one-sixteenth of the lettered quadrangle, which corresponds to an NTS sheet, scale 1:50,000, the deposits are put in the order of north-west, north-east, south-west and south-east. Within these sections, the deposits are listed in alphabetical order by commodity and then deposit name. If a deposit has more than one industrial mineral, the description is listed under the commodity which comes first alphabetically. If a deposit has metallic as well as industrial minerals, the description is listed under the industrial mineral which comes first alphabetically. In each entry a reference is made to other commodities in the deposit and also listed as such.

The name assigned to the deposit is that by which the deposit is commonly known or it is a reference to the company which holds the claim or did work on the deposit. A second name may also be included. Where no names are available, numbers are provided.

For each deposit, location has been described geographically, where possible, as well as by an NTS number and by latitude and longitude. The latitude and longitude have been taken from literature or measured from the largest scale map available which indicates a location of the deposit by a symbol, shaft, adit. etc.

Descriptive remarks on the deposits are intended to give the reader a characterization of the deposits. Information is from sources as indicated previously; and, from personal communication or interpretation from geology of area and marginal notes on geological maps. All measurements correspond to those given in source material. A metric conversion table is provided for the reader's use.

References listed should be considered as primary references which the reader may review to obtain more information. The MINSYS File number refers to minerals-related data in a computer system developed by the Data Base Systems Section of the Mineral Policy Sector, Energy, Mines and Resources in Ottawa. It stores data from mineral occurrence records of the National Mineral Inventory Section and related inventories.

A map reference is given only if a symbol of definite location of the deposit is indicated on the map. If this map is part of a publication listed as a reference, it is not listed separately.

Since industrial rocks and minerals are as diverse a group as are their uses, mode of origin and occurrence, there cannot be a singular rule of thumb of classification. Widely used, and adhered to in this publication, are the following classifications:

1) Producer - in production at time of compilation;

2) Past Producer - having had some production of economic value;

3) Major Occurrence - large sized deposit that has been developed or has possibilities of development; and

4) Minor Occurrence - little or no economic value.

NTS 52A

NAME: BLACK BAY PENINSULA AGATE OCCURRENCES agate

COMMODITY: Agate

STATUS: Minor Occurrences

NTS: 52A/8NW

LATITUDE: 48° 25' 15"N LONGITUDE: 88° 28' 00"W
48° 26' 05" 88° 28' 25"

LOCATION: Southeastern shore of Black Bay Peninsula on islands in Lake Superior.

DESCRIPTION:

GEOLOGY: Thick sheets of basaltic lavas ranging in thickness from 5 to 40 feet and containing minor amounts of interbedded red fragmental rocks overlie sandstone and mudstone of the Osler Series in this area. The contact is horizontal and concordant to the bedding planes of the subjacent rocks. The uppermost sediments have been indurated for a few inches and small veins have developed in them. The lavas are uniform in lithological character. All the flows are basic, fine textured and have an earthy or porcellanic lustre. Some of the flows are amygdaloidal throughout, however, the upper part is usually more vesicular.

Microscopic examination showed the rock to be made up essentially of tiny laths of plagioclase, magnetite, chloritic minerals and clouded, devitrified glass. The predominant colour of the lavas is dark greenish grey, however, tiny green mottlings through a base of greyish purple or dull reddish brown are evident.

Spherical amygdules less than 1/2 inch in diameter are partly filled with coarsely crystalline calcite, agate and quartz.

MINERALOGY: The minerals that commonly occur as fillings in the amygdules are calcite, agate, delessite, minerals of the chlorite group, laumontite, other identified zeolites, quartz in crystalline aggregates of prismatic habit projecting toward the centre and at times an inner development of beautifully terminated quartz crystals. Colourless and red amethyst project into the central cavity.

The most common filling material is calcite, however, agates of excellent quality for lapidary work can be found.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2304, 1 inch to 1 mile (1:63,360) 1975
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Maps P624-626, 1 inch to 1/4 mile (1:15,840) 1971

SELECTED REFERENCES: ODM GR 118, p. 15-16,24 (1975)
CDM,GS Mem. 167, p. 57-62 (1931)

(Minor Occurrences) (1) agate

COMMODITY: Agate

STATUS: Minor Occurrences

NTS: 52A/9NE

LATITUDE: 48° 41' 10"N LONGITUDE: 88° 05' 40"W
48° 41' 45" 88° 04' 40"

LOCATION: Fluor Island, southeast of Nipigon Strait and about 12 miles northeast of Black Bay.

DESCRIPTION: See BLACK BAY PENINSULA AGATE OCCURRENCES for a description of GEOLOGY, MINERALOGY and SELECTED REFERENCES, p. 5.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2304, 1 inch to 1 mile (1:63,360) 1975
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.624, 1 inch to 1/4 mile (1:15,840) 1971

(Minor Occurrence) (2) agate

COMMODITY: Agate

STATUS: Minor Occurrence

NTS: 52A/9SW

LATITUDE: 48° 34' 45"N LONGITUDE: 88° 15' 20"W

LOCATION: Herron Point, McKay Island, southeast of Black Bay.

DESCRIPTION: See BLACK BAY PENINSULA AGATE OCCURRENCES for a description of GEOLOGY, MINERALOGY, MAP REFERENCES and SELECTED REFERENCES, p.5.

NAME: PRINCE LOCATION AMETHYST OCCURRENCE amy

COMMODITY: Amethyst

STATUS: Minor Occurrence

NTS: 52A/3NW

LATITUDE: 48° 08' 45"N LONGITUDE: 89° 20' 50"W

LOCATION: Prince Location, within 1 mile west of Mink Bay, Lake Superior, opposite Spar Island.

DESCRIPTION:

GEOLOGY: Amethyst is present, in a brecciated calcite-quartz filled shear zone, locally in sub-economic quantities. The breccia zone strikes N55°W to N60°W and dips steeply northeast. "The shear zones lie between a diabase sill on the west and an olivine diabase dike on the east. The basal contact of the sill is down-warped eastward towards the carbonate breccia zone." (Geul 1973, p.37).

MINERALOGY: The breccia zone is filled with quartz, amethyst, chalcocite, barite, coarsely crystalline calcite and angular fragments of diabasic wall rocks. The zone is 12 - 18 inches wide and extends for several hundred feet.

HISTORY OF DEVELOPMENT:

1946-47: An open cut was driven westerly for 65 feet. Two shafts 24 and 27 feet were sunk. A 163-foot tunnel was driven towards the shafts 50 feet below the collar of the higher shaft. It was reported that a winze was driven 50 - 60 feet below this level. A 90-foot shaft was also sunk.

1866: Property was worked for copper.

REMARKS: A study of field examinations and reports "indicate that the distribution of any silver present is sporadic and that the mineralization is generally weak and of low average grade." (Geul 1973, p.37). Circa 1846-47 several hundred pounds of ore containing up to 3 percent silver have been extracted.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Maps 529-530, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM Geol. Guidebook 5, p. 73 (1976)
ODM GR 102, p. 19,37 (1973)
ODM MRC 10, p. 62 (1968)
CDM,GS Mem. 167, p. 189,193 (1931)
GNHSC, pt. H, p. 51 (1887)

NAME: CLOUD RIVER AMETHYST OCCURRENCE amy

COMMODITY: Amethyst

STATUS: Minor Occurrence

TOWNSHIP: Crooks

NTS: 52A/4SE

LATITUDE: 48° 06' 40"N LONGITUDE: 89° 31' 20"W

LOCATION: Occurrence is on Cloud River, approximately 1 mile south-southeast of Cloud Lake.

DESCRIPTION:
GEOLOGY: Amethyst is present in breccia zones, locally in sub-economic quantities. A breccia zone striking north-northwest cuts a diabase sill in contact with and overlying Rove sediments.

Quartz and barite are present in minor amounts.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Maps 529-530, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 267A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM Geol. Guidebook 5, p. 30-40 (1976)
ODM GR 102, p. 14,26 (1973)
ODM MRC 10, p. 75 (1968)
CDM,GS Mem. 167, p. 192 (1931)
ODM Vol. 69, pt. 7, p. 7 (1960)

NAME: F. JOHNSON AMETHYST QUARRY amy

COMMODITY: Amethyst

STATUS: Producer

TOWNSHIP: McTavish

NTS: 52A/10NW

LATITUDE: 48° 39' 40"N LONGITUDE: 88° 45' 55"W

LOCATION: Along Anderson Creek, about 1 mile north of Loon Lake.

DESCRIPTION:
GEOLOGY: Amethyst mineralization is associated with faulting that occurred in the Late Precambrian; it is found in granitic rocks that occur near the contact with the overlying Sibley sedimentary rocks. The amethyst occurs in quartz veins that are 2 - 3 inches wide. These veins are vertical and enclose vugs approximately 1 foot wide.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map P.720, 1 inch to 1/4 mile (1:15,840) 1971

SELECTED REFERENCES: ODM Geol. Guidebook 5, p. 23-40,54 (1976)

NAME: BOWKER, KARIES and MINOR OCCURRENCES amy, ba, py

COMMODITIES: Amethyst, barite, pyrite

STATUS: Minor Occurrences

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE:		LONGITUDE:	
	48° 42' 55"N		88° 37' 45"W (Bowker)
	48° 41' 05"		88° 33' 40" (Karies)
	48° 41' 10"		88° 44' 05"
	48° 42' 40"		88° 32' 00"
	48° 42' 50"		88° 32' 20"
	48° 43' 00"		88° 33' 20"
	48° 42' 20"		88° 35' 55"
	48° 40' 40"		88° 37' 50"
	48° 39' 50"		88° 39' 10"
	48° 41' 05"		88° 37' 10"
	48° 40' 45"		88° 36' 50"

LOCATION: Amethyst showings are scattered in the northern part of the township.

DESCRIPTION:

GEOLOGY: The showings occur in veins in or near granitic rocks of Archean age. The mineralization is associated with Late Precambrian faulting and is common at the contact between Archean felsic rocks and Sibley Group sediments. The amethyst occurs in quartz veins 2 to 3 inches wide. These veins are vertical and often enclose vugs about 1 foot wide. Other minerals associated with these veins are galena, chalcopyrite and sphalerite. The amethyst is deep purple and some crystals are coated with hematite. Analyses indicate iron is present in 500 p.p.m.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Maps P.720 and P.721, 1 inch to 1/4 mile (1:15,840) 1971

SELECTED REFERENCES: ODM Geol. Guidebook 5, p. 23-40 (1976)

NAME: DZUBA AMETHYST PROPERTIES amy

COMMODITY: Amethyst

STATUS: Producer

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE:		LONGITUDE:	
	48° 40' 30"N		88° 43' 15"W (Dzuba Property)
	48° 42' 35"		88° 33' 50" (Dzuba, N.)
	48° 42' 05"		88° 35' 55" (Dzuba, P.)

LOCATION: SE¼ of Section 4, Concession 6, Mineral Lots 5, 7, 13.

DESCRIPTION:

GEOLOGY: The largest of the veins has been traced for 2,000 feet. It occupies a fault, the northwest wall is quartz monzonite and the southeast wall is of red fragmental rock and quartz sandstone of the Sibley Series. Most of the vein is coarsely crystalline, white and pale grey calcite and bands up to a few feet in width of white, pale green amethystine quartz which is associated with calcite and barite. Quartz-amethyst veins are found at the base of a hill of quartz monzonite over a width of 270 feet across strike which varies from N65° - 80°E. The individual quartz veins are up to 4 feet wide, nearly vertical and contain some galena, pyrite, quartz and amethyst.

MINERALOGY: The westerly 125 feet of the ridge of quartz monzonite northwest of the fault is mineralized. The mineralized rock is about 25 feet wide and includes 10 feet of breccia. Amethyst of light to medium violet colour

lines the vugs which are frequent in the quartz veins. The vugs are 1 foot to 2 feet wide. The amethyst crystals are 1.5 - 2 inches in diameter. Many samples of amethyst show a variety of colours, which frequently alternate even in a single specimen. Many crystals reflect light from internal fractures or from crystal boundaries thus giving a sparkling appearance in the crystal clusters.

In some samples of amethyst specks of hematite are present near the surface; smoky quartz is also present.

HISTORY OF DEVELOPMENT:

May-Nov. 1970: Stripping and shallow trenching.

June 1972: Manual trenching.

June-Nov. 1974: Trenches dug; production started from claim TB287820.

1976: Blasting and trenching.

1977: Power stripping.

1979: Stripping, trenching and blasting.

REMARKS: Much of the amethystine and granitic rocks are used locally by the construction industry. Exports have been made to various parts of Canada, United States, Japan and Finland. The bulk of the quarried rock is used for exterior wall facings, and as landscaping stone. Mineral collectors and lapidarists purchase a good portion of the crystalline material which, in addition to being exported, is also sold at the site.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Maps P.720-721, 1 inch to 1/4 mile (1:15,840) 1971
ODM Map 38f, 1 inch to 1 mile (1:63,360) 1929

SELECTED REFERENCES: Resident Geologist's Files, OMNR,
Thunder Bay: Nick Dzuba File
ODM Geol.Guidebook 5, p.43-52 (1976)
ODM MP 23, p. 44-45 (1969)
CDM,GS Mem. 167, p. 172 (1931)

NAME: ENTERPRISE MINE amy

COMMODITY: Amethyst

STATUS: Producer

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE: 48° 40' 35"N LONGITUDE: 88° 37' 35"W

LOCATION: Mining Lot C on the north side of the C.N.R. about 2 1/2 miles southwest of Ancliff Station.

DESCRIPTION:

GEOLOGY: The property is partly underlain by flat-lying sediments of the Sibley Group up to more than 40 feet thick resting unconformably on pink granite of Archean age. Various members of the sedimentary series overlap each other and come in contact with the granite which rises as a hill in the northern part of the lot. A diabase dike 4 feet wide occupies a fault, striking N95°E through the sediments and granite. Faulting occurred after the diabase intrusion and the cavities and fissures formed as a result of the faulting are cemented with vein material. The largest mineralized vein has an average width of 4 feet and has been traced underground for 150 feet. Numerous branches of the vein ramify through a shatter zone for 3 feet on either side. The strike of the vein varies between N65°E and N70°E, it dips 75°S but becomes more vertical at depth.

MINERALOGY: The vein consists of calcite, quartz, local concentrations of fine-grained galena and chalcopyrite, and a later filling of amethyst and pink barite. Rich concentrations of metallic minerals were found as discontinuous lodes within the vein. Assays showed 41% Pb, 5.40% Cu, 3.2 ozs./ton Ag, and 0.33% ozs./ton Au.

HISTORY OF DEVELOPMENT:

1868: Sampling and assays were completed.

1870-76: Two shafts were sunk. No. 1 shaft was sunk 180 feet. On the 60-foot level, 76 feet of east drifting, 66 feet of west drifting and a sump completed on the north wall of the shaft. A 15-foot crosscut was made from the bottom of the shaft. No. 2 shaft was sunk 60 feet to the west of No. 1 shaft.

1884: Shafts dewatered and vein sampled.

1926: New building erected and No. 1 shaft dewatered and sampled.

REMARKS: The total recorded production from the mine was a 167 ton shipment of ore to Swansea, Wales in 1875. The occurrence contains amethyst, but it is not a primary source of this mineral.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2137, 1 inch to 4 miles (1:253,440) 1968
ODM Map P.721, 1 inch to 1/4 mile (1:15,840) 1971
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931
ODM Map 38f, 1 inch to 1 mile (1:63,360) 1929

SELECTED REFERENCES:
ODM Geol. Guidebook 5, p. 79 (1976)
ODM MRC 10, p. 70 (1968)
CDM,GS Mem. 167, p. 89,168-169 (1931)
OGS MP 71, p. 45-46 (1977)
ODM MRC 12, p. 294 (1969)
ODM Vol. 38, pt. 4, p. 79-81 (1929)

NAME: G. NOYES AMETHYST QUARRIES AND DEPOSITS amy

COMMODITY: Amethyst

STATUS: Producer

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE: 48° 41' 30"N LONGITUDE: 88° 41' 15"W

LOCATION: Northwest 1/4 of section 4, Concession IV, approximately 30 miles northeast of Port Arthur.

DESCRIPTION:

GEOLOGY: Amethyst occurs over a length of one-half miles in a vertically dipping fault zone that strikes N70°E, at the contact of red Archean granite, and dolomite and argillite of the Sibley Formation. The strike of the veins varies from N45°E to N60°E and the measured width of the mineralization varies from 50 to 67 feet. "Angular fragments of dolomite and granite are enclosed by vein matter. A very minor amount of pyrite and chalcopyrite also occurs. Adjacent to the fault, the granite is altered and epidotized and has a radioactive count of no more than 1.5 times background." (Kustra, 1969, p.44).

MINERALOGY: Several 2 - 3 inch wide quartz veins containing amethyst are exposed at locality. The veins are vertical and enclose vugs of approximately 1 foot in width. The amethyst crystals show a wide array of colours that range from light violet to a very dark, nearly black purple. The

crystals are sometimes coated with a layer of reddish brown hematite. Well preserved crystal clusters of amethyst up to 3 inches wide with a glassy lustre are common. Chalcopyrite-rich zones are associated with rusty stained or clear quartz crystals.

HISTORY OF DEVELOPMENT: 1968 - 1972: Manual and mechanical work performed on claims.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 720, 1 inch to 1/4 mile (1:15,840) 1971
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931
ODM Map 38f, 1 inch to 1 mile (1:63,360) 1929

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Noyes, G., District Thunder Bay, Township McTavish
ODM Geol. Guidebook 5, p. 54-57 (1976)
ODM MP 23, p. 44 (1969)

NAME: ONTARIO GEM COMPANY (AMRIC AMETHYST MINE) amy, ba

COMMODITIES: Amethyst, barite

STATUS: Producer

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE: 48° 42' 00"N LONGITUDE: 88° 35' 00"W

LOCATION: Lot 12, about 34 miles northeast of the City of Thunder Bay.

DESCRIPTION:

GEOLOGY: An amethyst-bearing vein is situated in a fault zone at the unconformity between Sibley Rocks and the Early Precambrian basement. The vein is 6 - 8 feet wide and is exposed along a strike length of 150 feet. It strikes N35°E and dips about 85°W. "The hanging wall is spotted red limy mudstone of the Sibley Group; the footwall is porphyritic quartz-biotite monzonite." (Fenwick and Scott 1976, p.46). Angular inclusions of Sibley mudstone are present in the vein. The main gangue mineral is white quartz and the ore minerals present are amethyst, barite and galena.

MINERALOGY: "Barite occurs in a 10 to 15 cm (4 to 6 inches) wide zone along the hanging wall. The barite exhibits some well-developed bladed crystals. Some barite, occurring near the footwall of the vein as a minor constituent, exhibits rosette texture.

"The central portion of the vein consists of a breccia of silicified Sibley Group mudstone fragments cemented by white and amethystine quartz. The amethystine quartz ranges in color from pale clear purple, to dark purple, to almost black. Crystal sizes exposed in the vein ranged from 5 to 10 mm. Large crystal clusters occur infrequently in some of the larger vugs. Several of the crystals, coated with a layer of hematite, display a blood-red to brown surface with a purple core.

"Galena occurs as small cubic crystals, up to 10 mm in size near the footwall of the vein. Total galena content of the vein is visually estimated to be less than 2 percent while local concentrations along the footwall approach 8 to 10 percent." (Fenwick and Scott 1976, p.46).

REMARKS: The Ontario Gem Company in 1977 planned to mine 10 tons of rock per day for an approximate yearly gross value of $100,000; reserves are sufficient for 2 years.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map P.721, 1 inch to 1/4 mile (1:15,840) 1971

SELECTED REFERENCES:
OGS MP 78, p. 42 (1977)
OGS MP 71, p. 46 (1976)

NAME: THUNDER BAY AMETHYST MINING COMPANY LIMITED amy

COMMODITY: Amethyst

STATUS: Producer

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE: 48° 41' 25"N LONGITUDE: 88° 43' 35"W

LOCATION: East shore of Elbow Lake about 4.5 miles north of Highway 17 and 35 miles northeast of Port Arthur.

DESCRIPTION:

GEOLOGY: The property is underlain by a batholith of pink granite of Archean age, containing many pegmatite stringers and lenses. The main deposit is in a complex shear zone 600 feet long and 50 - 80 feet wide. Amethyst occurs in veins enclosed within the Archean granite or in numerous irregular fractures along the fault zone as crystals up to 9 inches in diameter, and crystal clusters up to 2 feet in diameter and weighing up to 750 pounds. Individual amethyst-filled fractures may have any orientation and may expand into vugs ranging up to 4 feet wide. Vein extremities have chalcopyrite,and altered Sibley dolostone fragments form the vein breccia.

MINERALOGY: The total width of the mineralized rock is well over 80 feet. Vugs lined with amethyst crystals are estimated to be 5 percent by volume and the total amethyst content within the fault zone is estimated to be 20 percent. Some amethyst veins include numerous cavities lined with purple crystals. These cavities attain lengths of 10 feet and widths of 4 feet. Galena, pyrite and chalcopyrite are also present in minor amounts.

HISTORY OF DEVELOPMENT:

1962: Drilling, blasting and trenching operations.

1971: Stripping.

1972: Bulldozing, stripping and removal of overburden.

1973: Power stripping, 6 diamond drill holes totalling 847 vertical feet were sunk.

1974: Bulldozing, 5 diamond drill holes totalling 1,093 vertical feet were sunk.

1975: Power stripping, hauling and loading of overburden; 4 diamond drill holes totalling 1,101 vertical feet were sunk.

1976: One diamond drill hole totalling 120 vertical feet was sunk.

REMARKS: Production from the open pits was about 11,800 tons of which 2,467 tons of crystal clusters, building stone and landscape stone has been sold by piece, barrel, truckload and/or carload.
It is estimated that about 200 tons have been taken away due to the tourist trade. The bulk of the quarried rock is used by the construction industry for exterior wall facings and landscapings. Mineral collectors and lapidarists purchase a good portion of the crystalline material which, in addition to being exported, is also sold at the site.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.720, 1 inch to 1/4 mile (1:15,840) 1971
ODM Map 2137, 1 inch to 4 miles (1:253,440) 1968
ODM Map P.358, 1 inch to 2 miles (1:126,720) 1966
ODM Map 38f , 1 inch to 1 mile (1:63,360) 1929

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Thunder Bay Amethyst Mining Co. Ltd. Report.
OGS Toronto Geoscience Data Centre, File Elbow Lake,
District Thunder Bay, Township McTavish.
OGS MP 84, p. 37 (1979)
OGS MP 78, p. 41 (1978)
OGS MP 71, p. 43 (1977)
ODM MP 64, p. 44 (1976)
ODM Geol. Guidebook 5, p. 58-62 (1976)
ODM MP 23, p. 45-46 (1968)
ODM MP 16, p. 46-49 (1968)
MINSY File 51309500

NAME: WILLIAMSON AMETHYST PROPERTY amy

COMMODITY: Amethyst

STATUS: Minor Occurrence

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE: 48° 41' 30"N LONGITUDE: 88° 37' 10"W

LOCATION: Mineral Lot A.

DESCRIPTION:

GEOLOGY: Amethyst occurs in a near vertical calcite vein enclosed within Archean rocks. The major vein is up to 15 feet wide and strikes N76°E. It is surrounded by conglomerate and sandstone of the Sibley Group. The outcrop is exposed over a length of about 75 feet. At a distance of 1,000 feet an outcrop of amethyst in calcite is located; this vein is nearly vertical, strikes N94°E and is 8 feet wide. It is flanked by a wall of quartz monzonite on the north side. Altered Sibley sedimentary rocks are seen as fragments in the vein breccia.

MINERALOGY: Massive, coarse crystalline calcite forms the walls of the veins and seams of amethyst alternate with 1-inch wide veinlets or vugs lined with calcite. Deep violet crystals of amethyst grow together in dense clusters. The vein contains pockets of barite and stringers of pyrite and chalcopyrite. Barite also occurs as lenses in the calcite.

HISTORY OF DEVELOPMENT: 1967: 13 diamond drill holes totalling 1,809 feet were drilled.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.721, 1 inch to 1/4 mile (1:15,840) 1971

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
James Edmund Williamson File.
ODM Geol. Guidebook 5, p. 62-64 (1976)

NAME: EDWARD ISLAND PROSPECT As, Ag

COMMODITIES: Arsenic, silver

STATUS: Major Occurrence

NTS: 52A/7SE

LATITUDE: 48° 21' 05"N LONGITUDE: 88° 38' 30"W

LOCATION: Edward Island, 28 miles east across Thunder Bay from Fort William.

DESCRIPTION:

GEOLOGY: Basic lavas, locally 30 feet thick, overlie calcareous quartz sandstone and red fragmental rock of the Osler Series. These rocks have been faulted and intruded by a system of northeasterly-trending Keweenawan diabase dikes. One of the dikes is feldspathic and along its walls the brecciated sandstone and lava have been metamorphosed. A major northeast fault cuts all the rocks. Two minor faults within this fault zone are mineralized and each has been probed by a shaft.

MINERALOGY: The vein at Shaft No. 1 strikes north, varies in width up to 1 foot with numerous branches and parallel veinlets. The vein is in grey granophyre. Native silver and argentite occur in a gangue of calcite. Sphalerite, chalcopyrite, galena and native arsenic in reniform masses along the walls are also present in the vein. In Shaft No. 2, the vein is sparsely mineralized with galena, sphalerite and chalcopyrite. It strikes about N10°E and is several feet wide.

HISTORY OF DEVELOPMENT:

1884: Two shafts were sunk on the southwestern end of Edward Island.
Shaft No. 1 was sunk 35 feet deep.
Shaft No. 2 was sunk 100 feet deep about 100 feet inland to the northeast.

1921: Shaft No. 1 was dewatered and extended a few feet.

1963: An EM survey was conducted to outline graphitic shear zones. Two diamond drill holes totalling 1,300 feet were drilled; these failed to show silver ore.

REMARKS: Between 1884 - 1921 several hundred pounds of ore rich in native arsenic was produced. It is also reported that during that time the ore taken from Shaft No. 1 assayed 80 ounces per ton of silver, however, work ceased on this vein when it narrowed to a few inches.

MAP REFERENCES:
ODM Map P.1521 (1:250,000) 1978
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931
CDM Map 203A, 1 inch to 1 mile (1:63,360) 1931
ODM Map P.358, 1 inch to 2 miles (1:126,720) 1966
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1973

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Edward Island, District Thunder Bay, Lat. 48°15', Long. 88°30'
ODM MRC 10, p. 73 (1968)
CDM,GS Mem. 167, p. 186-187 (1931)

NAME: CONMEE TOWNSHIP ASBESTOS DEPOSIT asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

TOWNSHIP: Conmee

NTS: 52A/5NW

LATITUDE: 48° 29' 35"N LONGITUDE: 89° 45' 50"W

LOCATION: Approximately 6 miles northwest of Mokomon, within 1/4 mile of the western boundary of the township.

DESCRIPTION:

GEOLOGY: Asbestos veinlets occur within basic-ultra basic igneous rocks, primarily peridotite, dunite and serpentinite.

HISTORY OF DEVELOPMENT:

1951: Surface sampling by Quebec Asbestos Corp. Ltd. and McIntyre Porcupine Mines Ltd.

1969: Geophysical survey and drilling by Acorn Mining Syndicate.

MAP REFERENCES: ODM Map P.1521 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963

SELECTED REFERENCES: ODMNA IMR 36, p. 30,63 (1971)
ODM IMR 1, p. 3 (1953)
MINSY File 50011400

NAME: SOUTH McKELLAR ISLAND DEPOSIT calc, ba

COMMODITIES: Calcite, barite

STATUS: Major Occurrence

NTS: 52A/3NE

LATITUDE: 48° 11' 10"N LONGITUDE: 89° 07' 45"W

LOCATION: South McKellar Island, south of Pie Island, Lake Superior and 18 miles by air due south of Thunder Bay.

DESCRIPTION:

GEOLOGY: Barite occurs in a vein that strikes N45°W and dips vertically crossing McKellar Island. The vein varies in width from 30 - 60 feet and is 450 feet long. It pinches rapidly as it passes under the lake. Half of the vein is exposed at the outcrop and has been quarried down 25 feet over an area of 45 feet by 75 feet. In the area Keweenawan diabase intrudes the Animikie or Lower Gunflint iron formation. The Keweenawan diabase dike trends northeast from McKellar Island. Locally, barite may constitute up to 90 percent of the vein material.

MINERALOGY: The vein consists of two parts: a coarsely-banded massive assemblage of coarse barite and calcite, and a narrow banded portion. Barite occurs as white radiating tabular aggregates and in the more massive sections the crystals can be up to 10 inches long and average 3 - 6 inches wide. Calcite is present throughout the vein, however, at the west contact a well banded zone contains about 80 percent calcite in bands up to 12 inches wide. Minor amounts of quartz fill secondary fractures. The quartz is colourless to milky, however, it is amethystine in places. At the east contact a 1 inch zone of encrusted quartz crystals with terminated hexagonal prisms up to 1 1/2 inches in diameter are oriented at right angles to the vein wall. Some of the quartz crystals are zoned with pale purple centres and colourless borders. Purple fluorite is also present in small amounts with quartz filling narrow fractures in the diabase.

HISTORY OF DEVELOPMENT:

1869: Discovered by the McKellar brothers in a search for silver, the vein was subsequently developed from a shaft 130 feet deep, an adit 150 feet long and a crosscut 60 feet long.

1885 - 1894: Shipments totalling 8,402 tons of hand cobbed barite were reported by the United States Baryta Co. of Cleveland.

1894: 500 tons of ore was shipped by the Duluth Barytes Co.

1967: R.A. Hill, consulting geologist for the L.V. Lomas Chemical Co. Ltd., supervised the drilling of one diamond drill hole.

REMARKS: The McKellar Island vein is a potential source of good quality barite and calcite. Both minerals appear quite pure and of good colour; concentrates of each might be marketable. The vein would appear to represent about 50,000 tons of a barite-calcite mixture. Barite occurs in amounts up to 50 percent barium by weight.

MAP REFERENCES:
ODM Map P.1521 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay:
McKellar Island - L.V. Lomas Chemical Co. Ltd. Report
ODM MRC 10, p. 75 (1968)
ODM IMR 10, p. 8-11 (1963)
CDM,GS Mem. 167, p. 188 (1931)
GNHSC Ann. Rept. Vol. 3, pt. 2, plate 2, (1887-88)
GNHSC Sum. Rept., pt. T, p. 25 (1888)
GNHSC Sum. Rept., pt. H, p. 41 (1888)
CDM,MB No. 570, p. 56 (1921)

NAME: THOMPSON ISLAND DEPOSIT ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrence

NTS: 52A/3NE

LATITUDE: 48° 10' 25"N LONGITUDE: 89° 09' 20"W

LOCATION: Thompson Island, Lake Superior. About 19 miles south of Thunder Bay, south of Pie Island and southwest of McKellar Island.

DESCRIPTION:

GEOLOGY: The island consists mainly of dikes running lengthways with a small development of argillites between two dikes that form the western point. The main dike is Keweenawan, diabasic and trends northeast from McKellar Island. In the vicinity Keweenawan diabase intrudes the Animikie or Lower Gunflint iron formation.

MINERALOGY: The dike is coarse grained and dark green in colour. The vein is about 4 feet thick and is composed of barite, minor calcite and quartz. Small amounts of galena, sphalerite and pyrite are present.

HISTORY OF DEVELOPMENT:

1853: Showing discovered by Mr. T. MacFarlane for the Montreal Mining Company.

1873: Small amount of exploration.

Winter 1873-74: Development work done. A 25 foot adit and a 9 foot winze was sunk on the vein.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File
Thompson Island, District Thunder Bay,
Lat. 48°00', Long. 89°00'
ODM IMR 10, p. 6 (1963)
CDM,GS Mem. 167, p. 189 (1931)

NAME: McKELLAR POINT DEPOSIT ba

COMMODITY: Barite

STATUS: Minor Occurrences

TOWNSHIP: Crooks

NTS: 52A/3SW

LATITUDE: 48° 04' 15"N LONGITUDE: 89° 24' 40"W
48° 03' 55" 89° 24' 40"

LOCATION: McKellar Point is directly southwest of Victoria, Jarvis and Spar Islands on Lake Superior. It is southwest of Cloud Bay.

DESCRIPTION:

GEOLOGY: Red syenitic rock occurs along with the basic trap dikes in the area. The syenitic rock varies from a coarse-grained to a fine-grained texture in places. Red feldspar is associated with a green mineral possibly hornblende and is distinctly visible in the coarse-grained phase, however, in the finer-grained phase it appears as a clastic rock that has been metamorphosed. The syenitic rock has a distinctive bedded appearance and dips to the east about 15 degrees.

MINERALOGY: Veins consisting of coarsely crystalline calcite and barite cross the point in a northwesterly direction. Minor amounts of metallic minerals are present as well as some colourless and amethystine quartz.

HISTORY OF DEVELOPMENT: Circa 1931: Development work was done on the north side of McKellar Point. An 80-foot tunnel has been dug and a shaft 30 feet deep sunk.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map 529, 1 inch to 1/4 mile (1:15,840) 1969
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM GR 102, p. 11,114,38 (1973)
CDM,GS Mem. 167, p. 191 (1931)

NAME: SPAR ISLAND OCCURRENCE ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrences

NTS: 52A/3SW

LATITUDE: 48° 06' 20"N LONGITUDE: 89° 17' 00"W
48° 06' 00" 89° 17' 00"

LOCATION: Spar Island, Lake Superior, approximately 23 miles due south of Port Arthur and 19 miles southwest of Fort William.

DESCRIPTION:

GEOLOGY: Flat-lying Animikie argillites of the Rove formation occur between two parallel northeast-striking Keweenawan diabase dikes. The mineralized vein cuts a complex of diabase dikes and sills. Well-developed jointing in the diabase is parallel to the vein at N25°W. Another joint system strikes N80°E, both dip vertically. The vein can be traced in a N25°W direction for 280 feet and is visible on the south shore of the island in shallow water a further 150 feet. The vein dips vertically and is best exposed on the south shore where it can be traced for 60 feet. The wall-rocks of the vein have been displaced 65 feet horizontally.

MINERALOGY: Mineralization occurs in quartz carbonate veins 5 feet and 6 feet wide; these merge inland to form a vein 14 feet wide. The mineralization consists of barite, calcite, chalcocite, native silver, argentite, sphalerite, galena, chalcopyrite and cobalt arsenides.

Barite constitutes about 25 percent and quartz 10 percent of the vein, however, massive assemblages of coarse white calcite predominate. Grab samples assayed 1.38 percent copper, 1.97 percent barite, and 0.15 ounces per ton silver.

HISTORY OF DEVELOPMENT:

1846-47: An open cut was driven westerly for 65 feet. 2 shafts 24 feet and 47 feet were sunk. A 165-foot tunnel was driven towards the shafts 50 feet below the collar of the highest shaft. A winze was driven 50 - 60 feet below this level. A shaft 90 feet deep was sunk on the vein.

1866: Property was worked for copper.

REMARKS: Several hundred pounds of ore containing 3 percent of silver were extracted around 1846-47.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map P.530, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Spar Island, District Thunder Bay, Lat. 48°00', Long. 89°15'
ODM MRC 12, p. 346 (1969)
ODM GR 102, p. 22-23 (1973)
ODM MRC 10, p. 62 (1968)
ODM IMR 10, p. 6,11-12 (1963)
CDM,GS Mem. 167, p. 189-190 (1931)

NAME: VICTORIA ISLAND DEPOSITS ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrences

NTS: 52A/3SW

LATITUDE: 48° 05' 00"N LONGITUDE: 89° 21' 45"W
48° 04' 25" 89° 21' 40"

LOCATION: Victoria Island on Lake Superior, offshore of the northeastern boundary of Crooks Township.

DESCRIPTION:

GEOLOGY: Keweenawan diabase intrudes the Animikie or Lower Gunflint iron formation in the area. The diabase dike trends northeast and forms Victoria Island. A partly eroded granophyre sill occurs between two northeasterly trending ridges; the granophyre underlies flat-lying Rove sedimentary rocks.

A dike with interfingering gabbro and diabase forms the northern ridge. The southern ridge is made up mainly of olivine diabase with minor gabbroic phases. The strike length of the gabbro dike is about 1,275 feet and varies in width between 150 - 500 feet.

MINERALOGY: Mineralization consists of calcite and barite-bearing veins which locally crosscut or run parallel to the Rove sedimentary rocks and mafic intrusions. Massive to weakly disseminated copper-nickel sulphide mineralization associated with iron-titanium oxide phases occur

throughout the gabbro dike. Specks of pyrrhotite, chalcopyrite and witherite are also present. Grab samples when analysed showed 0.14 - 0.53 percent copper, trace - 0.29 percent nickel and up to 0.02 ounces per ton precious metals, mainly palladium.

HISTORY OF DEVELOPMENT:

Circa 1931: Veins tested by surface work and by two test pits to a depth of 30 feet. Some tunnelling was also done.

1964: Stripping, trenching, sampling and diamond drilling were done. 12 exploratory holes totalling 1,258 feet were drilled.

REMARKS: The 1964 diamond drill programme results as reported were: No. 10 hole intersected 60 feet of disseminated sulphide mineralization that averaged 0.43 percent copper, 0.16 percent nickel, and precious metals up to 0.02 ounces per ton silver. Two other hole intersections averaged 0.26 percent copper, 0.13 percent nickel over a distance of 52.8 feet.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map P.530, 1 inch to 1/4 mile (1:15,840) 1969
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM GR 102, p. 38-39 (1973)
CDM,GS Mem. 167, p. 191 (1931)

NAME: WEST FIELD MINERALS LIMITED ba, calc

COMMODITIES: Barite, calcite

STATUS: Major Occurrences

NTS: 52A/3SW

LATITUDE: 48° 05' 40"N LONGITUDE: 89° 18' 30"W
48° 05' 55" 89° 18' 30"

LOCATION: Jarvis Island in Lake Superior, about 24 miles south of Port Arthur.

DESCRIPTION:

GEOLOGY: Two parallel northeast-striking Keweenawan diabase dikes form Jarvis Island. The dikes are 350 feet apart, between them are flat-lying Animikie argillites of the Rove formation. The argillite bedding is turned down against the northern dike but turned up against the dike to the south. A calcite vein that strikes northwest and dips about N55°E crosses the island. The vein is exposed on both sides of the island where it cuts diabase dikes. The vein is obscured for 400 feet in the low lying central part of the island, but assuming that it is continuous it is 800 feet long. It varies in width up to 15 feet. Associated with the main vein are narrow parallel stringers that extend for several feet on both sides.

MINERALOGY: The vein consists of coarsely banded aggregates of calcite crystals up to 6 inches long, separated by white barite ribs several inches thick. Hematite and biotite are developed at the contacts between the diabase and argillite. Stubby terminated crystals of quartz are encrusted in narrow zones along the vein contacts but can be found also in the veins disseminated or in thin encrusted seams. Some argentite with galena, sphalerite, pyrrhotite and pyrite have been reported in minor amounts.

HISTORY OF DEVELOPMENT:

1868: Vein was discovered.

1869: A shaft was sunk 12 feet.

1870: Shaft deepened to 32 feet.

1871 - 1872: Main shaft sunk to 160 feet. Two levels at 70 feet and 150 feet.
Two other shafts and a winze were also sunk.

1886: Further underground development including drilling north and south from main shaft.

REMARKS: Examination of the waste dump on the north side of the island indicated that the vein material is about 50 percent barite. Quartz and wall rock fragments constitute about 10 percent and calcite is common. On the south end of the island the vein material is 80 percent calcite with 10 percent each of barite and quartz.

Around 1868 - 1911 the value of silver ore produced was $40,000 from about 36,000 ounces of silver.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map P.530, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File West Field Minerals Ltd., District Thunder Bay, Lat. 48°00', Long. 89°15'
ODM GR 102, p. 23 (1973)
ODM MRC 10, p. 61 (1968)
ODM IMR 10, p. 6-8 (1963)
CDM,GS Mem. 167, p. 190-191 (1931)
GNHSC pt H, p. 43-45 (1889)

(Minor Occurrences) (1) ba, calc

COMMODITIES: Barite, Calcite

STATUS: Minor Occurrences

NTS: 52A/3SW

LATITUDE:		LONGITUDE:	
	48° 06' 25"N		89° 16' 15"W
	48° 06' 57"		89° 15' 00"
	48° 07' 20"		89° 15' 45"

LOCATION: Spar Island, Lake Superior, approximately 23 miles due south of Port Arthur and 19 miles southwest of Fort William.

DESCRIPTION: See SPAR ISLAND OCCURRENCE for DESCRIPTION, MAP REFERENCES and SELECTED REFERENCES, p.17.

(Minor Occurrences) (2-3) ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrences

TOWNSHIP: Crooks

NTS: 52A/3SW

LATITUDE:		LONGITUDE:	
	48° 02' 10"N		89° 29' 15"W
	48° 02' 25"		89° 27' 15"
	48° 02' 30"		89° 27' 00"
	48° 03' 50"		89° 27' 20"
	48° 04' 15"		89° 27' 25"

LATITUDE: 48° 03' 50"N LONGITUDE: 89° 26' 50"W
48° 03' 45" 89° 26' 25"
48° 03' 47" 89° 26' 10"
48° 05' 10" 89° 23' 40"
48° 05' 25" 89° 23' 00"

LOCATION: Approximately 4 miles south of Cloud Bay and 20 miles southwest of Fort William.

DESCRIPTION:

GEOLOGY: In the area many mineralized veins are known in a belt 25 miles wide and 150 miles long. The calcite-barite veins are associated with a breccia zone that trends northwest and cuts a diabase sill. The diabase is Keweenawan in age and overlies the Animikie or Lower Gunflint iron formation. The diabase is locally porphyritic and medium to coarse grained.

MINERALOGY: Barite is common gangue material, with calcite and quartz. The veins are 2 - 3 inches wide and trace amounts of silver have been found associated with them.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM GR 102, p. 8-11,17-23 (1973)
ODM IMR 10, p. 5 (1963)
CDM,GS Mem. 167, p. 36,192,195 (1931)

NAME: SCRIPTURES VEIN ba

COMMODITY: Barite

STATUS: Minor Occurrence

TOWNSHIP: Lismore

NTS: 52A/4NW

LATITUDE: 48°14 ' 30"N LONGITUDE: 89° 55' 00"W

LOCATION: Mining location R61 on east-facing cliff of Silver Bluff and approximately 1 1/2 miles southwest of Silver Mountain.

DESCRIPTION:

GEOLOGY: A vein trending N75°W and dipping 85°N is stripped for a vertical distance of 25 feet on a cliff. It is exposed below the sheer part of the cliff for 20 feet and about 75 feet below this an adit has been driven probably 25 feet into the vein.

The upper 25 feet of the vein occurs in Keweenawan diabase. The lower part is in grey taconite with the beds dipping 2° towards the southwest. "The contact between the sediments and the overlying diabase sill occurs in a sheer cliff and the amount of dislocation along the fissure occupied by the vein is apparently about 4 feet." (Tanton, 1931, p.114).

MINERALOGY: The vein consists of coarsely crystalline calcite and barite with green fluorite in discontinuous bands. The vein is 2 - 3 feet wide and parallel stringers occur within 2 feet of the walls of the main vein. In the central part of the vein irregular patches and vug linings of well terminated white and amethystine quartz occur. Barite is the most abundant mineral constituent throughout the greater part of the vein.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1968
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: CDM,GS Mem. 167, p. 110,114 (1931)

NAME: HYMERS BARITE DEPOSIT ba

COMMODITY: Barite

STATUS: Minor Occurrence

TOWNSHIP: O'Connor

NTS: 52A/5SE

LATITUDE: 48° 18' 40"N LONGITUDE: 89°43' 57"W

LOCATION: South half of Lot 9, Concession I, about 50 feet north of the road that runs westerly between Gillies and O'Connor Townships.

DESCRIPTION:

GEOLOGY: The vein occupies a fault that occurs in flat-lying wavy-bedded greenalite taconite of Animikie age. The vein varies in width between 2 1/2 inches in the upper part of the workings and 6 inches in its lowest exposure. It strikes N80°E and dips about 75°S at the northern wall, the southern wall is vertical.

An open cut has been driven S80°W into the hillside along the vein for 25 feet. The vein is exposed for a vertical distance of 15 feet.

MINERALOGY: The vein consists mainly of coarsely crystalline barite. Some crystalline white calcite, green fluorite and quartz are present. Minor amounts of galena and sphalerite occur locally in the vein.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM IMR 10, p. 6 (1963)
CDM,GS Mem. 167, p. 123 (1931)

NAME: MINING LOCATION T 142 (Beaver Junior Property) ba

COMMODITY: Barite

STATUS: Minor Occurrence

TOWNSHIP: O'Connor

NTS: 52A/5SE

LATITUDE: 48° 19' 25"N LONGITUDE: 89° 38' 05"W

LOCATION: Immediately north of Beaver Mine in the southeast part of the township. Whitefish highway passes through the property.

DESCRIPTION:

GEOLOGY: A Keweenawan diabase sill about 30 feet thick as exposed on the marginal cliffs caps flat-lying Animikie shale in the area. The base of the sill on the north side of the ridge is 1,015 feet above sea level. Two nearly parallel veins are branched from a lenticular vein 1 - 15 feet wide. The veins strike generally N85°E and dip nearly vertical. The more southerly of the veins is a 4 foot wide composite vein which consists of 8 inch wide sinple veins.

MINERALOGY: The veins consist mainly of calcite and crystalline aggregates of barite. Minor amounts of amethyst, green and purple fluorite, pale yellow sphalerite, pyrite and quartz are also present.

The northerly of the two veins is known as the Big Harry vein. Its upper part is 20 inches wide and is in diabase. The lower part divides into several veinlets in a 3 foot wide zone. Amethystine quartz occurs along the walls and lines vugs in the vein. Coarsely crystalline calcite is in the middle part of the vein. Nuggets of argentite are also present in minor amounts.

HISTORY OF DEVELOPMENT:

Prior to 1927: North Bluff vein was worked by crosscut adits.

Work on the Big Harry vein consists of an adit 50 feet or more driven along the vein in shale 15 feet below the base of the capping sill of diabase.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM IMR 10, p. 6,11 (1963)
CDM,GS Mem. 167, p. 131-132 (1931)

NAME: MINING LOCATIONS T 142 and T 144 ba

COMMODITY: Barite

STATUS: Minor Occurrence

TOWNSHIP: O'Connor

NTS: 52A/5SE

LATITUDE: 48° 19' 55"N LONGITUDE: 89° 44' 25"W

LOCATION: North bank of Pitch Creek in Concession II of the township. It is about 25 miles west of Port Arthur.

DESCRIPTION:

GEOLOGY: The vein occupies a fault in flat lying, black shaly Animikie iron formation. Lenses of oolitic chert about an inch thick occur at intervals throughout the rock and make up about 1/10 of the total volume. The vein is exposed for a length of 150 feet and is 5 feet wide. It strikes N55°E and dips between 50 - 75° southeast.

MINERALOGY: The vein consists principally of coarsely crystalline calcite, platy barite, and small amounts of clear and amethystine quartz. Disseminated galena in traces and minor amounts of green fluorite are present. Ribs of cream-coloured barite occur up to 24 inches thick. These ribs are often found in the wall zones rather than the centre of the vein. The barite makes up about 10 percent of the vein.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963

SELECTED REFERENCES: ODM IMR 10, p. 6,11 (1963)
CDM,GS Mem. 167, p. 123 (1931)

NAME: COOPER BARITE OCCURRENCE ba

COMMODITY: Barite

STATUS: Minor Occurrence

TOWNSHIP: Neebing

NTS: 52A/6NW

LATITUDE: 48° 23' 20"N LONGITUDE: 89° 21' 00"W

LOCATION: Lot 17, Concession V, about 660 feet south of the northeastern corner.

DESCRIPTION:
GEOLOGY: The composite vein occupies a fault zone in a knoll. The hill is made up of Animikie rocks of the Rove formation. The rocks on the southeastern side have moved relatively downward through a distance of about 20 feet. In the area of the vein the beds dip 15° south-southeast. On the wall of the cliff a 2 foot vein of barite strikes N85°E and dips 60°N, this vein can be traced westerly for 30 feet where it seems to join another vein 1 1/2 feet wide. The second vein strikes N65°E and dips 75°NW; it is exposed discontinuously over a length of 20 feet.

MINERALOGY: The barite is coarsely crystalline and platy in the first vein. Banded fine and coarsely crystalline white quartz, purple fluorite and small amounts of galena are present in the second vein.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map P.817 (1:50,000) 1973
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: ODM IMR 10, p. 11 (1963)
CDM,GS Mem. 167, p. 147-148 (1931)

NAME: KARIES OCCURRENCE amy, ba

COMMODITIES: Amethyst, barite

STATUS: Minor Occurrence

NTS: 52A/10NE

DESCRIPTION: Listed under AMETHYST - Bowker, Karies and Minor Occurrences

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NAME: ONTARIO GEM COMPANY amy, ba

COMMODITIES: Amethyst, barite

STATUS: Producer

NTS: 52A/10NE

DESCRIPTION: Listed under AMETHYST - Ontario Gem Company

NAME: LOFQUIST - MAATA BARITE DEPOSIT ba

COMMODITY: Barite

STATUS: Minor Occurrence

TOWNSHIP: Nipigon

NTS: 52A/16NW

LATITUDE: 48° 59' 55"N LONGITUDE: 88° 15' 45"W

LOCATION: Concession III, Lot 9.

DESCRIPTION:
GEOLOGY: The oldest rocks in this vicinity are granite and granite-gneiss. "Nearly flat-lying Sibley sediments 400 feet thick extend westerly across the area and form the lower part of hills capped by a sill of diabase over 100 feet thick. Diabase dikes more than 50 feet wide occur at the eastern and northwestern extremities of the diabase-capped mesas, and dikes less than 5 feet wide have been exposed in intimate association with veins in granitic rocks at three localities.

"The strata of the hills appear to be traversed by faults that follow the drift-filled depressions that extend across the hills; these depressions are indicated by embayments in the outline of the capping diabase. Several faults are known in the area underlain by granite north of the mesas and each of these is occupied by veins of the silver-bearing type or by diabase dikes." (Tanton, 1931, p.181).

MINERALOGY: Barite is found in veins near the granitic rocks. These veins are 1 - 2 feet wide and ore has been traced for 150 feet. A large vein trends northeast and dips approximately 80° to the northwest. It is estimated that pink barite makes up 90 percent of the vein minerals, galena 5 percent, chalcopyrite 1 percent and 4 percent sphalerite. Small amounts of silver are also present.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES: ODM IMR 10, p. 6 (1963)
CDM,GS Mem. 167, p. 181-182 (1931)

(Minor Occurrence) be

COMMODITY: Beryl

STATUS: Minor Occurrence

NTS: 52A/13NE

LATITUDE: 48° 59' 50"N LONGITUDE: 89° 36' 35"W

LOCATION: Approximately 3/4 mile east-northeast of Eayrs Lake and within 5 miles east of Block No. 3. One mile northwest of Tackle Lake.

DESCRIPTION:
GEOLOGY: Jolliffe (1934, p.15D) reported an occurrence of beryl in an "albite pegmatite" at this location, however, Kaye (1969, p.25) did not locate the occurrence in his survey but he concluded that beryl may be present in the white muscovite granite pegmatite intrusions in economic amounts.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.187, 1 inch to 2 miles (1:126,720) 1963

SELECTED REFERENCES: ODM GR 77, p. 25 (1969)
CDM,GS Sum. Rept., pt. D, p. 15D (1933)

(Minor Occurrence) (1) calc

COMMODITY: Calcite

STATUS: Minor Occurrence

NTS: 52A/3NW

LATITUDE: 48° 07' 35"N LONGITUDE: 89° 19' 00"W

LOCATION: Prince Location, about 1 mile northeast of Mink Point.

DESCRIPTION:
GEOLOGY: In the vicinity Keweenawan diabase intrudes the Animikie or Lower Gunflint iron formation. Mineralization occurs in veins and breccia zones commonly 1 - 2 feet in width dipping steeply northeast. Crystalline calcite, quartz, amethyst and barite fill these shear zones.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2250, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCES: ODM GR 102, p. 21,23,37 (1973)
CDM,GS Mem. 167, p. 90,100 (1931)

NAME: SOUTH McKELLAR ISLAND DEPOSIT — calc, ba

COMMODITIES: Calcite, barite

STATUS: Major Occurrence

NTS: 52A/3NE

DESCRIPTION: Listed under BARITE - South McKellar Island Deposit

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NAME: THOMPSON ISLAND DEPOSIT — ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrence

NTS: 52A/3NE

DESCRIPTION: Listed under BARITE - Thompson Island Deposit

NAME: SPAR ISLAND OCCURRENCE — ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrence

NTS: 52A/3SW

DESCRIPTION: Listed under BARITE - Spar Island Occurrence

NAME: VICTORIA ISLAND DEPOSITS — ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrence

NTS: 52A/3SW

DESCRIPTION: Listed under BARITE - Victoria Island Deposits

NAME: WESTFIELD MINERALS LIMITED — ba, calc

COMMODITIES: Barite, calcite

STATUS: Major Occurrence

NTS: 52A/3SW

DESCRIPTION: Listed under BARITE - Westfield Minerals Limited

(Minor Occurrences) (2) ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrence

NTS: 52A/3SW

DESCRIPTION: Listed under BARITE - Minor Occurrences (1)

(Minor Occurrences) (3) ba, calc

COMMODITIES: Barite, calcite

STATUS: Minor Occurrence

NTS: 52A/3SW

DESCRIPTION: Listed under BARITE - Minor Occurrences (2)

(Minor Occurrence) (4) calc

COMMODITY: Calcite

STATUS: Minor Occurrence

TOWNSHIP: Crooks

NTS: 52A/3SW

LATITUDE: 48° 06' 06"N LONGITUDE: 89° 28' 12"W

DESCRIPTION: For DESCRIPTION, MAP REFERENCES and SELECTED REFERENCES, see under CALCITE - Minor Occurrence (1), p. 26.

(Minor Occurrence) (5) calc, ba

COMMODITIES: Calcite, barite

STATUS: Minor Occurrence

NTS: 52A/3SW

DESCRIPTION: Listed under BARITE - Minor Occurrence (3)

NAME: NEEPATRYE MINE calc

COMMODITY: Calcite

STATUS: Past Producer

TOWNSHIP: Neebing

NTS: 52A/6NW

LATITUDE: 48° 23' 55"N LONGITUDE: 89° 23' 00"W

LOCATION: On Lots 24 and 25, Concession V, north of the Kaministikwia River. The property embraces the former Walbridge mine and adjoins Algoma mine on the east.

DESCRIPTION:

GEOLOGY: The country rock is nearly flat-lying red and green cherty taconite of the Animikie or Upper Gunflint iron formation. In the immediate vicinity of the veins there is a highly disturbed and wide shatter zone. North of the vein the upper layers of the iron formation are rich in iron oxides for a depth of 3 feet.

Hematite and magnetite make up about 1/2 of the rock's volume. The vein cemented shatter zone trends east and west and has a width of 100 feet. There are simple veins, vein stockworks and vein material that occurs as cement around brecciated fragments of the country rock within the shatter zone. Changes between these various types are gradational.

MINERALOGY: Seven veins are known on this property and these have been developed by three open cuts. In open cut No. 1 the vein is principally coarsely crystalline calcite with galena and chalcopyrite sparsely disseminated throughout. Vugs and small channels are lined with white and amethystine quartz. The vein is almost solid for a width of 30 feet through a length of 110 feet with seams up to 6 inches wide that consist of quartz, fluorite, sphalerite and galena disposed as if along the walls of original channels.

At open cut No. 2, the vein is about 10 feet wide and consists of coarsely crystalline calcite and barite. The barite veins appear to be later additions to the rest of the assemblage. A 2-foot barite vein trends S60^{o}E through the main vein. This vein consists of transparent pale brown crystals of barite surrounded by coarsely crystalline, pink, interfingering platy aggregates of the same material.

The veins at open cut No. 3 are similar to the ones at the other open cuts. White coarsely crystalline barite is associated with a similar type calcite. The main vein is about 10 feet wide.

HISTORY OF DEVELOPMENT:

1863: Some trenching was done and a 40-foot shaft sunk.

1925: Operations commenced.

1927: 3 open cuts east to west along east-northeast vein, 100 feet wide.

REMARKS: The vein was mined for coarse-grained calcite which was crushed and screened to three sizes. This was marketed as pebble dash for stucco work and finer material for land plaster. Iceland Spar, a transparent variety of calcite, is said to occur as crystal aggregates up to 2 inches in length. This is suitable for optical purposes. Up to July 1927, 150 tons of material had been marketed.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map P.817 (1:50,000) 1973
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES:
ODM MRC 10, p. 77 (1968)
ODM Vol. 69, pt. 7, p. 7 (1960)
CDM,GS Mem. 167, p. 144 (1931)

(Minor Occurrences) (6-9) calc

COMMODITY: Calcite

STATUS: Minor Occurrences

TOWNSHIP Sibley

NTS: 52A/7NE
52A/7SE
52A/9NE

LATITUDE:	48° 28' 50"N	LONGITUDE:	88° 35' 00"W
	48° 23' 15"		88° 36' 10"
	48° 23' 55"		88° 34' 50"
	48° 22' 20"		88° 39' 00"
	48° 38' 57"		88° 05' 45"

LOCATION: West of George Point, northeast of Miles Bay. Edward and Fluor Islands in Thunder Bay District. East and southeast of Black Bay.

DESCRIPTION:

GEOLOGY: The area in which the veins occur is underlain by a complex of Early Precambrian rocks and a group of nearly flat-lying, unconformably overlying sedimentary rocks. All of the rocks have been intruded by Keweenawan diabase dikes. These dikes are extensive and in some places are up to 250 feet thick. After the intrusions a great number of faults and fissures were developed. The fissures are cemented by vein-forming minerals. There are simple and composite veins; these occur as cement around brecciated fragments of the country rock within shatter zones. Simple veins range in width from a few inches to 70 feet. Some vein systems are more than 100 feet wide.

MINERALOGY: The veins characteristically consist of calcite, barite, and fluorite. Quartz occurs as either white or amethystine variety. The metallic minerals are rare and sparsely disseminated in the vein material as galena, sphalerite, chalcopyrite and pyrite.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2304, 1 inch to 1 mile (1:63,360) 1975
ODM Map P.624, 1 inch to 1/4 mile (1:15,840) 1971

SELECTED REFERENCES: ODM GR 102, p. 5-11,19-26 (1973)
ODM IMR 10, p. 5 (1963)
CDM,GS Mem. 167, p. 89-90 (1931)

NAME: GREAT LAKES NICKEL cr, Ni, Cu

COMMODITIES: Chromite, nickel, copper

STATUS: Major Occurrence

TOWNSHIP: Pardee

NTS: 52A/4SE

LATITUDE:	48° 04' 36"N	LONGITUDE:	89° 34' 15"W

LOCATION: Approximately 29 miles southwest of Thunder Bay in the central part of the township.

DESCRIPTION:

GEOLOGY: "The area is underlain by relatively flat-lying argillite and greywacke of the Rove Formation, intruded by a discordant, sill-like mass of gabbro and anorthositic gabbro. The central part is occupied by an E-trending, U-shaped mesa, open toward the west. The N arm of the mesa is trough-like in N-S section, about 1,500 feet wide and at least 7,000 feet long. It plunges at approximately 20° toward the E and remains open at the down-dip end. The N and S sides of the trough dip 50S and 35N respectively. The trough contains an upper anorthositic gabbro, a middle zone of medium- to coarse-grained anorthositic olivine gabbro pegmatite that contains the bulk of the sulphide mineralization, and a basal, fine-grained chill zone with disseminated sulphides and massive pyrrhotite stringers. Chromium spinel is disseminated throughout the sulphide zone and particularly concentrated as a thin, conformable layer of chromitite above the sulphide zone.

"Syngenetic sulphide mineralization (pentlandite, pyrrhotite and chalcopyrite) with an average thickness of 100 feet, occurs in disseminated form near the base of the anorthositic olivine gabbro, and bears a Cu-Ni ratio of 2:1." (Shklanka, 1969, p. 297).

MINERALOGY: The mineralized zone appears to be arcuate in cross-section, about 90 feet thick, and a relatively flat part in the centre of the trough. The zone is up to 1,500 feet in width and the strike length is about 7,000 feet. It is parallel to the 15 - 20°E plunge of the intrusion.

Nickeliferous pyrrhotite and chalcopyrite constitute 2 - 5 percent of the rock. They occur as fine-grained disseminations to near massive blebs scattered and discontinuous with weakly mineralized to barren zones intervening. The chalcopyrite commonly rims the pyrrhotite.

Pentlandite, cubanite, niccolite, mackinawite, pyrite and marcasite are also present.

A low copper to nickel ratio for the top of the mineralized zone with respect to relatively copper-enriched basal portions was shown by the drill cores.

Chromite bands or seams overlap the top of the sulphide mineralization by 50 feet.

HISTORY OF DEVELOPMENT:

1952: Trenching by Falconbridge Nickel Mines.

1954: 6 drill holes totalling 3,471 feet were drilled by R. Barker and W. Davidowich. "A 55 foot section analysed 0.54 percent Cu and 0.18 percent Ni with additional precious metal values" (assessment files).

1954-57: 7 drill holes totalling 5,556 feet by Mogul Mining Corp. Ltd. These intersected the mineralized zone for an average thickness of 30 - 40 feet, assaying 0.9 percent combined Cu and Ni (assessment files).

1966-69: 68 surface drill holes totalling 109,279 feet, No. 1 adit, 87.5 feet long and 19 underground drill holes totalling 1,287 feet by Great Lakes Nickel Corp. Ltd.

1970: Feasibility study carried out by Parsons-Jurden Corp. indicated that a 6 million ton annual mining (underground) and milling operation would be technically and economically feasible.

1972-73: Another feasibility study confirmed the results to date. Site preparation commenced in preparation for a 1975 start up date.

1974: Construction was stopped and equipment put into storage. The property was put on a stand-by basis. The development work included 122 feet in the No. 1 adit, 3,417 feet in the No. 2 adit, 192,550 feet of surface drilling and 85,899 feet of underground drilling.

1977: A feasibility study was done.

REMARKS: The proven and indicated reserves are 45.6 million tons of 0.344 percent copper and 0.183 percent nickel. A 2,300-ton bulk sample sent to Sweden for testing indicated that the autogenous grinding circuit would work.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2207, 1 inch to 1/2 mile (1:31,680) 1970
ODM Map P.467, 1 inch to 1/4 mile (1:15,840) 1968
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 355A, 1 inch to 1 mile (1:63,360) 1936

SELECTED REFERENCES:
ODMNA MP 46, p. 152 (1971)
ODM MP 33, p. 55 (1970)
ODM GR 87, p. 31-36, 46 (1970)
ODM MRC 12, p. 297-298 (1969)
ODM Vol. 79, p. 71 (1969)
ODM Vol. 78, p. 84-86 (1968)

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ODM MP 16, p. 37-38 (1968)
ODM Vol. 77, p. 97-98,121 (1967)
ODM MP 11, p. 25-26 (1967)
ODM Vol. 76, p. 107,133 (1966)
Northern Miner, June 11, 1970, p. 18
OGS Toronto Geoscience Data Centre, File
Great Lakes Nickel, District Thunder Bay,
Township Pardee
Resident Geologist's Files, OMNR, Thunder Bay:
Great Lakes Nickel
MINSY File 000782

NAME: PINE BAY CLAY DEPOSIT clay

COMMODITY: Clay

STATUS: Minor Occurrence

TOWNSHIP: Crooks

NTS: 52A/4SE

LATITUDE: 48° 03' 50"N LONGITUDE: 89° 30' 55"W

LOCATION: Within 20 kilometers northeast of Pigeon River. On the Pine river bank about a mile east of Highway 61.

DESCRIPTION:

GEOLOGY: Early Precambrian granite and older rocks form the basement of the area. These are overlain on a peneplaned surface by flat-lying Animikie rocks. All Animikie rocks are cut by narrow dikes and sills of brown weathering diabase. During the Pleistocene epoch glaciers deposited material gouged from the bedrock. Varved clays were deposited in glacial lakes and stratified clay,silt and sand were deposited in lakes, ponds and flood plains of rivers.

MINERALOGY: Unstratified beds of brown clay and olive-grey silt are overlain by stratified red clay at this locality. Samples taken east of Highway 61 showed: The top 4 feet of the bank consists of smooth red-brown clay variably stratified with laminae of grey silty clay. This section is stoneless but there are a few roots. The stratified clay grades downwards into massive, smooth, plastic grey-brown clay with some patches of red clay and grey silt, which is underlain by massive, uniform, low plasticity olive-grey silt.

Samples taken between Highway 61 and Pine Bay showed: A 2-foot section of massive red plastic clay with a low grit content. Stratigraphically lower is a very loamy, stoneless, massive, brown to slightly red, smooth plastic clay.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map 2358 (1:2,000,000) 1976
ODM GR 164, Map SMC 13658, 1 inch to 8 miles, 1977

SELECTED REFERENCES:
ODM MDC 15, p. 111 (1977)
CDM,GS Mem. 167, p. 200,204-205 (1931)
ODM GR 102, p. 16 (1973)

NAME: THUNDERBRICK LIMITED (SUPERIOR BRICK AND TILE CO.) clay

COMMODITY: Clay

STATUS: Producer

TOWNSHIP: Paipoonge

NTS: 52A/6SW

Rosslyn Village

LATITUDE: 48° 21' 30"N LONGITUDE: 89° 27' 15"W

McCluskys Corners

LATITUDE: 48° 18' 30" LONGITUDE: 89° 28' 17"

LOCATION: The plant is located south of Rosslyn Village, 7 miles west of Fort William, on the north bank of the Kaministikwia River. Pits are located in Lots 11 and 12, Concession I of the township;and, a pit is located just to the southeast of McCluskys Corners.

DESCRIPTION:

GEOLOGY: Early Precambrian rocks form the basement of the area. These are overlain by flat-lying Animikie rocks that are cut by diabasic dikes and sills. During the Pleistocene, the clay was deposited in glacial Lake Algonquin. The clay rests on gravel and was worked in pits near the mouth of the Kaministikwia River. It is believed that the Kaministikwia River was a pre-Algonquin spillway and as Lake Algonquin receded, thin deltaic deposit of stratified sand and silt were spread on the varved clays.

MINERALOGY: The varved clay section is thin. Feed for the brick plant is largely stratified silt, sand and clay. The clay pit at Rosslyn Village is located 50 feet above the river on the east bank, it is semi-circular, 700 by 400 feet. The reported thickness is 6 metres and the maximum clast size is 0.2 metres.

REMARKS: An excellent supply of stoneless clay along the lower reaches of the Kaministikwia River is suitable for the manufacture of brick and tile.

MAP REFERENCES:
OGS Map P.1521 (1;250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1;1,584,000) 1974
ODM Map 2372 (1:50,000) 1976
ODM GR 164, Fig. 10, 1 inch to 4 miles (1:253,440) 1976
ODM Map P.817 (1:50,000) 1973

SELECTED REFERENCES:
OGS GR 164, p. 52,63 (1977)
ODM IMR 22, p. 189-193 (1967)
CDM,GS Mem. 167, p. 200,203-205 (1931)
CDM,GS Mem. 142, p. 127-128 (1924)

NAME: DOG LAKE DEPOSIT clay

COMMODITY: Clay

STATUS: Minor Occurrence

TOWNSHIP: Fowler

NTS: 52A/12NE

LATITUDE: 48° 40' 40"N LONGITUDE: 89° 35' 45"W

LOCATION: South of Dog Lake within 25 miles northwest of Thunder Bay. Deposit is exposed about 1 mile east of Silver Falls Power Plant.

DESCRIPTION: The area is underlain by Early Precambrian rocks. Flat-lying Animikie rocks rest on a peneplaned surface of the basement rocks. Rocks of the Animikie are cut by narrow dikes and sills of brown-weathering diabase.

Thick deposits of red clay deposited during the Pleistocene Epoch are present at this locality. The clay is exposed continuously for more than 1/4 mile and is overlain and underlain by stratified sand and gravel. Samples of an exposed section near the base of the clay unit showed: The upper 2 m (7 1/2 feet) consists of massive, smooth, stiff-red clay. The lower 1.7 m (5 1/2 feet) consists of a 0.6 m (2 feet) bed of massive red clay overlain by 0.9 m (3 feet) of pale grey and olive-grey silt with occasional thin layers of red clay.

It is estimated that about 100 feet of red clay is present at this locality.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
OGS Map 2358 (1:2,000,000) 1977
OGS GR 164, Fig. 4, 1 inch to 8 miles, 1977

SELECTED REFERENCES: OGS GR 164, p. 11,22-26,46 (1977)
OGS MDC 15, p. 101,111 (1977)
ODM IMR 22, p. 117-123 (1967)

NAME: FINMARK CLAY DEPOSIT clay

COMMODITY: Clay

STATUS: Minor Occurrence

TOWNSHIP: Forbes

NTS: 52A/12SW

LATITUDE: 48° 35' 20"N LONGITUDE: 89° 45' 30"W

LOCATION: Near Finmark on the CPR line about 25 miles northwest of Thunder Bay and south of Conmee near the junction of Highways 17 and 17A.

DESCRIPTION: The area is underlain by Early Precambrian granite and older rocks. These are overlain by Animikie rocks which are cut by narrow diabasic dikes and sills.

Samples taken indicated: red clay with occasional limy pebbles or concretions, or stiff red clay.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
OGS Map 2358 (1:2,000,000) 1977
OGS GR 164, Fig. 4, 1 inch to 8 miles, 1977

SELECTED REFERENCES: OGS MDC 15, p. 101,111 (1977)
ODM IMR 22, p. 117-123 (1967)

NAME: SILVER ISLET cob, Ag nc, sp

COMMODITIES: Cobaltite, silver, niccolite, sphalerite

STATUS: Past Producer

TOWNSHIP: Sibley

NTS: 52A/7SW

LATITUDE: 48° 19' 16"N LONGITUDE: 88° 48' 48"W

LOCATION: Silver Islet about 6 miles east-northeast from Thunder Cape. About 20 miles east across Thunder Bay from Fort William.

DESCRIPTION:

GEOLOGY: Silver Islet is formed of a large diabase dike which cuts flat-lying, Animikie sediments. The dike trends northeast-southwest, and is offset for about 80 feet at Silver Islet by an almost vertical fault which strikes northwest. The fault is represented by lenses of gouge, shear zones and breccia, within which are found vein fillings locally carrying silver. The dike has been traced for a total of 2,800 feet north and south of the mine, and the fault (and its assumed extension) for 1 1/2 miles onto the peninsula.

The veins form cement for the breccia, as well as filling fissures in the wall rock. The vein system was found through 1,800 foot length, 1,200 foot depth, with widths from a few inches to 50 feet. Individual veins are less than 1 foot in width, and usually less than 1 inch. Lenses of vein material also occur within the gouge. An average of the aggregate width of vein material has been placed at 2 feet to 10 feet.

Ore was found only where the veins were adjacent to the diabase. In addition, the presence of graphite seemed to be required for silver deposition.

Primary ore, making up perhaps 9/10 of the deposit, was found to be associated with a fine-grained mixture of quartz and dolomite, particularly where dolomite predominated.

MINERALOGY: Small amounts of calcite, barite, galena, sphalerite, rhodochrosite,and chalcopyrite are widely disseminated. The ore minerals are microscopically intergrown, occuring in seams and masses up to 4 inches by 6 feet. Minerals found are: silver, argentite, niccolite, marcasite, cobaltite, smaltite and possibly domeykite, tetrahedrite, breithauptite and millerite; mixtures described or inferred from analyses were: macfarlanite (silver, galena, niccolite), animikite (silver, dyscrasite), huntilite (arsenian silver), and arquerite (mercurian silver).

Secondary ore, forming discontinuous bodies and vug fillings to a depth of 220 feet or more, consists of quartz, calcite, barite, sphalerite, pyrolusite, silver, marcasite, galena and argentite.

HISTORY OF DEVELOPMENT:

1868: Initial surface exploration.

1869: Shaft sinking begun.

1870-73: Cribwork built around islet, mined to 360 feet level and 2 million ounces of silver were produced.

1873-78: Mostly underground exploration. Southerly drifting on 3rd level (150 feet depth) in 1878 encountered rich ore that produced 800,000 ounces of silver.

1878-83: Workings developed to 1,230 feet depth.

1921: Exploration drift on 4th level driven southwest for 783 feet; diamond drill hole extended a further 431 feet.

1922: Mining carried out above 60 foot level.

Exploration drift on 9th or 560 foot level was extended northwesterly along vein for 720 feet. Vein system followed northwest on mainland with trenches and shallow shafts.

1975: Lake bottom geochemical survey was carried out.

1976: Metallurgical testing continued.

1977-78: Extensive sampling and a modest drilling programme was undertaken.

REMARKS: Many additional veins have been found and examined along the fault to the northwest of Silver Islet, and along the dike to the northeast and southwest. In 1963 diamond drilling was carried out on Edwards Island, to the northeast. Nowhere has significant silver mineralization been located, except on the tiny island itself.

provided

The 1975 bulk sampling of the waste dumped into the lake off Silver Islet estimates that 50,000 tons of the material graded 100 to 150 ounces per ton silver or that 1,115,000 tons at 40 ounces per ton was recoverable (MP 71, p.44). From 1869-1922, approximately 2,870,000 ounces of silver worth $3,261,000 were produced.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
ODM Map P.358, 1 inch to 2 miles (1:126,720) 1966
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931
CDM Map 1902 (1:3,000) 1924
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES:
OGS MP 71, p. 44 (1977)
ODM MRC 10, p. 74 (1968)
CDM,GS Mem. 167, p. 94-104 (1931)
ODM Vol. 31, pt. 10, p. 18 (1923)
ODM Vol. 30, pt. 4, p. 31 (1922)
ODM Vol. 29, pt. 1, p. 9 (1920)
ODM Vol. 6, pt. 3, p. 125-157 (1896)
GNHSC Ann. Rept., pt. H, p. 27-40 (1887)
OGS Toronto Geoscience Data Centre,
File Silver Islet, District Thunder Bay,
Township Sibley.

NAME: BUDA FELDSPAR DEPOSIT fel

COMMODITY: Feldspar

STATUS: Major Occurrence

TOWNSHIP: Goldie

NTS: 52A/12NW

LATITUDE: 48° 40' 15"N LONGITUDE: 89° 49' 30"W

LOCATION: Concession V, Lot 6 of the township.

DESCRIPTION:

GEOLOGY: Generally the area seems to consist of Couchiching mica schists and gneisses. Algoman granite is known to outcrop at some distance from Buda.

The showing consists of a pegmatitic feldspar dike forming the crest of a north-south trending ridge. It strikes in the same direction. The dike has an exposed strike length of about 220 metres and an exposed width of 21 metres near the middle of the dike. This width was measured near the main trench. The main pit is about 4 x 4 x 4 feet. A similar, older pit is located at the north end of the exposure.

MINERALOGY: The feldspar is coarsely crystalline with some individual crystals almost 30 cm across. Muscovite is fairly uniformly distributed, principally as small specks or crystals. Some altered garnets are present. These minerals are concentrated near the feldspar crystal boundaries. The chemical analysis indicated that the feldspar is a potassic variety probably microcline.

HISTORY OF DEVELOPMENT:

1939: A pit was blasted in the middle of the exposed section of the dike.

REMARKS: A rough tonnage estimate indicates that the deposit contains approximately 219,648 tonnes of material.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay: Buda Feldspar Report.
ODM IMR 21, p. 22 (1967)

NAME: SANDERSON OCCURRENCE hem

COMMODITY: Hematite

STATUS: Minor Occurrence

TOWNSHIP: McTavish

NTS: 52A/10NE

LATITUDE: 48° 41' 25"N LONGITUDE: 88° 37' 35"W

LOCATION: 1 1/2 miles south of Bowker Station, Canadian Pacific Railway. In Concession I of the township.

DESCRIPTION:

GEOLOGY: The deposit is exposed on the side of a hill of granite which is overlapped around its flank by nearly flat-lying Sibley sediments. A shatter zone strikes about N65°E and dips vertically through the hill. This zone is exposed at a point below where the sedimentary rocks are in contact with the granite.

Hematite permeates the red fragmental rock of the Sibley series in the shatter zone. It is concentrated along the walls of quartz veinlets. The hematite-bearing rock does not extend for more than a few inches from the walls of the veinlets and passes gradationally into the unmineralized fragmental rock.

MINERALOGY: Red hematite in porous, massive and botryoidal form occurs in quartz veinlets about 4 feet wide. Trenching exposed the veinlets to a depth of 3 feet.

"The shatter zone is cemented with a network of veinlets consisting of white, red and amethystine quartz sparsely mineralized with chalcopyrite and later veinlets and vug fillings of coarse-grained pink barite." (Tanton, 1931, p.170).

REMARKS: "The form of the deposit, as a replacement along the walls of a composite vein, indicates that it is probably too small to be of commercial value." (Tanton, 1931, p.170).

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODMNA Map P.721, 1 inch to 1/4 mile (1:15,840) 1971
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES: CDM,GS Mem. 167, p. 170 (1931)

(Minor Occurrence) mag

COMMODITY: Magnetite

STATUS: Minor Occurrence

NTS: 52A/3SW

LATITUDE: 48° 04' 51"N LONGITUDE: 89° 20' 53"W

LOCATION: Victoria Island, Lake Superior.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map P.530, 1 inch to 1/4 mile (1:15,840) 1969

NAME: INTOLA MARL DEPOSIT ma

COMMODITY: Marl

STATUS: Minor Occurrence

TOWNSHIP: McIntyre

NTS: 52A/6NW

LATITUDE: 48° 28' 45"N LONGITUDE: 89° 23' 50"W

LOCATION: 1 1/3 miles south-southeast of Intola Post Office.

DESCRIPTION:
GEOLOGY: "A deposit, locally 2 feet thick, consisting chiefly of calcareous shells of small organisms, is exposed along the shore around the western part of the lake. The deposit probably extends over a large part of the lake bottom." (Tanton, 1931, p.201).

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCES: ODM IMR 28, p. 111 (1969)
CDM,GS Mem. 167, p. 201 (1931)

NAME: ARTHUR BOG peat

COMMODITY: Peat

STATUS: Minor Occurrence

TOWNSHIP: Paipoonge

NTS: 52A/6NW

LATITUDE: 48° 24' 55"N LONGITUDE: 89° 15' 25"W

LOCATION: Approximately 9 miles west of Fort William.

DESCRIPTION: The bog extends in a northeast and southwest direction and covers an area of about 1,474 acres.

"The peat in this bog is fairly well humified and could be manufactured for fuel. The peat is heavily intermixed with roots and stumps, but in most cases these are sufficiently decomposed for a drill to penetrate. Samples show that the peat is composed mainly of carex plants slightly intermixed with sphagnum and eriophorum, the former being the more prevalent.

"The bottom is formed of reddish sand intermixed with clay.

"The bog is rather shallow, but it is free from knolls and the surface is quite level and would make an admirable drying field. Most of the surface is heavily wooded with alders, dwarf spruce, dwarf birch, and poplar. The southwestern side of the bog could not be used as a drying field because it is margined on that side by an abrupt bank. The bog can easily be drained as it is 45 feet above the Kaministikwia river, and the southern end of the bog is only 1,000 feet from the river." (Anrep, 1921, p. 7D).

Analysis of Peat from the Arthur Peat Bog

Sample	I		II		III	
	R	D	R	D	R	D
Moisture.....%	7.3	.....	9.1	.....	9.0	.....
Ash.....%	13.9	15.0	12.3	13.4	12.5	13.7
Volatile matter.....%	52.8	57.0	52.4	57.7	53.3	58.6
Fixed carbon (by difference).....%	26.0	28.0	26.2	28.8	25.2	27.7
Sulphur.....%	0.4	0.4	0.5	0.6	0.5	0.6
Nitrogen.....%	1.8	1.9	1.6	1.7	1.5	1.6
Calorific value in calories per gram, gross.....	4,160	4,490	3,840	4,230	3,980	4,370
Calorific value in B.Th.U. per lb., gross.....	7,480	8,070	6,920	7,620	7,160	7,860
Fuel ratio, fixed carbon, volatile matter.....	0.49	0.49	0.50	0.50	0.47	0.47

REMARKS: Of the total area "542 acres have a depth of less than 5 feet with an average depth of 3 feet, and 932 acres have a depth of more than 5 feet with an average depth of 7 feet. The volume of peat contained is 2,623,000 cubic yards in an area with a depth of less than 5 feet, and 10,523,000 cubic yards in an area with a depth of more than 5 feet.

The 542 acres less than 5 feet may be excluded from consideration as a commercial source of peat. Allowing 2 feet for the decrease in depth through drainage, the remaining 932 acres would have an average depth of 5 feet and a total of 7,518,000 cubic yards. The total dry tonnage is 752,000 tons or 1,003,000 tons of peat fuel having 25 per cent of moisture." (Anrep, 1921, p. 7D-8D).

This bog is conveniently situated regards market since it is traversed both by the Canadian Northern and Canadian Pacific railways.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
OGS Map 2372 (1:50,000) 1971
CDM Map 1953, 1 inch to 2,400 feet (1:28,800) 1921

SELECTED REFERENCES: OGS GR 164, p. 45 (1977)
CDM,GS Sum. Rept. 1921D, p. 7D-8D (1921)

NAME: TWIN CITIES BOG peat

COMMODITY: Peat

STATUS: Minor Occurrence

TOWNSHIP: Paipoonge

NTS: 52A/6NW

LATITUDE: 48° 22' 30"N LONGITUDE: 89° 26' 40"W

LOCATION: In a low-lying area between Port Arthur and Fort William.

DESCRIPTION: The bog extends in a northeast and southwest direction. The total area is about 993 acres.

"The peat is fairly well humified and is suitable for fuel. The bog is very shallow but it is already thoroughly drained, as this section has been laid out for the expansion of the Twin Cities and is, therefore, never likely to be worked for peat.

"It is almost free from wooded growth and the surface is level. This bog is mostly composed of sphagnum slightly intermixed with carex and eriophorum plants.

"The bottom of the bog is formed of reddish sand intermixed with clay." (Anrep, 1921, p. 9D).

Analysis of Peat from the Twin Cities Peat Bog

Sample	I	
	R	D
Moisture.....%	6.7	.....
Ash.....%	8.0	8.6
Volatile matter.....%	58.2	62.4
Fixed carbon (by difference).....%	27.1	29.0
Sulphur.....%	0.5	0.5
Nitrogen.....%	1.4	1.5
Calorific value in calories per gram,gross.....	4,520	4,850
Calorific value in B.Th.U.per lb.,gross.....	8,140	8,730
Fuel ratio, fixed carbon, volatile matter.....	0.46	0.46

REMARKS: Of the total area "895 acres have a depth of less than 5 feet with an average depth of 3 feet, and 98 acres have a depth of more than 5 feet with an average depth of 5 feet. There are 4,332,000 cubic yards in the area with a depth of less than 5 feet and 794,000 cubic yards in the area with a depth of more than 5 feet.

"The 895 acres with a depth of less than 5 feet may be left out of consideration as a source of commercial peat. As the bog is already thoroughly drained no shrinkage allowance for drainage need be made for the remaining 98 acres with an average depth of 5 feet, which have a total volume of 791,000 cubic yards of peat. The total tonnage of dry substance is 79,000 tons, or 105,000 tons of peat fuel having 25 per cent moisture." (Anrep, 1921, p.9D).

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
OGS Map 2372 (1:50,000) 1971
CDM Map 1952, 1 inch to 2,400 feet (1:28,800) 1921

SELECTED REFERENCES: OGS GR 164, p. 45 (1977)
CDM,GS Sum. Rept. 1921D, p. 9D (1921)

NAME: WILLIAM BOG peat

COMMODITY: Peat

STATUS: Minor Occurrences

TOWNSHIP: Neebing and McIntyre

NTS: 52A/6NW

LATITUDE: 48° 24' 30"N LONGITUDE: 89° 17' 50"W
48° 24' 10" 89° 19' 40"

DESCRIPTION: The bog extends in a northeast and southwest direction and has a total area of about 1,789 acres.

"The peat is fairly well humified and could be utilized for the manufacture of machine peat fuel. It is slightly inferior to the peat in the Arthur bog. It is rather shallow, but the surface is free from knolls and is comparatively level and, therefore, suitable as a drying field. The entire surface is heavily wooded with spruce, alders, dwarf birch, and poplar. This bog could be easily drained, as the eastern end is situated 1,000 feet from McIntyre creek and the southern end is about the same distance from Neebing

creek, both of which flow with a free current. Stumps and roots were encountered, which do not seem to be as well decomposed as those in the Arthur bog, but they should not amount to a serious hindrance. The peat is mainly composed of carex plants, heavily intermixed near the surface with sphagnum; occasionally, eriophorum is found. Remains of various aquatic plants were visible in the deeper section of the bog.

"The bottom is formed of reddish sand intermixed with clay.

"The samples were found greatly deficient in cohesive properties. This is due to the frost penetrating almost the entire thickness of peat before snow covered the surface. Such occurrences seem to be characteristic of this part of the country." (Anrep, 1921, p. 9D).

Analysis of Peat from the William Peat Bog

Sample	I	
	R	D
Moisture.....%	6.2	.....
Ash.....%	10.6	11.3
Volatile matter.....%	59.3	63.2
Fixed carbon (by difference).....%	23.9	25.5
Sulphur.....%	0.3	0.4
Nitrogen.....%	1.7	1.8
Calorific value in calories per gram,gross.....	4,500	4,800
Calorific value in B.Th.U. per lb.,gross.....	8,100	8,630
Fuel ratio, fixed carbon, volatile matter.....	0.41	0.41

REMARKS: 926 acres of the total area "have a depth of less than 5 feet with an average depth of 3 feet, and 863 acres have a depth of more than 5 feet with an average depth of 7 feet. The volume of the peat contained is 4,482,000 cubic yards in an area less than 5 feet deep and 9,743,000 cubic yards in an area more than 5 feet.

"Excluding from consideration the 926 acres of bog which is less than 5 feet deep and allowing 2 feet for drainage, there are approximately 863 acres of utilizable peat with an average depth of 5 feet. The total volume is 6,962,000 cubic yards. The total dry tonnage is 696,000 tons or 928,000 tons of peat fuel having 25 per cent of moisture." (Anrep, 1921, p.9D).

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
OGS Map 2372 (1:50,000) 1971
CDM Map 1952, 1 inch to 2,400 feet (1:28,800) 1921

SELECTED REFERENCES: OGS GR 164, p. 45 (1977)
CDM,GS Sum. Rept. 1921D, p. 9D (1921)

NAME: BOWKER OCCURRENCE amy, py

COMMODITIES: Amethyst, pyrite

STATUS: Minor Occurrence

NTS: 52A/10NE

DESCRIPTION: Listed under AMETHYST - Bowker, Karies and Minor Occurrences

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(Major Occurrence) U, mar, py

COMMODITIES: Uranium, marcasite, pyrite

STATUS: Major Occurrence

NTS: 52A/15SW

LATITUDE: 48° 47' 18"N LONGITUDE: 88° 51' 22"W

LOCATION: Near Greenwich Lake.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

NAME: BARNES PROPERTY Mo, Se

COMMODITY: Molybdenum, selenium

STATUS: Major Occurrence

NTS: 52A/10NW

LATITUDE: 48° 38' 40"N LONGITUDE: 88° 53' 40"W

LOCATION: 6 miles west and 1 mile north of Loon Station on CPR line.

DESCRIPTION:

GEOLOGY: Late Precambrian rocks form the bedrock of the area and belong to the Keweenawan. The oldest rock unit is sandstone of the Sibley Group which is overlain by rocks of the Osler Group. The contact between the two rock groups is not seen in the area, but in some places they are separated by an erosional disconformity.

"The Osler Group is a sequence of tholeiitic flood basalt flows with minor intercalated clastic sedimentary and pyroclastic units and felsic flows." (McIlwaine and Wallace, 1976, p.5).

Quartz porphyry and quartz-feldspar porphyry bodies cut the Osler Group. Large dikes of ophitic olivine diabase and narrow diabase dikes intrude all the rocks in the area. Selenium occurs in flat southwesterly dipping quartz veins and pegmatitic dikes.

MINERALOGY: The veins consist of fine-grained quartz, amorphous molybdenite in thin streaks and platy segregations that lie parallel to the walls. Small amounts of chalcopyrite, pyrite, gold and selenium are also present.

HISTORY OF DEVELOPMENT:

1955: Trenching, stripping, a dip needle survey and 12 diamond drill holes totalling 4,815 feet were done by Wright - Hargreaves Mines Ltd.

MAP REFERENCES: OGS MAP P.1521 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Port Arthur:
Barnes Property.
OGS Toronto Geoscience Data Centre, File Barnes,
District Thunder Bay, Lat. 48°45', Long. 88°45'
ODM MRC 7, p. 74 (1968)
CGM,GS Mem. 167, p. 22,49 (1931)

NAME: MOUNT McKAY SHALE sh

COMMODITY: Shale

STATUS: Major Occurrence

NTS: 52A/6SW

LATITUDE: 48° 20' 35"N LONGITUDE: 89° 17' 40"W

LOCATION: South side of the City of Thunder Bay.

DESCRIPTION: At this locality, the Rove Sediments are capped by a 200-foot thick, flat-lying diabase sill. A 15-foot thick diabase sill is also interlayered with the shales 400 feet below the top and about 800 feet of shales and greywackes are exposed.

GEOLOGY: The Animikie shale is the oldest shale that has been used for clay products in this area. It is brittle and grades in places to slate. It was deposited in a Late Precambrian sea 1.6 billion years ago.

Animikie rocks are relatively flat-lying and overlie Early Precambrian granite and older basement rocks.

"Rocks of the Animikie Group are divided into three formations: The Kakabeka Conglomerate is the thin basal formation. It is overlain by the Gunflint Formation consisting of taconite (iron formation), carbonate rock, and some shale. The Rove Formation overlies the Gunflint and consists largely of shale; it is known to exceed 360 m (1,200 feet) in thickness....

"Shales of the Rove Formation are grey-black, medium- to very thin-bedded, fissile weathering, brittle rocks, interbedded in some places with layers of silt stone and greywacke.

"The shales weather to medium grey, except in the upper few feet of outcropping sections where they are oxidized to yellow-buff." (Guillet, 1977, p.39,43).

MINERALOGY: "Flattened spheroidal concretions up to 2 m (8 feet) in diameter and 1 m (4 feet) thick are locally common in the Rove Shale. They are composed mainly of calcium carbonate, apparently leached from limy layers in the shale, and have formed since the deposition of the shale, distorting the bedding both above and below.... Quartz constitutes one-third of the average sample and dolomite is a very minor constituent. Iron ranges between 5 - 8 percent (Fe_2O_3), except in the siliceous iron-rich varieties more properly called taconites. Of the clay minerals, illite is abundant and chlorite occurs in moderate amount. Animikie rocks also contain various layered minerals structurally related to the clays." (Guillet, 1977, p.43).

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map P.817 (1:50,000) 1973
ODM Map 2358 (1:2,000,000) 1976

SELECTED REFERENCES:
OGS MDC 15, p. 39-43 (1977)
ODM GC 10, p. 13 (1962)
CDM,GS Mem. 167, p. 200 (1931)
CDM,GS Mem. 142, p. 11,133-134 (1924)
CDM,MB Sum. Rept. 1919, No. 542, p. 107 (1920)

NAME: RIVERDALE ROAD QUARRY sh

COMMODITY: Shale

STATUS: Minor Occurrence

TOWNSHIP: Neebing

NTS: 52A/6SW

LATITUDE: 48° 19' 50"N LONGITUDE: 89° 21' 20"W

LOCATION: Riverdale Road 3/4 mile north of Highway 61 and approximately 3 miles southwest of Thunder Bay.

DESCRIPTION: "A 3 m (10 feet) section of the shale is exposed over a length of 90 m (300 feet). The section exposes a medium-bedded, blue-black shale, that weathers with a platy lamination and a blue-grey colour. White efflorescence and rusty alterations are common. Large carbonate concretions occur at intervals of 3 - 5 m (10 - 15 feet) at a single horizon 2 m (6 feet) above the floor. Vertical jointing is well-developed at N40°W and N55°E." (Guillet, 1977, p.44).

See MOUNT McKAY SHALE for GEOLOGY, MINERALOGY, and MAP REFERENCES, p.42.

SELECTED REFERENCES: OGS MDC 15, p. 44 (1977)
ODM GC 10, p. 22-23 (1962)

NAME: SAWYER BAY SHALE sh

COMMODITY: Shale

STATUS: Major Occurrence

TOWNSHIP: Sibley

NTS: 52A/7SW

LATITUDE: 48° 21' 50"N LONGITUDE: 89° 53' 15"W

LOCATION: Forms the western shore of Sibley Peninsula at Sawyer Bay.

DESCRIPTION: Shale of the Rove Formation was mined at this locality for brick and structural tiles. Along the shore shale banks reach 40 feet. The plasticity of the shale was found to be rather low and firing range short. In 1919 the operations were suspended.

See MOUNT McKAY SHALE for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p.42.

NAME: KESHKABUON ISLAND SHALE sh

COMMODITY: Shale

STATUS: Minor Occurrence

NTS: 52A/10SW

LATITUDE: 48° 31' 30"N LONGITUDE: 88° 50' 45"W

LOCATION: On an island about 1 mile offshore and 16 miles east of Thunder Bay.

DESCRIPTION: Animikie shale of the Rove Formation is present at this locality A 30 feet section is exposed and overlain by a great thickness of other rocks. In exposed sections talus slopes free of overburden.

See MOUNT McKAY SHALE for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p.42.

NAME: HEWITSON QUARRY st

COMMODITY: Stone

STATUS: Past Producer

TOWNSHIP: McIntyre

NTS: 52A/6NE

LATITUDE: 48° 25' 40"N LONGITUDE: 89° 14' 55"W

LOCATION: About one-half mile to the southwest of Port Arthur and one mile east-northeast of the Port Arthur Golf Club.

DESCRIPTION: The rocks are exposed along a ridge that slopes at a small angle toward the southeast. A 15 feet thick diabase sill lies between thinly laminated, dark-grey shale and passes near the quarry. The upper and lower contacts of the diabase sill may be observed on the west side of the quarry.

Several faults and small veins that trend at various angles are exposed in the workings. These intersect in an irregular pattern.

A mineralized vein carrying argentite and native silver was found in the quarry. It is 1 foot wide, strikes N80°E and is exposed through a length of less than 20 feet.

GEOLOGY: The bedrock of the area is formed entirely by Precambrian rocks. The metavolcanics are the oldest and consist of basaltic and andesitic lava flows and fragmental rocks. Associated with the metavolcanics are the metasediments such as slate, conglomerate and iron deposits. Many of these rocks have been metamorphosed to schists and gneisses.

Deposited on the essentially planar erosional surface of the Precambrian rocks are the rocks of the Animikie Series. This series consists mainly of the Gunflint Formation which contains chert, carbonate, taconite, hematite and magnetite and the predominantly dark-coloured Rove Formation which is a fissile argillite with occasional calcareous interbeds.

Numerous dikes and sills cut all the rocks of the area at a low angle and the sheets of diabase can reach up to 200 feet thick.

Several veins, faults and fissures were developed subsequent to the intrusion of the diabase.

MINERALOGY: Fissures in the faults were cemented by vein-forming minerals. The veins characteristically consist of calcite, barite, fluorite, quartz and when mineralized carry sulphides and silver-bearing minerals.

REMARKS: The rock in the quarry has been removed to depths up to 20 feet in an area of 125 yards by 75 yards.

Crushed diabase was produced for road metal and the indurated shale lying about 10 feet below the base of the diabase sill has also been used, after crushing and screening, for surfacing roads.

MAP REFERENCES:
OGS Map P.1521 (1:250,000) 1978
OGS GR 164, Fig. 10, 1 inch to 4 miles (1:253,440) 1977
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.817 (1:50,000) 1973
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 276A, 1 inch to 4 miles (1:253,440) 1931

SELECTED REFERENCES:
OGS GR 164, p. 5-7,48-51 (1977)
CDM,GS Mem. 167, p. 40,152,200 (1931)

NAME: GEORGE POINT QUARRY st

COMMODITY: Stone

STATUS: Minor Occurrence

TOWNSHIP: Sibley

NTS: 52A/7NE

LATITUDE: 48° 29' 40"N LONGITUDE: 88° 34' 50"W

LOCATION: About a mile north of George Point on the east shore of Black Bay.

DESCRIPTION: Pale grey, impure sandstone was produced from the quarry for building material. No production has taken place at this location for 50 years.

See HEWITSON QUARRY for GEOLOGY and MINERALOGY, p.43.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map P.358, 1 inch to 4 miles (1:253,440) 1966

SELECTED REFERENCES: OGS GR 164, p. 5-7 (1977)
CDM,GS Mem. 167, p. 199 (1931)
ODM GR 133, p. vii, 507 (1976)

NAME: ROADSIDE QUARRY st

COMMODITY: Stone

STATUS: Producer

NTS: 52A/10SE

LATITUDE: 48° 33' 50"N LONGITUDE: 88° 44' 00"W

LOCATION: East side of Highway 587 on the Sibley Peninsula.

DESCRIPTION: A 20-foot face of Rove Shale is exposed at this location over a length of 300 feet. "The section is topped by several feet of weathered shale topsoil containing a few stones. The top extends eastward in a level plane....

"The lower 3 m (10.5 feet) is a uniform grey-black, moderately hard, medium bedded, shale that weathers with a fissile lamination and a medium-grey colour. White efflorescence is common, also some rusty weathering. Large orange-brown carbonate concretions occur at intervals of 3 - 6 m (10 - 20 feet) at two horizons. Concretions of the upper horizon, 2 m (7 feet) above the floor, are associated with a continuous 7.5 cm (3 inches) limy layer....

"The upper 3 m (9 feet) of the quarry section contains no concretions or hard layers. It is softer due to weathering and is oxidized to a pale grey colour. Efflorescence and rusting is present in moderate amounts....

"Jointing is moderately well-developed in the shale in two directions, north-south and east-west." (Guillet, 1977, p.43-44).

See MOUNT McKAY SHALE for GEOLOGY and MINERALOGY, p.42.

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
OGS MDC 15, Fig. 7, 1 inch to 2 miles, 1977

SELECTED REFERENCES: OGS MDC 15, p. 43-44 (1977)
CDM,GS Mem. 167, p. 199,200 (1931)

NAME: NIPIGON RIVER LIMESTONE QUARRY st

COMMODITY: Stone

STATUS: Minor Occurrence

TOWNSHIP: Nipigon

NTS: 52A/16NE

LATITUDE: 48° 58' 00"N LONGITUDE: 88° 14' 20"W

LOCATION: East shore at the mouth of the Nipigon River.

DESCRIPTION: The deposit is limestone of the Sibley Group. "The limestone there is thinly interlaminated with red, purple and green shaly material. In a zone, about 20 feet wide, adjacent to a wide diabase dike, the rock has been slightly recrystallized and indurated. Prior to 1919 an ornamental building stone, known as Nipigon marble, was produced from a quarry on the east shore." (Tanton, 1931, p.199).

GEOLOGY: Late Precambrian rocks form the bedrock of the area. The oldest rock unit is sandstone of the Sibley Group which is overlain by rocks of the Osler Group. The contact between the two rock groups is not seen in the area but in some places they are separated by an erosional disconformity. The maximum thickness of the Sibley Group was suggested to be 700 feet (Franklin 1970).

Tanton (1921, p.50), suggested that the Sibley succession of sediments be divided into 6 groups.

The occurrence represents the D member of the group and because of the unique lithological character it is often used as a horizon marker. "The member consists of grey chert and grey limestone in thin alternating layers that range in thickness from 1/40 inch or less to 1/4 inch." (Tanton, 1931, p.54).

MAP REFERENCES: OGS Map P.1521 (1:250,000) 1978
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973

SELECTED REFERENCES:
ODM GR 133, p. 5-8 (1976)
ODM IMR 16, p. 84 (1964)
CDM,GS Mem. 167, p. 47-54,199 (1931)

NTS 52B

NAME: STEEP ROCK IRON MINES Fe, py, bauxite gth, hem

COMMODITIES: Iron, pyrite, bauxite (gibbsite), goethite, hematite

STATUS: Major Occurrences

TOWNSHIP: Freeborn

NTS: 52B/13SE

LATITUDE:			LONGITUDE:	
	Errington Mine	48° 47' 50"N		91° 38' 30"W
	Roberts Mine	48° 48" 25"		91° 38' 44"
	Hogarth Mine	48° 49' 23"		91° 38' 29"

LOCATION: The Middle Arm of Steep Rock Lake has been drained to allow open pit and underground iron ore mining. The Errington Mine is located at the south end of the former Middle Arm, 2.2 miles north of Atikokan and the Hogarth Mine is located at the north end of the Middle Arm, 4 miles north of Atikokan. The Roberts Mine links the two. The claim group is 125 miles west of Thunder Bay. Rail (C.N.R.) and road access is available.

DESCRIPTION:

GENERAL GEOLOGY: The Steep Rock Iron Mines orebody is a stratigraphic member within a sedimentary-volcanic sequence of Archean age called the Steeprock Group. The Steeprock Group lies unconformably on a Granite Complex and is based by a Conglomerate, succeeded by Dolomite, Orezone and Ashrock Formations. Archean goethite, bauxite and residual soil have been preserved.

The Orezone consists of three members. The lowermost or Manganiferous Paint Member rests disconformably upon the Dolomite. This is succeeded by the Goethite Member and finally the Pyrite Member.

The northeastern or foot-wall side of the Orezone consists of Manganiferous Paint Member. This Formation extends for at least 8 miles along strike to a depth of greater than 2,000 feet. The variable rudely-banded to fragmental material is made up of, in decreasing abundance: quartz and chert, goethite, hematite, pyrolusite, illite, kaolinite, cryptomelane, manganite, gibbsite, muscovite, apatite and carbon. Gibbsite, with illite and quartz were identified in the matrix of pisolitic hematitic material. Manganese and alumina reflect a rude soil profile near the Dolomite contact. Iron, particularly that combined in hematite, increases toward the bottom contact and reaches a maximum about 20 feet above the Dolomite. The Manganiferous Paint Member represents a residual soil derived from the Dolomite Formation in which ancient weathering products such as goethite, gibbsite and pisolites were preserved. The Paint may be regarded as akin to recent residual soils or to bauxites of the "terra rossa" type.

Most of the Goethite Member is of ore grade goethitic iron ore with an iron/manganese ratio commonly greater than 200. Goethite is usually from 2 to 5 times as abundant as hematite; together, these two minerals make up greater than 90% of the iron ore material, with minor aluminous and cherty sediments and some lenses of ferruginous pisolitic bauxite accounting for most of the balance. The goethite includes rare tiny crystals projecting into vugs, colloform types and xanthosiderite. Hematite includes rare specularite. The ore is uniform over tens or even hundreds of feet. Waste bands are either cross-cutting clayey material (altered dikes) or conformable aluminous and cherty sediments (including pisolites) which may show hematite staining along bedding planes.

An irregular, relatively minor, stock-like body of material locally termed "Buckshot" occurs near the top of the Goethite Member at the Errington Mine. This highly aluminous rock is made up of dark pisolites and fragments of hematite in a matrix containing kaolinite and gibbsite. The relatively high titania content of this material supports its identification as a pisolitic ferruginous bauxite. Some tens or hundreds of thousands of tons of it have been disclosed in the Errington Mine. Its depth suggests an Archean age bauxite. (above information paraphrased from Jolliffe 1966, p.75-86-97).

Pyrite lenses occur as discontinuous bodies over a strike length of 14,000 feet; individual lenses are up to 250 feet wide and 1,675 feet long. They are present at two stratigraphic intervals: (1) in the Pyrite Member of the Orezone Formation; (2) within the Ashrock Formation. (paraphrased from Hewitt 1967, p.45).

Pyrite occurs in conformable lenses sporadically distributed along and near the contact between the Orezone and overlying Ashrock Formation. The only exceptions are in the eastern part of the Errington Mine area where their anomalous positions may be due to deformation. The uppermost parts of these lenses, i.e. adjoining the Ashrock, are commonly competent, well consolidated and relatively uniform. However, most of the pyrite is found stratigraphically below this, associated with or contained in well-bedded sediments. The latter resemble the conformable sedimentary waste in the Goethite Member and differ from it only in pyrite content. In addition, some bands of goethite-hematite breccia ore, contiguous to the above, contain various proportions of pyrite. Adjacent to or between the pyrite bearing cherty and aluminous sediments are 10-foot thick bands of unconsolidated material containing disseminated to 1 inch thick pyrite accompanied by variable amounts of chert, goethite, hematite and carbonaceous material. Chemical analysis of carbonaceous material from the Pyrite Member has amorphous carbon, alumina and potash present in notable amounts. Practically all pyrite in the Steeprock Orezone shows typical colloform features. Some of the larger fragments show radiating fibrous pyrite terminating in rounded boundaries. In addition, concretionary forms with well-defined concentric zoning are not uncommon. A polished section shows goethite veins cementing and replacing fragmental colloform pyrite. Hematite has apparently developed as an alteration of goethite. Micro-colloform structures in the pyrite, paucity of trace elements, and association with carbon and banded chert support a sedimentary origin for this member. (paraphrased from Jolliffe 1966, p.75-86-97).

In the Ashrock Formation, recent drilling has outlined a series of discontinuous pyrite lenses in the "ashrock". The lenses probably represent a once continuous unit that is structurally disrupted considering the degree of deformation the unit has undergone. At least one pod of hematite-goethite completely surrounded by pyrite has been noted. (paraphrased from Shklanka 1972, p.76).

ECONOMIC FEATURES: "A weighted average of 1970 feet of drill hole intersections gave 38.6% Fe, 14.6% SiO_2, 24.3% S." (Shklanka 1968, p.297).

HISTORY OF DEVELOPMENT: (For Iron Ore)

1937-39: Geophysical survey, 55 diamond drill holes.

1939-45: Exploration, plant construction, open pit mining, 462 diamond drill holes totalling 110,438 feet.

1953+: Underground mining.

1966-67: Pellet plant construction.

Early 1979: Steep Rock Iron Mines reported the economically recoverable reserves had been exhausted.

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2217, 1 inch to 1,000 feet, 1972
ODM Map 48a, 1 inch to 1 mile (1:63,360) 1939
ODM Map 48b, 1 inch to 1/4 mile (1:15,840) 1939

SELECTED REFERENCES:
OGS Toronto AFRO File Freeborn Township, File 63.573.
OGS Toronto Geoscience Data Centre, File Errington, Hogarth and Roberts, District Rainy River, Township Freeborn.
ODMNA GR 93, p. 72-79 (1972)
ODM MRC 11, p. 297 (1968)
ODM MRC 5, p. 45 (1967)
GAC Special Paper 3, p. 75-98 (1966)
ODM Vol. 48, pt. 2, p. 35-50 (1940)

NAME: P. CARRIGNAN BERYLLIUM PROPERTY . be

COMMODITY: Beryl

STATUS: Major Occurrence

NTS: 52B/5NW

LATITUDE: 48° 23' 20"N LONGITUDE: 91° 47' 30"W

LOCATION: The occurrence may be found on the easterly of two small islands in the Maligne River, at the mouth of Poohbah Creek, east of Tanner Lake, Quetico Provincial Park, 26 miles southwest of Atikokan.

DESCRIPTION:

GEOLOGY: The showing is an outcrop of quartz-albite-microcline-muscovite pegmatite, measuring 150 feet in length and up to 50 feet in width. The pegmatite strikes N75°W. It intrudes Archean biotite gneisses.

MINERALOGY: Beryl crystals up to 6 inches in length and 1 1/2 inches in diameter are found associated with the quartz, and appear to be concentrated along the north side of the exposure.

At one point at the east end of the exposure a section of pegmatite measuring 3 feet by 3 feet contains approximately 4% beryl. However, the beryl content of the exposure as a whole is less than 1%.

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay: File P. Carrignan.

NAME: J. CYR PROPERTY be, gt, Mo

COMMODITIES: Beryl, garnet, molybdenum

STATUS: Minor Occurrence

NTS: 52B/5NW

LATITUDE: 48° 23' 20"N LONGITUDE: 91° 47' 45"W

LOCATION: The occurrence is the westerly of two small islands in the Maligne River, at the mouth of Poohbah Creek, east of Tanner Lake, Quetico Provincial Park. (26 miles southwest of Atikokan).

DESCRIPTION:
GEOLOGY: The showing is a small outcrop of quartz-albite-muscovite pegmatite, measuring 40 feet in length and up to 20 feet in width. The pegmatite strikes N75°W. It contains a little scattered molybdenite and red garnet. Associated with the quartz in places is a little beryl in crystals up to 3/4 inch in diameter. The pegmatite dike intrudes Archean biotite gneisses. (OGS Thunder Bay AFRO).

ECONOMIC FEATURES: The grade of beryl is very low.

REMARKS: The showing lies on strike of the Paul Carrignan discovery, which shows an appreciably higher content of beryl. However, the deposit does not appear to be of any commercial significance.

MAP REFERENCE: OGS Map P.1522 (1:250,000) 1978

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Thunder Bay: File P. Carrignan.

(Minor Occurrence) be

COMMODITY: Beryl

STATUS: Minor Occurrence

NTS: 52B/5SW

LATITUDE: 48° 22' 50"N LONGITUDE: 91° 54' 35"W

LOCATION: The occurrence is approximately 1 1/2 miles northeast of Twin Falls on the Maligne River, and approximately 2 miles east of the International Lithium Mining Corp. Ltd. holdings. It is within Quetico Provincial Park.

DESCRIPTION:
GEOLOGY: The beryl-bearing pegmatite intrudes Archean metasediment (biotite gneisses).

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.188, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCE: MINSY File 51120600

NAME: TURTLE LAKE BERYL DEPOSIT be

COMMODITY: Beryl

STATUS: Minor Occurrence

NTS: 52B/13NW

LATITUDE: 48° 56' 55"N LONGITUDE: 91° 57' 50"W

LOCATION: The beryl occurrence exists on a small island near the north shore of Turtle Lake. It is located within claim group F.F.9810 to F.F.9831 inclusive. It is 17 miles northwest of the Town of Steep Rock Lake.

DESCRIPTION:

GEOLOGY: "Small crystals of beryl were seen in a pegmatite dike cutting Archean granite on a small island in Turtle Lake." (Moore 1939, p.34).

MINERALOGY: "Beryl crystals up to two inches in length, translucent, and of a yellowish green colour, occur in a pegmatite dike. The observed crystals are not of gem quality." (CDM Map 534A, 1940).

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 534A, 1 inch to 4 miles (1:253,440) 1940

SELECTED REFERENCES: MINSY File 51120700
ODM Vol. 48, pt. 2, p. 34 (1940)

NAME: INCO SHEBANDOWAN MINE, No. 1 and No. 2 Shafts py, Co, cr, Cu, Ni, Pt, Pd

COMMODITIES: Pyrite, cobalt, chromite, copper, nickel, platinum, palladium

STATUS: Producers

TOWNSHIP: Hagey

NTS: 52B/9SE/SW

LATITUDE: #1 Shaft 48° 35' 45"N LONGITUDE: 90° 16' 45"W
#2 Shaft 48° 35' 35" 90° 15' 05"

LOCATION: The INCO Shebandowan Mine, located north of Crayfish Creek Fault is approximately 60 miles west of Thunder Bay by way of Highway 11. The No. 1 Shaft is located on Discovery Point, Southwest Bay of Lower Shebandowan Lake. The No. 2 Shaft is about one mile east of No. 1 Shaft across Southwest Bay.

DESCRIPTION:

SURFACE GEOLOGY: "The orebody at the Shebandowan Mine (a sulphide breccia in which lithic fragments are cemented together by sulphides) is associated with highly sheared (slickensides abundant) serpentinized peridotite near the contact between mafic metavolcanics and the Shebandowan Lake Stock (quartz diorite). The orebody has an east-west trend and dips vertically. The orebody consists of a series of lenses or discontinuous narrow bands within a 100 foot zone that can be traced for 4000 feet (1220 m) along strike, is up to 100 feet wide (averages 4.9 m or 16 ft) and contains a series of sulphide replacement lenses 800 to 1600 feet in length. Ore widths range from 5 - 10 feet. The largest orebody lies under the lake.

"A coarse grained basalt underlies Discovery Point where No. 1 Shaft is located. The basalt is highly epidotized and sheared in places and is intruded by granodiorite and minor associated epidote veins which often strike parallel to local schistosity. Left handed faults of small displacement are evident in outcrops, and displace both the granodiorite and epidote veins. Coarse grained clastic rocks occur south of Discovery Bay. The lenticular clasts up to six inches long are enclosed in a green chloritic matrix and may be a facies of the porphyritic hornblende trachyte clasts in the oligomictic conglomerate to the east. A volcanic tuff breccia with porphyritic intermediate volcanic clasts occurs south of the trachyte conglomerate.

"The clastic unit is also exposed near the No. 2 Shaft where the clasts attain lengths up to two feet and have a length to width ratio of 8:1. All the clasts are of a uniform felsic to intermediate composition. The peridotites and basalts near the No. 2 Shaft have been intruded by quartz diorite rather than granodiorite. The quartz diorite is carbonatized and extensively altered. Along its contact, a granite porphyry and some feldspar porphyry dikes occur. They have an aphanitic groundmass and a laminar

structure that might be due to igneous flow and are interpreted to be a chilled phase of the quartz diorite. At another locality on the site of the No. 2 Shaft, altered quartz diorite is in contact with hornblendite. The hornblendite is probably derived from contact metamorphosed peridotite or basalt." (Morin 1973, p.22-23 and Hodgkinson 1968).

UNDERGROUND GEOLOGY: "The Shebandowan orebody is located between a zone of mafic metavolcanics to the north, and a zone of intercalated peridotite and mafic metavolcanics to the south. Feldspar porphyry dikes are found in the wall rocks to the north and south of the orebody. The northern metavolcanic zone is about 500 feet thick, and is in contact with the Shebandowan Lake Stock at its northern edge. Some of the mafic metavolcanics have been altered to hornblendite, especially where they are in contact with sulphide mineralization.

"The southern zone consists of 50 foot thick units of peridotite, intercalated with mafic metavolcanics. Approaching the Crayfish Creek fault this sequence becomes increasingly sheared, with abundant fault gouge; here the ground is not stable enough to permit underground workings. The peridotite is completely serpentinized, and is not visibly mineralized. The entire mine sequence is shot through with white carbonate-quartz veins." (Morin 1973, p.24).

Origin of the Orebody: "The origin [theory] of the Shebandowan orebody is necessarily speculative, due to the lack of exposed outcrop and the lack of available underground mine and drilling data. Close association of the Cu-Ni mineralization and the peridotite lens is taken as evidence that the orebody is magmatic in origin. Significant facts, with which any interpretation of the origin of the orebody should be consistent, include the following:

(1) The orebody is spatially associated with a peridotite lens, a major fault zone, and the contact between the Shebandowan Lake Stock and neighbouring metavolcanic rocks.
(2) Part of the orebody is a breccia with fragments of peridotite, metavolcanics, and quartz diorite in a sulphide matrix.
(3) The orebody is separated from the Shebandowan Lake Stock by a zone of altered metavolcanics that probably have undergone contact metamorphism.
(4) One of the textures observed in the ore is nodular pyrite phenocrysts, partly surrounded by chalcopyrite in a foliated matrix of pyrrhotite - pentlandite.
(5) One of the structures observed in the ore consists of a foliated matrix of pyrrhotite and pentlandite, in which streaky, discontinuous layers of pentlandite and of pyrite and chalcopyrite are included.
(6) The high temperature oxide, chromite, occurs in pods with euhedral cumulate textures.
(7) Sulphur (S^{34}) isotope values from peridotite associated with the orebody have a value of - 0.34.
(8) The massive sulphides consist of 9 percent Ni and 6 percent Cu, and have a Ni/Cu ratio of (sic) 2:1.
(9) Peridotite at the No. 2 Shaft site contains about 0.35 percent Ni." (Morin 1973, p.24-26).

MINERALOGY: "The major sulphide minerals are pyrrhotite, pentlandite, chalcopyrite and pyrite. Chromite, cobalt, polydymite platinum, paladium, bravoite, violarite, and millerite are present in minor amounts.

"The orebody on the 600 foot level is a sulphide breccia with inclusions of peridotite, volcanic rocks and feldspar porphyry, in a sulphide matrix. The lithic inclusions range in size from less than one inch to several feet. The orebody is continuous along strike.

"The ore appears massive in areas where the lithic inclusions are small and a few in number, and stringer-like in areas where the inclusions are large and numerous. In places, the ore is banded with streaky layers of pentlandite, and pentlandite "eyes" or augen; both of which may be due to shearing or primary flow." (Morin 1973, p.23-24). Chromite, which is found as an accessory mineral in the Shebandowan orebody may be a useful guide in the exploration for similar peridotite-associated mineralization in this area.

ECONOMIC FEATURES: (Watson 1928, p.140)
J.G. Cross data; from 0.17% Cobalt to a high of 0.51% Cobalt (average 0.30%)
Mines Branch Laboratories, Ottawa: 0.20% Cobalt (average 0.22%)

HISTORY OF DEVELOPMENT:

1913 - 1927: Trenching, test-pitting and a little diamond drilling.

1936: Trenching and test-pitting, considerable diamond drilling.

1951 - 1952: Further diamond drilling and geological surveys.

1965: 2 diamond drill holes totalling 1196 feet on claims TB 115653 and TB 115432.

1966: 34 diamond drill holes totalling 44,732 feet and No. 1 Shaft, Discovery Point was collared and sunk to 577 feet.

1907 - 1968: Ground magnetic and electromagnetic surveys were done.

1967: 109 diamond drill holes totalling 91,116 feet and 1,083 diamond drill holes totalling 349,698 feet drilled underground "No. 1 Shaft reached planned depth of 1,140 feet; underground exploration commenced 1967. Production No. 2 Shaft (approximately 1 mile from exploration shaft) to 2,395 feet" (Canadian Mining Handbook 1978-1979, p. 150). The No. 1 and No. 2 Shafts are connected at the 600 foot, 800 foot and 1,000 foot levels. The No. 1 Shaft is presently being used for ventilation purposes.

1972: Mine production commenced with a mine capacity of 2000 tons/day. The mill is about 3000 feet directly south of the No. 2 Production Shaft. All ore is to be moved from ore bins on the 400 foot level of the mine to the mill along an underground conveyor that is 3300 feet long. The mill has a design capacity to treat 2500 tons of ore per day, to produce a Ni-Cu concentrate which is shipped by rail to Copper Cliff, Ontario for further processing. A 280 acre tailings pond was created to hold the mill wastes. All work since 1937 has been completed by INCO.

REMARKS: "Drilling has indicated a 20 year mill supply, suggesting a reserve of 20 million short tons" (Northern Miner, Sept. 28, 1972, p. 1).

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map 2267, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODMNA Map P.708, 1 inch to 1/4 mile (1:15,840) 1971
ODM Map 2127, 1 inch to 1/2 mile (1:31,680) 1968
ODM Map 2128, 1 inch to 1/2 mile (1:31,680) 1968

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File INCO Shebandowan, District Thunder Bay, Township Hagey
Canadian Mines Handbook, p. 150 (1978-1979)
ODM GR 110, p. 21-27 (1973)
ODM GR 53, p. 25-26 (1968)
ODM Vol. 37, pt. 4, p. 140 (1928)
CDM,GS Sum. Rept. 1922, pt. D (1923)
MINSY File 51264500

NAME: INCO SHEBANDOWAN MINE, No. 1 and No. 2 Shafts py, Co, cr, Cu, Ni, Pt, Pd

COMMODITIES: Pyrite, cobalt, chromite, copper, nickel, platinum, palladium

STATUS: Producers

NTS: 52B/9SW

DESCRIPTION: Listed under CHROMITE - INCO Shebandowan Mine, No. 1 and No. 2 Shafts.

NAME: CANADIAN - ADDICKS MINING CORP. PROPERTY py, Co po, cp

COMMODITIES: Pyrite, cobalt, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52B/13NE

LATITUDE: 48° 55' 40"N LONGITUDE: 91° 33' 25"W

LOCATION: "The Canadian - Addicks Mining Corporation property consists of 34 unpatented mining claims number FF 15656 to FF 15665 inclusive, FF 15667 to FF 15672 inclusive, and FF 15674 to FF 15691, which form a contiguous group just east of Gamik Point at the north end of Finlayson Lake. The main showing is just north of the large island that is 1 1/4 miles (2 km) north-east of Gamik Point" (Fenwick 1976, p.65).

Finlayson Lake is situated in the Steep Rock Lake - Atikokan area of Rainy River district. The southern boundary of the area is approximately 40 miles south of Ignace, a divisional point on the C.N.R. The southern and central portions of the area are accessible by an all-season motor road from Atikokan, 12 miles to the south of the deposit.

DESCRIPTION:

GEOLOGY: There are numerous sulphide replacement zones throughout the area, mostly associated with Keewatin iron formation. The larger zones consist principally of pyrite with minor amounts of chalcopyrite and pyrrhotite. "The sulphide deposit is in well-sheared intermediate meta-volcanics, and is intimately associated with cherty iron formation. The deposit strikes N70°E and dips vertically. It has been traced for over 50 feet (15 metres) and may be up to 10 feet (3 metres) wide" (Fenwick 1976, p.65).

MINERALOGY: "Mineralization consists chiefly of massive pyrrhotite, massive and nodular pyrite, and minor chalcopyrite" (Fenwick 1976, p.65). Samples when assayed showed that the mineralization contained a small amount of copper, a trace of cobalt (sometimes as high as 0.01% cobalt), but was devoid of nickel (also see "Regional Geology" of Addicks Property, 52B/13NE, p.71.)

HISTORY OF DEVELOPMENT:

1966: Canadian - Addicks Mining Corporation conducted electro-magnetic and magnetometer surveys on their claims and outlined nine conductors. Thirty trenches were blasted in the general vicinity.

1968: Magnetic survey and sampling.

1969: 5600 feet (1700 metres) of diamond drilling was drilled as well as additional trenching by the Canadian - Addicks Mining Corporation.

REMARKS: "The presence of widespread sulphide mineralization throughout the area is important from the standpoint of prospecting and it is believed that further exploration may result in the discovery of base metals and large pyrite orebodies" (Bartley, 1953).

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.542, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2297, 1 inch to 1/2 mile (1:31,680) 1976

SELECTED REFERENCES:
ODM GR 145, p. 65 (1976)
Canadian Mines Handbook, p. 75 (1971-1972)
CPR Dept. Ind. Dev., Area 4 (1953)
ODM Vol. 48, pt. 2, p. 1-34 (1939)
CDM,GS Sum. Rept. 1925, pt. C (1925)

NAME: ARCHIBALD - HANNA PROSPECT Fe, po, py, Co

COMMODITIES: Iron, pyrrhotite, pyrite, cobalt

STATUS: Minor Occurrence

TOWNSHIP: McCaul

NTS: 52B/14SW

LATITUDE: 48° 45' 55"N LONGITUDE: 91° 25' 20"W

LOCATION: The property consists of three claims located immediately north of the Atikokan River along the Quetico Fault, two miles west of Sapawe Lake: R400 (79 acres), R401 (90 acres) and R402 (78 acres). The C.N.R. line passes about 1 mile south of the prospect.

DESCRIPTION:

GEOLOGY: "The mineralized zone containing magnetite, pyrrhotite, pyrite and minor chalcopyrite, is a hydrothermal replacement within a gabbro dike along the Quetico Fault. This fault is the locus for the emplacement of these gabbroic intrusions which occur intermittently along the fault for a distance of about 12 miles east and west of Sapawe Lake, i.e. the extent of the Atikokan Range.

"The fault occupies the contact between the Early Precambrian metavolcanics to the north and older metasediments to the south. The deposit is part of the Atikokan Range and is within the Superior Structural Province.

"The dike strikes approximately east-west (N74°E) and dips steeply to the north. The deposit is divided into two parts. The east part, on claim R400 and the east half of R401, is about 2,200 feet long and 200 feet wide. The west part, on claim R402 and the western half of R401, is 2,300 feet long and about 200 feet wide.

"The sulphides occur as irregular lenses and disseminations throughout the rock. Copper, nickel and cobalt are also present in small amounts and would be recovered when mined." (NMI 507140 - OGS Toronto Geoscience Data Centre).

The iron-bearing deposit is very similar in physical and geological character to that of the Atikokan Iron Mine as well as the other occurrences along the Quetico Fault (Bruce Staines Property, Pattison Group, claims 138X and 139X).

ECONOMIC FEATURES:

1908: Indicated reserves of magnetic iron ore and iron sulphides for claim R400, R401 (east half) were 2,055,000 long tons grading 52.78% Fe, 12.61% SiO_2, 3.16% S and 0.021% P. Indicated reserves for claim R402 (west half) were estimated at 264,000 tons averaging 52.85% Fe, 10.42% SiO_2, 10.45% S and 0.053% P.

1970: Estimated reserves from drilling were 3 million long tons grading roughly 35% Fe, and 0.40% Cu.

1971: Monteagle indicated a zone 5,000 feet long grading 0.46% Cu and 40.5% Fe with low values in Co and Ni across an estimated average true width of 82 feet.

HISTORY OF DEVELOPMENT:

Pre 1906: A tunnel was driven 74 feet into the hillside at a point 100 feet west of the common boundary between R400 and R401. A 50-foot long 2.5-foot wide trench was also excavated.

1906 - 1908: Some stripping and prospecting done by United States Steel Corp.; 19 drill holes were drilled and 10 trenches dug along with a 52-foot vertical shaft located 37 feet inside the tunnel.

1969 - 1970: Aeromagnetic and aeroelectromagnetic surveys and ground magnetic, electromagnetic and geological surveys by Kemins Explorations Ltd.

1971 - 1973: Drilling and metallurgical testing were carried out by Monteagle Explorations Ltd. to test the anomalies uncovered by the 1969-1970 geophysical surveys.

REMARKS: Nothing of economic interest apparently exists east of the Atikokan Iron Mine. The Archibald - Hanna Claim Group, in spite of the estimated tonnage, is not impressive due to the narrow widths and extremely lensy nature of the orebody. The silica content is above the marketable average.

"Due to the high sulphur content, and presence of base metal contaminants in the deposit, acceptable iron ore could not be produced from the crude ore, at the turn of the century." (NMI 507140 - OGS Toronto Geoscience Data Centre)

MAP REFERENCES: ODM Map 38e, 1 inch to 3/4 mile, 1929
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCES:
OGS NMI 507140
MINSY File 50714000
The Northern Miner, V.57, No. 17, July 15, 1971, p. 6
The Northern Miner, Oct. 26, 1972, p. 17
OGS Toronto Geoscience Data Centre , File Archibald-Robert, District Rainy River, Township McCaul

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NAME: ATIKOKAN IRON MINE (NORTH RANGE MINING CO.) Fe, Cu, Co, Ni, py

COMMODITIES: Iron, copper, cobalt, nickel, pyrite

STATUS: Past Producer

TOWNSHIP: Hutchinson

NTS: 52B/14SW

LATITUDE: 48° 47' 12"N LONGITUDE: 91° 16' 32"W

LOCATION: The Atikokan Iron Mine is located 128 miles west of Thunder Bay and 16 miles east of Atikokan. The mine is situated north of the Atikokan River in the District of Rainy River in Hutchinson Township, about 1 mile east of Sapawe Lake.

DESCRIPTION:
GEOLOGY: The mineralized zones are hydrothermal replacement bodies within gabbroic dikes along the Quetico Fault. The replacement bodies (replace mafic dikes) are irregularly shaped and contain varying amounts of magnetite,

pyrrhotite, pyrite and minor chalcopyrite. The east-west trending fault follows the contact between the Early Precambrian metavolcanic rocks to the north and the older metasedimentary rocks to the south. The deposit is located within the Superior Structural Province. The iron-bearing zone, forming a ridge protruding 100 feet over the surrounding swamps, is 3,800 feet long and has a maximum width of 300 feet, averaging 150 feet. Similar lenticular bodies outcrop intermittently for 26 km along the Quetico Fault. It strikes east-west and dips steeply to the north. This deposit is part of the Atikokan Iron Range which extends for some 16 miles to the west.

The deposit at the Atikokan Iron Mine represents a distal facies of the Steep Rock Iron deposit on the basis of correlation of the amphibolite and "ashrock" along with the stratigraphic positions of the ore zones and related lithologic units.

MINERALOGY: "The ridge is made up of interlaminated greenstone, green schists, and lenticular bodies of magnetite some of which carry much pyrite. In parts of some of the lenses on the south side of the ridge, pyrite is the most abundant constituent." (Janes 1952, p.47).

The ore mineralogy consists of magnetite, pyrite, pyrrhotite and minor chalcopyrite. Five sample of the pyrite contained and average trace element concentration of 1964 ppm cobalt, 2352 ppm copper, 1354 ppm nickel and 319 ppm zinc. Five samples of the pyrrhotite contained and average of 781 ppm cobalt, 3001 ppm copper, 1670 ppm nickel and 248 ppm zinc; and, nine samples of the magnetite contained and average of 159 ppm cobalt, 169 ppm copper, 159 ppm nickel and 184 ppm zinc. The cobalt therefore appears to be concentrated in the pyrite while the nickel appears to be concentrated in the pyrrhotite.

ECONOMIC GEOLOGY:

Proven reserves: In 1915, the proven reserves were 4,868,011 long tons of low sulphur ore (less than 6% S) and 6,047,472 long tons of high sulphur ore for a total of 10,915,482 long tons.

1972: An estimated 12,000,000 long tons of material has been outlined by drilling with grades in the order of 35% Fe and 0.40% Cu and some cobalt and nickel.

1970: The average grade (from 10 DDH) is reported at 32.7% soluble iron, 0.23% copper and 0.71 lb. cobalt/ton over an estimated true width of 81.8 feet or 0.38% copper, 36.9% iron and 1.18 lb. cobalt/ton over an estimated true width of 41.4 feet.

1974: In grab samples taken by Paulpic Gold Mines Ltd., iron ranged from 23.5% to 59.1%, copper from 0.01% to 2.2%, cobalt from 0.01% to 0.11% and nickel from 0.01% to 0.12%.

CHEMICAL ANALYSIS: The arsenide content of the ore (arsenopyrite) makes cobalt separation extremely difficult.

HISTORY OF DEVELOPMENT:

1887: A trench was cut across the orebody just west of claims E10 and E11 boundary by McKellar brothers.

1899 - 1901: The Hunter Brothers, under option, completed surface stripping, and dug a 284-foot tunnel through the hill and reportedly developed 5 million tons of ore.

1901: 6 holes were drilled by American Wire & Steel Co. under option.

1905 - 1910: Access to a newly constructed mining plant was made possible with the construction of a three mile spur line to the plant from the C.N.R. mainline. On May 1,1907, mining began with the enlargement of the tunnel and drifting on either side of it. Some open cut mining was also done. Mining was carried out during the summer months of 1907, 1909 and 1910 by Atikokan Iron Co. Ltd. "90,680 tons of iron ore was mined using 5 tunnels, 3 shafts with crosscuts and 2 open cuts." (Fenwick 1980, p.37).

1911 - 1913: Four new tunnels were dug through the hill and three exploratory shafts were sunk. No. 1 was 47 feet deep, No. 2, 150 feet deep, and No. 3 was 127 feet deep. About 150 feet

of crosscutting was done. Mining was done in 1911 only. In 1913, all operations at the mine were terminated. The ore was shipped to Port Arthur in 1913 where it had to be roasted to prepare it for blast furnace. All work since 1905 was done by the Atikokan Iron Co. Ltd.

1966: Sampling program.

1969 - 1970: Aeromagnetic and aeroelectromagnetic surveys and ground magnetic and electromagnetic and geological surveys spaced at 400-foot intervals along a north-south trend by Kemins Exploration Ltd., for Paulpic Gold Mines Ltd. (which optioned 3 claims) and assaying over 5400 feet in 1970 of 5 of the diamond drill holes.

1971 - 1973: 6 diamond drill holes totalling 2111 feet and metallurgical tests done by Monteagle Explorations and Paulpic Gold Mines Ltd. (12.2 million tonnes with minor Co).

REMARKS: A tight supply situation for cobalt has been developing since 1976 when Zaire, which accounts for two-thirds of the free world's cobalt, was hit hard by transportation, personnel, financial and political difficulties. This has increased prices from $U.S. 6./lb. in March 1977 to $U.S. 20./lb. in December 1978. ($U.S. 45./lb. on the free market). (The Northern Miner, December 21, 1978, p.18). Increasing world market prices for cobalt therefore seem to have created a potential market for the cobalt of the Atikokan Iron Mine.

"Exploration so far has shown that mineralization is sufficiently widespread to make possible a large tonnage potential amenable to low cost open pit mining methods" (for Fe and Cu). (The Northern Miner, May 18,1972, V.58,P.18)

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map 38e, 4 inches to 3 miles, 1929
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay: Atikokan Iron Mine File
MINSY FILE 50892400
The Northern Miner, Oct. 26, 1972, p. 1,17
The Northern Miner, Oct. 8, 1970, p. 6
The Northern Miner, Dec. 21, 1978, p. 18
The Northern Miner, May 18, 1972, V.58, p. 18
OGS Toronto AFRO Files 2.85, 2.666
OGS Toronto Geoscience Data Centre, File Atikokan Iron Mine, Township Hutchinson, District Rainy River
OGS MP 84, p. 42 (1979)
ODM MRC 5, p. 42 (1967)
CDMTS,MB Mem. 118, p. 47 (1952)

NAME: BRUCE STAINES PROPERTY (SAPAWE LAKE PROSPECT) mag (Fe), Co, Cu, Ni, py

COMMODITIES: Magnetite (iron), cobalt, copper, nickel, pyrite

STATUS: Major Occurrence

TOWNSHIP: McCaul - Hutchinson

NTS: 52B/14SW

LATITUDE: 48° 46' 15"N LONGITUDE: 91° 22' 05"W

LOCATION: The property is 0.5 miles northwest of the village at Sapawe accessible by C.N.R. and Highway 11 and 11.5 miles east of Atikokan on the boundary between McCaul and Hutchinson Townships.

DESCRIPTION:

GEOLOGY: The mineralized zones are hydrothermal replacement bodies within gabbroic dikes along the Quetico Fault. The replacement bodies are irregularly shaped and contain varying amounts of magnetite, pyrrhotite, pyrite and minor chalcopyrite. The east-west trending fault follows the contact between the Early Precambrian volcanic rocks to the north and the older sedimentary rocks to the south. Archean granite and related rocks lie to the north and south of the metavolcanic-metasediment belt, and to the southeast of Sapawe Lake (arkose, greywacke, slate, mica schist and gneiss).

The deposit, one of several along the fault, is located within the Superior Structural Province. This deposit is part of the Atikokan Iron Range which extends for some 16 miles to the west. The main zone has been outlined for a length of 2500 feet and a width of approximately 100 feet. The dip is near vertical. The cobalt values are supposedly higher in the footwall (south - up to 3 pounds) than in the hanging wall of the sulphide iron formations. The cobalt, mineralogically, appears to be within the pyrite.

ECONOMIC FEATURES: The major zone is 2500 feet long and approximately 100 feet wide. The zone assayed 2.12 lbs/ton cobalt and 0.5% copper.

Assessment work indicated 0.092% (1.8 lbs/ton) cobalt over 39.2 feet at a drill hole depth of 574.8 to 614.0 feet (dip 54°; diamond drill hole SA1) and 0.11% (2.2 lbs/ton) cobalt and 0.40% copper over 46 feet at a drill hole depth of 162.7 to 208.7 feet (dip 45°).

Bruce Staines (personal communication) has indicated that the cobalt values are higher in the footwall (south up to 3 lbs.) than in the hanging wall of the sulphide iron formation. He has estimated that the tonnage of his deposit runs about 30,000,000 to 50,000,000 tons of 2 1/2 lbs. cobalt. The anomaly is 6,000 feet long.

CHEMICAL ANALYSIS: Laboratory work by Sherritt Gordon Mines Ltd. on this deposit indicates that the cobalt is extremely difficult to extract from the pyrite due to arsenides in the ore.

HISTORY OF DEVELOPMENT:

Circa 1950:	Steep Rock Iron Mines Ltd. completed diamond drilling on FF 3507.
1969 - 1970:	Monteagle Minerals Ltd. drilled 3 drill holes totalling 1576 feet (545', 501', 530') and performed airborne (1000 feet apart) and ground electromagnetic and magnetic surveys over the area (lines 400 feet apart over 2600 acres).
1976 - 1977:	Diamond drilling by Leon Bruce Staines on claim TB 432053.
August 1979:	Sherritt Gordon Mines Ltd. completed three diamond drill holes on TB 432055, FF 3507 and K 202185.

REMARKS: A tight supply situation for cobalt has been developing since 1976 when Zaire, which accounts for two-thirds of the free world's cobalt, was hit hard by transportation, personnel, financial and political difficulties. This has increased prices from $ U.S. 6./lb. in March 1977 to $ U.S. 20./lb. in December 1978 ($ U.S. 45./lb. on the free market). In March 1979, the Northern Miner reported that Noranda Exploration and Steep Rock Iron Mines are among major companies that have become interested in the Bruce Staines property. Increasing world market prices for cobalt therefore seem to have created a potential market for the Bruce Staines cobalt discovery (Northern Miner, December 1978, p.18 and Northern Miner, March 15, 1979, p.4).

SELECTED REFERENCES:

OGS Toronto AFRO Files 63.2755 and 63.2843
The Northern Miner, March 15, 1979, p. 4
The Northern Miner, December 21, 1978, p. 18
Resident Geologist's Files, OMNR,
Thunder Bay: Bruce Staines Property
MINSY File 50713900
Staines L.B., personal communication 1979

NAME: LOCKE ERNE - ANDOWAN GROUP f1

COMMODITY: Fluorspar

STATUS: Minor Occurrence

NTS: 52B/9SW

LATITUDE: 48° 36' 50"N LONGITUDE: 90° 20' 10"W

LOCATION: Several occurrences of fluorspar are on or near Loche Erne, about 7 miles southwest of Kashabowie station on the C.N.R. line.

DESCRIPTION:
GEOLOGY: "The deposits in which the fluorspar occurs are breccia zones up to 20 feet wide, the interspaces of which are filled with quartz and, in places, a small proportion of purple fluorspar." (Wilson 1929, p.33).

REMARKS: "The amount of fluorspar present in the observed occurrences is too small to be of commercial importance." (Wilson 1929, p.33).

SELECTED REFERENCES: MINSY File 50235500
CDM,GS Econ. Geol. Series No. 6, p. 32,33 (1929)

NAME: J. CYR PROPERTY be, gt, Mo

COMMODITIES: Beryl, garnet, molybdenum

STATUS: Minor Occurrence

NTS: 52B/5NW

DESCRIPTION: Listed under BERYL - J. Cyr Property

NAME: STEEP ROCK IRON MINES Fe, py, bauxite gth, hem

COMMODITIES: Iron, pyrite, bauxite, goethite, hematite

STATUS: Major Occurrence

NTS: 52B/13SE

DESCRIPTION: Listed under BAUXITE - Steep Rock Iron Mines

NAME: AVENUE SYNDICATE gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 52B/9SW

LATITUDE: 48° 34' 50"N LONGITUDE: 90° 17' 35"W

LOCATION: "South of Southeast Bay, extending almost to Greenwater Lake in Haines, Begin, and Lamport Townships." (Morin 1973, p.20).

DESCRIPTION:
GENERAL GEOLOGY: "The surface geology consists of mafic to intermediate metavolcanic flows and pyroclastics with minor amounts of conglomerate, arkose, argillite, iron formation, peridotite and gabbro." (Morin 1973, p.20).

HISTORY OF DEVELOPMENT:

1958-59: Electromagnetic survey.

1960: Geological, magnetic and electromagnetic surveys followed by diamond drilling over anomalies.

REMARKS: All diamond drilling cores were found to contain graphitic slate, the apparent cause of the anomalies.

MAP REFERENCES: ODM Map 2127, 1 inch to 1/2 mile (1:31,680) 1967
ODM Map 2267, 1 inch to 1/2 mile (1:31,680) 1973

SELECTED REFERENCES: MINSY File 504888000
ODM GR 110, p. 20 (1973)

NAME: STEEP ROCK IRON MINES Fe, py, bauxite gth, hem

COMMODITIES: Iron, pyrite, bauxite, goethite, hematite

STATUS: Major Occurrence

NTS: 52B/13SE

DESCRIPTION: Listed under BAUXITE - Steep Rock Iron Mines

NAME: R.C. WAGER LITHIUM PROPERTY Li

COMMODITY: Lithium (spodumene)

STATUS: Major Occurrence

NTS: 52B/5NW

LATITUDE: 48° 23' 35"N LONGITUDE: 91° 46' 45"W

LOCATION: The R.C. Wager lithium discovery is located on the north shore of a small pond 1/2 mile north of Poobah Creek and approximately 1/4 mile east of the Maligne River. The property which is made up of 6 claims, adjoins ground held by P. Carrignan to the southwest. It is located within Quetico Provincial Park.

DESCRIPTION:

GEOLOGY: The property is underlain by steeply dipping Archean biotite gneisses and garnetiferous biotite gneisses trending east-west at a point on the north shore of the previously mentioned pond, the sediments are cut by a pegmatite sill, which is exposed for a length of 40 feet and a width of 25 to 30 feet.

MINERALOGY: The pegmatite is coarse-grained and consists of white feldspar, quartz, and spodumene with subordinate pale yellowish-green muscovite and accessory amounts of garnet, apatite and molybdenite.

ECONOMIC FEATURES: The deposit contains 20 to 25 percent spodumene (visual estimation).

REMARKS: The spodumene is of commercial grade.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.188, 1 inch to 2 miles (1:126,720) 1963
ODM Map 1065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCES: NMI File 508395
MINSY File 50839500
Resident Geologist's Files, OMNR,
Thunder Bay: File R.C. Wager

(Major Occurrence) Li

COMMODITY: Lithium (spodumene)

STATUS: Major Occurrence

NTS: 52B/5NE

LATITUDE: 48° 24' 45"N LONGITUDE: 91° 43' 30"W

LOCATION: The occurrence is located on the east bank of the Maligne River where it enters the southern most tip of Sturgeon Lake. It is located within Quetico Provincial Park.

DESCRIPTION:
GEOLOGY: The spodumene-bearing granitic pegmatite dike intrudes Archean metasediments (arkose, greywacke, slate, mica schists and gneisses). The area is surrounded by younger granitic intrusive masses.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

NAME: INTERNATIONAL LITHIUM MINING CORP. Li

COMMODITY: Lithium (spodumene)

STATUS: Major Occurrence

NTS: 52B/5SW

LATITUDE: 48° 21' 45"N LONGITUDE: 91° 59' 25"W

LOCATION: The present group of 17 claims is located on the south shore near the east end of Lac La Croix near the mouth of the Maligne River within Quetico Provincial Park. Bell Island is 1 1/4 miles to the east and Twin Falls is about 1 1/2 miles to the east. Access by timber road is available to within 12 miles of the site and a branch C.N.R. line from Port Arthur to Fort Frances passes within 25 miles of the claim group. The Lithium Corporation of America has a refining plant in Minneapolis 400 miles to the south. The claim group consists of FF 10046 to FF 10054 inclusive and FF 10507 to FF 10514 inclusive with outcrops on FF 10047 and FF 10049.

DESCRIPTION:
GEOLOGY: "Several spodumene-bearing pegmatite dikes outcrop near Lac La Croix near the south margin of a band of Couchiching metasedimentary biotite gneisses that trends easterly tapering from a width of about 16 miles near the east end of the lake" (Mulligan 1965, p.65). "The known spodumene pegmatite dikes of the International Lithium Mining Corp. cut these highly metamorphosed Archean metasediments which form a narrow belt bounded by large granitic masses to the north and south. The dikes are conformable to the east-west trending (N85°E) metasediments but they cut the gneisses down the dip - the gneisses dip 30° to 50°N whereas the pegmatite is near vertical (70°N). The main dike has an exposed outcrop of 175 feet by 55 feet. Another dike lies about 650 feet south of the lakeshore, about 3400 feet to the east."(Pye 1956, p.73).

MINERALOGY: "Examination of the outcrop shows it to be coarse-grained to very coarse-grained, with the individuals of the various minerals ranging up to and in places exceeding 12 inches in length. The constituents are albite, quartz, and spodumene, with about 10% muscovite and accessory amounts of garnet. Although aplitic bands and patches are evident in the outcrop, a regular internal zoned structure is not apparent. Spodumene occurs as pale grey, randomly oriented, prismatic crystals making up to 25% of the outcrop."(Pye 1956, p.72). Some of the dikes are spodumene-free and are interrupted by a few transverse quartz-filled fractures.

ECONOMIC FEATURES:

Trenching: at 30 foot intervals.

Grade: varies from 1.22% lithia over a 35-foot width to a high of 2.04% lithia over 55 feet.

DDH:

1975 (est) 37,178 vertical feet of diamond drill holes tested the dike over a length of 1800 feet. One section, 1000 feet in length is estimated to contain 1,525,000 tons grading 1.27% Li_2O across an average width of 39.5 feet to a depth of 500 feet. Width varies from 10 feet to 55 feet.

1956 (est) The deposit has been drill proven for a length of 700 feet to a depth of 300 feet across an average width of 42.5 (grade: 1.31% Li_2O). Calculating the ore zone with a factor of 13 cu. ft./ton. This area contains a drill proven reserve of 686,000 tons.

HISTORY OF DEVELOPMENT:

1956: The exposed section of the dike was trenched at 30-foot intervals (total 7 trenches), also 12 diamond drill holes totalling 4,004 vertical feet were completed along the strike of the dike approximately every 400 feet.

REMARKS: This discovery of commercial grade spodumene ore is comparable to anything yet found in the better known lithium-bearing regions in Ontario. The successful completion of this drill program will invite consideration of a shaft sinking and underground development program designed to block out the ore zone on 3 sides.

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map P.188, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 534A, 1 inch to 4 miles (1:253,440) 1940

SELECTED REFERENCES:
NMI 508393
Canadian Mines Handbook 1963, p. 145
MINSY File 50839300
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 65,66 (1965)
Resident Geologist's Files, OMNR, Thunder Bay:
File International Lithium Mining Corp.
OGS Toronto Geoscience Data Centre, File
Lac La Croix, 48°15, 91°45', District Rainy River
Can. Min. Jour., April 1956, p. 73 (1956)

NAME: TWIN FALLS OCCURRENCE Li

COMMODITY: Lithium (spodumene)

STATUS: Major Occurrence

NTS: 52B/5SW

LATITUDE: 48° 22' 10"N LONGITUDE: 91° 55' 58"W

LOCATION: This occurrence of lithium in the Lac La Croix area is located at Twin Falls on the south shore of an island in the Maligne River. It is 1/4 mile east of Bell Island and 1 1/2 miles east of the International Lithium Mining Corp. Ltd. holdings. It is within Quetico Provincial Park.

DESCRIPTION:

GEOLOGY: The 30-foot wide lithium-bearing pegmatite dike occurs in an east-west trending body containing 20% spodumene. The dike intrudes Archean metasediments (biotite gneisses).

MINERALOGY: The spodumene crystals are up to 10 inches in diameter.

ECONOMIC FEATURES: 20% spodumene in a 30-foot wide pegmatite dike.

HISTORY OF DEVELOPMENT:

1944: The occurrence was first noted by T.L. Tanton and was investigated by Consolidated Mining and Smelting Company of Canada. However, it did not prove to be extensive enough to warrant further development (after NM1 508394).

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map P.188, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 534A, 1 inch to 4 miles (1:253,440) 1940

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay: Twin Falls Occurrence.
NM1 File 508394
MINSY File 50839400
Can. Min. Jour. April 1956, p. 73
OGS Toronto Geoscience Data Centre, File Twin Falls, 48°15', 91°45', District Rainy River

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NAME: BRUCE STAINES PROPERTY (SAPAWE LAKE PROSPECT) mag (Fe), Co, Cu, Ni, py

COMMODITIES: Magnetite (iron), cobalt, copper, nickel, pyrite

STATUS: Major Occurrence

NTS: 52B/14SW

DESCRIPTION: Listed under COBALT - Bruce Staines Property (Sapawe Lake Prospect)

NAME: PATTISON GROUP (R 403 and 212 X) mag

COMMODITY: Magnetite

STATUS: Minor Occurrence

TOWNSHIP: McCaul

NTS: 52B/14SW

LATITUDE: 48° 45' 48"N LONGITUDE: 91° 26' 07" to 91° 26' 56"W

LOCATION: These magnetite-pyrrhotite deposits are part of the Atikokan Iron Range west of Sapawe Lake along the Quetico Fault. They lie just south of the Atikokan River about 1/2 mile north of the C.N.R. line. A 1500-foot gap without magnetic attraction separates the Pattison group from the Archibald-Hanna Prospect to the east. Atikokan is 10 miles due west of the deposit.

MAP REFERENCES:
ODM Map 38e, 1 inch to 3/4 mile, 1929
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963

NAME: 138 X and 139 X (QUINN PROSPECT) mag

COMMODITY: Magnetite

STATUS: Minor Occurrence

TOWNSHIP: McCaul

NTS: 52B/14SW

LATITUDE: 48° 45' 36"N LONGITUDE: 91° 28' 00"W

LOCATION: The deposit is located within the Atikokan Iron Range west of Sapawe Lake, along the Quetico Fault. It is found just west of a bend in the Atikokan River (on the south side of the river) and north of the C.N.R. line. The Pattison claim group is 1 mile east of the deposit and the town of Atikokan is 9 miles due west.

MAP REFERENCE: ODM Map 38e, 1 inch to 3/4 mile, 1929

NAME: PEAT MOSS DEPOSIT NO. 18 peat

COMMODITY: Peat moss

STATUS: Minor Occurrence

TOWNSHIP: Conacher

NTS: 52B/9NE

LATITUDE: 48° 38' 06"N to 48° 38' 48"N LONGITUDE: 90° 05' 12"W to 90° 06' 30"W

LOCATION: "This deposit is centred 4 km east and 3.2 km south of the northwest corner of the township. Shebandowan, just south of Highway 11, lies 2.4 km to the east. The City of Thunder Bay lies 64 km to the southeast.

"Highway 11 passes 400 m south of the southeast end of the deposit. The C.N.R. crosses Highway 11, 2.5 km west of the turn to Shebandowan. Access to the south side of the deposit is achieved by proceeding northwest along the railway for 600 m.

"A power line, not shown on current maps, crosses the railway about 510 m northwest of the road." (Graham 1979, p.57).

DESCRIPTION:

GEOLOGY: The peat deposit "comprises approximately 111 ha. The open area extends east-west for 1890 m and varies from 240 to 850 m in width....

"The depth where sampled varies from 2.4 to 2.5 m and the deposit rests on a grey to greenish-grey plastic clay bottom. The surface layer of sphagnum varies from 0.25 to 0.5 m in thickness. It rests on a fine-grained dark brown peat with an ash content of 5.79 to 14.7 percent and a water content of 85 to 88 percent averaging 86.8 percent. No roots were encountered during the sampling.

"The swamp river meanders along the north side and through the eastern part of the deposit...[and] represents a serious problem as there does not appear to be a practical way to divert it and creeks drain into the deposit from the north." (Graham 1979, p.57).

CHEMICAL ANALYSIS:

Deposit and Sample Site	Moisture percent	Ash percent	pH	Absorptive Value dry (X own wt)	Absorptive Value 40 percent Moisture	As recovered Wr/Vw
18: CONACHER TP.						
Site 1						
0.5 - 2.5 m	88	6.16	5.12	5.04	2.62	0.913
Site 2						
0.4 - 1.5 m	88	5.79	5.10	8.20	4.52	0.997
1.5 - 2.45 m	87	9.72	6.14	4.90	2.54	0.853
Site 3						
0.25 - 2.4 m	85	14.7	5.55	3.13	1.47	0.934

Deposit and Sample Site	Saturated Volume Weights-gm/cc Oven Dried Wd/Vw	Wet Ww/Vw	Dry Volume Wt/gm/cc Wd/Vd
18: CONACHER TP.			
Site 1			
0.5 - 2.5 m	0.154	0.934	0.33
Site 2			
0.4 - 1.5 m	0.108	0.977	0.34
1.5 - 2.45 m	0.128	0.757	0.34
Site 3			
0.25 - 2.4 m	0.216	0.890	0.54

HISTORY OF DEVELOPMENT: 1979: Graham, R.B. sampled the bog at 3 separate sites.

REMARKS: "There is insufficient moss to be of interest and the area is too small to be regarded as a source of fuel peat at this time" (Graham 1979, p.57).

MAP REFERENCE: OGS Map P.1522 (1:250,000) 1978

SELECTED REFERENCE: OGS MDC 19, p. 5-59,96,119 (1979)

NAME: PEAT MOSS DEPOSIT NO. 21 peat

COMMODITY: Peat Moss

STATUS: Minor Occurrence

TOWNSHIP: Fallis

NTS: 52B/16NE

LATITUDE: 48° 55' 20"N to 48° 56' 33" LONGITUDE: 90° 06' 30"W

LOCATION: "Deposit 21 is centred 5.6 km west of the northeast corner of Fallis Township and extends north into Gibbard Township. The city of Thunder Bay lies 8.7 km to the southeast.

"The Canadian Pacific Railway and Highway 17 cross the southern end of the deposit 6.9 km west of Argon Creek. The southern part can be reached directly from the road. The northern part is best reached by following a north-trending ridge along the west side for 1160 m where the pipeline crosses the deposit" (Graham 1979, p.60).

DESCRIPTION:

GEOLOGY: The peat deposit consists of "an open area of some 172 ha within the extensive Savanne River-Muskeg Lake bog system.... It varies in depth from 0.2 m in the northern part to 3 m in the south-central part and 1.75 m just north of the railway. It rests on a clay bottom.

"The surface layer of sphagnum varies from nil in the northern part to 0.4 m in the south-central part underlain by 0.2 to 2.6 m of peat containing many roots. The ash content is high, mostly between 7 and 8 percent with anomalously high values of 78 and 32.4 percent at the northern end where the deposit is shallow. These high values could be due to admixed clay although this was not observed in the samples.

"The water content varies from 65 to 92 percent and averages 85.8 percent." (Graham 1979, p.60).

CHEMICAL ANALYSIS:

Deposit and Sample Site	Moisture percent	Ash percent	pH	Absorptive Value dry (X own wt)	Absorptive Value 40 percent Moisture	As recovered Wr/Vw
21: FALLIS TP.						
Site 1						
0.28 - 1.75 m	88	7.34	6.20	4.77	2.46	0.971
Site 2						
0.65 - 1.0 m	89	8.42	5.80	5.45	2.87	0.891
1.0 - 1.5 m	87	10.2	5.92	5.62	2.97	0.976
1.5 - 2.5 m	88	8.0	6.15	5.82	3.09	0.968
2.5 - 3.0 m	91	5.84	6.20	8.29	4.57	0.961
Site 3						
0 - 0.2 m	65	78.0	6.43	7.27	3.96	0.894
Site 4						
0.1 - 1.2 m	82	32.4	5.65	2.60	1.16	1.025

Deposit and Sample Site	Saturated Volume Weights-gm/cc Oven Dried Wd/Vw	Wet Ww/Vw	Dry Volume Wt/gm/cc Wd/Vd
21: FALLIS TP.			
Site 1			
0.28 - 1.75 m	0.148	0.860	0.25
Site 2			
0.65 - 1.0 m	0.113	0.735	0.36
1.0 - 1.5 m	0.134	0.890	0.20
1.5 - 2.5 m	0.128	0.870	0.23
2.5 - 3.0 m	0.085	0.794	0.20

Deposit and Sample Site	Saturated Volume Weights-gm/cc Oven Dried Wd/Vw	Wet Ww/Vw	Dry Volume Wt/gm/cc Wd/Vd
Site 3			
0 - 1.2 m	0.100	0.828	0.21
Site 4			
0.1 - 1.2 m	0.264	0.951	0.74

HISTORY OF DEVELOPMENT: 1979: Graham, R.B., sampled the bog at four separate sites.

REMARKS: "The area examined has more of the characteristics of a swamp than a bog. The rooty nature, limited area, and shallow depth of this deposit precludes its use as a potential source of fuel peat. There is insufficient unhumified moss to be of interest" (Graham 1979, p.60).

MAP REFERENCE: OGS Map P.1522 (1:250,000) 1978

SELECTED REFERENCE: OGS MDC 19, p. 60-62,96,120 (1979)

NAME: PEAT MOSS DEPOSIT NO. 22 peat

COMMODITY: Peat

STATUS: Minor Occurrence

TOWNSHIP: Gibbard

NTS: 52B/16NE

LATITUDE: 48° 57' 25"N (Centre) LONGITUDE: 90° 03' 55"W (Centre)

LOCATION: "This deposit is centred 3.2 km north and 4.8 km east of the southeast corner of the township. The City of Thunder Bay lies 8.4 km to the southwest.

"The Canadian National Railway passes along the southwestern side of the deposit. The Canadian Pacific Railway and Highway 17 lie 4.8 km to the south. A minimum of 4.8 km of road would be required for access. Lumber trails, passable with the Bombardier tractor, extend north from Highway 17, 3.7 km east of Savanne, to the northwestern end of Deposit 23: Gibbard Township. Deposit 22: Gibbard Township can then be reached by proceeding southeast along the C.P.R. right-of-way for 4 km" (Graham 1979, p.63).

DESCRIPTION:

GEOLOGY: "This deposit forms part of the large Savanne River-Muskeg Lake interconnected muskeg system. An area of some 150 ha was initially selected for sampling. On field inspection it was found that heavy tree growth had encroached into the northwestern and western parts. The remaining area of openly wooded muskeg consisting of 93 ha was sampled....

"An average depth of 3.8 m is indicated from four sample sites. The maximum depth of 4 m was obtained at site 4 in the northwestern part of the deposit....

"A thickness of 0.4 to 0.6 m of fresh sphagnum overlies H4 to H6 sphagnum sedge peat resting on a soft grey clay bottom. The water content varies from 88.7 to 91.5 percent and averages 90.7 percent. The ash content varies from 8.6 to 14.9 percent and averages 10.8 percent." (Graham 1979, p.63).

CHEMICAL ANALYSIS:

Deposit and Sample Site	Moisture percent	Ash percent	pH	Absorptive Value dry (X own wt)	Absorptive Value 40 percent Moisture	As recovered Wr/Vw
22: GIBBARD TP. Site 1 0.5 - 3.9 m	91.5	11.8	6.3	8.2	4.5	1.33
Site 2 0.5 - 3.6 m	91.3	9.5	6.3	7.2	3.9	1.51
Site 3 0.4 - 3.5 m	91.2	9.1	5.8	7.7	4.2	1.24
Site 4 0.6 - 3.5 m	90.8	8.6	6.0	7.3	4.0	1.13
3.5 - 4.0 m	88.7	14.9	6.7	7.7	4.2	1.15

Deposit and Sample Site	Saturated Volume Weights-gm/cc Oven Dried Wd/Vw	Wet Ww/Vw	Dry Volume Wt/gm/cc Wd/Vd
22: GIBBARD TP. Site 1 0.5 - 3.9 m	0.10	0.95	0.32
Site 2 0.5 - 3.6 m	0.12	0.95	0.33
Site 3 0.4 - 3.5 M	0.11	0.96	0.29
Site 4 0.6 - 3.5 m	1.11	0.93	0.29
3.5 - 4.0 m	1.12	1.06	0.33

HISTORY OF DEVELOPMKENT: 1979: Graham, R.B., selected four site to sample the bog.

REMARKS: "There is insufficient sphagnum moss present to be of commercial interest and the area is too limited to be regarded as a potential source of fuel peat." (Graham 1979, p.63).

MAP REFERENCE: OGS Map P.1522 (1:250,000) 1978

SELECTED REFERENCE: OGS MDC 19, p. 63-65,97-98,120 (1979)

NAME: PEAT MOSS DEPOSIT NO. 23 peat

COMMODITY: Peat

STATUS: Minor Occurrence

TOWNSHIP: Gibbard

NTS: 52B/16NE

LATITUDE: 48° 58' 48"N LONGITUDE: 90° 07' 49"W

LOCATION: "Deposit 23: Gibbard Township adjoins Deposit 22, Gibbard Township on the northwest, adjacent to the north side of the Canadian National Railways. It is centred 2 km east of the southwest corner of the township. The City of Thunder Bay lies 9.6 km to the southeast.

"A minimum of 4.8 km of road would be required to reach Deposit 22 from which Deposit 23 could be serviced. Access by Bombardier tractor to the northwestern end of the deposit has been described in the section on Deposit 22: Gibbard Township" (Graham 1979, p.66).

DESCRIPTION:

GEOLOGY: "This is an elongated bog extending 5 km to the northwest with an average width of about 400 m. It is wooded to varying degrees. The least forested section, comprising approximately 313 ha, was sampled....

"The average depth as determined from seven sample sites is 2.6 m. It is deepest at site 3 (4 m) in the northeastern part. It is shallowest at the southeastern end where the depth is 0.9 m.

"A thickness of 0.2 to 0.6 m of fresh sphagnum overlies peat resting on a sandy clay bottom. The northern and northeastern parts consist of light fibrous H4 peat with a low ash content. The remainder of the deposit is a dense heavier H6 to H7 peat. Roots are sufficiently abundant to retard the rate of sampling.

"The moisture content of the peat ranges from 85.6 to 94.1 percent and averages 89.6 percent. The ash content ranges from 1.9 to 27.8 percent. The high value represents a 0.5 m bottom layer containing many roots. Excluding this anomalously high result, the average ash content is 7.5 percent" (Graham 1979, p.66).

CHEMICAL ANALYSIS:

Deposit and Sample Site	Moisture percent	Ash percent	pH	Absorptive Value dry (X own wt)	Absorptive Value 40 percent Moisture
23: GIBBARD TP.					
Site 1					
0.2 - 1.0 m	94.1	10.3	5.3	8.3	6.6
1.0 - 2.2 m	91.6	6.6	5.7	8.6	4.8
Site 2					
0.4 - 2.3 m	90.8	7.8	5.7	8.1	4.5
2.3 - 2.8 m	80.3	27.8	5.6	3.3	1.6
Site 3					
0.25 - 2.0 m	91.9	1.9	4.8	9.4	5.2
2.0 - 2.3 m	92.2	3.4	5.2	11.8	6.7
2.3 - 4.0 m	93.9	4.5	5.8	10.5	5.9
Site 4					
0.3 - 0.5 m	NSS	NSS	NSS	9.7	5.4
0.5 - 1.9 m	88.1	0.4	4.7	6.1	3.3
Site 5					
0.5 - 2.4 m	87.8	6.8	5.8	6.1	3.3
Site 6					
0.2 - 0.9 m	85.6	17.7	5.8	6.5	3.5
Site 7					
0.6 - 1.4 m	89.4	12.4	5.5	6.1	3.3

Deposit and Sample Site	As recovered Wr/Vw	Saturated Volume Weights-gm/cc Oven Dried Wd/Vw	Saturated Volume Weights-gm/cc Wet Ww/Vw	Dry Volume Wt/gm/cc Wd/Vd
23: GIBBARD TP.				
Site 1				
0.2 - 1.0 m	1.54	0.10	0.90	0.25
1.0 - 2.2 m	1.17	0.10	0.93	0.29
Site 2				
0.4 - 2.3 m	1.23	0.11	1.01	0.25
2.3 - 2.8 m	1.13	0.26	1.14	0.64
Site 3				
0.25 - 2.0 m	1.07	0.09	0.94	0.22
2.0 - 2.3 m	0.98	0.08	0.97	0.27
2.3 - 4.0 m	1.13	0.09	1.01	0.27
Site 4				
0.3 - 0.5 m	1.17	0.09	0.92	0.20
0.5 - 1.9 m	1.01	0.14	0.98	0.37
Site 5				
0.5 - 2.4 m	1.04	0.13	0.92	0.28
Site 6				
0.2 - 0.9 m	1.13	0.12	0.92	0.28
Site 7				
0.6 - 1.4 m	1.10	0.13	0.90	0.28

HISTORY OF DEVELOPMENT: 1979: Graham, R.B., sampled the bog at seven separate sites.

REMARKS: "There is insufficient sphagnum moss present to be of commercial interest. The area, even if combined with Deposit 22, is too limited to be regarded as a potential source of fuel peat at this time" (Graham, 1979, p.66).

MAP REFERENCE: OGS Map P.1522 (1:250,000) 1978

SELECTED REFERENCE: OGS MDC 19, p. 66-68,98-99,120 (1979)

NAME: J.F. WEST GOLD PROPERTY py

COMMODITY: Pyrite

STATUS: Minor Occurrence

TOWNSHIP: Hagey

NTS: 52B/9NE

LATITUDE: 48° 39' 00"N LONGITUDE: 90° 13' 00"W

LOCATION: The property is in the centre of Hagey Township, north and south of Highway 11, within 1 mile of the north shore of Middle Shebandowan Lake.

MAP REFERENCE: ODM Map 2267, 1 inch to 1/2 mile (1:31,680) 1973

NAME: INCO SHEBANDOWAN MINE No. 1 and 2 SHAFTS py, Co, cr, Cu, Ni, Pt, Pd

COMMODITIES: Pyrite, cobalt, chromite, copper, nickel, platinum, palladium

STATUS: Producer

NTS: 52B/9SW

DESCRIPTION: Listed under CHROMITE - INCO Shebandowan Mine No. 1 and 2 Shafts

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NAME: ADDICKS PROPERTY py

COMMODITY: Pyrite

STATUS: Major Occurrence

NTS: 52B/13NE

LATITUDE: 48° 56' 45"N LONGITUDE: 91° 31' 40"W

LOCATION: Mentor C. Addicks, Sr. staked 20 unpatented claims in the vicinity of Copper Hook Lake, approximately 2 1/2 miles northeast of the northern end of Finlayson Lake.

Finlayson Lake is situated in the Steep Rock Lake-Atikokan area of Rainy River district, Ontario. The southern boundary of the area is approximately 40 miles south of Ignace, a divisional point on the C.P.R. The southern and central portions are accessible by an all-season motor road from Atikokan, a town 14 miles to the south.

DESCRIPTION:

GEOLOGY: The rocks in the vicinity of Finlayson Lake are part of the northeastward extension of the northeasterly trending greenstone belt also containing the Steep Rock Lake iron ore deposits.

The volcanic and sedimentary zone is approximately 13 1/2 miles long and varies in width from 1/2 to 3 1/2 miles. It is bounded on the northwest by Algoman granite and on the southeast by Laurentian granite.

The northern end is connected to the Norway-Keewatin Lakes greenstone belt; the southern end is an extension of the greenstone belt adjacent to the lower Seine River. The rocks in the area are all Precambrian. Most of the rocks have undergone various degrees of metamorphism. Tectonic activity which accounted for much of the metamorphism has caused the volcanic and sedimentary formation to assume a vertical or near vertical attitude.

There are numerous sulphide replacement zones throughout the area, mostly associated with Keewatin iron formation, the Addicks property being one of them.

HISTORY OF DEVELOPMENT:

1968: M. Wicheruk completed some trenching and stripping on pyritic and pyrrhotitic iron formation and thin interbeds of graphitic argillites.

REMARKS: The presence of widespread sulphide mineralization throughout the area is important from the standpoint of prospecting and it is believed that further exploration may result in the discovery of base metals and large pyrite orebodies.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.543, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2298, 1 inch to 1/2 mile (1:31,680) 1976

SELECTED REFERENCES:
ODM GR 145, p. 59 (1976)
CPR Dept. Ind. Dev. Area 4 (1953)
ODM Vol. 48, pt. 2, p. 24,32 (1939)
CDM,GS Sum. Rept. 1925, Part C (1927)

NAME: CANADIAN ADDICKS MINING CORPORATION PROPERTY py, Co, po, cp

COMMODITIES: Pyrite, cobalt, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52B/13NE

DESCRIPTION: Listed under COBALT - Canadian Addicks Mining Corporation Property

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NAME: FIN-LAN COPPER MINES LIMITED po, py, cp

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52B/13NE

LATITUDE: 1st deposit: 48° 53' 00"N LONGITUDE: 91° 36' 45"W
2nd deposit: 48° 53' 45" 91° 36' 15"

LOCATION: The Fin-Lan Copper Mines Ltd. property is located on the southwest and southeast shores and on islands adjacent to the southeast shore of Finlayson Lake, 2 1/2 miles from the southern tip of the lake. The southern boundary of the area is approximately 40 miles south of Ignace, a divisional point on the C.P.R. The southern and central portions are accessible by an all-season motor road from Atikokan 11 miles to the south.

DESCRIPTION:

GEOLOGY: "The main sulphide showing trends approximately N30°E and dips vertically. It has been traced for a total distance of about 600 feet (180m) by geological mapping on the surface; magnetometer and electromagnetic surveys indicate a total length of about 1,900 feet (580m) (the northern extension is underwater). This tabular body is not straight, but is irregular in shape. The surrounding host rocks are mainly mafic to intermediate pillowed lavas and tuffs with minor amounts of intercalated metasediments. In immediate contact with the massive pyrrhotite are thin bands of fine-grained quartz-sericite-carbonate schist.... Development work has indicated irratic sulphide mineralization along strike and in thickness. Widths up to 16 feet (4.9m) of massive sulphides have been encountered but the average width is about 8 feet. Mineralization consists chiefly of massive to disseminated pyrrhotite, nodular pyrite and minor chalcopyrite.... The sulphide showing when dry, is covered with a white fibrous coating of sulfate salts (melanterite; an alteration product of pyrite).

"A well-banded siliceous sedimentary rock was noted on the footwall side of the pyrrhotite. It has the appearance of an iron formation but chemical analysis...indicates that it is too lean to be correctly termed a true iron formation.... A thin section indicates alternating bands of chert and fibrous amphibole (actinolite). This unit has been strongly folded and is not continuous but in sections. It varies in width along strike from 3 to 8 feet (0.9 to 2.4 m)." (Fenwick 1976, p.67). (Also see "Regional Geology" of Addicks Property, 52B/13NE).

MINERALOGY: Chalcopyrite is found locally in pyrrhotite, pyrite and vein quartz as inclusions and veinlets. Found within the massive pyrrhotite are abundant and unique round ball-like bodies of pyrite. They vary from 1mm up to 15cm in size and average about 3cm. These concretions are very similar in appearance to those that are found in graphitic argillite and those that are found in a strictly sedimentary environment (shale). The pyrite concretions on the Fin-Lan Copper Mines property are found mainly along fractures in the massive pyrrhotite and are in a predominantly volcanic environment. The pyrite concretions usually occur separately but a number may coalesce along a fracture to form a definite layer of pyrite which may be several feet in extent. The concretions which are in the 3 centimeter range show a radial structure. The outer shells of these concretions are sometimes rimmed by small idiomorphic pyrite crystals. The larger concretions that are greater than 3 cm in diameter, show concentric rings and cone-in-cone

structure. A few concretions show a similarity of patterns in the concentric rings, possibly indicating periods of growth in response to some external influence during diagenesis.

Inclusions and veinlets of quartz and carbonate are abundant in the concretions. Minor chalcopyrite was also noted as inclusions and veinlets. (paraphrased from Fenwick 1976, p.66).

HISTORY OF DEVELOPMENT:

1955: Diamond drilling of 3 holes (150 ft; 45.7 m) and 11 trenches along the strike of showing performed by Fin-Lan Copper Mines Ltd.

1965: Trenching, geological mapping, ground magnetic survey by Bank Field Consolidated Mines Ltd.

1966 - 1967: Cyprus Exploration Corporation Ltd. performed electromagnetic and magnetometer surveys, trenching, and drilled 12 diamond drill holes (5,443 ft) on 36 claims in the central part of Finlayson Lake.

1969: Fin-Lan Copper Mines Ltd. completed more trenching and Kerr Addison completed geophysics and trenching to test anomalies

REMARKS: The presence of widespread sulphide mineralization throughout the area is important from the standpoint of prospecting and it is believed that further exploration may result in the discovery of base metal and large economic pyrite orebodies. (Bartley 1953).

MAP REFERENCES:
OGS Map P.1522 (1:250,000) 1978
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
ODM Map P.542, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map P.2297, 1 inch to 1/2 mile (1:31,680) 1976

SELECTED REFERENCES:
Canadian Mines Handbook, p.156 (1971-1972)
OGS Toronto AFRO File 63.2041
OGS Toronto Geoscience Data Centre, File Kuhner, District Rainy River, Lat. 48° 45', Long. 91° 30'
ODM GR 145, p. 65-71 (1976)
CPR Dept. Ind. Dev., Area 4 (1953)

NAME: SCHEIDER OCCURRENCE py

COMMODITY: Pyrite

STATUS: Major Occurrence

NTS: 52B/13NE

LATITUDE: 48° 53' 42"N LONGITUDE: 91° 34' 20"W
48° 54' 34" 91° 35' 40"

LOCATION: The Scheider Occurrence is located on the east shore of Finlayson Lake from 3 to 4 1/2 miles from the south tip of the lake. The southern boundary of the area is approximately 40 miles south of Ignace, a divisional point on the C.P.R.. The southern and central portions are accessible by an all-season motor road from Atikokan, 11 miles to the south. The property consisted of 26 unpatented claims which form a block about 3 1/2 miles long by 1/2 mile wide.

DESCRIPTION:

GEOLOGY: Page (ODM Regional Geologist's Files, Thunder Bay) states: "Lenses of pyrite are located in a band of light coloured fissile sericite schist uppermost felsic part of a well-differentiated Archean volcanic pile in a euogeosynclinal environment which strikes northeasterly and dips vertically.... Five exposures of massive pyrite are found along the 11,500 feet (3500m) length of the #1 zone. This zone is a section of fissile sericite schists lying roughly midway between the former lakeshore and the new shore developed since lowering of Finlayson Lake during the Steep Rock diversion program. These bodies of pyrite have been designated as #1 to #5, starting at the extreme northeast end of the zone and progressing southwest." (Fenwick 1976, p.71).

exposure #1: 50 ft long X 6 ft wide.
exposure #2: 150 ft long X 25 ft wide (max.).
exposure #3: 3 ft of schistose material on the edge of a clay filled

depression. "Core from a diamond drill hole shows poor grade pyrite across 10 ft (3m) of core length (at 70 degrees)." (Fenwick 1976, p.71)

exposure #4: 130 ft long X 20 ft wide.

exposure #5: "two feet (0.6 m) of what is probably the west wall of another lens is exposed along the east side of a low cliff. A sulphide content of 90% pyrite is apparent at this exposure. However fifteen feet (4.6 m) of core from a hole drilled beneath it shows no more than an average of 65% pyrite....

"The lenses exposed in zone #1 have similar dimensions and are widely spaced along strike. Sufficient outcrops exist to preclude any suggestion that connecting structures exist but are obscured. There is nothing to indicate that subsurface lenses exist between the observed occurrences of pyrite. The discontinuous and lenticular nature of the mineralization in plan most probably persists in section.

"Page's exposures numbers 1, 2 and 3 were found by the author. These pyrite occurrences are lenticular, strike northeasterly, and are strata-bound within the platy felsic metavolcanic host rock. Locally, in the pyrite, there is fine banding, which is parallel to the general foliation trend of the area. On the footwall side (east side) of the pyrite lenses is a narrow band of graphitic argillite containing pyrite nodules." (Fenwick 1976, p.72).

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2297, 1 inch to 1/2 mile, 1976

SELECTED REFERENCES: ODM GR 145, p. 71-72, 74 (1976)

NAME: BIG SIX PROSPECT py

COMMODITY: Pyrite

STATUS: Major Occurrence

NTS: 52B/13SE

LATITUDE: 48° 51' 30"N LONGITUDE: 91° 40' 20"W

LOCATION: The Big Six Prospect is situated 1/4 mile (0.4 km) southeast of the east end of Eye Lake. Atikokan is 8 miles south-southeast of here. The region is accessible by aircraft or an all-season motor road from Atikokan.

DESCRIPTION:

GEOLOGY: The Finlayson Lake area is underlain by a northeast extension of the northeasterly trending greenstone belt which also contains the Steep Rock Lake iron ore deposits. This narrow synclinal belt consists of four distinct units which are bounded the the east and west sides by granitic intrusive rocks that are possibly of different ages. The four distinct units are:

(1) lower mafic metavolcanic unit (basalt flows).
(2) felsic metavolcanic unit (contains massive pyrrhotite, pyrite and minor chalcopyrite which seems to be confined to a particular stratigraphic unit found associated with cherty iron formation).
(3) metasedimentary unit (greywacke, argillite).
(4) upper mafic metavolcanic unit (pillowed basalt, andesite with mineralization as in the (2) unit).

The granitic rocks on the east side of the belt are trondhjemite, quartz porphyry, and quartz-sericite schist in areas of intense shearing. Biotite granite, quartz monzonite, granitic gneiss, and trondhjemite are the principal granitic rocks on the west side of the belt.

Numerous sulphide replacement zones throughout the area occur in Keewatin greenstone or in granite near the contact of the two.

The main quartz vein of the Big Six Prospect containing pyrite (and galena, sphalerite) strikes N21°E along the contact of the green chloritic hornblende schists of the greenstone belt (upper mafic metavolacnic unit) and the adjoining westerly granitic intrusive. The contact passes through the

centre of W.R. 56 and has been stripped over a distance of about 300 m (1000 feet) north of a shaft which is sunk vertically on the hanging wall of the quartz vein. At the shaft, the quartz vein at the surface consists of two branches about 20 feet apart. These come together north of the shaft, where the vein averages 3 - 4 feet in width. West of the main vein in the greenstone, several felsite dikes scattered over a distance of 100 feet or more contain minor quartz. (Fenwick 1976, p. abs.,6-8,43-45).

HISTORY OF DEVELOPMENT:

1897 - 1899: Depth of main shaft 100 feet; depth of first level 80 feet, drifting north 70 feet, south 30 feet; crosscut 10 feet south of shaft with a west direction and length of 18 feet.

1955: Gravity survey completed by Steep Rock Mines Ltd., (east-west grid, lines separated 600 ft. at an interval of 100 ft).

REMARKS: Massive pyrite and widespread sulphide mineralization has been noted on the east shore of Finlayson Lake. It is believed that further exploration in the area may result in new discoveries of base metals and pyrite orebodies.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2297, 1 inch to 1/2 mile (1:31,680) 1976
ODM Map P.542, 1 inch to 1/4 mile (1:15,840) (1969
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963

SELECTED REFERENCES: ODM GR 145, p.abs.,6-8,43-45 (1976)
ODM Vol. 48, pt. 2, p. 32 (1939)
OGS Toronto AFRO File 63.573
CPR Dept. Ind. Dev. Area 4 (1953)
CDM,GS Sum. Rept. 1925, Part C (1927)

NAME: MACKENZIE AND MANN OCCURRENCE py, po

COMMODITY: Pyrite, pyrrhotite

STATUS: Minor Occurrence

TOWNSHIP: Freeborn

NTS: 52B/13SE

LATITUDE: 48° 45' 36"N LONGITUDE: 91° 39' 36"W

LOCATION: This occurrence is on the west side of Steep Rock Lake behind Birch Point, about 3 miles north of the C.N.R. Three patented mining claims, Nos. 460, 461 and 462.

MAP REFERENCE ODM Map 48a, 1 inch to 1 mile (1:63,360) 1939
OGS Map P.2159, 1 inch to 1/4 mile (1:15,840) 1981

NAME: STEEP ROCK IRON MINES Fe, py, bauxite gth, hem

COMMODITIES: Iron, pyrite, bauxite, goethite, hematite

STATUS: Major Occurrence

NTS: 52B/13SE

DESCRIPTION: Listed under BAUXITE - Steep Rock Iron Mines

NAME: STRAWHAT LAKE DEPOSITS (Quebec Cartier Mining Co.) py

COMMODITY: Pyrite

STATUS: Minor Occurrence

TOWNSHIP: Schwenger

NTS: 52B/13SE

LATITUDE: 48° 46' 48"N LONGITUDE: 91° 36' 36"W

LOCATION: Southwest end of Strawhat Lake, 4 miles northeast of Atikokan. It lies 1/4 mile west from the south end of the southeast arm of Steep Rock Lake Mining Locations 857 x and 858 x (patented claims).

MAP REFERENCES: ODM Map 2217, 1 inch to 1000 feet (1:12,000) 1972.

NAME: BURREX OCCURRENCE py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 52B/14NW

LATITUDE: 48° 58' 10"N LONGITUDE: 91° 29' 55"W

LOCATION: Burrex Mines Prospecting Syndicate held 31 unpatented claims (now forfeited) in the area northeast of Copper Hook Lake, which is northeast of Finlayson Lake. The main showing on the claims is found near the north end of the small pond northeast of Copper Hook Lake. The occurrence exists on past claims TB 513039 and TB 513046.

Finlayson Lake is situated in the Steep Rock Lake-Atikokan area of Rainy River District. The southern boundary of the area is approximately 40 miles south of Ignace, a divisional point on the C.P.R. The southern and central portions of this area are accessible by an all-season motor road from Atikokan, which is located 16 miles to the southeast.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.543, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2298, 1 inch to 1/2 mile (1:31,680) 1976

NAME: ARCHIBALD - HANNA PROSPECT Fe, po, py, Co

COMMODITIES: Iron, pyrrhotite,pyrite, cobalt

STATUS: Minor Occurrence

NTS: 52B/14SW

DESCRIPTION: Listed under COBALT - Archibald - Hanna Prospect

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NAME: ATIKOKAN IRON MINE (NORTH RANGE MINING CO.) Fe, Cu, Co, Ni, py

COMMODITIES: Iron, copper, cobalt, nickel, pyrite

STATUS: Past Producer

NTS: 52B/14SW

DESCRIPTION: Listed under COBALT - Atikokan Iron Mine (North Range Mining Co.)

NAME: BRUCE STAINES PROPERTY (SAPAWE LAKE PROSPECT) mag (Fe), Co, Cu, Ni, py

COMMODITIES: Magnetite, (iron), cobalt, copper nickel, pyrite

STATUS: Major Occurrence

NTS: 52B/14SW

DESCRIPTION: Listed under COBALT - Bruce Staines Property (Sapawe Lake Prospect)

NAME: NORTHERN LIGHT LAKE - SOUTHEAST BAY TALC DEPOSIT talc, sps

COMMODITIES: Talc, soapstone

STATUS: Minor Occurrence

NTS: 52B/7SE

LATITUDE: 48° 15' 15"N LONGITUDE: 90° 35' 00"W

LOCATION: The talc occurrence is on the northeastern shore of Northern Light Lake in Southeast Bay. The showing is covered by patented claims JK 241, JK 280, JK 348, and JK 760. Highway 588, which terminates on the east side of Trafalgar Bay, Northern Light Lake is almost two miles north of the showing.

DESCRIPTION:
GEOLOGY: The surrounding region of the actual occurrence is underlain by Archean acid igneous and metamorphic rocks composed of granite (gneiss), porphyritic granite (gneiss), quartz and feldspar porphyry, migmatite, syenite, pegmatite, etc. Outcropping at various locations around Northern Light Lake is an older undifferentiated basic to intermediate metavolcanic unit with some metasediments which consist predominantly of massive greenstone, hornblende and chlorite schists. The talc deposit is found within this older unit.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.188, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCES: MINSY File 51030100

NAME: MILK LAKE TALC DEPOSIT talc, sps

COMMODITIES: Talc, soapstone

STATUS: Minor Occurrence

TOWNSHIP: Amussen

NTS: 52B/13SW

LATITUDE: 48° 45' 30"N LONGITUDE: 91° 55' 25"W

LOCATION: The showing is located north of the Seine River at the southwest end of Milk Lake, 3 miles northeast of Banning which is on the C.N.R. line. It occurs within past claims FF 9987 and FF 10004. Atikokan is 14 miles due east of the deposit. Highway 11 runs a few miles south of the showing.

DESCRIPTION:
GEOLOGY: "...there is a small body of soapstone about 25 feet wide and nearly 100 feet long. This rock lies in a highly contorted, dark-green to rusty [coloured] chlorite schist, which appears to be an altered basic tuff cut by a number of small felsite dikes and a quartz vein with a maximum

width of 3 feet. The green flaky, [aplite] talc lies adjacent to the vein and along the dikes. No work has been done on this outcrop, which lies along a ridge running in a northwesterly direction between Milk Lake and a small lake to the west of it" (Moore 1939, p.34).

"The stone is a soft, fine grained rock of fair quality, and when tested, proved to have a fusion point of 1360°C" (Spence 1940, p.67).

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965
CDM Map 534A, 1 inch to 4 miles (1:253,440) 1940

SELECTED REFERENCES: ODMNA IMR 40, p. 49 (1972)
CDMR,BM No. 803, p. 67 (1940)
ODM Vol. 48, pt. 2, p. 34 (1939)
CDM,GS Geol. Series No. 2, p. 66 (1926)

NAME: UPPER SHEBANDOWAN LAKE TALC DEPOSIT talc

COMMODITY: Talc

STATUS: Minor Occurrence

NTS: 52B/9NW/SW

LATITUDE: 48° 37' 50"N LONGITUDE: 90° 25' 45"W

LOCATION: The talc occurrence is on the southern shore of Upper Shebandowan Lake approximately 1 km southwest of Anderson Island. Highway 11 and the Port Arthur - Fort Frances C.N.R. line run in an east-west direction north of the occurrence. Three miles to the northeast an aircraft landing facility is found near Postans.

DESCRIPTION:
GEOLOGY: The Postans Fault separates metasedimentary rocks to the north from basic and intermediate undifferentiated metavolcanics to the south. The talc occurrence is found in well-sheared fine to coarse-grained amphibolite and amphibolite schists of the metavolcanics. It is similar in lithology to the Keewatin but no age relationship is known. (All units are Precambrian age). Younger basic intrusives (gabbros) flank the amphibolite in places. The amphibolite schistosity trends northwest and dips 80° to the southwest. The occurrence is found in a continuous belt which includes the Greenwater Lake Talc deposit to the southwest.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2128, 1 inch to 1/2 mile (1:31,680) 1967
ODM Map P.223, 1 inch to 1/2 mile (1:31,680) 1964
ODM Map P.177, 1 inch to 2 miles (1:126,720) 1963
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCE: MINSY File 51030300

NAME: GREENWATER LAKE TALC DEPOSIT talc

COMMODITY: Talc

STATUS: Minor Occurrence

NTS: 52B/9SW

LATITUDE: 48° 36' 05"N LONGITUDE: 90° 28' 50"W

LOCATION: The talc occurrence is on the northwestern shore of Greenwater Lake. Highway 11 and a C.N.R. line run in an east-west direction approximately 4 miles north of the occurrence. An aircraft landing facility is located northeast of the occurrence at Postans, which is approximately 7 miles away.

DESCRIPTION:

GEOLOGY: The talc occurrence is found within Precambrian early basic intrusive rocks of peridotite composition. The narrow finger-like unit trends in a northeast-southwest direction and is flanked on either side by older metavolcanic units. The northwest side is composed of basic rocks of amphibolite and amphibolite schist composition while the southeast flank is a more acidic rhyolite. Iron formations are found nearby along faults trending north-northeast and southeast.

HISTORY OF DEVELOPMENT:

June 1971: Electromagnetic survey done by Falconbridge Nickel Mines Ltd.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2127, 1 inch to 1/2 mile (1:31,680) 1967
ODM Map P.223, 1 inch to 1/2 mile (1:31,680) 1964
ODM Map 2065, 1 inch to 4 miles (1:253,440) 1965

SELECTED REFERENCE: MINSY File 50713400

NAME: NORTHERN LIGHT LAKE (SOUTHEAST BAY TALC DEPOSIT) talc, sps

COMMODITIES: Talc, soapstone

STATUS: Minor Occurrence

NTS: 52B/7SE

DESCRIPTION: Listed under SOAPSTONE - Northern Light Lake (Southeast Bay Talc Deposit)

NAME: MILK LAKE TALC DEPOSIT talc, sps

COMMODITIES: Talc, soapstone

STATUS: Minor Occurrence

NTS: 52B/13SW

DESCRIPTION: Listed under SOAPSTONE - Milk Lake Talc Deposit

NTS 52C

(Minor Occurrence) ap, rt, il

COMMODITIES: Apatite, rutile, ilmenite

STATUS: Minor Occurrence

TOWNSHIP: Halkirk

NTS: 52C/11NE

LATITUDE: 48° 41' 28"N LONGITUDE: 93° 02' 46"W

LOCATION: Northeast of Swell Bay in the southwestern part of the township.

DESCRIPTION:

GEOLOGY: "The oldest rocks in the area are a volcanic-sedimentary sequence which has been injected by sills of gabbro and related mafic rocks. An igneous complex of porphyritic quartz monzonite and mafic rocks...cuts the metasediments and metavolcanics. This igneous complex is in turn cut by granitic stocks and sills. Dikes of diabase and lamprophyre cut the granite and are the youngest rocks in the area." (Harris 1974, p.5).

MINERALOGY: Ilmenite and magnetite are disseminated in trace amounts throughout a 16 mile long oxide-bearing gabbro sill. The sill ranges from 300 - 3,000 feet in width and the mineralization is commonly present in amounts ranging from 5 to 15 percent.

Coarse apatite has also been observed at this location.

"An oxide phase is concentrated in a narrow discontinuous zone 200 to 800 feet south of the northern contact of the sill." This zone "strikes N75°E, is vertical, and consists of discontinuous bands of massive and disseminated ilmenite and magnetite.... The massive ilmenite and magnetite are usually accompanied by disseminated oxides on one or both sides, but in some areas the massive oxides are in sharp contact with the gabbro. In other areas along the oxide-bearing zone, there is only disseminated ilmenite and magnetite." (Harris 1974, p.28,79).

REMARKS: "An unusual characteristic of the ilmenite is its high magnetic property. Rose (1969) believes that this unusual magnetism is caused by the twinned character of the ilmenite, by the ferric oxide, and by the intergrowths of magnetite. This means that magnetic separation of the magnetite and ilmenite is impossible (Rose 1969)." (Harris 1974, p.79).

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974

SELECTED REFERENCES: ODM GR 115, p. 5,28,79 (1974)
CDEMR,GSC Econ. Geol. Series No. 25, p. 121-125 (1969)

NAME: JACKFISH LAKE (H. VINALL GROUP) Cu, Bi (bm, cp, mag, py)

COMMODITIES: Copper, bismuth (bismuthinite, chalcopyrite, magnetite, pyrite)

STATUS: Minor Occurrence

NTS: 52C/13NE

LATITUDE: 48° 58' 30"N LONGITUDE: 93° 36' 12"W

LOCATION: North end of the northeast arm of Jackfish Lake. About 27 miles north of Fort Frances.

DESCRIPTION:

GEOLOGY: The predominant rock type is a massive granodiorite that contains frequent small inclusions of greenstone. The granitic rock varies between massive hornblende granite and granodiorite. Small lamprophyre and pegmatite dikes sometimes intrude the granitic rocks. The schlieren in the granitic rock types trend in a N50°E direction. (Blackburn 1976, p.54).

MINERALOGY: A pit 8 feet wide by 12 feet long and 8 feet deep was sunk on the sulphide zone of the main showing. A pyrite zone about 8 feet wide was encountered at the bottom of the pit. The zone extends for about 180 feet along the contact of the granite and the amphibolite and narrows down to a zone of scattered pyrite that averages about 3 feet in width on the surface.

"The pyrite mineralization occurs in a fracture zone.... It strikes North 50 degrees East and dips to the East at 60 degrees. Blue quartz stringers several inches in width are associated with the mineralization. The

sulphides appear to occupy joint planes in the amphibolite and fractures along the contact. They replace both the amphibolite and the granitic wall rock. In places scattered pyrite spreads outward into the amphibolite for a distance of 15 feet from the contact.

"The mineralization consists of pyrite mainly with minor chalcopyrite, pyrrhotite and magnetite. A narrow seam of bismuthinite was also reported in the east wall of the pit.... The gangue material is quartz and altered amphibolite.

"The amphibolite has been altered to epidote and chlorite near the sulphide zone. To the east of the main pit a few feet, a flat 6 inch white quartz vein is exposed which contains frequent coarse crystals of pyrite and occasional inch long crystals of bismuthinite. These occur in small vugs in the quartz and are associated with a small amount of pink orthoclase. The pyrite and bismuthinite occupy less than 10% of the volume of the vein. A small pegmatite veinlet with large quartz and orthoclase crystals occurs near the quartz vein." (Resident Geologist's Files, Kenora).

HISTORY OF DEVELOPMENT: 1938 - 1944: The property was prospected for gold.

CHEMICAL ANALYSIS: "Grab samples of the well mineralized material taken by H. Vinall were reported to have given assays as follows.

"Surface sample, 0.5% copper; sample at a depth of 4 feet, 0.96% copper; sample at a depth of 8 feet, 4.68% copper. Two grab samples of well mineralized material were taken by the writer. The blue quartz vein material assayed 0.01 oz. of gold per ton, copper 0.59%. A sample of massive sulphides containing considerable black magnetite oxidation product assayed the same in copper and gold. A trace of nickel was also obtained in the samples....

"A grab sample of the mineralized quartz vein taken by the writer gave an assay of 1.53% bismuth. This sample represented the best mineralized portion of the vein exposed.

"The flat vein containing the bismuthinite pinched out in a few feet and appeared to emanate from the sulphide zone in the pit as a tension crack.

"An assay of 0.50 oz. per ton in silver was reported from a lamprophyre dike along the west boundary of claim FF3356." (Resident Geologist's Files, Kenora).

"The sulphide deposit appears to be a replacement type occurring at the contact of a granodiorite mass and a small roof pendant remnant of earlier volcanic rock. The possible width of the greenstone remnant would be a maximum of 400 feet before it is cut off by the granodiorite masses on the east and west sides. This suggests that contact conditions would not extend to any great depth and limits the size of any deposit associated with the contacts. Nothing is known of the length of the favourable greenstone beyond the exposed outcrop due to the heavy overburden on the valley floor.

"The values obtained in copper, nickel and gold so far are insufficient to warrant any heavy expenditure in opening up the deposit any further. The bismuthinite mineralization appears to be erratic, and confined to narrow stringers." (Resident Geologist's Files, Kenora).

MAP REFERENCES:
OGS Map P.1523 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.742, 1 inch to 1/2 mile (1:31,680) 1972
ODM Map 2325, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2148, 1 inch to 25 miles (1:1,584,000) 1968
ODM Map P.309, 1 inch to 2 miles (1:126,720) 1965
ODM Map P.293, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Jackfish Lake: District Rainy River, Lat. 48°45', Long. 93°30'
Resident Geologist's Files, OMNR, Kenora: File 52C/13NE A-1.
ODM GR 140, p. 53-55 (1976)
ODM MRC 12, p. 225 (1969)

NAME: FORT FRANCES clay

COMMODITY: Clay

STATUS: Minor Occurrence

TOWNSHIP: McIrvine

NTS: 52C/11SW

LATITUDE: 48° 36' 00"N LONGITUDE: 93° 26' 00"W

LOCATION: Samples were taken from a bank on the south side of Highway 11 at the west end of Fort Frances.

DESCRIPTION: "Varved clays are widespread in Northwestern Ontario, as a result of a succession of post-glacial lakes in the Lake Superior basin, and Lake Agassiz in the west.... The glacial ice commenced its withdrawal from the Lake Superior basin about the same time as the formation of early Lake Agassiz....

"Non-varved stoneless clays were deposited from some of the later lakes, and more recent stratified clays have originated by reworking of earlier ones, including tills, and redeposition on recent flood plains" (Guillet 1977, p.101).

"Five metres (15 feet) of till, not excessively stony, is exposed at the top of a sand and gravel pit.... A 12 - 15 m (40 - 50 feet) thickness of stratified sand and gravel is exposed beneath the till. Two samples of the till were taken as follows.

"The top 1.5 m (5 feet) consists of a massive dark, olive-grey till, mottled with blue and rusty brown, containing a low to moderate number of limestone particles about 0.3 cm (1/8 inch) in size.

"The underlying 1.5 m (5 feet) is similar tough, blocky till, but containing more numerous stones averaging 0.6 cm (1/4 inch) with a maximum of 2.5 cm (1 inch). Stoniness increases with depth." (Guillet 1977, p.114).

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2358 (1:2,000,000) 1976

SELECTED REFERENCES: OGS MDC 15, p. 101,114 (1977)
ODM IMR 22, p. 119-123 (1967)

NAME: EMO clay

COMMODITY: Clay

STATUS: Minor Occurrence

TOWNSHIP: Lash

NTS: 52C/12NW

LATITUDE: 48° 38' 00"N LONGITUDE: 93° 50' 00"W

LOCATION: Sample was taken from a roadside bank on Highway 602 on the south side of Emo about 1,000 feet south of the railway.

DESCRIPTION:
"Much of the terrain between Rainy River and Emo is a flat clay plain made more conspicuous by the numerous small yellow-white subangular limestone pebbles on its surface." (Guillet 1977, p.113).

The upper metre (3 feet) of a 3 metre (10 feet) clay section was accessible. It consists of alternating layers of yellow-brown silty clay 2.5 - 5 cm (1 - 2 inches) thick, and smooth grey clay up to 0.6 cm (1/4 inch) thick.

Upon firing, the clay becomes tan to cream-buff to buff in colour and the hardness varies from soft to almost hard with temperatures of 1660°F, 1840°F and 1980°F respectively.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2358 (1:2,000,000) 1976

SELECTED REFERENCES: OGS MDC 15, p. 113 (1977)
ODM IMR 22, p. 119-123 (1967)

NAME: GLENORCHY clay

COMMODITY: Clay

STATUS: Minor Occurrence

NTS: 52C/16SW

LATITUDE: 48° 45' 00"N LONGITUDE: 92° 28' 00"W

LOCATION: Near Highway 11, about 80 km (50 miles) east of Fort Frances.

DESCRIPTION: "Varved clays are widespread in Northwestern Ontario, as a result of a succession of post-glacial lakes in the Lake Superior basin, and Lake Agassiz in the west.... The glacial ice commenced its withdrawal from the Lake Superior basin about the same time as the formation of early Lake Agassiz....

"Non-varved stoneless clays were deposited from some of the later lakes, and more recent stratified clays have originated by reworking of earlier ones, including tills, and redeposition on recent flood plains" (Guillet 1977, p.101).

Buff coloured clay upon firing at 1660°F, 1840°F and 1980°F turns from a pale salmon-to salmon-to a red-brown in colour. It is a smooth textured and attractive clay with hardness varying from fairly soft to steel hard.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2358 (1:2,000,000) 1976

SELECTED REFERENCES: OGS MDR 15, p. 101-107,114 (1977)
ODM IMR 22, p. 119-123 (1967)

NAME: REEF POINT OCCURRENCE py, po gf, cp

COMMODITIES: Pyrite, pyrrhotite, graphite, chalcopyrite (sulphides)

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NW

LATITUDE: 48° 41' 55"N LONGITUDE: 93° 16' 31"W

LOCATION: About 8 miles northeast of Fort Frances, in the west-central portion of the township. Lot 38, Concession II (north range). The sulphide zone is on the south side of a swamp, 600 feet east of the western end of Reef Point, about the middle of the peninsula.

DESCRIPTION:
GEOLOGY: "The oldest rocks in the area are a volcanic-sedimentary sequence which has been injected by sills of gabbro and related mafic rocks. An igneous complex of porphyritic quartz monzonite and mafic rocks...cuts the metasediments and metavolcanics. This igneous complex is in turn cut by granitic stocks and sills. Dikes of diabase and lamprophyre cut the granite and are the youngest rocks in the area." (Harris 1974, p.5).

A 20-foot zone of massive sulphides in an Early Precambrian iron formation strikes N95°E and dips 83°N. The deposit is in contact to the south with pillow lava which is cut by a few narrow granitic dikes. A limeation on the planes of foliation in the pillow lava plunges 60 degrees to the east.

MINERALOGY: The mineralized zone contains fine- to medium-grained massive pyrite and pyrrhotite and small amounts of graphite. It is cut by a few veins of chalcopyrite.

Samples assayed 0.09 percent copper, a trace of nickel and a trace of zinc.

HISTORY OF DEVELOPMENT:

1959: Dip needle survey, electromagnetic survey and a pit 30 x 20 x 5 feet was put down.

1960: Three diamond drill holes totalling 546 feet were drilled by M. Hupchuk.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.522, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Reef Point, District Rainy River, Township Watten.
ODM GR 115, p. 76-77 (1974)

NAME: YOUNG PROPERTY py, cp, gf

COMMODITIES: Pyrite, chalcopyrite, graphite

STATUS: Major Occurrence

NTS: 52C/16SW

LATITUDE: 48° 45' 36"N LONGITUDE: 92° 19' 48"W

LOCATION: Approximately 1.5 miles northeast of Glenorchy Station on the C.N.R. line.

DESCRIPTION:

GEOLOGY: The area is underlain by Early Precambrian rocks. The entire claim group lies within a basic gabbro or diorite stock which, in most places, is sheared and altered to hornblende and chlorite schists. To the north of the group lies biotite schist and to the south andesite. The trend of the strike of the formation is northwest with the diorite enclosed in a trough.

Lenses of pyrite from 10 - 60 feet thick extending up to 2,000 feet in a northwest direction are present. They cut chlorite schist.

MINERALOGY: Graphite and chalcopyrite are associated with pyrite in the deposit. Low grade copper mineralization has been found, however, the most outstanding mineral occurrence is a pyrite-pyrrhotite sulphide zone which was intersected in drilling. The sulphide zone has a strike length of about 2,550 feet and an average thickness of 50 feet.

HISTORY OF DEVELOPMENT: 1958: Geophysical survey and diamond drilling by Noranda Mines.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.293, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Young, District Rainy River, Lat. 48°45', Long. 92°15'
OGS Toronto AFRO File 52C/16SW
ODM MRC 5, p. 47 (1967)

NAME: WISA LAKE Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

NTS: 52C/8NE

LATITUDE: 48° 25' 15"N LONGITUDE: 92° 14' 10"W

LOCATION: About 1 mile south of Wisa Lake and 4 miles north of Lac La Croix.

DESCRIPTION: Several spodumene-bearing dikes cutting metasedimentary rocks are found in the area. Alteration of the spodumene to yellowish brittle mica is noticed on the surface of the dikes. "A" core and packsack diamond drilling indicated 330 tons of material, grading 1.15 percent lithium oxide, in several structures over a strike length of 1,100 feet, to a depth of 200 feet.

HISTORY OF DEVELOPMENT: 1956: Lexindindin Gold Mines (Norlox Mines Limited) completed 5,620 feet of "A" core and 431 feet of packsack diamond drilling on a property of 77 claims.

SELECTED REFERENCES: CDMTS,GSC Econ. Geol. Rept. No. 21, p. 66 (1965)
OGS Toronto Geoscience Data Centre, File Wisa Lake, District Rainy River, Lat. 48°15', Long. 92°15'

NAME: RYAN, R.A.H. PROSPECT (SEINE BAY PROSPECT) Zn, mag, il (Fe, Ti, V)

COMMODITIES: Zinc, magnetite, ilmenite (Iron, titanium, vanadium)

STATUS: Minor Occurrence

NTS: 52C/10NW

LATITUDE: 48° 39' 53"N LONGITUDE: 92° 57' 04"W

LOCATION: Northern shore of Seine Bay, east of Wind Bay.

DESCRIPTION:

GEOLOGY: "The titaniferous magnetite is associated with a sill-like or tongue-like body of gabbroic and anorthositic rocks that is intrusive into the older Keewatin-type greenstone, schists, and metasediments. The gabbro anorthosite is in turn intruded by younger granitic rocks that may be related in part to the anorthositic body or co-magmatic with it....

"The titaniferous magnetite occurs in a series of nearly vertical, elongated lenses or intermittent bands of both high- and low-grade material mainly within the western part of the gabbroic member of the intrusive body." (Rose 1969, p.122).

The mineralization is in a mafic sill which is made up of medium-grained gabbro, coarse-grained anorthositic gabbro, and fine-grained gabbro dikes. The sill is 7 miles long and ranges from 300-3,000 feet in width.

MINERALOGY: The oxide zone strikes N75°E, is vertical, and consists of discontinuous bands of massive and disseminated ilmenite and magnetite... massive bands containing from 65 to 95 percent oxides are up to 10 feet wide. The massive ilmenite and magnetite are usually accompanied by disseminated oxides on one or both sides, but in some areas the massive oxides are in sharp contact with the gabbro. In other areas along the oxide-bearing zone, there is only disseminated ilmenite and magnetite.

"The massive mineralization consists of equant-granular subhedral grains of oxide, averaging 1.5 mm in diameter, set in a fine-grained chloritic matrix. The oxide minerals may made up to 35 percent of the rock.

"An examination of thin sections and polished surfaces by Rose (1969) revealed that ilmenite was the predominant oxide mineral along with some magnetite and a few grains of pyrrhotite and pyrite. The magnetite is usually intergrown with the ilmenite." (Harris 1974, p.79).

HISTORY OF DEVELOPMENT:

1911: Trenching and diamond drilling were done.

1917: A magnetometer survey was done by the Ottawa Mines Branch and 3 diamond drill holes were put down by W.L. Goodwin.

1918: 275 pounds of the ore were sent to the Ottawa Mines Branch for a feasibility study.

1919: A process was developed for smelting titaniferous ore using silica or sand as flux and recovering vanadium.

1956, 1957: Geological and magnetometer survey was carried out by Stratmat Limited and a detailed geological map was made.

REMARKS: The west zone is estimated to contain 22,000 tons per vertical foot of disseminated and massive material averaging 45.1 percent TiO_2 and Fe.

"At the present time, there are two problems with the economic development of these titaniferous magnetite deposits. Firstly, the difficulty in reducing the titanium content by magnetic methods. Secondly, the narrow widths and vertical attitudes of the titaniferous magnetite zone make it unsuitable for an open-pit operation." (Harris 1974, p.79).

MAP REFERENCES:
OGS Map P.1523 (1:250,000) 1978
ODM Map 2279, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.586-587, 1 inch to 1/4 mile (1:15,840) 1970
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Kenora:
File Seine Bay
OGS Toronto Geoscience Data Centre, File Seine Bay, District Rainy River, Township Halkirk
ODM GR 115, p. 78-79 (1974)
CDEMR,GSC Econ. Geol. Series No. 25, p. 121-125 (1969)
CDM,MB No. 579, p. 84 (1922)
CDM,GS Mem. 40 (1913)
OGS Toronto AFRO File 63A.307
ODM MRC 11, p. 295-296 (1968)
The Northern Miner, Feb. 1972, p. 15

NAME: SEINE BAY PROSPECT (CENTRAL ZONE) mag, il, (Fe, Ti, V)

COMMODITIES: Magnetite, ilmenite, (iron, titanium, vanadium)

STATUS: Minor Occurrences

TOWNSHIP: Halkirk and Farrington

NTS: 52C/10NW

LATITUDE: 48° 40' 03"N LONGITUDE: 92° 55' 15"W
48° 40' 04" 92° 54' 55"
48° 40' 42" 92° 51' 14"

LOCATION: Along the north shore of Seine Bay including the southern parts of the townships.

DESCRIPTION: See RYAN, R.A.H. PROSPECT for GEOLOGY, MINERALOGY, HISTORY OF DEVELOPMENT, REMARKS, MAP REFERENCES and SELECTED REFERENCES,p.85.

NAME: ROCKY ISLET BAY PROSPECT (STRATMAT DEPOSIT) po, py, mag, cp

COMMODITIES: Pyrrhotite, pyrite, magnetite, chalcopyrite

STATUS: Minor Occurrences

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 42' 45"N LONGITUDE: 93° 11' 30"W
48° 42' 42" 93° 11' 28"

LOCATION: On the northwest shore of Rocky Islet Bay.

MAP REFERENCES:
OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.522, 1 inch to 1/4 mile (1:15,840) 1969

NAME: SIMS STATION PROPERTY py, mag, po, cp

COMMODITIES: Pyrite, magnetite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 41' 02"N LONGITUDE: 93° 08' 40"W
48° 40' 53" 93° 09' 38"

LOCATION: Eastern and western shores of Grassy Portage Bay Narrows.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969

(Minor Occurrence) py, mag

COMMODITIES: Pyrite, magnetite

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 41' 25"N LONGITUDE: 93° 06' 35"W

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969

NAME: YOUNG, A.F. py, cp, mag

COMMODITIES: Pyrite, chalcopyrite, magnetite

STATUS: Minor Occurrences

TOWNSHIP: Potts

NTS: 52C/13NW

LATITUDE: 48° 52' 51"N LONGITUDE: 93° 50' 11"W
48° 53' 55" 93° 50' 13"

LOCATION: Drill holes were put down approximately 1/4 mile (0.4 km) southeast of Off Lake and also on the west shore of the lake, just north of narrows at the lake's southern end.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODMNA Map P.742, 1 inch to 1/2 mile (1:31,680) 1972

NAME: JACKFISH LAKE (H. VANALL GROUP) Cu, Bi, (bm, cp, mag, py)

COMMODITIES: Copper, bismuth (bismuthinite, chalcopyrite, magnetite, pyrite)

STATUS: Minor Occurrence

NTS: 52C/13NE

DESCRIPTION: Listed under BISMUTH - Jackfish Lake (H. Vanall Group)

NAME: PINEWOOD PEAT INDUSTRIES peat

COMMODITY: Peat

STATUS: Past Producer

TOWNSHIP: Carpenter

NTS: 52C/12NW

LATITUDE: 48° 42' 10"N LONGITUDE: 93° 46' 55"W

LOCATION: North half of the township in the western part of Lot 6 and eastern part of Lot 7, Concession IV.

DESCRIPTION: The bog is covered with sphagnum moss, labrador tea and grass. Scattered over the area are 1 to 2 inch diameter scrub spruce. Sampling indicated that the depth is over 16 feet.

"An examination of old diggings...showed a depth of 3 feet of brown moss containing 25 per cent roots which were up to 1/5 inch in diameter. The moss contains 20 per cent reed and sedge, the latter being somewhat humified and occurring in layers; the layers are up to 1/10 inch thick separated by 1/2 inch to several inches of sphagnum moss. This layering continues to a depth of between 8 and 9 feet, after which the moss is increasingly humified. Roots are abundant throughout." (Graham and Tibbetts 1969, p.54).

"The peat east of the north-south road and north of the creek on the west side of the road, to a depth of from 3 to 8 feet, is light brown to yellowish brown, slightly humified sphagnum moss containing 10 to 20 per cent reeds and fine fibrous rootlets. The area south of the creek is more humified.

"Roots up to 2 inches in diameter are scattered throughout. Along the ditch there is a greater concentration of roots at a depth of 5 feet than at lesser depths. There are fewer roots east of the road than west. The roots are not present in sufficient quantity to hinder sampling as was the case in other bogs." (Graham and Tibbetts 1969, p.58).

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES: CDMTS,MB Tech. Bull. 65, p. 53-57 (1965)

NAME: ARCTIC PEAT MOSS CORPORATION LTD. peat

COMMODITY: Peat

STATUS: Past Producer

TOWNSHIP: Crozier

NTS: 52C/12SE

LATITUDE: 48° 34' 36"N LONGITUDE: 93° 33' 10"W

LOCATION: Section 7 and 8 of township. Approximately 9 miles southwest of Fort Frances.

DESCRIPTION: "The bog is typical of others in the area in that it has a surface growth of sphagnum moss and labrador tea...spruce and tamarack shrubs up to 1 inch in diameter at the stump are sparsely distributed throughout...scattered poplar bush and birch are present...grass occurs with the sphagnum moss and a scattered growth of scrub spruce is present.

"The nature of the peat varies from place to place; there are many roots throughout. The southern and eastern parts contain mainly humified peat, while in the northern and western parts medium brown, relatively unhumified sphagnum moss, with a high proportion of grasses and sedge is present. On drying, the material has a tendency to be brittle and dusty.

"The least humified material occupies an area of approximately 270 acres, with an average depth of 3 to 4 feet and a maximum depth of 9 feet." (Graham and Tibbetts 1965, p.29,31).

"The peat moss stratum has a depth of 4 feet, is light brown, and at the lower level is intermixed with roots of trees and undecomposed woody material. The moss is composed mainly of sphagnum with some hypnum, and there are smaller quantities of carex and aquatic plant residues." (Severin 1946, p.72).

ANALYSES OF SAMPLES:

Sample From	Absorptive Value Dry	Absorptive Value At 25% Moisture	Ash %, Dry	Nitrogen %, Dry
Working face, west end bog	10.1	7.3	6.2	1.3
Poultry litter, average runs	12.2	8.9	6.1	1.3
Peat mull	14.2	10.4	5.0	1.1

HISTORY OF DEVELOPMENT:

1942: Bog was brought into production by Arctic Peat Moss Corporation Ltd.

1945: The baling mill was burned.

1949: The operations were resumed.

1952: Operations ceased.

REMARKS: From 1941 - 1952, the Arctic Peat Moss Corporation Ltd. produced 17,168 tons (15,575 metric tons) of peat moss valued at $596,090.00.

"The bog is favourably located with respect to transportation and supplies. Three-phase hydroelectric power is obtainable at Fort Frances. While in general the sphagnum moss contains many roots and is somewhat inferior in quality to that presently marketed, some areas appear to have sufficient good moss to permit limited production. The most favourable from this viewpoint is an area of 270 acres in Sections 17 and 18." (Graham and Tibbetts 1965, p.34).

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2263, 1 inch to 1 mile (1:63,360) 1973
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.286, 1 inch to 1 mile (1:63,360) 1965

SELECTED REFERENCES: ODM GR 107, p. 28-30 (1973)
CDMTS,MB Tech. Bull. 65, p. 29-36 (1965)
CDMR,BM No. 817, p. 72-73 (1947)

NAME: LAKATOS, S. and COUSINEAU, L. Mo, py

COMMODITIES: Molybdenite, pyrite

STATUS: Minor Occurrence

TOWNSHIP: Halkirk

NTS: 52C/10NW

LATITUDE: 48° 42' 08"N LONGITUDE: 92° 59' 23"W

LOCATION: Pit is located 1500 feet north of Highway 11 just east of Bear Passage.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2279, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.586, 1 inch to 1/4 mile (1:15,840) 1970

NAME: AINLEY, L.T. (NICKEL LAKE MINING CO. LTD.) po, py, cp

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite

STATUS: Major Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 49° 41' 40"N LONGITUDE: 93° 05' 17"W

LOCATION: Main shaft is on southern shore of Nickel Lake.

DESCRIPTION:

GEOLOGY: "A band of sulphide iron formation and associated recrystallized chert and shale, approximately 150 feet wide, is intermittently exposed along the southern, eastern, and northeastern shores of Nickel Lake. This band of magnetite, sulphide minerals, and metasediments is folded into a syncline, which has its apex at the eastern end of Nickel Lake, and plunges westerly at approximately 20 degrees. Medium-grained hornblende gabbro sills which have also been folded into the syncline are exposed on either side of the mineralized band.

"Along the south shore of Nickel Lake, the mineralized zone consists of narrow bands of magnetite-bearing iron formation, which are intercalated with actinolite schist and minor amounts of slate. The mineralization ranges from 100 percent magnetite to 100 percent sulphide minerals and consists of pyrrhotite, pyrite, and trace amounts of chalcopyrite.

"The shaft put down by the Nickel Lake Mining Company Limited is just south of a zone of magnetite-chert iron formation. An examination of the dump material indicates that the shaft and crosscut encountered massive sulphide minerals. The sulphide minerals identified are pyrite, pyrrhotite, and minor amounts of chalcopyrite....

"There is a banded magnetite-chert iron formation along the northeastern side of Nickel Lake. The widest zone... is 3,500 feet north-northwest of the shaft. The zone is 25 feet wide, contains an estimated 35 percent magnetite, and was traced 200 feet along a strike to the east, where it is cut off by intrusive hornblende gabbro." (Harris 1974, p.45).

MINERALOGY: "The samples examined from the dump consist of massive granular pyrite with a grain size of 1 mm to 2 mm and massive pyrrhotite with minor amounts of pyrite and chalcopyrite. Some of the pyrrhotite is in the form of veins which cut and contain inclusions of graphitic argillite. In examining polished sections of the sulphide minerals, Bannerman (1928) noticed that the pyrite is cut by the pyrrhotite. He also reported that the chalcopyrite and sphalerite are always associated with pyrrhotite. Two grab samples from the dump and analyzed by the Mineral Research Branch of the Ontario Division of Mines, have only a trace of copper and a trace of nickel." (Harris 1974, p.45).

HISTORY OF DEVELOPMENT:

1902: Exploratory diamond drilling was done.

1918 - 1919: Vertical shaft sunk to a depth of 75 feet and 35 feet of crosscutting was done.

REMARKS: "None of the iron range examined can be called marketable ore, though some parts of it strongly charged with magnetite are quite heavy; but the finding of so much of the iron range here suggests that secondary ore deposits may be looked for somewhere in the region." (Coleman 1902, p.135).

"J.E. Gill (1951) visited the Nickel Lake sulphide mineralization deposit in 1951. His conclusions were that the sulphide mineral deposits along the south shore of Nickel Lake were too low-grade to be of economic importance, but they might be near more important deposits. He considered that areas near the axis of the syncline would be most attractive for further exploration." (Harris 1974, p.45).

MAP REFERENCES:
OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES:
ODM MRC 11, p. 306-307 (1968)
Resident Geologist's Files, OMNR, Kenora: Nickel Lake Report.
OGS Toronto Geoscience Data Centre, File Nickel Lake Mining Co. Ltd., District Rainy River, Township Watten.
ODM MRC 5, p. 42,44 (1967)
CDMTS,MB Mem. 118, p. 114 (1952)
ODM Vol. 29, pt. 1, p. 67-68 (1920)
ODM Vol. 11, p. 134-135 (1902)

NAME: MOOSEHORN LAKE OCCURRENCE (NORANDA MINES LTD.) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 41' 43"N LONGITUDE: 93° 09' 00"W

LOCATION: Claims straddle Highway 11, 4,000 feet northwest of Moosehorn Lake.

MAP REFERENCES:
OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969

NAME: MORRISON, F. (WALLACE CLAIMS) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 41' 12"N LONGITUDE: 93° 07' 50"W

LOCATION: South of Moosehorn Lake, Nickel Creek flows through the claims and a north-south trending pit is on the south side of the creek.

MAP REFERENCES:
OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969

NAME: MURRAY, M.W. (BRUNETTE CLAIMS) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 41' 08"N LONGITUDE: 93° 11' 47"W

LOCATION: North side of Commissioners Bay, approximately 1 mile southwest of the west end of Highway 11 bridge at Rocky Bay Islet.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.522, 1 inch to 1/4 mile (1:15,840) 1969

NAME: PARAMAQUE MINES LTD. py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 49° 42' 30"N LONGITUDE: 93° 05' 19"W

LOCATION: Eastern edge of township, south of Highway 11.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969

NAME: REEF POINT OCCURRENCE py, po gf, cp

COMMODITIES: Pyrite, pyrrhotite, graphite chalcopyrite (sulphides)

STATUS: Minor Occurrence

NTS: 52C/11NW

DESCRIPTION: Listed under GRAPHITE - Reef Point Occurrence

NAME: ROCKY ISLET BAY PROSPECT (STRATMAT DEPOSIT) po, py, mag, cp

COMMODITIES: Pyrrhotite, pyrite, magnetite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52C/11NE

DESCRIPTION: Listed under MAGNETITE - Ricky Islet Bay Prospect (Stratmat Deposit)

NAME: SIMS STATION PROPERTY — py, mag, po, cp

COMMODITIES: Pyrite, magnetite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52C/11NE

DESCRIPTION: Listed under MAGNETITE - Sims Station Property

NAME: WEISS COOPER (EAST BRUDON GROUP) — po, py, cp

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NE

LATITUDE: 48° 42' 08"N LONGITUDE: 93° 05' 14"W

LOCATION: Approximately east of Nickel Lake and halfway to the eastern boundary of the township.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.523, 1 inch to 1/4 mile (1:15,840) 1969

(Minor Occurrence) (1) — py, mag

COMMODITIES: Pyrite, magnetite

STATUS: Minor Occurrence

NTS: 52C/11NE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrence) (1)

NAME: NORANDA EXPLORATION COMPANY LTD. (1968) — py, cp

COMMODITIES: Pyrite, chalcopyrite

STATUS: Minor Occurrences

TOWNSHIP: Senn

NTS: 52C/13NW

LATITUDE: 48° 54' 50"N LONGITUDE: 93° 49' 35"W
48° 55' 10" 93° 49' 12"

LOCATION: North of Off Lake about 2 miles northeast of Finland, on Highway 615.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2325, 1 inch to 1 mile (1:63,360) 1975

NAME: YOUNG, A.F. py, cp, mag

COMMODITIES: Pyrite, chalcopyrite, magnetite

STATUS: Minor Occurrences

NTS: 52C/13NW

DESCRIPTION: Listed under MAGNETITE - Young, A.F.

NAME: JACKFISH LAKE (H. VINALL GROUP) Cu, Bi (bm, cp, mag, py)

COMMODITIES: Copper, bismuth (bismuthinite, chalcopyrite, magnetite, pyrite)

STATUS: Minor Occurrence

NTS: 52C/13NE

DESCRIPTION: Listed under BISMUTH - Jackfish Lake (H. Vinall Group)

NAME: YOUNG PROPERTY py, cp, gf

COMMODITIES: Pyrite, chalcopyrite, graphite

STATUS: Major Occurrence

NTS: 52C/16SW

DESCRIPTION: Listed under GRAPHITE - Young Property

(Minor Occurrence) (1) ap, rt, il

COMMODITIES: Apatite, rutile, ilmenite

STATUS: Minor Occurrence

NTS: 52C/11NE

DESCRIPTION: Listed under APATITE - (Minor Occurrence)

NAME: SEINE RIVER OCCURRENCE talc (sps)

COMMODITY: Talc (soapstone)

STATUS: Minor Occurrence

NTS: 52C/15SE

LATITUDE: 48° 46' 24"N LONGITUDE: 92° 38' 06"W

LOCATION: On southeast shore of Little Turtle Lake, approximately 1 mile west of Mine Centre Railway Station.

DESCRIPTION:

GEOLOGY: "The oldest rocks in the area are a volcanic-sedimentary sequence which has been injected by sills of gabbro and related mafic rocks. An igneous complex of porphyritic quartz monzonite and mafic rocks... cuts the metasediments and metavolcanics. This igneous complex is in turn cut by granitic stocks and sills. Dikes of diabase and lamprophyre cut the granite and are the youngest rocks in the area." (Harris 1974, p.5).

The showing occurs in beds ranging in width from 10 - 25 feet and exposed for 300 - 600 feet. The rock is soft, fine-grained and consists of schistose stone, containing small crumpled aplite dikes.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.293, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: ODMNA IMR 40, p. 49 (1972)
CDMR,BM No. 803, p. 67 (1940)
CDM,GS Econ. Geol. Series No. 2, p. 66 (1926)
ODM GR 115, p. 5 (1974)

(Minor Occurrence) st

COMMODITY: Stone

STATUS: Minor Occurrence

TOWNSHIP: Watten

NTS: 52C/11NW

LATITUDE: 48° 39' 45"N LONGITUDE: 93° 16' 45"W

LOCATION: Quarry cuts across Highway 11 on Lobstick Island.

DESCRIPTION:

GEOLOGY: "The oldest rocks in the area are a volcanic-sedimentary sequence which has been injected by sills of gabbro and related mafic rocks. An igneous complex of porphyritic quartz monzonite and mafic rocks.... cuts the metasediments and metavolcanics. This igneous complex is in turn cut by granitic stocks and sills. Dikes of diabase and lamprophyre cut the granite and are the youngest rocks in the area." (Harris 1974, p.5).

The quarry is in what is referred to as the Rocky Islet Bay Complex. It is an intrusive complex that ranges in composition from hornblendite to porphyritic quartz monzonite.

At this location, medium to coarse-grained massive hornblendite is exposed. The hornblendite is estimated to make up less than 2 percent of the mafic rocks in the Complex and is cut by medium-grained diorite.

MINERALOGY: The hornblendite is made up of equant grains of amphibole with minor amounts of biotite, plagioclase, quartz and apatite.

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2278, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.522, 1 inch to 1/4 mile (1:15,840) 1969

SELECTED REFERENCES: ODM GR 115, p. 29-31 (1974)

NAME: SEINE RIVER OCCURRENCE talc (sps)

COMMODITY: Talc (soapstone)

STATUS: Minor Occurrence

NTS: 52C/15SE

DESCRIPTION: Listed under SOAPSTONE - Seine River Occurrence

NAME: RYAN, R.A.H. PROSPECT (SEINE BAY PROSPECT) — Zn, mag, il (Fe, Ti, V)

COMMODITIES: Zinc, magnetite, ilmenite (iron, titanium, vanadium)

STATUS: Minor Occurrence

NTS: 52C/10NW

DESCRIPTION: Listed under MAGNETITE - Ryan, R.A.H. Prospect (Seine Bay Prospect)

NAME: SEINE BAY PROSPECT (CENTRAL ZONE) — mag, il (Fe Ti, V)

COMMODITIES: Magnetite, ilmenite (iron, titanium, vanadium)

STATUS: Minor Occurrences

NTS: 52C/10NW

DESCRIPTION: Listed under MAGNETITE - Seine Bay Prospect (Central Zone)

NAME: BAD VERMILION (SEINE BAY PROSPECT) — Fe, Ti (V)

COMMODITIES: Iron, titanium (vanadium)

STATUS: Minor Occurrence

NTS: 52C/10NE

LATITUDE: 48° 42' 51"N LONGITUDE: 92° 44' 30"W

LOCATION: East of Farrington Township, on west shore of Bad Vermilion Lake.

DESCRIPTION: See RYAN, R.A.H. PROSPECT (SEINE BAY PROSPECT) for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p.85.

NTS 52D

NAME: RAINY RIVER OCCURRENCE — clay

COMMODITY: Clay

STATUS: Minor Occurrence

TOWNSHIP: Curran

NTS: 52D/10NE

LATITUDE: 48° 44' 21"N LONGITUDE: 94° 36' 10"W

LOCATION: Sample was taken from the bank of the Rainy River approximately 1 mile west of the Railway and International bridges.

DESCRIPTION: "Varved clays are widespread in Northwestern Ontario, as a result of a succession of post-glacial lakes in the Lake Superior basin and Lake Agassiz in the west.... The glacial ice commenced its withdrawal from

the Lake Superior basin about the same time as the formation of early Lake Agassiz....

/stage

Non-varved stoneless clays were deposited from some of the later lakes, and more recent stratified clays have originated by reworking of earlier ones, including tills, and redeposition on recent flood plains." (Guillet 1977, p.101).

"A 1.5 m (5 feet) section of stratified clay and sand is exposed near the top of the 4 m (14 feet) bank. Till and lenses of gravel occupy the lower 2 m (8 feet). The 1.5 m (5 feet) sampled section consists of olive-brown silty calcareous clay, drying to buff and mottled with white and rusty patches, interlayered with seams of fine sand. Sand seams contain occasional white clam shells, and rarely pebbles. Roots are fairly common throughout." (Guillet 1977, p.113).

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
OGS Map 2358 (1:2,000,000) 1977

SELECTED REFERENCES: OGS MDC 15, p. 101,113 (1977)

NAME: POLAR BEAR PEAT MOSS peat

COMMODITY: Peat

STATUS: Past Producer

TOWNSHIP: Nelles and Pattullo

NTS: 52D/16SW/SE

LATITUDE: 48° 47' 25"N LONGITUDE: 94° 10' 58"W
48° 48' 20" 94° 15' 03"

LOCATION: Sections 24 and 25 in Nelles Township and sections 19 and 30 in Pattullo Township. Approximately 40 miles northwest of Fort Frances.

DESCRIPTION: The Pinewood Bog occupies an area of about 23 square miles and is opened in four localities. The bog "is slightly dome-shaped and slopes northward towards Pine River and its tributaries. The surface growth is mainly sphagnum moss that is intermixed with hypnum moss and sedges, labrador tea, bog rosemary, and aquatic plants. The bog ranges in depth from 4 to 12 feet. There is plenty of good moss in most parts of the deposit and, by judicious cutting and by avoiding pockets of humified moss, it should be possible to obtain a fair overall grade of commercial peat moss. The stratum of 4 feet being worked consists of a fairly good quality moss, but becomes somewhat more humified at lower levels. Sufficient peat moss is available, however, in the 4-foot stratum to maintain a fairly large production throughout the life of the plant.

About 200 acres have been drained. The main ditch is 2 miles long and runs north and south, and there are thirteen lateral ditches at right angles on both sides of the road, 500 feet apart on the area east of the road and 1,000 feet apart on the area west of the road." (Severin 1943, p.73).

The peat is generally light in weight, elastic, and light brown in colour.

"Laboratory tests carried out on a sample of hand-cut, air-dried sod from the old workings gave the following results:

Absorptive Value		Ash	
Dry	At 25% Moisture	%, Dry	pH
12.5	9.1	3.7	4.5

(Graham & Tibbetts 1965, p.76)

HISTORY OF DEVELOPMENT:

Prior to 1942: Bog was worked by Polar Bear Peat Moss Products Registered. Moss harvested by hand-digging and transported to mill at Pinewood.

1945: The mill burned and operations were transferred to the eastern part of the Carpenter-Dobie bog. During World War II the bog was worked by Jack Briggs.

1962: About 16 acres, just east of the Kishkakoesis River, were worked by a Pinewood co-operative.

REMARKS: "The moss in the area investigated, with proper shredding and screening, would provide a marketable product. Consequently, this bog merits further investigation to determine the actual extent of the unhumified material.

"Power facilities are close. Access is by secondary road; the bridges have an 8-ton load limit. Some modification of road and bridges would probably be required for heavy shipments in the early spring shipping season." (Graham and Tibbetts 1965, p.76).

MAP REFERENCES: OGS Map P.1523 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File
Polar Bear Peat Moss, District Rainy River, Townships Nelles and Pattullo
CDMTS,MB Tech. Bull. 65, p. 73-77 (1965)
CDMR,BM No. 817, p. 73-74 (1946)

NTS 52E

NAME: LABYRINTH BAY OCCURRENCE talc, asb (sps)

COMMODITIES: Talc, asbestos (soapstone)

STATUS: Minor Occurrence

NTS: 52E/10SW

LATITUDE: 49° 36' 30"N LONGITUDE: 94° 49' 40"W

LOCATION: Exposure of serpentine rock is found on northwestern shore of Labyrinth Bay, approximately 19 miles southwest of Kenora.

DESCRIPTION:

GEOLOGY: The bedrock of the area is Precambrian in age and consists of a thick sequence of metavolcanics and metasediments into which ultramafic and mafic, intermediate and felsic rocks have been intruded. This sequence, belonging to the Keewatin, is comprised of two groups, both of which consist of a lower zone of primarily mafic flows, a central zone of intermediate to felsic pyroclastic rocks and an upper zone of sedimentary origin.

East-northeast-trending fold axes are dominant in the area and a major north-east-trending fault is indicated from Machin Point to the west shore of Labyrinth Bay.

Metamorphosed gabbro and peridotite are closely associated in many of the numerous mafic and ultramafic sills in the western part of Labyrinth Bay.

MINERALOGY: According to Davies (1978, p.32), "The peridotite weathers dark brown and is greenish black on the weathered surface. It consisted of equidimensional olivine grains 0.1 to 1.0 mm across which were surrounded by pyroxene and primary amphibole. The olivine has been completely serpentinized and the pyroxene has been chloritized. Magnetite, released during the alteration, is disseminated throughout the rock. Incipient fibrous amphibole is present in the chloritized interstitial material and has also developed in some of the serpentinized olivine.

"The gabbro weathers grey to brownish black, depending on the mafic mineral content. Typically, the original mineralogy comprised euhedral to subhedral pyroxene grains 2 to 5 mm across surrounded by a mesh of tabular labradorite crystals up to 2 mm long in the darker gabbro. In the lighter coloured gabbro the texture is more equigranular. The pyroxene has been largely replaced by green amphibole and some chlorite, and the plagioclase has been partly saussuritized. The fibrous edges of the amphibole which has replaced the pyroxene encroached upon original felsic areas indicating replacement of the plagioclase by the amphibole. Ilmenite is the principal accessory mineral of the gabbros."

MAP REFERENCES: OGS Map P.1531 (1:250,000) 1978
ODM Map P.594, 1 inch to 1/4 mile (1:15,840) 1970

SELECTED REFERENCES: OGS OFR 5242, p. 32 (1978)
ODM PR 1965-2 (1965)
GNHSC Ann. Rept., Vol. 1, 1885, p. 126cc (1886)

(Minor Occurrences) asb

COMMODITY: Asbestos

STATUS: Minor Occurrences

NTS: 52E/10SW

LATITUDE: 49° 36' 30"N LONGITUDE: 94° 50' 10"W
49° 33' 25" 94° 54' 55"

LOCATION: Asbestos fibres have been noted one mile east of Machin Point, Shoal Lake area, and 300 feet northwest of Labyrinth Bay.

DESCRIPTION:
GEOLOGY: The bedrock of the area is Precambrian in age and consists of a thick sequence of metavolcanics and metasediments into which ultramafic and mafic, intermediate and felsic rocks have been intruded. This sequence, belonging to the Keewatin, is comprised of two groups, both of which consist of a lower zone of primarily mafic flows, a central zone of intermediate to felsic pyroclastic rocks and an upper zone of sedimentary origin.

East-northeast-trending fold axes are dominant in the area and a major northwest-trending fault is indicated from Machin Point to the west shore of Labyrinth Bay.

Metamorphosed gabbro and peridotite are closely associated in many of the numerous mafic and ultramafic sills in the western part of Labyrinth Bay and according to Davies (1969), the peridotite contains a little cross-fibre amphibole in places, and rare cross-fibre chrysotile.

According to Davies (1968), "fine-grained serpentinized basalt with narrow veins of cross-fibre asbestos occurs on three islands southeast of Machin Point"; and, later Davies (1978) reports brittle asbestos fibres in altered peridotites one mile east of Machin Point and "the seams in which the fibres occur at each locality are few in number, less than 2 feet (0.6 km) long, and less than 1/4 inch (7 mm) wide."

MINERALOGY: In the western part of Labyrinth Bay, according to Davies (1978,p.32), "The peridotite weathers dark brown and is greenish black on the weathered surface. It consisted of equidimensional olivine grains 0.1 to 1.0 mm across which were surrounded by pyroxene and primary amphibole. The

olivine has been completely serpentinized and the pyroxene has been chloritized. Magnetite, released during the alteration, is disseminated throughout the rock. Incipient fibrous amphibole is present in the chloritized interstitial material and has also developed in some of the serpentinized olivine.

"The gabbro weathers grey to brownish black, depending on the mafic mineral content. Typically, the original mineralogy comprised euhedral to subhedral pyroxene grains 2 to 5 mm across surrounded by a mesh of tabular labradorite crystals up to 2 mm long in the darker gabbro. In the lighter coloured gabbro the texture is more equigranular. The pyroxene has been largely replaced by green amphibole and some chlorite, and the plagioclase has been partly saussuritized. The fibrous edges of the amphibole which has replaced the pyroxene encroached upon original felsic areas indicating replacement of the plagioclase by the amphibole. Ilmenite is the principle accessory mineral of the gabbros."

MAP REFERENCES: OGS Map P.2098, 1 inch to 1/4 mile (1:15,840) 1980
OGS Map P.1531 (1:250,000) 1978
ODM Map P.594, 1 inch to 1/4 mile (1:15,840) 1970
ODM Map P.528, 1 inch to 1/4 mile (1:15,840) 1969

SELECTED REFERENCE: OGS OFR 5242, p. 31-32,125 (1978)

NAME: FALCON ISLAND MINING COMPANY mi, fel, be

COMMODITIES: Mica, feldspar, beryl

STATUS: Minor Occurrences

NTS: 52E/7SW

LATITUDE: 49° 19' 50"N LONGITUDE: 94° 47' 20"W
49° 21' 08" 94° 46' 20"

LOCATION: Pits and trenches are located on Mica Point, southeastern tip of Falcon Island, Lake of the Woods.

DESCRIPTION:

GEOLOGY: Bedrock is Precambrian in age. The southern part of Falcon Island is underlain by a fine crystalline rock in different stages of alteration.

Along the shoreline, the grayish-black rock shows a small degree of schistosity with minute specks of mica on fresh breaks; and, further inland, the rock has a greenish appearance, is more schistose and on a fresh break, the specks of mica are not in evidence and seem to be altered to chlorite. The well-banded schists strike roughly east-west and dip 40° - 50° north. A dike of cream, pink and white feldspar, with some showings of quartz, strikes 45°NW and dips 60°SW for a length of about 1/2 mile. The dike averages 10 feet in width and test pits show it to be 15 feet deep. Mica is found outcropping on the surface and along the contact walls but not in the general mass of the feldspar. Few beryl crystals have been found in the dike.

Outcrops of pyroxenite, containing varying amounts of biotite, feldspar and magnetite, are common about the rim of the island.

MINERALOGY and CHEMICAL ANALYSIS: A number of old pits and trenches expose coarse-grained granite pegmatite from which muscovite and feldspar were taken.

The dike consists mainly of large pink crystals of orthoclase, with some quartz and mica which are intimately associated and, in the section, appear to be segregated in irregular vein-like streaks, in a vertical attitude. Large crystals of mica make up a very small part of the dike and most occur along the contact walls. The crystals from the northeast wall of Pit 2 are of good quality with good splitting properties. Trimmed sheets would range from 1 inch by 2 inches up to 16 inches by 18 inches. The mica is clear, unstained, free from iron and other blemishes and is considered suitable for electrical insulation. Some of this mica, taken out in the 1880's proved to stand fire well by practical use in some coal stoves in Rat Portage.

Chemical analysis of the feldspar indicates it to be of commercial quality:

Loss on ignition	.10
Silica	63.41
Aluminum Oxide	19.51
Iron Oxide	.10
Magnesium Oxide	.88
Potassium Oxide	12.77
Sodium Oxide	2.33
	99.00

Fusion tests on this feldspar compared well up with three standard commercial feldspars used for comparison.

Several crystals of beryl were found in the pegmatite, the largest of which measured 8 inches in diameter and assayed 12.90% BeO.

ECONOMIC FEATURES: Two tons of mica were revealed upon the removal of 27 tons of gangue material from Pit 2.

HISTORY OF DEVELOPMENT:

1885: Two locations were worked for mica. One pit was 39' long x 6-8' wide x 8' deep. This was later widened to 22'. Some mica was used in coal stoves in Rat Portage.

1927: Winnipeg Roofing Company removed a few hundred tons of spar of which some was shipped to the company's plant in Winnipeg for stucco purposes.

1943: Falcon Island Mining Company Limited was formed in Winnipeg to exploit the deposit on Mica Point. No data on operations, if any, is available.

1955: Property examination performed upon request from the Ontario Department of Mines, Mining Recorder Office at Kenora.

MAP REFERENCES:
OGS Map P.1531 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965

RELECTED REFERENCES:
ODM IMR 21, p. 20,30 (1967)
GNHSC Ann. Rept. (New Series) Vol. 1, 1885, p. 149-150cc (1886)
CDM,MB No. 731, p. 61 (1932)
OGS Toronto AFRO File 2.38
Resident Geologist's Files, OMNR, Kenora: 52E/7SW & SE, B-1
ODM IMR 3, p. (1952)

NAME: ALCOCK, C.A. (Chimo-Alcock) Cu, Co, Zn, Au, Ag

COMMODITIES: Copper, cobalt, zinc, gold, silver

STATUS: Minor Occurrence

TOWNSHIP: Ewart

NTS: 52E/11NE

LATITUDE: 49° 42' 05"N LONGITUDE: 95° 04' 49"W

LOCATION: Approximately 1 mile east of High Lake and 1/2 mile west of Shoal Lake Road at a point 2 1/2 miles south of Highway 17.

DESCRIPTION:

GEOLOGY: The Early Precambrian basalts are a part of a large Keewatin sequence of volcanics and sediments which underlie the area and which have been intruded by a variety of acid stocks and batholiths and a few basic stocks, sills and dikes. Faulting in an east-west direction occurs throughout the area and influences the outcrop pattern along the zone extending east from the northeast corner of High Lake.

An exposure of a disseminated (locally heavy dissemination to massive) sulphide zone in the volcanic host (sheared basalt) is found on the south side of a huge outcrop area. The east-west striking sinuous shear zone is of limited extent and the best mineralization zone is 4 feet wide.

MINERALOGY: Pyrite, chalcopyrite, sphalerite, pyrrhotite and galena are associated with the most highly sheared part of the basalt.

CHEMICAL ANALYSIS: Best assays of grab samples indicate 3% zinc, 1% copper, 0.25% cobalt, 0.08% gold per ton and 3 oz. silver per ton.

HISTORY OF DEVELOPMENT:

: Pitting and trenching by Mr. Alcock - 20 foot by 7 foot pit.

1962: Electromagnetic induction survey, 1 drill hole 503 feet deep by Chimo Gold Mines Ltd.

1970: Trenching, 1 drill hole 205 feet deep by C.A. Alcock.

MAP REFERENCES:
OGS Map P.1531 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2069, 1 inch to 1/2 mile (1:31,680) 1965
ODM Map P.144, 1 inch to 1/4 mile (1:15,840) 1962

SELECTED REFERENCES:
ODMNA MP 46, p. 13,21 (1971)
ODM MRC 12, p. 149,187 (1969)
ODM MRC 10, p. 39 (1968)
ODM GR 41, p. 48-49 (1965)
Canadian Mines Handbook 1963, p. 72-73
Resident Geologist's Files, OMNR,
Kenora: 52E/11NE A-2, A-3

NAME: FALCON ISLAND MINING COMPANY LIMITED mi, fel, be

COMMODITIES: Mica, feldspar, beryl

STATUS: Minor Occurrence

NTS: 52E/7SW

DESCRIPTION: Listed under BERYL - Falcon Island Mining Company Limited

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(Minor Occurrence) gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 52E/7SE

LATITUDE: 49° 21' 50"N LONGITUDE: 94° 42' 30"W

LOCATION: On a small island in Tug Channel, Lake of the Woods.

DESCRIPTION: Bedrock is Precambrian in age. A sample of graphitic schist, that appears to be heavy in graphite was taken from the island. The island is hornblende schist on the east shore, and a gossan showing is found on the

southwest shore, striking east-west. The sample is typical of many of the graphitic schists in the area, containing no flakes and runs about 40% carbon.

MAP REFERENCES: OGS Map P.1531 (1:250,000) 1978
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCE: Resident Geologist's Files, OMNR,
Kenora: 52E/7SE A-1

NAME: MARIPOSITE SHOWING mp

COMMODITY: Mariposite

STATUS: Minor Occurrence

NTS: 52E/10SE

LATITUDE: 49° 39' 25"N LONGITUDE: 94° 36' 40"W

LOCATION: Pits are located several hundred feet north of the southern shoreline of the Northern Peninsula, along a path from a summer cabin on a small point of land, northwest of Fox Island, Lake of the Woods.

DESCRIPTION: The southern part of the Northern Peninsula is underlain by Archean acid, intermediate and basic metavolcanics intruded at the south-eastern end by basic and ultrabasic igneous rocks. The metavolcanics are folded with anticlinal axes running northeasterly. Along the shore, where the showing is found, the metavolcanics are undifferentiated and there are indications of vertical schistosity, striking east-west, or along the eastern and northern part of the peninsula, striking northeast.

Apple green mariposite-bearing schist is found within a zone of highly altered schistose felsic tuffs. In addition to intense shearing, the rocks have been silicified and much carbonate is present including some iron carbonates which weather brown, as do the small quantities of pyrite. The rock breaks in large slabs and fresh surfaces reveal the high content of the bright green mariposite. Minor amounts of gold and traces of zinc, copper, lead and silver have also been found in the area.

A carbonated zone of about 300 feet along the shorelines of two small islands, about 1 mile west of Corkscrew Island, contains schist with some apple green mariposite.

HISTORY OF DEVELOPMENT: : Stone was quarried from a number of small pits. Blasting was noted in the vicinity of these pits.

REMARKS: The mariposite has been used as an ornamental rock, mainly for fireplaces, some slabs being shipped to Texas.

SELECTED REFERENCES: ODM Vol. 45, pt. 3, p. 28 (1936)
OGS Toronto AFRO File 2.3532
Resident Geologist's Files, OMNR,
Kenora: 52E/10NE G-1, I-2

NAME: FALCON ISLAND MINING COMPANY LIMITED mi, fel, be

COMMODITIES: Mica, feldspar, beryl

STATUS: Minor Occurrence

NTS: 52E/7SW

DESCRIPTION: Listed under BERYL - Falcon Island Mining Company Limited

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(Minor Occurrence) si

COMMODITY: Silica Sand

STATUS: Minor Occurrence

TOWNSHIP: Redditt

NTS: 52E/16NW

LATITUDE: app. 49° 59'N LONGITUDE: 94° 24'W

LOCATION: A deposit of sand is located within 1 mile north of the town of Redditt (Personal Communication, Resident Geologist, Kenora, April 1982).

DESCRIPTION: Bedrock is of Precambrian age and the area is underlain by granite. The sand from this area is a very fine, quartz sand, most of it being -65 mesh in size. Most of the sand is white feldspar and the little dark-coloured material is mainly mica with possibly some amphibole. Tests done on this impure sand indicate that a recovery of 25-30% of silica sand may be possible. The sand is not considered to be of ceramic grade but is good for foundry use and other uses. Presently, the deposit is being considered for development for use in sandblasting (Personal communication, Resident Geologist, Kenora, February 1982).

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Kenora: 52E/16NW A-1

NAME: COSTE ISLAND SOAPSTONE sps

COMMODITY: Soapstone

STATUS: Minor Occurrence

NTS: 52E/7NE

LATITUDE: 49° 25' 12"N LONGITUDE: 94° 42' 15"W

LOCATION: Talcose unit runs from the southeast corner of Coste Island, to a point on Alneau Peninsula, Lake of the Woods.

DESCRIPTION: Bedrock in the area is Precambrian in age, and the area is underlain by pillowed basalt and hornblende and chlorite schist. According to Lawson (1885,p.148cc), "The less pure grey-coloured granular variety of talc, known as soapstone or steatite...forms at least one extensive deposit which constitutes the rock on both sides of the canoe channel.... The rock is soft, sectile, and frequently free from grit taking a moderately fine polish with ease...." This rock is a very talcose,altered mafic or ultramafic unit contained within fresher amphibolitic basalt, possibly with some mafic tuffs. The talc-carbonate rock seems to be more mafic than adjacent basalts and it appears that this unit represents an altered ultramafic or high magnesium basalt flow.

The talcose unit, as measured on the ground, is at least 210 feet wide, and from the aerial photograph it appears to be at least 600 feet wide. The unit strikes between 45° - 64° and shows conspicuous glacial striations at N10°E.

HISTORY OF DEVELOPMENT: Indians have used this stone in pipes.

MAP REFERENCE: OGS Map P.1531 (1:250,000) 1978

SELECTED REFERENCES: CDMR,BM No. 803, p. 63 (1940)
CDM,GS Econ. Geol. Series No. 2, p. 56 (1926)
GNHSC Ann. Rept. (New Series) Vol. 1, 1885, p. 148-149cc (1886)
Resident Geologist's Files, OMNR, Kenora: 52E/7NE C-1

NAME: ANDREW BAY talc, sps

COMMODITIES: Talc, soapstone

STATUS: Minor Occurrence

TOWNSHIP: Manross

NTS: 52E/9NE

LATITUDE: 49° 37' 30"N LONGITUDE: 94° 20' 17"W

LOCATION: Approximately 12 miles southeast of Kenora, on Pipestone Portage.

DESCRIPTION:

GEOLOGY: Bedrock of the area is Precambrian in age and is made up largely of Keewatin volcanic rocks: a basic series, a siliceous series and a basic intrusive, later than both. The soapstone is a hornblende schist of the basic series and appears as a 75-foot wide band, enclosed in a harder grey slate and strikes almost due east, dipping steeply. The rock is a soft, decomposed or steatitic variety of brownish-green hornblendic schist which possesses the character of a soft chloritic slate.

MINERALOGY: The soapstone is harsh to the touch and yields a dirty grey powder having little or no slip. It has a slaty structure, exhibiting considerable jointing, thus breaking out in large blocks and is reported to stand up well under the hammer. Analysis of the rock indicates its composition to be of a variety of minerals, including considerable dolomite or ankerite, the principal component being chlorite.

HISTORY OF DEVELOPMENT: 1915: Rock was quarried and 4 carloads were shipped to the Dryden Timber and Power Company for lining smelting furnaces.

REMARKS: The Indians did not use this stone for pipes, and the stone tested as furnace lining material proved too seamy for the purpose and did not stand up well under the heat.

MAP REFERENCES: OGS Map P.1531 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
ODMNA IMR 40, p. 38 (1972)
ODM Vol. 22, pt. 1, p. 219-220 (1913)
ODM Vol. 39, pt. 3, p. 61 (1930)
CDMR,BM No. 803, p. 63-64 (1940)
CDM,GS No. 2092, p. 56 (1926)
CDM, MB No. 583, p. 34-35 (1922)
GNHSC Ann. Rept. (New Series) Vol. 1, 1885, p. 37cc (1886)
OGS Toronto Geoscience Data Centre, File Andrew Bay, District Kenora, Township Manross

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NAME: LABYRINTH BAY OCCURRENCE talc, asb (sps)

COMMODITIES: Talc, asbestos (soapstone)

STATUS: Minor Occurrence

NTS: 52E/10SW

DESCRIPTION: Listed under ASBESTOS - Labyrinth Bay Occurrence

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NAME: RUSH BAY QUARRIES st

COMMODITY: Stone

STATUS: Producer

TOWNSHIP: Forgie

NTS: 52E/10NW

LATITUDE: 49° 41' 43"N LONGITUDE: 94° 56' 00"W

LOCATION: Quarry is 1 3/4 miles south of Highway 17 on Rush Bay Road, just south of Moss Creek.

DESCRIPTION:

GEOLOGY: The bedrock of the area is all of Precambrian age. A large Keewatin sequence of volcanics and sediments, belonging to the Superior Structural Province, underlie the area. The rock quarried is of quartz-sericite schist and argillite, part of a sequence of altered and schistose felsic volcanic tuffs.

MINERALOGY: The flagstone slabs, quarried for use in fireplaces, patios, etc. vary in colour from reddish to greenish (containing chrome mica) to black. It is highly fissile, especially the black argillaceous sections. Pyrite is present in varying amounts and sections that are rusty and highly pyritic are not used.

HISTORY OF DEVELOPMENT: Quarry has been in operation for 6 years selling flagstone locally, in Ontario, and Manitoba.

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Kenora

NAME: WHITE QUARRY st

COMMODITY: Stone

STATUS: Producer

TOWNSHIP: Rice

NTS: 52E/14NE

LATITUDE: 49° 53' 50"N LONGITUDE: 95° 06' 40"W

LOCATION: Quarry is located on CNR line, approximately 3 miles east of the Manitoba border.

DESCRIPTION: Bedrock is Precambrian in age and the area is underlain by granite. Crushed rock, used for roadbed ballast, is granitic and highly variable throughout the quarry and commonly a grey to pink, medium-grained granodiorite with varying amounts of biotite. Coarse biotite gives a very clotty appearance to some of the rock. Coarse-grained pink pegmatite is commonly present.

MAP REFERENCE: OGS Map P.1531 (1:250,000) 1978

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Kenora

(Minor Occurrence) st

COMMODITY: Stone

STATUS: Minor Occurrence

TOWNSHIP: Redditt

NTS: 52E/16NW

LATITUDE: 49° 58' 10"N LONGITUDE: 94° 25' 15"W

LOCATION: Quarry is located on CNR line, approximately one mile west of the town of Redditt.

DESCRIPTION: Bedrock is of Precambrian age and the area is underlain by granite. The quarry was initially worked for crushed rock for use as a railroad ballast and road building. It is now being worked for sand and gravel. (Personal communication - Mr. Jack Charlesworth, Ministry of Natural Resources, Kenora, October 1979).

MAP REFERENCE: OGS Map P.1531 (1:250,000) 1978

NAME: ANDREW BAY talc, sps

COMMODITIES: Talc, soapstone

STATUS: Minor Occurrence

NTS: 52E/9NW

DESCRIPTION: Listed under SOAPSTONE - Andrew Bay

NAME: WITCH BAY talc

COMMODITY: Talc

STATUS: Minor Occurrence

TOWNSHIP: Manross

NTS: 52E/9SW

LATITUDE: 49° 35' 49"N LONGITUDE: 94° 15' 29"W

LOCATION: North shore of Witch Bay, Lake of the Woods.

DESCRIPTION: Bedrock of the area is Precambrian in age and is made up largely of Keewatin volcanic rocks: a basic series, a siliceous series and a basic intrusive, later than both. Soapstone from Pipestone Point is a soft, decomposed or steatitic variety of hornblendic schists. The Witch Bay occurrence is probably of similar type of material (Personal communication, Resident Geologist, Kenora, October 1979).

A narrow strip of sericite schist, probably talcose, runs along the north shore of Witch Bay. The fissility of this schist is close to that of slates and in some instances, large thin slabs may be broken off.

MAP REFERENCES: OGS Map P.1531 (1:250,000) 1978
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES:
ODMNA IMR 40, p. 38 (1972)
ODM Vol. 39, pt. 3, p. 64 (1930)
CDM,GS No. 2092, p. 56 (1926)
GNHSC Ann. Rept. (New Series) Vol. 1, 1885, p. 37cc (1886)

NAME: LABYRINTH BAY OCCURRENCE talc, asb (sps)

COMMODITIES: Talc, asbestos (soapstone)

STATUS: Minor Occurrence

NTS: 52E/10SW

DESCRIPTION: Listed under ASBESTOS - Labyrinth Bay Occurrence

NTS 52F

(Minor Occurrences) asb

COMMODITIES: Asbestos

STATUS: Minor Occurrences

TOWNSHIP: Godson

NTS: 52F/4NW

LATITUDE: 49° 14' 40"N LONGITUDE: 93° 54' 21"W
49° 10' 10" 93° 47' 48"

LOCATION: On a small island in the northern part of Kakagi Lake. Next showing occurs about 7 miles northeast of Nestor Falls, south of Kakagi Lake.

DESCRIPTION:

GEOLOGY: All bedrock in the area is of Early Precambrian age except a northwest-trending diabase dike. Sequences of about 1200 to 1500 m thick of basic volcanic rocks lie in the vicinity of Kakagi Lake. Generally these basic volcanics face toward the lake which appears to be the centre of complex synclinal folding. The volcanic sequence consists predominantly of occasional basalt flows and intrusions, however, thin, dacitic breccia and clastic sedimentary zones are present.

On Kakagi Lake older basic volcanic rocks are overlain by acid volcanic breccia and clastic sedimentary rocks. East of Sandhill Lake, bedded pyroclastics grade northward from fine tuff into coarse dacitic pyroclastic breccia. In the northwesterly part of Kakagi Lake, dacitic breccia overlies basic volcanics, but in the southeast, thick-bedded, coarse-grained arkose, quartzite and breccia directly overlie the basic volcanic rocks.

North of Kakagi Lake, ultramafic rocks form composite sill-like bodies in intermediate pyroclastics. At this locality fresh peridotite, pyroxenite and gabbro are associated with leucogabbro and minor quartz diorite.

MINERALOGY: Cross-fibrous picrolite asbestos occurs in the serpentinized peridotite sill rocks in the area. The peridotite weathers medium brown and normally contains a high proportion of unaltered olivine, orthopyroxene and lesser clinopyroxene. The colour varies from dark grey and greenish grey to bluish grey on the fresh surface.

The olivine is generally fine grained, and the orthopyroxene occurs as clear vitreous euhedral to subhedral laths up to 5 mm long. Large black poikilitic plates of hornblende may also occur.

HISTORY OF DEVELOPMENT:

1970: AMAX performed electromagnetic and magnetometer survey northeast of deposit.

1972: Hudson Bay Exploration and Development Co. Ltd. did airborne geophysical survey.

1975: Electromagnetic survey was done by Hudson Bay Co. Ltd.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.921, 1 inch to 1/4 mile (1:15,840) 1974

SELECTED REFERENCES: OGS GR 194, p. 4-6, 38-41 (1980)
ODM PR 1965-2, p. 33 (1965)
ODM Vol. 42, pt. 4, p. 60-63 (1934)

NAME: MEDICINE LAKE OCCURRENCE be, tour, ta

COMMODITIES: Beryl, tourmaline, tantalite

STATUS: Minor Occurrences

TOWNSHIP: Tustin

NTS: 52F/13SW

LATITUDE:	49° 51' 49"N	LONGITUDE:	93° 46' 35"W
	49° 51' 47"		93° 46' 23"
	49° 51' 48"		93° 46' 21"

LOCATION: In the northeast corner of the township between Medicine and Lift Lake at the Gordon Lake Development road which joins up to Highway 17.

DESCRIPTION:

GEOLOGY: The bedrock is Early Precambrian in age. A belt of volcanic and sedimentary assemblages running east-west lies between the English River Belt on the north and a composite granitic batholith to the south. The northern part of the belt dips subvertically, however, dips in the southern part average 30°-60°N. Aplite, pegmatitic granite and pegmatite intrude the meta-volcanic-metasedimentary sequence, the mafic to ultramafic intrusions, and most of the felsic and granitic rocks in the area.

The pegmatite bodies are of varying sizes and shapes and range in length from several feet to 5,000 feet and from a fraction of an inch in width to over 1,000 feet. The bodies are fine- to coarse-grained and are unzoned. Many of these intrusions form branching dikes which are conformable with the foliation of the host rocks but in the area transect the foliation.

Pink pegmatite is relatively common throughout the area, however, white pegmatite occurs mainly in the vicinity of Medicine and Lift Lakes.

"The white pegmatite is in part spatially related to porphyritic granodiorite. The white pegmatite bodies are medium to coarse grained, massive, and locally are weakly radioactive. The major minerals are perthite, quartz and biotite. Accessory minerals include black tourmaline, beryl, garnet and rare tantalite.

"The close spatial relationship and similarity in mineral assemblages between white pegmatite and porphyritic granodiorite suggest a common genesis for these rocks." (Pryslak 1976, p.28).

MINERALOGY: Mineralization occurs in a pegmatite intrusion that is white to grey in colour and pink in local areas. The intrusion is about 1,500 feet wide and 2,000 feet long and is oriented in a northeasterly direction.

The pegmatite is medium to very coarse-grained and consists of feldspar and quartz with small amounts of muscovite, rare black tourmaline, biotite, red garnet, black tantalite and yellow to clear beryl crystals.

"The beryl crystals appeared to be confined to a coarser phase of the pegmatite in this locality. Large crystals of white and gray perthitic feldspar up to a foot across accompany the beryl mineralization. Thin sheets of biotite mica several inches in length often occur along the crystal faces of the feldspar. Small patches and crystals of black tourmaline up to an inch in diameter were noticed." (Chisholm 1949, p.5).

Some columbite-tantalite crystals were also observed northeast of the main beryl showing and it is believed that uraninite crystals are also present in the pegmatite since higher than normal counts were obtained on a geiger counter.

HISTORY OF DEVELOPMENT:

1949: Beryl was discovered and the property was staked by E. Sobiski. Trenching and stripping were carried out.

1969: Falconbridge Nickel Mines Ltd. examined the peridotite intrusions for nickel-copper mineralization.

REMARKS: A sample sent to Beryllium Corporation for assay showed 13.6% beryllium oxide and a sample of the massive grey perthite is reported to contain 1% beryllium oxide.

"The beryl crystals appear to be too scattered and small to be worked for beryl alone, however additional stripping might reveal an economic deposit of potash spar. Its commercial possibilities would appear to depend on the size of the deposit, its overall grade as determined by additional trenching and sampling, and the cost of transportation to markets in eastern Ontario.

The geological conditions indicate that the area should be carefully prospected with a geiger counter for the occurrence of radioactive minerals." (Chisholm 1949, p.6).

MAP REFERENCES:
OGS Map P.1530 (1:250,000) 1978
ODM Map 2302, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.1031, 1 inch to 1 mile (1:63,360) 1975
ODM Map P.472, 1 inch to 1/4 mile (1:15,840) 1968
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Kenora:
52F/13SW T-1, J-1
ODM GR 130, p. 27-28, 34-35 (1976)
CDM,GS Econ. Geol. Monograph 2, p. 16 (1949)
ODM IMR 21, p. 38 (1967)
MINSY File 51343400

(Minor Occurrences) be, tour

COMMODITIES: Beryl, tourmaline

STATUS: Minor Occurrences

TOWNSHIP: Zealand

NTS: 52F/15SE

LATITUDE: 49° 48' 20"N LONGITUDE: 92° 43' 40"W
49° 48' 50" 92° 43' 28"

LOCATION: About 5.5 miles northeast of Dryden, Lot 17, Con. VII and VII of the township.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments.

These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

A group of Algoman intrusives form batholiths, stocks and sills; these intrude the preceding groups and consist of a variety of granitic masses ranging from diorite to granite.

A Keweenawan diabase dike cuts all the rocks in the area.

Tourmalinization of the volcanics,indicating metasomatic effects,is common in some areas and it is believed that the origin of the tourmaline is indicated by the close association of quartz-tourmaline veins.

At this locality a tourmaline pegmatite dike is found in the sediments. It is largely a pink and white muscovite pegmatite with sharp margins. The black tourmaline crystals are frequently arranged in lines parallel to the margins.

Banding caused by an alternating of white and blue-grey layers of medium grained pegmatite with occasional layers 1 to 3 inches thick of coarse muscovite pegmatite is present.

MINERALOGY: Small green beryl crystals have been found in the tourmaline pegmatite. Minor amounts of feldspar, quartz and mica are also present. A thin section examination of the pegmatite showed the tourmaline to be strongly pleochroic from a pale violet to a deep Prussian blue. Graphic intergrowths of quartz and tourmaline can be seen occasionally.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES: ODM IMR 21, p. 38 (1967)
ODM Vol. 50, pt. 2, p. 7,19,39-40,55 (1941)
MINSY File 51120800

NAME: NAVIMAR LAKE OCCURRENCE mo, bm

COMMODITIES: Molybdenite, bismuthinite

STATUS: Minor Occurrence

NTS: 52F/7NW

LATITUDE: 49° 27' 02"N LONGITUDE: 92° 50' 12"W

LOCATION: Approximately 400 m east of Navimar Lake and west of Upper Manitou Lake, about 25 miles south of Dryden Station.

DESCRIPTION:

GEOLOGY: The bedrock is Early Precambrian (Archean) in age and consists of thick flows and pyroclastic metavolcanic sequences. The metavolcanic sequence is folded into a northeast-trending anticline. The base of the sequence is composed of mafic flows which are overlain by intermediate pyroclastics. The pyroclastics are overlain by a mixed sequence of mafic flows and intermediate pyroclastics. These occur on the flanks of the anticline.

Intruding the pyroclastics is a subvolcanic plug of intermediate composition. Felsic porphyry dikes and a stock-like lens intrude all levels of the volcanic rocks.

Molybdenum and bismuthinite occur in a quartzose dike. A 30 m long, 3 to 4 m quartz vein containing minor amounts of feldspar and striking northwest within dioritic rocks also hosts molybdenum. The molybdenum is confined to a small portion of the vein and was not observed in the country rocks. The diorite occurs at the contact between granitic rocks of the Atikwa Batholith and mafic metavolcanics of the Superior Structural Province.

MINERALOGY: A small pocket of molybdenite occurs in a well-defined pegmatitic quartz vein that extends for 250 to 300 feet. Small amounts of chlorite, orthoclase, bismuthinite and green and bronze-coloured mica and pyrite are present.

Molybdenite occurs in intimate association with the chlorite which is present in clumps.

HISTORY OF DEVELOPMENT:

1915: Property staked by E.D.G. Pidgeon.

1920: Assessment work yielded 200 lbs. of high grade samples.

1939: Trenches 4.6 to 6 m apart were excavated.

REMARKS: "Assays of twenty-four samples gave zero to trace amounts of molybdenum. A bulk sample from a pit on the original find is reported to have averages of 1.48 percent molybdenum." (Blackburn 1979, p.64).

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
OGS Map 2409, 1 inch to 1/2 mile (1:31,680) 1978
ODM Map P.961, 1 inch to 1/4 mile (1:15,840) 1974
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.242, 1 inch to 2 miles (1:226,720) 1964
ODM Map 42c, 1 inch to 1 mile (1:63,360) 1934

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Pidgeon, E.D., District Kenora, Lat. 49°15', Long. 92°45'
OGS GR 189, p. 64 (1979)
ODM MRC 7, p. 45 (1968)
Canadian Mines Handbook, p. 204 (1939)
OBM Vol. 26, pt. 1, p. 304 (1917)
CDM,MB No. 592, p. 77 (1925)
MINSY File 50636200

NAME: PIDGEON, G.L. (PIDGEON MOLYBDENUM MINES LIMITED) Mo, fmo, cp, py, bm, mag, mus, fl

COMMODITIES: Molybdenum, ferromolybdite, chalcopyrite, pyrite, bismuthinite, magnetite, muscovite, fluorite

STATUS: Major Occurrences

TOWNSHIP: Echo

NTS: 52F/16NW

LATITUDE: 49° 57' 07"N LONGITUDE: 92° 21' 30"W
49° 57' 01" 92° 21' 35"
49° 56' 55" 92° 21' 52"

LOCATION: Main showings are in Lots 8, 9, Concession V, east of Lateral Lake.

DESCRIPTION:

GEOLOGY: Bedrock of the area is Early Precambrian in age. Molybdenum deposits occur along the eastern and southern contacts of a granite stock, Lateral Lake stock, which has intruded an anticlinal fold in metasediments. These deposits are associated with simple pegmatites, aplitic dikes and cross-cutting quartz veins. Molybdenum mineralization was also noted along the northern margin of the stock.

According to Vokes (1963, p.74), "the rocks of the Lateral stock are generally fairly coarse grained, with a high ferromagnesian content. Large patches of biotite are very abundant. The rocks are gneissic, except for the more massive aplitic parts. The mineral composition indicates that the rocks range from biotite-quartz monzonites to biotite granites, with most specimens belonging to the former group.

"The intrusive rocks of the Lateral stock are bordered and overlain by hornblende-rich sedimentary schists of the Abram Series of pre-Algoman age. Those sedimentary rocks bordering the stock form a band which varies in width due to variations in dip, but has a true thickness of the order of 1,900 to 2,000 feet." Along the southern edge of the stock, "the sediments strike between N45°E and N60°E and dip southward between 40 and 65 degrees. On the north of the stock the strike is N70°E and dips are from 35 to 50°N.

"Along the southern contact of the stock the 'granite' contains irregular dykes of aplite that are cut by quartz and pegmatite stringers.... The aplite dykes strike N55°E and dip at 70 degrees to the southeast."

MINERALOGY: At the main showing, lying at the east end of the Lateral Lake stock, an adit was driven into the side of a low northeast-striking ridge. "The ridge consists of a complex of grey granodiorite, cut by pink muscovite granite pegmatite, pink aplite, and glassy white (occasionally pink) quartz. Aplite is the most abundant rock type, forming about 50 percent of the whole

ridge. The aplite stringers and dikelets, from less than 1 inch to 3 feet in width, strike northeast and dip 45°SE. The pegmatitic quartz and quartz stringers also strike northeast, as well as other directions. They appear to have a vertical dip. The quartz veins are mostly less than 1 foot wide, the widest seen on surface being 5 feet. The veins consist of quartz with scattered feldspar crystals, or quartz with feldspar at the margins.

"Molybdenite mineralization is present as scattered to abundant flakes in the aplite, as fracture-filling seams in the aplite, and as scattered flakes in the muscovite granite pegmatite and quartz. Muscovite, and to a lesser extent pyrite, is associated with the molybdenite mineralization. Pyrite occurs in cubes, from 1/4 inch to as much as 1 inch across, in aplite, or in coarse aggregates often intimately associated with molybdenite and muscovite. Bismuthinite is a rare accessory in muscovite granite pegmatite, occurring as minute prismatic crystals 1/16 inch across and up to 1 inch in length. Magnetite is present in minute, round grains and occasionally larger masses up to 1 inch across in aplite stringers. Tourmaline was noted in one place as an aggregate of minute black needles and radiating clusters filling a fracture.... Bulk sampling of the adit indicated two sections of molybdenite mineralization. The first, 0-23.1 feet assayed 0.24 per cent MoS_2 over 25.3 feet....

"At the Cliff or North Showing, an aplite-granodiorite complex has an exposed width of 50 feet. A north-south, 75-foot trench, about 40 feet above swamp level, exposes aplite, granite pegmatite, and quartz. The pegmatitic quartz veins are 3-5 feet wide. Molybdenite is erratically distributed in patches and seams up to 1/4 inch thick, or disseminated in compound flakes, mostly 1/4-inch or less across, to a maximum of 1/2-inch in diameter. Cubes of pyrite, up to 1/2-inch edge, occur in aplite. A pit, about 600 feet north of the Cliff Showing, exposes some molybdenite in aplite.

"The South Showing is in a clearing, 100 by 500 feet in size, trending N.60°E. Stripping and pits expose a complex of granodiorite, granite pegmatite, aplite, and quartz across widths to a maximum of 100 feet. The aplite forms lit-par-lit stringers and dikelets that strike N.50°E. and dip 45°SE. Random pits expose molybdenite mineralization as seams and flakes associated with pyrite and muscovite. Pyrite cubes are occasionally as much as 1 1/2 inches across. Minor accessory minerals are magnetite and biotite." (Satterly, J.,1960, p.29,30).

REMARKS: Drilling, in 1979, indicated the presence of 15.8 million tons of material grading 0.08% molybdenum.

HISTORY OF DEVELOPMENT:

1946: Molybdenite was discovered by J.K. Webb and H.E. Neal and subsequently seven claims were staked by G.L. Pidgeon.

1954: Property was optioned to Detta Minerals Ltd. who performed stripping, trenching, two drill holes totalling 350 feet and drove an adit 73 feet long from which a 255-ton bulk sample was obtained.

1956: Company was renamed Candore Explorations. The adit was completed to 114 feet.

1957: Pidgeon Molybdenum Mines Ltd. was incorporated with controlling interest held by Rio Tinto Mining Company of Canada Ltd. Option was dropped by Rio Tinto in 1958.

1957-58: Rio Canadian Exploration Ltd. drilled 21 holes totalling 2,727 feet.

1965: A magnetometer survey and 10,800 feet of BX drilling was done. Control of the property (60%) was held by Rio Algom Mines Ltd. with Dickenson Mines Ltd. holding the remainder.

1966: One hole was drilled for 1320 feet.

1979: Ground geophysical surveys and a 7,000 foot diamond drilling program were carried out by Rio Algom and Dickenson on a 65-35 basis.

MAP REFERENCES: OGS Map P.2372, 1 inch to 1/4 mile (1:15,840) 1980
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES:
ODM MRC 7, p. 38 (1968)
CMTS,GSC Econ. Geol. Rept. No. 20, p. 73-78 (1963)
ODM Vol. 69, pt. 6, p. 29-30 (1960)
ODM Vol. 64, pt. 2, p. 106 (1955)
ODM Vol. 59, pt. 5, p. 37 (1950)
OGS Toronto Geoscience Data Centre, File
Pidgeon, G.L., District Kenora, Tp. Echo

NAME: KOSOWY-LEDUCHOWSKI OCCURRENCE Cs, Li

COMMODITIES: Cesium, lithium

STATUS: Minor Occurrence

TOWNSHIP: Webb

NTS: 52F/16NW

LATITUDE: 49° 55' 10"N LONGITUDE: 92° 28' 00"W

LOCATION: About 2 1/2 miles east of Gullwing Lake, between Tot and Philcot Lakes. Approximately 27 miles west-southwest of Sioux Lookout.

DESCRIPTION:

GEOLOGY: The occurrence is found in a belt of metasedimentary-metavolcanic rocks and lies near a granitic contact to the north. Mapping by Donner (1964) shows a complex intermingling of metasediments, basic volcanics and quartz porphyry in the immediate area. The mafic flows encountered by Speed (1979) have a strike of 81° and a dip of 63°SE.

Mineralization occurs in a pegmatite dike that trends northeast approximately 320° and dips 80° to the northeast. The dike lies at the eastern edge of a relatively small outcrop of basic volcanic and amphibolitic rocks; it is exposed over a length of about 170 feet. Some zoning is present but it is not continuous. The dike has a fine-grained central core in some places but this becomes progressively coarser toward the outer boundaries.

The northerly part of the dike is in contact with fine- to medium-grained mafic volcanics (andesite). These rocks trend about 75-88°E and dip 44-65°SE. The southerly part is in direct contact with a more massive coarse-grained volcanic flow (amphibolite), that trends 60-65° easterly.

MINERALOGY: Phenocrysts of spodumene that vary from a few centimetres up to tens of centimetres in length and width occur throughout the pegmatite. Tourmaline, a green mica (phlogopite), quartz and feldspar occur in most of the exposed area. Accessory minerals include beryl, graphite and lepidolite.

Pollucite, a source mineral of cesium, is reported to be present in a pocket within the pegmatite mass. It is about 3 feet in diameter and is located near the east edge of the dike.

HISTORY OF DEVELOPMENT:

1964: Three diamond drill holes were drilled, geological mapping, a magnetometer survey, trenching and stripping were done by Kosowy and Leduchowski.

REMARKS: A series of chip samples across a width of 2-3 foot trenches assayed about 1.0% lithium.

It would appear, from the reports, that pollucite is not present in sufficient economical quantities to be extracted for its cesium content.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 1950-2, 1 inch to 1 mile (1:63,360) 1950

SELECTED REFERENCES: Resident Geologist's Files, OMNR,
Sioux Lookout: 52F/16NW (15) (16)
OGS Toronto AFRO File 32.891
ODM IMR 21, p. 48 (1967)
ODM Vol. 49, pt. 4, p. 1-27 (1950)

NAME: HARRISON, H.A. (COBBLE LAKE OCCURRENCE) mi, tour, (Cb-Ta)

COMMODITIES: Mica, tourmaline, (Columbium-tantalum)

STATUS: Minor Occurrence

TOWNSHIP: Bridges

NTS: 52F/13SE

LATITUDE: 49° 51' 48"N LONGITUDE: 93° 39' 15"W

LOCATION: A small peninsula that extends northeastward from the south shore of Cobble Lake.

DESCRIPTION:

GEOLOGY: The bedrock is Early Precambrian in age. A belt of volcanic and sedimentary assemblages running east-west lies between the English River Belt on the north and a composite granitic batholith to the south. The northern part of the belt dips subvertically, however, dips in the southern part average 30-60°N. Aplite, pegmatic granite and pegmatite intrude the meta-volcanic-metasedimentary sequence, the mafic to ultramafic intrusions, and most of the felsic and granitic rocks in the area.

The pegmatite bodies are of varying sizes and shapes and range in length from several feet to 5,000 feet and from a fraction of an inch in width to over 1,000 feet. The bodies are fine to coarse grained and are unzoned. Many of these intrusions form branching dikes which are conformable with the foliation of the host rocks but in the area transect the foliation.

Pink pegmatite is relatively common throughout the area.

"The peninsula is underlain by peridotite and pyroxenite intruded by pink coarse-grained pegmatite dikes.

"The muscovite-bearing pegmatite trends easterly through the centre of the claim, dips subvertically, and has a maximum width of 150 feet (46 m)....

"Muscovite is segregated in small lenses in the pegmatite. The largest muscovite zone occurs near the entrance of the adit, strikes easterly and dips vertically. The zone has a maximum thickness of 2 feet (0.6 m) and can be traced on the surface for a distance of 30 feet (9 m)." (Pryslak 1976, p.41-42).

MINERALOGY: The major mineral constituents are microcline, perthitic microcline and quartz. Biotite, muscovite and tourmaline are present in lesser amounts. Minor amounts of blue-green garnets and tantalite-columbite have been reported at this locality.

The tourmaline is black in colour and forms up to 10% of the pegmatite mass, the crystals range up to 10 inches in length and 2 1/2 inches in diameter. Biotite crystals form about 5% of the pegmatite mass and are up to 5 inches in diameter and 2 inches thick. The muscovite is light greenish-brown in colour and forms books up to 18 inches in diameter and 5 inches thick; some of the larger books contain structural imperfections known as "A" reeves and wedge structure.

HISTORY OF DEVELOPMENT:

Circa 1952: An adit was driven 18 feet in a northward direction.

1953-1954: 6 diamond drill holes totalling 206 feet were drilled.

1955: Harrison and D.F. Parrot re-examined the property for tantalum and columbite.

REMARKS: Around 1953-54 some mica was shipped to General Electric in Toronto. Columbium-tantalum mineralization assayed up to 1.85% Cb_2O_5 and 0.17% Ta_2O_2.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 2303, 1 inch to 1/2 mile (1:31,680) 1976
ODM Map P.505, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Harrison, H.A.: District Kenora, Township Bridges
ODM GR 130, p. 35,41-42 (1976)
Resident Geologist's Files, OMNR, Kenora: 52F/13SW Harrison, H.A.

NAME: TRASHER CLAIMS f1

COMMODITY: Fluorite

STATUS: Minor Occurrence

NTS: 52F/5NW

LATITUDE: 49° 24' 10"N LONGITUDE: 93° 55' 00"W

LOCATION: On the north shore of Lobstick Bay, east of Willingdon Township, approximately 3 miles northeast of Whitefish Bay.

DESCRIPTION:

GEOLOGY: The claim is underlain by rocks grouped by E.M. Burwash (1933) as "felsite, rhyolite and quartz porphyry flows, largely altered to sericite schist." The rock is much altered and shows banding.

"Along the shore of Lobstick bay at the mouth of the creek, the rock exposed is a light gray fine grained, with a spangled appearance on fresh surface due to the development of sericite flakes usually less than 1 mm. diameter.

"About 50 to 60 feet from the mouth of the creek outcrops of similar rock occur, but away from the creek bed overburden seemed to be heavy.

"Shearing in general poorly marked is roughly S.60°E. and dips to the south." (OMNR Files Kenora).

MINERALOGY: The mineralization consists of purple fine-grained fluorite. Veinlets and impregnations are very sparsely scattered over a width of 4 feet. Fine-grained pyrite is occasionally associated with the fluorite and in one place it is over half an inch wide.

Near the fluorite a few veinlets containing coarse-grained quartz and feldspar occur. Some masses and needles of black tourmaline are also present in the veinlets.

REMARKS: Fluorite "is in such minor amount as to be of no possible economic interest." (OMNR File Kenora).

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.281, 1 inch to 2 miles (1:31,680) 1965
ODM Map 42b, 1 inch to 1 mile (1:63,360) 1933

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Lobstick Bay-Thrasher, District Kenora, Lat. 49°15', Long. 93°45'
Resident Geologist's Files, OMNR, Kenora: Kakagi Lake Area
OGS MDC 16, p. 24 (1976)
ODM Vol. 42, pt. 4, p. 47-48,66 (1933)

NAME: DOME EXPLORATION LIMITED mo, fl

COMMODITIES: Molybdenite, fluorite

STATUS: Minor Occurrence

NTS: 52F/8NW

LATITUDE: 49° 27' 20"N LONGITUDE: 92° 17' 30"W

LOCATION: Between Mennin Lake and Kawashegamuk Lake, approximately 34 miles southwest of Dryden.

DESCRIPTION:

GEOLOGY: The area consists almost entirely of Early Precambrian (Archean) age rocks; the greater part is underlain by Keewatin lavas, pyroclastics and associated sediments.

The property is underlain by a gabbroic plug which is surrounded by greenstone and granite gneiss. The property more or less straddles a northwesterly trending basalt-granite contact. Greenstones lie to the west of the contact and granite is to the east.

Narrow bands of sediments, which range in width from less than 10 feet to over 600 feet, are found in the greenstones at a distinct horizon which stratigraphically is not far below the Manitou series sediments. These bands have distinct bedding planes and are often interbedded with lava flows. The beds dip approximately parallel to the western granite contact, and in the neighbourhood of the granite contact the bedding of the sediments dips 20-35°SE.

MINERALOGY: Minor amounts of purple fluorite are present and molybdenite has been reported in some quartz veins. The quartz veins are narrow and are scattered in the granite mass.

HISTORY OF DEVELOPMENT: 1952: Geophysical work by INCO.

1966: Geochemical survey by B. Sandersar for Dome Exploration. Some trenching and stripping was also done.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 42c, 1 inch to 1 mile (1:63,360) 1933

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Kenora: 52F/8NW E-1
ODM Vol. 42, pt. 4, p. 6,11-13 (1933)
MINSY File 50235600

NAME: CANADIAN NICKEL COMPANY LTD. (1969) gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 52F/4NE

LATITUDE: 49° 12' 58"N LONGITUDE: 93° 35' 58"W

LOCATION: Approximately 16 miles northeast of Nestor Falls, adjacent to South Otterskin and Brooks Lakes.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is of Early Precambrian age except a northwest-trending diabase dike.

The area is predominantly underlain by amygdaloidal and variolitic pillowed mafic flows with minor flow-top breccia, mafic tuff and lapilli-tuff and interflow chert. Intermediate tuff-breccia is interbedded with mafic and intermediate flows in the Otterskin Lake area and pyroxenite forms part of a discontinuous composite mafic to ultramafic dike on the south shore of the lake.

The mafic flows are generally light green or light grey-green to beige on fresh and weathered surfaces. Pillows are common and may be up to 2 m long. Varioles are also common and are scattered throughout where they occur.

Sediments lie unconformably upon mafic flows; arkosic beds form the southern or lower 600 to 1500 m thick sedimentary facies.

Thin graphitic zones, chert iron formation, sulphides and possibly carbonate are found in this sedimentary sequence.

MINERALOGY: Several graphitic horizons are present mainly in the feldspathic sediments. These thin silicified graphitic zones commonly contain pyrite nodules. Rimming small ovoid cavities in these zones is quartz.

HISTORY OF DEVELOPMENT:

1969: Canadian Nickel Company Ltd. did diamond drilling.

1967: Selco Exploration drilled 2 holes in the area and INCO drilled one hole to the northeast.

1972: Airborne geophysical survey by the Hudson's Bay Co.

1975: Ground electromagnetic survey by the Hudson's Bay Co.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
OGS Map 2421, 1 inch to 1/2 mile (1:31,680) 1980
ODM Map P.1000, 1 inch to 1/4 mile (1:15,840) 1975

SELECTED REFERENCES: OGS GR 194, p. 4-6,14,22,28-31,55-56 (1980)
Resident Geologist's Files, OMNR, Kenora:
52F/4NE D-1

NAME: FREEPORT-BETH OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrences

NTS: 52F/4NE

LATITUDE:		LONGITUDE:	
	49° 08' 25"N		93° 34' 20"W
	49° 08' 10"		93° 34' 18"
	49° 07' 55"		93° 34' 02"
	49° 08' 18"		93° 34' 45"
	49° 08' 38"		93° 35' 30"

LOCATION: Southern tip of Schistose Lake, approximately 16 miles east-northeast of Hestor Falls.

DESCRIPTION:

GEOLOGY: The area consists almost entirely of Early Precambrian (Archean) basement rocks except for a northwest-trending diabase dike.

The occurrences are located in metamorphosed felsic intrusive rocks and metasediments. A shallow level quartz and quartz-feldspar porphyry stock intrude the mafic flows southeast of Schistose Lake and appears to have formed an Early Precambrian (Archean) highland which was subsequently eroded. It is overlain by conglomerate composed largely of quartz porphyry and minor chert boulders and cobbles which may represent part of a basal conglomerate defining an unconformity between metasediments to the north and flows and porphyry to the south. Intense alteration (carbonatization) and prevalent shearing along the contact between the flows and metasediments especially in the Pipestone-Schistose Lake area could be indicative of some form of paleoweathering horizon.

A graphitic zone of unknown width which is partially exposed in a small pit on the northern shore of Fish Island, occurs at what is probably the contact between carbonatized mafic flows to the south and metasediments to the north. Ovoid cavities occur in the graphitic schist and probably contained pyrite nodules. North of and immediately adjacent to the graphitic zone in the pit is a horizon of subangular granule to pebble conglomerate also of unknown thickness.

MINERALOGY: Mineralization consists of graphite and some nodules of pyrite. Quartz often rim small ovoid cavities in the graphitic zones.

HISTORY OF DEVELOPMENT: 1970: Questor Surveys did an airborne electromagnetic survey and 2,093 feet of diamond drilling was done at 6 locations in the area.

REMARKS: The diamond drilling intersected graphitic and pyritic zones mainly in feldspathic volcanic derived metasediments, however, since 1971 the claims were allowed to lapse.

MAP REFERENCES:
OGS Map P.1530 (1:250,000) 1978
ODM Map P.1000, 1 inch to 1/4 mile (1:15,840) 1975
ODM Map P.1025, 1 inch to 1/4 mile (1:15,840) 1975
OGS Map 2421, 1 inch to 1/2 mile (1:31,680) 1980

SELECTED REFERENCES:
OGS GR 194, p. 4-6,14,22,56-58 (1980)
Resident Geologist's Files, OMNR,
Kenora: 52F/4NE B-1, C-1

NAME: HUDSON'S BAY OIL AND GAS PYRITE OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrences

NTS: 52F/4NE

LATITUDE: 49° 14' 35"N LONGITUDE: 93° 41' 02"W
49° 14' 41" 93° 40' 59"

LOCATION: Southeast arm of Cameron Lake, approximately 15 miles northeast of Hestor Falls.

DESCRIPTION:
GEOLOGY: See CANADIAN NICKEL COMPANY LTD. (1969) for description of GEOLOGY and MINERALOGY, and MAP REFERENCES , p. 117.

HISTORY OF DEVELOPMENT: 1973: Two diamond drill holes totalling 451 feet were drilled into EM conductors.

SELECTED REFERENCES:
OGS GR 194, p. 4-6,14,22,56-59 (1980)
Resident Geologist's Files, OMNR,
Kenora: 52F/4NE E-1

NAME: KENNCO EXPLORATION PYRITE OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrence

NTS: 52F/4NE

LATITUDE: 49° 10' 48"N LONGITUDE: 93° 40' 58"W

LOCATION: Situated approximately 1/2 mile south of the eastern arm of Kakagi Lake and about 12 miles northeast of Nestor Falls.

DESCRIPTION: See FREEPORT-BETH OCCURRENCE for description of GEOLOGY and MINERALOGY, and MAP REFERENCES , p. 118.

HISTORY OF DEVELOPMENT:

1956: 6 diamond drill holes totalling 450 feet were drilled.

1969: Canadian Nickel Company drilled 2 holes.

1972: Hudson's Bay Exploration and Development Co. did airborne geophysical survey.

1975: An electromagnetic survey was conducted by Hudson's Bay Co.

SELECTED REFERENCES: OGS GR 194, p. 4-6,14,22,56-59 (1980)
Resident Geologist's Files, OMNR,
Kenora: 52F/4NE D-2, F-1

NAME: SELCO PYRITE OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrence

NTS: 52F/4NE

LATITUDE: 49° 12' 48"N LONGITUDE: 93° 37' 04"W

LOCATION: Adjacent to South Otterskin and Brooks Lakes.

DESCRIPTION: See CANADIAN NICKEL COMPANY LTD. (1969) for description of GEOLOGY and MINERALOGY, and MAP and SELECTED REFERENCES, p.117.

NAME: MEEHAN GROUP J.P. & Minor Occurrence gf

COMMODITY: Graphite

STATUS: Minor Occurrences

TOWNSHIP: Hartman and Wabigoon

NTS: 52F/14NW and 16SW

LATITUDE: (1) 49° 45' 23"N LONGITUDE: 92° 28' 09"W
(2) 49° 57' 18" 92° 27' 44"

LOCATION: (1) Approximately 1 1/2 miles northwest of Hartman Lake and about 15 miles southeast of Dryden.

(2) Lot 5, Concession XII of Wabigoon Township, about 48 miles east-north of Kenora and 8 miles north of Vermilion Bay.

DESCRIPTION:

GEOLOGY: The bedrock is entirely Precambrian in age with the oldest group the Keewatin consisting of thick steeply inclined intercalated volcanic rocks and sediments. The contacts between the sediments and volcanics appear to be conformable.

A variety of intrusive rocks ranging from basic to ultrabasic occur in the volcanics. They occur as narrow sills and bosses, and in one place apparently truncate the sediments. Granitic masses ranging from diorite to granite intrude all the preceding groups. These occur as batholiths, stocks, dikes and sills of all dimensions.

The mineralization occurs in granite. The granite is medium to coarse grained and contains remnants of biotite schist. Narrow stringers and dikes of aplite and pegmatite cut the granite; these are usually under five feet in width.

MINERALOGY: Narrow bands of graphitic schist up to two feet wide are exposed in trenches blasted in a narrow pegmatite dike. The dike is composed of dark grey feldspar and small amounts of quartz.

Local mineralization of pyrite in narrow quartz veins is evident and minor amounts of chalcopyrite and molybdenite are present. Uranium occurs in lenses and dikes of granite and pegmatite, cutting greenstone which in places is gneissic or schistose.

HISTORY OF DEVELOPMENT:

1971: Canadian Nickel Co. drilled 650 feet on Hartman Lake property.

1949: Trenching and sampling done on Meehan Group property.

MAP REFERENCES:
OGS Map P.1530 (1:250,000) 1978
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Kenora:
52F/14NW C-1, 52F/16SW D-2
ODM Vol. 50, pt. 2, p. 7,37,41 (1941)
CDMTS,GSC Econ. Geol. Series No. 16, p. 120 (1952)
ODM MRC 9, p. 59 (1968)
MINSY File 50894300

(Minor Occurrence) hem

COMMODITY: Hematite

STATUS: Minor Occurrence

NTS: 52F/7NW

LATITUDE: 49° 28' 47"N LONGITUDE: 92° 48' 05"W

LOCATION: About 3/4 mile east of Kekekwa Lake.

DESCRIPTION:

GEOLOGY: The bedrock of the area is entirely Precambrian in age with the oldest group, the Keewatin, consisting of thick steeply inclined intercalated volcanic rocks and sediments. The contacts between the sediments and volcanics appear to be conformable.

A variety of intrusive rocks ranging from basic to ultrabasic occur in the volcanics. They occur as narrow sills and bosses, and in one place apparently truncate the sediments. Granitic masses ranging from diorite to granite intrude all the preceding groups. These occur as batholiths, stocks, dikes and sills of all dimensions.

Pegmatite dikes, sills and small stocks are fairly common in the granitic intrusives.

MINERALOGY: The mineralization occurs in pink pegmatitic granite which is composed of quartz, microcline and albite-oligoclase. Hematite occurs as minute grains scattered along cleavage cracks in the feldspar and around the mineral grains.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.961, 1 inch to 1/4 mile (1:15,840) 1974

SELECTED REFERENCES: OGS GR 189, p. 5-7,43,50 (1979)
ODM Vol. 50, pt. 2, p. 37,41 (1941)

NAME: LUN-ECHO Li

COMMODITY: Lithium

STATUS: Minor Occurrence

TOWNSHIP: Brownridge

NTS: 52F/15SE

LATITUDE: 49° 48' 45"N LONGITUDE: 92° 39' 25"W

LOCATION: About 8 miles east-northeast of Dryden on the south shore of Mavis Lake.

DESCRIPTION:

GEOLOGY: A series of pegmatite dikes strike in an easterly direction for 3,500 feet through the Brownridge volcanics immediately south of Mavis Lake. The pegmatite dikes contain spodumene, columbite and tantalite.

The volcanics are Keewatin-type greenstones and in the vicinity of the dikes, there are hornblende schists and pillow lavas.The volcanics strike east-west, dip steeply to the north and appear to be overturned.

"A pegmatite dike, trending east-west and dipping between 45-60° towards the north, outcrops approximately 1000 feet (300 m) south of Mavis Lake. The pegmatite mobilizate has intruded the surrounding host mafic metavolcanic rocks (coarse-grained amphibolite flows) and is conformable with the east-west trending metavolcanics. The dike is approximately 15 feet (4.6 m) wide on this particular outcrop. The dike pinches out towards the east and a metamorphic aureole of coarse-grained tourmaline crystals in a matrix of hornblende, mica and chlorite has developed up to 2 inches (5 cm) in thickness.

"Tourmaline crystal halos have also developed around inclusions of mobilizate in the host metavolcanic rocks. The tourmaline halo is also present along the exposed contact of the pegmatite dike and the surrounding metavolcanics." (Speed 1977, p.1-2).

MINERALOGY: "Coarse and fine, green and white spodumene in random orientation, associated with very coarse white feldspar and quartz, occurs in irregular lenses and masses within the dyke. These are exposed here and there through about 2,200 feet along the general strike of the zone, and some parts are very rich. Other parts of the dyke, especially along contacts are low grade or barren, consisting mainly of aplite with locally abundant black tourmaline and small grains of blue apatite. These contrasting assemblages constitute a general but rough form of internal zoning.

"Some of the spodumene is altered to dark green and buff, and some pale greenish mica appears to be pseudomorphous after spodumene. Both spodumene and feldspar are locally stained pink by alteration processes." (Mulligan 1965, p.64).

HISTORY OF DEVELOPMENT: 1956: 43 diamond drill holes totalling 6,647 feet were drilled.

REMARKS: Around 1956-61 a series of shallow drill holes were drilled over a 2100-foot strike length in the main zone. This outlined about 500,000 tons of "ore" that averaged 1.0% lithia mostly above the 200-foot horizon. One

hole at the 500-foot horizon showed a 15-foot width of "ore" grading 1.0% lithia. Work done by Lun-Echo in 1957 showed the spodumene-bearing pegmatite was encountered continuously near the surface but did not appear to be continuous at depth.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Lun-Echo, District Kenora, Township Brownridge
Resident Geologist's Files, OMNR, Kenora: 52F/15SE G-1
CDEMR,GSC Paper 69-45, p. 161 (1970)
ODM MRC 14, p. 48 (1971)
ODM IMR 21, p. 48 (1967)
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 63-64 (1965)
CDMTS,GSC Paper 57-3, p. 16 (1956)
MINSY File 51400100

NAME: MILESTONE MINES Li

COMMODITY: Lithium

STATUS: Minor Occurrence

TOWNSHIP: Brownridge

NTS: 52F/15SE

LATITUDE: 49° 48' 55"N LONGITUDE: 92° 38' 01"W

LOCATION: On the east side of Mavis Lake, approximately 8 miles east of Dryden.

DESCRIPTION:

GEOLOGY: A series of pegmatite dikes strike in an easterly direction for 3,500 feet through the Brownridge volcanics immediately south of Mavis Lake. The pegmatite dikes contain spodumene, columbite and tantalite.

The volcanics are Keewatin-type greenstones and in the vicinity of the dikes, there are hornblende schists and pillow lavas. The volcanics strike east-west, dip steeply to the north and appear to be overturned.

"An irregular pegmatite dike trending approximately northwest-southeast outcrops about 1500 feet east of Mavis Lake. Over most of its exposed length of about 700 feet the pegmatite contains some spodumene. The indicated surface width is from 15 to 60 feet, but a hole drilled under the widest surface exposure intersected only 5.9 feet of pegmatite at a depth of about 50 feet. The pegmatite intersection contained about 20% spodumene and assayed 1.20% lithia." (OGS Kenora Files).

MINERALOGY: Phenocrysts of spodumene of varying sizes occur in the coarser grained parts of the dike. Other minerals present include quartz, apatite, feldspar and mica. Black tourmaline is locally abundant.

HISTORY OF DEVELOPMENT: 1956: 110 feet of drilling was done by Milestone Mines Ltd.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES:
ODM IMR 21, p. 48 (1967)
Resident Geologist's Files, OMNR, Kenora: 52F/15SE H-1

NAME: KOSOWY-LEDUCHOWSKI OCCURRENCE Cs, Li

COMMODITIES: Cesium, lithium

STATUS: Minor Occurrence

NTS: 52F/16NW

DESCRIPTION: Listed under CESIUM - Kosowy-Leduchowski Occurrence

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(Minor Occurrence) (1) mag

COMMODITY: Magnetite

STATUS: Minor Occurrence

TOWNSHIP: Godson

NTS: 52F/4NW

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.921, 1 inch to 1/4 mile (1:15,840) 1974
ODM Map 42b, 1 inch to 1 mile (1:63,360) 1934

(Minor Occurrences) (2) py, cp, mc, mag, po

COMMODITIES: Pyrite, chalcopyrite, malachite, magnetite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52F/5SE

LATITUDE:	49° 21' 37"N	LONGITUDE:	93° 38' 01"W
	49° 20' 57"		93° 37' 36"
	49° 21' 37"		93° 36' 57"
	49° 20' 57"		93° 40' 04"

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.831, 1 inch to 1/4 mile (1:15,840) 1973
ODM Map 52b, 1 inch to 1 mile (1:63,360) 1934

(Minor Occurrence) (1) mc, py

COMMODITIES: Malachite, pyrite

STATUS: Minor Occurrence

NTS: 52F/4NW

LATITUDE:	49° 12' 50"N	LONGITUDE:	93° 53' 01"W

LOCATION: Southwestern part of Kakagi Lake, approximately 6 miles north of Nestor Falls.

DESCRIPTION:

GEOLOGY: All bedrock in the area is of Early Precambrian age except a northwest-trending diabase dike. Sequences of about 1200 to 1500 m thick of basic volcanic rocks lie in the vicinity of Kakagi Lake. Generally these basic volcanics face toward the lake which appears to be the centre of complex synclinal folding. The volcanic sequence consists predominantly of occasional basalt flows and intrusions, however, thin, diacitic breccia and clastic sedimentary zones are present.

On Kakagi Lake, older basic volcanic rocks are overlain by acid volcanic breccia and clastic sedimentary rocks. East of Sandhill Lake bedded pyroclastics grade northward from fine tuff into coarse dacitic pyroclastic breccia. In the northwesterly part of Kakagi Lake dacitic breccia overlies basic volcanics but in the southeast thick bedded, coarse-grained arkose, quartzite and breccia directly overlie the basic volcanic rocks.

North of Kakagi Lake ultramafic rocks form composite sill-like bodies in intermediate pyroclastics. At this locality fresh peridotite, pyroxenite and gabbro are associated with leucogabbro and minor quartz diorite.

MINERALOGY: The showing consists of malachite and pyrite in narrow quartz veins.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.921, 1 inch to 1/4 mile (1:15,840) 1974
ODM Map 42b, 1 inch to 1 mile (1:63,360) 1934

SELECTED REFERENCES: OGS GR 194, p. 4-6,38-41 (1981)
ODM Vol. 42, pt. 4, p. 49-55 (1931)

(Minor Occurrences) (2) py, cp, mc, mag, po

COMMODITIES: Pyrite, chalcopyrite, malachite, magnetite pyrrhotite

STATUS: Minor Occurrences

NTS: 52F/5SE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrence) (2)

NAME: HARRISON, H.A. (COBBLE LAKE OCCURRENCE) mi, tour, (Cb-Ta)

COMMODITIES: Mica, tourmaline, (columbium-tantalum)

STATUS: Minor Occurrence

NTS: 52F/13SE

DESCRIPTION: Listed under COLUMBIUM - Harrison, H.A. (Cobble Lake Occurrence)

NAME: HARRISON, H.A. (COBBLE LAKE OCCURRENCE) mi, tour, (Cb-Ta)

COMMODITIES: Mica, tourmaline, (columbium-tantalum)

STATUS: Minor Occurrence

NTS: 52F/13SE

DESCRIPTION: Listed under COLUMBIUM - Harrison, H.A. (Cobble Lake Occurrence)

(Minor Occurrence) (1) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52F/2NE

LATITUDE: 49° 12' 58"N LONGITUDE: 92° 40' 29"W

LOCATION: Entwine Lake area about 2 miles southeast of Eagle Rock Lake.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.292, 1 inch to 1/2 mile (1:31,680) 1965

NAME: FURLONGE LAKE OCCURRENCE (DRUMMOND CLAIMS) py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 52F/3SW

LATITUDE: 49° 05' 30"N LONGITUDE: 93° 23' 15"W

LOCATION: About 35 miles north of Fort Frances and 10 miles north of Manitou Sound, the north end of the north arm of Rainy Lake. Situated on the northwest side of Furlonge Lake.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 44e, 1 inch to 1 mile (1:63,360) 1934
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967

(Minor Occurrence) (2) mc, py

COMMODITIES: Malachite, pyrite

STATUS: Minor Occurrence

NTS: 52F/4NW

DESCRIPTION: Listed under MALACHITE - (Minor Occurrence) (1)

NAME: CANADIAN NICKEL COMPANY OCCURRENCE po, py

COMMODITIES: Pyrrhotite, pyrite

STATUS: Minor Occurrence

NTS: 52F/4NE

LATITUDE: 49° 10' 43"N LONGITUDE: 93° 43' 17"W

LOCATION: Approximately 1/4 mile east of the north end of Brown Trout Lake.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1000, 1 inch to 1/4 mile (1:15,840) 1975

NAME: FREEPORT-BETH OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrences

NTS: 52F/4NE

DESCRIPTION: Listed under GRAPHITE - Freeport-Beth Occurrence

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NAME: HUDSON'S BAY OIL AND GAS PYRITE OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrence

NTS: 52F/4NE

DESCRIPTION: Listed under GRAPHITE - Hudson's Bay Oil and Gas Pyrite Occurrence.

NAME: SELCO PYRITE OCCURRENCE py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrence

NTS: 52F/4NE

DESCRIPTION: Listed under GRAPHITE - Selco Pyrite Occurrence

(Minor Occurrences) (3) py, cp, mc, mag, po

COMMODITIES: Pyrite, chalcopyrite, malachite, magnetite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52F/5SE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences) (2)

(Minor Occurrence) (4) py

COMMODITY: Pyrite

STATUS: Minor Occurrence

TOWNSHIP: Langton

NTS: 52F/14SW

LATITUDE: 49° 50' 57"N LONGITUDE: 93° 24' 39"W

LOCATION: Approximately 1 mile north of Vermilion Bay Station on the CPR line.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1203, 1 inch to 1 mile (1:63,360) 1976

(Minor Occurrences) (5) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

TOWNSHIP: McIlraith

NTS: 52F/15NE

LATITUDE: 49° 58' 06"N LONGITUDE: 92° 32' 16"W
49° 57' 34" 92° 30' 04"
49° 56' 29" 92° 32' 16"

LOCATION: Southeast of Bluett Lake.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976

(Minor Occurrences) (6) py, cp, po

COMMODITIES: Pyrite, chalcopyrite, pyrrhotite

STATUS: Minor Occurrence

TOWNSHIP: Drope

NTS: 52F/15NE

LATITUDE: 49° 56' 21"N LONGITUDE: 92° 33' 05"W
49° 55' 32" 92° 30' 01"

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976

(Minor Occurrences) (7) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

TOWNSHIP: Van Horne

NTS: 52F/15SW

LATITUDE: 49° 46' 45"N LONGITUDE: 92° 55' 04"W
49° 45' 02" 92° 55' 04"

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1203, 1 inch to 1 mile (1:63,360) 1976

(Minor Occurrences) (8) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

TOWNSHIP: Echo

NTS: 52F/16NW

LATITUDE: 49° 53' 55"N LONGITUDE: 92° 21' 22"W
49° 53' 06" 92° 20' 21"
49° 54' 11" 92° 15' 25"

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976

NAME: McCOMBE OCCURRENCE py, po, Cu, Mo

COMMODITIES: Pyrite, pyrrhotite, copper, molybdenum

STATUS: Minor Occurrence

TOWNSHIP: Jordan

NTS: 52F/16NE

LATITUDE: 49° 57' 39"N LONGITUDE: 92° 03' 05"W

LOCATION: The northwest end of Lyon Bay.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976

NAME: VERMILION LAKE MINE py, Au

COMMODITIES: Pyrite, gold

STATUS: Major Occurrence

TOWNSHIP: Vermilion

NTS: 52F/16NE

LATITUDE: 49° 51' 39"N LONGITUDE: 92° 11' 30"W

LOCATION: South shore of Vermilion Lake.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is of Early Precambrian (Archean) age. The area forms part of a regional belt of alternating metavolcanic and metasedimentary assemblages. These are bordered on the north and south by batholithic areas of granite. Tongues and stocks of granite and more mafic igneous rocks intrude the meta-assemblages.

"There are two main metavolcanic belts in the Vermilion-Abram Lakes area and each is bordered on the south by metasediments. The metasediments south of the northern Vermilion-Pelican Lakes metavolcanic belt consist of an older sequence of metasediments and pyroclastics called the Patara metasediments that rest disconformably on the metavolcanics and a younger sequence called the Abram metasediments that rest unconformably upon the Patara rocks and the metavolcanics or are in fault contact with them.

"The metasediments bordering the southern or Minnitaki-Little Vermilion belt of metavolcanics are probably correlative with the younger Abram metasediments and are unconformable on or are in fault contact with the metavolcanics." (Johnston 1972, p.3).

The deposit occurs in two zones at or near the contact of quartz porphyry and Abram sediments which are to the south.

The north zone consists of a quartz stringer zone that trends about N75°E and dips 65°N at the intrusive contact of a quartz porphyry body and volcanic boulder conglomerate. The quartz stringer zone is about 5 feet wide and is exposed for over 100 feet in length before disappearing under Vermilion Lake.

The south zone consists of a quartz vein up to 12 inches wide. The vein is sparsely mineralized and milky. It lies in sheared conglomerate 10 to 20 feet south of the porphyry contact.

"The north zone mineralization with the heavy alteration including pyritization and carbonatization, is confined to the quartz porphyry contact and is probably genetically related to the intrusive, whereas the south zone mineralization occurs in rocks younger than the quartz porphyry." (Johnston 1972, p.40). In the south zone the conglomerate unconformably overlies the quartz porphyry, therefore the mineralization is not related to it.

MINERALOGY: "The rocks along the contact are highly sheared to quartz-sericite or talcose schists locally containing minor amounts of mariposite. The rocks are also silicified, carbonatized, and impregnated with much pyrite. Other minerals in the zone include minor arsenopyrite, galena, sphalerite, and chalcopyrite." (Johnston 1972, p.40).

In the south zone trenching exposed the vein over 100 feet in length with a width of 1 to 3 feet. Small pockets of sphalerite, galena and minor amounts of pyrite and chalcopyrite are contained in the quartz veins.

HISTORY OF DEVELOPMENT:

1930: 25 tons of ore was mined and 15.75 ounces of gold were produced.

1935: 18 tons of material was mined and 7.076 ounces of gold and 2 ounces of silver were produced.

MAP REFERENCES:

OGS Map P.1530 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2242, 1 inch to 1/2 mile (1:31,680) 1972
ODM Map 41h, 1 inch to 1/2 mile (1:31,680) 1933

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Vermilion: District Kenora, Township Vermilion
Resident Geologist's Files, OMRN, Kenora: 52F/16NE Vermilion
ODM GR 101, p. 3,39-40 (1972)
ODM Vol. 41, pt. 6, p. 19-21 (1933)
ODM Vol. 45, pt. 1, p. 11 (1936)

(Minor Occurrences) (9) py, po, cp, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, sphalerite

STATUS: Minor Occurrences

TOWNSHIP: McAree

NTS: 52F/16SW

LATITUDE:	49° 51' 55"N	LONGITUDE:	92° 21' 47"W
	49° 51' 08"		92° 21' 59"
	49° 51' 23"		92° 18' 30"
	49° 52' 26"		92° 20' 21"

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2242, 1 inch to 1/2 mile (1:31,680) 1972

NAME: MILE LAKE OCCURRENCE sps

COMMODITY: Soapstone

STATUS: Minor Occurrences

NTS: 52F/10NW

LATITUDE:	49° 40' 30"N	LONGITUDE:	92° 46' 08"W
	49° 41' 20"		92° 46' 30"

LOCATION: Southeast and northeast shores of Mile Lake about 8 miles south-southeast of Dryden.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments.

These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

Another group of intrusives called the Algoman form batholiths, stocks and sills; these intrude the preceding groups and consist of a variety of granitic masses ranging from diorite to granite.

"Felsite dikes are particularly abundant in the Mile-Trap Lakes area. Here they cut all the rocks except later basic dikes and the Keweenawan diabase. Field evidence indicates that they are the next to youngest of the Algoman intrusives. Most of the dikes are 10 feet or less in width but occasionally reach widths of 75 feet. The felsite is typically very fine grained and often breaks with a good conchoidal fracture. The colour ranges from pale grey or buff to reddish-brown." (Satterly 1941, p.41-42).

"Two occurrences of soapstone have been noted on Mile Lake. One of these is on the southeast shore of the lake, where the rock is an altered gabbro capped by clay, in which there are a number of caved-in trenches. One chain in from the shore is an outcrop of soapstone, which has been blasted, and

blocks have been sawn, presumably for test purposes. The soapstone is medium-grained and blotchy green and grey, and is probably a highly altered, ultrabasic lens in the gabbro.

"The other occurrence is on the northwest shore of the lake near the west contact of the gabbro mass and is a greenish, coarse-grained rock with aggregates of biotite, probably metamorphic in origin. This rock does not appear to be of the same type as that on the southeast shore." (Satterly 1941, p.54).

REMARKS: "The soapstone is grey-coloured, soft, sectile, free from grit and takes a moderately fine polish with ease." (Wilson 1926, p.56).

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES: ODM IMR 40, p. 41 (1972)
ODM Vol. 50, pt. 2, p. 54 (1941)
CDMR,BM No. 803, p. 65 (1940)
CDM,GS Econ. Geol. Series No. 2, p. 56,64 (1926)

NAME: WABIGOON SOAPSTONE COMPANY LIMITED sps, talc

COMMODITIES: Soapstone, talc

STATUS: Minor Occurrence

TOWNSHIP: Zealand

NTS: 52F/10NE

LATITUDE: 49° 43' 24"N LONGITUDE: 92° 38' 00"W

LOCATION: Approximately 1 1/2 miles west of Wabigoon Station on the peninsula that forms the west boundary of Barritt Bay in the eastern part of Wabigoon Lake.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments. These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

Another group of intrusives called the Algoman form batholiths, stocks and sills; these intrude the preceding groups and consist of a variety of granitic masses ranging from diorite to granite.

"The soapstone deposits occur in a gabbro mass, which underlies most of the peninsula, and the island to the northwest on which the Indian cemetery is located. This mass presumably extends under much of Barritt bay, as it is found on islands and in the village of Wabigoon. The gabbro is, in places, fairly fresh, but adjacent to the soapstone deposits it is highly altered. Two specimens of it studied in thin section under the microscope are found to consist of plagioclase with clouds of clinozoisite, felted aggregates of an amphibole probably derived from a pyroxene, and in one section a minor amount of quartz. The rock is believed to have been originally a gabbro, as related masses are of this composition.... The soapstone has been trenched in two places, and Wright states that there are two bands. A thin section of grey soapstone with brown carbonate rhombs shows, under the microscope, an aggregate of antigorite with bands of magnetite, talc, chlorite, and an iron carbonate. This mineral assemblage indicates that the original rock was ultrabasic in composition." (Satterly 1941, p.53).

The trend of the two bands is northwest and they dip approximately vertical. The northern band has a length of over 500 feet with an average width of 35 feet. It consists of about 35 feet of medium-grained stone, apparently

homogeneous throughout its width. Along each contact is about 18 inches of fine-grained, compact, soft soapstone.

The extent of the southern band has not been determined but it is considered to be much larger than the northern band.

MINERALOGY: The soapstone is fine- to medium-grained, dark grey and soft enough to be scratched with the fingernail. It is composed largely of talc with the largest constituent being dolomite crystals that occur as phenocrysts up to 1/8 inch in diameter. Some rhombs of a brown carbonate and chlorite is also present. The grain is quite uniform and the rock is massive and homogeneous throughout. The rock yields a greenish-grey powder which screens through a 100 mesh. It is distinctly gritty.

Thin section examinations showed that talc forms 50-75% of the rock, chlorite 10-30%, dolomite 2-20%, serpentine 0-12% and magnetite 2-3%.

HISTORY OF DEVELOPMENT:

1921: First developed by E.G. Pidgeon who did stripping and quarried several cubic feet for testing.

1922: Some material was shipped.

1926-7: Some development work was done by Wabigoon Soapstone Co. Ltd.

REMARKS: The deposit is well situated for working, the exposures being on the top of a ridge, thus providing good drainage for quarry operations. It is also very close to rail. The quality is considered good for general purposes and is compared to Virginia Alberene stone by Spence 1922.

MAP REFERENCES:
OGS Map P.1530 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Wabigoon, District Kenora, Township Zealand
Resident Geologist's Files, OMNR, Kenora: 52F/10NE Stn 1
ODM IMR 40, p. 38 (1938)
ODM Vol. 50, pt. 2, p. 53-54 (1941)
CDMR,BM No. 803, p. 64 (1940)
CDM,GS Econ. Geol. Series No. 2, p. 57-63 (1926)
ODM Vol. 32, pt. 6, p. 23-25 (1923)
CDM, MB No. 583, p. 35-38 (1922)
Can. Min. Jour., p. 871 (1924)
MINSY File 51030400

NAME: EAGLE LAKE SOAPSTONE QUARRY (GRACE MINE) sps, talc, chl

COMMODITIES: Soapstone, talc, chlorite

STATUS: Past Producer

NTS: 52F/11NW

LATITUDE: 49° 40' 00"N LONGITUDE: 93° 18' 50"W

LOCATION: About 1/4 mile north of Grace Gold Mine, opposite Pioneer Island on the southwest shore of Eagle Lake, approximately 23 miles southwest of Dryden, south of Temple Township.

DESCRIPTION:
GEOLOGY: "The consolidated rocks of the Eagle Lake area are Precambrian in age. They have been glaciated and are partly covered by glacial-lacustrine clays and gravels and, more rarely, by pleistocene morainal deposits....

The sedimentary series occurs as a strip of varying width, with an east-west to southwest-northeast trend in the northern third of the area. It is bounded on the north and west by intrusive granite, granite gneiss, and pegmatitic granite; on the south by greenstone. The volcanic rocks also form a continuous belt of variable width crossing the area. In addition a narrow spur branches southwestward past the Grace and Eldorado mines...." (Moorhouse 1941, p.5,6).

The soapstone occurs as a band about 100 feet in length and is enclosed in a talc-chlorite schist. It is an altered volcanic flow. The stone is dark bluish green, medium grained and schistose in structure. It weathers white and is cut by veinlets and lenses of carbonate, with a maximum width of 3 inches.

MINERALOGY: Microscopic examinations showed the soapstone to be composed of carbonate and chlorite with talc or a related mineral. Calcite was found associated with chlorite and greenish coarse talc. Some disseminated sulphides were observed associated with ankerite.

HISTORY OF DEVELOPMENT:

1924: Grace Mining Company started development work, installed a large sawing plant and erected a camp.

1925-1927: 174 tons were cut and shipped.

1927: Operations were discontinued.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 2115, 1 inch to 4 miles (1:253,440) 1967
ODM Map 48d, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre,
File Eagle Lake, 49°30', 93°15', District Kenora
Resident Geologist's Files, OMNR,
Kenora: 52F/11NW E-1
ODM IMR 40, p. 44-45 (1972)
ODM Vol. 48, pt. 4, p. 25 (1941)
CDMR,BM No. 803, p. 66 (1940)
MINSY File 51030600

NAME: ZEALAND OCCURRENCE sps

COMMODITY: Soapstone

STATUS: Minor Occurrence

TOWNSHIP: Zealand

NTS: 52F/15SE

LATITUDE: 49° 45' 03"N LONGITUDE: 92° 36' 10"W

LOCATION: Concession III, north half of lot 6, about 1 1/2 miles southeast of Thunder Lake and 10 miles east-southeast of Dryden.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments. These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

Another group of intrusives called the Algoman form batholiths, stocks and sills; these intrude the preceding groups and consist of a variety of granitic masses ranging from diorite to granite.

A Keweenawan diabase dike cuts all the rocks in the area.

Tourmalinization of the volcanics,indicating metasomatic effects,is common in some areas and it is believed that the origin of the tourmaline is indicated by the close association of quartz-tourmaline veins.

In the area, soapstone occurs in sill-like bodies that range from 30-100 feet in thickness. "Tourmalinization of the adjacent volcanics or the margin of the sill has resulted in the formation in several localities of a tourmaline amphibolite. Associated with this rock in places are quartz-tourmaline veins. It would, therefore, seem highly probable that the development of the soapstone in these sills is due to hydrothermal action accompanying the injection of these quartz veins." (Satterly 1941, p.55).

At this locality the soapstone is associated with the Thunder River volcanics. It is believed to be a small boss since it appears to truncate the strike of the sediments at the north contact of the Thunder Bay volcanics.

REMARKS: "The soapstone is grey-coloured, soft, sectile, free from grit and takes a moderately fine polish with ease." (Wilson 1926, p.56).

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Zealand, District Kenora, Township Zealand
ODM IMR 40, p. 43 (1972)
ODM Vol. 50, pt. 2, p. 55 (1941)

(Minor Occurrence) st

COMMODITY: Stone

STATUS: Minor Occurrence

NTS: 52F/11NW

LATITUDE: 49° 38' 47"N LONGITUDE: 93° 18' 17"W

LOCATION: Southwestern part of Eagle Lake.

DESCRIPTION:
GEOLOGY: "The consolidated rocks of the Eagle Lake area are pre-Cambrian in age. They have been glaciated and are partly covered by glacial-lacustrine clays and gravels and, more rarely, by pleistocene morainal deposits....

"The sedimentary series occurs as a strip of varying width, with an east-west to southwest-northeast trend in the northern third of the area. It is bounded on the north and west by intrusive granite, granite gneiss, and pegmatitic granite; on the south by greenstone. The volcanic rocks also form a continuous belt of variable width crossing the area." (Moorehouse 1941, p.5,6).

The building stone at this locality is Laurentian granite. The granite is coarse grained and grey in colour. It is excellent for building and monumental purposes.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES: ODM Vol. 48, pt. 4, p. 5-6 (1939)
ODM Vol. 20, pt. 1, p. 196 (1911)

NAME: CANADIAN PACIFIC RAILWAY COMPANY (HAWK LAKE QUARRY) st

COMMODITY: Stone

STATUS: Producer

TOWNSHIP: MacNicol

NTS: 52F/13SW

LATITUDE: 49° 48' 30"N LONGITUDE: 93° 59' 40"W

LOCATION: North of Hawk Lake in the southwest corner of MacNicol Township, approximately 22 miles east-northeast of Kenora.

DESCRIPTION:

GEOLOGY: The bedrock is Early Precambrian in age. A belt of volcanic and sedimentary assemblages running east-west lies between the English River Belt on the north and a composite granitic batholith to the south. The northern part of the belt dips subvertically, however, dips in the southern part average 30 to 60 degrees north. Aplite, pegmatitic granite and pegmatite intrude the metavolcanic-metasedimentary sequence, the mafic to ultramafic intrusions and most of the felsic and granitic rocks in the area.

The quarry is located in massive to weakly gneissose equigranular granodiorite.

HISTORY OF DEVELOPMENT:

1928-1929: Plant and equipment installed by the Grenville Crushed Rock Company Limited.

Since 1928: Quarry has been used intermittently to produce crushed rock.

Jun.-Dec. 1968: 2,000 tons of crushed rock was produced per day.

1969: Estimated 295,496 cubic yards of crushed rock was produced.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 2302, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.1031, 1 inch to 1 mile (1:63,360) 1975
ODM Map P.471, 1 inch to 1/4 mile (1:15,840) 1968

SELECTED REFERENCES: ODM GR 130, p. 4,36-37 (1976)
ODM MP 33, p. 36 (1970)

NAME: UNIVERSAL GRANITE CENTRE (1976) LIMITED (VERMILION BAY QUARRY) st

COMMODITY: Building stone

STATUS: Producer

TOWNSHIP: Docker

NTS: 52F/13SE

LATITUDE: 49° 49' 40"N LONGITUDE: 93° 30' 05"W

LOCATION: South shore of Aaron Lake about 6 miles west of Vermilion Bay Station on the CPR line.

DESCRIPTION:

GEOLOGY: The bedrock is Early Precambrian in age. A belt of volcanic and sedimentary assemblages running east-west lies between the English River Belt on the north and a composite granitic batholith to the south. The northern part of the belt dips subvertically, however, dips in the southern part average 30 to 60 degrees north. Aplite, pegmatitic granite and pegmatite intrude the metavolcanic-metasedimentary sequence, the mafic to ultramafic intrusions and most of the felsic and granitic rocks in the area.

"The quarry is opened on the crest of a low east-west ridge and is being worked in steps down the gentle northern slope. The workings are spread over an area of 200 feet square (3720m^2) and the inclined sheets have an aggregate thickness of 39 feet (12m). Two small openings on the south side of the ridge just above the route of the natural gas pipeline were apparently the site of earlier operations.

"The rock is a uniform moderate orange-pink, medium-grained, biotite granite. It is typically granitic in texture and is composed of orange-pink feldspar and white to colourless quartz speckled with black mica. A faint gneissosity is apparent in the quarry face but is not readily seen in the hand specimen. It is due to slight relative enrichments of the three minerals in diffuse alternating bands an inch (25cm) or so thick striking east-west and dipping about 12° N. Sheeting in the granite is parallel to the gneissosity and is frequently marked by a pegmatitic layer, 1 to 2 inches (2.5 to 5cm) thick, of quartz and feldspar. Small pegmatitic patches within the mass of the rock are not sufficiently frequent to be deleterious. Staining was not observed on any of the rock surfaces and quartz segregations are absent.

"The thickness of sheets in the quarry area measured from top to bottom are 2,2,3,4,2,12,10, and 4 feet (0.6,0.6,0.9,1.2,0.6,3.6,3.0, and 1.2m). The two thick sheets form the major producing zone. Outcropping parts of the thin upper sheets are present as erosional remnants on the northern slope of the ridge and hence their thicknesses are not constant. Jointing is poorly developed in one direction--N.45° E., and the interval is wide. The jointing is usually tight, almost healed, and is often marked by a 1/4-inch (0.6cm) bleached zone. The rock breaks well in directions parallel to the jointing and sheeting, and "plug and feather", and black-powder blasting techniques, are used in these directions. The third direction is difficult and requires channelling methods to insure a square cut.

"The granite is well exposed in outcrops along highway No. 17 for more than half a mile (1km). Commonly its structure is massive and sparsely jointed as in the quarry area, but towards the eastern limits two joint systems are developed. One is in a direction N.50° W. at intervals of 8 inches to 6 feet (20cm to 1.8m); the other is north-south at 2 to 20 feet (0.6m to 6m). Westward the granite contains blocks of amphibolite and it grades finally into a contorted lit-par-lit gneiss by injection between the bands of the flanking dark paragneiss." (Guillet 1964, p.45).

MINERALOGY: "The stone may be described as a medium-grained pink biotite granite of uniform colour, composition, and texture. It is composed mainly of orthoclase, microcline, and quartz, with minor amounts of plagioclase, biotite, and hornblende; magnetite (or ilmenite) is the common accessory mineral. The quartz is glassy clear and the feldspar is translucent to opaque. Biotite makes up about 2 per cent of the stone, and hornblende about 1 per cent. Pyrite is absent, and the mineral constituents, with the exception of the orthoclase, some of which has been altered to white mica, are in an excellent state of preservation. The stone takes an excellent polish and there is a fair contrast between sandblasted and polished surfaces. It has a pleasing appearance and should become quite popular both as a building and as a monumental stone." (Carr 1955, p.146).

HISTORY OF DEVELOPMENT:
1948: Quarry opened by Vermilion Pink Granite Co. Ltd.
1954-1960: 4,819 tons of granite valued at $395,000 were quarried.
1971: Quarry re-opened by Universal Granite Company.

REMARKS: The rock is considered to be of good quality. Transporting the granite to a processing plant should not be difficult since it is close to Highway 17 and a CPR mainline.

"Physical properties of the Vermilion pink granite are as follows: compressive strength, 26,600 p.s.i.; absorption, 0.22 percent; bulk specific gravity, 2.60; weight per cubic foot, 162 pounds; abrasive hardness, 80.8." (Guillet 1964, p.47).

MAP REFERENCES:
OGS Map P.1530 (1:250,000) 1978
ODM Map P.1031, 1 inch to 1 mile (1:63,360) 1975
ODM Map 2303, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.544, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965
ODM Map P.242, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Universal, District Kenora, Township Docker
Resident Geologist's Files, OMNR, Kenora: 52F/13SE St-1
ODM GR 130, p. 4,52 (1976)
ODM IMR 40, p. 44-47 (1964)
CDMTS,MB No. 846, p. 146-147 (1955)

NAME: NELSON GRANITE, Division of NELSON MONUMENTS COMPANY LIMITED st

COMMODITY: Building stone

STATUS: Producer

TOWNSHIP: Docker

NTS: 52F/14SW

LATITUDE: 49° 49' 26"N LONGITUDE: 93° 29' 52"W

LOCATION: South side of Highway 17, about 6 miles west of Vermilion Bay.

DESCRIPTION: This quarry is in the same granite body as the Universal Granite Centre quarry. See UNIVERSAL GRANITE CENTRE (1976) LIMITED (VERMILION BAY QUARRY), p.135.

HISTORY OF DEVELOPMENT:

1981: Quarry opened by Nelson Granite, Division of Nelson Monument Company Ltd. Approximately 20,000 cubic feet was produced.

REMARKS: Stone is transported by truck to the company's finishing plant in New Brunswick.

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Kenora.

(Minor Occurrence) talc

COMMODITY: Talc

STATUS: Minor Occurrence

NTS: 52F/4NW

LATITUDE: 49° 08' 50"N LONGITUDE: 93° 53' 00"W

LOCATION: Northern part of Kakagi Lake.

DESCRIPTION:

GEOLOGY: All bedrock in the area is of Early Precambrian age except a northwest-trending diabase dike. Sequences of about 1200 to 1500 m thick of basic volcanic rocks lie in the vicinity of Kakagi Lake. Generally these basic volcanics face toward the lake which appears to be the centre of complex synclinal folding. The volcanic sequence consists predominantly of occasional basalt flows and intrusions, however, thin, dacitic breccia and clastic sedimentary zones are present.

On Kakagi Lake, older basic volcanic rocks are overlain by acid volcanic breccia and clastic sedimentary rocks. East of Sandhill Lake bedded pyroclastics grade northward from fine tuff into coarse dacitic pyroclastic breccia. In the northwesterly part of Kakagi Lake dacitic breccia overlies basic volcanics but in the southeast thick bedded, coarse-grained arkose, quartzite and breccia directly overlie the basic volcanic rocks.

North of Kakagi Lake ultramafic rocks form composite sill-like bodies in intermediate pyroclastics. At this locality fresh peridotite, pyroxenite and gabbro are associated with leucogabbro and minor quartz diorite.

Talc mineralization occurs in small segregations in some of the green schists in the area.

MINERALOGY: The talc is pearly whitish-green and shows some foliations.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: OGS GR 194, p. 4-6 (1980)
ODM IMR 40, p. 37 (1972)

NAME: TRAP LAKE talc

COMMODITY: Talc

STATUS: Minor Occurrence

NTS: 52F/10NW

LATITUDE: 49° 40' 00"N LONGITUDE: 92° 43' 20"W

LOCATION: Islands 249 and 246 near the outlet of Trap Lake (northeast side) about 9 miles southeast of Dryden.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments. These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

Another group of intrusives called the Algoman form batholiths, stocks and sills; these intrude the preceding groups and consist of a variety of granitic masses ranging from diorite to granite.

"Felsite dikes are particularly abundant in the Mile-Trap Lakes area. Here they cut all the rocks except later basic dikes and the Keweenawan diabase. Field evidence indicates that they are the next to youngest of the Algoman intrusives. Most of the dikes are 10 feet or less in width but occasionally reach widths of 75 feet. The felsite is typically very fine grained and often breaks with a good conchoidal fracture. The colour ranges from pale grey or buff to reddish brown." (Satterly 1941, p.41-42).

"The origin of the soapstone deposits near Wabigoon and on Mile and Trap lakes is uncertain. Field and microscopic evidence would indicate that all the soapstones could be derived from the alteration of harzburgite, which apparently occurs as ultrabasic segregations in the gabbro masses. As fairly fresh harzburgite occurs on island No. 247 in Trap Lake, it is apparent that the alteration of the harzburgite masses tended to be local. On Mile and Trap lakes the gabbro mass is cut by numerous felsite and quartz porphyry dikes, and it is thought that the hydrothermal activity accompanying the injection of these dikes has caused the development of the soapstone. The soapstone deposit near Wabigoon is reported not to extend to depth, but it may be noted that a granite stock lies only 1 mile to the southeast of the deposit and may be the cause of the development of the soapstone from a lens of an ultrabasic rock in the gabbro mass." (Satterly 1941, p.55).

MINERALOGY: The soapstone from island 246 "is fairly massive but has widely spaced fractures, is medium-grained and grey and green in colour, the two colours representing pseudomorphs after two minerals. In thin section under the microscope the aggregate consists of talc, carbonate, and antigorite, with a minor amount of penninite and iron ores. The original two minerals were probably olivine and a pyroxene. The olivine is represented by an

aggregate of talc; carbonate, with grains of iron ore; and some antigorite. The pyroxene pseudomorph shows strips of antigorite at right angles to each other, presumably paralleling two sets of cleavages, with a talc aggregate between these strips. The original rock was, therefore, a variety of peridotite; as harzburgite occurs on a nearby island, the rock was most likely that species.

"On island No. 249 the soapstone is fairly massive, medium-grained, and greyish-green in colour. The reef just southwest of this island is also a medium-grained soapstone composed of a green mineral in a chocolate-brown groundmass. These occurrences are also believed to be altered harzburgites." (Satterly 1941, p. 55-56).

HISTORY OF DEVELOPMENT:

1923: Thermo-Stone Quarries Ltd. (of Toronto) was formed to develop the property

1924: Company amalgamated with Wabigoon Soapstone Co. and a small amount of surface work was carried out with some samples sent for testing.

REMARKS: Little or no production was reported, however, several cubic feet of soapstone were shipped for tests which showed the soapstone to be of high quality.

MAP REFERENCES:
OGS Map P.1530 (1;250,000) 1978
ODM Map 2115, i inch to 4 miles (1:253,440) 1967
ODM Map P242, 1 inch to 2 miles (1:126,720) 1964
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Trap Lake, District Kenora, Lat. 49°30'. Long. 92°30'
Resident Geologist's Files, OMNR, Kenora: 52F/10NW Stn 2
ODM IMR 40, p. 41 (1972)
ODM Vol. 50, pt. 2, p. 41-42,55-56 (1941)
CDMR,BM No. 803, p. 64-65 (1940)
CDM,GS Econ. Geol. Series No. 2, p. 57-58,63-65 (1926)
MINSY File 51030500

NAME: WABIGOON SOAPSTONE COMPANY LIMITED sps, talc

COMMODITIES: Soapstone, talc

STATUS: Minor Occurrence

NTS: 52F/10Ne

DESCRIPTION: Listed under SOAPSTONE - Wabigoon Soapstone Company Limited.

NAME: EAGLE LAKE SOAPSTONE QUARRY (GRACE MINE) sps, talc, chl

COMMODITIES: Soapstone, talc, chlorite

STATUS: Past Producer

NTS: 52F/11NW

DESCRIPTION: Listed under SOAPSTONE - Eagle Lake Soapstone Quarry (Grace Mine)

NAME: MEDICINE LAKE OCCURRENCES (FALCONBRIDGE NICKEL MINES LTD.)

COMMODITIES: Beryl, tourmaline, tantalite be, tour, ta

STATUS: Minor Occurrences

NTS: 52F/13SW

DESCRIPTION: Listed under BERYL - Medicine Lake Occurrences (Falconbridge Nickel Mines Ltd.)

NAME: HARRISON, H.A. (COBBLE LAKE OCCURRENCE) mi, tour, (Cb-Ta)

COMMODITIES: Mica, tourmaline, (columbium-tantalum)

STATUS: Minor Occurrence

NTS: 52F/13SE

DESCRIPTION: Listed under COLUMBIUM - Harrison, H.A. (Cobble Lake Occurrence)

NAME: MEDICINE LAKE OCCURRENCES (FALCONBRIDGE NICKEL MINES LIMITED)

COMMODITIES: Mica, tourmaline, tantalite be, tour, ta

STATUS: Minor Occurrences

DESCRIPTION: Listed under BERYL - Medicine Lake Occurrences (Falconbridge Nickel Mines Ltd.)

NAME: HARRISON, H.A. (COBBLE LAKE OCCURRENCE) mi, tour, (Cb-Ta)

COMMODITIES: Mica, tourmaline, (columbium-tantalum)

STATUS: Minor Occurrence

NTS: 52F/13SE

DESCRIPTION: Listed under COLUMBIUM - Harrison, H.A. (Cobble Lake Occurrence)

(Minor Occurrence) (1) be, tour

COMMODITIES: Beryl, tourmaline

STATUS: Minor Occurrence

NTS: 52F/15SW

DESCRIPTION: Listed under BERYL - (Minor Occurrence) (1)

(Minor Occurrence) (2) tour

COMMODITY: Tourmaline

STATUS: Minor Occurrence

TOWNSHIP: Zealand

NTS: 52F/15SE

LATITUDE: 49° 49' 44"N LONGITUDE: 92° 42' 43"W

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments. These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

Another group of intrusives called the Algoman form batholiths, stocks and sills; these intrude the preceeding groups and consist of a variety of granitic masses ranging from diorite to granite.

A Keweenawan diabase dike cuts all the rocks in the area.

Tourmalization of the volcanics, indicating metasomatic effects, is common in some areas and it is believed that the origin of the tourmaline is indicated by the close association of quartz-tourmaline veins.

MINERALOGY: Black tourmaline occurs a single metacrysts or as sheath-like clusters. The metacrysts can be as much as 1/4 of an inch in diameter and 1 inch long while the clusters can be several inches across. A thin section examination showed the tourmaline to be strongly pleochroic. Graphic intergrowths of quartz and tourmaline may be present occasionally.

MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976

SELECTED REFERENCE: ODM Vol. 50, pt. 2, p. 19,46,55 (1941)

(Minor Occurrences) (3) & (4) tour

COMMODITY: Tourmaline

STATUS: Minor Occurrences

TOWNSHIP: Brownridge

NTS: 52F/15SE

LATITUDE: (3) 49° 48' 30" LONGITUDE: 92° 39' 42"
(4) 49° 49' 11" 92° 38' 01"

LOCATION: (3) Just south of Mavis Lake.
(4) East shore of Mavis Lake.

DESCRIPTION:

GEOLOGY: All the bedrock in the area is Precambrian in age. The oldest group is made up of a thick sequence of steeply inclined intercalated volcanic flows and sediments. These Keewatin volcanics consist of a variety of intrusive rocks ranging from basic to ultrabasic in composition. The intrusives occur as narrow sills, small to large bosses and some of them contain inclusions of the volcanics and in one place truncate the sediments.

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MAP REFERENCES: OGS Map P.1530 (1:250,000) 1978
ODM Map 50e, 1 inch to 1 mile (1:63,360) 1941
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976

SELECTED REFERENCE: ODM Vol. 50, pt. 2, p. 19,46,55 (1941)

NTS 52G

NAME: GARGOYLE LAKE ASBESTOS DEPOSIT asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

NTS: 52G/3SE

LATITUDE: 49° 05' 00"N LONGITUDE: 91° 04' 00"W

LOCATION: Eastern shore of Gargoyle Lake, approximately 5 miles west of the western boundary of Hanniwell Township.

DESCRIPTION:

GEOLOGY: The area consists of a greenstone belt that averages 3-4 miles in width. The belt is made up of Early Precambrian basic and intermediate lavas and pyroclastic rocks with some sediments in most places highly altered, steeply folded and schistose.

The rocks of the Lumby Lake greenstone belt are mainly andesite and basalt with minor dacite. Most of the original minerals of the volcanics have been altered to a mass of epidote, carbonate and chlorite. Primary structures such as pillows, amygdules and flow top features have only been preserved in relatively few places in the area.

The texture of the greenstones range from aphanitic to coarse-grained, however, most of the flows are fine-grained equigranular, but a few andesites are porphyritic.

"Bands of serpentine rock, representing serpentinized dikes and sills of peridotite, were observed in the Oldman and Gargoyle lakes area. They appear to be 100-200 feet wide, striking parallel to the general trend of the area. The age relationship with the Laurentian granite is not known, though the intrusive at Oldman Lake is near or at the contact." (Woolverton 1960, p.27).

MINERALOGY: "The rock is light grey to brown weathering, dark green to black on fresh surfaces. In thin section it appears as a mesh of serpentine derived from the alteration of an original dunite. Serpentine occurs as

kernels pseudomorphous after olivine. The typical cracks of the crystals are filled with minute cross fibres of serpentine with magnetite, and the interstitial material between the pseudomorphs consists of fibrous serpentine, minor chlorite, epidote, and magnetite." (Woolverton 1960, p.27).

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM MAP P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map P.964, 1 inch to 2 miles (1:126,720) 1974

SELECTED REFERENCE: ODM Vol. 69, pt. 5, p. 5-6,27 (1960)

NAME: TEXMONT MINES LIMITED fl, py

COMMODITIES: Fluorite, pyrite

STATUS: Minor Occurrence

NTS: 52G/15NW

LATITUDE: 49° 56' 35"N LONGITUDE: 90° 51' 40"W

LOCATION: About 48 miles east-southeast of Sioux Lookout on Seaton Island in the southwestern part of Sturgeon Narrows in Sturgeon Lake.

DESCRIPTION:

GEOLOGY: The area is underlain entirely by Precambrian rocks; these are extensively overlain by glacial deposits and recent swamp accumulations. The Precambrian rocks include mafic to intermediate and felsic to intermediate metavolcanics, metasediments, mafic and ultramafic intrusives and felsic to intermediate intrusive rocks.

The rocks have been folded as indicated by divergent structural trends and small scale fold structures.

The showing occurs in an alkalic plutonic complex. The complex is elongated in a northeasterly direction and tapers abruptly at the southwest end. It has been identified as a syenite by Moore(1911, p.155).

According to Graham(1930, p.44) "The syenite along the narrows varies greatly in colour, texture, and composition. The main mass is a coarse, grey augite syenite, but pink phases are common along the border. Light-coloured nephelite syenite is also found in small amounts. Under the microscope the nephelite syenite is seen to consist of microperthite, orthoclase, augite, nephelite, some biotite, cancrinite, and titanite."

On Seaton Island, the location of the showing, the alkalic complex has intruded metavolcanics, mafic intrusive rocks and metasediments at the southwest end and metasediments at the northeast end. Fenitization is also apparent. The complex also exhibits flow banding and compositional and textural layering.

MINERALOGY: "Under the microscope one section is composed of the following minerals: Orthoclase, microcline, green hornblende, a little biotite and a small quantity of mica the pleochroism of which would identify it as zinnwaldite. The relation of this mica to the other minerals suggests that it has been introduced into the rock from an external source. Titanite in prismatic and in acute rhombic sections is fairly common, and small crystals of it are frequently enclosed in the crystals of hornblende. A considerable amount of topaz is present and it shows as a colorless, slightly higher birefringent mineral than quartz, filling spaces between the feldspars and in places appears to have replaced portions of these minerals. Fluorite varying in color from blue, violet to colorless is quite common. It occurs in some cases as irregular streaks, but also as little cubes. It is found as small crystals in orthoclase, fills holes in topaz, and occupies cracks in the other minerals or the interstices between various crystals. Apatite is found in small crystals, and pyrite and magnetite in small quantity. Other thin sections show orthoclase, microcline, green hornblende, a little albite, small crystals of augite, apatite, a little tourmaline, considerable titanite, calcite, fluorite, topaz and a small proportion of quartz." (Moore 1911, p.155).

HISTORY OF DEVELOPMENT: 1970: Ground magnetic and electromagnetic surveys.

1971: Airborne magnetic and electromagnetic surveys were carried out by Texmont Mines Limited.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map 2335, 1 inch to 1/2 mile (1:31,680) 1976
ODM Map P.761, 1 inch to 1/4 mile (1:15,840) 1972

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Sioux Lookout: 52G/15NW
OGS Toronto AFRO Files 63.2952, 2.382 and 2.180
ODM GR 154, p. 54 (1976)
ODM GR 24, p. 22-30 (1964)
ODM Vol. 39, pt. 2, p. 44 (1930)
ODM Vol. 33, pt. 6, p. 33-38 (1924)
OBM Vol. 20, pt. 1, p. 155 (1911)
OBM Vol. 12, p. 105 (1903)

NAME: WAHL, W.G. LIMITED f1

COMMODITY: Fluorite

STATUS: Major Occurrence

NTS: 52G/15NW

LATITUDE: 49° 57' 25"N LONGITUDE: 90° 49' 05"W

LOCATION: About 50 miles east-southeast of Sioux Lookout and 4 miles north of the west end of Post Lake.

DESCRIPTION: See TEXMONT MINES LIMITED for GEOLOGY and MINERALOGY, p.143.

GEOLOGY: Diamond drilling on the property intersected rock units of the Sturgeon Narrows Alkalic Complex and a mixed assemblage of intermediate metavolcanics and metasediments intruded by the complex. The drilling also intersected mylonite zones that Wahl interpreted as being the result of block faulting which bordered a graben structure extending down Sturgeon Narrows.

MINERALOGY: Diamond drill results showed fluorite, strontianite, roscoelite, sulphides and local anomalous gold values. It was also noticed that local sheared and carbonatized zones contained more massive pods of fluorite.

HISTORY OF DEVELOPMENT:

1968: Ground magnetic surveys were done.

1969: Five diamond-drill holes, totalling 4,336 feet, were drilled.

1970: Two diamond-drill holes, totalling 1,455 feet were drilled by Selco Exploration Company Limited.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map 2335, 1 inch to 1/2 mile (1:31,680) 1976
ODM Map P.761, 1 inch to 1/4 mile (1:15,840) 1972

SELECTED REFERENCES: OGS Toronto AFRO File 63.2437
ODM GR 154, p. 54-55 (1976)
ODM GR 24, p. 22-30 (1964)
ODM Vol. 39, pt. 2, p. 44 (1930)
ODM Vol. 33, pt. 6, p. 33-38 (1924)
OBM Vol. 20, pt. 1, p. 155 (1911)
OBM Vol. 12, p. 105 (1903)

NAME: GREEN POINT MINES LIMITED gt

COMMODITY: Garnet

STATUS: Minor Occurrence

NTS: 52G/15NE

LATITUDE: 49° 58' 00"N LONGITUDE: 90° 44' 45"W

LOCATION: Approximately 52 miles east-southeast of Sioux Lookout and 3 miles northwest of Quest Lake.

DESCRIPTION:

GEOLOGY: The area is underlain entirely by Precambrian rocks; these are extensively overlain by glacial deposits and recent swamp accumulations. The Precambrian rocks include mafic to intermediate and felsic to intermediate metavolcanics, metasediments, mafic and ultramafic intrusives and felsic to intermediate intrusive rocks.

The rocks have been folded as indicated by divergent structural trends and small scale fold structures.

The showing occurs in an alkalic plutonic complex. The complex is elongated in a northeasterly direction and tapers abruptly at the southwest end. It has been identified as a syenite by Moore (1911, p.155).

"The property is underlain on the west side of Sturgeon Narrows by an intercalated assemblage of mafic to intermediate and felsic to intermediate metavolcanics, and minor metasediments, and is cut by minor mafic intrusive rocks. The eastern portion of the property is underlain by a portion of the Sturgeon Narrows Alkalic Complex and by the contact zone of this complex with a predominantly metasedimentary assemblage fenitized by the alkalic complex." (Trowell 1976, p.50-51).

MINERALOGY: In the north-central portion of the complex garnet is a major constituent of the inner nepheline syenite. The garnet is black to brown in colour with poorly developed dodecahedra. The grain size varies from less than 12 mm to more than 2 cm.

HISTORY OF DEVELOPMENT:

1970: Airborne magnetic and electromagnetic surveys were carried out over the property.

1971: Ground magnetic and electromagnetic surveys were done. Six diamond drill holes totalling 1,712 feet were drilled west of Sturgeon Narrows. Five diamond drill holes totalling 564 feet were drilled on the east side of the Narrows south of Anderson Lake.

MAP REFERENCES:
OGS Map P.1529 (1:250,000) 1978
ODM Map 2335, 1 inch to 1/2 mile (1:31,680) 1976
ODM Map P.761, 1 inch to 1/4 mile (1:15,840) 1972

SELECTED REFERENCES:
OGS Toronto AFRO Files 63.2729, 2.416 and 2.766
ODM GR 154, p. 35,46,50 (1976)
ODM GR 24, p. 22-30 (1964)
ODM Vol. 39, pt. 2, p. 44 (1930)
ODM Vol. 33, pt. 6, p. 33-38 (1924)
OBM Vol. 20, pt. 1, p. 155 (1911)
OBM Vol. 12, p. 105 (1903)

NAME: MATTAGAMI LAKE MINES LIMITED gt, tour, py

COMMODITIES: Garnet, tourmaline, pyrite

STATUS: Minor Occurrence

NTS: 52G/15SW

LATITUDE: 49° 51' 50"N LONGITUDE: 90° 51' 58"W

LOCATION: About 49 miles southeast of Sioux Lookout and 2 miles south of Lyon Lake.

DESCRIPTION:

GEOLOGY: The area is underlain entirely by Precambrian rocks; these are extensively overlain by glacial deposits and recent swamp accumulations. The Precambrian rocks include mafic to intermediate and felsic to intermediate metavolcanics, metasediments, mafic and ultramafic intrusives and felsic to intermediate intrusive rocks.

The rocks have been folded as indicated by divergent structural trends and small scale fold structures.

The showing occurs in an alkalic plutonic complex. The complex is elongated in a northeasterly direction and tapers abruptly at the southwest end. It has been identified as a syenite by Moore (1911, p.155).

MINERALOGY: Drilling intersected "an assemblage of intercalated intermediate and felsic pyroclastics with local graphitic tuff and sulphide zones containing pyrite, pyrrhotite and minor arsenopyrite and sphalerite." (Trowell 1976, p.52).

HISTORY OF DEVELOPMENT: 1970: Ground magnetic and electromagnetic surveys were carried out over the property.
Two diamond drill holes totalling 1,015 feet were drilled.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map P.670, 1 inch to 1/4 mile (1:15,840) 1971
ODM Map 2284, 1 inch to 1/2 mile (1:31,680) 1974

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Sioux Lookout: 52G/15NW
OGS Toronto AFRO File 63.2779
ODM GR 154, p. 43,44,52 (1976)
ODM GR 24, p. 22-30 (1964)
ODM Vol. 39, pt. 2, p. 44 (1930)
ODM Vol. 33, pt. 6, p. 33-38 (1924)
OBM Vol. 20, pt. 1, p. 155 (1911)
OBM Vol. 12, p. 105 (1903)

(Minor Occurrences) gf, py, po, cp

COMMODITIES: Graphite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

TOWNSHIP: Factor

NTS: 52G/14NW

LATITUDE: 49° 54' 20"N LONGITUDE: 91° 23' 50"W
49° 55' 35" 91° 28' 05"
49° 55' 45" 91° 29' 28"
49° 59' 15" 91° 22' 35"

LOCATION: Approximately 24 miles east-southeast of Sioux Lookout and 1 mile east of Yonde Lake and 2 miles north of Wyatt Lake.

DESCRIPTION:

GEOLOGY: The consolidated rocks of the area are Precambrian in age. The occurrences are in a zone of metavolcanics of Keewatin age.

The Keewatin forms a belt which is about 16 miles wide in the extreme western part of the area. The series is made up almost entirely of volcanic rocks with lava flows, greenstone or andesite being the most common.

Alteration of the Keewatin formations has taken place. A regional shearing in a general northeast direction has produced gneissic and in some cases schistose rocks in which secondary minerals such as chlorite, carbonate and sericite have been developed. The contact action of intrusive bodies of granite has formed contact zones of coarsely crystalline greenstone into which quartz and feldspar have been introduced in considerable amounts.

The west end of the property consists of intermediate tuff and mafic volcanics. On the east end there are narrow bands of acid volcanics interbedded with mafic volcanics. The rocks dip to the south and have a general strike of N60°E.

MINERALOGY: The mineralization consists of seamed and disseminated sulphides (pyrite, pyrrhotite and chalcopyrite) in shear zones. Minor amounts of graphite are also present.

HISTORY OF DEVELOPMENT: 1969: Gold Ray Mines carried out electromagnetic and magnetometer surveys.

1970: 398 feet of diamond drilling was done.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map 46d, 1 inch to 2 miles (1:126,720) 1937

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Sioux Lookout:
52G/14NW, Wyatt Lake Report #276
ODM Vol. 46, pt. 6, p. 5-8 (1937)

(Minor Occurrence) py, mag

COMMODITIES: Pyrite, magnetite

STATUS: Minor Occurrence

NTS: 52G/9SW

LATITUDE: 49° 31' 50"N LONGITUDE: 90° 23' 30"W

LOCATION: Western shore of Little Aylsworth Lake about 21 miles north-northeast of Graham on the C.N.R. line.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map P.963, 1 inch to 2 miles (1:126,720) 1974

NAME: TEXMONT MINES LIMITED / STURDY MINES LIMITED mus

COMMODITY: Muscovite

STATUS: Minor Occurrence

NTS: 52G/15NW

LATITUDE: 49° 56' 50"N LONGITUDE: 90° 51' 50"W

LOCATION: Approximately 48 miles east-southeast of Sioux Lookout on Seaton Island in the southwestern part of Sturgeon Narrows in Sturgeon Lake.

DESCRIPTION: See TEXMONT MINES LIMITED for GEOLOGY and MINERALOGY, p.143.

HISTORY OF DEVELOPMENT: 1970: Ground magnetic and electromagnetic surveys.

1971: Airborne magnetic and electromagnetic surveys were carried out by Texmont Mines Limited.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map 2335, 1 inch to 1/2 mile (1:31,680) 1976
ODM Map P.761, 1 inch to 1/4 mile (1:15,840) 1972

SELECTED REFERENCES:
Resident Geologist's Files, OMNR,
Sioux Lookout: 52G/15NW
OGS Toronto AFRO Files 63.2952, 2.382 and 2.180
ODM GR 154, p. 54 (1976)
ODM GR 24, p. 22-30 (1964)
ODM Vol. 39, pt. 2, p. 44 (1930)
ODM Vol. 33, pt. 6, p. 33-38 (1924)
OBM Vol. 20, pt. 1, p. 155 (1911)
OBM Vol. 12, p. 105 (1903)

NAME: STEDMAN TOWNSHIP PEAT DEPOSIT peat

COMMODITY: Peat

STATUS: Major Occurrence

TOWNSHIP: Stedman

NTS: 52G/2SE

LATITUDE: 49° 05'00"N LONGITUDE: 90° 41' 05"W

LOCATION: About 80 miles southeast of Thunder Bay and 1.6 km east and 2 km south of the northwest corner of the township.

DESCRIPTION: "This deposit is a large and irregularly shaped bog with numerous embayments and densely forested islands.... The western side is occupied by an open elongated flark zone 1500 m long. The northern tip of the zone coincides with a drainage entry and the zone is narrowest at this point. Seven hundred and sixty metres farther south the zone widens abruptly from 75 m to 150 m and continues to within 150 m of the southern end of the deposit. An outlet ditch leads south from the deposit 300 m farther to the south.

"A second partially developed flark zone occupies the northern part of the area examined. This zone extends east-west for about 975 m and averages 220 m in width with a narrow strip extending an additional 600 m to the west. The western end appears to be related to inlet drainage. The eastern end has poorly defined drainage into the Stedman River 450 m to the east.

"The flarks are parallel, elongated, wet muddy shallow troughs in the sphagnum surface, a few metres wide. They are due to surface stretching or creep, and most commonly occur on the shoulders of high moor bogs. Here the flark zone appears to be due to creep from the drainage pattern. The orientation of the flarks is perpendicular to the direction of the drainage.

"The flark zones have an overgrowth of clumps of grass, sparse stunted tamarack, and low bush cranberry growing on a thin moss carpet.

"Fringing the flark zone are open grassy areas or open spruce areas growing on sphagnum.

"The intervening areas are covered by spruce trees with varying growth densities and heights.... The undergrowth in the areas of taller trees consists of labrador tea and some grass growing on sphagnum.

"Outcrops of granite were observed along the southern margin of the central part and on one of the spruce islands in the central part.

"The depth of the deposit where sampled varies from 1.5 to 5.95 m and averages in excess of 3.6 m. At sites 5, 6, and 7 bottom was not reached due to lack of extension rods. Additional rods were obtained and bottom was reached at 5.95 m at site 8. At site 9 bottom could not be reached due to a root matt at 3.5 m.

"An area of 55 ha of horticultural grade sphagnum has been partially delimited by four test holes in the west-central part of the bog. The depth of the sphagnum varies from 1.7 to 3.5 m and averages 2.7 m. This area is underlain by peat resting on a clay bottom. There are insufficient data to determine the thickness of the peat in this sector but it probably varies from 2.45 to over 3 m.

"The sphagnum is light brown, medium fibred and elastic. Minor himified lenses at site 6, (0.45 to 3.0 m) and at site 8, (3.0 to 3.5 m) would result in a dustier product than elsewhere. The absorption varies from 10.11 to 14.28, the ash from 2.26 to 4.35 percent, and the water content in the natural state from 92 to 94 percent with an average of 93 percent.

"Surrounding the area of horticultural grade moss, the sphagnum layer is from 0.25 to 1.0 m thick resting on 1.25 to 3.7 m of peat. The average thickness of the peat is 2.28 m.

"The peat is fine textured and the humification varies from H5 to H8 but is mostly H7. The main characteristics are tabulated below.

"The ash content excludes anomalously high values of 34.8 percent at site 2, 0.25 to 1.5 m and of 33.6 percent at site 4, 2.5 to 3.5 m." (Graham 1979, p.69,72).

CHEMICAL ANALYSIS:	Range	Average
Water percent	77-93	90.16
Ash Dry percent	6.25-13.4	10.14
Wet Vol.Dry Wt. gm/cc	0.08-0.14	0.11
Cal. Val. Kcal/Kgm	2726-5768	4571
S percent	.09-.25	.18
P percent	.04-.07	.05

REMARKS: According to Graham (1979, p.72), "There do not appear to be any drainage problems associated with this deposit.... The ditching required here is limited."

Additional sampling is required to determine accurately the reserves of horticultural grade peat moss. Based on the preliminary data the thickness and area is sufficient to support a small operation. However, the tree cover and roots will mean higher preparation and production costs.

MAP REFERENCE: OGS Map P.1529 (1:250,000) 1978

SELECTED REFERENCE: OGS MDC 19, p. 69-72 (1979)

NAME: CATHCART TOWNSHIP peat

COMMODITY: Peat

STATUS: Major Occurrence

TOWNSHIP: Cathcart

NTS: 52G/6SW

LATITUDE: 49° 15' 30"N LONGITUDE: 91° 16' 00"W

LOCATION: Deposit centred 6.8 km east and 2 km south of the northwest corner of the township. Thunder Bay is 174 km to the southeast.

DESCRIPTION: The deposit is about 1300 m long and 180 m wide in the central part and contains a few scattered spruce growing on grass and sphagnum.

The depth varies from 1.25 to 1.75 m where sampled. "The surface layer of fresh sphagnum is 0.5 m thick. It rests on a dark relatively uniformly humidified peat with an ash content of 4.41 to 9.89 percent. The bottom samples from sites 1 and 2 have anomalously high ash contents of 44.2 and 39.3 percent, possibly due to contamination from the underlying clay.

At site 3 a lens of relatively unhumified sphagnum was encountered from 0.75 to 1.0 m. This is of local extent.

The moisture content of the peat varies from 77 to 91 percent and averages 84.5 percent." (Graham 1979, p.80)

REMARKS: "There is insufficient sphagnum moss present to be of commercial interest. Whereas the peat present is relatively uniform, its thickness is limited to between 0.75 and 1.25 m and consequently does not represent a significant potential source of peat." (Graham 1979, p.80).

MAP REFERENCE: OGS Map P.1529 (1:250,000) 1978

SELECTED REFERENCE: OGS MDC 19, p. 80-82,110-111,124-125 (1979)

NAME: MATHIEU PROPERTY py

COMMODITY: Pyrite

STATUS: Major Occurrence

NTS: 52G/3SE

LATITUDE: 49° 02' 55"N LONGITUDE: 91° 07' 10"W

LOCATION: Approximately 1 1/2 miles east of Keewatin Lake, 2 1/2 miles south of Gargoyle Lake and 7 miles west of the western boundary of Hanniwell Township.

DESCRIPTION:

GEOLOGY: The area consists of a greenstone belt that averages 3-4 miles in width. The belt is made up of Early Precambrian basic and intermediate lavas and pyroclastic rocks with some sediments in most places highly altered, steeply folded and schistose.

The rocks of the Lumby Lake greenstone belt are mainly andesite and basalt with minor dacite. Most of the original minerals of the volcanics have been altered to a mass of epidote, carbonate and chlorite. Primary structures such as pillows, amygdules and flow top features have only been preserved in relatively few places in the area.

The texture of the greenstones range from aphanitic to coarse-grained, however, most of the flows are fine-grained equigranular, but a few andesites are porphyritic.

The property is located in the western half of the Keewatin greenstone belt. The central portion of this belt is occupied by a predominantly sedimentary series consisting of slates, greywackes, quartzite and iron formation. The quartzite appears to form the axis of the belt, and along its fractured and brecciated contact with the slates, bodies of pyrrhotite and pyrite with some siderite have been locally developed.

"The main belt of sediments crosses the property from east to west, varying in width from 400 feet to over 2,500 feet. The strike of the sediments ranges from N.80°W. to N.85°W.,with some flexures and dragfolding; dips are very steep to vertical, with local variations. The sediments may be sub-divided into two divisions, the northern part being mainly siliceous iron formation up to 1,200 feet wide, and the southern part argillaceous greywacke and graphitic argillite. The largest lens of graphitic argillite occurs at Hematite Lake. A stock of Algoman (?) granite intrudes the greenstones and sediments of the east end of Hematite Lake. Iron sulphide and siderite occur largely within the iron formation at and near its contact with the argillite, but locally concretionary pyrite zones in the argillite are important....

"Three zones of mineralization had been outlined by drilling up to 1952. The A zone, on the south side of Hematite Lake, is about 2,100 feet long. Sulphides were intersected by four drill holes, but core lengths were less than 50 feet, and estimated sulphide content was about 40 percent; no siderite was reported from this zone.

"The B zone is a possibly continuous band of sulphides in the iron formation; the average width is about 55 feet. Sulphur content of material sampled and assayed by Candela Development Company averaged 15-36 percent sulphur, an

approximate average for the zone being 20 percent. The zone is folded north at the west end, so that a pair of holes, drilled north and south from one set-up east of Keewatin Lake, totalled 574 feet of iron sulphides averaging 22.2 percent elemental sulphur.

"North of the sulphide zone, and in places interbedded with sulphides, lenses of siderite occur; the iron carbonate contains varying amounts of silica and small amounts of iron sulphides and iron silicates, grading with increasing silica northward into cherty silica zones of low iron content. The siderite zones intersected range up to 40 feet in true width and vary considerably in iron and silica content. Four bands of siderite were intersected in drill hole No. 3 of the 1950 drilling. The widest zone was intersected between 249-299 feet and represents a true width of 41 feet. Assays provided by M.W. Bartley are as follows: Iron, 27.60 percent; manganese, 1.80 percent; silica, 19.63 percent; sulphur, 2.03 percent.

"It is possible that the siderite lenses form a zone extending the entire 4,000 feet of the B zone and may prove to be of an economic grade and width in a form readily amenable to modern methods of beneficiation.

"The C zone, west of Keewatin Lake, had, until 1952, only limited exploration. Mineralization consists of pyrite concretions in argillite, and disseminated pyrrhotite in the chert on the north. The zone is about 400 feet long, with 15.6 percent sulphur over a core length of 115 feet being reported. No notable siderite mineralization was intersected." (Woolverton 1960, p.49).

MINERALOGY: "Mineralization consists of massive to disseminated pyrite and pyrrhotite, underlain by lenses of siderite. The siderite is in part pisolitic, and is, along with at least some of the pyrite in the iron formation, probably of sedimentary origin. The pyrrhotite occurs as finely crystalline aggregates, suggestive of replacement of chert, and is later than some of the pyrite. The pyrrhotite, and a later, well-crystallized pyrite may be of hydrothermal origin and associated with the van Nostrand granite stock." (Woolverton 1960, p.49).

HISTORY OF DEVELOPMENT:

1948-49: Diamond drilling was done on property.

1950: 4 holes totalling 2,001 feet were drilled.

1952: Candela Development Company optioned the property.

1952: 13 holes totalling 3,192 feet were drilled.

REMARKS: "Based on the development work done on the property, it would appear that the sulphide zones in zone B is a promising source of sulphur and iron and the siderite associated with the sulphides may be developed into an economic source of iron." (Woolverton 1960, p.49).

MAP REFERENCES:
OGS Map P.1529 (1:250,000) 1978
ODM Map P.964, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.183, 1 inch to 2 miles (1:126,720) 1963
ODM Map 1960g, 1 inch to 1/2 mile (1:31,680) 1960

SELECTED REFERENCES:
ODM Vol. 69, pt. 5, p. 5-6,16-17,48-49 (1960)
OGS Toronto AFRO File 63A.175
Resident Geologist's Files, OMNR, Thunder Bay:
Mathieu Property 52G/3SE

(Minor Occurrence) (1) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 52G/5SE

LATITUDE: 49° 19' 45"N LONGITUDE: 91° 43' 10"W

LOCATION: About 2 miles west of McNamara Lake and 6 miles southwest of Norman on the CPR line.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map P.964, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrence) (2) py, mag

COMMODITIES: Pyrite, magnetite

STATUS: Minor Occurrence

NTS: 52G/9SW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrence)

(Minor Occurrence) (3) py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 52G/13NW

LATITUDE: 49° 59' 35"N LONGITUDE: 91° 47' 35"W

LOCATION: Approximately 1 mile north of Southeast Bay.

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
OGS Map 2442, 1 inch to 4 miles (1:253,440) 1980

(Minor Occurrence) (4) gf, py, po, cp

COMMODITIES: Graphite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52G/14NW

DESCRIPTION: Listed under GRAPHITE - (Minor Occurrence)

(Minor Occurrences) (5) py, po, cp, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, sphalerite

STATUS: Minor Occurrences

TOWNSHIP: Factor

NTS: 52G/14NW

LATITUDE:	49° 54' 15"N	LONGITUDE:	91° 29' 20"W
	49° 53' 35"		91° 26' 20"
	49° 53' 50"		91° 28' 00"
	49° 55' 00"		91° 24' 20"

SELECTED REFERENCE: Resident Geologist's Files, OMNR,
Sioux Lookout: 52G/14NW

(Minor Occurrences) (6) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52G/14NE

LATITUDE:		LONGITUDE:	
	49° 56' 10"N		91° 06' 00"W
	49° 58' 35"		91° 00' 50"
	49° 54' 10"		91° 02' 40"
	49° 53' 45"		91° 04' 25"
	49° 53' 30"		91° 05' 20"
	49° 55' 50"		91° 06' 40"
	49° 55' 30"		91° 03' 10"

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map P.927, 1 inch to 1/4 mile (1:15,840) 1974
ODM Map 2268, 1 inch to 1/2 mile (1:31,680) 1974

(Minor Occurrences) (7) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52G/14SE

LATITUDE:		LONGITUDE:	
	49° 49' 00"N		91° 06' 00"W
	49° 51' 15"		91° 00' 20"

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
OGS Map 2442, 1 inch to 4 miles (1:253,440) 1980
ODM Map 2269, 1 inch to 1/2 mile (1:31,680) 1974

NAME: TEXMONT MINES LIMITED fl, py

COMMODITIES: Fluorite, pyrite

STATUS: Minor Occurrence

NTS: 52G/15NW

DESCRIPTION: Listed under FLUORITE - Texmont Mines Limited.

(Minor Occurrences) (8) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52G/15NW

LATITUDE:		LONGITUDE:	
	49° 57' 50"N		90° 59' 10"W
	49° 57' 50"		90° 52' 20"
	49° 56' 20"		90° 45' 00"
	49° 58' 40"		90° 52' 20"

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
ODM Map P.928, 1 inch to 1/4 mile (1:15,840) 1974
ODM Map 2269, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map 2284, 1 inch to 1/2 mile (1:31,680) 1974

(Minor Occurrences) (9) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52G/15NE

LATITUDE:		LONGITUDE:	
	49° 55' 35"N		90° 42' 30"W
	49° 58' 30"		90° 35' 50"
	49° 53' 30"		90° 42' 50"
	49° 53' 50"		90° 44' 45"

MAP REFERENCES: OGS Map P.1529 (1:250,000) 1978
OGS Map 2442, 1 inch to 4 miles (1:253,440) 1980
ODM Map 2284, 1 inch to 1/2 mile (1:31,680) 1974

NAME: MATTAGAMI LAKE MINES LIMITED gt, tour, py

COMMODITIES: Garnet, tourmaline, pyrite

STATUS: Minor Occurrence

NTS: 52G/15SW

DESCRIPTION: Listed under GARNET - Mattagami Lake Mines Limited

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NAME: BUTLER QUARRIES st

COMMODITY: Stone

STATUS: Past Producer

TOWNSHIP: Bradshaw

NTS: 52G/5NW

LATITUDE:		LONGITUDE:	
	49° 27' 17"N		91° 46' 52"W
	49° 27' 50"		91° 48' 07"
	49° 27' 34"		91° 50' 12"

LOCATION: Approximately 9 miles west of Ignace just southeast of the Butler siding in south-central Bradshaw Township.

DESCRIPTION: "...the stone is a light grey medium grained biotite granite, with a decided gneissic structure. The feldspar is white and opaque and the quartz highly vitreous with a smoky tinge. The biotite mica is small in amount and unevenly distributed and there is also a small amount of metallics present." (Carr 1955, p.145).

According to Hewitt (1964, p.44), at this locality, "Four quarries were observed on a low wooded ridge over a distance of 1/2 mile, all between 100 and 300 yards south of the railway. The most westerly quarry lies 200 yards north of the highway and can be seen from the road across a shallow sand pit. The quarry measures 60 feet by 150 feet and has a maximum depth of 4 feet. The rock is white, massive and medium-grained. Rare small patch pegmatites were noticed beyond the quarry area. Sheeting is horizontal, somewhat tapering, and thin. Thicknesses of the two sheets being worked varies from 15 to 40 inches. Jointing at N.40°E. is spaced at 4 to 8 feet. Jointing at N.70°W. is widely spaced. The planes are commonly marked by a mottled brown and white alteration."

"The large opening first visited by Cole (4) had a face of 15 feet, a length of 140 feet, and had been worked back for a distance of 40 feet. Only the surface lift or top sheet was being worked. There was a solid face of 14 feet to the first parting plane, but the sheeting appeared very irregular and

not continuous for any great length. The formation was cut by two sets of vertical joints, a major set striking N2°W and a minor set striking N71°W. The rift was vertical and parallel to the main joint planes, and the grain was horizontal and parallel to the sheeting." (Carr 1945, p.145).

HISTORY OF DEVELOPMENT:

Circa 1932: Quarry was worked by Wm. Horne for road ballast, building and tomb stones.

1940: The operations were closed.

REMARKS: "Physical properties of the Butler grey granite are as follows: compressive strength, 26125 p.s.i.; absorption, 0.28 percent; bulk specific gravity, 2.61; weight per cubic foot, 163 pounds; abrasive hardness, 58.0." (Hewitt 1964, p.44).

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Kenora: 52G/5NW
ODM IMR 19, p. 43-44 (1964)
CDMTS,MB No. 846, p. 145-146 (1955)

NAME: CANADIAN PACIFIC RAILWAY COMPANY QUARRY st

COMMODITY: Stone

STATUS: Past Producer

TOWNSHIP: Ignace

NTS: 52G/5NE

LATITUDE: 49° 25' 32"N LONGITUDE: 91° 41' 15"W

LOCATION: "The Ignace quarries are located just north of the Canadian Pacific Railway and highway No. 17, less than 2 miles northwest of Ignace station and 3/4 mile due north of Agimac Lake in north central Ignace township, District of Kenora." (Hewitt 1964, p.41).

DESCRIPTION: The area is underlain entirely by rocks of Precambrian age. These are extensively overlain by glacial deposits and recent swamp accumulations. According to Hewitt (1964) p. 41, relief is very low in the area and two quarries were worked in low outcroppings of granite that protrudes through a predominantly sandy terrain. The granite is considered to be Archean (Early Precambrian) in age, structurally massive and weathers light grey. It is composed of white feldspar, black biotite, and pale yellow to amber quartz. "Vertical jointing is developed in two directions almost at right angles and sheeting is horizontal. The rock breaks well in all three directions, and hairline fractures, stains, and segregations are practically absent." (Hewitt 1964, p.42).

Quarry (1): "The face is 200 feet long with a maximum height of 16 feet. It is cut into the east side of a low granite outcrop. The rock is a faintly gneissic, medium-grained pale pink and grey biotite granite striking N.70°E. and dipping 45°S. Both colour and texture are locally variable and streaks of a dark rock are sometimes included. Six sheets from 18 inches to 8 feet thick are present in the face. The sheeting dips 10°N. Jointing is well developed at N.70°W. at intervals of 6 inches to 20 feet, commonly 4 to 6 feet. Jointing at N.40°E. is widely spaced. Quarrying of the large blocks appears to have been accomplished with black powder in widely spaced drill holes the full depth of the sheet." (Hewitt 1964, p.42).

Quarry (2): "A number of shallow cuts have been made over an area of several acres in a low outcrop of the white granite. The rock is massive and medium-grained with rare diffuse patches of coarser texture up to several feet in diameter. The sheeting is massive and horizontal at the east end of the workings and large blocks were taken from an 8-foot working face. At the west end, sheets 6 to 24 inches thick are common. Scattered workings in this

area were largely for paving and curb stones. Jointing is widely spaced in the same two directions, N.70°W. and N.30°E. Plug and feather quarrying were used." (Hewitt 1964, p.43).

REMARKS: "Physical properties of the Ignace grey granite are as follows: Maximum compressive strength, 26375 p.s.i.; minimum compressive strength, 15375 p.s.i.; average compressive strength, 20875 p.s.i.; absorption, 0.20 percent; bulk specific gravity, 2.62; weight per cubic foot, 163 pounds; abrasive hardness, 66.8." (Hewitt 1964, p.43).

HISTORY OF DEVELOPMENT:

Circa 1912: Canadian Pacific Railway opened quarries for production of paving blocks, bridge foundations and curb blocks.

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Kenora: 52G/5NE
ODM IMR 19, p. 41-43 (1964)
CDMTS,MB No. 846, p. 145 (1955)
ODM Vol. 24, pt. 1, p. 96 (1915)

NAME: BONHEUR STONE QUARRY st

COMMODITY: Stone

STATUS: Past Producer

TOWNSHIP: Burk

NTS: 52G/6SW

LATITUDE: 49° 18' 15"N LONGITUDE: 91° 19' 39"W

LOCATION: About 18 miles east of Ignace.

DESCRIPTION: See CANADIAN PACIFIC RAILWAY COMPANY QUARRY for DESCRIPTION and SELECTED REFERENCES, p.155.

NAME: WATCOMB QUARRY st

COMMODITY: Building stone

STATUS: Producer

TOWNSHIP: Block 8

NTS: 52G/14SW

LATITUDE: 49° 50' 18"N LONGITUDE: 91° 19' 56"W

LOCATION: East of Slaght Township near Grassy River Crossing.

DESCRIPTION: The quarry is in a mafic rock mapped by Trowell, 1970, as medium to coarse-grained amphibolite and classified as mafic metavolcanic. In the vicinity of the quarry, Trowell indicates the rock to be massive.

HISTORY OF DEVELOPMENT: 1972: Quarry opened by Canadian National Railways.

REMARKS: The stone is used for track ballast.

SELECTED REFERENCES:
ODM GR 88, p. 5-11 (1970)
Resident Geologist's Files, OMNR, Sioux Lookout

NAME: MATTAGAMI LAKE MINES LIMITED gt, tour, py

COMMODITIES: Garnet, tourmaline, pyrite

STATUS: Minor Occurrence

NTS: 52G/15SW

DESCRIPTION: Listed under GARNET - Mattagami Lake Mines Limited

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NTS 52H

NAME: BISH BAY-WEST BAY ASBESTOS OCCURRENCE asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

TOWNSHIP: Dorothea

NTS: 52H/9NE

LATITUDE: 49° 41' 45"N LONGITUDE: 88° 06' 05"W

LOCATION: Showing is on a cliff along the eastern shoreline of Lake Nipigon midway between Bish and West Bays.

DESCRIPTION:

GEOLOGY: "The area is underlain by east-trending, metamorphosed, folded and faulted Archean volcanic and sedimentary rocks. The metavolcanics range from massive and pillowed mafic lavas to intermediate and felsic pyroclastics. The metasediments consist of conglomerate, sandstone, siltstone, argillite, and minor iron formation. Stratigraphic relationships are not certain.

"The metasediments and metavolcanics are intruded by east-trending mafic dikes and lenticular bodies of intermediate rocks. Feldspar and quartz-feldspar porphyry dikes cut the metavolcanics.

"Diabase, probably of Keweenawan age, is present as north-trending dikes and as a thick west-dipping sheet.

"The Precambrian rocks are covered in part by Pleistocene deposits of sand, gravel and clay, as well as by Recent lake, stream, and swamp deposits." (Mackasey 1975, p.4-6).

At this locality, light green asbestos occurs in a 20-foot long zone along fractures in a serpentinized peridotite dike.

MINERALOGY: The fibrous material has been identified as tremolite by the Mineral Research Branch of the Ontario Division of Mines. The fibres are soft and flexible and are up to 5 inches long.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2294, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.479, 1 inch to 1/4 mile (1:15,840) 1968

SELECTED REFERENCE: ODM GR 122, p. 4-6,38 (1975)

NAME: MNW LITHIUM PROSPECT (Bird River Mines Co. Ltd. Lithium Deposit) Li, Be, Cs

COMMODITIES: Lithium, beryllium, cesium

STATUS: Minor Occurrence

NTS: 52H/1NE

LATITUDE: 49° 13' 55"N LONGITUDE: 88° 00' 40"W

LOCATION: Approximately 19 miles northeast of Nipigon, near the south end of a ridge parallel to Jackfish River and 1.5 miles west of Cosgrave Lake.

DESCRIPTION:

GEOLOGY: The bedrock of the area is of Precambrian age. The oldest Archean rocks are metasediments; these strike east-northeast, dip steeply to the north, and are overlain by metavolcanics.

The metasediments were intruded by large masses of Algoman granitic rocks, numerous sills and dikes, pegmatite and aplite. Small stock-like masses and narrow dikes of basic rocks also cut the metasediments.

Pegmatites are common in the area, they occur close to and within large masses of granitic rock. The pegmatites occur as irregular-shaped bodies and as thin dikes, sills and attenuated lenses. They show regional zoning and a genetic association of pegmatites and granite is indicated.

The deposit "occurs in massive, medium-grained, pink granite and is localized along a fracture, which strikes north and dips 75°-80°W. It ranges up to 45 feet in thickness and has been traced in outcrops and trenches intermittently for a distance of 1,400 feet. Although it pinches and swells, the M.N.W. dike is essentially tabular in shape; towards its extremities it splits into two, and in one place three, narrow units separated by 5-15 feet of intervening wallrock. It is unique in the area in that it is characterized by an exceptionally well-developed, internal-zonal structure. It is made up of five distinct petrographic units: (1) a quartz-spodumene core; (2) a feldspar-muscovite-quartz intermediate zone; (3) cleavelandite-rich intermediate zones; (4) muscovite-quartz-feldspar wall zones; and (5) tourmaline-rich border zones...." (Pye 1965, p.84).

MINERALOGY: "The core of the M.N.W. dike has a length of about 400 feet and widths of up to 30 feet. It is made up largely of fine- to medium-grained, acicular spodumene crystals and quartz, together forming unusual lamellar and fibrous intergrowths. These peculiar intergrowths range up to several feet across. They adjoin and merge with other intergrowths, similar in every way but having different directions of preferred orientation of the spodumene crystals. The spodumene-quartz intergrowths in places enclose scattered, medium- to coarse-grained, tabular crystals of spodumene; they are interrupted at widely-spaced intervals by large, irregular-shaped masses of quartz, from several inches to 7 feet across, and large individuals of potash feldspar up to 4 feet in length. A little amblygonite is associated with the quartz of the irregular-shaped masses, and very small amounts of colourless beryl occur in the spodumene-quartz intergrowths. The spodumene of the core is largely white and unaltered. Some altered spodumene, however, occurs in the southernmost outcrop. Here, on either side and within 6 to 8 inches of an oblique fracture striking N.20°-30°W., the spodumene is pale red to deep brick-red in colour. The altered spodumene was examined microscopically by V.G. Milne, who found it to be made up largely of a fibrous, colourless mica and a little red hematite, the latter occurring as tiny patches in the mica and as grains and films along irregular fractures.

"The inner intermediate zone was not observed in the surface exposures. It extends downward and lengthwise, outward from the core. It is represented by material made up largely of medium-grained quartz with abundant muscovite, some feldspar, and accessory amounts of black tourmaline. The proportions of the major constituents vary considerably, but in general the quartz makes up 50-70 percent by volume; the muscovite, 10-30 percent. In places the pegmatite minerals are interrupted by small, irregular masses of sugary-

textured albite. The outer intermediate zones are discontinuous units, 2-6 feet thick, that flank the core and the inner intermediate zones. Unlike the latter, they are made up largely of cleavelandite, as crystals up to 6 inches in length, associated with quartz, muscovite, and some beryl. Minor amounts of tourmaline, columbite, cassiterite, apatite, and purpurite also occur. The cleavelandite-rich unit grades sharply, over an inch or two, into the inner intermediate zone and the adjoining wall zones.

"The wall zones are continuous units, 2-12 feet thick, which lie between the intermediate zone and the border zones. They are made up of quartz with potash and plagioclase feldspars and, in places, a little tourmaline, apatite and beryl. Adjacent to the cleavelandite zones, the quartz and potash feldspars are medium-grained, with individuals 1-4 inches across. But the granularity decreases outward, so that at the border zones these minerals are typically fine-grained, with individuals 1/4-1/2 inch across. Along and close to the cleavelandite-rich pegmatite, the muscovite-quartz-feldspar material of the wall zones is interrupted at irregular but frequent intervals by large individuals of potash feldspar, many of them 12 inches or more in length. These crystals may represent still another intermediate unit, which, because the central part of the outcrop at the north end of the exposed portion of the dike consists largely of potash feldspar, possibly occurs as a north-plunging "hood." The wall zones are also interrupted in places by irregular-shaped masses of "aplite," from a few inches to several feet across, which appears to replace and is intimately intergrown with the pegmatite minerals. It consists almost entirely of sugary-textured albite ($Ab_{97}An_3$) with a little black tourmaline and blue apatite. It is similar to, but more abundant and conspicuous than, the sugary-textured feldspar of the inner intermediate zone.

"The border zones occur as fairly continuous, sharply-defined units, up to about 8 inches thick, along the margins of the dike. Each border zone is made up of two parts, an inner part of pale-grey or pink granite rich in black tourmaline, and an outer part of similar granite in which tourmaline is absent or nearly absent. In the west border zone, the tourmaline-rich layer is 1/2-1 inch thick and contains in places as much as 90 percent dark mineral. In the east border zone, it is 3-6 inches thick, and contains 25-30 percent tourmaline, which is disseminated irregularly throughout but is particularly abundant, over a width of about 1/2 inch, adjacent to the outer part of the zone." (Pye 1965, p.84-86).

HISTORY OF DEVELOPMENT:

1956: 14 diamond drill holes totalling 2,499 feet were drilled at intervals of 50-200 feet over a strike length of 1,400 feet to cut the dike at vertical depths of 70-90 feet.

1960: The dike was sampled for its beryl content. Property was staked by F. Koosel as a cesium prospect.

1977: A Dutch firm (Jan de Poorter) became interested in acquiring a bulk sample of 2,000 metric tons with a Li_2O content of no less than 4.0 percent and a Fe_2O_3 content of no greater than 0.10 percent.

REMARKS: The Dutch firm reneged on its offer by not providing a credit expenditure for equipment and shipping costs to remove the bulk sample.

It has been estimated that the core has 40,000 tons of high grade lithium material and surface sampling in the core has yielded assay values as high as 2 percent Li_2O over 30 feet.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File
MNW Lithium Prospect, District Thunder Bay,
Lat. 49°00', Long. 88°00'

SELECTED REFERENCES (continued)

Resident Geologist's Files, OMNR, Thunder Bay:
Consolidated Mining and Smelting Company Report
ODM MRC 14, p. 53 (1971)
CDEMR,GSC Econ. Geol. Rept. No. 23, p. 78 (1968)
ODM GR 31, p. 47,84-86 (1965)
CDMTS,GSC Paper 57-3, p. 15 (1957)
Can. Min. Jour. Vol. 77, No. 4 (1956)
ODM IMR 21, p. 48 (1967)
OGS Toronto AFRO File 2.2118
MINSY File 51259300

NAME: SWANSON BERYL DEPOSIT Be

COMMODITY: Beryllium

STATUS: Minor Occurrence

NTS: 52H/1NE

LATITUDE: 49° 13' 20"N LONGITUDE: 88° 01' 03"W

LOCATION: South of Jackfish River and west of Cosgrave Lake.

DESCRIPTION:

GEOLOGY: The bedrock of the area is of Precambrian age. The oldest Archean rocks are metasediments; these strike east-northeast, dip steeply to the north, and are overlain by metavolcanics.

The metasediments were intruded by large masses of Algoman granitic rocks, numerous sills and dikes, pegmatite and aplite. Small stock-like masses and narrow dikes of basic rocks also cut the metasediments.

Pegmatites are common in the area, they occur close to and within large masses of granitic rock. The pegmatites occur as irregular-shaped bodies and as thin dikes, sills and attenuated lenses. They show regional zoning and a genetic association of pegmatites and granite is indicated.

The showing is exposed along the west side of a shallow north-trending valley. "It is a sill that strikes N.60°E. and dips vertically to steeply northwest. It is exposed for a length of about 40 feet. It is 35 feet wide at one point; northeast of this point it splits into two parallel branches, one 10 feet wide, the other 3-5 feet wide, separated by about 20 feet of metasediments." (Pye 1965, p.103).

MINERALOGY: "The sill is made up of potash and plagioclase feldspars, quartz, muscovite, beryl and accessory tourmaline, forming an equigranular, fine- to coarse-grained rock devoid of any preferred orientation. The beryl present occurs as greenish yellow, well-formed, hexogonal crystals up to 7 inches in length. It is not abundant, and some of it has been altered to hühnerkobelite and small amounts of muscovite and apatite." (Pye 1965, p.103).

HISTORY OF DEVELOPMENT:

1957: Goldale Mines Ltd. optioned the property and a 15-foot long channel sample weighing 225 pounds was taken across the southeast side of the dike.

REMARKS: The sample assayed 2.58 percent beryllium.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Goldale Mines Ltd. Report
ODM IMR 21, p. 38 (1967)
ODM GR 31, 47,103 (1965)
Can. Min. Jour. Vol. 77, No. 4 (1956)
MINSY File 51120900

(Minor Occurrence) be

COMMODITY: Beryl

STATUS: Minor Occurrence

NTS: 52H/4SE

LATITUDE: 49° 00' 00"N LONGITUDE: 89° 36' 35"W

LOCATION: About 1 mile northwest of Tackle Lake.

DESCRIPTION:

GEOLOGY: The Precambrian bedrock comprises a basement complex of deformed and metamorphosed clastic sedimentary, volcanic and granitic rock. These are overlain by near-horizontal shales of the Sibley Group and Keweenawan diabase sills.

The oldest rocks are highly deformed, granitized quartzo-feldspathic and amphibolitic paragneisses. A prominent metasedimentary-metavolcanic belt strikes northeasterly through the area.

The metasediments of this belt consist mainly of moderately metamorphosed equivalents of greywacke, arkose, conglomerate, and magnetite greywacke iron formation. They are generally steeply dipping. The metavolcanics are found as several bands intercalated within the metasediments. They consist mainly of mafic flows and volcaniclastics, with minor felsic flows, agglomerate, and magnetite iron formation.

MINERALOGY: According to Jolliffe (1934, p.15D), beryl occurs in an "albite pegmatite" at this location, however, Kaye (1969, p.25), reported that he did not find occurrences of beryl during his survey, however, he believed that beryl may be present in economic amounts in the white muscovite granite pegmatite intrusions of the area.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2171, 1 inch to 1 mile (1:63,360) 1969

SELECTED REFERENCES: ODM GR 77, p. 25 (1969)
CDM,GS Sum. Rept. 1933, pt. D, p. 7D-15D (1934)
MINSY File 51310900

NAME: MNW LITHIUM PROSPECT Li, Be, Cs

COMMODITIES: Lithium, beryllium, cesium

STATUS: Minor Occurrence

NTS: 52H/1NE

DESCRIPTION: Listed under BERYL - MNW Lithium Prospect

NAME: CHROME LAKE DEPOSITS Cr

COMMODITY: Chromium

STATIS: Minor Occurrences

NTS: 52H/13NE

LATITUDE: 49° 58' 40"N LONGITUDE: 89° 31' 05"W
49° 58' 45" 89° 30' 55"

LOCATION: Approximately 118 miles north of Port Arthur and 30 miles southwest of Armstrong.

DESCRIPTION:

GEOLOGY: A Precambrian schist forms the basement in the area; it has been folded into a syncline about 15 miles long and 7 miles wide. The schist belt strikes general N70°E and is covered in the east by the Nipigon diabase sill.

Keewatin greenstones make up the greater portion of the synclinal area of the basement schists.

At this locality, boss-like masses of peridotite which have been altered to serpentine have been found. "This altered peridotite body is elliptical in surface outline with a major axis of 3 1/2 miles and a minor axis of three-quarters of a mile. Originally intruded into the ancient sedimentary schists, the peridotite is now contained within the transitional zone between these schists and the Algoman gneiss." (Graham 1930, p.54).

At Chrome Lake, the weathered surface of the serpentine is black or rusty in colour. The fresh surface is dark green. The rock is soft and the serpentine lens forms low flat ground about the gneissic hills.

Two segregated deposits in the form of irregular and vein-like bodies have been found on a small island at the north end of Chrome Lake. They are up to 1 1/2 feet wide and 10-20 feet long.

A series of chromite veins have also been found within the serpentine at some distance from the contact with the gneiss. These veins strike northwest and southeast and have dips of 20 and 40 degrees southwest. The veins range in width from 10 inches to 2 feet and have been uncovered over a length of 60 feet.

MINERALOGY: Chromite is an original constituent of the peridotite and is found disseminated throughout the peridotite mass. The chromite is black and fine grained. Numerous small fractures are found in the chromite rock and small amounts of chlorite and kammererite have developed along some fractures.

The grains and crystals of chromite range in size from 1/10 to 1/50 of a millimetre. Chemical analyses showed a variation between 27 and 34 percent Cr_2O_3.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.963, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.416, 1 inch to 1/4 mile (1:15,840) 1967
ODM Map 2169, 1 inch to 4 miles (1:253,440) 1970

SELECTED REFERENCES:
Resident Geologist's Files, OMNR,
Thunder Bay: 52H/13NE
ODM Vol. 39, pt. 2 p. 54-59 (1930)

NAME: PUDDY LAKE PROSPECTS Cr, Ir, Co

COMMODITIES: Chromium, iridium, cobalt

STATUS: Major Occurrences

NTS: 52H/13NE

LATITUDE: 49° 58' 05"N LONGITUDE: 89° 32' 10"W
49° 57' 55" 89° 33' 32"

LOCATION: Approximately 118 miles north of Port Arthur and 30 miles southwest of Armstrong.

DESCRIPTION:

GEOLOGY: A Precambrian schist forms the basement in the area; it has been folded into a syncline about 15 miles long and 7 miles wide. The schist belt strikes generally N70°E and is covered in the east by the Nipigon diabase sill.

Keewatin greenstones make up the greater portion of the synclinal area of the basement schists.

At this locality, boss-like masses of peridotite which have been altered to serpentine have been found. "This altered peridotite body is elliptical in surface outline with a major axis of 3 1/2 miles and a minor axis of three-quarters of a mile. Originally, intruded into the ancient sedimentary schists, the peridotite is now contained within the transitional zone between these schists and the Algoman gneiss." (Graham 1930, p.54).

"The intrusive trends easterly, dips steeply S, and is concordant with a granitic paragneiss footwall and a metasedimentary-augen gneiss hanging wall. The intrusion, with Alpine-type characteristics, is a differentiated stock of completely serpentinized pyroxenite, peridotite and dunite. Steatitization and bleaching are locally intense." (Shklanka 1969, p. 332).

MINERALOGY: Lenses and ramifying veinlets of massive nickeliferous magnetite are found in 10 zones scattered within the stock. Small grains of chromite, magnetite, nickel, copper, hematite, and cobalt sulphides occur disseminated irregularly throughout the rock. Narrow millerite-bearing shear zones have also been found near the east end of the property and towards the south of the lake.

HISTORY OF DEVELOPMENT:

1965: A ground magnetic survey was carried out over 28 claims and 17 holes totalling 5,590 feet were drilled.

1968: Newmont Mining Corporation of Canada did EM survey, some trenching and 10 holes totalling 3,100 feet were drilled.

1970-71: Optioned to Falconbridge Nickel Mines Ltd., the company did geophysical surveys and some diamond drilling.

1974: The property was optioned to Sheridan Geophysics Ltd.

REMARKS: All of the holes drilled in 1965 intersected nickel-iron mineralization. The shortest intersection was 60 feet that averaged 0.27 percent nickel, and the longest, 380 feet, averaged 0.21 percent nickel. It has been estimated that the main zone contains roughly 30 million tons of open pit material, grading 0.1 to 0.6 percent nickel, about 0.01 to 0.06 percent cobalt and 7.2 percent recoverable iron. In addition, small amounts of platinum group metals, zinc, cobalt, chromite, gold and silver were identified. In 1967 a massive sulphide zone was discovered north of the main zone. The grab samples varied from 4.1 to 11.6 percent nickel.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2167, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.416, 1 inch to 1/4 mile (1:15,840) 1967

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay:
Commercial Nickel Mines Ltd. NTS 52H/13NE
Canadian Mines Handbook, p. 81 (1977-78)
Northern Miner, June 15 (1967)
Northern Miner, August 17 (1967)
ODM MRC 12, p. 332-33 (1969)
ODM PR 1966-1, p. 20 (1966)
CDM,GS Sum. Rept., pt. D, p. 16-37 (1933)
ODM Vol. 39, pt. 2, p. 54-56 (1931)
OGS Toronto Geoscience Data Centre; File Paddy Lake Prospects, 49°45', 89°30', District Thunder Bay
MINSY File 50877200

NAME: CHROMIUM MINING AND SMELTING CORPORATION LIMITED Cr

COMMODITY: Chromium

STATUS: Minor Occurrence

NTS: 52H/14NW

LATITUDE: 49° 58' 22"N LONGITUDE: 89° 29' 55"W

LOCATION: Approximately 118 miles north of Port Arthur and 30 miles southwest of Armstrong.

DESCRIPTION:

GEOLOGY: A Precambrian schist forms the basement in the area; it has been folded into a syncline about 15 miles long and 7 miles wide. The schist belt strikes generally N70°E and is covered in the east by the Nipigon diabase sill.

Keewatin greenstones make up the greater portion of the synclinal area of the basement schists.

At this locality, boss-like masses of peridotite which have been altered to serpentine have been found. "This altered peridotite body is elliptical in surface outline with a major axis of 3 1/2 miles and a minor axis of three-quarters of a mile. Originally, intruded into the ancient sedimentary schists, the peridotite is now contained within the transitional zone between these schists and the Algoman gneiss." (Graham 1930, p.54).

"The intrusive trends easterly, dips steeply S, and is concordant with a granitic paragneiss footwall and a metasedimentary-augen gneiss hanging wall. The intrusion, with Alpine-type characteristics, is a differentiated stock of completely serpentinized pyroxenite, peridotite and dunite. Steatitization and bleaching are locally intense." (Shklanka 1969, p.332).

MINERALOGY: Chromite is an original constituent of the peridotite and is found disseminated throughout the peridotite mass. The chromite is black and fine grained. Numerous small fractures are found in the chromite rock and small amounts of chlorite and kammererite have developed along some fractures.

The grains and crystals of chromite range in size from 1/10 to 1/50 of a millimetre. Chemical analyses showed a variation between 27 and 34 percent Cr_2O_3.

Lenses and ramifying veinlets of massive nickeliferous magnetite are found in 10 zones scattered within the stock. Small grains of chromite, magnetite, nickel, copper, hematite and cobalt sulphides occur disseminated irregularly throughout the rock. Narrow millerite-bearing shear zones have also been found near the east end of the property and towards the south of the lake.

HISTORY OF DEVELOPMENT:

1929-30: Stripping, trenching and about 1,000 feet of diamond drilling was done on the property. A shaft was sunk to a depth of 350 feet with levels at 100 and 225 feet.

1933: Chromium Alloy Co. hauled 70 tons of ore from the deposits for experimental purposes.

1934: 23 holes totalling 5,000 feet were drilled. These holes reportedly indicated 225,000 tons averaging 17 percent Cr_2O_3 in the "E" zone for a length of 770 feet and to a depth of 300 feet.

1936-37: Mining operations were re-commenced.
A 50-ton concentrator was constructed on the property.
A new level at 325 feet was completed on the shaft.

1937: Underground work was discontinued after about 8,000 tons of ore had been raised.

Total development on the property to 1938 included 34,867 feet of drilling (includes 1,963 feet of underground drilling); 1,709 feet of lateral workings on the 100-foot level, 1,416 feet on the 225-foot level and 1,179 feet on the 325-foot level.

REMARKS: It was reported by the company in their Interim Report of September 1937 that the reserves at closing of the operations were 25,000 tons averaging 12 percent Cr_2O_3 to 300 feet in depth in the "E" zone and 7,410 tons at 10.2 percent in the surface dump. Five other zones were also outlined.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2169, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.963, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.417, 1 inch to 1/4 mile (1:15,840) 1967

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Obonga Lake, 49°45', 89°15', District Thunder Bay
Resident Geologist's Files, OMNR, Thunder Bay: Chromium Mining and Smelting Corporation Ltd.
Geol. Assoc. Can., Proc., Vol. 18, p. 67-91 (1967)
ODM MP 71, p. 48 (1977)
Canadian Mines Handbook, p. 47 (1940)
CDM,GS Sum. Rept., pt. D, p. 16-17,29-36 (1933)
ODM Vol. 47, pt. 1, p. 35,80-81 (1938)
ODM Vol. 46, pt. 1, p. 45,90-91 (1937)
ODM Vol. 40, pt. 1, p. 63-64 (1931)
ODM Vol. 40, pt. 4, p. 111-119 (1931)
ODM Vol. 39, pt. 1, p. 77-78 (1930)
ODM Vol. 39, pt. 2, p. 51-60 (1930)

NAME: PUDDY LAKE PROSPECTS Cr, Ir, Co

COMMODITIES: Chromium, iridium, cobalt

STATUS: Major Occurrence

NTS: 52H/13NE

DESCRIPTION: Listed under CHROMIUM - Puddy Lake Prospects

NAME: STURGEON ESCARPMENT OCCURRENCE hem

COMMODITY: Hematite

STATUS: Minor Occurrence

NTS: 52H/7SE

LATITUDE: 49° 16' 50"N LONGITUDE: 88° 38' 50"W

LOCATION: Approximately 3/4 mile east of the south end of Black Sturgeon Lake on the face of a prominent fault escarpment, just north of Nonwatin Lake.

DESCRIPTION:

GEOLOGY: The oldest rocks in the area are steeply-dipping clastic sedimentary and volcanic rocks of Precambrian age. These rocks have been metamorphosed, deformed and intruded by granite. Unmetamorphosed, flat-lying sedimentary rocks of the Sibley Group unconformably overlie the older rocks. Along the unconformity surface of the base of the Sibley Group and intercalated with Sibley sedimentary rocks are Keweenawan diabase sills.

The rocks of the Archean basement are predominantly migmatic in nature and remnant bodies of metasedimentary and metavolcanic rocks are preserved in this complex. The boundary zones where the granitic complex intrudes the older rocks are marked by some occurrences of hybrid granitic gneisses. Stocks of granite and quartz monzonite intrude these rocks.

Hematite mineralization occurs in a migmatite of the injection complex. The injection complex is characterized by "lit-par-lit injection of granitic material along bedding or schistosity planes in the older rocks or by the presence of abundant inclusions of these older rocks within the granite bodies." (Coates 1972, p.8).

MINERALOGY: Hematite occurs as a cementing material and as small stringers and veins in the Archean rocks. The narrow lenses of specular hematite seldom exceed 3 feet in length and 1 inch in thickness and they are found localized in tension fractures associated with the major faulting.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2234, 1 inch to 1 mile (1:63,360) 1971
ODM Map P.463, 1 inch to 1 mile (1:63,360) 1968
ODM Map 18A, 1 inch to 1 mile (1:63,360) 1909
CDM Map 8A, 1 inch to 1 mile (1:63,360) 1910
ODM Map 2137, 1 inch to 4 miles (1:253,440) 1968

SELECTED REFERENCES:
ODMNA GR 98, p. 8,32 (1972)
ODM Vol. 18, pt. 1, p. 165,168,171 (1909)
CDM,GSB Mem. 1, p. 138 (1910)
OGS Toronto Geoscience Data Centre, File Sturgeon Escarpment, 49°15', 88°30', District Thunder Bay District Thunder Bay
ODM MRC 11, p. 430 (1968)

NAME: PUDDY LAKE PROSPECTS Cr, Ir, Co

COMMODITIES: Chromium, iridium, cobalt

STATUS: Major Occurrence

NTS: 52H/13NE

DESCRIPTION: Listed under CHROMIUM - Puddy Lake Prospects

NAME: GRESKY LIME DEPOSITS lime, ma
(Fossil Lake Group and Bluejay Lake Group)

COMMODITIES: Lime, marl

STATUS: Minor Occurrences

NTS: 52H/2SW and 3SE

LATITUDE: 49° 06' 15"N LONGITUDE: 88° 55' 25"W
49° 03' 25" 89° 04' 55"

LOCATION: South of Lake Nipigon and 20 miles northwest of Hurkett. The Fossil Lake Group lies about 3 miles west of the south end of Sturge Lake. The Bluejay Lake Group lies approximately 3 1/2 miles south and 5 1/2 miles west of the Fossil Lake Group.

DESCRIPTION:
GEOLOGY: The oldest rocks in the area are steeply-dipping clastic sedimentary and volcanic rocks of Precambrian age. These rocks have been metamorphosed, deformed and intruded by granite. Unmetamorphosed, flat-lying sedimentary rocks of the Sibley Group unconformably overlie the older rocks. Along the unconformity surface of the base of the Sibley Group and intercalated with Sibley sedimentary rocks are Keweenawan diabase sills.

Flat-lying beds of limestone in layers from 3-6 feet thick are exposed at these locations. "The limestone has been considerably altered but structures reminiscent of the algal limestone of the Sibley Group were recognized in a few of the blocks. The boulders are fairly angular and measure up to 10 feet in their maximum dimension." (Coates 1972, p.31).

The limestone is exposed for 1/4 mile along the northwest shore of Bluejay Lake where it encloses an area of 600 acres and has an east-west length of 1 1/4 miles and a width of 3/4 mile. The Fossil Lake Group covers an area of 1760 acres, with a length in an east-southeast direction of 2 3/4 miles and a width of 1 mile. The limestone horizon is exposed intermittently over a distance of 1/2 mile in the bed of the creek entering Fossil Lake from the west.

MINERALOGY: The limestone is reported to contain 93 percent $CaCo_3$ by weight.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2235, 1 inch to 1 mile (1:63,360) 1971
ODM Map P.462, 1 inch to 1 mile (1:63,360) 1968

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Alex Gresky-Black Sturgeon Area
ODMNA GR 98, p. 31 (1972)

(Minor Occurrence) G(lim)

COMMODITY: Limonite (gossan)

STATUS: Minor Occurrence

NTS: 52H/4SE

LATITUDE: 49° 04' 52"N LONGITUDE: 89° 31' 05"W

LOCATION: North of Keni Lake about 50 miles north-northwest of Port Arthur.

DESCRIPTION:

GEOLOGY: The basement rocks in the area are Precambrian in age and consist primarily of highly deformed and metamorphosed clastic sedimentary, volcanic, and volcaniclastic rock units, and granite. These are overlain by flat-lying carbonate shales of the Sibley Group and Keweenawan diabase sills.

Limonite gossan was found in mafic metavolcanics immediately north of magnetite-chert. The magnetite-chert is found within a sequence of dark green, chloritic tuffaceous metavolcanics, in the northern part of the "major" greenstone metavolcanic band of the area.

The magnetite-chert unit can be traced for a strike distance of 2,000 feet and is 100 feet thick. According to Kaye
associated with the magnetite-chert unit."

MINERALOGY: "The magnetite-chert unit comprises whitish, sheared and strongly fractured, fine-grained, recrystallized chert, and strongly sheared bands of light brown weathering material largely composed of the iron amphibole, grunerite. Small crystals and very fine grains of magnetite are liberally distributed throughout the rock, but their greatest concentrations are in the grunerite bands." (Kaye 1969, p.8).

Trace quantities of gold and silver were found in grab samples of the limonitic material.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2172, 1 inch to 1 mile (1:63,360) 1969
ODM Map P.339, 1 inch to 1/2 mile (1:31,680) 1966

SELECTED REFERENCE: ODM GR 77, p. 8,24 (1969)

NAME: MNW LITHIUM PROSPECT Li, Be, Cs

COMMODITIES: Lithium, beryllium, cesium

STATUS: Minor Occurrence

NTS: 52H/1NE

DESCRIPTION: Listed under BERYL - MNW Lithium Prospect

NAME: CARAL MINING COMPANY LTD. Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

NTS: 52H/8NE

LATITUDE: 49° 26' 27'N LONGITUDE: 88° 00' 30"W

LOCATION: The lithium pegmatite is located just west of Piper Lake, 2 miles north-northeast of Postagoni Lake.

DESCRIPTION: See NAMA CREEK MINES LTD. for description of general GEOLOGY and MINERALOGY, p.170.

HISTORY OF DEVELOPMENT: 1955-56: Geological mapping and 13 diamond drill holes having an aggregate length of 2,681 feet were carried out.

REMARKS: The best sample 5 feet in core length, from a diamond drill hole, was found to contain 0.67 percent lithia.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Caral, District Thunder Bay, Lat. 49°15', Long. 88°00'
Resident Geologist's Files, OMNR, Thunder Bay: Assessment File, Caral Mining Co. Ltd. Report
ODM GR 31, p. 65-66 (1965)
Can. Min. Jour., Vol. 77, No. 4, p. 73-75,100 (1956)

NAME: CONWAY PROSPECT - NO. 1 DEPOSIT and CONWAY DEPOSIT Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrences

NTS: 52H/8NE

No. 1 Deposit: LATITUDE: 49° 26' 45"N LONGITUDE: 88° 00' 12"W
Conway Deposit: 49° 27' 05" 88° 00' 05"

LOCATION: The deposits are north-northeast of Postagoni Lake. The No. 1 Deposit is about 1/4 mile northeast of Piper Lake and 1/4 mile east of Little Postagoni River. Conway Deposit is exposed 1,000 feet north-northeast of the No. 1 Deposit, about 1,500 feet east of Little Postagoni River.

DESCRIPTION:
GEOLOGY: These two Algoman spodumene-bearing pegmatite dikes cut metasediments. The Conway Deposit is the larger of the two pegmatites and is 1,400 feet long by 10-37 feet wide, striking N30°E and dipping 70°NW. It is considered to be an extension of the No. 1 Deposit, which is exposed for 115 feet and ranges in horizontal width from 3 to 8.5 feet. It strikes N20°-25°E and dips 55°-65°NW.

MINERALOGY: The Conway pegmatite is largely made up of feldspars, spodumene and quartz with small amounts of muscovite. An unidentified black mineral (tourmaline ?) was found in cores from diamond drill holes. Small amounts of fine-grained beryl were found in the southwestern portion of the deposit. The matrix of this pegmatite is fine-grained quartz, feldspar and muscovite in which large crystals of potash feldspar (3-18 inches in length) and large crystals of spodumene (1.5-6 inches in length) occur as phenocrysts. These are arranged in subparallel alignment and are oriented roughly normal to the strike of the dike. Vein aplites, up to several inches in thickness, occur in the dike, and in one outcrop they make up over 90 percent of the west half of the dike.

Assay values from samples from diamond drill holes indicate beryllium contents of 0.02-0.5 percent over core lengths up to 12.5 feet. Diamond drilling in the northeastern part of the dike indicates Li_2O contents ranging from 0.49 percent over 9.3 feet of core to 0.91 percent over 14.5 feet of core, and, in the southwestern portion, contents range from 0.73 percent over 10.3 feet of core to 1.30 percent over 35 feet of core.

The No. 1 Deposit pegmatite is more banded than the Conway dike by vein aplites which are conformable to the dike. These vein aplites are 1-5 inches thick and, in one part of the dike, make up about one quarter of the deposit. The pegmatite consists of medium-grained crystals of potash feldspar and fine-grained crystals of spodumene in a very fine-grained (granitoid) matrix. The larger crystals are oriented perpendicular to the strike of the deposit. Much of the spodumene is unaltered and some has been sericitized, and about 50 feet from the southwest end of the dike, granular-textured muscovite has replaced most of the spodumene.

Five diamond drill holes were bored and the two most northerly drill holes indicated average grades of 0.56-0.58 percent Li_2O. The other three holes did not intersect much spodumene.

HISTORY OF DEVELOPMENT:

May 1957: United Montauban Mines Limited bored 5 diamond drill holes totalling 1,447 of which only two intersected appreciable amounts of spodumene.

Sept 1958: A total of 15 diamond drill holes were bored by Leitch Gold Mines Limited at intervals of 65-130 feet, totalling 3,200 feet.

REMARKS: The Conway Deposit is estimated to contain 1,830,000 tons of material grading 0.96% Li_2O.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES:
ODM IMR 21, p. 48 (1967)
ODM GR 31, p. 67-69 (1965)
OGS Toronto AFRO File 63A.275
OGS Toronto Geoscience Data Centre,
File Conway, District Thunder Bay,
Lat. 49°15', Long. 88°00'
MINSY File 7000300

NAME: KENOGAMISIS LITHIUM DEPOSIT Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

TOWNSHIP: Kilkenny

NTS: 52H/8NE

LATITUDE: 49° 26' 00"N LONGITUDE: 88° 01' 25"W

LOCATION: See NAMA CREEK MINES LTD. for description of general GEOLOGY and MINERALOGY , p.170.

HISTORY OF DEVELOPMENT:

Dec. 1955: 3 diamond drill holes totalling 1,015 feet were bored at 200 foot intervals by the Kenogamisis Gold Mines Ltd. The holes did not locate anything of commercial interest.

REMARKS: Surface samples indicate 0.49 percent lithia over a width of 10.0 feet, 1.31 percent lithia over a width of 9.0 feet and 0.55 percent lithia over a width of 7.0 feet. In the diamond drill holes, the results range from 0.21 percent lithia over a core length of 7.6 feet in a hole drilled at 60 degrees to 0.78 percent lithia over a core length of 12.3 feet in a hole drilled at 70 degrees.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES: ODM GR 31, p. 77-78 (1965)
ODM IMR 21, p. 48 (1967)

NAME: McVITTIE LITHIUM DEPOSIT Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

NTS: 52H/8NE

LATITUDE: 49° 24' 25"N LONGITUDE: 88° 01' 25"W

LOCATION: The deposit is along the north shore of Dive Lake, about 3,000 feet east of the northern end of Postagoni Lake.

DESCRIPTION: See NAMA CREEK MINES LTD. for description of general GEOLOGY and MINERALOGY , p.170.

HISTORY OF DEVELOPMENT:

1955-56: A program of trenching and 12 diamond drill holes totalling 3,587 feet drilled at intervals of 100-300 feet over a strike length of 1,100 feet was carried out.

REMARKS: The drill holes indicated 261,000 tons of material grading 1.03 percent Li_2O to a depth of 300 feet.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File McVittie (Lithium), District Thunder Bay, Lat. 49°15', Long. 88°00'
Resident Geologist's Files, OMNR, Thunder Bay: Assessment File, McVittie Lithium Property
MINSY File 7000200

NAME: NAMA CREEK MINES (BEARDMORE LITHIUM PROPERTY) Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrences

TOWNSHIP: Kilkenny

NTS: 52H/8NE

LATITUDE:		LONGITUDE:	
	49° 26' 45"N		88° 02' 30"W
	49° 26' 20"		88° 02' 50"
	49° 26' 37"		88° 01' 40"
	49° 26' 20"		88° 01' 28"
	49° 26' 25"		88° 01' 31"
	49° 26' 40"		88° 00' 56"
	49° 26' 26"		88° 02' 20"
	49° 26' 00"		88° 03' 00"

LOCATION: The property is approximately 85 miles northeast of Thunder Bay and 30 miles north of Lake Superior. It is 22 miles by road from Beardmore and 32 miles from the town of Nipigon.

DESCRIPTION:

GEOLOGY: The bedrock of the area is of Precambrian age. The oldest Archean rocks are metasediments; these strike east-northeast, dip steeply to the north, and are overlain by metavolcanics.

The metasediments were intruded by large masses of Algoman granitic rocks, numerous sills and dikes, pegmatite and aplite. Small stock-like masses and narrow dikes of basic rocks also cut the metasediments.

Pegmatites are common in the area, they occur close to and within large masses of granitic rock. The pegmatites occur as irregular-shaped bodies and as thin dikes, sills and attenuated lenses. They show regional zoning and a genetic association of pegmatites and granite is indicated.

The pegmatites of Nama Creek Mines are divided into 2 main zones; the North and South, and then into four minor zones; Boundary, Line 20, Camp 37 and Camp 38 road. The north deposits are stretched over a length of 3,000 feet, strike N50°-60°E and dip 60°-80°NW.

According to Pye (1965, p.89-90), "The property of Nama Creek Mines Limited is underlain chiefly by thick-bedded biotite gneisses and quartz-rich biotite gneisses. In places these are folded on a small scale, forming synclinal structures pitching 30°-35°SW. and, close to intrusive bodies of lithium pegmatite, minor crenulations and dragfolds. As a general rule, however, the metasediments strike rather uniformly northeast, and dip 50°-85°NW. They are interrupted at widely-spaced intervals by a few tabular bodies of hornblende schist, representing either beds of tuff or basic intrusive sills. These rarely exceed 12 inches in thickness and exhibit a remarkably well-developed boudinage structure. Several diabase dikes, with widths up to 100 feet, cut sharply across the metasediments and the pegmatites; in the extreme southwest corner of the property, along the west shore of Downey Lake, the metasediments are overlain by an intrusive diabase sheet that stands up to form high, east-facing cliffs.

"A wide fault zone is thought to exist under a linear valley extending north from Downey Lake. Two diamond-drillholes, bored to test the ground under the valley, intersected intensely fractured metasediments and diabase, showing calcite and some quartz stringers, and numerous chloritic partings and slickensided slip surfaces. Although the relative displacement is not known, it is apparent that the fault has cut several of the lithium-bearing pegmatites and is responsible for the abrupt terminations of them."

MINERALOGY: "The dykes are all similar in mineralogy and structure. They are mineralogically unzoned and carry spodumene essentially from wall to wall but are longitudinally banded. Medium-grained spodumene with interstitial fine quartz feldspar and a few coarse crystals of white feldspar occurs in bands and stringers separated by irregular stringers of aplite. The spodumene, and most of the coarse feldspar crystals are consistently oriented perpendicular to the dyke walls. Most of the spodumene is light green, but part is altered to dark green and brown colours, and this alteration is thought to be related principally to the proximity to younger diabase bodies. Pale yellowish mica is conspicuous along oblique fractures in the dykes." (Mulligan 1965, p.56-57).

HISTORY OF DEVELOPMENT:

1955-1956: Trenching, sampling and a total of 43,000 feet of diamond drilling was completed.

HISTORY OF DEVELOPMENT (cont'd)

1956: Company began sinking a 4-compartment shaft on the north zone.

mid-1957: Work was halted but a depth of 503 feet had been reached. Stations were cut at the 150-, 300-, 450-foot horizons and a small amount of cross-cutting was done.

1974: A metallurgical sample was taken.

REMARKS: Diamond drilling indicated reserves of 2,784,000 tons of 1.11 percent Li_2O over a length of 2,800 feet to a depth of 1,000 feet in the North Zone. Reserves indicated in the South Zone are 1,508,332 tons of 0.95 percent Li_2O in a dike 800 feet long and having an average width of 25 feet. (Isaacs 1955). The operations were suspended due to lack of markets.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 (1:31,680) 1961

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File
Nama Creek Mines, District Thunder Bay,
Township Kilkenny
Resident Geologist's Files, OMNR, Thunder Bay:
Nama Creek Mines Ltd. report
OGS Toronto AFRO File 63A.308
ODM IMR 21, p. 47-51 (1967)
ODM GR 31, p. 89-96 (1965)
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 56-57 (1965)
ODM Vol. 67, pt. 2, p. 109-110 (1958)
ODM Vol. 66, pt. 2, p. 104 (1957)
CDMTS,GSC Paper 57-3, p. 13-14 (1956)
Can. Min. Jour., Vol. 77, No. 4,
p. 73-75,100 (1956)
Nama Creek Mines Limited, unpublished
Company Report October 31, 1955
MINSY Files 50839701 and 50839702

NAME: LUN-ECHO GOLD MINES LIMITED Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrences

NTS: 52H/8SW

LATITUDE: 49° 19' 45"N LONGITUDE: 88° 16' 20"W
49° 19' 35" 88° 16' 55"

LOCATION: Approximately 22 miles north of the town of Nipigon and less than 3/4 mile northeast of Pine Portage dam. The western boundary of the claim group is about 1/4 mile from the east shore of Emma Lake on the Nipigon River.

DESCRIPTION:
GEOLOGY: The area is underlain by Archean sediments intruded by Algoman pegmatite dikes or sills. Late Precambrian Keweenawan diabase dikes and sills also intrude the sediments.

The sedimentary gneisses and schists strike northeast and dip 55°-75°SE. The rocks exposed on the property are made up primarily of metasediments which strike N 40°-45°E and dip 55°-70°SE. Two diabase dikes cut these rocks. The dikes are 75-100 feet wide and strike about N5°-10°W; one of them has been traced intermittently for about 3 miles.

A sheet of Keweenawan diabase, about 650 feet thick was intersected by diamond drill holes at vertical depths of 80-230 feet. This sheet dips under the metasediments and has a warped or gently undulating upper contact.

Six spodumene-bearing pegmatite sills have been sampled at these locations. The pegmatites parallel the metasediments in attitude.

MINERALOGY: Feldspar, spodumene and quartz are the principal constituents of these deposits. Small amounts of muscovite, a little accessory apatite and columbite are also present. The potash feldspar is pale pink or white and coarse-grained with some crystals longer than 12 inches. The spodumene is highly altered, pale grey and prismatic. Sporadic crystals of black columbite up to 1 1/2 inches long are not considered of any commercial importance. Towards the centre of the pegmatite large irregular patches of sugary textured feldspar or aplite break the continuity in a few places.

HISTORY OF DEVELOPMENT: 1955: A geological survey was done on a scale of 1 inch to 100 feet.
The deposits were tested by diamond drilling.
A total of 39 holes aggregating 10,561 feet were drilled.

REMARKS: The possibility of outlining appreciable tonnages is low since the deposits are truncated by the diabase dikes at shallow depths and are altered near the contacts.

The deposits range in width from 5-45 feet and in length from 150-2,050 feet. They carry from 10-30 percent spodumene and negligible to 2.75 percent lithia across 21.0 feet.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2056, 1 inch to 1 mile (1:63,360) 1964
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre,
File Pine Portage (Forgan Lake),
District Thunder Bay, Lat. 49°15', Long. 88°15'
Resident Geologist's Files, OMNR, Thunder Bay:
Lun-Echo Gold Mines Ltd. Report
CDEMR,GSC Econ. Geol. Rept. No. 29, p. 117-118 (1974)
ODM MRC 14, p. 53 (1971)
ODM GR 31, p. 80-83 (1965)
ODM IMR 21, p. 47-51 (1967)
CDMTS,GSC Paper 57-3, p. 15 (1957)
Can. Min. Jour., Vol. 77, No. 4, p. 75 (1956)
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 61 (1965)
MINSY File 50839800

NAME: TERRITORY MINING COMPANY LIMITED PROPERTY mag

COMMODITY: Titaniferous magnetite

STATUS: Minor Occurrence

NTS: 52H/7NW

LATITUDE: 49° 25' 15"N LONGITUDE: 88° 55' 50"W

LOCATION: The deposit is on the north shore of Black Sturgeon Lake, south-southeast of Lake Nipigon.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2233, 1 inch to 1 mile (1:63,360) 1971
ODM Map 2137, 1 inch to 4 miles (1:253,440) 1968
ODM Map P.462, 1 inch to 1 mile (1:63,360) 1968

NAME: WEST SHORE OCCURRENCE mag

COMMODITY: Titaniferous magnetite

STATUS: Minor Occurrence

NTS: 52H/7SW

LATITUDE: 49° 19' 28"N LONGITUDE: 88° 53' 08"W

LOCATION: Southwest shore of Black Sturgeon Lake, southeast of Lake Nipigon.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2233, 1 inch to 1 mile (1:63,360) 1971
ODM Map 2137, 1 inch to 4 miles (1:253,440) 1968
ODM Map P.462, 1 inch to 1 mile (1:63,360) 1968

NAME: LUNDMARK PROSPECT mb

COMMODITY: Marble

STATUS: Minor Occurrence

NTS: 52H/3SE

LATITUDE: 49° 02' 57"N LONGITUDE: 89° 01' 58"W

LOCATION: About 2 1/2 miles west of Leckie Lake and 5 miles east of the Eaglehead Lake Reserve.

DESCRIPTION:

GEOLOGY: The oldest rocks in the area are steeply-dipping clastic sedimentary and volcanic rocks of Precambrian age. These rocks have been metamorphosed, deformed and intruded by granite. Unmetamorphosed, flat-lying sedimentary rocks of the Sibley Group unconformably overlie the older rocks. Along the unconformity surface of the base of the Sibley Group and intercalated with Sibley sedimentary rocks are Keweenawan diabase sills.

The rocks of the Archean basement are predominantly migmatic in nature and remnant bodies of metasedimentary and metavolcanic rocks are preserved in this complex. The boundary zones where the granitic complex intrudes the older rocks are marked by some occurrences of hybrid granitic gneisses. Stocks of granite and quartz monzonite intrude these rocks.

Rocks of the Sibley Group directly overlie the Archean basement and are largely composed of clastic sedimentary rocks with minor limestone and dolomite. The sedimentary rocks have been intruded by dikes, sills and laccoliths of diabase. In the area, tabular diabase forms a brittle cap sheathing less resistant sedimentary rocks.

The showing consists of Sibley sediments which are suitable for ornamental building stone.

HISTORY OF DEVELOPMENT:

July 1976: Manual stripping, blasting rubble and talus and benching of bedrock was done.

Nov. 1977: Some drilling, blasting and mucking was done.

MAP REFERENCES:
OGS Map P.1528 (1:250,000) 1978
ODMNA Map 2235, 1 inch to 1 mile (1:63,360) 1971

SELECTED REFERENCES:
ODMNA GR 98, p. 5,9 (1971)
CDM,GS Mem. 167, p. 199 (1931)

NAME: GRESKY MARL DEPOSIT ma
(Shillabeer Lake Group)

COMMODITY: Marl

STATUS: Minor Occurrence

TOWNSHIP: Cockeram

NTS: 52H/2SE

LATITUDE: 49° 04' 25"N LONGITUDE: 88° 39' 45"W

LOCATION: In the basin containing Shillabeer and Fog Lakes and Shillabeer Creek. Shillabeer Lake is south of Lake Nipigon and 20 miles northwest of Hurkett.

DESCRIPTION:

GEOLOGY: "The oldest rocks in the area are steeply-dipping clastic sedimentary and volcanic rocks. They have been regionally metamorphosed to intermediate grades, highly deformed, and intruded by granite. This complex is unconformably overlain by unmetamorphosed, flat-lying sedimentary rocks of the Sibley Group. Keweenawan diabase sills are found intercalated with Sibley sedimentary rocks and along the unconformity surface at the base of the Sibley Group." (Coates 1972, p.5).

Auger drilling indicated the existence of a large marl deposit at this locality. The indicated minimum average thickness of the deposit is 20 feet. The lime beds occur over a distance of 5 miles and may exceed 1/2 mile in width.

The deposit has been tested by 8 auger drill holes at intervals of 200-700 feet; the result indicates the deposit to extend at least 2,000 feet in the east-west direction and 1500 feet in the north-south direction.

The marl contains abundant fragments of the alga Chara which is growing everywhere over the lake bottom. It is believed that the marl deposit is a result of the decomposition of the Chara.

CHEMICAL ANALYSIS: The samples represent sections from 2-6 feet below the creek bed at points 400 feet apart. Results of the analytical studies by the Laboratory and Research Branch, Ontario Department of Mines and Northern Affairs:

Analyses of Shillabeer Creek Marl in the Black Sturgeon River Area; M.E. Coates Samples, from Guillet, 1969, p.110

	GM-1 percent	GM-2 percent	GM-3 percent
CaO	51.50	41.30	50.40
MgO	0.96	1.60	0.98
Fe_2O_3	0.13	1.57	0.17
Loss on ignition	45.29	36.42	44.95
Insoluble	1.45	16.27	1.33
Total	99.33	97.16	97.83
Calculated $CaCO_3$	92.00	73.70	90.00
Calculated $MgCO_3$	2.00	3.34	2.02
Total carbonate	94.00	77.04	92.02
Brightness	62.0	53.5	65.0
Oil absorption	31.3	30.9	37.4

Results from the analyses indicate that the marl consists almost entirely of calcium carbonate, the magnesium carbonate is very low and there are no impurities of consequence.

HISTORY OF DEVELOPMENT:

1959: 8 auger holes confirmed the existence of a large marl deposit.

1960: 400 drill holes by Anaconda Iron Ore (Ont.) Ltd. encountered lime mud 10-70 feet thick.

1970: 36 auger holes, 4 inches in diameter and averaging 20 feet deep were drilled on the 8 claims.

REMARKS: It is estimated that the deposit would yield a minimum of 5 million tons of marl. In 1967, M.E. Coates sampled the deposit for the Ontario Department of Mines. The results showed the average moisture content was 46.7 percent and that 880 pounds of dry marl is contained in one cubic yard of the crude. Tests have shown that 90 percent CaO of good quality is recoverable from the deposit.

According to a survey of the lime market by L. Baartz, about 50,000 tons of lime is used annually by the local mills, most of this lime is shipped from Beachville, Ontario. Because of the high delivery price, due in part to transportation cost, it would appear quite possible that a market for locally produced lime should be considered.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2232, 1 inch to 4 miles (1:253,440) 1973
ODMNA Map 2236, 1 inch to 1 mile (1:63,360) 1972
ODM Map 2183, 1 inch to 16 miles (1:1,013,760) 1969
ODM Map P.463, 1 inch to 1 mile (1:63,360) 1968

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Gresky Marl Deposit
ODM GR 98, p. 5,34-36 (1972)
ODM IMR 28, p. 108-110 (1969)
CDM,GSB Mem. 1, p. 116 (1910)

NAME: PHELPS DODGE CORPORATION PROPERTY py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52H/5SW

LATITUDE:	LONGITUDE:
49° 16' 45"N	89° 55' 40"W
49° 16' 05"	89° 57' 00"
49° 15' 06"	89° 55' 50"
49° 15' 20"	89° 55' 20"
49° 16' 40"	89° 53' 50"
49° 16' 55"	89° 53' 35"
49° 16' 45"	89° 51' 30"

LOCATION: The area is approximately 65 miles northwest of Thunder Bay in the vicinity of Jack Lake. It is serviced by the Dog River Road and branch roads owned by the Great Lakes Paper Co. Ltd.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map P.380, 1 inch to 1/2 mile (1:31,680) 1966

NAME: ALBERT P.E. HOPKINS PROPERTY py

COMMODITY: Pyrite

STATUS: Minor Occurrence

TOWNSHIP: Dorothea

NTS: 52H/9NE

LATITUDE: 49° 40' 20"N LONGITUDE: 88° 04' 30"W

LOCATION: North of Sturgeon River, less than 1 mile east of Lake Nipigon (Bish Bay) in the southeast quarter of the township.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2294, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.479, 1 inch to 1/4 mile (1:15,840) 1968
ODM Map 45a, 1 inch to 1 mile (1:63,360) 1936

NAME: BISH BAY PYRITE OCCURRENCE py

COMMODITY: Pyrite

STATUS: Minor Occurrence

TOWNSHIP: Dorothea

NTS: 52H/9NE

LATITUDE: 49° 41' 25"N LONGITUDE: 88° 05' 55"W

LOCATION: The occurrence is on the shore of a small cove on the eastern shore of Lake Nipigon north of Bish Bay.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2294, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.479, 1 inch to 1/4 mile (1:15,840) 1968

NAME: V.W. TYSON PROPERTY py, Au

COMMODITIES: Pyrite, gold

STATUS: Minor Occurrence

TOWNSHIP: Dorothea

NTS: 52H/9NE

LATITUDE: 49° 41' 30"N LONGITUDE: 88° 02' 40"W

LOCATION: The property stretches east from Bish Bay on the east shore of Lake Nipigon. It is about 7 miles northwest of the town of Beardmore.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODM Map 2294, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.479, 1 inch to 1/4 mile (1:15,840) 1968
ODM Map 45a, 1 inch to 1 mile (1:63,360) 1936

NAME: LAWRENCE MARBLE QUARRY st (mb)

COMMODITY: Stone (marble)

STATUS: Minor Occurrence

NTS: 52H/8NW

LATITUDE: 49° 27' 25"N LONGITUDE: 88° 15' 25"W

LOCATION: On Crooke Point, south shore of Lake Nipigon, west of the Virgin Islands.

DESCRIPTION:
GEOLOGY: "The oldest rocks in the area are steeply-dipping clastic sedimentary and volcanic rocks. They have been regionally metamorphosed to

intermediate grades, highly deformed, and intruded by granite. This complex is unconformably overlain by unmetamorphosed, flat-lying sedimentary rocks of the Sibley Group. Keweenawan diabase sills are found intercalated with Sibley sedimentary rocks and along the unconformity surface at the base of the Sibley Group." (Coates 1972, p.5).

At this locality, "The Sibley sediments are exposed at the base of a diabase sheet for about a mile along the lakeshore and rise as much as 20 feet above lake level. They are gently folded, thin-bedded dolomitic limestones, either white or pale green in colour. In 1931 they were investigated by the late J.W. Lawrence as a source of building and ornamental stone. Several samples were forwarded to Nicholson Cut Stone Limited of Leaside, Ontario, as regards colour, texture and weathering properties." (Resident Geologist's Files, Port Arthur).

CHEMICAL ANALYSIS:

	percent
SiO_2	20.78
Al_2O_3	3.22
CaO	37.12
MgO	10.80
Fe	1.06
P	0.03
Mn	0.05
S	0.05
L.O.I.	22.83
	95.94

HISTORY OF DEVELOPMENT:

1931: Investigated by the late J.W. Lawrence as a source of building and ornamental stone.

1948: An analysis was made of the dolomite which indicated that the silica content was in excess of 20 percent.

MAP REFERENCES: OGS Map P.1528 (1:250,000) 1978
ODMNA Map 2234, 1 inch to 1 mile (1:63,360) 1971

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Port Arthur:
J.W. Lawrence Marble Quarry, Cooke Point, Lake Nipigon
ODM IMR 16, p. 84-85 (1964)
ODMNA GR 98, p. 5 (1972)
CDM,GS Mem. 167, p. 199 (1931)

NTS 52I

NAME: NORTH AUBRY DEPOSIT, SOUTH AUBRY DEPOSIT Li, Be

COMMODITIES: Lithium, beryllium

STATUS: Major Occurrences

NTS: 52I/8NW

North Aubry Deposit: LATITUDE: 50° 24' 35"N LONGITUDE: 88° 26' 50"W
South Aubry Deposit: 50° 24' 10" 88° 26' 55"

LOCATION: These two bodies of spodumene-bearing pegmatite are found about 2 1/2 miles west of Seymour Lake.

DESCRIPTION: See CHAPPAIS LAKE LITHIUM DEPOSIT for GEOLOGY, p. 186.
North Aubry Deposit: "The North Aubry pegmatite body intrudes schistose amphibolite and pillow lavas. It strikes north and is exposed intermittently over a length of 700 feet and across widths up to 300 feet. It was

tested by 11 diamond-drillholes, totalling 1,304.5 feet, and was found to dip 20°-25°E. It is up to 70 feet thick and averages 30 to 35 feet. The body decreases in thickness down the dip, however, and in two vertical holes, drilled from collars located about 150 feet east of the pegmatite outcrop area, it was found to have a true thickness of only about 15 feet....

"In the outcrops, the North Aubry pegmatite is made up of feldspar, spodumene, and quartz, with small amounts of muscovite, a little apatite, and in places a few crystals of pale-green beryl. Two feldspars, microcline or perthitic microcline and albite, are present. The potash feldspar is white to pale-pink, and is present mainly as large phenocrysts, from less than 4 inches to over 12 inches in length; the albite is typically fine-grained, and is found only as a constituent of the matrix of the pegmatite.

"Like the potash feldspar, the spodumene also forms phenocrysts. These are white or pale-greenish-grey, and are characteristically prismatic, with lengths up to a measured maximum of 24 inches. In two outcrops they were found to be oriented more or less vertically... [reflecting] the gentle easterly dip of the deposit. The quartz of the pegmatite for the most part forms grains less than one inch across, is fine-grained, and, like the albite, it is present only as a part of the pegmatite matrix. Of interest is the fact that in several places it was found to cut across fractured and broken spodumene crystals. The muscovite is fine-grained. It is intergrown with the quartz and albite, and also replaces spodumene along the latter's cleavage planes.

"A zonal structure was not observed in the outcrops by the author, nor was any reported by The Anaconda Company (Canada) Limited in the logs of the diamond-drillholes. The pegmatite body, however, is interrupted in places by replacement units of aplite. These consist of very fine-grained albite and quartz with some muscovite and, in places, red garnets. They range up to 6.5 feet thick, and occur as irregular patches, lenses, or tabular veins. They are not numerous and detract little from any potential value the deposit might have.

"The outcrops contain, on the average, about 30 percent unaltered spodumene, indicating an overall grade of at least 1.5 percent Li_2O. This estimate is confirmed by the results...of the diamond-drilling. The BeO content of the deposit was found to be too low to be of any present commercial significance." (Pye 1968, p.47-48).

South Aubry Deposit: "The South Aubry deposit is about 3,000 feet south-southwest of the North deposit. It strikes about N35°W and is exposed in several outcrops, over a length of about 400 feet, close to the base of a prominent west-facing escarpment of metavolcanics. Four diamond-drillholes, aggregating 327.0 feet, showed it to dip 15°-20°E and to have a true thickness of 50 feet or more.

"The pegmatite body is similar in composition and fabric to the North Aubry deposit, and is made up of medium-grained to coarse-grained individuals of potash feldspar and spodumene in a matrix of fine-grained quartz, albite, and muscovite with a little apatite. Some of the spodumene, however, has been altered and exhibits secondary muscovite and hematitic staining. The spodumene, and hence the lithia content of the deposit is low; analyses of core samples indicated a grade of between 0.5 and 1 percent Li_2O in its southeast part and a grade of less than 0.5 percent Li_2O in its northwest part. The BeO content is less than 0.1 percent.

"Spodumene-bearing pegmatite is exposed along the west-facing escarpment about 200 feet north-northeast of the northwest extremity of the Aubry South deposit. It is identical in composition to the North Aubry deposit and may represent the latter's extension. Its spodumene content is about 10 percent." (Pye 1968, p.49).

HISTORY OF DEVELOPMENT:

1957: Discovered by Nelson Aubry.
Detailed mapping, sampling and 15 diamond drill holes bored under the direction of E. Brimley for the Anaconda Company (Canada) Limited.

1979: Magnetometer survey by Cominco Limited.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Anaconda Company (Canada) Ltd., Nelson Aubry
OGS Toronto Geoscience Data Centre, Files:
Aubry (North), District Thunder Bay, Lat. 50°15', Long. 88°15', Aubry (South), District Thunder Bay, Lat. 50°15', Long. 88°15'
OGS Toronto AFRO File 2.3207
ODM GR 55, p. 7,32,36,47-49 (1968)
ODM IMR 21, p. 48,51 (1967)
ODM PR 1963-1, p. 12 (1963)
MINSY Files 50840001, 50840002

NAME: LINKLATER TIN DEPOSIT (SAN ANTONIO GOLD MINES LIMITED) Sn, Be, cs

COMMODITIES: Tin, beryllium, cassiterite

STATUS: Major Occurrence

NTS: 52I/10SW

LATITUDE: 50° 33' 15"N LONGITUDE: 88° 45' 40"W

LOCATION: A group of 18 unpatented claims are located along the south shore of the east end of Linklater Lake, approximately 20 miles northeast of Armstrong. The original tin zone is on claims K.K.4781 and 4784.

DESCRIPTION:

GEOLOGY: The regional geology, as described in File 63.1862, p.4, consists of rocks, all Precambrian in age, which are "mostly steeply dipping sediments and volcanics of Keewatin age which are intruded and overlain by a generally flat-dipping sill of Keweenawan Nipigon diabase." In the vicinity of the cassiterite showing, Chisholm (1948, p.2,3), reports, the rocks "consist of a large intrusive batholith of granite bordering the north shore of Linklater lake, followed to the south by a narrow band of sediments, which is approximately 1,500 feet wide at the showing and strikes in an east-west direction; this is conformable with a large area of Keewatin-type greenstone to the south. The above assemblage is cut by large sills and dikes of quartz diabase. The sedimentary belt lying between the greenstones to the south and the granite to the north extends for a distance of 25 miles in an east-west direction. It has been given the local name of Linklater formation....

"The Linklater sediments appear to be interbanded with the Keewatin-type lavas to the south. In the neighbourhood of the showing, they can be lithologically divided into two distinct members. The northern member, which borders the granite and extends southwards to the lava contact, consists of impure arkosic quartzite containing frequent narrow bands of magnetite. As the lavas to the south are approached the sediments become more impure and grade into greenish greywacke and tuff near the lava contact. It is within the impure sedimentary member carrying magnetite bands that the felsitic dikes containing cassiterite occur....

"The strike of the sedimentary strata in the vicinity of the showing varies from N.70° to 80°W. and dips S.80°.... Several minor drag folds occur in the iron bands of the impure sediments along the strike of the main tin showing. These vary in width from a few inches to 10 feet. At the west end of the showing they plunge to the west at 15 degrees, and 1,500 feet to the east they plunge to the east at 50 degrees. They may indicate the presence of a larger synclinal or anticlinal axis near by or, what is more likely, they may be associated with minor shearing in the neighbourhood. The change in plunge along the strike indicates a cross-warp in the strata. The narrow felsite dikes have been injected along the bedding-planes of the impure quartzite member of the sedimentary formation lit par lit fashion and appear to be

localized where the brittle magnetite bands occur most frequently. The structural control of the dikes appears to be the differential movement between the brittle magnetite bands and the less brittle impure quartzite interbedded with it. No injections of felsitic material were noted in the massive grey quartzite to the north or in the lavas to the south.

"Some local shearing of the dikes has developed sericite in the feldspars and elongated individual crystals of feldspar parallel to the walls of the dike. Towards the west end of the showing, the dikes show a banding of the constituent muscovite, quartz, and feldspar. It could not be determined whether this was produced at the time of injection of the dikes while they were in a plastic state or whether it occurred at some later time.

"No major faulting in the area was recognized, although some long, narrow valleys in the sedimentary strata to the east of Linklater lake indicate that a strike displacement exists along the bedding-planes there. A minor cross fracture towards the east end of the showing shows a displacement of the beds of a few inches in a north-south direction."

MINERALOGY: According to Mulligan (1975, p.102,102), trenching at the occurrence "has exposed 18 narrow granitoid dykes cutting across greywacke and iron-formation in a zone 1,500 feet long and 50 feet wide. The dykes average 6 inches in width and 30 feet in length. They are composed of pink feldspar, quartz, and muscovite, with minor tourmaline and scattered concentrations of cassiterite. They are partly felsitic but mainly granitoid, with a distinct augen structure due to lenticular porphyroblasts of feldspar. The texture is cataclastic, with shattered feldspar grains partly recrystallized and consisting mainly of plagioclase, probably albite. Microscopic grains of cassiterite and beryl were seen in some thin sections, and topaz and fluorite were tentatively identified."

A report on two thin sections, made of material from the showing, examined by Dr. H.B.D. Wilson, University of Manitoba, is summarized by Chisholm (1948, p.4,5). "No. 1 section was made from the felsitic material carrying heavy cassiterite mineralization. The composition of the rock is a follows: orthoclase, 65-70 per cent; quartz, 20 per cent; muscovite, 5-10 per cent; cassiterite, 3-5 per cent; accessory minerals, apatite and an unidentified mineral. The rock appears to represent a sheared cassiterite-bearing pegmatite in which the original coarser-grained minerals have been granulated. The original larger feldspar grains have been crushed and the fragments rotated. In one case the present grains are only slightly out of orientation and outline an original lath-shaped feldspar of larger dimensions. The quartz grains are strained and sutured and appear to be the result of elongation and recrystallization of original quartz. Fine-grained quartz also occurs with muscovite along small shear zones and surrounding some of the feldspar grains.

"From its extinction angle, the mica appears to be muscovite. The grains tested did not give a flame test for lithium. The mica occurs mostly with quartz and along slips, but a few grains are associated with the feldspar.

"The cassiterite occurs mainly with the feldspar and is rare in quartz and micaceous bands. Thus it appears to be an original constituent rather than associated with the later mineralization along the small shear zones.

"Two small prisms of apatite were observed in the section. An unidentified prismatic isotropic mineral with high positive relief and faint yellow tinge occurs in the feldspar bands, in places closely associated with the cassiterite.

"No. 2 slide was taken across the contact of a cassiterite-bearing pegmatite stringer and the sedimentary wall rock, with the object of determining whether cassiterite occurred in the sedimentary wall rock as well as in the pegmatite. It appears that the cassiterite is confined to the pegmatite.

"The section is made up of three rock types: pegmatite and light and dark sedimentary bands.

"The pegmatite is similar to specimen No. 1 above, except that it contains prominent elongate patches of apatite (0.5 mm. to 3.5 mm.) concentrated near the sedimentary contact.

"A typical dark band of the sediment is composed of quartz, 70-75 per cent; sericite, 10 percent; hornblende, 5 per cent; magnetite, 10 per cent; and apatite, 3 per cent. It has fairly even, fine-grained, granular texture, with the average grain size about 0.1 mm.

"A typical light-coloured band consists of quartz, 55 per cent; sericite, 20 per cent; epidote, 20 per cent; magnetite, 3-5 per cent; and traces of apatite and zircon. The texture is similar to the dark bands. The sericite and epidote are apparently derived from original feldspar grains now almost completely altered.

"The section represents a finely banded, metamorphosed, argillaceous sediment, with a pegmatite dike injected along the bedding."

ECONOMIC FEATURES: Grab samples assayed as high as 5 percent tin, in proportion to the density of the mineral showing. The best channel sample was 1.83 percent tin across a width of 0.5 feet. A sample from the main showing gave an assay value of 2.60 percent tin. Other grab samples of pegmatitic material assayed from a trace of tin to 0.04 percent tin, and trace of beryl. (paraphrased from Chisholm 1948, p.3).

HISTORY OF DEVELOPMENT:

1943: Showing discovered by prospector Stanley Johnson.

1947: Tin assays received by E. Wenzel.

1948: Stripping, trenching and sampling by San Antonio Gold Mines Ltd. and work on claims KK4781, 4783, 4784 over a distance of 1600 feet by 50 feet.

1949: 8 diamond drill holes by Canada Tin Limited on claim KK4783 for a total of 735 feet.

1960: 7 diamond drill holes by Chimo Gold Mines Ltd. on claim KK22128 (KK4783) for a total of approximately 480 feet.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay:
Canada Tin - 52I/10SW
OGS Toronto Geoscience Data Centre, File
Linklater Lake, District Thunder Bay,
Lat. 50°30', Long. 88°45'
OGS Toronto AFRO File 63.1862
CDEMR,GSC Econ. Geol. Rept. No. 28, p. 102,103 (1975)
ODM MP 42, p. 57-58 (1970)
CDEMR,GSC Econ. Geol. Rept. No. 23, p. 77-78 (1968)
CDMTS,MB Mem. 125, p. 5 (1952)
ODM PR 1948-11, p. 1-6 (1948)
Northern Miner, September 9, 1948, p.5
ODM Vol. 49, pt. 6, p. 1-10 (1942)
MINSY File 50947200

NAME: SAN ANTONIO GOLD MINES LIMITED be

COMMODITY: Beryl

STATUS: Minor Occurrences

NTS: 52I/10SW

LATITUDE: 50° 33' 35"N LONGITUDE: 88° 46' 50"W
50° 33' 22" 88° 46' 40"

LOCATION: A group of 18 unpatented claims are located along the south shore of the east end of Linklater Lake, approximately 20 miles northeast of Armstrong.

DESCRIPTION: The regional geology, as described in Technical Survey File 63.1862, p.4, consists of rocks, all Precambrian in age, which are "mostly steeply dipping sediments and volcanics of Keewatin age which are intruded and overlain by a generally flat-dipping sill of Keweenawan Nipigon diabase." In the vicinity of the cassiterite showing, Chisholm (1948, p.2,3) reports that the rocks "consist of a large intrusive batholith of granite bordering the north shore of Linklater lake, followed to the south by a narrow band of sediments, which is approximately 1,500 feet wide at the showing and strikes in an east-west direction; this is conformable with a large area of Keewatin-type greenstone to the south. The above assemblage is cut by large sills and dikes of quartz diabase. The sedimentary belt lying between the greenstones to the south and the granite to the north extends for a distance of 25 miles in an east-west direction. It has been given the local name of Linklater formation....

"The Linklater sediments appear to be interbanded with the Keewatin-type lavas to the south. In the neighbourhood of the showing, they can be lithologically divided into two distinct members. The northern member, which borders the granite and extends southwards to the lava contact, consists of impure arkosic quartzite containing frequent narrow bands of magnetite. As the lavas to the south are approached, the sediments become more impure and grade into greenish greywacke and tuff near the lava contact....

"Scattered beryl crystals, making up an estimated 5 per cent of a 2-foot lens of pegmatite over a length of 10 feet, were seen on claim No. 4,795. The dike occurs in a small reef of sediments on the east side of a large bay on the south shore of Linklater Lake. The dike, which has been injected into the impure sediments, strikes N.70°W. and dips 75°S. It pinches off within a few feet to the east and extends under the water to the west.... The beryl crystals are from a quarter of an inch to 1 inch in diameter and are approximately 1 inch long. They are yellowish to pale-green in colour, and their distribution throughout the dike is irregular. Some tourmaline and red garnet are associated with the beryl. No cassiterite mineralization was noted by eye.

"A second beryl dike is exposed on claim No. 4,792, approximately 10 chains southeast of the No. 4 post. The dike, which is 3 feet in width, is exposed for a length of 15 feet.... It contains an estimated 2 per cent beryl, which occurs in scattered green-coloured crystals half an inch in diameter. Twenty-five feet east of this along strike, the dike is again exposed. Within a few feet of this dike were several large pieces of coarse pegmatite float containing scattered garnets and beryl crystals up to half an inch in diameter.

"An aplite dike 20 feet in width is exposed by a trench approximately 400 feet east of the point where the south boundary of claim No. 4,799 intersects the shore of Linklater lake. It is approximately 100 feet north of the claim line at this point. The dike strikes east-west and dips steeply to the south. The south wall has not been uncovered because of deep overburden. South of this, and separated by 7 feet of sedimentary material, is a similar aplitic dike 2 1/2 feet in width. A second stripping 20 feet west of this exposed the two dikes again. Cassiterite was reported to have been panned from this dike. The composition of the dike is similar to that of the felsitic material from the main tin showing to the east except that the former has a larger content of quartz and muscovite. Scattered tourmaline and garnet crystals were present. The quartz and muscovite lie in bands parallel to the walls of the dike.

"The location of this dike is approximately at the contact of the sediments and greenstone, which may account for its greater width." (Chisholm 1948, p.2,3).

HISTORY OF DEVELOPMENT: 1948: Work done in area by San Antonio Gold Mines Limited.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Canada Tin - 52I/10SW
OGS Toronto AFRO File 63. 1862
ODM PR 1948-11, p. 1-6 (1948)
ODM Vol. 49, pt. 6, p. 1-10 (1942)

(Minor Occurrence) (1) gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 52I/13SE

LATITUDE: 50° 50' 20"N LONGITUDE: 89° 33' 10"W

LOCATION: South end of Arril Lake, approximately 44 miles northwest of Armstrong.

DESCRIPTION:

GEOLOGY: The occurrence of graphite mineralization is found within the Archean metasediments. The metasediments form easily recognized stratigraphic units, either within or bordering the metavolcanics. Many of these units are less than 200 feet thick and tend to occur as attenuated lenses.

The metasediments are generally well-foliated, thin to thick bedded and fine to medium-grained. They consist principally of biotite schist or gneiss, biotite-quartz-feldspar gneiss and quartzite.

MINERALOGY: The metasediments contain abundant fine-grained graphite mineralized with disseminated pyrite and pyrrhotite.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

SELECTED REFERENCES: ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM GR 55, p. 20-21,60-62 (1968)

(Minor Occurrence) (2) gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 52I/14NW

LATITUDE: 50° 52' 35"N LONGITUDE: 89° 29' 40"W

LOCATION: North end of Arril Lake, approximately 45 miles northwest of Armstrong.

DESCRIPTION:

GEOLOGY: The occurrence of graphite mineralization is found within the Archean metasediments. The metasediments form easily recognized stratigraphic units, either within or bordering the metavolcanics. Many of these units are less than 200 feet thick and tend to occur as attenuated lenses.

The metasediments are generally well-foliated, thin to thick bedded and fine to medium-grained. They consist principally of biotite schist or gneiss, biotite-quartz-feldspar gneiss and quartzite.

MINERALOGY: The metasediments contain abundant fine-grained graphite mineralized with disseminated pyrite and pyrrhotite.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

SELECTED REFERENCES: ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM GR 55, p. 20-21,60-62 (1968)

(Minor Occurrences) (1) hem

COMMODITY: Hematite

STATUS: Minor Occurrences

NTS: 52I/6SE

LATITUDE:		LONGITUDE:	
	50° 18' 17"N		89° 09' 55"W
	50° 22' 18"		89° 10' 29"
	50° 21' 54"		89° 09' 39"
	50° 18' 31"		89° 00' 25"

LOCATION: Two deposits are approximately 8 miles northwest of Armstrong; one is about 5 miles west of Armstrong and the other is about 1 mile northeast of Armstrong.

DESCRIPTION:

GENERAL GEOLOGY: All the bedrock is Precambrian in age. The area is underlain chiefly by andesitic lavas, locally interbedded with tuffs and impure altered sediments and some magnetic iron formation. These have been isoclinally folded, intensely metamorphosed and intruded by large masses of granitic rocks and by dikes of genetically related porphyry and pegmatite.

Layered rock with sharply defined beds is indicative of these deposits. The layers are up to 15 inches thick.

MINERALOGY: Minor sulphide mineralization is usually found in association with the hematite. Disseminated to patchy pyrite and pyrrhotite is found in some of the layers.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

SELECTED REFERENCES: ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM GR 55, p. 5-12 (1968)

(Minor Occurrence) (2) hem

COMMODITY: Hematite

STATUS: Minor Occurrence

NTS: 52I/7SW

LATITUDE:		LONGITUDE:	
	50° 18' 06"N		88° 57' 32"W

LOCATION: Approximately 3 1/4 miles east of Armstrong, just north of the CNR line.

DESCRIPTION:

GENERAL GEOLOGY: All the bedrock is Precambrian in age. The area is underlain chiefly by andesitic lavas, locally interbedded with tuffs and impure altered sediments and some magnetic iron formation. These have been isoclinally folded, intensely metamorphosed and intruded by large masses of granitic rocks and by dikes of genetically related porphyry and pegmatite.

Layered rock with sharply defined beds is indicative of these deposits. The layers are up to 15 inches thick.

MINERALOGY: Minor sulphide mineralization is usually found in association with the hematite. Disseminated to patchy pyrite and pyrrhotite is found in some of the layers.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

SELECTED REFERENCES: ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM GR 55, p. 5-12 (1968)

NAME: CHAPPAIS LAKE LITHIUM DEPOSIT Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

NTS: 52I/8NW

LATITUDE: 50° 26' 25"N LONGITUDE: 88° 20' 30"W

LOCATION: The pegmatite dike is 400 feet southeast of a small pond located about 1 1/2 miles east of the south end of Chappais Lake, approximately 32 miles east of Armstrong.

DESCRIPTION:

GEOLOGY: "All the bedrock is of Precambrian age. The oldest rocks are Archean metavolcanics and metasediments, which form a segment of a well-defined belt that has been traced from Caribou Lake eastward for over 100 miles. The metavolcanics include massive and schistose amphibolite or greenstone, pillow lava, metadiabase, and basic tuff and agglomerate; the metasediments include biotite gneiss, biotite-quartz-feldspar gneiss, quartzite, conglomerate, and iron formation. As far as could be ascertained in the field, the metavolcanics and metasediments are interbanded and conformable, and for this reason they have been assigned to a single unit known locally as the Marshall Lake Group.

"The formations of the Marshall Lake Group have been intruded, at widely-spaced intervals, by small bodies of basic or ultrabasic rocks classified as metagabbro, metapyroxenite, anorthosite, and anorthositic metagabbro, and serpentinite. Younger than these are acid igneous rocks, chiefly granite and granite gneiss and their porphyritic equivalents, and migmatite. The acid rocks make up large batholithic masses flanking the metasediments complex on both the north and south.... Genetically related to them are a number of widely scattered dikes and small sills or sill-like bodies of pegmatite and quartz and feldspar porphyries. The youngest igneous rocks in the area are Keweenawan diabases. They occur in two ways: as steeply dipping dikes that cut transversely or obliquely across the older rocks; and as flat or gently dipping sheets (Logan sills), the erosional remnants of which stand up as prominent hills, bounded in places by steep-walled escarpments.

"The Archean metavolcanics and metasediments have been isoclinally folded, and a number of minor anticlinal and synclinal structures, pitching mostly 25° to 50°E, are thought to reflect the occurrence of a regional syncline between the flanking masses of granitic rocks. Superposed on this framework are secondary folds related to the large igneous intrusions." (Pye 1968, p.vi,vii).

The Chappais Lake deposit is a lithium pegmatite dike that cuts granite gneiss, striking east and dipping 60°S. It is exposed in one outcrop 60 feet long and up to 30 feet wide, split into two tongues separated by a thin wedge of granite gneiss at the west end.

MINERALOGY: The dike contains 15-20 percent "pale-grey spodumene, as prismatic crystals up to 8 inches in length, associated with potash feldspar, quartz, albite and muscovite." (Pye 1968, p.50).

HISTORY OF DEVELOPMENT:

1953: Deposit discovered by Lorne Dempster of Dempster Exploration Limited.

1980: Geochemical and magnetic surveys performed by Cominco Limited.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Chappais Lake, District Thunder Bay, Lat. 50°15', Long. 88°15'
OGS Toronto AFRO Files 2.3304, 2.3207
ODM GR 55, p. 50 (1968)
ODM IMR 21, p. 48,51 (1967)

NAME: NORTH AUBRY DEPOSIT, SOUTH AUBRY DEPOSIT Li, Be

COMMODITIES: Lithium, beryllium

STATUS: Major Occurrences

NTS: 52I/8NW

DESCRIPTION: Listed under BERYL - North Aubry Deposit, South Aubry Deposit

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NAME: SEYMOUR LAKE LITHIUM DEPOSIT Li

COMMODITY: Lithium

STATUS: Minor Occurrence

NTS: 52I/8NW

LATITUDE: 50° 24' 40"N LONGITUDE: 88° 26' 05"W

LOCATION: The pegmatite dike is about 1 1/2 miles west of Seymour Lake.

DESCRIPTION: See CHAPPAIS LAKE LITHIUM DEPOSIT for GEOLOGY, p. 186.
The Seymour Lake deposit is a "north-trending dike of pegmatite cutting porphyritic biotite-granite gneiss.... It is exposed continuously along its strike for about 300 feet, and ranges in width from 18 feet at its north end to 80 feet near its centre. It is thought to be a lens-shaped body that dips flatly west and occurs merely as a thin erosional remnant overlying the granitic host rock. It consists mainly of feldspar, quartz, and muscovite, with, in places, a little apatite and red garnet. Some large crystals of spodumene are present, but these are not abundant, and the lithia content of the dike is too low to be of any importance." (Pye 1968, p.53).

Results of sampling and analysis for tantalum in the area indicated no economically significant concentrations.

HISTORY OF DEVELOPMENT:

1957: 16 diamond drill holes were bored in the area by Anaconda (Canada) Limited.

1969: Chip sampling, reconnaissance and detailed mapping done by Tantalum Mining Corporation of Canada Limited.

1979: Magnetometer survey by Cominco Limited.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Seymour Lake, District Thunder Bay, Lat. 50°15', Long. 88°15'
OGS Toronto AFRO Files 2.3207, 63A.562, 63A.21
ODM GR 55, p. 53 (1968)
ODM IMR 21, p. 48,51 (1967)

NAME: ZIGZAG LAKE (DEMPSTER) LITHIUM DEPOSIT Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrences

NTS: 52I/8NW

Tebishogeshik Deposit:	LATITUDE:	50° 27' 15"N	LONGITUDE:	88° 18' 20"W
Dempster East Dike:		50° 27' 50"		88° 18' 20"
Dempster L28 Deposit:		50° 26' 40"		88° 19' 00"
Dempster L40 Deposit:		50° 26' 45"		88° 19' 30"
Dempster L61 Deposit:		50° 26' 30"		88° 20' 00"

LOCATION: Several spodumene-bearing pegmatite bodies are found in the vicinity of Zigzag Lake. The Tebishogeshik Deposit, made up of five lenses, is along the north side of a ridge extending westerly from the rapids and chute between Zigzag and Tettares Lakes. The Dempster East Dike is about 1 1/2 miles east of Zigzag Lake. The three other deposits are west of Tettares Lake: Dempster L28 is approximately 4,000 feet west, Dempster L40 is about 1,200 feet west of Dempster L28 and Dempster L61 is about 1 1/4 miles west of the lake.

DESCRIPTION:

GEOLOGY: See CHAPPAIS LAKE LITHIUM DEPOSIT, p. 186.
The Zigzag Lake lithium deposits are a group of pegmatite dikes which lie along the south boundary of a two mile wide belt of Keewatin-type, predominantly andesitic metavolcanics, part of the Marshall Lake Group, which are intruded on either side by Algoman-type granite.

Tebishogeshik Deposit: "The Tebishogeshik deposit is in amphibolite and schistose amphibolite 80 to 100 feet north of the contact with the granite and porphyritic granite found west of Tettares Lake. The deposit is exposed intermittently over a length of 2,800 feet, and is made up of five lenses, at least four of which are arranged en echelon..., The lenses generally parallel the host rocks in strike and tend N75°-80°E. But whereas the host rocks dip 75°-80°N, the lenses dip 55°-70°S and in this way are transgressive.

"The No. 1 or most westerly lens is attenuated. It is exposed at intervals over a length of 520 feet and attains a maximum known width of 20 feet. The No. 2 lens is 15 to 20 feet north of the east end of the No. 1, which it overlaps in strike for about 150 feet. It is exposed intermittently in ten outcrops for 460 feet and has a maximum observed width at its centre of 35 to 40 feet. The No. 3 lens, with a strike length of 350 feet and a maximum width of 60 feet, is the shortest but widest of the several bodies making up the deposit. It is 20 to 25 feet north of the No. 2 body, and parallels it for 70 to 100 feet...the No. 3 lens is curved and irregular in shape, and toward its east end, splits into tongue-like eastward-projecting extremities. The No. 4 lens is the largest and, in terms of lithia content, the most important. It is exposed 110 feet east and roughly 50 feet north of the east end of the No. 3 lens and from this exposure can be traced easterly for 500 feet. It averages 22 feet in width and has an observed maximum of 34 feet. The No. 5 lens is about 870 feet east of the No. 4 body. It has been traced in outcrops for 150 feet and has measured widths up to 20 feet." (Pye 1968, p.56-57).

Dempster East Dike: "The deposit is a dike which cuts obliquely across the metavolcanics and has been traced in a general northwest direction for about 150 feet. Throughout much of its length it strikes N45°W and is exposed across widths of 5 to 10 feet. To the southeast, however, it curves to strike S15°E for about 35 feet, and here it is exposed across widths up to 15 feet. The dip of the deposit is not known." (Pye 1968, p.58).

Dempster L28 Deposit: This deposit, in granite gneiss, strikes N65°E for a known length of 40 feet and is up to 15 feet wide.

Dempster L40 Deposit: The deposit is in a granitic host and is exposed across widths up to 25 feet in two trenches about 30 feet apart, along an easterly strike. It dips 45°S.

Dempster L61 Deposit: Two lithium pegmatite dikes, cutting granite gneiss, make up this deposit. "The L61 West dike is exposed in outcrops and in trenches for a length of about 250 feet. This dike is a broadly curving body up to 10 feet wide. In its southern part it strikes N25°-30°W and in its

northern part...N10°W.... The L61 East deposit...is exposed about 30 feet east of the centre of the first dike; from this point it has been traced S25°E for about 200 feet. It ranges from 10 to 20 feet in width." (Pye 1968, p.59).

MINERALOGY:

Tebishogeshik Deposit: "The five bodies making up the Tebishogeshik deposit are similar in both mineralogical composition and fabric. They are of simple composition and consist of pale-green spodumene, white and pale-pink potash feldspar, quartz, albite, muscovite, and accessory apatite. A little medium-grained beryl, identified by the Laboratory Branch, Ontario Department of Mines, also is present, but the amount is small. As with other lithium deposits in the Crescent Lake area, the pegmatites are distinctly porphyritic, with large crystals of spodumene and potash feldspar in a groundmass of the other minerals. In the interior of the lenses, the spodumene and potash feldspar crystals are typically coarse-grained to very coarse-grained ...whereas the other constituents for the most part are fine-grained to medium-grained. As the contacts and the east and west extremities of the lenses are approached, granularities decrease, and the spodumene and potash feldspar individuals become fine-grained to medium-grained. The spodumene crystals are prismatic. In most exposures they are in subparallel alignment, with their long dimensions oriented roughly perpendicular to pegmatite contacts. This is particularly true near the margins of the lenses. In a few places in the interior portions of the lenses, however, they are found to be crudely oriented longitudinally rather than transversely.

"The spodumene of the five pegmatite bodies is slightly sericitized but otherwise it is mostly unaltered and of high lithia content. Near the margins, and toward the extremities of the lenses, however, many crystals are found to be partially replaced by pale-greenish-yellow muscovite, particularly in their outer parts. This alteration appears to be most intense where muscovite, muscovite-quartz, and quartz veinlets and lenses are developed along oblique and irregular fractures. These veinlets and lenses, mostly only a fraction of an inch thick, are up to 4 inches wide and several feet in length. They are found only at widely spaced intervals and, although a few extend right across the pegmatite bodies, most of them appear to be confined to the marginal portions." (Pye 1968, p.57).

Dempster East Dike: "The pegmatite is made up of abundant medium-grained to coarse-grained potash feldspar and fine-grained prismatic spodumene associated with quartz, albite, muscovite, and accessory blue apatite as before; in a few places a little tourmaline is conspicuous because of its black colour. An interesting feature of the deposit is the fact that the spodumene crystals in places are oriented with their long dimensions parallel to the strike (N60°E) of the host rocks. Some small inclusions of amphibolite are similarly oriented. These are sharply defined from the pegmatite along their sides, but they do show partial replacement by granular-textured muscovite, and they commonly finger out and grade lengthwise into the pegmatite." (Pye 1968, p.58).

Dempster L28 Deposit: "It is similar to the Tebishogeshik deposit in mineralogical composition, containing prismatic spodumene crystals up to about 4 inches in length. Much of the spodumene has been partially altered to pale-green muscovite, however, and the pegmatite has been replaced to a large extent by aplite, such that the latter makes up over 30 percent of the outcrop." (Pye 1968, p.58).

Dempster L40 Deposit: "It is made up of medium-grained to coarse-grained, pale-green spodumene and coarse-grained to very coarse-grained potash feldspar associated with quartz, muscovite, and accessory apatite. The spodumene makes up about 30 percent of the pegmatite. It is of interest that its prismatic crystals pitch steeply north and in so doing reflect the dip, 45°S, of the deposit." (Pye 1968, p.58).

Dempster L61 Deposit: The L61 West dike is "similar to the Tebishogeshik pegmatite lenses described previously, its principal difference being a smaller granularity with prismatic spodumene crystals ranging from less than 1 inch up to about 3 inches in length. Four features are indicative of a magmatic derivation: 1. Several spodumene crystals have been broken and cemented by groundmass quartz. 2. Contacts with the enclosing granitic rocks are sharp in most places, and the margins of the pegmatite are marked by border or "chill" zones, up to one inch thick, of granitoid mica-quartz-feldspar material. 3. The granularity of the pegmatite increases from the

border zones inward. 4. The texture is porphyritic; prismatic crystals of spodumene and potash feldspar, oriented roughly perpendicular to the contacts, are embedded in a fine-grained matrix of other pegmatite constituents.

"Some of the spodumene present is altered as a result of partial replacement by muscovite and sericite. But the altered spodumene is not abundant and is confined to marginal portions of the dike. The average spodumene content of the dike is about 20 percent."

The L61 East deposit "consists of coarse-to very coarse-grained individuals of potash feldspar and spodumene in a matrix of fine-grained quartz, albite, and muscovite. As before, the spodumene content is about 20 percent and altered material is not abundant. The presence in places of irregular gradational contacts with the enclosing granite gneiss, and the local orientation of pegmatite minerals parallel to the latter's foliation near the north end of the dike, indicate that some replacement of the country rock has taken place. But, as before, the porphyritic texture of the pegmatite and the presence of bent and broken spodumene crystals welded by groundmass quartz are features indicating that the pegmatite, or the bulk of it, is of magmatic origin." (Pye 1968, p.59).

ECONOMIC FEATURES:

Tebishogeshik Deposit: "In the outcrops, the No. 1 lens contains less than 10 percent spodumene and hence has a low lithia content. The No. 2 lens contains about 20 percent spodumene. Two channel samples, each 16 feet in length, were cut across it near its centre by Dempster Explorations Limited. These samples were found on analysis to average 1.28 percent Li_2O across 32 feet (Hoiles 1958). Like the No. 1 lens, the No. 3 also has not been sampled. It is richer than the No. 1, however, and near its centre contains 20 to 25 percent of unaltered spodumene across its full width of 60 feet. The No. 4 lens has been channel-sampled at intervals throughout a length of 500 feet. According to Hoiles (1958), it averages 1.65 percent Li_2O across a mean width of 22 feet, and contains, per vertical foot of depth, 1,250 tons of commercial-grade material. In the No. 5 pegmatite body, the spodumene content is negligible." (Pye 1968, p.57).

Dempster East Dike: "Six channel samples were cut... [indicating] an average grade of 1.88 percent Li_2O.... Three samples, cut from near the southeast end of the deposit, averaged 1.78 percent Li_2O across a width of 13.5 feet." (Pye 1968, p.58).

Dempster L40 Deposit: "Sampling of the pegmatite...indicated grades of 1 to 1.5 percent Li_2O." (Pye 1968, p.59).

HISTORY OF DEVELOPMENT:

1956: Frank Tebishogeshik discovered pegmatite bodies.

1956-1957: Detailed mapping, trenching and sampling and one short hole bored under the east end of No. 4 lens of Tebishogeshik Deposit done by Dempster Explorations Limited.

1958: 23 holes, drilled by packsack,were bored by Dempster Explorations Limited.

1975: Samples taken for geochemical surveying and a magnetometer survey run on the Tebishogeshik Deposit.

1979: Geochemical survey by Cominco Limited.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay:
Dempster Explorations Limited
OGS Toronto Geoscience Data Centre Files:
Zigzag Lake, Dempster East, Dempster L40, Dempster L61,District Thunder Bay, Lat. 50°15', Long. 88°15'
OGS Toronto AFRO Files 2.3207, 2.3304, 63A.352
ODM GR 55, p. 56-59 (1968)

SELECTED REFERENCES (cont'd)

ODM IMR 21, p. 48,51 (1967)
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 61,62 (1965)
ODM PR 1963-1, p. 12 (1963)
MINSY File 50839900

NAME: DESPARD LITHIUM DEPOSIT Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

NTS: 52I/8NE

LATITUDE: 50° 25' 40"N LONGITUDE: 88° 05' 40"W

LOCATION: The pegmatite body is approximately 1/2 mile northeast of North Lamaune Lake.

DESCRIPTION:

GEOLOGY: See CHAPPAIS LAKE LITHIUM DEPOSIT, p.186.
"The Despard deposit...is a pegmatite body, in schistose amphibolite.... It is exposed in outcrops and is represented by boulders appearing intermittently over an east-west length of about 3000 feet and across widths up to 90 feet....

"In surface exposures the Despard pegmatite body appears to be conformable with the enclosing metavolcanics, which strike N70°W to N80°E. The diamond-drilling, however, indicated that it dips about 10°N rather than 45°-80°N, as do the metavolcanics, and that therefore it is a dike rather than a sill, as at first supposed. This dike was tested in the diamond-drillholes, at intervals of 300 feet, over a strike length of 1,500 feet. From the drilling it was determined to be roughly tabular-shaped, from 20 to 50 feet, and averaging about 40 feet, in thickness. The best intersections were obtained in diamond-drillholes Nos. 1 and 2. In hole No. 1, bored 40°S, the drill cored 30.2 feet of unaltered spodumene pegmatite, of which 20.0 feet was found on analysis to average 1.68 percent Li_2O....

"In hole No. 2, also bored 40°S from a set-up 115 feet north of hole No. 1, the drill cored 63.5 feet of unaltered spodumene pegmatite, including two sections, one 6.6 feet long, the other 9.0 feet long, grading 1.70 and 1.53 percent Li_2O respectively...." (Pye 1968, p.50-51).

MINERALOGY: "The Despard pegmatite is a massive white-weathering rock of simple composition. It is made up chiefly of feldspar, spodumene, and quartz with small amounts of muscovite, a little black tourmaline and, in places apatite. The texture in most exposures is porphyritic, with large crystals of feldspar and spodumene set in a relatively fine-grained matrix of pegmatite constituents. The large feldspar crystals are roughly rectangular-shaped individuals of white to salmon-pink microcline or perthite, averaging 4 to 6 inches and ranging up to 18 inches in length; the spodumene phenocrysts are typically white or pale-greenish prismatic crystals averaging 2 to 3 inches and ranging up to about 12 inches in length. The phenocrysts are conspicuous in contrast to the pegmatite matrix, the minerals of which are generally 2 inches or less across and...are fine-grained to medium-grained.

"The deposit appears to be crudely zoned, with a central spodumene-rich section enclosed in wall zones of relatively fine-grained material having only a low spodumene content. In the central spodumene-rich portion, the large crystals of feldspar and spodumene show no distinct preferred orientation, and granularities generally decrease outward. Small radiating clusters of black tourmaline crystals, up to 1 1/2 inches long, and a little blue apatite, are generally present. The wall zones vary from 6 inches to about 5 feet in width. They are characterized in several places by a distinct banded appearance, and are composed of layers of sugary-textured aplite alternating with layers made up of fine-grained grey quartz, muscovite, a little tourmaline, apatite, garnet, and, in places, some fine-grained to medium-grained spodumene and, less commonly, white potash feldspar. The layers conform to the pegmatite-metavolcanics contacts. They range from less

than 1 inch to over 2 inches in thickness, and often pinch and swell or split and bifurcate along their lengths.... It is of particular interest that any spodumene or potash feldspar crystals present tend to be oriented with their long dimensions parallel to, or nearly parallel to, the layered structure.

"In one exposure a layer of aplite in the south or lower wall zone was found to enclose and cut across a large broken spodumene crystal.... This indicates the possibility that the sugary feldspar or aplite is a late-formed replacement unit. If this is the case, the quartz-muscovite-spodumene-feldspar material of the wall zones may owe its fine granularity to the chilling of pegmatite melt against the country rocks at the time of emplacement, and the orientation of its constituent minerals may be attributable to the frictional resistance of the country rocks to the flowage of the chilled partly-crystallized melt along and parallel to the contacts." (Pye 1968, p.51-52).

HISTORY OF DEVELOPMENT:

1957: Deposit discovered and staked by Walter Despard.

1958: Property was acquired jointly by Sogemines Development Company Linited, Frobisher Limited and Ventures Limited. A program of surface sampling was undertaken.

1959: 10 diamond drill holes totalling 1,724 feet were bored by Sogemines Development Company Limited.

1978: Claims restaked by Gordon Huston.

1979: Detailed geological mapping by Cominco Limited.

REMARKS: "The spodumene content of the outcrops and many of the boulders is high, up to about 30 percent.... In the eastern half of the zone, much of the spodumene present was found to be highly altered, and here the lithia content proved to be low. In the western half, however, an average grade of 1.60 percent Li_2O was indicated...." (Pye 1968, p.50).

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Thunder Bay:
Sogemines Development Company Limited
OGS Toronto Geoscience Data Centre, File
Zmudzinski-Despard, District Thunder Bay,
Lat. 50°15', Long. 88°00'
OGS Toronto AFRO File 2.3207
ODM GR 55, p. 50-53 (1968)
ODM IMR 21, p. 48,51 (1967)
ODM PR 1963-1, p. 13 (1963)
MINSY File 50840200

NAME: FALCON LAKE DEPOSITS (MOTSEN CLAIM GROUP) Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Major Occurrences

NTS: 52I/8NE

Discovery Deposit:	LATITUDE:	50° 28' 30"N	LONGITUDE:	88° 09' 55"W
East Deposits:		50° 28' 25"		88° 09' 05"
West Deposits:		50° 28' 25"		88° 07' 50"
Far West Deposits:		50° 28' 15"		88° 07' 00"

LOCATION: The Motsen claim group, of 87 claims, extends from about 1 mile to 3 miles west of Falcon Lake.

The Discovery Deposit is about 700 feet south of the east end of a small pond, 1 3/4 miles west-northwest of Falcon Lake.

The East Deposits are about 1/2 mile (2400 feet) east-southeast of the Discovery Deposit, and 1 1/4 miles west-northwest of Falcon Lake.

Two main pegmatite bodies make up the West Deposits about 1 mile (5000 feet) west of Discovery Deposit and 2 3/4 miles west of Falcon Lake.

The Far West Deposits are found 1/2 mile (2400 feet) west of the West Deposits, 3 1/4 miles west of Falcon Lake.

DESCRIPTION:

GENERAL GEOLOGY: "Most of the claim group is underlain by easterly trending bands of Precambrian sedimentary and metamorphosed sedimentary and volcanic rocks. They have been folded into a syncline that traverses the central part of the area and swings northerly, paralleling the north arm of Falcon Lake. In the south and southwest parts of the area gabbro diorite has intruded the folded rocks and cuts some of the pegmatite dykes.

"The pegmatite dykes occur in four northeasterly trending zones from about 1 mile to 3 miles west of Falcon Lake, and lie within a central band of greenstone schists. Most dip steeply southeast, but a few dip gently. Remnants of country rock occur within the pegmatites, commonly on strike with the wall-rock, and up to 50 per cent of one dyke is a cherty dull green material, apparently consisting of altered rock fragments. There are two varieties of pegmatite, a white albite pegmatite and a red pegmatite rich in orthoclase, or, in places, perthite.

"Spodumene occurs mostly in the white to grey-white albite-rich pegmatites, rarely in the other dykes." (Mulligan 1965, p.62).

Sulphides occur in narrow silicified bands along or near the contacts of the sedimentary and metamorphic rocks, following the strike of the enclosing rocks.

MINERALOGY: "The white, lithium-bearing pegmatites contain white or pink albite, glassy to milky quartz, a pale green mica, variable amounts of greenish spodumene, and minor green to blue-green beryl, black tourmaline, red garnet, and blue to reddish blue apatite. In places cleavelandite, orthoclase, and perthitic intergrowths were observed. Wall-to-wall zoning is generally absent, although in some of the spodumene-bearing dykes there is a barren border zone, 6 to 10 inches wide, and most of the dykes have a fine-grained margin less than 1/2 inch thick." (Mulligan 1965, p.62).

Discovery Deposit: "The Discovery dike is exposed in a ridge of schistose amphibolite about 700 feet south of the east end of a small pond one and three-quarter miles west-northwest of Falcon Lake. It strikes N40°E for an exposed length of 65 feet, and is up to 18 feet wide. It is made up of 15 to 20 percent pale-greenish-grey spodumene, as unoriented prismatic crystals up to 8 inches in length associated with fine-grained quartz, feldspar, muscovite, and accessory apatite. Chilled margins and the presence of rotated inclusions (one xenolith, measuring 6 inches in length, strikes N60°E, but the wall rock strikes N80°-85°W) point to a magmatic origin. Three diamond-drillholes were bored to test the deposit. One hole, No. D2, was drilled at an angle of 45°; it intersected 6 feet 3 inches of barren pegmatite at a depth in the hole of 176 feet 7 inches. If this intersection represents the Discovery dike, the latter dips about 60°NW. The other two holes cut diabase, which apparently intrudes and truncates the pegmatite at a shallow depth....

"About 100 feet east of the south end of the Discovery dike there is an irregular-shaped mass of spodumene-bearing pegmatite up to about 30 feet in diameter. The spodumene is found mainly along the east side of the body as crystals 4 inches or less in length in a matrix of fine-grained quartz, feldspar, and muscovite. The grade is low and the body is obviously too small to be of any importance." (Pye 1968, p.54).

East Deposits: "The East deposits are found in schistose amphibolite about 1/2 mile east-southeast of the Discovery dike and 1 1/4 miles west-northwest of Falcon Lake. The principal pegmatite body strikes N20°E and dips steeply east. It is exposed across a width of 13 feet in two outcrops about 500 feet apart. It is made up of fine-grained spodumene and fine-grained to medium-grained potash feldspar in a groundmass of quartz, albite, and muscovite, having accessory black tourmaline and apatite. The spodumene crystals are pale-green and show no preferred orientation. They make up 10 to 15 percent of the rock.

"The pegmatite body was tested by five diamond-drillholes, spaced at intervals of 200 feet, over a strike length of 800 feet. Two of the diamond-drillholes, one at the south end of the body and the other about midway between the two outcrops, failed to intersect pegmatite and indicated the deposit to consist of two short lenses rather than a continuous dike. The drilling showed the pegmatite lenses to be of low-average grade. One hole, though, cut 18 feet of pegmatite, which was found on analysis to average 1.13 percent Li_2O.... In diamond-drillhole No. E5, near the south end of the deposit, some of the spodumene of the pegmatite intersected was found to be dark-grey and highly altered. This alteration may reflect the southward convergence of the pegmatite and a prominent diabase dike....

" A second pegmatite body is exposed about 600 feet west of the East deposit. It is a lens up to 30 feet wide that has been traced on the surface for 75 feet in a N50°E direction. The occurrence was tested by a single diamond-drillhole, but again nothing of commercial importance was discovered." (Pye 1968, p.55).

West Deposits: "In the West "area", about 1 mile west of Discovery dike, there are two spodumene-bearing pegmatite bodies, one exposed in outcrops, the other concealed by overburden and located by diamond-drilling.

"The exposed pegmatite body strikes N10°E and can be followed in outcrops for about 100 feet. It was tested in five diamond-drillholes spaced at roughly 100-foot intervals. This work showed it to be a lens-shaped mass, 300 to 400 feet long and up to about 70 feet thick, with a dip of 70°-80°E. One drillhole cut the lens at a depth of 190 feet. The hole intersected 60 feet of pegmatite, of which 35 feet was found to average better than 1 percent Li_2O. A second drillhole cut the lens at a depth of 250 feet. It intersected 75 feet of pegmatite. In this case, though, only 10 feet was found to average better than 1 percent Li_2O....

"The exposed pegmatite body cuts thinly layered schistose amphibolite (tuff?) striking N75°E and dipping steeply south. It contains abundant spodumene as unoriented prismatic crystals, mostly 3 to 6 inches and ranging up to about 12 inches in length, associated with potash feldspar, quartz, albite, and muscovite, together with accessory amounts of apatite and black tourmaline. In the outcrops, the spodumene is characteristically pale-grey or pale-green and has a high lithia content. But, in the cores from the diamond-drillholes much of the spodumene was found to be dark-green or black and highly altered. As elsewhere in the area, this alteration is due mainly to a pseudomorphic replacement of the spodumene by muscovite or sericite. It may reflect the proximity of the pegmatite body to a small diabase intrusion noted by the author in the core recovered from a depth of 260 to 310 feet in one of the diamond-drillholes (No. W4). The pegmatite body is not zoned, but in places it exhibits small irregular-shaped masses and thin veins of aplite.

"The second pegmatite body found in the West "area" lies east of, and parallel to, the first body. Two diamond-drillholes were collared in it; in a third hole, in which both contacts were intersected, a true width of over 35 feet was indicated...this pegmatite body was found in the diamond-drillholes to average over 1 percent Li_2O and to be the most important of the several occurrences found near Falcon Lake. It is similar in character to the exposed pegmatite and may be of greater lateral extent." (Pye 1968, p.55).

Far West Deposits: "The Far West "area" is about 1/2 mile west of the West "area" and about 1 1/2 miles west of the Discovery dike. Three bodies of spodumene-bearing pegmatite occur here.

"One pegmatite body, exposed across a width of 7 feet and for a length of 20 feet, strikes N15°E and dips steeply east. The second body is 175 feet N40°W from the first. It is exposed in two outcrops, 50 feet apart, along a strike of N20°E. In the south outcrop it is 31 feet wide, in the north outcrop, 12 feet wide, with only the east contact exposed. The third pegmatite body is about 100 feet west of the first and is exposed in an outcrop 11 feet across. But, since its contacts are not visible, its true dimensions and attitude are not known. It may possibly represent the south extension of the second body.

"The three pegmatite bodies are similar in character. In the outcrops they are made up of unaltered spodumene and some potash feldspar, which occur as phenocrysts in a groundmass of quartz, albite, muscovite, and, in places, a little apatite and tourmaline. The spodumene present makes up 5 to 15

percent of the pegmatites, and occurs as prismatic crystals up to 6 inches in length. The three pegmatite bodies were tested by diamond-drilling but none was found to contain over 0.5 percent Li_2O.... They appear to be truncated at a shallow depth by diabase, the presence of which may account for the occurrence of dark-green altered spodumene in some of the drillcores." (Pye 1968, p.55-56).

HISTORY OF DEVELOPMENT:

1955: T. Fayolle and C. Loiselle discovered spodumene in area (Discovery Deposit).

1956: British Canadian Lithium Mines Limited bore 18 diamond drill holes totalling 5,241 feet and carried out geological surveys and stripping.

1979: Geochemical surveys carried out by Cominco Limited.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966
ODM Map P.267, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Thunder Bay:
Motsen Claim Group (British Canadian Lithium Mines)
OGS Toronto Geoscience Data Centre, File Falcon Lake, District Thunder Bay, Lat. 50°15, Long. 88°00'
OGS Toronto AFRO Files 63A.313, 2.3207
ODM GR 55, p. 29-39,53-56 (1968)
ODM IMR 21, p. 48,51 (1967)
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 61,62 (1965)
ODM PR 1963-1, p. 12 (1963)
MINSY File 50840100

(Minor Occurrence) (1) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 52I/6NW

LATITUDE: 50° 24' 30"N LONGITUDE: 89° 28' 30"W

LOCATION: Approximately 3/4 mile west of Boiling Sand River and 8 miles north of Collins.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrences) (2) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52I/6NE

LATITUDE: 50° 28' 50"N LONGITUDE: 89° 00' 05"W
50° 29' 20" 89° 11' 10"

LOCATION: Approximately 13 miles north of Armstrong, one deposit is about 1 1/4 miles west of Outlet Bay and the other is about 1 mile east of Caribou Lake.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

NAME: CAMP SHOWING and KELLAR ISLAND SHOWING py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52I/10SW

LATITUDE: 50° 34' 15"N LONGITUDE: 88° 59' 20"W
50° 31' 35" 88° 57' 58"

LOCATION: Approximately 18 miles north of Armstrong, Kellar Island Showing is at the southern end of Kellar Island and Camp Showing is northwest of Howie Lake.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966

NAME: LUN-ECHO Cu, Ag, Au, po, py

COMMODITIES: Copper, silver, gold, pyrrhotite, pyrite

STATUS: Minor Occurrence

NTS: 52I/10SW

LATITUDE: 50° 32' 10"N LONGITUDE: 88° 57' 10"W

LOCATION: South shore of Kellar Bay about 17 miles north of Armstrong.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969

NAME: GLENN Cu, Zn, py

COMMODITIES: Copper, zinc, pyrite

STATUS: Minor Occurrence

NTS: 52I/10SW

LATITUDE: 50° 33' 50"N LONGITUDE: 88° 56' 13"W

LOCATION: Property is just north of the north end of Kellar Island, Caribou Lake, about 18 miles north of Armstrong.

MAP REFERENCES:
OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969

(Minor Occurrence) (3) po, py

COMMODITIES: Pyrrhotite, pyrite

STATUS: Minor Occurrence

NTS: 52I/10SW

LATITUDE: 50° 30' 44"N LONGITUDE: 88° 54' 27"W

LOCATION: Approximately 16 miles north of Armstrong, between the two northern arms of D'Alton Lake.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969

(Minor Occurrence) (4) py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 52I/10SE

LATITUDE: 50° 30' 41"N LONGITUDE: 88° 34' 44"W

LOCATION: Southwest shore of Lee Lake, about 20 miles northeast of Armstrong.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrences) (5) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52I/11NW

LATITUDE:	LONGITUDE:
50° 39' 50"N	89° 25' 00"W
50° 41' 00"	89° 21' 00"
50° 41' 50"	89° 26' 20"
50° 41' 55"	89° 24' 25"
50° 42' 45"	89° 24' 35"
50° 44' 11"	89° 23' 50"

LOCATION: This group of deposits is approximately 30-35 miles northwest of Armstrong, on both sides of Berg River.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map 49q, 1 inch to 1 mile (1:63,360) 1940

NAME: CARIBOU BAY OCCURRENCE py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 52I/11SW

LATITUDE: 50° 31' 57"N LONGITUDE: 89° 15' 10"W

LOCATION: Approximately 19 miles northwest of Armstrong, on the west shore of Funger Lake, just south of Caribou Bay.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

NAME: LONEBREAST BAY OCCURRENCE py (G, lim)

COMMODITIES: Pyrite, (gossan, limonite)

STATUS: Minor Occurrence

NTS: 52I/11SW

LATITUDE: 50° 37' 00"N LONGITUDE: 89° 16' 05"W

LOCATION: On a small island in Lonebreast Bay, Smoothrock Lake, approximately 24 miles northwest of Armstrong.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrences) (6) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52I/11SW

LATITUDE:		LONGITUDE:	
	50° 30' 21"N		89° 17' 45"W
	50° 31' 25"		89° 15' 04"
	50° 35' 32"		89° 26' 30"
	50° 36' 15"		89° 28' 20"

LOCATION: Two locations are approximately 18 miles northwest of Armstrong and 3 miles south of Caribou Bay; and, the other two occurrences are about 28 miles northwest of Armstrong on the west shore of the southern end of Outlet Bay.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

NAME: FAYOLLE and FLETCHER SHOWINGS py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52I/11SE

LATITUDE: 50° 36' 55"N LONGITUDE: 89° 00' 20"W
50° 33' 55" 89° 00' 18"

LOCATION: The showings are approximately 18 miles north of Armstrong between Caribou and Campbell Lakes.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969
ODM Map 2102, 1 inch to 4 miles (1:253,440) 1966
ODM Map 2100, 1 inch to 1 mile (1:63,360) 1966

NAME: ROVE LAKE OCCURRENCE py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 52I/11SE

LATITUDE: 50° 36' 43"N LONGITUDE: 89° 09' 57"W

LOCATION: South shore of Rove Lake, about 4 3/4 miles east of the Lonebreast Bay pyrite occurrence. Armstrong is about 22 miles to the south-southeast.

MAP REFERENCE: ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrence) (7) po, py

COMMODITIES: Pyrrhotite, pyrite

STATUS: Minor Occurrence

NTS: 52I/12NE

LATITUDE: 50° 41' 45"N LONGITUDE: 89° 43' 57"W

LOCATION: Approximately 2 miles north of Wabakimi Lake and 41 miles northwest of Armstrong.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrences) (8) py, cp

COMMODITIES: Pyrite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52I/12SE

LATITUDE: 50° 37' 26"N
50° 32' 10"
50° 30' 57"

LONGITUDE: 89° 32' 03"W
89° 31' 02"
89° 31' 02"

LOCATION: Two occurrences are on the west side of Smoothrock Lake about 27 miles northwest of Armstrong; and, the third occurrence is on the south shore of Almas Bay, Smoothrock Lake, about 31 miles northwest of Armstrong.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

(Minor Occurrence) (9) po, py

COMMODITIES: Pyrrhotite, pyrite

STATUS: Minor Occurrence

NTS: 52I/13NE

LATITUDE: 50° 55' 20"N LONGITUDE: 89° 32' 10"W

LOCATION: Approximately 49 miles northwest of Armstrong and about 1 mile south of Dawn Lake and 2 miles west of Dawn Creek.

MAP REFERENCES: OGS Map P.1536 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974

NAME: LINKLATER TIN DEPOSIT
(SAN ANTONIO GOLD MINES LIMITED) Sn, Be, cs

COMMODITIES: Tin, beryllium, cassiterite

STATUS: Major Occurrence

NTS: 52I/10SW

DESCRIPTION: Listed under BERYL - Linklater Tin Deposit

NTS 52J

NAME: EAST PASHKOKOGAN LAKE OCCURRENCE Li, (Be, cs, Rb)

COMMODITIES: Lithium, (beryllium, cesium, rubidium)

STATUS: Major Occurrence

NTS: 52J/16NE

LATITUDE: 50° 57' 26"N LONGITUDE: 90° 13' 58"W

LOCATION: Approximately 38 miles south-southwest of Pickle Crow and 3 1/2 miles west of Greenbush Lake. On the northeast shore of the southeast bay of East Pashkokogan Lake, 1 mile northeast of the mouth of Savant River.

DESCRIPTION:

GEOLOGY: "The major rock types consist of mafic to intermediate metavolcanics and a diverse assemblage of metasediments. Only a small proportion of felsic to intermediate metavolcanics (2-3 percent) appear to be present.... Felsic metavolcanics form several narrow bands along Pashkokogan and East Pashkokogan Lakes and consist of massive to foliated rhyolite and dacite flows and pyroclastic deposits ranging from tuff to agglomerate. Most of the metasediments are contained within three discrete units, which are partly to completely enveloped by metavolcanics. The largest unit trends southwest for 7 miles through the map-area and appears to merge with metasediments of the English River Block in the region between Medcalf Lake and the southwest extremity of Pashkokogan Lake. Metagreywacke is the most prevalent rock type, commonly associated with local units of arkose, polymictic conglomerate, and argillite. Metasediments additionally occur as relatively minor intercalations within the metavolcanics. The Pashkokogan Lake-Misehkow River Belt has been intruded by four late tectonic granitic stocks consisting of massive to weakly foliated, equigranular, biotite granodiorite to quartz monzonite. Stratigraphic relations between this belt and the bordering English River Block could not be resolved due to a lack of outcrop in the Greenbush Lake area and the presence of a mylonitic zone along the south shore of Pashkokogan Lake." (Breaks 1973, p.45).

At this locality a spodumene-bearing zone about 50 feet wide and 100 feet in exposed length occurs in a pegmatite. "The pegmatite lies in a host rock of acid volcanic breccia composed of light-coloured rhyolite fragments in a grey dacitic matrix. Where visible at the water's edge to the west, the pegmatite zone is thinning out. To the east it disappears beneath overburden." (Goodwin 1965, p.55).

MINERALOGY: "The zone comprises medium- to coarse-grained granite pegmatite composed of pink feldspar, muscovite, quartz, tourmaline, spodumene, and possibly minor lepidolite. The lithium-bearing minerals have an erratic distribution within the zone." (Goodwin 1965, p.54-55).

A chip sample across 50 feet showed 1.25 percent Li_2O and traces of cesium and beryllium. Trace amounts of rubidium were also reported to be present.

REMARKS: "Because of drift and water cover, the full extent of the mineralization cannot be determined by direct observation. Further work may reveal significant extensions to this zone or the presence of other zones in the vicinity." (Goodwin 1965, p.55).

MAP REFERENCES:
OGS Map P.1537 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map 2169, 1 inch to 4 miles (1:253,440) 1970
ODM Map 2094, 1 inch to 1/2 mile (1:31,680) 1965
ODM Map P.352, 1 inch to 2 miles (1:126,720) 1966
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933
ODM Map 31f, 1 inch to 2 miles (1:126,720) 1922

SELECTED REFERENCES:
OGS MP 72, p. 48 (1978)
ODM MP 56, p. 45-46 (1973)
ODM GR 42, p. 54-55 (1965)
ODM PR 1962-5, p. 9-10 (1962)
ODM Vol. 42, pt. 6, p. (1933)
ODM Vol. 31, pt. 8, p. (1923)

NAME: EAST PASHKOKOGAN LAKE OCCURRENCE Li, (Be, Cs, Rb)

COMMODITIES: Lithium (beryllium, cesium, rubidium)

STATUS: Major Occurrence

NTS: 52J/16NE

DESCRIPTION: Listed under BERYL - East Pashkokogan Lake Occurrence

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NAME: STURGEX MINES LIMITED po, py, gf, cp

COMMODITIES: Pyrrhotite, pyrite, graphite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52J/1NW

LATITUDE: 50° 09' 45"N LONGITUDE: 90° 30' 00"W
50° 08' 55" 90° 29' 50"

LOCATION: About 64 miles east of Sioux Lookout and 2 1/2 miles northwest of Swiss Lake.

DESCRIPTION:

GEOLOGY: "The rocks over most of the area consist of Archean granites, felsic to mafic intrusives, metasediments and felsic to mafic volcanics. Proterozoic rocks, mostly diabase, occupy an extensive area on the east of the sheet. Greenstone belts for the most part located on the west half of the sheet tend to follow the east-west trends common throughout the Superior Province of the Canadian Shield. The discovery at Sturgeon Lake is located on one of these trends and is in an acid to intermediate volcanic contact environment.

"An exception to this major trend is the large formation of volcanics, intrusives and metasediments trending northeast from the discovery areas at Sturgeon Lake. This formation exhibits a number of structural trends some northeast, some north, and others northwest with all of these being identified in the large arcuate formation which marks the easterly contact of the volcanics with the granites east of the northeast arm of Sturgeon Lake.

"The Sturgex group of claims are located across part of this formation where the rocks are trending in a west-northwest direction." (Technical Survey File 2.252).

MINERALOGY: "The ground geophysics has identified a number of conductive zones following the regional trend of the geology in a north-northwest direction. For the most part the length and continuity of response identifies these as conductive shear zones which over much of their length would have little interest economically. There are however some sections where association with magnetics suggests the presence of pyrrhotite with the possibility of economic sulphides implied." (Technical Survey File 2.252).

HISTORY OF DEVELOPMENT:

1970: Sturgex Mines Ltd. carried out magnetic and electromagnetic surveys.

MAP REFERENCES: OGS Map P.1537 (1:250,000) 1978
ODM Map 2169, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.969, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.362, 1 inch to 2 miles (1:126,720) 1965

SELECTED REFERENCES: OGS AFRO Technical Survey File 2.252
OGS AFRO Diamond Drilling Report #12

NAME: CONSOLIDATED MORRISON EXPLORATIONS LIMITED Li

COMMODITY: Lithium

STATUS: Minor Occurrence

NTS: 52J/13NE

LATITUDE: 50° 56' 05"N LONGITUDE: 91° 41' 40"W

LOCATION: Approximately 2 1/2 miles northwest of Root Lake, just south of Roadhouse River.

DESCRIPTION:

GEOLOGY: A spodumene-bearing dike, traced for a length of 100 feet and having widths up to about 30 feet, intrudes Archean greenstones and hornblende schists.

MINERALOGY: The dike is medium-grained to coarse-grained. Three diamond drill holes, at 200 foot intervals, indicate 1.34 percent Li_2O over a width of 14.5 feet, 2.60 percent Li_2O over 10.0 feet and 1.86 percent Li_2O over 13.0 feet.

HISTORY OF DEVELOPMENT:

Jan.-June 1956: Consolidated Morrison Explorations Ltd. put down 16 diamond drill holes totalling 6,200.8 feet on the property.

SELECTED REFERENCES:
ODM IMR 21, p. 48 (1967)
CDMTS,GSC Econ. Geol. Rept. No. 21, p. 65 (1965)
Can. Min. Jour. Vol. 77, April 1956, No. 4, p. 73-74 (1956)

NAME: McCOMBE SHOWING (CAPITAL LITHIUM MINES LIMITED) Li

COMMODITY: Lithium

STATUS: Minor Occurrence

NTS: 52J/13NE

LATITUDE: 50° 56' 20"N LONGITUDE: 91° 42' 36"W

LOCATION: Approximately 60 air miles north of Sioux Lookout, 3 miles north-northwest of Root Lake and just north of Roadhouse River. The showing occurs on the north side of an east-trending ridge.

DESCRIPTION:

GEOLOGY: "The country rock in the vicinity of the showing has a trend of N 126° E and dips 67° N. Although the rock is highly sheared it exhibits both mineralogical and colour variation which may be relict bedding. Thicker beds average about 1 cm and are composed of quartz, feldspar and minor chlorite and hornblende. Thinner beds average about one half centimetre and are dominantly chlorite and hornblende. The mineralogy and structures both suggest a highly metamorphosed greywacke...." (Resident Geologist's Files, Thunder Bay).

"The showing consists of two spodumene-bearing pegmatite dikes which have intruded massive to pillowed mafic metavolcanics. The pillowed metavolcanics have recognizable selvages but the pillows have been greatly elongated. The elongation direction of the pillows is 110° with a near vertical dip.

"Along the contact between the metavolcanics and the pegmatite dikes, there are segregations of fine- to medium-grained tourmaline....

"The larger pegmatite dike averages 20 m in width and an exposed length of 200 m. It strikes 110° in the east and 080° in the west. The smaller pegmatite dike is lens-shaped and has a maximum width of 20 m and is about 100 m in exposed length. It strikes approximately 060°." (Panagapko 1979, p.1).

Where exposed at the east end, the pegmatite dike is a minimum of 10 m in width. "The general trend is to the west. On the western exposures neither contact is visible. The dyke is cut by a northeasterly trending set of dextral faults, one of which has a horizontal displacement of about five metres.

"The pegmatite is relatively fine grained with quartz and feldspar crystals generally about 0.5 cm in diameter. Along the northern edge of the outcrop the rock is very fine grained. Feldspar is generally white. Two types of zoning were observed." (Resident Geologist's Files, Thunder Bay).

"The innermost zone or core consists of quartz, albite, and spodumene. It grades outward into and is enclosed by an intermediate zone, in which orthoclase and muscovite also become apparent. The intermediate zone, in turn, is found in places to be bordered by a thin chill zone of aplitic material, of low spodumene content but rich in black tourmaline." (Pye 1956, p.3).

MINERALOGY: "Where individual tourmaline crystals are seen, they are usually perpendicular to the contact, although some are subparallel to the contact. Some tourmaline crystals have been broken up and deformed, this being possibly due to magmatic flowing, as the tourmaline probably crystallized out early.

"The spodumene occurs as pale green prismatic crystals that range in length from 1 to 10 cm. The spodumene concentrations are found in the coarsely pegmatitic zones. Potassium feldspar is also found as phenocrysts attaining sizes of up to 18 cm across. The spodumene and potassium feldspar phenocrysts set in a coarse grained to aplitic matrix consisting of quartz, feldspar & greenish muscovite. The coarse grained matrix predominates....

"Other minerals found include garnet (associated with tourmaline in contact zones) and lepidolite, which occurs as small, lenticular pods." (Panagapko 1979, p.1).

"Spodumene crystal size and concentration seem to increase towards the central portion of the dyke...in size from less than one cm on the north side to about 20 cm on the south side of the outcrop. Density of spodumene in the rock also increased from several percent to over 10 percent on the south side. Tourmaline shows concentration along the north edge of the outcrop in the very fine grained aplite." (Resident Geologist's Files, Thunder Bay).

HISTORY OF DEVELOPMENT:

1955-1957: Geological, magnetometer and resistivity surveys were done over the property by Capital Lithium Mines Ltd. 72 holes were drilled totalling about 34,350 feet.

REMARKS: Four zones were delimited by the drilling and a resource estimate calculated from the drilling was 2,297,000 tons of 1.3 percent Li_2O.

MAP REFERENCES:
OGS Map P.1537 (1:250,000) 1978
ODMNA Map 2169, 1 inch to 4 miles (1:253,440) 1969
ODM Map 2156, 1 inch to 2 miles (1:126,720) 1968
ODM Map P.354, 1 inch to 2 miles (1:126,720) 1966
ODM Map P.92, 1 inch to 1/2 mile (1:31,680) 1961

SELECTED REFERENCES:
OGS Toronto AFRO Files 63A.295, 63.857
OGS Toronto AFRO File Root Lake, DDH Rept. 12,13
Resident Geologist's Files, OMNR, Thunder Bay:
Capital Lithium Mines
OGS MP 72, p. 48-49 (1978)
CDMTS,GCS Econ. Geol. Rept. No. 21, p.64-65 (1965)
Can. Min. Jour., p. 3, April (1956)
CDMTS,GSC Paper 57-3, p. 16-17 (1956)

NAME: EAST PASHKOKOGAN LAKE OCCURRENCE — Li (Be, cs, Rb)

COMMODITIES: Lithium (beryllium, cesium, rubidium)

STATUS: Major Occurrence

NTS: 52J/16NE

DESCRIPTION: Listed under BERYL - East Pashkokogan Lake Occurrence

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(Minor Occurrences) (1) — mag

COMMODITY: Magnetite

STATUS: Minor Occurrences

NTS: 52J/4SW

LATITUDE:	50° 07' 05"N	LONGITUDE:	91° 55' 30"W
	50° 03' 00"		91° 56' 45"
	50° 02' 15"		91° 59' 00"

MAP REFERENCES: OGS Map P.1537 (1:250,000) 1978
OGS Map P.2218, 1 inch to 1 mile (1:63,360) 1979
ODM Map P.421, 1 inch to 1/4 mile (1:15,840) 1967

NAME: NORANDA EXPLORATION COMPANY LIMITED & MINOR OCCURRENCES (2) — py, mag, po, Cu, Ni

COMMODITIES: Pyrite, magnetite, pyrrhotite, copper, nickel

STATUS: Minor Occurrences

NTS: 52J/6NW/6NE

LATITUDE:	50° 26' 00"N	LONGITUDE:	91° 22' 00"W
	50° 23' 25"		91° 29' 45"
	50° 21' 45"		91° 07' 10"

LOCATION: Approximately 32 miles northeast of Sioux Lookout, 2 miles north of Hik Lake, and on the south shore of Bury Lake.

MAP REFERENCES: OGS Map P.1537 (1:250,000) 1978
OGS Maps P.2217 & P.2218, 1 inch to 1 mile (1:63,360) 1979

NAME: FALCONBRIDGE NICKEL MINES & MINOR OCCURRENCES (3) — mag, py, po

COMMODITIES: Magnetite, pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52J/7NW/7SW

LATITUDE:		LONGITUDE:	
	50° 26' 45"N		90° 55' 55"W
	50° 25' 10"		90° 56' 30"
	50° 22' 30"		90° 46' 35"
	50° 22' 40"		90° 15' 00"
	50° 22' 33"		90° 15' 18"

LOCATION: Approximately 50 miles northeast of Sioux Lookout.

MAP REFERENCES:
OGS Map P.2218, 1 inch to 1 mile (1:63,360) 1979
OGS Map P.1537 (1:250,000) 1978
ODM Map P.1093, 1 inch to 1/4 mile (1:15,840) 1976
ODM Map P.933, 1 inch to 1/4 mile (1:15,840) 1974

NAME: STURGEX MINES LTD. — po, py, gf, cp

COMMODITIES: Pyrrhotite, pyrite, graphite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52J/1NW

DESCRIPTION: Listed under GRAPHITE - Sturgex Mines Ltd.

(Minor Occurrences) (1) — py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52J/4SW

LATITUDE:		LONGITUDE:	
	50° 01' 20"N		91° 52' 25"W
	50° 04' 30"		91° 55' 40"

LOCATION: About 2-4 miles south of Sioux Lookout.

MAP REFERENCES:
OGS Map P.1537 (1:250,000) 1978
OGS Map P.2218, 1 inch to 1 mile (1:63,360) 1979
ODM Map P.421, 1 inch to 1/4 mile (1:15,840) 1967

(Minor Occurrence) (1) — po, py

COMMODITIES: Pyrrhotite, pyrite

STATUS: Minor Occurrence

NTS: 52J/5NE

LATITUDE: 50° 22' 45"N LONGITUDE: 91° 36' 25"W

LOCATION: Approximately 22 miles northeast of Sioux Lookout.

MAP REFERENCES:
OGS Map P.1537 (1:250,000) 1978
OGS Map P.2218, 1 inch to 1 mile (1:63,360) 1979

(Minor Occurrence) (3) py, mag, po, Cu, Ni

COMMODITIES: Pyrite, magnetite, pyrrhotite, copper, nickel

STATUS: Minor Occurrence

NTS: 52J/6NW/6NE

DESCRIPTION: Listed under MAGNETITE - Noranda Exploration Company Limited & Minor Occurrences (2)

(Minor Occurrences) (4) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52J/6NW

LATITUDE:		LONGITUDE:	
	50° 23' 10"N		91° 28' 00"W
	50° 24' 10"		91° 26' 00"
	50° 24' 20"		91° 24' 00"
	50° 25' 50"		91° 20' 20"
	50° 25' 15"		91° 18' 20"
	50° 26' 25"		91° 17' 20"
	50° 25' 50"		91° 16' 30"

LOCATION: Approximately 32 miles northeast of Sioux Lookout.

MAP REFERENCES: OGS Map P.2217, 1 inch to 1 mile (1:63,360) 1979
OGS Map P.1537 (1:250,000) 1978

(Minor Occurrences) (5) mag, py, po

COMMODITIES: Magnetite, pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52J/7NW/7SW

DESCRIPTION: Listed under MAGNETITE - Falconbridge Nickel Mines & Minor Occurrences (3)

(Minor Occurrence) (6) py, cp

COMMODITIES: Pyrite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52J/8NW

LATITUDE: 50° 24' 35"N LONGITUDE: 90° 29' 40"W

LOCATION: About 60 miles northeast of Sioux Lookout in Stillar Bay, approximately 2 miles southwest of Girard Island in Savant Lake.

MAP REFERENCES: OGS Map P.1537 (1:250,000) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
OGS Map 2398, 1 inch to 1/2 mile (1:31,680) 1978

(Minor Occurrence) tour

COMMODITY: Tourmaline

STATUS: Minor Occurrence

NTS: 52J/8SW

LATITUDE: 50° 20' 45"N LONGITUDE: 90° 21' 45"W

LOCATION: South-central part of township, 1 mile south of Smye Lake.

DESCRIPTION:

GEOLOGY: All of the underlying rocks in the area are of Early Precambrian (Archean) age.

Mafic metavolcanics are the oldest rocks; these have been deformed by the intrusion of granitic batholiths. Pillow lavas are plentiful throughout this sequence indicating that these rocks were primarily deposited in a subaqueous environment.

Unconformably deposited upon the mafic metavolcanics is a conglomerate with volcanic components at the base. This metaconglomerate sequence is overlain by ferruginous and arenaceous metasediments. The mafic to intermediate metavolcanics form a continuous sequence that faces northwest.

The showing occurs in the Jutten Batholith. The batholith consists of early granitic rocks that have intruded the mafic volcanics. They range in composition from trondhjemite to granodiorite and quartz monzonite. The Jutten Batholith appears to be fairly homogeneous, medium-grained, white to whitish pink and commonly displays a foliation.

MINERALOGY: Quartz veins in the area carry some tourmaline which occurs as bands or scattered crystals in the veins. The tourmaline varies in colour from brown to blue and violet. Minor amounts of arsenopyrite, pyrite and some carbonates are also present.

MAP REFERENCES: OGS Map P.1537 (1:250,000) 1978.
OGS Map 2398, 1 inch to 1/2 mile (1:31,680) 1978
ODM Map P.962, 1 inch to 2 miles (1:126,720) 1974
ODM Map P.805, 1 inch to 1/4 mile (1:15,840) 1973

SELECTED REFERENCES: OGS GR 182, p. 6-8,50 (1979)
ODM Vol. 37, pt. 4, p. 53-82 (1927)

NTS 52K

NAME: SANDY CREEK be, tour, ap

COMMODITIES: Beryl, tourmaline, apatite

STATUS Minor Occurrence

NTS: 52K/11NW

LATITUDE: 50° 42' 58"N LONGITUDE: 93° 20' 00"W

LOCATION: Approximately 29 miles southeast of Red Lake, and about 2 miles south of Bruce Lake. North of Ear Falls near Sandy Creek.

DESCRIPTION:

GEOLOGY: The area straddles a sequence of interbedded metagreywackes and metavolcanics in the north and iron formation and metagreywacke in the south. These units are not divided by any marked lithological, structural or metamorphic boundaries. These rocks have been intruded by granitic rocks of at least three ages and by mafic dikes, stocks and batholiths.

Muscovite-biotite granodiorite underlies the showing. These rocks may form part of a sedimentary-granitic complex. The rocks are heterogeneous in grain size, and range from medium- to coarse-grained with local fine-grained facies.

Most of the rocks are foliated and often show well-developed primary layering. They are sheared in proximity of the east-trending lineament and it is believed that post-granodiorite deformation has affected the area. (paraphrased from Shklanka 1970, p.12).

In the complex, granodiorite may either predominate with the sediments occurring as concordant lenticular rafts or as a subordinate constituent occurring in a lit-par-lit fashion in the sediments.

Dikes of aplite and pegmatite are associated with the granodiorite. The aplite dikes are generally only a few inches wide and are fine-grained, leucocratic quartz-feldspar rocks. The pegmatite dikes may be 10 feet or more in width. They are of variable composition and grain size and may have sharp or gradational contacts.

The showing occurs in a 12-foot wide pegmatite dike; the dike is exposed for 180 feet. It is mostly fine-grained but some coarse-grained phases and pods are present.

MINERALOGY: Quartz, microcline, muscovite, plagioclase and biotite are commonly present, but have a zonal distribution in the dike. White beryl crystals 2 inches long and tourmaline in narrow crosscutting veins are found throughout the dike. Minor accessory minerals are apatite and zircon. Some myrmekite is also present.

HISTORY OF DEVELOPMENT: 1963: Stripping and trenching were carried out by Madsen Red Lake Gold Mines Ltd.

MAP REFERENCES:
OGS Map P.1538 (1:250,000) 1978
ODM Map P.1199, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.407, 1 inch to 2 miles (1:126,720) 1967

SELECTED REFERENCES:
ODM GR 82, p. 12 (1970)
ODM MP 63, p. 32 (1975)
ODM IMR 21, p. 37-38 (1967)

NAME: SANDY CREEK be, tour, ap

COMMODITIES: Beryl, tourmaline, apatite

STATUS: Minor Occurrence

NTS: 52K/11NW

DESCRIPTION: Listed under APATITE - Sandy Creek

(Minor Occurrences) gt, si

COMMODITIES: Garnet, silica

STATUS: Minor Occurrences

NTS: 52K/1SW/1SE

LATITUDE:		LONGITUDE:	
	50° 04' 28"N		92° 09' 02"W
	50° 06' 45"		92° 10' 53"
	50° 06' 45"		92° 12' 20"
	50° 05' 16"		92° 16' 26"

LOCATION: The occurrences are scattered in a radium of about 1-2 miles around Hudson on the CNR line and Lost Lake.

DESCRIPTION:

GEOLOGY: The "area is part of a regional belt of alternating metavolcanic and metasedimentary sequences which are bordered on the north and south by batholithic areas of granite and in many places are pierced by tongues and stocks of granite and more mafic igneous rocks. All the consolidated rocks are considered to be of Archean (Early Precambrian) age." (Johnston 1972,p.3).

The deposit occurs in a metavolcanic belt that consists of massive to schistose mafic to intermediate flows and abundant pillow lava with minor pyroclastics and intercalated iron formation, quartzite, and tuffaceous sediments.

In the immediate vicinity of the deposit, the metavolcanics are greenschist facies that gradually give way to epidote-amphibolite and almandine-amphibolite facies. On the north shore of Lost Lake, where the deposits are found, silliminite and coarse garnets are developed in the thin metavolcanic remnant.

MINERALOGY: The garnets are large and about 1 inch in diameter. Associated with the garnets are coarse hornblende crystals.

MAP REFERENCES: OGS Map P.1538 (1:250,000) 1978
ODM Map 2242, 1 inch to 1/2 mile (1:31,680) 1972
ODM Map P.336 & P.337, 1 inch to 1/4 mile (1:15,840) 1966

SELECTED REFERENCES: ODM GR 101, p. 3,5,22 (1972)
ODM MP 63, p. 30-31 (1975)

(Minor Occurrences) py, mag, po, Zn, Pb

COMMODITIES: Pyrite, magnetite, pyrrhotite, zinc, lead

STATUS: Minor Occurrences

TOWNSHIPS: Lomond, Drayton, Jordan, Vermilion Additional, Vermilion, I.R.28

NTS: 52K/1SW/1SE

LATITUDE	LONGITUDE	TOWNSHIP
50° 02' 10"N	92° 14' 35"W	Whitefish Island, Vermilion Lk
50° 01' 37"	92° 19' 44"	Lomond
50° 03' 55"	92° 19' 07"	
50° 04' 52"	92° 17' 32"	
50° 04' 52"	92° 01' 26"	Drayton
50° 00' 32"	92° 00' 49"	Jordan
50° 00' 00"	92° 01' 14"	Jordan
50° 05' 00"	92° 04' 31"	Drayton
50° 04' 03"	92° 09' 02"	Vermilion Additional
50° 03' 47"	92° 09' 52"	Vermilion Additional
50° 02' 34"	92° 08' 01"	Drayton
50° 03' 39"	92° 12' 57"	Vermilion Additional
50° 02' 34"	92° 11' 30"	Vermilion
50° 06' 45"	92° 09' 52"	I.R.28
50° 02' 34"	92° 11' 06"	Vermilion

LOCATION: The occurrences are scattered between the CNR line and Vermilion Lake.

MAP REFERENCES: OGS Map P.1538 (1:250,000) 1978
ODM Map P.1204, 1 inch to 1 mile (1:63,360) 1976
ODM Map 2242, 1 inch to 1/2 mile (1:31,680) 1972
ODM Maps P.336 & P.337, 1 inch to 1/4 mile (1:15,840) 1966

(Minor Occurrences) (1) py, mag, po, Zn, Pb

COMMODITIES: Pyrite, magnetite, pyrrhotite, zinc, lead

STATUS: Minor Occurrences

NTS: 52K/1SW/1SE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences)

(Minor Occurrences) (2) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52K/15NW

LATITUDE: 50° 57' 42"N LONGITUDE: 92° 59' 55"W
50° 57' 58" 92° 52' 36"

LOCATION: Fredart Lake Area.

MAP REFERENCES: OGS Map P.1538 (1:250,000) 1978
ODM Map P.1199, 1 inch to 1 mile (1:63,360) 1976
ODM Map P.406, 1 inch to 2 miles (1:126,720) 1967
ODM Map P.349, 1 inch to 1/4 mile (1:15,840) 1966

(Minor Occurrences) gt, si

COMMODITIES: Garnet, silica

STATUS: Minor Occurrences

NTS: 52K/1SW/1SE

DESCRIPTION: Listed under GARNET - (Minor Occurrences)

NAME: SANDY CREEK be, tour, ap

COMMODITIES: Beryl, tourmaline, apatite

STATUS: Minor Occurrence

NTS: 52K/11NW

DESCRIPTION: Listed under APATITE - Sandy Creek

NTS 52L

NAME: GLEN ECHO MINES LIMITED be

COMMODITY: Beryl

STATUS: Minor Occurrence

NTS: 52L/7SE

LATITUDE: 50° 15' 55"N LONGITUDE: 94° 32' 00"W

LOCATION: Approximately 35 miles north of Kenora on the north shore of English River. About 2 miles northwest of Separation Rapids, 3 miles west of Oneman Lake.

DESCRIPTION:
GEOLOGY: "Massive to foliated, locally pillowed, intermediate to mafic metavolcanics of the Separation Lake area form a southern margin to the metasedimentary belt of the Umfreville-Separation Lake area. The greatest preserved thickness (in excess of 1 1/2 miles, 2.2 km) of these metavolcanics occurs at Separation Lake with a tapering off both to the east and west.

North of Routine Lake (now part of Umfreville Lake) the metavolcanic sequence is less than 100 feet (30 m) wide. These metavolcanics commonly are dark green to black, banded amphibolites. Where found, pillows were poorly preserved and usually stretched to the point of being barely recognizable. Only at one location was a facing direction indicated by pillow shape.

"Narrow, finely bedded, felsic to intermediate tuff and lapilli-tuff lenses outcrop along the shore of the English River east of Separation Lake. At first glance they resembled banded chert, but on closer examination lapilli sized fragments were discernable. At one location the weathering of fine grained pyrite gives the outcrop a rusty appearance. These lenses were narrow (30 to 40 feet) (9 to 12 m) and not traceable for more than several hundred yards along the shore." (Breaks et al, 1974, p.27).

The intrusives range from diorite to acid granite and pegmatite. The showing occurs in a large pegmatite dike.

"The intrusive rocks were subdivided on the basis of composition and on the presence or absence of metamorphic textures. In most of the area, these classes were well defined and helped to separate distinctive bodies of similar composition. The metamorphosed intrusive rocks of granodioritic to trondhjemitic composition commonly have an east-trending foliation parallel to the foliation of the metavolcanics and metasediments." (Breaks et al, 1974, p.27).

HISTORY OF DEVELOPMENT:

1930: D.R. Dewy mapped general geology of area.

1957: Trenching, geomagnetic surveys and feasibility studies were done.

1974: Electromagnetic surveys and drilling were done by Sherritt Gordan Mines Limited.

MAP REFERENCES: OGS Map P.1539 (1:250,000) 1978
ODM Map P.1028, 1 inch to 1 mile (1:63,360) 1975

SELECTED REFERENCES: ODM MP 59, p. 27 (1974)
ODM IMR 21, p. 38 (1967)
CDM,GS Mem. 167, p. 127 (1932)

NAME: WERNER LAKE NICKEL PROSPECT Cr, Cu, Ni, V

COMMODITIES: Chromium, copper, nickel, vanadium

STATUS: Major Occurrence

NTS: 52L/7NW

LATITUDE: 50° 27' 28"N LONGITUDE: 94° 49' 52"W

LOCATION: About 50 miles northwest of Kenora to the northeast end of Werner Lake there are two mineralized zones; the first zone is located beside the mouth of a creek that flows into the east end of Werner Lake from the north, and the second zone is located along the north shore of Loon's Nest Lake.

DESCRIPTION:
GEOLOGY: The rocks of this area consist of pink Archean granite surrounding a band of sedimentary gneiss. The gneiss is about 1,600 feet wide and trends N80°W. It is cut by numerous pegmatite dikes.

An easterly trending fault cuts the metasediments and felsic intrusives. Another subsidiary fault also branches off this fault on the property and extends east-northeast under Loon's Nest Lake.

A mineralized peridotite plug about 160 feet long and up to 50 feet wide is located along the main fault. Another mineralized zone occurs about 1 1/2 miles east of the fault in paragneiss.

MINERALOGY: The plug is sparsely mineralized with minor amounts of disseminated pentlandite, chalcopyrite, pyrite, and pyrrhotite. The second zone contains disseminated chalcopyrite. Assay results indicated that the peridotite body has an average content of 0.40 percent Ni, 1.76 percent Cu, 0.54 percent vanadium pentoxide, and 4.12 percent Cr.

HISTORY OF DEVELOPMENT:

1942-45: Trenching, dip needle survey, mapping and 32 drill holes totalling 3,750 feet by Dome Exploration (Canada) Ltd.

1955: 4,000 feet of drilling and geophysical surveys were done by Werner Lake Nickel Mines Ltd.

REMARKS: Assay results, (1954 Prospectus, Werner Lake Nickel Mines Ltd.), from d.d. holes intersecting the peridotite body are as follows:

DD Hole No.	Core Length - Ft.	Assay (Percent Ni)
1	63.0	0.48
2	66.0	0.38
3	15.5	0.49
4	-	-
5	53.5	0.31

MAP REFERENCES:
OGS Map P.1539 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.366, 1 inch to 2 miles (1:126,720) 1966
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map 1957-2, 1 inch to 1/2 mile (1:31,680) 1957

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Werner Lake, District Kenora
ODM MRC 12, p. 171 (1967)
ODM Vol. 66, pt. 4, p. 27 (1957)
Precambrian Vol. 22, No. 4, p. 10-15,53-54 (April 1949)

NAME: EASTERN MINING AND SMELTING CORPORATION Co, Ni, Cu

COMMODITIES: Cobalt, nickel, copper

STATUS: Minor Occurrences

NTS: 52L/7NW

LATITUDE: 50° 27' 38"N LONGITUDE: 94° 54' 25"W
50° 27' 30" 94° 53' 55"

LOCATION: About 50 miles north of Kenora, 35 air miles north and west of Minaki on the CNR line and approximately 20 miles north of the junction of the English and Winnipeg Rivers.

DESCRIPTION:
GEOLOGY: "The most important geological feature of the property is a gently curving fault zone, which trends roughly east-west and extends from the west end of Werner Lake, through Gordon Lake parallel, and close to, its south shore, thence roughly parallel to the north shore of Werner Lake. The surface expression of the fault is a lineal depression in the topography, which also marks, throughout most of its length, the approximate contact between massive granitic rocks to the south and banded lit par lit injected paragneisses on the north. Diamond-drilling and underground exploration have shown that this fault dips to the north at about 75 degrees. As stated earlier, at least a dozen small plugs of peridotite have been found along the footwall of the fault in the underground workings on the 300-foot level; a number of others have been indicated by drilling at various other locations along the fault. Each peridotite plug is sheathed in hornblende-biotite schist of variable thickness, and there are lenses of the latter rock type occurring along the fault zones that have apparently completely replaced original peridotite plugs. The plugs and lenses of peridotite, pyroxenite,

hornblendite, and hornblende-biotite schist are enclosed in banded amphibolites, which grade with no perceptible contact into banded, lit par lit injected quartz-rich paragneisses on either side. The fault zone, which roughly parallels a granite-paragneiss contact at the surface, lies about 80 feet north of this contact on the 300-foot level. The various mafic rocks and the adjoining paragneisses are cut by irregular bodies of granite-pegmatite." (Carlson 1958, p.23-24).

MINERALOGY: "Sulphide mineralization, consisting of variable proportions and quantities of pyrrhotite, pentlandite, chalcopyrite, and pyrite, occurs within and between the mafic plugs. Within the mafic plugs, the distribution of the sulphides appears to be rather erratic, ranging from very sparsely to very heavily disseminated within a few feet. Lenses, streaks, and seams of massive sulphides are common and appear to be localized by joint planes in the peridotite, and by small faults, which cut the mafic plugs. The massive sulphide lenses may be as much as 4 feet thick and trend in several different directions according to the attitudes of the minor structures that control their location. The disseminated sulphides are medium- to coarse-grained and appear to occupy the interstices between the silicate minerals in the host rock.

"Between the mafic plugs, the sulphides occur in the banded amphibolites, chiefly in long, narrow, massive stringers and lenses up to 2 feet thick, which lie parallel to the banding in the host rock and, to a lesser extent,in sparsely-to-heavily disseminated discrete grains scattered through the amphibolite. Small amounts of chalcopyrite have been found in thin stringers and seams and as disseminated grains in the paragneiss adjacent to the amphibolites in the underground workings. Where later pegmatites have cut well-mineralized portions of the earlier rocks, sulphide minerals can generally be found within the pegmatites themselves, in many places in sufficient quantity to make good ore." (Carlson 1958, p.24).

HISTORY OF DEVELOPMENT:

1942: Surface-trenching, stripping and diamond drilling were done by Noranda Mines Ltd.

1948-1949: Magnetometer and electromagnetic surveys and diamond drilling were done.

1952: Extensive surface diamond drilling, shaft sinking and underground development were done by Quebec Nickel Corporation.

ECONOMIC FEATURES: "The surface diamond-drilling program had more or less delineated, on strike, two zones of possible ore. The first of these, termed the G zone, lies under the southeast corner of Gordon Lake, and was estimated by company officials, on the basis of drilling results, to have a length of 465 feet, an average width of 14.4 feet, and to contain about 542,000 tons of material to a depth of 750 feet, having an average grade of 0.42 percent nickel, 0.68 percent copper, and 0.07 ounces per ton of precious metals of the platinum group. The second zone, termed the B zone, lies under and along the southwest edge of Gordon Lake, and was estimated by company officials to have, between the 150- and 500-foot horizons, an average width of 6.5 feet and to contain about 768,000 tons of material having an average grade of 1.15 percent nickel, 0.36 percent copper, and 0.12 ounces per ton of precious metals.

"Underground exploration has shown that, on the 300-foot level, the G zone has a maximum width of 60 feet and an average width of 40 feet, and the B zone has an average width of 8 feet. Some 2,300 tons per vertical foot of material grading about 1.25 percent nickel and 0.65 percent copper have been outlined in the two zones combined on the 300-foot horizon.

"A number of other mineralized zones are known from surface work and diamond-drilling along the major fault zone on Eastern Mining and Smelting Corporation's property, but to date insufficient work has been done on any of these to arrive at an adequate conclusion concerning their ore-making possibilities." (Carlson 1958, p.24).

REMARKS: "The surface plant consists of an office, warehouse, boiler-rooms, machine shop, two diesel powerhouses, several bunkhouses, a cookery, and

several small houses and garages. Two shafts have been sunk on the property. One is located near the southeast corner of Gordon Lake and was put down to a depth of 340 feet with one station being cut on the 300-foot level; from this station a crosscut, about 200 feet long, was driven north to intersect the ore zones on the 300-foot horizon. Some 4,000 feet of drifting on this level has been completed along and between the ore zones from No. 1 shaft. The second shaft is located about 1/2 mile west of the first, being collared close to the middle of the south shore of Gordon Lake. Stations have been cut at 150-foot intervals down to the 1,050-foot horizon, a crusher station has been cut below the latter, and a crosscut connects the shaft with the ore zones on the 300-foot level." (Carlson 1958, p.22-23).

MAP REFERENCES: OGS Map P.1539 (1:250,000) 1978
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.366, 1 inch to 2 miles (1:126,720) 1966
ODM Map 1957-2, 1 inch to 1/2 mile (1:31,680) 1957

SELECTED REFERENCES: ODM Vol. 66, pt. 4, p. 22-24 (1958)
Resident Geologist's Files, OMNR, Kenora, Rexora Mining Corporation Limited Report, 52L/7NW O-1

NAME: WERNER LAKE COBALT MINES
FALCONBRIDGE NICKEL MINES LTD. cob, Ni, Cu, Ag

COMMODITIES: Cobaltite, nickel, copper, silver

STATUS: Past Producer

NTS: 52L/7NW

LATITUDE: 50° 28' 00"N LONGITUDE: 94° 58' 10"W

LOCATION: Northwest end of Werner Lake which is about 50 miles north of Kenora and 20 miles north of the junction of the English and Winnipeg Rivers. The site of the early workings is 1/4 mile west of the northwest corner of Werner Lake.

DESCRIPTION:

GEOLOGY: The bedrock in the area consists of grey and black sedimentary gneisses intruded by pink and grey granite and by pegmatite. Along the south contact trenches have exposed a zone of sheared and jointed garnet-rich gneiss for a distance of 3,500 feet.

"The property is traversed by at least two major fault zones, one of these being the easterly extension of the structure along which nickel and copper have been found on the adjoining Norpax property to the west. The ore zone of the mine is located along the east side of another fault, trending about N.60°W., a few hundred feet from its junction with the east-west trending Norpax fault zone.

"The ore zone occupies what appears to be an east-west trending, vertically-dipping gash fracture, which opens off the major fault zone immediately to the west and follows the contact between a band of lit par lit injected garnetiferous paragneiss on the north and massive pink granite on the south. This gash fracture has been filled by a narrow lens of amphibolite, 8-10 feet wide and about 150 feet long which is petrographically similar to the amphibolites, that are closely related spatially and genetically to intrusive peridotite plugs elsewhere in the area. The contact between the amphibolite and the paragneiss to the north is marked by a narrow zone of quartz-poor biotite-feldspar schist. All these rocks are cut by small stringers of quartz and granite-pegmatite." (Carlson 1958, p.25).

MINERALOGY: "The metallic minerals identified in the ore zone are cobaltite, chalcopyrite, pyrrhotite, pyrite, and magnetite. These are disseminated in various amounts throughout the zone and in places, particularly in the quartz-poor biotite-feldspar schist. form irregular, small lenses and pods of high-grade ore. Minor amounts of hematite, annabergite, erythrite, and malachite were observed on the exposed surfaces of the ore zone as alteration products of the primary metallic minerals." (Carlson 1958, p.25).

HISTORY OF DEVELOPMENT:

Circa 1928: Trenches and test pits were dug and a shaft was sunk 35 feet.

1932: Property was actively mined, the ore being hand cobbed, and 70 tons of ore were produced.

1940-44: Property was again actively mined, and in 1942 a small 25 tons/day mill was flown in.

1957: 3,000 feet of diamond drilling was completed.

ECONOMIC FEATURES: "Channel samples across the ore zone early in the exploration of the deposit assayed as high as 7.8 percent cobalt and 2.4 percent copper. Nickel assays of 0.5 percent were obtained from individual samples. The average grade of the deposit appears to have been about 2 percent cobalt and 0.75 percent copper. High grade ore sorted from the zone assayed 22.0 percent cobalt, 0.25 percent copper and 0.02 percent nickel." (Carlson 1958, p.25).

MAP REFERENCES:
OGS Map P.1539 (1:250,000) 1978
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.366, 1 inch to 2 miles (1:126,720) 1966
ODM Map 1957-2, 1 inch to 1/2 mile (1:31,680) 1957

SELECTED REFERENCES:
ODM MRC 10, p. 38 (1967)
ODM Vol. 66, pt. 4, p. 25 (1958)
ODM Vol. 39, pt. 3, p. 39 (1930)
CDM,GS Mem. 169, p. 98 (1932)
CDM,GS Sum. Rept., pt. C, p. 74 (1922)
OGS Toronto Geoscience Data Centre, File Falconbridge, District Kenora, Lat. 50°15', Long. 94°45'
Resident Geologist's Files, OMNR, Kenora: Werner Lake Cobalt Mines, 52L/7NW S-1
OGS Toronto AFRO Files 63.136, 2.331

NAME: MINAKI PYRITE MINE py

COMMODITY: Pyrite

STATUS: Past Producer

NTS: 52L/2SE

LATITUDE: 50° 04' 00"N LONGITUDE: 94° 36' 00"W

LOCATION: Approximately 6 miles north-northeast of Minaki on the CNR line, and on the northern edge of Vermilion Lake.

MAP REFERENCES:
OGS Map P.1539 (1:250,000) 1978
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.366, 1 inch to 2 miles (1:126,720) 1966
ODM Map P.281, 1 inch to 2 miles (1:126,720) 1965

(Minor Occurrences) py, po, Cu, Zn, Ni

COMMODITIES: Pyrite, pyrrhotite, copper, zinc, nickel

STATUS: Minor Occurrences

TOWNSHIP: Mulcahy

NTS: 52L/16NE/16NW

LATITUDE:	50° 59' 53"N	LONGITUDE:	94° 13' 10"W
	50° 59' 50"		94° 11' 57"
	50° 59' 26"		94° 12' 45"
	50° 59' 05"		94° 11' 04"
	50° 58' 31"		94° 11' 09"
	50° 57' 29"		94° 10' 30"
	50° 57' 09"		94° 11' 09"
	50° 56' 55"		94° 11' 23"
	50° 59' 20"		94° 12' 05"

LOCATION: The occurrences are scattered in a radius of approximately 2 miles around Leitch Lake and about 40 miles east of the Manitoba-Ontario boundary line.

MAP REFERENCES: OGS Map P.1539 (1:250,000) 1978
ODM Map 2295, 1 inch to 1000 feet - 1976
ODM Map P.567, 1 inch to 800 feet - 1969
ODM Map 49a, 1 inch to 1/2 mile (1:31,680) 1940

NAME: TREELINED LAKE OCCURRENCE Th, U

COMMODITIES: Thorium, uranium

STATUS: Minor Occurrence

NTS: 52L/8SW

LATITUDE: 50° 17' 42"N LONGITUDE: 94° 29' 50"W

LOCATION: About 40 miles north of Kenora and 2 miles north of Separation Lake.

MAP REFERENCES: OGS Map P.1539 (1:250,000) 1978
ODM Map P.1028, 1 inch to 1 mile (1:63,360) 1975

NTS 52M

NAME: BIRON BAY GOLD MINES LIMITED asb
SPIERS, H.R.

COMMODITY: Asbestos

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS: 52M/1SW/1SE

LATITUDE:	51° 05' 00"N	LONGITUDE:	94° 16' 00"W
	51° 02' 25"		94° 12' 03"
	51° 03' 30"		94° 13' 40"
	51° 02' 20"		94° 11' 58"

LOCATION: Approximately 18 miles west of Red Lake.

DESCRIPTION:
GEOLOGY: The showings are underlain principally by Archean tuffs that strike about N70°W and dip 70°N. The asbestos occurs in altered Keewatin greenstones.

Serpentine is the most common constituent of some of the greenstones and often forms the main mass of the rocks. These serpentinized greenstones are closely associated with normal greenstones and are thought to be serpentinized flows

rather than serpentinized intrusives. In the area no basic intrusives that might give rise to serpentine rocks were found.

Upon casual examination the rocks are similar to common greenstone, however, they are softer than the greenstones and contain some carbonate. They are generally fine- to medium-grained and contain in some places deformed pillow structures.

"Although some of these rocks may have been basic greenstones, which have been serpentinized with little or no concomitant chemical changes, except possibly the addition of some water, many of them appear to have undergone some replacement. Partial analysis of a specimen from the southeast corner of Pipestone Bay, which shows over 30 percent MgO and about 20 percent CO_2, indicates that hydrothermal solutions carrying MgO and CO_2 have been effective in the change. The MgO content is considerably higher than in any of the adjoining basic greenstones. As carbonates are invariably present in the serpentinized rocks and as the water content is higher, it is believed that hydrothermal solutions are the cause of the change." (Horwood 1940, p.27).

MINERALOGY: Chrysotile asbestos veins occur in the massive serpentine rocks. The veinlets and stringers are only a fracture of an inch in width with fine silky, greenish fibres transverse to the walls.

Quartz, sphalerite, pyrite, chalcopyrite and minor amounts of antigorite are present.

MAP REFERENCES:
OGS Map P.1544 (1:250,000) 1978
ODM Map 2265, 1 inch to 1000 feet (1:12,000) 1975
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.792, 1 inch to 1000 feet (1:12,000) 1972
ODM Map P.355, 1 inch to 2 miles (1:126,720) 1966
ODM Map P.338, 1 inch to 2 mile (1:63,360) 1966

SELECTED REFERENCES:
ODM Vol. 49, pt. 2, p. 27,63,66 (1940)
OGS Toronto AFRO File 63.2884
ODM Vol. 36, pt. 3, p. 56 (1928)

(Minor Occurrences) asb

COMMODITY: Asbestos

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS: 52M/1SE

LATITUDE:	LONGITUDE:
51° 03' 30"N	94° 13' 40"W
51° 03' 45"	94° 14' 20"
51° 03' 30"	94° 11' 25"
51° 03' 10"	94° 12' 45"
51° 03' 05"	94° 12' 30"
51° 02' 35"	94° 12' 50"
51° 02' 25"	94° 13' 15"
51° 02' 20"	94° 13' 01"
51° 02' 10"	94° 13' 48"
51° 02' 10"	94° 13' 52"

DESCRIPTION: See BIRON BAY GOLD MINES LIMITED for DESCRIPTION, MAP REFERENCES and SELECTED REFERENCES , p.217.

(Minor Occurrences) mag

COMMODITY: Magnetite

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS: 52M/1SE

LATITUDE:	51° 03' 30"N	LONGITUDE:	94° 12' 35"W
	51° 03' 07"		94° 11' 20"
	51° 02' 50"		94° 11' 50"

LOCATION: Approximately 18 miles west of Red Lake.

MAP REFERENCES:
OGS Map P.1544 (1:250,000) 1978
ODM Map 2265, 1 inch to 1000 feet (1:12,000) 1975
ODM Map P.792, 1 inch to 1000 feet (1:12,000) 1972

(Minor Occurrences) (1) py, cp, sp, po, gn, Ni, Mo, Au

COMMODITIES: Pyrite, chalcopyrite, sphalerite, pyrrhotite, galena, nickel, molybdenum, gold

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS: 52M/1SW

LATITUDE:	51° 02' 15"N	LONGITUDE:	94° 15' 20"W
	51° 02' 08"		94° 15' 15"
	51° 02' 10"		94° 15' 05"
	51° 02' 15"		94° 15' 30"
	51° 02' 25"		94° 15' 30"
	51° 02' 28"		94° 15' 30"
	51° 02' 30"		94° 16' 05"
	51° 03' 16"		94° 16' 30"
	51° 03' 20"		94° 15' 45"
	51° 03' 30"		94° 15' 45"
	51° 03' 40"		94° 16' 15"
	51° 04' 15"		94° 15' 30"
	51° 04' 02"		94° 15' 30"
	51° 03' 30"		94° 15' 15"
	51° 02' 55"		94° 16' 15"
	51° 02' 35"		94° 15' 43"

LOCATION: Approximately 18 miles west of Red Lake and north of Douglas Lake.

MAP REFERENCES:
OGS Map P.1544 (1:250,000) 1978
ODM Map 2265, 1 inch to 1000 feet (1:12,000) 1975
ODM Map P.792, 1 inch to 1000 feet (1:12,000) 1972

NAME: COCHENOUR EXPLORATIONS LIMITED (1966) py, sp, cp, gn, Ni

COMMODITIES: Pyrite, sphalerite, chalcopyrite, galena, nickel

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS: 52M/1SE

LATITUDE:	51° 04' 10"N	LONGITUDE:	94° 10' 12"W

LOCATION: Approximately 18 miles west of Red Lake.

MAP REFERENCES: OGS Map P.1544 (1:250,000) 1978
ODM Map 2265, 1 inch to 1000 feet (1:12,000) 1975
ODM Map P.792, 1 inch to 1000 feet (1:12,000) 1972

(Minor Occurrences) (2) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS: 52M/1SE

LATITUDE:	LONGITUDE:
51° 00' 23"N	94° 10' 55"W
51° 00' 34"	94° 11' 40"
51° 00' 45"	94° 11' 15"
51° 00' 46"	94° 11' 10"
51° 00' 03"	94° 12' 05"
51° 00' 08"	94° 12' 07"
51° 01' 20"	94° 13' 30"
51° 01' 28"	94° 13' 25"
51° 01' 30"	94° 13' 32"
51° 01' 32"	94° 14' 15"
51° 01' 08"	94° 13' 30"
51° 03' 00"	94° 13' 30"

LOCATION: Approximately 18 miles west of Red Lake.

MAP REFERENCES: OGS Map P.1544 (1:250,000) 1978
ODM Map 2265, 1 inch to 1000 feet (1:12,000) 1975
ODM Map P.792, 1 inch to 1000 feet (1:12,000) 1972

(Minor Occurrences) (3) py, po, Cu, Ag, Zn, cp, sp

COMMODITIES: Pyrite, pyrrhotite, copper, silver, zinc, chalcopyrite, sphalerite

STATUS: Minor Occurrences

TOWNSHIP: Ball

NTS. 52M/1SE

LATITUDE:	LONGITUDE:
51° 00' 03"N	94° 11' 30"W
51° 00' 05"	94° 11' 35"
51° 00' 10"	94° 11' 45"
51° 00' 30"	94° 13' 25"
51° 00' 40"	94° 13' 45"
51° 00' 45"	94° 13' 50"
51° 01' 08"	94° 12' 25"
51° 03' 40"	94° 14' 30"
51° 03' 35"	94° 14' 45"
51° 03' 30"	94° 15' 15"
51° 02' 15"	94° 13' 47"
51° 02' 05"	94° 12' 53"
51° 02' 10"	94° 10' 45"
51° 01' 28"	94° 13' 25"
51° 04' 20"	94° 10' 28"
51° 01' 00"	94° 12' 26"
51° 03' 30"	94° 13' 45"

LOCATION: About 18 miles west of Red Lake.

MAP REFERENCES: OGS Map P.1544 (1:250,000) 1978
ODM Map 2265, 1 inch to 1000 feet (1:12,000) 1975
ODM Map P.792, 1 inch to 1000 feet (1:12,000) 1972

(Minor Occurrence) asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

TOWNSHIP: Goodall

NTS: 52N/2NE

LATITUDE: 51° 14' 20"N LONGITUDE: 92° 33' 35"W

LOCATION: Approximately 48 miles northeast of Red Lake.

DESCRIPTION:

GEOLOGY: The showing occurs in altered Keewatin greenstones which is part of an Archean volcanic-sedimentary sequence in the Superior Structural Province of the Canadian Shield.

Most of the metamorphosed massive greenstones in the area are easily recognized as basic volcanics and often retain original structures, such as ellipsoidal markings.

Serpentine is found in many of the altered greenstones and often forms the main mass of the rock. The serpentinized greenstones are closely related with normal greenstones and are thought to be serpentinized flow rocks rather than serpentinized intrusives. The altered greenstones are generally fine- to medium-grained, contain some carbonates, and are often softer than common greenstones.

MINERALOGY: The massive greenstones consist of secondary minerals, chiefly chlorite and minor amounts of serpentine, amphibole or carbonates. Stringers of asbestos with fine, silky, greenish fibres have been developed in some of the serpentinized rocks; these stringers are up to a fraction of an inch in width.

MAP REFERENCES:
OGS Map P.1543 (1:250,000) 1978
ODM Map P.763, 1 inch to 1/4 mile (1:15,840) 1972
OGS Map 2081, 1 inch to 1/4 mile (1:15,840) 1980
OGS Map P.1216, 1 inch to 1/4 mile (1:15,840) 1977
ODM Map P.901, 1 inch to 1/4 mile (1:15,840) 1973

SELECTED REFERENCES:
ODM Vol. 36, pt. 3, p. 11-12,56,95-106 (1928)
ODM Vol. 37, pt. 4, p. 5-21 (1929)
ODM Vol. 21, pt. 2, p. 4-6 (1912)

NAME: SWAIN LAKE
VANCO EXPLORATION LTD. Co, Cu

COMMODITIES: Cobalt, copper

STATUS: Minor Occurrence

NTS: 52N/7SE

LATITUDE: 51° 16' 50"N LONGITUDE: 92° 36' 10"W

LOCATION: Approximately 57 miles northeast of Red Lake, 1 mile east of the narrows on Swain Lake.

DESCRIPTION:

GEOLOGY: The consolidated rocks of the area are all Precambrian in age and consist of a series of interbedded sediments and lavas that have been vertically folded and metamorphosed.

The oldest rocks are severely metamorphosed basic lavas and structurally above the lavas is a group of rocks of varying composition including dacites, trachytes and rhyolites. These rocks weather to light coloured surfaces in contrast to the dark green surfaces of the basic lavas.

Numerous dikes, sills and irregular bodies of igneous rocks intrude the sediments and lavas. "The latest rocks are granites and quartz porphyries. Although the various granite masses have different characteristics, they may possibly be all of one age. Some granite formed part of the surface before the upper sediments were laid down, since they contain granite pebbles; but they are themselves intruded by granite, and no granite was found which could be shown to be older than these sediments." (Greig 1927, p.96).

At this locality, "The sulphides are predominantly confined to an intermediate to felsic metavolcanic unit which has been severely brecciated and invaded by quartz and epidote stringers. The host rock is interbedded with mafic metavolcanics and some intermediate to felsic pyroclastic rocks." (Shklanka 1969, p.176-177).

MINERALOGY: "Patchy, globular, and disseminated pyrrhotite, chalcopyrite, sphalerite and cobalt mineralization occur along an east-west strike length of over 1/2 mile.... Finely disseminated mineralization occurs over 50-foot sections of core. Sections containing 3-5% combined pyrrhotite and chalcopyrite are up to 10 feet thick." (Shklanka 1969, p.176-177).

HISTORY OF DEVELOPMENT:

1963: Gunnex Ltd. did an I.P. survey and 2,050 feet of diamond drilling.

1969: Vanco Exploration of Ontario Ltd. did geological, ground magnetic, self potential, airborne magnetometer, electromagnetic and gamma ray spectrometer surveys.

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Swain Lake, District Kenora, Patricia Portion, 51°15', 92°30
OGS Toronto AFRO Files 63.2659, 63.2702, 63.2597
Resident Geologist's Files, OMNR, Red Lake: Swain Lake
ODM MRC 12, p. 176-177 (1969)
ODM Vol. 45, pt. 4, p. 5-18 (1936)
ODM Vol. 42, pt. 6, p. 23-24,26 (1933)
ODM Vol. 37, pt. 4, p. 5 (1928)
ODM Vol. 36, pt. 3, p. 95-106 (1927)

(Minor Occurrences) (1) py, po, cp, mag

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite

STATUS: Minor Occurrences

TOWNSHIP: Corless and Skinner

NTS: 52N/2NW

LATITUDE:	LONGITUDE:
51° 08' 53"N	92° 54' 30"W
51° 09' 05"	92° 54' 38"
51° 12' 08"	92° 47' 15"
51° 12' 06"	92° 47' 30"
51° 12' 30"	92° 47' 20"
51° 13' 07"	92° 47' 05"
51° 13' 10"	92° 47' 05"
51° 13' 45"	92° 48' 15"
51° 13' 11"	92° 48' 00"

LOCATION: Approximately 48-55 miles northeast of Red Lake.

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
OGS Map P.1975, 1 inch to 1 mile (1:63,360) 1978
ODM Map P.1071, 1 inch to 1/4 mile (1:15,840) 1976
ODM Map P.763, 1 inch to 1/4 mile (1:15,840) 1972
ODM Map P.634, 1 inch to 1/4 mile (1:15,840) 1971

(Minor Occurrences) (2) py, po, mag, cp, sp, Mo, Cu, Ag, gn

COMMODITIES: Pyrite, pyrrhotite, magnetite, chalcopyrite, sphalerite, molybdenum, copper, silver, galena

STATUS: Minor Occurrences

NTS: 52N/7SW

LATITUDE:	LONGITUDE:
51° 17' 40"N	92° 45' 00"W
51° 21' 15"	92° 59' 45"
51° 20' 30"	92° 59' 10"
51° 19' 01"	92° 56' 05"
51° 19' 01"	92° 56' 00"
51° 18' 30"	92° 55' 55"
51° 18' 45"	92° 55' 55"
51° 19' 05"	92° 55' 40"
51° 19' 30"	92° 56' 30"
51° 19' 45"	92° 56' 32"
51° 19' 55"	92° 56' 40"
51° 15' 15"	92° 46' 50"

LOCATION: Approximately 57 miles northeast of Red Lake.

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
OGS Map P.2119, 1 inch to 1/4 mile (1:15,840) 1980
ODM Map P.901, 1 inch to 1/4 mile (1:15,840) 1973

NAME: BOG, H. MINING LIMITED (1969) mag

COMMODITY: Magnetite

STATUS: Minor Occurrence

NTS: 52N/7SE

LATITUDE: 51° 18' 30"N LONGITUDE: 92° 42' 30"W

LOCATION: About 57 miles northeast of Red Lake.

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
OGS Map P.1975, 1 inch to 1 mile (1:63,360) 1978
ODM Map P.901, 1 inch to 1/4 mile (1:15,840) 1973

NAME: NORTHWEST EXPLORERS (1967) LIMITED py, mag, Sn, Cu, Zn

COMMODITIES: Pyrite, magnetite, tin, copper, zinc

STATUS: Minor Occurrence

NTS: 52N/7SE

LATITUDE: 51° 17' 30"N LONGITUDE: 92° 42' 30"W

LOCATION: Approximately 55 miles northeast of Red Lake, 1/4 mile north of the southwestern part of Swain Lake.

DESCRIPTION:

GEOLOGY: The consolidated rocks of the area are all Precambrian in age and consist of a series of interbedded sediments and lavas that have been vertically folded and metamorphosed.

The oldest rocks are severely metamorphosed basic lavas and structurally above the lavas are a group of rocks of varying composition including dacites, trachytes and rhyolites. These rocks weather to light coloured surfaces in contrast to the dark green surfaces of the basic lavas.

Numerous dikes, sills and irregular bodies of igneous rocks intrude the sediments and lavas. "The latest rocks are granites and quartz porphyries. Although the various granite masses have different characteristics, they may possibly be all of one age. Some granite formed part of the surface before the upper sediments were laid down, since they contain granite pebbles; but they are themselves intruded by granite, and no granite was found which could be shown to be older than these sediments." (Greig 1927, p.96).

The showing occurs in calcitic chlorite-sericite schist near the contact between mafic metavolcanics and felsic to intermediate metavolcanics.

MINERALOGY: Pyrrhotite, minor pyrite and traces of chalcopyrite are found in the breccia and fracture fillings and along schistosity planes. Assay results from a 10-foot core sample between 180 and 181 feet were 0.04 percent Zn, 0.05 percent Cu, 0.10 ounce per ton Ag, and 0.005 ounce per ton Au.

HISTORY OF DEVELOPMENT: 1969: Airborne magnetometer, electromagnetic and gamma ray spectrometer surveys, and one diamond drill hole totalling 206 feet.

MAP REFERENCES:
OGS Map P.1543 (1:250,000) 1978
ODM Map P.901, 1 inch to 1/4 mile (1:15,840) 1973
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Northwest Explorers, District Kenora, Patricia P., 51°15',92°30
OGS Toronto AFRO Files 2.226, 63.2772, 2.236 and Shubumeni Lake Area, Drill Long Rept. No. 12
ODM Vol. 45, pt. 4, p. 5-18 (1936)
ODM Vol. 42, pt. 6, p. 23-24,26 (1933)
ODM Vol. 37, pt. 4, p. 5 (1928)
ODM Vol. 36, pt. 3, p. 95-106 (1927)

(Minor Occurrence) (1) py, po, cp, mag

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite

STATUS: Minor Occurrence

NTS: 52N/2NW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrence) (1)

(Minor Occurrence) (2) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

TOWNSHIP: Goodall

NTS: 52N/2NE

LATITUDE: 51° 14' 03"N LONGITUDE: 92° 44' 53"W

LOCATION: Approximately 48 miles northeast of Red Lake.

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
OGS Map 2081, 1 inch to 1/4 mile (1:15,840) 1980
OGS Map P.1216, 1 inch to 1/4 mile (1:15,840) 1977
ODM Map P.901, 1 inch to 1/4 mile (1:15,840) 1973
ODM Map P.763, 1 inch to 1/4 mile (1:15,840) 1972

(Minor Occurrences) (3) py, po, cp, sp, Cu, Pb, Ag

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, sphalerite, copper, lead, silver

STATUS: Minor Occurrences

TOWNSHIP: Corless and Knott

NTS: 52N/2SW

LATITUDE:		LONGITUDE:	
	51° 03' 30"N		92° 47' 10"W
	51° 04' 10"		92° 47' 12"
	51° 01' 52"		92° 48' 45"
	51° 03' 50"		92° 47' 30"
	51° 03' 58"		92° 47' 25"
	51° 05' 30"		92° 50' 15"
	51° 06' 18"		92° 46' 50"
	51° 06' 23"		92° 50' 12"

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
OGS Map P.1975, 1 inch to 1 mile (1:63,360) 1978
ODMNA Maps P.634, P.635, 1 inch to 1/4 mile (1:15,840) 1971

(Minor Occurrences) (4) py, po, Cu, Zn

COMMODITIES: Pyrite, pyrrhotite, copper, zinc

STATUS: Minor Occurrences

TOWNSHIP: Mitchell and Earngey

NTS: 52N/2SE

LATITUDE:		LONGITUDE:	
	51° 05' 08"N		92° 41' 00"W
	51° 03' 45"		92° 44' 55"
	51° 03' 50"		92° 44' 55"
	51° 02' 10"		92° 38' 02"
	51° 05' 30"		92° 37' 30"

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
OGS Map P.1975, 1 inch to 1 mile (1:63,360) 1978
OGS Map 2428, 1 inch to 1/2 mile (31,680) 1980
ODM Map P.1212, 1 inch to 1/4 mile (1:15,840) 1976
ODM Map P.932, 1 inch to 1/4 mile (1:15,840) 1974
ODM Map P.593, 1 inch to 1/4 mile (1:15,840) 1970

(Minor Occurrences) (5) py, po, mag, cp, sp, Mo, Cu, Ag, gn

COMMODITIES: Pyrite, pyrrhotite, magnetite, chalcopyrite, sphalerite, molybdenum, copper, silver, galena

STATUS: Minor Occurrences

NTS: 52N/7SW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences)

NAME: NORTHWEST EXPLORERS (1967) LIMITED py, mag, Sn, Cu, Zn

COMMODITIES: Pyrite, magnetite, tin, copper, zinc

STATUS: Minor Occurrence

NTS: 52N/7SE

DESCRIPTION: Listed under MAGNETITE - Northwest Explorers (1967) Limited

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(Minor Occurrences) (6) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52N/7SE

LATITUDE:	LONGITUDE:
51° 15' 18"N	92° 43' 50"W
51° 15' 03"	92° 44' 01"
51° 16' 05"	92° 43' 50"
51° 16' 45"	92° 45' 00"
51° 17' 50"	92° 39' 58"
51° 18' 03"	92° 39' 30"
51° 18' 33"	92° 39' 43"
51° 18' 19"	92° 38' 52"

LOCATION: Approximately 55 miles northeast of Red Lake.

MAP REFERENCES: OGS Map P.1543 (1:250,000) 1978
ODM Map P.763, 1 inch to 1/4 mile (1:15,840) 1972

NAME: SELCO MINING CORPORATION (SOUTH BAY MINE) Cu, Zn, Ag, Sn

COMMODITIES: Copper, zinc, silver, tin

STATUS: Producer

TOWNSHIP: Dent

NTS: 52N/2SE

LATITUDE: 51° 06' 45"N LONGITUDE: 92° 40' 03"W

LOCATION: Approximately 50 miles east of Red Lake, on the east shore of Confederation Lake at the extreme southeastern portion of the township.

DESCRIPTION:

GEOLOGY: "The deposit is in the Superior structural province of the Canadian Shield, and lies within a typical metamorphosed Archean volcanic-sedimentary area known as the Birch-Uchi greenstone belt. A study of this belt by Goodwin (1967) established two successive volcanic cycles, each grading upward from predominantly basic volcanic rocks at the base to intermediate and acid volcanic rocks at the top. The Uchi deposit is in the upper acid volcanic division of Goodwin.

"The volcanic sequence, which contains the Uchi deposit, forms part of the east limb of a north-trending syncline. The synclinal axis is considered to pass through Confederation Lake a short distance west of the mine (Pryslak, 1969), but the exact location of this axis in the mine area is not known.

"The volcanic and sedimentary rocks of the mine area have been intruded by numerous bodies ranging from gabbro to granite in composition. The rocks have been regionally metamorphosed to lower greenschist facies, and a north-easterly schistosity has been developed at a large angle to the generally north-trending formational boundaries.

"The Uchi deposit is a stratiform pyrite-sphalerite-chalcopyrite deposit associated with the late, rhyolite phase of a differentiated volcanic pile, and is a member of an important class of similar deposits -- the "Noranda type" -- formed in an Archean volcanic environment.

"...the Uchi deposit occurs near the top of a west-facing, steeply dipping volcanic sequence grading from andesites and basalts at the bottom to rhyolites at the top. The domical shape of this volcanic pile suggests that it may be an example of the type of felsic edifice described by Goodwin (1968), although this domical shape is partly due to post-volcanic structural events. The deposit occurs along a contact between rhyolite tuffs and a body of quartz-feldspar porphyry, being localized in a tight fold embayment of tuffs into porphyry.

"The volcanic sequence consists of a lower unit about 3,000 feet (1,000 m) thick of pillowed or amygdaloidal andesite and basalt, a middle unit 3,000 feet (1,000 m) to 5,000 feet (1,600 m) thick of massive or spherulitic dacite and rhyodacite tuffs and flows, and an upper unit 3,000 feet (1,000 m) thick of massive or spherulitic rhyolite flows and tuffs. Quartz megacrysts ("eyes") 1 to 2 mm in size are conspicuous and characteristic in rocks of the upper, rhyolite unit.

"Fine pyroclastic rocks are abundant in the middle and upper units, but volcanic breccias and agglomerates are restricted to a lenticular area 2,500 feet (800 m) by 6,000 feet (2,000 m) in size at the base of the rhyolite unit, centered about 4,000 feet (1,300 m) southeast of the mine. Thin discontinuous beds of pyritic argillite or pyritic tuff, locally with disseminated sphalerite, occur at several places within the rhyolite and dacite sequences. Drilling in the mine area has revealed argillites carrying abundant pyrite near the southwest end of the ore zone.

"The rhyolite tuffs within the ore zone include fine-grained, spherulitic and coarse-grained varieties, with the coarse varieties containing felsic clasts and pyrite masses up to 10 centimeters across in a fine, generally siliceous matrix with a variable argillaceous content.

"Numerous bodies of quartz-feldspar porphyry occur within the dacite and rhyolite units. The porphyry bodies may be lenticular to tabular in form, or may have irregular shapes due, in part, to folding. They range from a few hundred feet across to 12,000 feet (4,000 m) by 2,500 feet (800 m) for the largest body, adjacent to the Uchi deposit.

"Where fresh, the porphyry consists of from 20 to 25 per cent 2- to 5-mm subspherical quartz phenocrysts and 4- to 10-mm euhedral phenocrysts of sodic plagioclase, in roughly equal proportions, within a fine granular siliceous matrix. Alteration, in the mine area, has converted many of the plagioclase phenocrysts into sericitic streaks within the porphyry....

"In surface outcrop the quartz-feldspar porphyry has features, such as transgressive, apparently intrusive contacts, fine-grained marginal zones and rare small inclusions of wall rock, which indicate a shallow-seated intrusive origin for this rock. There is no evidence of bedding, banding, clasts, shards or other features suggestive of an extrusive origin, and the generally uniform texture and appearance of this rock, both megascopically and in thin section, are consistent with an intrusive origin for the bulk of it.

"In the mine, immediately adjacent to the orebodies, a distinct phase of the porphyry ..."porphyry-type 2", is locally developed. The type 2 porphyry has quartz phenocrysts typical of the normal quartz-feldspar porphyry but generally has a characteristic fragmental or brecciated appearance, or it may consist of felsic patches in a dark chloritic and sericitic matrix. Angular fragments of black argillite are present locally within this rock. The significance of the type 2 porphyry is not known at present, but it is believed to represent either a local extrusive phase of quartz-feldspar porphyry or an altered and brecciated zone beneath the orebody.

"There is a close spatial relationship between the ore and the quartz-feldspar porphyry at Uchi, and further studies of the significance of this relationship are in progress. The evidence available at present indicates that the quartz-feldspar porphyry is a shallow-seated, subvolcanic intrusive rock, comagmatic with the rhyolite tuffs which enclose the orebody. Locally the porphyry magma reached surface, and the Uchi orebody was deposited on one such area, possibly an endogenous dome, of extrusive porphyry.

"The structure of the mine area is complex, with evidence of folding in at least three directions. The structure is dominated by shear folding in an east-northeast direction parallel to the regional foliation. In addition, the area lies on an east limb of a regional north-trending syncline and probably was affected by small-scale folding in this direction. There is also evidence in outcrop and underground of late flexural folding of the regional foliation. The orebodies were folded along with the wall rocks, to produce a complex pattern of folded lenses which plunge generally to the northeast. Some of the structural complexity within the ore may be due to pre-consolidation slump structures.

"Sericite and carbonate alteration of the quartz-feldspar porphyry and rhyolite tuff is apparent in the general mine area. The distribution of this alteration is highly irregular, but a general increase in intensity toward the ore zone indicates that this is wall-rock alteration related to the orebody. The sericitic alteration is typical of ore deposits of the Noranda type." (above quotations from Pollock et al 1972, p.299-308).

MINERALOGY: The major ore minerals identified in the ore are pyrite, sphalerite, and chalcopyrite, with minor to trace amounts of arsenopyrite, galena, tetrahedrite, cassiterite, pyrrhotite, marcasite, scheelite, wolframite, and native bismuth.

The orebody, although fairly narrow, is composed of massive sulphides. In particular, sphalerite is enriched in certain layers which gives the ore a banded appearance.

Pyrite occurs mainly as euhedral crystals up to a millimeter in diameter. It is widespread and, in the sphalerite-rich sections, it occurs as disseminated individual crystals, but frequently forms massive zones of euhedral crystals. The pyrite contains very minor inclusions of sphalerite and galena, except in certain parts of the orebody in which there has been extensive fracturing with subsequent replacement and fracture filling by chalcopyrite and sphalerite.

Sphalerite is generally coarse-grained and, within the orebody, it occurs as thick lenses or layers of massive sphalerite. The massive sphalerite in these zones generally contains disseminated euhedral pyrite. The mineral often contains inclusions of chalcopyrite as small as 5 microns. The composition of the sphalerite was determined in situ with the electron microprobe and the variation in iron content of the mineral was determined at intervals across the orebody for the two cores UG2 and UG20. The cadmium content was between 0.18 and 0.4 percent, manganese was less than 0.1 percent, and copper was not detected.

Chalcopyrite occurs as aggregates, more than one millimeter in diameter, that enclose and partially replace pyrite and as 5-μ inclusions and stringers in sphalerite or in pyrite. Chalcopyrite is widespread in the orebody, but tends to be associated with the pyrite.

Tetrahedrite was the only silver-bearing mineral identified in the ore. It occurs as irregular grains generally associated with chalcopyrite and galena in sphalerite. It varies in size from small inclusions (10 microns) to fairly coarse (300 microns) grains. The silver content of the tetrahedrite is variable, ranging from 3.7 to 21.0 wt. percent.

Galena is quite rare in the ore and very seldom does it occur as large irregular grains. It commonly is found as small inclusions or remnants in sphalerite and occasionally in pyrite. Pyrrhotite is very rare and occurs mainly as inclusions (<50 microns) in sphalerite and chalcopyrite. Cassiterite is widespread in the massive sulphides and shows no tendency to associate with any particular mineral. It occurs as rounded 10 to 100-μ grains whose average diameter is about 40 microns. It was not observed as inclusions in pyrite, but quite often occurs in sphalerite.

Native bismuth, scheelite and wolframite were identified in only one polished section. The native bismuth occurs with tetrahedrite and pyrrhotite, but the scheelite and wolframite were observed in gangue. Arsenopyrite occurs as euhedral crystals mainly associated with pyrite. Marcasite is rare in the ore and occurs either associated with pyrite or as narrow rims between some of the chalcopyrite and gangue. (above information paraphrased from Harris 1972, p.18-19).

HISTORY OF DEVELOPMENT:

1927: The property was trenched and surveyed by Dunlop Consolidated Mines Ltd.

1968: Selco Exploration Company Ltd. carried out Airborne INPUT electromagnetic survey, and drilled 4 holes that totalled 1,908 feet.

1969-71: Shaft sunk 717 feet. Levels at 50, 100, 150, 300 and 600 feet. Inclined ramp driven from surface. About 96 diamond drill holes totalling 50,000 feet. Construction of a 500 ton mill. Production started mid-1971. Work by Selco Exploration Company Ltd. and Selco Minine & Development Ltd.

1974: The shaft was deepened and is expected to ultimately reach the 2,100 foot level.

MAP REFERENCES:
OGS Map P.1543 (1:250,000) 1978
OGS Map P.2081, 1 inch to 1/4 mile (1:15,840) 1980
ODM Map P.1059, 1 inch to 1/4 mile (1:15,840) 1975
ODM Map 2175, 1 inch to 4 miles (1:253,440) 1970
ODM Map P.592, 1 inch to 1/4 mile (1:15,840) 1970
ODM Map P.406, 1 inch to 2 miles (1:126,720) 1967
ODM Map P.1975, 1 inch to 1 mile (1:63,360) 1978
ODM Map P.901, 1 inch to 1/4 mile (1:15,840) 1973

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File South Bay, District Kenora, Patricia Portion, Township Dent
OGS AFRO Files Dent Tp. Drill Logs Nos. 10, 11 & 14
Resident Geologist's Files, OMNR, Red Lake: South Bay Mine, 52N/2SE
CDEMR,GSC Econ. Geol. Rept. No. 28, p.101-102 (1975)
Can. Mines Branch TB 146, p. 16-19 (1972)
24 Inter. Geol. Cong. Rept. Sec. 4, p. 299-308 (1972)
C.I.M. Conference Paper 34 (1973)
ODM MP 6, p. 10-69 (1969)
ODM MRC 12, p. 147 (1969)
ODM Vol. 48, pt. 8 (1939)

NAME: NORTHWEST EXPLORERS (1967) LIMITED py, mag, Sn, Cu, Zn

COMMODITIES: Pyrite, magnetite, tin, copper, zinc

STATUS: Minor Occurrence

NTS: 52N/7SE

DESCRIPTION: Listed under MAGNETITE - Northwest Explorers (1967) Limited

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NTS 52O

NAME: NEW JERSEY ZINC EXPLORATION COMPANY (CANADA) LTD. Cu, Ni, Co, Pb, py

COMMODITIES: Copper, nickel, cobalt, lead, pyrite

STATUS: Minor Occurrence

NTS: 52O/11SW

LATITUDE: 51° 33' 45"N LONGITUDE: 91° 19' 30"W

LOCATION: Approximately 56 miles northwest of Pickle Crow on the southeast shore of McVicar Lake.

DESCRIPTION:

GEOLOGY: The property is underlain by Early Precambrian (Archean) metavolcanics and metasediments. These rocks form an east-west trending basin structure known as the Shonia Lake greenstone belt. Mafic intrusives occur next to the southern contact with massive quartz monzonite and granodiorite.

"The major zone of mineralization occurs along a southeast to east-trending brecciated, sheared contact situated between a large metagabbro pluton and mafic metavolcanics to the north. The trenched areas are greatly obscured by limonitic stains rendering it difficult to unravel exact relationships. Host rocks of the mineralization consist predominantly of coarse-grained, massive, porphyritic, dark greenish-black (fresh surface) metagabbro. Light greenish white plagioclase phenocrysts typically measure about 5 mm in diameter and range up to 15 mm in diameter. Generally these phenocrysts comprise between 20 and 30 percent of the rock. A fine-grained equigranular metagabbro phase was noted to occur locally, intruded into the porphyritic unit. The adjacent mafic metavolcanic rocks dip to the south at approximately 65°. Fenwick (1970) indicates that mafic pyroclastic rocks varying from tuff to pyroclastic breccia are exposed contiguous to the main mineralized zone although these rocks could represent the products of tectonism. Sparse dykes of light pink to white weathering, massive, leucocratic slightly porphyritic trondhjemite were observed to represent the latest intrusive event in the immediate area." (Sage and Breaks 1976, p.258).

MINERALOGY: "The observed mineralization appears to occur in two distinct modes:

(1) as massive sulphide segregations which almost exclusively consist of fine-grained to coarse-grained pyrrhotite, and,

(2) as disseminated and fracture fillings of pyrrhotite and chalcopyrite in porphyritic and equigranular metagabbro.

"The former category occurs in relatively large lenticular masses varying up to five feet (1½ meters) in length. Blocky to ovoid fragments of both metagabbro phases are locally discernable in the massive sulphide sections. Some specimens of the massive sulphide display a peculiar cross-hatching, apparently defined by two fracture sets intersecting approximately at right angles.

"In the latter category the sulphide content is considerably lower and locally approaches 20 percent of the host rock. Both phyrrotite (sic) and chalcopyrite occur as fine to medium size grains disseminated amongst the silicate phases.

"A series of six grab samples representative of the variation in type and content of the sulphide mineralization were selected by the writer, for analysis by the Mineral and Research Branch, Ontario Division of Mines.... The results generally confirm the wide range in copper and (sic) nickle values earlier observed by Fenwick (pers. comm.). Two massive sulphide specimens returned the highest nickel values of 0.89 and 1.48 percent with palladium values up to 0.03 ounces per ton. Polished section microscopy and X-ray diffractometry of the specimen containing the highest nickel value confirmed the nickel phase to be violarite $(Ni,Fe)_3S_4$, not pentlandite as was previously suspected ...the observed mode of occurrence of violarite, i.e., as narrow veinlets or seams showing cubic cleavage and situated between coarsely crystalline pyrrhotite grains. The latter mineral often shows prominent basal parting. Violarite commonly occurs as a replacement of pentlandite as exemplified by the Umex Thierry deposit. No relict pentlandite was indicated in the cursory laboratory investigation. No other sulphide phases of any importance were detected although high trace concentrations of cobalt in some samples (up to 1200 ppm) may reflect erratic grains of seigenite, a nickel bearing variety of linnaeite (Co_3S_4), a mineral crystallographically related to violarite. Emission spectroscopic analyses on all grab specimens indicated an absence of any other metals of economic importance." (Sage and Breaks 1976, p.360).

HISTORY OF DEVELOPMENT:

1956-61: Kenlew Mines Ltd. did trenching, ground electromagnetic and self potential surveys on the property. 1911 feet of diamond drilling was also done.

1962: Kerr Addison Gold Mines Ltd. carried out magmetometer and electromagnetic surveys and 535 feet of diamond drilling.

1969: Geological, ground electromagnetic, magnetic and geochemical surveys were done.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 39d, 1 inch to 1 mile (1:63,360) 1930

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Red Lake:
McVicar Lake Prospect, 52O/11SW
OGS Toronto Geoscience Data Centre, File McVicar Lake, District Kenora, Patricia Portion, 51°30', 91°15
OGS Toronto AFRO Files, 63.1164, 63.2563, McVicar Lake Area, Drill Log Repts. No. 10 & 11
ODM OFR 5180, p. 357-362 (1976)
ODM MRC 12, p. 178 (1969)
ODM Vol. 39, pt. 3, p. 1-21 (1930)

(Minor Occurrence) Cu, py, Mo, fl

COMMODITIES: Copper, pyrite, molybdenum, fluorite

STATUS: Minor Occurrence

NTS: 52O/4NE

LATITUDE: 51° 09' 05"N LONGITUDE: 91° 34' 15"W

LOCATION: About 48 miles southwest of Pickle Crow, in the middle of North Bamaji Lake.

DESCRIPTION:

GEOLOGY: The basement rocks of the area are comprised of Early Precambrian metavolcanics that have been intruded by granitic rocks and porphyries.

The deposit occurs in an epizonal intrusion known as the Bamaji Lake Complex. The "Complex is possibly composite in character, although the major portion of the area observed at North Bamaji Lake is remarkably homogeneous and trondhjemitic in composition. At the west end of North Bamaji Lake and in the vicinity of Senior Lake, there is some evidence for quartz diorite to quartz monzonite phases within the Complex, with quartz monzonite being more common in the western portion or Senior Lake area of the Complex.

"The best observed portion of the Complex is a fine- to medium-grained, generally cataclastic, very homogeneous trondhjemite centered in North Bamaji Lake and extending westward and northward to Wesleyan Lake. The fine grained locally porphyritic texture and light whitish-grey weathering surface are characteristic of this Complex.

"A typical visually estimated mode is: quartz 35 percent, plagioclase (An_{28}) 50 percent, biotite 10 percent, muscovite 5 percent. Plagioclase of oligoclase composition varies from An_{24} to An_{28}. Generally, biotite exceeds muscovite, but in some cases, the above mica percentages are reversed." (Sage and Breaks 1976, p.310).

MINERALOGY: Fine-grained fluorite and pyrite accompanied with very fine-grained molybdenite, occurs within a medium- to coarse-grained quartz veinlet less than 10 inches in width. Sheared sericitic masses and concentrations of a pale whitish feldspar borders the vein.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

SELECTED REFERENCES: ODM OFR 5180, p. 309-319 (1976)
ODM Vol. 44, pt. 6, p. 53-73 (1935)
OGS Toronto Geoscience Data Centre, File Island-North Bamaji Lake, District Kenora, Patricia Portion Lat. 51°00', Long. 91°30'

NAME: INITIATIVE EXPLORATION LIMITED goe, py

COMMODITIES: Goethite, pyrite

STATUS: Minor Occurrence

NTS: 52O/12SE

LATITUDE: 51° 34' 45"N LONGITUDE: 91° 37' 00"W

LOCATION: About 105 miles northeast of Red Lake, 2 miles north of the western part of Lang Lake, and on the eastern shore of Bowen Lake.

DESCRIPTION: See MEXTOR MINERALS LIMITED listed under GRAPHITE for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p.241.

SELECTED REFERENCE: OGS Toronto AFRO Stoughton Lake Report No. 2.345, 2.369

NAME: SELCO EXPLORATION COMPANY LIMITED po, py, gf

COMMODITIES: Pyrrhotite, pyrite, graphite

STATUS: Minor Occurrences

NTS: 52O/1SW

LATITUDE: 51° 01' 45"N LONGITUDE: 90° 19' 45"W
51° 02' 07" 90° 20' 25"
51° 00' 58" 90° 20' 57"

LOCATION: Approximately 31 miles south of Pickle Lake and 2 miles east of Riach Lake. The claim group is centred about Hughes Lake immediately north of Pashkokogan Lake.

DESCRIPTION:

GEOLOGY: The bedrock is of Precambrian age and contains an older assemblage of metasediments, metavolcanics and associated basic intrusions, younger acid intrusions and diabase.

The metasediments and metavolcanics are interlayered. The metasediments, forming the lower part of the sequence, consist mainly of quartz-mica schist, arkose, greywacke and banded iron formation. These "are conformably overlain by a substantial thickness of assorted acid to basic volcanic tuff flows, and breccias. Occasional dikes, sills, and larger irregular masses of metadiorite and metagabbro are present.

"Granitic intrusions, ranging from narrow dikes up to large stocks 6 miles in diameter, are present. In addition, granite gneiss and migmatite, part of a large regional mass, underlie the south margin of the area. A single dike of fresh diabase was observed." (Goodwin 1965, p.vi).

The occurrences are found in a zone of mafic to intermediate metavolcanics. The rocks are generally fine-grained, foliated to massive, greenish to green-black on weathered surface and greenish black on fresh surface.

The metavolcanics are generally composed of fine- to medium-grained hornblende and plagioclase in roughly equal proportions and locally mineral segregation or banding is apparent. This zone of rock displays an abundance of medium- to coarse-grained, euhedral to subhedral plagioclase phenocrysts which appear slightly oriented parallel to the strike of the unit.

MINERALOGY: Disseminated sulphides in small conformable zones are present in the area. The zones are usually 1 to 5 feet wide and 20 to 80 feet long. They contain pyrite, pyrrhotite, and minor amounts of magnetite and graphite.

HISTORY OF DEVELOPMENT: 1971: Ground geophysical survey and 6 holes totalling 1,917 feet were drilled by Selco Exploration Company Limited.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933
ODM Map 31f, 1 inch to 2 miles (1:126,720) 1923
CDM Map 51, 1 inch to 4 miles (1:253,440) 1961
ODM Map 2094, 1 inch to 1/2 mile (1:31,680) 1965
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

SELECTED REFERENCES: ODM OFR 5180, p. 389-413 (1969)
OGS Toronto AFRO File Riach Lake Rept. No. 2.571
ODM Vol. 42, pt. 6, p. 1-20 (1934)
ODM Vol. 31, pt. 8, p. 33-38 (1923)
ODM PR 1962-5, p. 1-10 (1962)
ODM GR 42, p. vi,3-38,55 (1965)
Resident Geologist's Files, OMNR,
Sioux Lookout: 52O/1SW/1SE

(Minor Occurrences) (1) po, py, gf, cp, mag, pent

COMMODITIES: Pyrrhotite, pyrite, graphite, chalcopyrite, magnetite, pentlandite

STATUS: Minor Occurrences

NTS: 52O/1SE

LATITUDE:		LONGITUDE:	
	51° 03' 15"N		90° 06' 15"W
	51° 02' 12"		90° 12' 45"
	51° 01' 05"		90° 14' 00"
	51° 00' 55"		90° 14' 58"
	51° 05' 57"		90° 01' 35"
	51° 07' 01"		90° 03' 45"
	51° 07' 01"		90° 01' 35"

LOCATION: About 30 miles south of Pickle Lake.

DESCRIPTION: See SELCO EXPLORATION COMPANY LIMITED for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p. 232.

NAME: UMEX CORPORATION LIMITED py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrences

NTS: 52O/2NW

LATITUDE:		LONGITUDE:	
	51° 13' 15"N		90° 39' 15"W
	51° 12' 25"		90° 38' 35"

LOCATION: About 32 miles southwest of Pickle Lake and 1 mile south of Duffel Lake.

DESCRIPTION:
GEOLOGY: The area is underlain by Keewatin metavolcanics, interflow sediments, acid and basic igneous rocks. The volcanic rocks are mainly basic in composition and most are altered to amphibolite. Local bands of tuff and quartz-mica schist are common. The quartz-mica schist may have been derived from felsic volcanics. Numerous calcium carbonate bands up to one inch wide are interbedded with the schists. Large granitic masses occur within the greenstone belt. Abundant granitic stringers in the greenstone suggest the granite is intrusive. Where observed, the granite is coarse-grained, pink to grey in colour and fresh in appearance. The volcanic and sedimentary rocks have a general east-west strike and are steeply dipping.

The deposit occurs in a metavolcanic belt marginal to the Duffel Lake stock. The belt trends east-west and is of variable width. A thin section examination of the rock showed it to be silicified and it was visually estimated to consist of 70-80 percent partly chloritized biotite, with 20-30 percent vein quartz and 10-20 percent inequigranular fine- to medium-grained quartz. The rock is dark grey brown with well-developed foliation on the fresh surface and weathers rusty brown. Moderate shearing is evident with the foliation being defined by micaceous minerals.

MINERALOGY: Pyrite and graphite occur in sheared volcanics with bands of quartz-carbonate and abundant biotite totalling about 8-10 feet in width.

HISTORY OF DEVELOPMENT: 1972-73: Airborne magnetometer survey was done.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES:
ODM OFR 5180, p. 129-140 (1976)
OGS Toronto AFRO File 2.1212
ODM Vol. 42, pt. 6, p. 1-17 (1932)

(Minor Occurrence) (2) py, gf, po

COMMODITIES: Pyrite, graphite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52O/3NE

LATITUDE:	51° 12' 38"N	LONGITUDE:	91° 00' 15"W
	51° 12' 15"		91° 06' 35"
	51° 11' 25"		91° 03' 20"

LOCATION: Approximately 45 miles southwest of Pickle Lake, 4 miles northeast of Drum Lake, and about 2 miles south and north of McVean Lake.

DESCRIPTION:

GEOLOGY: The occurrences are found in a zone of mafic to intermediate volcanic rocks that weather "dark to light greenish grey with fresh surfaces of dark greenish grey. These rocks are foliated to massive with pillowed types noted in the east central portion of the area south of McVean Lake. Commonly, the metavolcanics are aphanitic to fine-grained, but can approach a medium grain size, particularly in the pillowed outcrops. Mineralogically, hornblende and plagioclase are the dominant constituents with chlorite being common within the central portion of the belt.

"Pillow structures vary in development from poorly defined to well preserved. The shapes of these pillows are elongated and not generally conducive to reliable top determinations; only two top determinations were made, both suggesting tops to the south. The persistent occurrence of pillowed metavolcanics along a northwest-southeast line about 2 miles (3.2 km) south of McVean Lake may indicate that the regional stratigraphy in this area is trending largely southeastward, and generally parallel to the schistosity. Similar bedding-schistosity trends occur in metasediments approximately 2 miles (3.2 km) east of McVean Lake." (Sage and Breaks 1976, p.335-336).

MINERALOGY: Diamond drill results showed minor patches of graphitic alteration, thin magnetic-bearing bands and some blebs of sulphides.

HISTORY OF DEVELOPMENT: 1970: Ground magnetic and electromagnetic surveys were carried out.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
OGS Map P.1504, 1 inch to 1/4 mile (1:15,840) 1977
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

SELECTED REFERENCES: ODM OFR 5180, p. 335-346 (1976)
ODM Vol. 44, pt. 6, p. 53-75 (1935)
OGS Toronto AFRO File 2.104
Resident Geologist's Files, OMNR, Sioux Lookout:
520/3NE, Drum Lake Report

NAME: COMINCO LIMITED po, gf, py, cp

COMMODITIES: Pyrrhotite, graphite, pyrite, chalcopyrite

STATUS: Minor Occurrences

NTS: 520/3SE

LATITUDE: 51° 00' 30"N LONGITUDE: 91° 06' 30"W
51° 01' 00" 91° 06' 25"

LOCATION: On the east shore of Johnston Bay of Lake St. Joseph, approximately 70 miles northeast of Sioux Lookout and 50 miles southwest of Pickle Lake.

DESCRIPTION:

GEOLOGY: The occurrences are found in a zone of mafic to intermediate volcanic rocks that weather "dark to light greenish grey with fresh surfaces of dark greenish grey. These rocks are foliated to massive with pillowed types noted in the east central portion of the area south of McVean Lake. Commonly, the metavolcanics are aphanitic to fine-grained, but can approach a medium grain size, particularly in the pillowed outcrops. Mineralogically, hornblende and plagioclase are the dominant constituents with chlorite being common within the central portion of the belt.

"Pillowed structures vary in development from poorly defined to well preserved. The shapes of these pillows are elongated and not generally conducive to reliable top determinations; only two top determinations were made, both suggesting tops to the south. The persistent occurrence of pillowed metavolcanics along a northwest-southeast line about 2 miles (3.2 km) south of McVean Lake may indicate that the regional stratigraphy in this area is trending largely southeastward, and generally parallel to the schistosity. Similar bedding-schistosity trends occur in metasediments approximately 2 miles (3.2 km) east of McVean Lake." (Sage and Breaks 1976, p.335-336).

MINERALOGY: Diamond drill results showed minor patches of graphitic alteration, thin magnetic-bearing bands and some blebs of sulphides.

HISTORY OF DEVELOPMENT:

1970: Diamond drilling totalling 597 feet was carried out by Cominco Ltd.

1977-78: Geophysical survey and diamond drilling were done.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Sioux Lookout:
520/3SE, Johnston Bay Report
ODM OFR 5180, p. 338-347 (1976)
ODM Vol. 44, pt. 6, p. 53-75 (1935)
ODM GR 70 (1969)

NAME: NEW CONEX CANADIAN EXPLORATION LIMITED
UNION MINIERE EXPLORATIONS and MINING CORPORATION LIMITED

py, gf, po, cp, sp

COMMODITIES: Pyrite, graphite, pyrrhotite, chalcopyrite, sphalerite

STATUS: Minor Occurrences

NTS: 52O/7SW

New Conex:	LATITUDE:	51° 17' 00"N	LONGITUDE:	90° 53' 15"W
Union M.:		51° 17' 30"		90° 46' 45"
Union M.:		51° 18' 01"		90° 46' 35"

LOCATION: About 30 miles west of Pickle Lake.

DESCRIPTION:

GEOLOGY: The area is underlain by Keewatin metavolcanics, interflow sediments, acid and basic igneous rocks. The volcanics are mainly basic in composition and most are altered to amphibolite.

The occurrences are found in a zone of mafic to intermediate (massive to foliated basalt and andesitic flows). Local bands of tuff and quartz-mica schist are common. The quartz-mica schist may have derived from felsic volcanics. Numerous calcium carbonate bands up to one inch wide are intercalated with the schists. Large granitic masses occur within the greenstone belt. Abundant granitic stringers in the greenstone suggest the granite is intrusive. Where observed the granite is coarse-grained, pink to grey in colour and fresh in appearance. The volcanic and sedimentary rocks have a general east-west strike and are steeply dipping. The rocks display a well developed foliation and relatively few primary structures. Some deformed pillow structures are present.

Generally metamorphosed to upper green schist, lower amphibolite grade of regional metamorphism, a thin section of mafic metavolcanic rocks collected in the southwest corner of Bancroft Lake is visually estimated to contain 40-50 percent hornblende, 50-60 percent fine-grained untwinned plagioclase, and 5-10 percent quartz.

HISTORY OF DEVELOPMENT:

1969: Airborne and ground electromagnetic surveys were carried out by New Conex.

1971: Airborne combined electromagnetic and magnetic surveys were done.

REMARKS: Analysis of airborne surveys revealed potential massive sulphide deposits, however, the 18 anomalous trends that were investigated on the ground proved inconclusive.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

SELECTED REFERENCES:
OGS Toronto AFRO Files 63.2807, 2.687
ODM OFR 5180, p. 130-137 (1976)
ODM Vol. 44, pt. 6, p. 53-73 (1935)

NAME: KOVAL-OHMAN PROSPECT

Au, asp, py, po, gf

COMMODITIES: Gold, arsenopyrite, pyrite, pyrrhotite, graphite

STATUS: Major Occurrence

NTS: 52O/7SE

LATITUDE: 51° 15' 50"N LONGITUDE: 90° 33' 50"W

LOCATION: Approximately 28 miles southwest of Pickle Crow north of Lake St. Joseph and about 2 miles south of Bancroft Lake.

DESCRIPTION:

GEOLOGY: The area is underlain by Precambrian metasedimentary rocks, of the Dempster Lake-Pickle Lake Belt. As part of one of several subprovinces of the Superior structural province, this belt is predominated by mafic metavolcanics with local intercalations of metasediments of probably greywacke composition. The metasediments of the property concerned consist mainly of a biotite-quartz-feldspar schist.

The property is underlain by two main rock types, the greenstone and the tuffs-sediments. The greenstones are mainly andesitic and cover the northwest part, but scattered flows occur in other parts of the property. The tuffs and sediments cover the south and southeast section of the property and are highly altered, thin banded assemblages with a thickness of at least 2500 feet. A few andesitic and rhyolite flows are interspersed among the tuffs and sediments. Dikes of varying widths and generally quite acidic in composition are common through the area. The formation in general strikes between N60 and N75°E with steep dips to the south. The ore zone occurs along the contact of a very light siliceous rock, elliptical in shape, and a dark tuffaceous rock with values occurring in both types, but always quite close to the contact and high values always being in the dark tuffaceous side. North of the siliceous zone is a bank of slate and slaty greywackes with narrow cherty bands, in all having a thickness of at least 500 feet. South of the ore zone the rock type varies from dark tuffs to brown sediments with interbedded rhyolitic sections and some andesitic flows.

MINERALOGY: Mineralization in the ore zone is mainly pyrite and pyrrhotite with the best values occurring with fine needles of arsenopyrite.

Gold values have been obtained in recurring lenses, apparently made up of pyritized quartz fillings and silicified structures, along a contact zone between light and dark sedimentary rocks.

HISTORY OF DEVELOPMENT:

1953-54: Extensive trenching and 87 diamond drill holes totalling 20,885 feet were completed by Hasaga Gold Mines Limited.

1974: Geological, magnetometer, and I.P. surveys were carried out.

1975: Geological mapping, geophysical survey and a drilling exploration program were completed by Little Long Lac Gold Mines Limited.

REMARKS: Five ore zones have been outlined on the property. These contain quartz veins which are usually less than a foot wide. Values from drilling ranged from 0.196 ounce/ton to 0.929 ounce/ton Au over lengths of 16.6 feet and 8 feet respectively. Drilling outlined the deposit as containing 149,000 tons averaging 0.19 ounces of gold per ton and 41,000 tons averaging 0.14 ounces of gold per ton in a length of about 300 feet.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.1502, 1 inch to 4 miles (1:253,440) 1977
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
CDM Map 51-1960, 1 inch to 4 miles (1:253,440) 1961

SELECTED REFERENCES:
ODM OFR 5180, p. 139-140 (1976)
ODM MRC 13, p. 245 (1971)
ODM Map P.809 Marginal Notes (1973)
OGS Toronto Geoscience Data Centre, File Koval-Ohman, Kenora (Patricia Portion), Lat. 51°15', Long. 90°30'
OGS Toronto AFRO Files 2.1933, 2.1934, 2.1935, Matapesatakun Bay Area Drill Reports No. 10, 11
ODM Vol. 44, pt. 6, p. 53-73 (1935)

NAME: UMEX CORPORATION LIMITED gf, py, po

COMMODITIES: Graphite, pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52O/8NW

LATITUDE: 51° 29' 52"N LONGITUDE: 90° 19' 05"W
51° 29' 45" 90° 18' 08"

LOCATION: Approximately 5 miles northwest of Pickle Lake on the north shore of Kapkichi Lake.

DESCRIPTION:

GEOLOGY: The showings occur as small mafic to ultramafic masses. These units intrude massive to banded, locally pillowed amphibolitized mafic metavolcanics. The metavolcanics are generally fine-grained, schistose and weather grey-black. The following information is quoted from Sage and Breaks (1976, p.193-194).

"A description of the geology and mineralization of the ultramafic bodies encountered by Union Miniere and Exploration Corporation Limited is adequately given by Verbeek (UMEX Corp. personal communication):

> The lenses are of various shapes, attitudes, and sizes. The largest, which lies entirely under Kapkichi Lake, is a lens approximately 2,000 feet by 1,000 feet in area, up to 800 feet thick, and dipping gently to the north. It is quite uniformly mineralized, with grades of about 0.45% Cu, and 0.12% Ni. The other lenses carry closely similar grades of mineralization, although sections of lower grade are common, particularly in the smaller masses.
>
> The deposits consist of lenticular bodies of mineralized peridotite with minor gabbro, occurring in a series of amphibolites which probably represent altered basic volcanics, and are locally intruded by small masses of granite. None of the mineralized rocks are found in outcrop. They were found by diamond drilling of magnetic anomalies, some of which also gave an electromagnetic response.
>
> The peridotite-gabbro lenses are all mineralized to varying degrees, but most carry a rather homogeneous disseminated sulphide mineralization. The sulphides, in order of abundance, are: pyrrhotite, chalcopyrite, cubanite, and pentlandite. Magnetite is also present and a little pyrite is found in some altered rocks. Massive sulphides occur locally in veinlets a few inches thick, but do not contribute substantially to the overall grades of copper and nickel. Non-mineralized peridotite is rare, and the mineralization also very seldom extends outside the ultrabasic rocks, although granite veins cutting the mineralized peridotite commonly carry a little chalcopyrite for a few feet close to their margins.

"While these deposits are not economically viable at present due to low grades and potential milling problems related to the very fine grain size of contained sulphides, a UMEX annual report stated that

> the exploration of the Thierry deposit would constitute an element in favour of the future development of these low grade ores.

"No tonnage figures have been released to date." (Sage and Breaks 1976, p.193-194).

HISTORY OF DEVELOPMENT:

1970: UMEX carried out ground magnetic and electromagnetic surveys.

1971: Geophysical and airborne electromagnetic surveys were done.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES: ODM OFR 5180, p. 141-213 (1976)
OGS Toronto AFRO Files 2.442, 2.677
ODM Vol. 42, pt. 6, p. 1-20 (1932)

NAME: CONWEST EXPLORATIONS COMPANY LIMITED py, gf, po

COMMODITIES: Pyrite, graphite, pyrrhotite

STATUS: Minor Occurrences

TOWNSHIP: Ponsford

NTS: 52O/8NE

LATITUDE: 51° 20' 45"N LONGITUDE: 90° 12' 40"W
51° 29' 58" 90° 12' 25"

LOCATION: About 3 miles north of Pickle Lake.

DESCRIPTION:

GEOLOGY: The area is underlain by Keewatin volcanic rocks and sediments, post Keewatin granite, acid porphyry, aplite, rhyolite and felsite, (possibly Algoman) and Keweenawan diabase and lamprophyre with the oldest being the Keewatin. The Keewatin are generally basic flows (andesite to basalt) which have been altered and sheared. Interbedded are iron formation, quartzite, greywacke and argillite.

The rocks have been originally folded and intruded by granite which in the Pickle Lake area create a ring of volcanics with granite in the centre with branching offshoots of volcanics extending to the northeast and southwest.

Sulphides were observed in both volcanic and sedimentary rocks which strike northwest-southeast but minor drag fold and local changes in strike are common. The rocks generally dip to the northeast.

MINERALOGY: Mineralization consists of disseminated pyrrhotite, pyrite and chalcopyrite. Some graphite alteration, quartz veins and blebs of quartz up to 5 inches are present in rock matrix. Patches of remobilized carbonate and minor and massive sulphide veins up to 2 inches in width were also observed.

HISTORY OF DEVELOPMENT:

1971: Airborne magnetic, ground geophysical, and electromagnetic surveys were done by Conwest Explorations Co. Ltd.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES: ODM OFR 5180, p. 141-213 (1976)
OGS Toronto AFRO Files: Dona Lake Area Technical Survey Files 2.737, 2.742 & Kapkichi Lake Area Technical Survey Files 2.677, 2.625
ODM Vol. 47, pt. 3, p. 1-65 (1938)
ODM OFR 5152, p. 14-108 (1976)
ODM Vol. 39, pt. 2, p. 1-35 (1930)

NAME: JAMES BAY MINING CORPORATION LIMITED py, gf, po, cp

COMMODITIES: Pyrite, graphite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

TOWNSHIP: Connell

NTS: 52O/8NE

LATITUDE: 51° 28' 15"N LONGITUDE: 90° 09' 30"

LOCATION: Southwestern corner of township.

DESCRIPTION:

GEOLOGY: The area is underlain by Keewatin volcanic rocks and sediments, post Keewatin granite, acid porphyry, aplite, rhyolite and felsite, (possibly Algoman) and Keweenawan diabase and lamprophyre with the oldest being the Keewatin. The Keewatin are generally basic flows (andesite to basalt) which have been altered and sheared. Interbedded are iron formation, quartzite, greywacke and argillite.

The rocks have been originally folded and intruded by granite which in the Pickle Lake area create a ring of volcanics with granite in the centre with branching offshoots of volcanics extending to the northeast and southwest.

Sulphides were observed in both volcanic and sedimentary rocks which strike northwest-southeast but minor drag fold and local changes in strike are common. The rocks generally dip to the northeast.

MINERALOGY: Mineralization consists of disseminated pyrrhotite, pyrite and chalcopyrite. Some graphite alteration, quartz veins and blebs of quartz up to 5 inches are present in rock matrix. Patches of remobilized carbonate and minor and massive sulphide veins up to 2 inches in width were also observed.

HISTORY OF DEVELOPMENT:

1971: Airborne magnetic, ground geophysical, and electromagnetic surveys were done by Conwest Explorations Co. Ltd.

Circa 1971: A trench 59 feet long and 5 1/2 feet deep was dug. About 35 tons of material was removed. Plugger holes totalling 59 feet were sunk.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES:
ODM OFR 5180, p. 141-213 (1976)
OGS Toronto AFRO Files: Dona Lake Area Technical Survey Files 2.737, 2.742 & Kapkichi Lake Area Technical Survey Files 2.677, 2.625
ODM Vol. 47, pt. 3, p. 1-65 (1938)
ODM OFR 5152, p. 14-108 (1976)
ODM Vol. 39, pt. 2, p. 1-35 (1930)

(Minor Occurrence) (3) py, po, gf

COMMODITIES: Pyrite, pyrrhotite, graphite

STATUS: Minor Occurrence

NTS: 52O/11SW

LATITUDE: 51° 34' 43"N LONGITUDE: 91° 22' 24"W

LOCATION: Approximately 3 miles north of McVicar Lake.

DESCRIPTION: See NEW JERSEY ZINC EXPLORATION COMPANY (CANADA) LIMITED listed under COBALT for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES p. 229.

SELECTED REFERENCE: OGS Toronto AFRO File McVicar Lake Area, Diamond Drilling Reports 1-4

NAME: MEXTOR MINERALS LIMITED po, py, cp, gf

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite, graphite

STATUS: Minor Occurrences

NTS: 52O/12NE

LATITUDE: 51° 37' 40"N LONGITUDE: 91° 35' 20"W
51° 37' 42" 91° 35' 00"

LOCATION: Northwest corner of Saddle Creek, approximately 60 miles west from Pickle Lake.

DESCRIPTION:

GEOLOGY: The showing is found in the area of the Cat Lake-Williams Lake Batholithic Complex which "is comprised of an overwhelming abundance of porphyritic potassic granitic rocks, as confirmed by extensive feldspar staining on slabbed hand specimens and by major element chemical analyses... the predominant rock type consists of coarse-grained, massive to weakly foliated porphyritic biotite and hornblende-biotite quartz monzonite to granodiorite. In certain instances biotite-hornblende porphyritic phases are present. Considerable variation with regards to colour index, size and abundance of potash-feldspar phenocryst is notable. Abundance of visible quartz, usually 25 to 30 percent constitutes an additional characteristic feature. Fresh surface colours commonly vary from pinkish grey to bright brick orange. Euhedral to subhedral potash feldspar phenocrysts which comprise up to 30 percent of the rock occasionally display well-developed zonation on slabbed surfaces. Seriate textures are particularly commonplace with the size of potash feldspar phenocrysts progressively grading from typical length of 2 to 3 cms down to matrix grain sizes in the order of 4 to 5 mms. The largest phenocryst observed by this survey measured 5 cms in length. Colour of these phenocrysts varies from light grey to deep brick orange, depending upon the quantity of microcrystalline hematite contained within crystal structure. These phenocrysts appeared to have crystallized relatively early under magmatic conditions as indicated by common presence of crystal facies, zonation and almost total lack of poikilitic inclusions other than erratic grains of earlier formed minor accessory minerals. Igneous platy-flow foliations are widespread and evidenced by trachytic alignment of phenocrysts and preferred orientation of xenoliths. A later generation potash feldspar is occasionally present in the matrix, occurring as irregular interstitial, inclusion-rich stringers and blebs. Matrix of these rocks is medium- to coarse-grained and dominated by a hypidiomorphic- to allotriomorphic-granular aggregation of plagioclase, quartz, and ferromagnesian minerals. Creamy white to faintly pink plagioclase very rarely attains dimensions of the potash feldspar phenocrysts.

"Colour index of the porphyritic phase ranges from 2 to 30 corresponding to a general concomitant decrease in visible quartz abundance. Usually colour index is less than 10. Biotite is the most abundant and prevalent characteristic accessory, although appreciable amounts of hornblende occur in rocks with relatively high colour index and low quartz contents." (Sage and Breaks 1976, P.455-457).

MINERALOGY: "Magnetite, sphene, apatite, garnet, and (sic) apatite represent the minor accessory minerals, listed in order of approximate decreasing abundance. The abundance of magnetite varies appreciably (up to 10 percent) and generally is directly proportional to colour index, as qualitatively determined by degree to which a suspended hand magnet is attracted to hand specimens of approximately similar size. Sphene is often altered to crumbly straw yellow coloured material, possibly caused by radioactive disintegration." (Sage and Breaks 1976, p.457-458).

HISTORY OF DEVELOPMENT: 1969: Electromagnetic and magnetic surveys carried out by Mextor Minerals.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1975
ODM Map P.581, 1 inch to 1/2 mile (1:31,680) 1970

SELECTED REFERENCES:
ODM OFR 5180, p. 455-458 (1976)
ODM Vol. 39, pt. 3, p. 1-21 (1931)
OGS Toronto AFRO File 63.2543

NAME: UMEX CORPORATION LIMITED po, py, mag, hem

COMMODITIES: Pyrrhotite, pyrite, magnetite, hematite

STATUS: Minor Occurrence

NTS: 52O/8NW

LATITUDE: 51° 29' 00"N LONGITUDE: 90° 21' 25"W

LOCATION: Approximately 6 miles northwest of Pickle Lake and on the north shore of Kapkichi Lake.

DESCRIPTION:

GEOLOGY: The occurrence is situated near the greenstone granite contact in the area. "The dominant characteristic of the contact zone is migmatite and granitic intrusion. This contact zone varies from several feet (m) to several hundreds of feet (m) in width. The granitic material as determined visually from its mineralogy varies from trondhjemite to quartz monzonite in composition. The intrusions are both concordant and discordant, and occur as dikes, sills, stringer veins, and "lit par lit" injections up to several 10C feet (304.8 m) in width marginally to the belt. On the southwest shore of Kapkichi Lake xenolithic quartz monzonite (visual identification) extends for several hundred feet across the metavolcanic-granite contact. The xenoliths vary from distinctly angular to partially assimilated schlieren of biotite-amphibolites. Locally the concentration of xenolith exceeds 25 percent and locally may be classed as schollen structure (Mehnert, 1968, p.10)....

"The greenstone-granite-contacts, where examined by thin section almost universally display cataclastic features....

"Cataclastic textures along margins of the greenstones-granite contact have been described in the Kapkichi Lake area by Verbeck et al. (1972, p.139) as follows: Wall rocks: On both sides the orebody is bordered by amphibolites, which are typically schistose and well lineated. To the north of the sulphide zone, sills, and lenses of granite become abundant. Some of the large granite bands show cataclastic textures, and are locally converted to a crushed, foliated rock resembling a mylonite. (Sage and Breaks 1976, p.186-188).

MINERALOGY: "These samples contain quartz with wavy extinction and oblate porphyroclasts of plagioclase feldspar setting in a matrix of granoblastic quartz and plagioclase. The micaceous minerals (biotite) are euhedral and define the foliation, however, the quartz and feldspars are allotriomorphic. Some of the larger plagioclase grains display bent twin lamellae and microfaulting. Texturally some of the rocks approach a protomylonite, Higgins (1971)." (Sage and Breaks 1976, p.187).

HISTORY OF DEVELOPMENT:

1950: Diamond drilling totalling 595 feet was done by Conwest Mines.

1971: Umex conducted electromagnetic and magnetic surveys.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

SELECTED REFERENCES: ODM OFR 5180, p. 141-213 (1976)
OGS Toronto AFRO Technical Survey Files 2.442, 63.2648
ODM Vol. 47, pt. 3, p. 1-65 (1938)
ODM Vol. 42, pt. 6, p. 1-20 (1932)

(Minor Occurrences) (1) po, py, gf, cp, mag, pent

COMMODITIES: Pyrrhotite, pyrite, graphite, chalcopyrite, magnetite, pentlandite

STATUS: Minor Occurrences

NTS: 52O/1SE

DESCRIPTION: Listed under GRAPHITE - (Minor Occurrences) (1)

(Minor Occurrences) (2) py, po, cp, mag, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite, sphalerite

STATUS: Minor Occurrences

NTS: 52O/3NW

LATITUDE:	LONGITUDE:
51° 14' 20"N	91° 23' 15"W
51° 10' 24"	91° 25' 41"
51° 10' 08"	91° 22' 24"
51° 11' 05"	91° 21' 35"
51° 11' 13"	91° 19' 19"
51° 12' 26"	91° 20' 33"
51° 12' 58"	91° 15' 25"
51° 14' 11"	91° 21' 10"
51° 14' 55"	91° 20' 30"

LOCATION: South of Moosetegon Lake area.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933

NAME: COCHENOUR WILLANS GOLD MINES LIMITED py, mag, cp, po

COMMODITIES: Pyrite, magnetite, chalcopyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52O/3NE

LATITUDE:	LONGITUDE:
51° 13' 26"N	91° 00' 20"W
51° 14' 15"	91° 13' 35"

LOCATION: Approximately 40-47 miles southwest of Pickle Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.1504, 1 inch to 1/4 mile (1:15,840) 1977
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

(Minor Occurrence) (3) py, po, cp, mag, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite, sphalerite

STATUS: Minor Occurrence

NTS: 52O/3SW

LATITUDE: 51° 06' 54"N LONGITUDE: 91° 27' 32"W

MAP REFERENCE: ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

(Minor Occurrence) (4) mag, py

COMMODITIES: Magnetite, pyrite

STATUS: Minor Occurrence

NTS: 52O/5NE

LATITUDE: 51° 29' 11"N LONGITUDE: 91° 32' 53"W

LOCATION: 35 miles southwest of Pickle Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

NAME: UMEX CORPORATION LIMITED mag, py

COMMODITIES: Magnetite, pyrite

STATUS: Minor Occurrences

NTS: 52O/6NW

LATITUDE: 51° 28' 30"N LONGITUDE: 91° 25' 00"W
51° 27' 50" 91° 27' 30"
51° 25' 45" 91° 25' 25"
51° 24' 10" 91° 20' 00"

LOCATION: Southwest of Pickle Lake, about 100 miles north-northeast of Sioux Lookout.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
CDM Map 51-1960, 1 inch to 4 miles (1:253,440) 1960

(Minor Occurrence) (5) py, po, cp mag, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite, sphalerite

STATUS: Minor Occurrence

NTS: 52O/6SW

LATITUDE: 51° 15' 20"N LONGITUDE: 91° 22' 45"W

LOCATION: Burley Lake area.

MAP REFERENCE: ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

(Minor Occurrences) (6) mag, py, po, Cu

COMMODITIES: Magnetite, pyrite, pyrrhotite, copper

STATUS: Minor Occurrences

NTS: 52O/6SE

LATITUDE: 51° 18' 15"N LONGITUDE: 91° 03' 43"W
51° 16' 45" 91° 02' 35"
51° 16' 45" 91° 08' 01"

LOCATION: About 40 miles southwest of Pickle Lake (by air). In the vicinity of Jacknife, Kaminiskag and Billett Lakes.

MAP REFERENCES:
OGS Map P.1542 (1:253,440) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

NAME: UNION MINING AND EXPLORATION CORPORATION LIMITED mag

COMMODITY: Magnetite

STATUS: Minor Occurrence

NTS: 52O/7NE

LATITUDE: 51° 26' 45"N LONGITUDE: 90° 40' 30"W

LOCATION: 4 miles northwest of Munch Lake, and about 20 miles east-southeast of Pickle Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
CDM Map 51, 1 inch to 4 miles (1:253,440) 1960
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

NAME: UMEX CORPORATION LIMITED Cu, Ni, pent cn, mag

COMMODITIES: Copper, nickel, pentlandite, cubanite, magnetite

STATUS: Major Occurrence

NTS: 52O/8NW

LATITUDE: 51° 28' 15"N LONGITUDE: 90° 22' 05"W

LOCATION: Eastern shore of Kapkichi Lake, about 7 miles west of Pickle Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933

NAME: UMEX CORPORATION LIMITED mag, py, po, cp

COMMODITIES: Magnetite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/8NW

LATITUDE:	LONGITUDE:
51° 25' 09"N	90° 24' 30"W
51° 26' 25"	90° 24' 20"
51° 26' 55"	90° 23' 45"
51° 27' 55"	90° 20' 05"
51° 28' 42"	90° 22' 25"
51° 28' 55"	90° 21' 48"
51° 27' 25"	90° 24' 15"
51° 29' 30"	90° 22' 20"
51° 28' 55"	90° 20' 00"
51° 28' 47"	90° 19' 25"

LOCATION: Central part of Kapkichi Lake, and about 4-10 miles west of Pickle Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933

NAME: UMEX CORPORATION LIMITED po, py, mag, hem

COMMODITIES: Pyrrhotite, pyrite, magnetite, hematite

STATUS: Minor Occurrence

NTS: 52O/8NW

DESCRIPTION: Listed under HEMATITE - Umex Corporation Limited

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NAME: CENTRAL PATRICIA GOLD MINES LIMITED (NO. 1 OPERATION) Ag, Au, po, asp mag, il, cp, py

COMMODITIES: Silver, gold, pyrrhotite, arsenopyrite, magnetite, ilmenite, chalcopyrite, pyrite

STATUS: Minor Occurrence

TOWNSHIP: Connell

NTS: 52O/8NE

LATITUDE: 51° 29' 00"N LONGITUDE: 90° 10' 05"W

LOCATION: About 3 miles southwest of Pickle Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 39a, 1 inch to 1 mile (1:63,360) 1930

NAME: UMEX CORPORATION LIMITED py, mag, po, cp

COMMODITIES: Pyrite, magnetite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/8SE

LATITUDE:	51° 17' 59"N	LONGITUDE:	90° 13' 37"W
	51° 17' 51"		90° 12' 47"
	51° 17' 36"		90° 12' 07"

LOCATION: About 4 miles west of Coucheemoskog Lake and 12 miles south of Pickle Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933

(Minor Occurrences) (7) mag, po, py, cp

COMMODITIES: Magnetite, pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/11SW

LATITUDE:	51° 36' 02"N	LONGITUDE:	91° 27' 20"W
	51° 34' 03"		91° 25' 16"
	51° 33' 06"		91° 22' 12"
	51° 31' 53"		91° 26' 55"
	51° 31' 37"		91° 26' 06"
	51° 36' 05"		91° 27' 20"
	51° 35' 24"		91° 27' 07"

LOCATION: Approximately 56 miles northwest of Pickle Crow.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 39d, 1 inch to 1 mile (1:63,360) 1930

NAME: CARD LAKE COPPER MINES LIMITED mag, py, Mo cp, asp

COMMODITIES: Magnetite, pyrite, molybdenum, chalcopyrite, arsenopyrite

STATUS: Minor Occurrences

NTS: 52O/11SE

LATITUDE:	51° 37' 10"N	LONGITUDE:	91° 14' 15"W
	51° 34' 28"		91° 12' 36"

LOCATION: About 115 miles northeast of Red Lake, in the Card and Cannon Lakes area.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 39d, 1 inch to 1 mile (1:63,360) 1930

(Minor Occurrences) (8) py, mag, po, cp

COMMODITIES: Pyrite, magnetite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/12SE

LATITUDE:	LONGITUDE:
51° 36' 45"N	91° 34' 35"W
51° 35' 50"	91° 35' 00"
51° 36' 30"	91° 32' 00"
51° 36' 00"	91° 31' 10"
51° 37' 10"	91° 30' 00"
51° 35' 40"	91° 35' 50"
51° 35' 32"	91° 31' 02"
51° 34' 52"	91° 30' 24"
51° 34' 44"	91° 30' 37"

LOCATION: About 110 miles northeast of Red Lake, north of Lang Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map P.738, 1 inch to 1/2 mile (1:31,680) 1972
ODM Map P.581, 1 inch to 1/2 mile (1:31,680) 1970
ODM Map 39d, 1 inch to 1 mile (1:63,360) 1930

(Minor Occurrences) (1) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite .

STATUS: Minor Occurrences

NTS: 52O/1NE

LATITUDE:	LONGITUDE:
51° 09' 11"N	90° 03' 42"W
51° 09' 19"	90° 04' 31"

LOCATION: West of Osnaburgh Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

NAME: SELCO EXPLORATION COMPANY LIMITED po, py, gf

COMMODITIES: Pyrrhotite, pyrite, graphite

STATUS: Minor Occurrence

NTS: 52O/1SW

DESCRIPTION: Listed under GRAPHITE - Selco Exploration Company Limited

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(Minor Occurrences) (2) po, py, gf, cp mag, pent

COMMODITIES: Pyrrhotite, pyrite, graphite, chalcopyrite, magnetite, pentlandite

STATUS: Minor Occurrences

NTS: 52O/1SE

DESCRIPTION: Listed under GRAPHITE - (Minor Occurrences) (1)

NAME: UMEX CORPORATION LIMITED py, gf

COMMODITIES: Pyrite, graphite

STATUS: Minor Occurrence

NTS: 52O/2NW

DESCRIPTION: Listed under GRAPHITE - Umex Corporation Limited

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(Minor Occurrences) (3) po, gn, py

COMMODITIES: Pyrrhotite, galena, pyrite

STATUS: Minor Occurrences

NTS: 52O/2NW

LATITUDE: 51° 14' 55"N LONGITUDE: 90° 59' 45"W
51° 13' 58" 90° 59' 02"

LOCATION: About 32 miles southwest of Pickle Lake and 4 miles west of Duffel Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

(Minor Occurrences) (4) py, po, cp, mag, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite, sphalerite

STATUS: Minor Occurrences

NTS: 52O/3NW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences) (2)

NAME: COCHENOUR WILLANS GOLD MINES LIMITED py, mag, cp, po

COMMODITIES: Pyrite, magnetite, chalcopyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52O/3NE

DESCRIPTION: Listed under MAGNETITE - Cochenour Willans Gold Mines Limited

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(Minor Occurrence) (5) po, py, cp, sp, Au

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite, sphalerite, gold

STATUS: Minor Occurrence

NTS: 52O/3NE

LATITUDE: 51° 12' 02"N LONGITUDE: 91° 07' 48"W

LOCATION: About 4 miles northeast of Drum Lake, and 45 miles southwest of Pickle Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
OGS Map P.1504, 1 inch to 1/4 miles (1:15,840) 1977
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

(Minor Occurrences) (6) py, gf, po

COMMODITIES: Pyrite, graphite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52O/3NE

DESCRIPTION: Listed under GRAPHITE - (Minor Occurrences) (2)

(Minor Occurrences) (7) py, po, cp, sp, asp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, sphalerite, arsenopyrite

STATUS: Minor Occurrences

NTS: 52O/3NE

LATITUDE:	51° 14' 36"N	LONGITUDE:	91° 08' 01"W
	51° 14' 43"		91° 07' 11"
	51° 14' 44"		91° 04' 31"
	51° 14' 27"		91° 04' 07"
	51° 14' 36"		91° 03' 17"
	51° 13' 06"		91° 06' 47"
	51° 12' 09"		91° 06' 15"
	51° 12' 10"		91° 06' 47"
	51° 12' 18"		91° 07' 48"
	51° 12' 01"		91° 10' 16"

LOCATION: Approximately 45 miles southwest of Pickle Lake, north of Drum Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.1504, 1 inch to 1/4 mile (1:15,840) 1977
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

(Minor Occurrences) (8) py, po, sp cp, Au

COMMODITIES: Pyrite, pyrrhotite, sphalerite, chalcopyrite, gold

STATUS: Minor Occurrences

NTS: 52O/3NE

LATITUDE:	51° 11' 04"N	LONGITUDE:	91° 08' 01"W
	51° 11' 04"		91° 07' 11"
	51° 11' 20"		91° 06' 34"
	51° 10' 08"		91° 06' 34"
	51° 09' 36"		91° 02' 28"
	51° 08' 55"		91° 02' 53"
	51° 10' 16"		91° 01' 14"
	51° 11' 21"		91° 01' 02"
	51° 11' 08"		91° 00' 25"

LOCATION: About 45 miles southwest of Pickle Lake in the vicinity of Drum and McVean Lakes.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.1504, 1 inch to 1/4 mile (1:15,840) 1977
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

(Minor Occurrences) (9) py, po, cp mag, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite, sphalerite

STATUS: Minor Occurrences

NTS: 52O/3SW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences) (3)

NAME: COCHENOUR WILLANS EXPLORATIONS LIMITED py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/3SE

LATITUDE: 51° 02' 25"N LONGITUDE: 91° 07' 40"W
51° 01' 32" 91° 05' 30"

LOCATION: About 50 miles southwest of Pickle Lake, northeast of Johnston Bay.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 2159, 1 inch to 1/2 mile (1:31,680) 1968
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

NAME: COMINCO LIMITED po, gf, py, cp

COMMODITIES: Pyrrhotite, graphite, pyrite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/3SE

DESCRIPTION: Listed under GRAPHITE - Cominco Limited

(Minor Occurrences) (10) po, py

COMMODITIES: Pyrrhotite, pyrite

STATUS: Minor Occurrences

NTS: 52O/3SE

LATITUDE: 51° 01' 32"N LONGITUDE: 91° 06' 15"W
51° 02' 45" 91° 07' 45"

LOCATION: 1 mile east of Johnston Bay, about 50 miles southwest of Pickle Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map 2159, 1 inch to 1/2 mile (1:31,680) 1968
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

(Minor Occurrences) (11) Mo, py, po, cp

COMMODITIES: Molybdenum, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/4NW

LATITUDE: 51° 12' 10"N LONGITUDE: 91° 53' 13"W
51° 12' 01" 91° 44' 23"

LOCATION: On the east shore of Fawthrop Lake and north of Strachan Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

NAME: BAMAJI LAKE (LOON) OCCURRENCE (COCHENOUR WILLANS GOLD MINES LIMITED) — Mo, Ag, Au cp, py

COMMODITIES: Molybdenum, silver, gold, chalcopyrite, pyrite

STATUS: Minor Occurrence

NTS: 52O/4NE

LATITUDE: 51° 08' 55"N LONGITUDE: 91° 30' 12"W

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.2247, 1 inch to 1/4 mile (1:15,840) 1979

(Minor Occurrence) (12) — Cu, py, Mo, fl

COMMODITIES: Copper, pyrite, molybdenum, fluorite

STATUS: Minor Occurrence

NTS: 52O/5NW

DESCRIPTION: Listed under FLUORITE - (Minor Occurrence)

(Minor Occurrence) (13) — po, py, cp

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52O/5NW

LATITUDE: 51° 23' 18"N LONGITUDE: 91° 50' 21"W

LOCATION: Zionz Lake area.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

(Minor Occurrence) (14) — mag, py

COMMODITIES: Magnetite, pyrite

STATUS: Minor Occurrence

NTS: 52O/5NE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrence) (4)

NAME: UMEX CORPORATION LIMITED — mag, py

COMMODITIES: Magnetite, pyrite

STATUS: Minor Occurrences

NTS: 52O/6NW

DESCRIPTION: Listed under MAGNETITE - Umex Corporation Limited

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(Minor Occurrence) (15) py, po, sp, cp

COMMODITIES: Pyrite, pyrrhotite, sphalerite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/6SW

LATITUDE:		LONGITUDE:	
	51° 15' 03"N		91° 22' 15"W
	51° 15' 16"		91° 22' 53"
	51° 15' 16"		91° 22' 03"
	51° 15' 16"		91° 20' 21"
	51° 15' 16"		91° 20' 08"
	51° 15' 09"		91° 19' 56"

LOCATION: Approximately 5 miles southwest of Burley Lake, and 53 miles southwest of Pickle Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973
ODM Map 44f, 1 inch to 2 miles (1:126,720) 1935

(Minor Occurrence) (16) py, po, cp, mag, sp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite, sphalerite

STATUS: Minor Occurrence

NTS: 52O/6SW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrence) (5)

(Minor Occurrence) (17) mag, py, po, Cu

COMMODITIES: Magnetite, pyrite, pyrrhotite, copper

STATUS: Minor Occurrences

NTS: 52O/6SE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences) (6)

NAME: NEW CONEX CANADIAN EXPLORATION LIMITED
UNION MINIERE EXPLORATIONS and MINING CORPORATION LIMITED py, gf, po, cp

COMMODITIES: Pyrite, graphite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/7SW

DESCRIPTION: Listed under GRAPHITE - New Conex Canadian Exploration Limited - Union Miniere Explorations and Mining Corporation Limited

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NAME: KOVAL-OHMAN PROSPECT — Au, asp, py, po, gf

COMMODITIES: Gold, arsenopyrite, pyrite, pyrrhotite, graphite

STATUS: Major Occurrence

NTS: 52O/7SE

DESCRIPTION: Listed under GRAPHITE - Koval-Ohman Prospect

NAME: UMEX CORPORATION LIMITED — mag, py, po, cp

COMMODITIES: Magnetite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/8NW

DESCRIPTION: Listed under MAGNETITE - Umex Corporation Limited

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NAME: UMEX CORPORATION LIMITED — gf, py, po

COMMODITIES: Graphite, pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 52O/8NW

DESCRIPTION: Listed under GRAPHITE - Umex Corporation Limited

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NAME: UMEX CORPORATION LIMITED — po, py, mag, hem

COMMODITIES: Pyrrhotite, pyrite, magnetite, hematite

STATUS: Minor Occurrence

NTS: 52O/8NW

DESCRIPTION: Listed under HEMATITE - Umex Corporation Limited

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NAME: CENTRAL PATRICIA GOLD MINES LIMITED (NO. 1 OPERATION) — Ag, Au, po, asp, mag, il, cp, py

COMMODITIES: Silver, gold, pyrrhotite, arsenopyrite, magnetite, ilmenite, chalcopyrite, pyrite

STATUS: Past Producer

NTS: 52O/8NE

DESCRIPTION: Listed under MAGNETITE - Central Patricia Gold Mines Limited (No. 1 Operation)

NAME: CONWEST EXPLORATIONS COMPANY LIMITED py, gf, po

COMMODITIES: Pyrite, graphite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52O/8NE

DESCRIPTION: Listed under GRAPHITE - Conwest Explorations Company Limited

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NAME: JAMES BAY MINING CORPORATION LIMITED py, gf, po, cp

COMMODITIES: Pyrite, graphite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52O/8NE

DESCRIPTION: Listed under GRAPHITE - James Bay Mining Corporation Limited

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(Minor Occurrences) (18) Au, py, po, Ag asp, cp

COMMODITIES: Gold, pyrite, pyrrhotite, silver, arsenopyrite, chalcopyrite

STATUS: Minor Occurrences

TOWNSHIP: Connell

NTS: 52O/8NE

LATITUDE:	51° 29' 11"N	LONGITUDE:	90° 04' 44"W
	51° 29' 11"		90° 04' 21"
	51° 29' 09"		90° 03' 04"
	51° 28' 06"		90° 01' 39"

LOCATION: About 3 miles southwest of Pickle Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.1009, 1 inch to 1000 feet (1:12,000 (1975)
OGS Map P.2319, 1 inch to 1/4 mile (1:15,840) 1980

NAME: CANADIAN NICKEL LIMITED py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52O/8SE

LATITUDE: 51° 17' 28"N LONGITUDE: 90° 13' 45"W

LOCATION: About 4 miles west of Coucheemoskog Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

NAME: UMEX CORPORATION LIMITED

py, mag, po, cp

COMMODITIES: Pyrite, magnetite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/8SE

DESCRIPTION: Listed under MAGNETITE - Umex Corporation Limited

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NAME: PICKLE CROW EXPLORATIONS LIMITED

Au, Ag, po
py, asp, sp
cp, gn, shee

COMMODITIES: Gold, silver, pyrrhotite, pyrite, arsenopyrite, sphalerite, chalcopyrite, galena, scheelite

STATUS: Past Producers

NTS: 52O/9SE

LATITUDW: 51° 31' 05"N LONGITUDE: 90° 02' 28"W
51° 30' 16" 90° 02' 16"

LOCATION: About 4 miles northeast of Pickle Crow.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
OGS Map P.2318, 1 inch to 1/4 mile (1:15,840) 1980

(Minor Occurrences) (19)

py, cp, po
Au, Ag, asp

COMMODITIES: Pyrite, chalcopyrite, pyrrhotite, gold, silver, arsenopyrite

STATUS: Minor Occurrences

NTS: 52O/9SE

LATITUDE: 51° 30' 36"N LONGITUDE: 90° 11' 55"W
51° 30' 18" 90° 06' 59"
51° 30' 55" 90° 06' 35"
51° 32' 34" 90° 03' 05"

LOCATION: Southeast of Tarp Lake.

MAP REFERENCES:
OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.2318, 1 inch to 1/4 mile (1:15,840) 1980

NAME: NEW JERSEY ZINC EXPLORATION COMPANY CANADA LIMITED

Cu, Ni, Co
Pb, py

COMMODITIES: Copper, nickel, cobalt, lead, pyrite

STATUS: Minor Occurrence

NTS: 52O/11SW

DESCRIPTION: Listed under COBALT - New Jersey Zinc Exploration Company Canada Limited

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(Minor Occurrence) (20) py, po, gf

COMMODITIES: Pyrite, pyrrhotite, graphite

STATUS: Minor Occurrence

NTS: 52O/11SW

DESCRIPTION: Listed under GRAPHITE - (Minor Occurrence (3)

(Minor Occurrences) (21) mag, po, py, cp

COMMODITIES: Magnetite, pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52O/11SW

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences) (7)

(Minor Occurrence) (22) Au, py, asp, sp, po, gn

COMMODITIES: Gold, pyrite, arsenopyrite, spahlerite, pyrrhotite, galena

STATUS: Minor Occurrence

NTS: 52O/11SW

LATITUDE: 51° 30' 41"N LONGITUDE: 91° 26' 35"W

LOCATION: South of Semia Lake and about 56 miles northwest of Pickle Crow.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

NAME: BOCHAWNA COPPER MINES LIMITED (LANG LAKE COPPER DEPOSIT) Cu, Mo, Au, Ni, cp, po, py, sp

COMMODITIES: Copper, molybdenum, gold, nickel, chalcopyrite, pyrrhotite, pyrite, sphalerite

STATUS: Major Occurrence

NTS: 52O/11SE

LATITUDE: 51° 32' 34"N LONGITUDE: 91° 00' 37"W

LOCATION: Western shore of Vein Lake.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
OGS Map P.2077, 1 inch to 1/4 mile (1:15,840) 1980

NAME: CARD LAKE COPPER MINES LIMITED — mag, py, Mo, cp, asp

COMMODITIES: Magnetite, pyrite, molybdenum, chalcopyrite, arsenopyrite

STATUS: Minor Occurrences

NTS: 52O/11SE

DESCRIPTION: Listed under MAGNETITE - Card Lake Copper Mines Limited

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NAME: MEXTOR MINERALS LIMITED — po, py, cp, gf

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite, graphite

STATUS: Minor Occurrences

NTS: 52O/12NE

DESCRIPTION: Listed under GRAPHITE - Mextor Minerals Limited

(Minor Occurrences) (23) — py, po, gn, cp, Ag

COMMODITIES: Pyrite, pyrrhotite, galena, chalcopyrite, silver

STATUS: Minor Occurrences

NTS: 52O/12NE

LATITUDE:	51° 38' 06"N	LONGITUDE:	91° 35' 33"W
	51° 37' 26"		91° 35' 33"
	51° 37' 26"		91° 33' 42"

LOCATION: North of Lang Lake and northwest of Saddle Creek.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

NAME: INITIATIVE EXPLORATIONS LIMITED — goe, py

COMMODITIES: Goethite, pyrite

STATUS: Minor Occurrence

NTS: 52O/12SE

DESCRIPTION: Listed under GOETHITE - Initiative Explorations Limited

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(Minor Occurrences) (24) — py, po, cp, mag

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite, magnetite

STATUS: Minor Occurrences

NTS: 52O/12SE

DESCRIPTION: Listed under MAGNETITE - (Minor Occurrences) (8)

NAME: BAMAJI URANIUM No. 1 SHOWING U, Th, Au, Ag, py

COMMODITIES: Uranium, thorium, gold, silver, pyrite

STATUS: Minor Occurrence

NTS: 52O/3NW

LATITUDE: 51° 10' 15"N LONGITUDE: 91° 25' 25"W

LOCATION: About 57 miles southwest of Pickle Lake and 1/2 mile south of Moosetegon Lake.

DESCRIPTION:

GEOLOGY: "The number one showing is contained within a relatively narrow east-west-trending, vertically dipping shear zone, exposed for a distance of 880 feet (268 m). This shear zone is marked by a short cliff which can be observed on one inch to one mile aerial photographs of the area. It can clearly be seen that this shear zone trends with an angular discordance of about 15 degrees to the two N60°E trending regional lineaments.... Relationship of the shear zone to these lineaments is unknown. The host rocks consist predominantly of foliated, occasionally pillowed fine-grained to medium-grained amphibolitized mafic metavolcanics, heavily intruded by lit-par-lit dykes and small bodies of massive to foliated, medium-grained, light-grey (fresh surface) biotite, and muscovite-biotite trondhjemite. Adjacent to the shear zone, which reaches a maximum width of about 6 feet, the wall rocks are locally dominated by a pyrite bearing muscovite quartzo-feldspathic schist which appears to be the sheared, altered equivalent of biotite trondhjemite. The latter rock type which greatly resembles that of the Bamaji Lake complex, becomes progressively more schistose, pyritic and muscovitic towards the shear zone. Within the shear zone, a characteristic, highly carbonatized fault breccia composed of mafic, chloritic fragments imbedded in a finer-grained, more readily disintegrated matrix of carbonate ± actinolite ± chlorite ± biotite occurs intermittantly along the exposed length. The carbonate is light brown on fresh surface and is possibly sideritic in composition. Actinolite often occurs as coarse-grained, radiating dark-green (fresh surface) fibrous aggregates." (Sage and Breaks 1976, p.327-328).

MINERALOGY: "The significant uranium, thorium, gold and silver values... are invariably correlatable with bands of highly sheared pyritic sericite schist which intermittantly occur along the exposed 800 foot strike length of the shear zone. These bands contain up to 30 percent fine-grained disseminated pyrite and are characterized by both rusty limonitic and light yellow staining. The latter colouration is probably indicative of secondary uranium minerals such as carnotite. The highest radioactivity readings (geiger counter) of 950 counts per minute were recorded over these bands. The mineralized zone is often sharply bounded to the north by the carbonate fault-breccia unit. Within certain areas of the pyritic zones, black, "sooty", very fine-grained masses and seams of a lightweight friable substance are apparent. When strongly heated, this black material gives off considerable water and then burns in air emitting sulphur dioxide fumes. The residue, after strong heating was found to be comprised of ferric oxide. X-ray diffraction patterns did not give a clear identification, although lines characteristic of goethite and marcasite were recognized.

"The uranium mineral(s) could not be separated for unequivocal identification. A cut face of a specimen indicating the highest radioactivity detected in the field was exposed to X-ray sensitive film for 24 hours. The resulting autoradiograph indicated local faint diffuse darkening of the film. The radioactive source appeared to be extremely fine-grained and impossible to separate. It is suspected that uranothorite and/or uraninite are present in very small quantities." (Sage and Breaks 1976, p.329-331).

HISTORY OF DEVELOPMENT:

1954: 11 holes totalling 565 feet were drilled and trenching was done by McCombe Mining and Exploration Limited.

1968: Townsite Gold Mines carried out trenching, detailed geological mapping and an airborne spectrometer survey.

MAP REFERENCES: OGS Map P.1542 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.808, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES: OGS Toronto AFRO File 63.2510
OGS Toronto Geoscience Data Centre, File Bamaji Lake, District Kenora, Lat. 51°00', Long. 91°15'
ODM OFR 5180, p. 327-334 (1976)
ODM Vol. 44, pt. 6, p. 53-73 (1935)

NTS 52P

NAME: GOVERNOR OCCURRENCE (TECK CORPORATION LTD.) Cu, Ni, Co

COMMODITIES: Copper, nickel, cobalt

STATUS: Major Occurrence

NTS: 52P/2NW

LATITUDE: 51° 11' 45"N LONGITUDE: 88° 52' 50"W

LOCATION: The claim group is situated 1 1/2 miles east of the southern portion of Shabuskwia Lake, 68 air miles north of Armstrong. The occurrence is about 2 miles east of Linsey Bay and about 1/4 mile south of the west end of Gould Lake.

DESCRIPTION:

GEOLOGY: The area is underlain principally by north-south striking metasedimentary migmatites with concordant pegmatites. The dark phase of the migmatites is garnetiferous biotite-quartz-feldspar gneiss with some areas containing minor hornblende.

The mineralized zones are found in anorthosite which consists of relatively large crystals of plagioclase feldspar with hornblende and augite. The anorthosite has been fractured by strong shearing which trends about N60°W.

Other rock types observed in the area are diorites, hornblende mica schists and pegmatites. The diorites vary in width from 2 to 3 feet, are dark, fine-grained and appear to have intruded the anorthosite along the shear zones and conform with its strike. Diorite is also exposed on the property along a small outcrop; here the strike is nearly north-south. This may imply a north-south fracture pattern or it may be a folded section of an east-west fracture zone. Overburden makes determination impossible. The hornblende-mica schist was observed only in the shear zones where it varies in width from 6 inches to 2 feet. The schist is present in all of the three shear zones and probably 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. The pegmatite width is not fully exposed. It appears fresh and unaltered and is probably the youngest rock type present. The anorthosite in which the mineral showings occur has a known extent from north to south of more than 3/4 of a mile. The east-west extent has not been established but prospecting to date indicates 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 100 feet and a north-south strike is reported cutting the granite in the northwestern portion of the property.

MINERALOGY: The mineralization consists of chalcopyrite, nickeliferous pyrrhotite and minor amounts of pyrite. It occurs as irregularly distributed blebs and as disseminations in anorthosite and hornblende mica schist. Diorite in contact with pegmatite was observed in one of the pits on the property. It was heavily mineralized with chalcopyrite. The nickeliferous pyrrhotite appears to be primary in origin with chalcopyrite being secondary and replacing the pyrrhotite.

HISTORY OF DEVELOPMENT:

1957: Magnetometer survey, geological mapping and trenching were completed by Cominco Ltd.
8 holes totalling 2,212 feet were drilled.

1961: Governor Gold Mines Ltd. restaked the property and did some trenching.

REMARKS: Grab samples indicated 0.71 - 1.87 percent copper and 0.02 - 0.18 percent nickel.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969
ODM Map 2148, 1 inch to 25 miles (1:1,584,000) 1967

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Gould Lake, District Thunder Bay, Lat. 51°00', Long. 88°45'
Resident Geologist's Files, OMNR, Thunder Bay: Governor Gold Mines
ODM MP 42, p. 48 (1970)
ODM MRC 12, p. 350 (1969)

NAME: SHABUSKWIA LAKE DEPOSIT (LEITCH GOLD MINES LTD.) Cu, Ni, Co

COMMODITIES: Copper, nickel, cobalt

STATUS: Minor Occurrence

NTS: 52P/2NW

LATITUDE: 51° 12' 05"N LONGITUDE: 88° 56' 30"W

LOCATION: About 70 miles north of Armstrong on the CNR line, and on the east shore of Shabuskwia Lake.

DESCRIPTION:

GEOLOGY: The area is underlain by Early Precambrian felsic intrusive and metamorphic rocks which have been intruded by bodies of anorthosite and anorthositic gabbro. The south of the claim group is underlain by metasedimentary migmatites that strike north-south and concordant pegmatites.

The mineralized zones occur in metasedimentary gneisses, intruded by granites and pegmatites. The dark phase of the migmatites is garnetiferous biotite-quartz-feldspar gneiss with some areas containing minor hornblende.

The showing is reported to be an outcrop of anorthositic gabbro. It lies in swampy ground, measures 30 feet by 60 feet and the attitude has not been reported.

MINERALOGY: The mineralized zones carry disseminated chalcopyrite, pyrite and pyrrhotite. Three grab samples taken from the outcrop indicated 0.52 - 2.30 percent copper, 0.38 - 0.62 percent nickel and 0.21 - 0.26 percent cobalt.

HISTORY OF DEVELOPMENT:

1956-57: Surface work, EM and MAG surveys, and 11 diamond drill holes totalling 1,764 feet were completed by Leitch Gold Mines Ltd.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969
ODM Map 2148, 1 inch to 25 miles (1:1,584,000) 1967

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Shabuskwia Lake, District Thunder Bay, Lat. 51°00', Long. 88°45'
Resident Geologist's Files, OMNR,
Thunder Bay: Leitch Gold Mines Ltd.
OGS Toronto AFRO File 63.918
ODM MP 42, p. 48 (1970)
ODM MRC 12, p. 340 (1969)
ODM MRC 2, p. 26 (1957)
Northern Miner, August 2 (1956)

NAME: STURDY MINES LIMITED
(MISEHKOW RIVER PROSPECT)

Fe, mag, hem, py, po, gf

COMMODITIES: Iron, magnetite, hematite, pyrite, pyrrhotite, graphite

STATUS: Major Occurrence

NTS: 52P/4NE

LATITUDE: 51° 08' 45"N LONGITUDE: 89° 32' 15"W

LOCATION: 30 miles southeast of Pickle Crow, 3 miles east of Iron Falls and 63 miles northwest of Armstrong.

DESCRIPTION:

GEOLOGY: "Much of the following discussion is inferred and abstracted from the diamond drill logs of Sturdy Mines Limited (Assessment Files Research Office, Ontario Division of Mines, Toronto). The rock types examined in the area along the northwestern shoreline of the Misehkow River, contiguous to the iron formation, are dominantly mafic metavolcanic consisting of an assemblage of massive to pillowed flows with the former occasionally displaying relatively coarse-grained centers. Several exposures of massive to foliated rhyolitic to dacitic flows and tuff to lapilli tuff units are notably intercalated within the dominant mafic metavolcanic assemblage. Specifically, as ascertained by diamond drill data, the iron formation is almost invariably bounded stratigraphically, above and below, by metasediments consisting principally of thinly bedded, graphitic, often silicified, dark metagreywacke and interbedded sericitic quartzite. In one diamond drill hole (SM-4), banded siliceous rhyolite, is in contact with the iron formation." (Sage and Breaks 1976, p.94).

MINERALOGY: "The iron formation consists of very uniform well bedded chert-magnetite layers with minor hematite and sulphide minerals in a few local areas.... Grade of the deposit was indicated to vary from 17.3 percent total iron over 305 feet to a maximum of 28.4 percent total iron across 140 feet (Sullivan ibid, p.3). Width of the iron formation varies from 156 feet to 507.8 and appears to gradually narrow westwards. Preliminary magnetic concentration tests on a minus 325 mesh composite sample from drill hole SM-1 resulted in the following analysis: 64.0 percent iron, 10.3 percent SiO_2, 0.05 percent P_2O_5, 0.09 percent TiO_2, 0.04 percent S, and 1.20 percent Al_2O_3 (Sullivan, ibid p.3)." (Sage and Breaks 1976, p.95).

HISTORY OF DEVELOPMENT:

1968: Magnetic and electromagnetic surveys were carried out by Sturdy Mines Ltd.
6 holes totalling 5,223 feet were drilled.

1978: Magnetic survey was done by Algoma Steel Corp.

REMARKS: "The diamond drill program (six holes totalling 5,223 feet) followed the iron-formation along a strike length of 5,350 feet, with the east and west ends still open. Tonnage to the 500 foot depth is estimated at 71,160,000 tons grading 21.0 percent total iron (Sullivan, 1968, p.1)." (Sage and Breaks 1976, p.95).

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974

SELECTED REFERENCES: ODM OFR 5180, p. 79,94-95 (1976)
OGS Toronto AFRO Files 2.2751, 2.843
Resident Geologist's Files, OMNR, Sioux Lookout:
52P/4NE 1-7, Achapi Lake Report
ODM Vol. 42, pt. 6, p. 1-201 (1933)

NAME: CANADIAN NICKEL COMPANY LIMITED po, py, asp, gf, cp

COMMODITIES: Pyrrhotite, pyrite, arsenopyrite, graphite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52P/4SW

LATITUDE: 51° 06' 30"N LONGITUDE: 89° 58' 20"W

LOCATION: Approximately 27 miles south-southeast of Pickle Lake and 4 miles southwest of Atikokiwawan Lake, just north of Caron Creek.

DESCRIPTION:

GEOLOGY: The occurrence is found in mafic to intermediate metavolcanics within the Misehkow River-Pashkokogan Lake Belt. "The rocks are generally fine grained, foliated to massive, greenish to green-black on weathered surface, and a lighter green to greenish black on fresh surface. Locally medium to coarse grained varieties are present which are interpreted to represent the centers of thick flows. The metavolcanics display a well developed schistosity in some of the exposures along the Misehkow River.

"Pillow structures are not common within the belt. Their presence has been noted in the metavolcanics close to the granite-greenstone contact on the south side of Osnaburgh Lake, Lowry Lake, and on the northwest shore of the unnamed lake on the Misehkow River approximately 1/2 mile (0.8 km) northeast of Iron Falls. Minor mafic tuff and pyroclastic horizons intercalated with other lithologic units have been observed in the area of Iron Falls.

"The metamorphic rank of the volcanic rocks ranges from greenschist facies to epidote-amphibolite facies of regional metamorphism, and primary textures are not common. Rocks of the greenschist facies are generally confined to the center of the belt while rocks of higher rank are more common along the margins of the belt." (Sage and Breaks 1976, p.72).

MINERALOGY: "The greenschist facies rocks are characterized by actinolite-tremolite, carbonate, epidote-zoisite, and untwinned plagioclase. Trace amounts of opaques and quartz are common. Abundant biotite with minor sericite was noted in one thin section.

"The amphibolites are characterized by pleochroic green hornblende set in a mozaic of polygonized untwinned plagioclase. The hornblende and plagioclase occur in approximately equal amounts however variations of up to 20 percent were noted in the relative proportions. Biotite may make up 15-20 percent of the rock in preference to hornblende. Minor amounts of calcite, epidote-zoisite, quartz, and magnetite are also present in some thin sections. In the Pashkokogan Lake area, garnet is common in some amphibolites and is easily recognizable in the field where on weathered outcrop surfaces it will weather in relief as subspherical knots up to 3-5 mm in diameter." (Sage and Breaks 1976, p.72-73).

HISTORY OF DEVELOPMENT:

1970: Geochemical and electromagnetic surveys were completed by Hudson Bay Exploration and Development Co. Ltd. 37 drill holes totalling 12,706 feet were drilled.

1971: 2 holes totalling 269 feet were drilled by Canadian Nickel Co. Ltd.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Canadian Nickel-Lowry, District of Thunder Bay, Lat. 51°00', Long. 89°45'
ODM MP 50, p. 25 (1972)
ODM OFR 5180, p. 72-73 (1976)
OGS Toronto AFRO Lowry Lake Area, DHR 11

NAME: CANADIAN NICKEL COMPANY LIMITED po, py, gf, mag

COMMODITIES: Pyrrhotite, pyrite, graphite, magnetite

STATUS: Minor Occurrence

NTS: 52P/12SW

LATITUDE: 51° 37' 00"N LONGITUDE: 89° 54' 20"W

LOCATION: About 19 miles northeast of Pickle Lake and 3 miles north of First Loon Lake.

DESCRIPTION:

GEOLOGY: The occurrence is found in a zone of mafic to intermediate metavolcanics within the Pickle Crow Belt. "The rocks are generally fine-grained, massive to schistose and vary from light green to grey-black on weathered surfaces. The metavolcanics contain well preserved but considerably elongated pillow structures south of the Pickle Crow Townsite and south of July Falls. Except in a few localities, the pillows are so highly elongated that they are of little value for stratigraphic-structural purposes....

"On fresh surface the mafic to intermediate metavolcanics are light green to black. The light-green variety is characteristic of rocks of the green schist grade of metamorphism, while the black coloured rocks are more characteristic of those of amphibolite grade.

"At Pickle Crow the metavolcanic-metasedimentary belt is approximately 6 to 7 miles (9.6-11.3 km) wide. The mafic to intermediate metavolcanic rocks of the central portion of this belt are characterized by chlorite, actinolite, and epidote-zoisite....

"Increasing grain size accompanies increasing metamorphic grade and close to the metavolcanic-granite contact, the amphibolites locally are banded. The banding is caused by a slight segregation of mafic-felsic components." (Sage and Breaks 1976, p.144-146).

MINERALOGY: Minor amounts of quartz are commonly present in some of the amphibolite metavolcanics and the more schistose mafic to intermediate rocks consist of either chlorite or hornblende. Diamond drill results showed sulphide mineralization and graphite. The best intersection assayed 0.01 percent Cu, 0.08 percent Zn, trace Au, and trace Ag.

HISTORY OF DEVELOPMENT: 1971: One hole totalling 173 feet was drilled by Canadian Nickel Co. Ltd. and Umex Corp. Ltd.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File First Loon Lake, District Kenora, Patricia Portion, Lat. 51°30', Long. 89°45'
OGS Toronto AFRO File First Loon Lake Area, DHR 14
ODM OFR 5180, p. 140-147 (1976)
ODM Vol. 47, pt. 3, p. 1-65 (1938)

NAME: BEAVIS LAKE

Fe, mag, hem, py, po, cp

COMMODITIES: Iron, magnetite, hematite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52P/3NE

LATITUDE: 51° 08' 49"N LONGITUDE: 89° 05' 20"W

LOCATION: Approximately 2 miles south of Beavis Lake.

DESCRIPTION:

GEOLOGY: "Host rocks of the iron deposit are predominantly fine-grained, foliated garnetiferous biotite metagreywacke. Thinly developed bedding is locally apparent, characterized by alternation of beds in the order of 5 mm thickness which display variation in biotite content from less than one percent to 15 percent, respectively corresponding to meta-arkose and metagreywacke bulk compositions....

"Basically, two types of iron formation can be classified at the outcrop scale: (1) massive, essentially uniform sections of light to medium smokey grey (weathered surface) iron formation with clastic quartz and plagioclase usually uniformly dispersed amongst the dominant magnetite grains, and, (2) conspicuously banded, relatively leaner iron formation, characterized by alternating black to smokey grey (weathered surface) magnetite-rich and light brown to light grey weathering magnetite-bearing mesobands of garnetiferous metagreywacke.

"The former locally possess thin mesobands of magnetite bearing metagreywacke. In the latter, there does not appear to be any uniformity in mesoband widths or spacings but within some of the magnetite-rich mesobands, numerous lamination of very fine-grained magnetite, appear to be rhythmically spaced.
1. Terminology after Trendall (1973)." (Sage and Breaks 1976, p.440-443).

MINERALOGY: "Mineralogically, the iron-rich bands consist essentially of magnetite-quartz and plagioclase accompanied by variable, lesser amounts of hematite, chlorite, biotite and garnet. Along some bedding planes, in the massive sections of iron formation, relatively coarse biotite is especially conspicuous." (Sage and Breaks 1976, p.443).

HISTORY OF DEVELOPMENT: 1967-8: 8 diamond drill holes totalling 2,722 feet were completed by Algoma Steel Corporation.

REMARKS: A 50-pound composite bulk sample, considered to represent a typical high grade section, taken along a 15-foot trench normal to the structural trend contained 31.2 percent iron. The iron formation extends east-west and is up to 600 feet thick.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Beavis Lake, District Thunder Bay, Lat. 51°00', Long. 89°00'
ODM OFR 5180, p. 434,439-448 (1976)
ODM MRC 11, p. 452 (1968)
Resident Geologist's Files, OMNR, Thunder Bay: Beavis Lake Occurrence - 52P/3NE

NAME: GREENMANTLE LAKE

Fe, mag, hem

COMMODITIES: Iron, magnetite, hematite

STATUS: Minor Occurrence

NTS: 52P/3SW

LATITUDE: 51° 06' 04"N LONGITUDE: 89° 16' 44"W

LOCATION: Between Greenmantle and Murrel Lakes.

DESCRIPTION:
GEOLOGY: See BEAVIS LAKE for GEOLOGY, p. 266.

MINERALOGY: The iron formation consists of quartz, muscovite biotite, varying amounts (up to 70 percent) of magnetite, and 10 to 15 percent hematite. The magnetite occurs as disseminated grains or bands up to 6 feet in width.

HISTORY OF DEVELOPMENT:

1962: Magnetometer survey and 7 drill holes totalling 949 feet were completed by Standard Iron Mines Ltd.

1966: Algoma Steel Corp. Ltd. drilled 5 holes totalling 3,328 feet.

1968: 4 holes totalling 1,796 feet were drilled.

REMARKS: The width of the deposit ranges from 300 to 1,000 feet and about 11,000 feet in length. Drilling outlined 12 zones but no tonnage was reported.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Greenmantle Lake, District Thunder Bay, Lat. 51°00', Long. 89°15'
ODM OFR 5180, p. 434,438-439 (1976)
ODM MRC 11, p. 452 (1968)

NAME: STURDY MINES LIMITED (MISEHKOW RIVER OCCURRENCE) — Fe, mag, hem, py, po, gf

COMMODITIES: Iron, magnetite, hematite, pyrite, pyrrhotite, graphite

STATUS: Major Occurrence

NTS: 52P/4NE

DESCRIPTION: Listed under GRAPHITE - Sturdy Mines Limited (Misehkow River Occurrence).

NAME: REXDALE MINES LIMITED — py, hem, po

COMMODITIES: Pyrite, hematite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52P/9NE

LATITUDE: (1) 51° 39' 40"N LONGITUDE: 88° 08' 10"W
(2) 51° 41' 35" 88° 03' 50"

LOCATION: Deposit No. 1 is on the west side of Lilypad Creek, about 2 miles west of Opikeigen Lake. Deposit No. 2 is approximately 1 mile west of the northern third of Opikeigen Lake.

DESCRIPTION:

GEOLOGY: All of the rocks in the area are Early Precambrian in age, and have been metamorphosed under almandine-amphibolite facies conditions.

The dominant structural trend in the area is produced by isoclinal folding along west to northwest-trending axes. Top determinations from pillow lavas were possible in only a few areas, but these suggest that a major anticline with a core of metavolcanics strikes eastward along the Eabamet River through the southern part of Opikeigen and Lilypad Lakes.

The occurrence is a banded (Algoma-type) oxide iron formation that consists of alternating laminae of fine magnetite-rich and siliceous material. It occurs intercalated with mafic metavolcanics. "The individual laminae are between 0.5 and 10 cm thick and bands of iron formation, which can vary from 5 to several tens of laminae. Commonly several bands will occur within a stratigraphic thickness of a few tens of metres separated by amphibolic and (or) chloritic rocks....

"The magnetite-rich laminae, which generally are more resistant to weathering than the siliceous material, are dark grey, very fine grained, hard and dense. The mineralogy is very simple consisting of little other than magnetite, chlorite and quartz. The siliceous laminae are light grey or white and consist of relatively coarse-grained polygonal quartz grains with minor magnetite, chlorite and sericite." (Wallace 1978, p.15).

MINERALOGY: Disseminated pyrite and pyrrhotite commonly form less than 2 percent of the mafic metavolcanics and quartz veins in the Opikeigen Lake area. Higher concentrations of pyrrhotite occur within mafic to intermediate tuff horizons in the mafic sequence.

At deposit No. 1 zones of massive pyrrhotite and gossan up to 10 feet wide and exposed over tens of feet were found in mafic volcanics. Disseminated, coarse-grained pyrite forming up to 15 percent of the rock is associated with the magnetite-quartz iron formation northwest of Opikeigen Lake.

HISTORY OF DEVELOPMENT:

1971: Airborne magnetic and electromagnetic survey was carried out over the property by Rexdale Mines Ltd.

REMARKS: Two conductive zones were located near the eastern part of the property.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
OGS Map 2379, 1 inch to 1/2 mile (1:31,680) 1977
OGS Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.926, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.562, 1 inch to 2 miles (1:126,720) 1970
ODM Map 51b, 1 inch to 1 mile (1:63,360) 1942

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre,
File Rexdale, District Kenora, Patricia Portion, Lat. 51°30', Long. 88°00'
OGS GR 185, p. 4,15,40,51 (1978)
ODM MRC 11, p. 224 (1968)
ODM Vol. 51, pt. 3, p. 5,14-15 (1942)
Northern Miner: May 13, p. 3; June 3, p. 3; June 17, p. 2; July 1, p. 5; Aug. 12, p. 15; Sept. 16, p. 9; Oct. 21, p. 2 (1971); Feb. 10, p. 3 (1972)

NAME: LILYPAD LAKES PROPERTY (SOUTHWEST SHOWING) Li, W, Ta

COMMODITIES: Lithium, tungsten, tantalum

STATUS: Minor Occurrence

NTS: 52P/9NW

LATITUDE: 51° 38' 15"N LONGITUDE: 88° 16' 30"W

LOCATION: North of Lilypad Lakes.

DESCRIPTION:

GEOLOGY: "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." (Wallace 1978, p.45).

MINERALOGY: "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)." (Wallace 1978, p.46).

Amblygonite and pollucite were determined by X-ray and quantitative chemical analysis while allanite, apatite, cassiterite and zircon were reportedly found in a thin section examination.

HISTORY OF DEVELOPMENT:

1956: Trenching, channel sampling, 7 drill holes totalling 2,500 feet and 5 drill holes totalling 675 feet were completed by Standard Lithium Corp. Ltd.

1962: 4 holes were drilled by R.J. Campbell.

REMARKS: "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 Division of Mines, Thunder Bay)." (Wallace 1978, p.46).

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.926, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.562, 1 inch to 2 miles (1:126,720) 1970
Map 2379, 1 inch to 1/2 mile (1:31,680) 1977
ODMNA Map 2237, 1 inch to 4 miles (1:253,440) 1972

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Lilypad Lake, District Kenora, Patricia Portion, Lat. 51°30', Long. 88°15'
OGS Toronto AFRO Files, Ferguson Lake Area, DHR 10 and 11
Resident Geologist's Files, OMNR, Thunder Bay: Standard Lithium Corp., 52P/9NW
OGS GR 185, p. 43-46 (1978)
ODM OFR 5163, p. 70-73 (1976)
ODM MP 47, p. 43,44 (1971)
ODM Vol. 51, pt. 3, p. 1-28 (1942)

NAME: LILYPAD LAKES PROPERTY (NORTH SHOWING) Li, Ta

COMMODITY: Lithium, tantalum

STATUS: Minor Occurrences

NTS: 52P/9NE

LATITUDE: 51° 38' 50"N LONGITUDE: 88° 14' 55"W
51° 39' 00" 88° 14' 25"
51° 38' 40" 88° 14' 10"

LOCATION: North of Lilypad Lakes.

DESCRIPTION: See LILYPAD LAKES PROPERTY (SOUTHWEST SHOWING) for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p.269.

"...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)." (Wallace 1978, p.45).

NAME: BEAVIS LAKE Fe, mag, hem, py, po, cp

COMMODITIES: Iron, magnetite, hematite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52P/3NE

DESCRIPTION: Listed under HEMATITE - Beavis Lake

NAME: GREENMANTLE LAKE Fe, mag, hem

COMMODITIES: Iron, magnetite, hematite

STATUS: Minor Occurrence

NTS: 52P/3SW

DESCRIPTION: Listed under HEMATITE - Greenmantle Lake

(Minor Occurrence) (1) mag

COMMODITIES: Magnetite

STATUS: Minor Occurrence

NTS: 52P/3SE

LATITUDE: 51° 03' 23"N LONGITUDE: 89° 12' 57"W

LOCATION: Northwest shore of Sapwell Lake.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

NAME: STURDY MINES LIMITED Fe, mag, hem, py, po, gf
(MISEHKOW RIVER PROSPECT)

COMMODITIES: Iron, magnetite, hematite, pyrite pyrrhotite, graphite

STATUS: Major Occurrence

NTS: 52P/4NE

DESCRIPTION: Listed under GRAPHITE - Sturdy Mines Limited (Misehkow River Prospect)

(Minor Occurrence) (2) Fe, mag

COMMODITIES: Iron, magnetite

STATUS: Minor Occurrence

NTS: 52P/4SE

LATITUDE: 51° 03' 04"N LONGITUDE: 89° 33' 14"W

LOCATION: East end of August Lake.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

NAME: CANADIAN NICKEL COMPANY OF CANADA po, py, mag

COMMODITIES: Pyrrhotite, pyrite, magnetite

STATUS: Minor Occurrence

NTS: 52P/11SW

LATITUDE: 51° 33' 30"N LONGITUDE: 89° 21' 05"W

LOCATION: 1/4 mile south of Napier Lake, approximately 56 miles east-northeast of Pickle Lake.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

NAME: CANADIAN NICKEL COMPANY LIMITED — po, py, mag

COMMODITIES: Pyrrhotite, pyrite, magnetite

STATUS: Minor Occurrences

NTS: 52P/11SE

LATITUDE: 51° 34' 50"N, 51° 32' 40", 51° 30' 35" — LONGITUDE: 89° 07' 20"W, 89° 04' 05", 89° 02' 30"

LOCATION: About 50 miles northeast of Pickle Lake.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

NAME: CANADIAN NICKEL COMPANY LIMITED — po, py, gf, mag

COMMODITIES: Pyrrhotite, pyrite, graphite, magnetite

STATUS: Minor Occurrence

NTS: 52P/12SW

DESCRIPTION: Listed under GRAPHITE - Canadian Nickel Company Limited

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NAME: BEAVIS LAKE — Fe, mag, hem, po, cp

COMMODITIES: Iron, magnetite, hematite, pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52P/3NE

DESCRIPTION: Listed under HEMATITE - Beavis Lake

NAME: UMEX CORPORATION LIMITED — py, po, mag, cp

COMMODITIES: Pyrite, pyrrhotite, magnetite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52P/12SW

LATITUDE: 51° 37' 15"N, 51° 36' 30", 51° 33' 30" — LONGITUDE: 89° 53' 15"W, 89° 57' 58", 89° 54' 20"

LOCATION: About 18 miles northeast of Pickle Lake.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
CDM Map 51, 1 inch to 4 miles (1:253,440) 1961

NAME: STURDY MINES LIMITED (MISEHKOW RIVER PROSPECT) — Fe, mag, hem, py, po, gf

COMMODITIES: Iron, magnetite, hematitie, pyrite, pyrrhotite, graphite

STATUS: Major Occurrence

NTS: 52P/4NE

DESCRIPTION: Listed under GRAPHITE - Sturdy Mines Limited (Misehkow River Prospect)

NAME: CANADIAN NICKEL COMPANY LIMITED — po, py, asp, gf, cp

COMMODITIES: Pyrrhotite, pyrite, arsenopyrite, graphite, chalcopyrite

STATUS: Minor Occurrence

NTS: 52P/4SW

DESCRIPTION: Listed under GRAPHITE - Canadian Nickel Company Limited

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(Minor Occurrences) (1) — po, py, gn

COMMODITIES: Pyrrhotite, pyrite, galena

STATUS: Minor Occurrences

NTS: 52P/4SW

LATITUDE: 51° 05' 32"N / 51° 05' 49" LONGITUDE: 89° 55' 53"W / 89° 55' 45"

LOCATION: Northeast of Caron Creek, about 25 miles south-southeast of Pickle Lake and 4 miles southwest of Atikokiwawan Lake.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
ODM Map 42e, 1 inch to 4 miles (1:253,440) 1933

(Minor Occurrence) (2) — py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

TOWNSHIP: McCullagh

NTS: 52P/5NW

LATITUDE: 51° 29' 55"N LONGITUDE: 89° 59' 55"W

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973

NAME: HUDSON BAY EXPLORATION and DEVELOPMENT COMPANY LIMITED PROPERTY — py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52P/7SE/8SW

LATITUDE: 51° 15' 05"N LONGITUDE: 88° 30' 30"W
51° 15' 45" 88° 28' 30"

LOCATION: Peninsula in Attwood Lake.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODMNA Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.564, 1 inch to 2 miles (1:126,720) 1969

(Minor Occurrence) (3) — py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 52P/9NW

LATITUDE: 51° 38' 55"N LONGITUDE: 88° 16' 00"W

LOCATION: 1 mile north of Lilypad Lakes.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODMNA Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.926, 1 inch to 1/2 mile (1:31,680) 1974
ODM Map P.562, 1 inch to 2 miles (1:126,720) 1970
OGS Map 2379, 1 inch to 1/2 mile (1:31,680) 1977

NAME: REXDALE MINES LIMITED — py, hem, po

COMMODITIES: Pyrite, hematite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52P/9NE

DESCRIPTION: Listed under HEMATITE - Rexdale Mines Limited

NAME: FROND LAKE MINING COMPANY LIMITED — Au, py, po, asp, cp

COMMODITIES: Gold, pyrite, pyrrhotite, arsenopyrite, chalcopyrite

STATUS: Major Occurrence

NTS: 52P/9SW

LATITUDE: 51° 36' 50"N LONGITUDE: 88° 19' 50"W

LOCATION: The showing is about 300 meters (1000 feet) west of where the creek from Goss Lake enters Frond Lake. The approximate location is 80 miles east of Pickle Lake.

DESCRIPTION:

GEOLOGY: The showing occurs in tightly folded Early Precambrian metamorphosed iron formation that consists of banded amphibole-garnet-biotite rocks interbedded with magnetite-quartz and grunerite-hornblende rocks.

According to Prest (1942) p.24, "Two breaks, known as the north and south, have been explored on this property. Both are cross-fractures with smaller connections along the strike. The east end of the south break occurs in the drag-folded section of the iron formation where it is crossed by the trail to Frond Lake. This is the best showing so far discovered on the property. The west end is in banded sediments near the iron formation south of the west end of Goss Lake, and is in general a low-grade section.

"The northern break has been uncovered paralleling Goss Lake from a point 5 chains south of the west end to the central part, where a swampy section covers it, and is reported to have been picked up by the drills where the trail from Frond Lake reaches Goss Lake. The break thus lies north of the iron formation but roughly parallel to it. Like the southern break it is best developed in the drag folded region, and there may be a break parallel to the axial planes of these drag folds. The northern break is in a banded slaty greywacke between softer argillaceous-looking beds. It is weakly magnetic, but this is in part due to the amount of pyrrhotite in the replaced rock adjacent to the quartz veins. The iron formation proper lies to the south of this horizon. The break is best developed in the east outcrop of the two lying north of the iron formation south of Goss Lake." (Prest 1942, p.24).

MINERALOGY: "Quartz veins with a maximum width of 3 1/2 feet, but usually about 2 feet wide and very irregular, cut across the resistant banded greywacke and have led to differential replacement and mineralization along the bedding planes. The workable mineralized zone has a maximum width of about 15 feet. In this zone the main cross-fracture veins occur every 15 to 20 feet, and the mineralization is practically continuous from one to the other. The quartz veins dip to the east at 50 to 60 degrees, and the bedding dips north at 70 degrees. Most of the veins are sharply terminated at the north edge of the banded greywacke where it is in contact with the sheared, grey-weathering schist. Not all the veins cross the full width of the brittle greywacke." (Prest 1942, p.24).

Sulphides are found localized where the garnet amphibolites occur in the sediments.

HISTORY OF DEVELOPMENT:

1940: Connell Mining and Exploration Company Limited completed surface diamond drilling.

1946: Frond Lake Mining Company Limited carried out diamond drilling.

1972: Magnetometer and EM surveys were carried out and 65 holes totalling 12,000 feet were drilled.

REMARKS: "The majority of the drill holes cut gold values. Over a length of 1,500 feet in the south zone, 14 vein sections returned assays of 0.20-0.50 oz. Au/ton with the greatest width being 6.5 feet. The north zone returned one shallow 400 foot length averaging 0.39 ounces gold per ton over 5 feet. The presence of isolated values and widths over partial lengths has been proven, but continuity has not been demonstrated." (Geoscience Data Centre Files).

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODMNA Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
OGS Map 2417, 1 inch to 1/2 mile (1:31,680) 1978
OGS Map P.992, 1 inch to 1/2 mile (1:31,680) 1976
OGS Map 2379, 1 inch to 1/2 mile (1:31,680) 1977
ODM Map P.562, 1 inch to 2 miles (1:126,720) 1969
ODM Map 51b, 1 inch to 1 mile (1:63,360) 1942

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Frond Lake, District Kenora, Patricia Portion, 51°30', 88°15'
Resident Geologist's Files, OMNR, Thunder Bay:
Frond Lake Mining Co. Ltd., 52P/9NE
OGS GR 214, p. 81-83 (1981)
OGS GR 185, p. 47 (1978)
OGS OFR 5235, p. 127-130 (1978)
ODM Vol. 51, pt. 3, p. 23-24 (1942)

NAME: FORT HOPE MINE Au, po, py, cp

COMMODITIES: Gold, pyrrhotite, pyrite, chalcopyrite

STATUS: Major Occurrence

NTS: 52P/9SE

LATITUDE: 51° 36' 55"N LONGITUDE: 88° 01' 55"W

LOCATION: About 4.5 miles northwest of Fort Hope at the head of Eabamet Lake, 8 miles north of Albany River and 1 mile southwest of Rond Lake.

DESCRIPTION:

GEOLOGY: The exposure of ellipsoidal Keewatin rock in which the veins occur is part of a low rounded knoll which rises about 40 feet above the surrounding muskeg. The country rock as a whole is an ophitic andesite or andesite gneiss. 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 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.

"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." (Wallace 1978, p.48).

The "Shaft" and the "California" are two dominant veins systems on the property.

"Wallace (1978, pp. 49, 50) quotes a feasibility study as describing the Shaft vein to be: "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 " and the California vein to be, "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 1,000 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." (Geoscience Data Centre Files).

MINERALOGY: 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 intergrowth texture with laths of andesine (Ab 60%, An 40%) and a few larger crystals altered to kaolin. The interstices are filled with green hornblende, the fibres mainly parallel, irrespective of the direction of the feldspars. The hornblende is slightly epidotized. Accessory ilmenite is altered to leucoxene. Where fractures traverse the rock they are filled with chlorite, epidote, and quartz.

The fragments of the andesite gneiss have been altered by the hydrothermal action accompanying the intrusion of the vein matter, which has produced recrystallization of the hornblende to coarser grains. Small fragments are also 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 found mainly in the quartz.

HISTORY OF DEVELOPMENT:

1927-1928: Shaft 125 feet with 330 feet lateral development on the 100 foot level by Fort Hope Mines Ltd.

1934-1935: Mine dewatered, underground sampling, 5,000 foot diamond drilling in 17 holes by Fort Hope Consolidated Gold Mines Ltd.

1946-1947: Trenching, magnetometer survey and 5,400 feet diamond drilling by Golden Hope Mines Ltd.

1959: Surface exploration including bulk sampling by Golden Hope Mines Ltd.

1963: A feasibility study was done by R.V. Oja.

1972: Feasibility study done by T.W. Dent.

1978: Geological, magnetometer and EM surveys were carried out by La Crib Mines Ltd.

1980: 3 diamond drill holes totalling 559 feet were completed.

REMARKS: The porphyry dike with which the known gold showings are associated is 6 feet wide, strikes east-west and dips 80° to the south. It has been traced about 1,000 feet, petering out about 500 feet east of the shaft. To the west it disappears under heavy overburden.

The surface length of the "Shaft" vein is 176 feet, averages 3 feet in width, and assayed 1.23 ounces of gold per ton over a length of 176 feet with an average width of 3.25 feet.

The "California" vein has a length of about 300 feet, averages 2 feet in width, and assayed 1.52 ounces per ton gold, however, the values were generally low.

MAP REFERENCES:
OGS Map P.1541 (1:250,000) 1978
ODM Map 2310, 1 inch to 25 miles (1:1,584,000) 1974
ODM Map 2379, 1 inch to 1/2 mile (1:31,680) 1977
ODM Map P.562, 1 inch to 2 miles (1:126,720) 1969
ODMNA Map 2237, 1 inch to 4 miles (1:253,440) 1972
ODM Map P.926, 1 inch to 1/2 mile (1:31,680) 1974

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Golden Hope Mine, District Kenora, Patricia Portion, Lat. 51°30', Long. 88°00'
OGS GR 185, p. 47-51 (1978)
ODM MRC 13, p. 232 (1971)
ODM Vol. 51, pt. 3, p. 27-28 (1942)
ODM Vol. 45, pt. 1, p. 107 (1936)
ODM Vol. 38, pt. 2, p. 46 (1929)
ODM Vol. 37, pt. 1, p. 103-104 (1928)
OGS Toronto AFRO Files 2.2965, 2.3057

NAME: CANADIAN NICKEL COMPANY OF CANADA po, py, mag

COMMODITIES: Pyrrhotite, pyrite, magnetite

STATUS: Minor Occurrence

NTS: 52P/11SW

DESCRIPTION: Listed under MAGNETITE - Canadian Nickel Company of Canada

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NAME: CANADIAN NICKEL COMPANY LIMITED po, py, mag

COMMODITIES: Pyrrhotite, pyrite, magnetite

STATUS: Minor Occurrences

NTS: 52P/11SE

DESCRIPTION: Listed under MAGNETITE - Canadian Nickel Company Limited

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NAME: CANADIAN NICKEL COMPANY LIMITED po, py, gf, mag

COMMODITIES: Pyrrhotite, pyrite, graphite, magnetite

STATUS: Minor Occurrence

NTS: 52P/12SW

DESCRIPTION: Listed under GRAPHITE - Canadian Nickel Company Limited

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NAME: UMEX CORPORATION LIMITED py, po, mag, cp

COMMODITIES: Pyrite, pyrrhotite, magnetite, chalcopyrite

STATUS: Minor Occurrences

NTS: 52P/12SW

DESCRIPTION: Listed under MAGNETITE - Umex Corporation Limited

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(Minor Occurrences) (4) py, cp

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 52P/12SW

LATITUDE:		LONGITUDE:	
	51° 37' 18"N		89° 53' 01"W
	51° 36' 54"		89° 52' 24"
	51° 34' 36"		89° 49' 56"
	51° 32' 50"		89° 56' 18"
	51° 32' 02"		89° 56' 18"
	51° 31' 54"		89° 57' 57"
	51° 32' 02"		89° 53' 38"

LOCATION: Occurrences are scattered in an area about 20 miles northeast of Pickle Lake to the north of McCullagh Township.

MAP REFERENCES: OGS Map P.1541 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.809, 1 inch to 2 miles (1:126,720) 1973
CDM Map 51, 1 inch to 4 miles (1:253,440) 1961

NAME: LILYPAD LAKES PROPERTY (SOUTHWEST SHOWING) Li, W, Ta

COMMODITIES: Lithium, tungsten, tantalum

STATUS: Minor Occurrence

NTS: 52P/9NW

DESCRIPTION: Listed under LITHIUM - Lilypad Lakes Property (Southwest Showing)

NAME: LILYPAD LAKES PROPERTY (NORTH SHOWING) Li, Ta

COMMODITIES: Lithium, tantalum

STATUS: Minor Occurrences

NTS: 52P/9NE

DESCRIPTION: Listed under LITHIUM - Lilypad Lakes Property (North Showing)

NTS 53A

NAME: SCHRYBURT LAKE OCCURRENCE Cb, (Nb), U, cp, pyl, ap, mag, verm

COMMODITIES: Columbium, (niobium), uranium, chalcopyrite, pyrochlore, apatite, magnetite, vermiculite

STATUS: Minor Occurrence

NTS: 53A/12SE

LATITUDE: 52° 36' 12"N LONGITUDE: 89° 36' 57"W

LOCATION: West of Schryburt Lake which is approximately 80 miles northeast of Pickle Lake, 250 miles north of Thunder Bay and about 27 miles southeast of Big Beaver House.

DESCRIPTION:

GEOLOGY: The Schryburt Carbonatite Complex lies within the Cat Lake Belt of the Superior structural province. It has a surface area of about 4.4 km^2 and the deposits are classified as contact metasomatic similar to the Oka complex in Quebec. Specifically, albitized, nepheline-rich zones with pyrochlore and perovskite form at the contact of carbonatites and alkalic rocks.

The complex is composed of predominantly calcitic carbonate. Samples collected from pits and trenches indicate that bands of nearly pure sovite alternate with bands of silicocarbonate. A coarse-grained dolomite dike was exposed in one of the pits, and in the carbonate very pronounced bands of nearly pure actinolite, apatite, magnetite or pyrrhotite alternate with pink to pinkish white carbonate. The rocks are highly variable in colour, texture and grain size, however, they could generally be classified as equigranular and medium grained.

The carbonate shows layering and it is believed that the host rocks are probably granitic. One outcrop of granitic rock in the northeastern corner of the complex is extensively cut by carbonate dikes and strongly fenitized.

MINERALOGY: "The carbonatite is described by Parsons (1961a) as follows: The carbonatite consists of varying proportions of calcite, magnetite, perovskite, fluorite, pyrochlore and sulphides. It varies from nearly pure calcite to almost pure apatite. Bands of nearly massive magnetite several feet across are also present, and in some cases carrying up to 10% perovskite. Green streaky fragments and bands consisting mostly of apatite and mica are common features in the carbonatite.

"Except for the outcrop and boulder area, in the river running out of Schryburt Lake on the east boundary of the property, all carbonatite found is a granular type, in the river it occurs as slabs and as a solid outcrop in its floor. Where the granular carbonatite is near surface it is covered with residual soils, generally brown, micaceous and radioactive.

"Pyrochlore mineralization was reported from only [one] trench, number 28, where it is associated with high radioactivity, with apatite rich material and in close proximity to a near massive magnetite band (Parsons 1961a, p.1). Pyrochlore from this trench is reported to occur as olive-green crystals and assayed 1.82 percent niobium oxide (Parsons 1961, p.6)." (Thurston et al 1975, p.245).

HISTORY OF DEVELOPMENT:

1961: Line cutting, geological mapping and a magnetic survey were completed over the claim group. Six trenches and 22 pits were dug and samples were taken. All the work was completed by Many Lakes Exploration Company Limited.

REMARKS: "Many Lakes Exploration Co. Ltd. took 55 samples, 43 of which assayed below 0.1% niobium oxide, 8 between 0.1 and 0.3 percent, and 4 between 0.3 and 1.82 percent (Parsons 1961b, p.2). Parsons (1961b, p.2) reports that the perovskite is the chief source of the niobium values the higher occurring with apatite rich samples. Parsons (1961b, p.2) also reports that there is no obvious direct correlation between niobium values and magnetite." (Thurston et al 1975, p.245).

MAP REFERENCES: OGS MAP P.1546 (1:250,000) 1978
OGS Map P.2236, 1 inch to 1/4 mile (1:15,840) 1979
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Schryburt Lake, District Kenora, Patricia Portion, 52°30', 89°30'
OGS Toronto AFRO Files 63.3423, 2.2341
ODM MRC 14, p. 48 (1971)
CDEMR,GSC Econ. Geol. Rept. No. 29, p. 110 (1974)
ODM OFR 5119, p. 244-245 (1975)
CDMTS Paper 63-1, p. 43-44 (1963)
OGS Map P.2236 Marginal Notes (1979)
OGS GR 193, p. 123-129,132-135,146 (1979)

NAME: BIG BEAVER HOUSE OCCURRENCE Cb, (Nb), Cu, ap

COMMODITIES: Columbium, (niobium), copper, apatite

STATUS: Major Occurrence

NTS: 53A/13NW

LATITUDE: 52° 54' 05"N LONGITUDE: 89° 55' 00"W

LOCATION: Approximately 3 miles east of Biarrs Lake, 300 miles north of Thunder Bay and 95 miles north of Pickle Lake.

DESCRIPTION:

GEOLOGY: The rocks of this carbonatite complex are Late Precambrian in age and lie within the Cat Lake Belt of the Superior structural province. The complex has a prominent circular aeromagnetic expression and it is estimated to have a surface area of 16.1 km^2. The deposits are classified as contact metasomatic similar to the Oka complex in Quebec. Specifically, albitized nepheline-rich zones with pyrochlore and perovskite form at the contact of carbonatites and alkalic rocks.

A carbonatite dike outcrops along the south shore of Camp Lake on the northern edge of the complex. It strikes northwest and dips 45 degrees northeast. The dike is exposed for 130 feet across a width of 30 feet with the hanging wall beneath the waters of Camp Lake and the foot wall in contact with fenitized gneiss.

Three rock types encountered in diamond drilling of the complex form major lithological units. The carbonatite cuts the mafic phases of the complex that together can be classified as magnetite-amphibole-pyroxene-biotite sovite. The second type referred to as "mafic rock", contains only a small percentage of carbonate and ijolite forms the third dominant phase. (Map 2237 Marginal Notes).

"Drilling intersected vertically-dipping zones of calcite carbonatite inter-banded with mafic zones consisting of magnetite, apatite, bronze to green mica and calcite with disseminated pyrrhotite and blebs of chalcopyrite and mafic rock fragments. In drill holes 1, 2 and 7 the mafic rock content varies from less than 1/4 to more than 1/2 of the total core length with narrow zones less than 20 feet and a few wide zones from 150 to 300 feet. Zones of mixed rock types are present, there are great variations in the amounts of particular minerals and rock contacts are gradational." (Ferguson 1971, p.37).

MINERALOGY: The carbonatite consists of calcite, green amphibole, platy ilmenite, colourless apatite with magnetite and barite in local areas. Minor amounts of zircon, nepheline, sphene and perovskite are present. Small olive green to dark brown crystals of pyrochlore occur throughout the carbonatite dike, exposed on the property, particularly in amphibole-apatite seams.

The "mafic rock" consists of olivine, pyroxene, biotite and magnetite with minor accessory of zircon, altered nepheline and apatite.

Disseminated sulphides were encountered in all the drill holes.

HISTORY OF DEVELOPMENT:

1960: Surface exploration and 9 holes totalling 2,847 feet were drilled by Many Lakes Exploration Company Limited.

1962: 7 holes totalling 3,207 feet were drilled.

1965: 19 claims were surveyed.

1966: Teck Corporation Limited entered into an option agreement with Many Lakes Exploration Company and drilled 7 holes totalling 3,000 feet.

MAP REFERENCES:
OGS Map P.1546 (1:250,000) 1978
OGS Map P.2237, 1 inch to 1/4 mile (1:15,840) 1979
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Big Beaver House, District Kenora, Patricia P., 52°45', 89°45'
OGS Toronto AFRO File Misamkivash Lake Reports No. 10, 11, 2.2340
CDEMR,GSC Econ. Geol. Rept. No. 29, p. 112 (1974)
ODM MRC 14, p. 36-37 (1971)
OGS OFR 5119, p. 236-238 (1975)
OGS Map P.2237 Marginal Notes (1979)
OGS GR 193, p. 115-123,132-135,116,145 (1979)

NAME: SCHRYBURT LAKE OCCURRENCE — Cb, (Nb), U, cp, pyl, ap, mag, verm

COMMODITIES: Columbium, (Niobium), uranium, chalcopyrite, pyrochlore, apatite, magnetite, vermiculite

STATUS: Minor Occurrence

NTS: 53A/12SE

DESCRIPTION: Listed under APATITE - Schryburt Lake Occurrence

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NAME: BIG BEAVER HOUSE OCCURRENCE — Cb, (Nb), Cu, ap

COMMODITIES: Columbium, (Niobium), copper, apatite

STATUS: Major Occurrence

NTS: 53A/13NW

DESCRIPTION: Listed under APATITE - Big Beaver House Occurrence

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NAME: CONWEST EXPLORATION LIMITED PROPERTY — py, gf, po

COMMODITIES: Pyrite, graphite, pyrrhotite

STATUS: Minor Occurrences

NTS: 53A/9NW

LATITUDE: 52° 38' 35"N to 52° 39' 25" LONGITUDE: 88° 29' 00"W to 88° 27' 50"

LOCATION: The occurrences are in the Peeagwon Creek area.

DESCRIPTION:

GEOLOGY: Ten diamond drill holes were drilled in the area to a total of 3,274 feet. "The thickness of the overburden was less than 2 feet in one hole and varied between 17 and 50 feet in all the others. Metavolcanics, predominantly mafic in composition, account for 80.6 percent to 95.5 percent of the rocks intersected by holes #1, #2, #3, #6, #9, and for 48.8 percent 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 was intersected by hole #1 at a depth of 122 feet, two bands of iron formation were intersected by hole #4a at depths of 42 and 56 feet, and five bands of iron formation were intersected by hole #5 at depths of 53, 62, 71, 92 and 159 feet. The apparent thickness of the iron formation bands are, in the given order, as follows: Hole #1 - 20 feet; Hole #4a - 4.7, 79 feet; Hole #5 - 4.4, 11.5, 10.5, 53. , 5.5 feet.

"The 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 sulphides. The concentration of sulphides in the sulphide-rich bands varies from 45% to massive over a width of 3.6 feet in hole #1, from 20% to 30% in hole #4a, and from 20% to 50% in hole #5." (Thurston et al 1975, p.200-201).

MINERALOGY: "Variable concentrations of pyrrhotite and pyrite with minor occasional chalcopyrite occur also as fracture-filling material, and/or stringers, blebs, and disseminations within metavolcanics, and metasediments other than iron formation." (Thurston et al 1975, p.200-201).

HISTORY OF DEVELOPMENT: 1970: A combined airborne magnetic and electromagnetic survey was carried out. Ten holes totalling 3,274 feet were drilled.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM Map 2287, 1 inch to 4 miles (1:253,440) 1974
ODMNA Map P.715, 1 inch to 2 miles (1:126,720) 1971

SELECTED REFERENCES: ODM OFR 5119, p. 199-201 (1975)
Resident Geologist's Files, OMNR, Thunder Bay:
Conwest Exploration Ltd. File
OGS GR 193, p. 89,106,107 (1979)

NAME: SCHRYBURT LAKE OCCURRENCE — Cb, (Nb), U, cp, pyl, ap, mag, verm

COMMODITIES: Columbium, (Niobium), uranium, chalcopyrite, pyrochlore, apatite, magnetite, vermiculite

STATUS: Minor Occurrence

NTS: 53A/12SE

DESCRIPTION: Listed under APATITE - Schryburt Lake Occurrence

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NAME: SCHRYBURT LAKE OCCURRENCE — Cb, (Nb), U, cp, pyl, ap, mag, verm

COMMODITIES: Columbium, (Niobium), uranium, chalcopyrite, pyrochlore, apatite, magnetite, vermiculite

STATUS: Minor Occurrence

NTS: 53A/12SE

DESCRIPTION: Listed under APATITE - Schryburt Lake Occurrence

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NAME: BIG BEAVER HOUSE OCCURRENCE — Cb, (Nb), Cu, ap

COMMODITIES: Columbium, (Niobium), copper, apatite

STATUS: Major Occurrence

NTS: 53A/13NW

DESCRIPTION: Listed under APATITE - Big Beaver House Occurrence

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(Minor Occurrence) — py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53A/5NW

LATITUDE: 52° 27' 18"N LONGITUDE: 89° 49' 51"W

LOCATION: Northwest shore of Neswagank Lake.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975

NAME: CONWEST EXPLORATION LIMITED PROPERTY — py, gf, po

COMMODITIES: Pyrite, graphite, pyrrhotite

STATUS: Minor Occurrences

NTS: 53A/9NW

DESCRIPTION: Listed under GRAPHITE - Conwest Exploration Limited Property

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NAME: CONWEST EXPLORATION LIMITED PROPERTY — py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53A/9NW

LATITUDE: 52° 40' 25"N LONGITUDE: 88° 23' 15"W

LOCATION: About 1.5 miles west of Horley Lake.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM Map 2287, 1 inch to 4 miles (1:253,440) 1974
ODMNA Map P.715, 1 inch to 2 miles (1:126,720) 1971

NAME: CANADIAN NICKEL COMPANY LIMITED PROPERTY — py

COMMODITY: Pyrite

STATUS: Minor Occurrences

NTS: 53A/9SE

LATITUDE: 52° 31' 25"N LONGITUDE: 88° 13' 45"W
52° 32' 05" 88° 10 25"
52° 32' 30" 88° 10' 20"

LOCATION: Peeagwon Creek-Nibinamik Lake area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODMNA Map P.715, 1 inch to 2 miles (1:126,720) 1971
ODM OFR 5119, Fig. 3b, 1 inch to 8 miles - 1975
ODM OFR 5119, Fig. 9, 1 inch to 2 miles - 1975

NAME: CANADIAN NICKEL COMPANY LIMITED PROPERTY Cu, py, Zn

COMMODITIES: Copper, pyrite, zinc

STATUS: Minor Occurrence

NTS: 53A/10NE

LATITUDE: 52° 40' 20"N LONGITUDE: 88° 35' 00"W

LOCATION: About 5 miles north of Bucheski Lake in the Peeagwon Creek-Nibinamik Lake area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODMNA Map P.715, 1 inch to 2 miles (1:126,720) 1971

NAME: CANADIAN NICKEL COMPANY LIMITED PROPERTY py

COMMODITY: Pyrite

STATUS: Minor Occurrences

NTS: 53A/10NE

LATITUDE:		LONGITUDE:	
	52° 40' 35"N		88° 35' 00"W
	52° 43' 15"		88° 34' 15"
	52° 44' 00"		88° 34' 20"
	52° 42' 15"		88° 33' 25"
	52° 37' 40"		88° 33' 10"
	52° 42' 40"		88° 37' 10"
	52° 43' 00"		88° 37' 30"
	52° 43' 15"		88° 34' 50"
	52° 45' 00"		88° 40' 35"
	52° 45' 00"		88° 37' 20"

LOCATION: Peeagwon Creek-Nibinamik Lake area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM Map 2287, 1 inch to 4 miles (1:253,440) 1974
ODM OFR 5119, Sketch Map, Fig. 9, 1 inch to 2 miles - 1975
ODM OFR 5119, Sketch Map, Fig, 3b, 1 inch to 8 miles- 1975

NAME: CANADIAN NICKEL COMPANY LIMITED PROPERTY py

COMMODITY: Pyrite

STATUS: Minor Occurrences

NTS: 53A/10SW

LATITUDE:		LONGITUDE:	
	52° 35' 50"N		88° 50' 45"W
	52° 35' 20"		88° 50' 50"
	52° 35' 25"		88° 50' 10"
	52° 35' 00"		88° 49' 50"
	52° 35' 00"		88° 49' 15"

LOCATION: Peeagwon Creek-Nibinamik Lake area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM OFR 5119, Sketch Map, Fig. 9, 1 inch to 2 miles - 1975
ODM OFR 5119, Sketch Map, Fig. 3b, 1 inch to 8 miles- 1975

NAME: CONWEST EXPLORATION LIMITED PROPERTY py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53A/10SW

LATITUDE: 52° 37' 30"N LONGITUDE: 88° 48' 00"W

LOCATION: Peeagwon Creek area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM Map 2287, 1 inch to 4 miles (1:253,440) 1974

NAME: CANADIAN NICKEL COMPANY LIMITED PROPERTY py

COMMODITY: Pyrite

STATUS: Minor Occurrence

NTS: 53A/10SE

LATITUDE: 52° 35' 45"N LONGITUDE: 88° 32' 50"W

LOCATION: Peeagwon Creek-Nibinamik Lake area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODMNA Map P.715, 1 inch to 2 miles (1:126,720) 1971

NAME: CONWEST EXPLORATION LIMITED PROPERTY py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 53A/10SE

LATITUDE:		LONGITUDE:	
	52° 33' 12"N		88° 40' 00"W
	52° 35' 45"		88° 39' 25"
	52° 34' 00"		88° 38' 40"
	52° 33' 40"		88° 39' 10"
	52° 32' 50"		88° 40' 25"

LOCATION: Peeagwon Creek area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM Map 2287, 1 inch to 4 miles (1:253,440) 1974

NAME: CANADIAN NICKEL COMPANY LIMITED PROPERTY py

COMMODITY: Pyrite

STATUS: Minor Occurrences

NTS: 53A/15SW

LATITUDE: 52° 50' 10"N LONGITUDE: 88° 50' 05"W
52° 49' 50" 88° 50' 00"

LOCATION: About 1.5 miles east of Sennett Lake in the Peeagwon Creek-Nibinamik Lake area.

MAP REFERENCES: OGS Map P.1546 (1:250,000) 1978
ODM OFR 5119, Sketch Map, Fig. 9, 1 inch to 2 miles - 1975
ODM OFR 5119, Sketch Map, Fig. 3b, 1 inch to 8 miles- 1975

NAME: SCHRYBURT LAKE OCCURRENCE Cb, (Nb), U, cp, pyl, ap, mag, verm

COMMODITIES: Columbium, (Niobium), uranium, chalcopyrite, pyrochlore, apatite, magnetite, vermiculite

STATUS: Minor Occurrence

NTS: 53A/12SE

DESCRIPTION: Listed under APATITE - Schryburt Lake Occurrence

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NAME: INTERNATIONAL MINERALS and CHEMICAL CORPORATION pyl

COMMODITY: Pyrochlore

STATUS: Minor Occurrence

NTS: 53A/13NW

LATITUDE: 52° 55' 10"N LONGITUDE: 89° 54' 20"W

LOCATION: Approximately 95 miles north of Pickle Lake.

DESCRIPTION: See BIG BEAVER HOUSE OCCURRENCE listed under APATITE for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p. 281.

NAME: SCHRYBURT LAKE OCCURRENCE Cb, (Nb), U, cp, pyl, ap, mag, verm

COMMODITIES: Columbium, (Niobium), uranium, chalcopyrite, pyrochlore, apatite, magnetite, vermiculite

STATUS: Minor Occurrence

NTS: 53A/12SE

DESCRIPTION: Listed under APATITE - Schryburt Lake Occurrence

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NTS 53B

(Minor Occurrence) asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

NTS: 53B/9SW

LATITUDE: 52° 31' 15"N LONGITUDE: 90° 26' 40"W

LOCATION: Approximately 175 miles northeast of Red Lake, north shore of Libert Lake.

DESCRIPTION:

GEOLOGY: The deposit occurs within the Weagamow-North Caribou Lake metavolcanic-metasedimentary belt. This belt is an elongate synclinal structure that extends about 105 km from Weagamow Lake along the north shore of North Caribou Lake and southward to Opapimiskan Lake where it bifurcates into two subsidiary belts, extending south to the Libert Lake area and east to the Markop-Karl Lakes area. The subsidiary belts maintain the synclinal form.

"Lithologically the basal units of the belt consist of mafic metavolcanics, with an abundance of pillowed flows and only occasional intercalations of felsic pyroclastic metavolcanics in which no flow rocks are represented. The metavolcanics are succeeded by clastic metasediments including several wedges of coarse conglomerate and arkose, which are succeeded by greywacke and argillaceous rocks." (Thurston et al 1979, p.7).

MINERALOGY: At this location the mineralization occurs in a mafic metavolcanic rock and consists of amphibole, albitic epidotized plagioclase, radiating masses of tremolite-actinolite and some hornblende. Minor amounts of pyrite, garnet, chalcopyrite and iron oxides were noted as accessory minerals.

MAP REFERENCES: OGS Map P.1547 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODMNA Map P.711, 1 inch to 2 miles (1:126,720) 1971

SELECTED REFERENCES: Resident Geologist's Files, OMNR, Sioux Lookout: 53B/9SW
OGS GR 193, p. 7,61-76 (1979)
ODM Vol. 48, pt. 9, p. 11-28 (1939)

NAME: INCO LIMITED asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

NTS: 53B/14SE

LATITUDE: 52° 51' 45"N LONGITUDE: 91° 14' 20"W

LOCATION: Agutua Arm of Weagamow Lake, North Eyapimikama Lake. Approximately 160 miles northeast of Red Lake.

DESCRIPTION: See (Minor Occurrence) listed under ASBESTOS for GEOLOGY, MINERALOGY, MAP and SELECTED REFERENCES, p. 287.

HISTORY OF DEVELOPMENT: 1972: INCO drilled one hold that totalled 597 feet.

NAME: FORESTER LAKE OCCURRENCE gf, po, Au

COMMODITIES: Graphite, pyrrhotite, gold

STATUS: Minor Occurrence

NTS: 53B/8NE

LATITUDE: 52° 28' 09"N LONGITUDE: 90° 07' 21"W

LOCATION: Western shore of Forester Lake which is approximately 68 miles north of Pickle Lake and 160 miles northeast of Red Lake.

DESCRIPTION:

GEOLOGY: The deposit occurs in a silicified shear zone in mafic metavolcanics and metasediments near the southern contact of the Forester Lake Belt. This metavolcanic-metasedimentary belt extends 28 miles in a southeasterly direction. The predominant rock types within this belt are massive to foliated andesite to basalt, pillowed andesite to basalt, amphibolite and mafic tuff to agglomerate.

MINERALOGY: Minor mineralization present on this claim occurs as pyrite, chalcopyrite, molybdenite and magnetite. Minor assays of copper, nickel, cobalt and negligible gold, silver and molybdenum have been recorded.

"Massive pyrrhotite mineralization (40-60 percent sulphide up to 6.1 feet in thickness), accompanied by graphite was intersected within agglomeratic rocks of unspecified composition." (Sage and Breaks 1976, p.68).

A 10-40 foot wide mineralized, silicified shear zone was investigated by trenching."

"The 3 trenches cut across a wide silicified, mineralized volcanic zone. Also present are quartz veins ranging in thickness from 1/2 to 1 1/2". The larger veins are commonly saccharoidal and leached. The smaller quartz veins and shears still retain pyrite mineralization. Along the south end of each trench occur two 2-3" pegmatite bands, and in No. 1 trench - aplite dikes. An apparent 2' shear zone of chloritic schist occurs through each trench. This probably represents an altered serpentinite associated with the peridotite intrusions. The presence of mariposite (nickel-mica) in the quartz veining close to the pegmatite dikes indicates a probable enrichment of the pegmatites from the ultrabasic sills in the vicinity. Pyrite is probably associated with pegmatitic activity. In the No. 1 trench metasediments occur along the northern margin. It can be assumed that silicification and mineralization occurred along the volcanic sedimentary boundary which was fractured during one period of shearing stress. No minerals of economic importance were assayed from the trenches. Minor molybdenite occurs in the pegmatites cutting the trenches." (AFRO File 63.1246).

HISTORY OF DEVELOPMENT: 1961: Ground electromagnetic surveys and detailed geological mapping were done by Rio Tinto. Two holes totalling 144 feet were drilled.

REMARKS: Trenching failed to reveal mineralization of economic value. However, the presence of magnetite peridotite sills assaying 0.07-0.16 percent nickel and 0.01 percent cobalt are interesting. These are predominantly narrow and vary from 30-60 feet wide. The total extent of these sills is difficult to determine as they underlie the lower muskeg areas of the claims. The peridotite appears to be cut by later granite intrusives close to the western claim boundary.

MAP REFERENCES:
OGS Map P.1547 (1:250,000) 1978
ODM Map P.807, 1 inch to 2 miles (1:126,720) 1973
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

SELECTED REFERENCES:
ODM OFR 5180, p. 62-68 (1976)
OGS Toronto AFRO File 63.1246
OGS Toronto Geoscience Data Centre,
File Forester Lake, District Kenora,
Patricia Portion, Lat. 52°15', Long. 90°00'
Resident Geologist's Files, OMNR,
Sioux Lookout: 53B/8SE

NAME: INCO LIMITED gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 53B/9NW

LATITUDE: 52° 40' 10"N LONGITUDE: 90° 23' 40"W

LOCATION: Approximately 160 miles northeast of Red Lake, 3 miles east of Thurston Bay in North Caribou Lake.

DESCRIPTION:

GEOLOGY: The deposit occurs within the Weagamow-North Caribou Lake metavolcanic-metasedimentary belt. This belt is an elongate synclinal structure that extends about 105 km from Weagamow Lake along the north shore of North Caribou Lake and southward to Opapimiskan Lake where it bifurcates into two subsidiary belts, extending south to the Libert Lake area and east to the Markop-Karl Lakes area. The subsidiary belts maintain the synclinal form.

"Lithologically the basal units of the belt consist of mafic metavolcanics, with an abundance of pillowed flows and only occasional intercalations of felsic pyroclastic metavolcanics in which no flow rocks are represented. The metavolcanics are succeeded by clastic metasediments including several wedges of coarse conglomerate and arkose, which are succeeded by greywacke and argillaceous rocks." (Thurston et al 1979, p.7).

MINERALOGY: Mineralization in graphitic schist with streaks of pyrrhotite and pyrite were encountered by diamond drilling.

HISTORY OF DEVELOPMENT: 1963: Three diamond drill holes were completed by INCO.

MAP REFERENCES:
OGS Map P.1547 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODMNA Map P.711, 1 inch to 2 miles (1:126,720) 1971
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File International Nickel, District Kenora, Patricia Portion, 52°30', 90°15
OGS GR 193, p. 7,61-76,82 (1979)
ODM OFR 5119, p. 70-74 (1974)
ODM Vol. 48, pt. 9, p. 11-28 (1939)

(Minor Occurrences) (1) py, Au

COMMODITIES: Pyrite, gold

STATUS: Minor Occurrences

NTS: 53B/2NW

LATITUDE: 52° 12' 34"N LONGITUDE: 90° 48' 32"W
52° 12' 02" 90° 46' 06"

LOCATION: West of Horseshoe Lake.

MAP REFERENCES:
OGS Map P.1547 (1:250,000) 1978
ODM Map 2218, 1 inch to 4 miles (1:253,440) 1975
ODM Map P.806, 1 inch to 2 miles (1:126,720) 1973

(Minor Occurrences) (2) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 53B/5NE

LATITUDE: 52° 29' 36"N LONGITUDE: 91° 35' 04"W
52° 29' 36" 91° 33' 05"

LOCATION: Central portion of Upper Windigo Lake.

MAP REFERENCE: OGS Map P.1547 (1:250,000) 1978

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Red Lake: 53B/5NE

(Minor Occurrences) (3) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 53B/8NE

LATITUDE: 52° 27' 34"N LONGITUDE: 90° 05' 04"W
52° 27' 10" 90° 03' 58"

LOCATION: Southeast of Forester Lake.

MAP REFERENCES: OGS Map P.1547 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODM Map P.807, 1 inch to 2 miles (1:126,720) 1973

(Minor Occurrences) (4) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 53B/9NW

LATITUDE: 52° 43' 15"N LONGITUDE: 90° 26' 41"W
52° 42' 10" 90° 24' 03"

LOCATION: East of Caribou Lake.

MAP REFERENCES: OGS Map P.1547 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974

(Minor Occurrence) (5) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53B/9SE

LATITUDE: 52° 30' 55"N LONGITUDE: 90° 08' 23"W

LOCATION: About 2 miles east of Markop Lake.

MAP REFERENCES: OGS Map P.1547 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.711, 1 inch to 2 miles (1:126,720) 1971

(Minor Occurrences) (6) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 53B/12SE

LATITUDE: 52° 31' 08"N LONGITUDE: 91° 32' 16"W
52° 31' 00" 91° 32' 17"
52° 30' 00" 91° 33' 18"
52° 30' 00" 91° 35' 57"
52° 31' 00" 91° 33' 19"
52° 30' 50" 91° 34' 51"

LOCATION: Upper Windigo Lake area.

MAP REFERENCE: OGS Map P.1547 (1:250,000) 1978

SELECTED REFERENCE: Resident Geologist's Files, OMNR, Red Lake: 53B/12SE

(Minor Occurrence) (7) py, po, asp, Cu

COMMODITIES: Pyrite, pyrrhotite, arsenopyrite, copper

STATUS: Minor Occurrence

NTS: 53B/14NE

LATITUDE: 52° 53' 06"N LONGITUDE: 91° 09' 56"W

LOCATION: About 3 miles north of Randall Lake, 2 miles east of Agutua Arm in Weagamow Lake.

MAP REFERENCES: OGS Map P.1547 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODMNA Map P.711, 1 inch to 2 miles (1:126,720) 1971

NTS 53C

NAME: SOUTH TROUT LAKE asb

COMMODITY: Asbestos

STATUS: Minor Occurrence

NTS: 53C/13SE

LATITUDE: 52° 51' 40"N LONGITUDE: 93° 39' 40"W

LOCATION: Approximately 1.6 km south of the east end of South Trout Lake, north of the old Barens River mine and about 128 miles north of Red Lake.

DESCRIPTION:

GEOLOGY: An isoclinally folded Early Precambrian metavolcanic-metasedimentary sequence forms an east- to southeast-trending belt in the area. The belt ranges in width from 2 to 3 miles, and is about 10,000 feet thick.

Lithologically the sequence is 67 percent mafic flows and is characterized by marked lateral and vertical changes. Metagabbro, metadiorite, peridotite sills, dikes and stocks intruded the sequence during volcanism and form about 15 percent. These intrusions range in thickness from a few feet to 1,000 feet.

The occurrence is located in the South Trout Lake stock which "is composed of metamorphosed gabbro and peridotite and has an area of about 1-square mile. The stock has sharp, but generally discordant, contacts with country rocks, although the long axis of the stock is parallel to regional stratigraphy. The stock thus differs in form from the more common metagabbro sills. Also in contrast to the sills, contact zones of the stock have been only locally chilled. The stock is in two segments, separated by the Setting Net Lake fault, and stratigraphic correlation of metavolcanic formations across the fault indicates that the two segments represent different levels of the stock...." (Ayres 1974, p.53-54).

Altered peridotite units up to 1,000 feet wide are the major ultramafic units and form major phases up to 50 percent of the South Trout Lake stock.

The peridotite shows two types of alteration, "a predominant serpentinization and a local talc-dolomite alteration. The association of altered peridotite with metagabbro indicates that some, if not most, of the alteration is the result of regional metamorphism.

"Serpentinized peridotite is a tough but relatively soft, magnetic rock that is commonly blue-grey on fresh surfaces but is locally dark grey, blue-green, or dark green. Weathered surfaces are white, pale green, pale brownish green, pale brown, or rusty brown and the weathering rind is up to 0.5 inch thick.

"Serpentinized peridotite is composed largely of serpentine, chlorite, tremolite, carbonate (largely dolomite), and iron oxide in varying proportions.... No primary mineralogy is preserved but relict fine- to medium-grained (0.5 mm to 2 mm) textures are locally preserved by tremolite pseudomorphs after pyroxene(?), serpentine pseudomorphs after olivine(?), and by distribution of fine-grained secondary magnetite, which ranges in abundance from 5 to 20 percent. Disseminated, very fine-grained pyrrhotite is locally present, and fine-grained chromite is a characteristic accessory mineral. Altered olivine(?) phenocrysts up to 10 mm long were found in several units.

"Peridotite is generally massive to poorly foliated but thin (1 mm to 10 mm) layering in zones up to 50 feet thick was locally found in the South Trout Lake stock. Primary flow foliation locally occurs at the margins of the stock and discrete sills; the primary nature of the foliation is shown by the presence of massive peridotite dikes in foliated peridotite of the stock." (Ayres 1974, p.52,53).

MINERALOGY: Veins and lenses of dolomite talc, serpentine, magnetite, fibrous tremolite, crysotile asbestos, rare calcite and magnesium are most abundant in the South Trout Lake stock.

"The asbestos forms cross-fibre veins that occur in several sets and range in width from a fraction of a mm to 5 mm. Where the densest vein concentration was observed, the wider veins are generally 5 to 15 cm apart but the narrowest veins are only a fraction of a cm apart with as many as 5 veins per cm. Maximum fibre content in the area of most abundant veins is probably less than 2 percent. Rare slip-fibre clino-chrysotile veins containing magnetite are also present; they have a maximum width of 15 mm.

"Sparse, commonly harsh, fibrous actinolite veins were found at three localities in serpentinized peridotite of the South Trout Lake stock.... The veins are up to 2 cm wide and are both cross-fibre and slip-fibre; they form less than 1 percent of the outcrop.

"Actinolite and clino-chrysotile identifications were confirmed by X-ray diffraction work done by the Mineral Research Branch, Ontario Division of Mines." (Ayres 1974, p.184).

MAP REFERENCES:
OGS Map P.1548 (1:250,000) 1978
ODM Map 2270, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.769, 1 inch to 2 miles (1:126,720) 1972
ODM Map P.538, 1 inch to 1/4 mile (1:15,840) 1969
ODM Map P.422, 1 inch to 1/4 mile (1:15,840) 1968

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File South Trout Lake, District Kenora, Patricia PORTION 52° 45', 93° 45'.
ODM GR 113, p. 45-54, 184 (1974)
ODM IMR 36, p. 30 (1971)
ODM MP 28, p. 36 (1969)

NAME: TECK MINING COMPANY LIMITED (Mattless Lake East) — Bi, Zn, Mo

COMMODITIES: Bismuth, zinc, molybdenum

STATUS: Minor Occurrence

NTS: 53C/12NE

LATITUDE: 52° 44' 15"N LONGITUDE: 93° 37' 59"W

LOCATION: About 4600 feet east of the southeast end of Mattless Lake, and 95 miles north of Red Lake.

DESCRIPTION:

GEOLOGY: The basement rocks of the area are Early Precambrian in age and are located in the Superior Structural Province. An isoclinally folded Early Precambrian metavolcanic-metasedimentary sequence forms an east- to southeast-trending belt in the area. The belt ranges in width from 2 to 3 miles, and is about 10,000 feet thick.

Lithologically the sequence is 67 percent mafic flows and is characterized by marked lateral and vertical changes. Metagabbro, metadiorite, peridotite sills, dikes and stock intruded the sequence during volcanism and form about 15 percent. These intrusions range in thickness from a few feet to 1000 feet.

MINERALOGY: A grab sample taken at this locality, of a 2-inch wide quartz vein within gneissic mafic metavolcanics gave, upon analysis, 0.72 percent zinc, 0.10 percent bismuth, 0.04 percent molybdenum, and 0.01 percent beryllium.

MAP REFERENCES:
OGS Map P.1548 (1:250,000) 1978
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.769, P.768, 1 inch to 2 miles (1:126,720) 1972
ODM Map P.538, 1 inch to 1/4 mile (1:15,840) 1969

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Mattless Lake East, District Kenora, Patricia Portion, Lat. 52°30', Long. 93°30'
ODM MP 28, p. 36 (1969)

NAME: McBEAN INVESTMENTS Cr, Ni

COMMODITIES: Chromium, nickel

STATUS: Minor Occurrence

NTS: 53C/10SW

LATITUDE: 52° 30' 16"N LONGITUDE: 92° 51' 24"W

LOCATION: Approximately 1/2 mile east of Memekwesi Island in North Spirit Lake and on the northeastern side of Peridotite Bay.

DESCRIPTION:

GEOLOGY: The area is underlain by an isoclinally folded metavolcanic-metasedimentary sequence and a batholithic granitic intrusive association.

"The original volcanic rocks ranged in composition from basalt to rhyodacite; original sediments included conglomerates, sandstones, mudstones, carbonates, and cherts. Ultramafic, mafic, intermediate, and felsic intrusions were emplaced in the volcanic and sedimentary strata. These were subsequently folded and metamorphosed, and intruded by the granitic batholithic rocks which now surround (on a regional scale) the metavolcanic-metasedimentary sequence.

"The major folds are isoclinal and trend west of north and east of north. Large scale fault structures are present in the western and central parts of the area." (Wood 1977, p.vii).

The deposit occurs in a metamorphosed ultramafic rock unit south of the North Spirit Lake Fault. The diamond drill logs indicated "an alternating sequence of "diorite" or "andesite" and iron formation. From details provided of these igneous rocks (e.g. "massive, fine to medium equigranular, dark green, medium softness, medium to highly chloritic, and in part talcose") there is little doubt that they are in actuality ultramafic in composition." (Wood 1977, p.53).

MINERALOGY: A grab sample taken from the property contained fine-grained disseminated oxide and minor sulphide mineralization. Analyses of the sample showed 0.14 percent nickel, 0.28 percent chromium, 0.16 percent manganese, 0.01 percent cobalt and about 0.05 percent titanium.

A 4.5 foot sample of drill core analyzed 0.16 percent copper and 0.03 percent nickel and some sulphides were noted in fractures in "andesite".

HISTORY OF DEVELOPMENT: 1970: 3 holes totalling 1,200 feet were drilled.

MAP REFERENCES:
OGS Map P.1548 (1:250,000) 1978
ODM Map 2362, 1 inch to 1/2 mile (1:31,680) 1977
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.760, 1 inch to 1/4 mile (1:15,840) 1972
ODM Map 47g, 1 inch to 1 mile (1:63,360) 1938

SELECTED REFERENCES:
Resident Geologist's Files, OMNR, Red Lake: McBean Investments, 53C/10SW
ODM GR 150, p. vii,48-49,52-53 (1977)
ODM Vol. 47, pt. 7, p. 44-78 (1938)

NAME: SETTING NET LAKE SOUTHWEST Li (spd)

COMMODITY: Lithium (spodumene)

STATUS: Minor Occurrence

NTS: 53C/12NE

LATITUDE: 52° 44' 50"N LONGITUDE: 93° 37' 53"W

LOCATION: Approximately 95 miles north of the community of Red Lake and 2 miles east-northeast of Mattless Lake.

DESCRIPTION:

GEOLOGY: An Early Precambrian metavolcanic-metasedimentary sequence that is at least 20,000 feet thick, and exhibits a marked cyclicity forms an east- to southeast-trending belt in the area.

"... he metavolcanic-metasedimentary sequence has been isoclinally folded with fold axes generally trending northwest parallel to the boundaries of the belt. The major folds are upright to slightly overturned and fold axes have relatively gentle plunges. Numerous faults with diverse trends have been recognized...." (Ayres 1972, p.8).

"Minor plutons consisting of sills, dikes, and small stocks of porphyritic trondhjemite, granophyric quartz diorite, felsite, diorite, gabbro, and ultramafic rocks were intruded into the volcanic-sedimentary sequence prior to regional metamorphism and are probably genetically related to the volcanism.... Unmetamorphosed, composite, granitic batholiths that range in composition from diorite to granite intrude and form the margins of the meta-volcanic-metasedimentary belt. The batholiths appear to have been emplaced during or slightly after the culmination of the regional metamorphism." (Ayres 1972, p.7-8).

The deposit occurs in the Setting Net Lake batholith, one of the concordant composite batholiths that intrudes the sequence. The batholith is composed mainly of porphyritic biotite granodiorite with sparse pegmatite and aplite dikes intrusions.

The dikes are generally fine grained, partly recrystallized and less than 10 feet wide. They are relatively common in the batholith in a 0.5 to one mile wide, northwest-trending zone adjacent to, but to the north side of the Bear Head Fault.

MINERALOGY: Lithium mineralization was found in a white spodumene-bearing pegmatite dike. A grab sample contained 0.52 percent lithium.

MAP REFERENCES:
OGS Map P.1548 (1:250,000) 1978
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.768, 1 inch to 2 miles (1:126,720) 1972
ODM Map P.538, 1 inch to 1/4 mile (1:15,840) 1970

SELECTED REFERENCES:
OGS Toronto Geoscience Data Centre, File Setting Net Southwest, District Kenora, Patricia Portion, Lat. 52°30', Long. 93°30
ODM MP 53, p. 7-8,12 (1972)
ODM GR 113, p. 61,92-99 (1974)

NAME: CAM MINES LIMITED Li

COMMODITY: Lithium

STATUS: Minor Occurrence

NTS: 53C/13SE

LATITUDE: 52° 48' 00"N LONGITUDE: 93° 44' 40"W

LOCATION: Approximately 0.5 miles north of the northern part of Bear Head Lake.

DESCRIPTION: See SETTING NET LAKE SOUTHWEST listed under LITHIUM for GENERAL GEOLOGY, MAP and SELECTED REFERENCES, p. 295.

Holmquistite, the lithium-bearing amphibole, was found in granitic rocks at this locality. The showing is within the zone in which white pegmatite dikes occur, however, no pegmatite was observed near the holmquistite occurrence.

(Minor Occurrence) py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53C/13NE

LATITUDE: 52° 53' 06"N LONGITUDE: 93° 40' 22"W

LOCATION: Southeastern shore of South Trout Lake.

MAP REFERENCES:
OGS Map P.1548 (1:250,000) 1978
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map 2270, 1 inch to 1/2 mile (1:31,680) 1973
ODM Map P.422, 1 inch to 1/4 mile (1:15,840) 1967,1968
ODM Map P.768, 1 inch to 2 miles (1:126,720) 1972

NAME: CAM (BEAR HEAD LAKE) DEPOSIT U, Th, Mo

COMMODITIES: Uranium, thorium, molybdenum

STATUS: Minor Occurrence

NTS: 53C/13SW

LATITUDE: 52° 48' 12"N LONGITUDE: 93° 50' 40"W

LOCATION: Approximately 110 miles north of Red Lake and 3 miles northwest of Bear Head Lake.

MAP REFERENCES:
OGS Map P.1548 (1:250,000) 1978
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.768, 1 inch to 2 miles (1:126,720) 1972

NAME: CAM GROUP A PROSPECT U, Th, Mo, Pb

COMMODITIES: Uranium, thorium, molybdenum, lead

STATUS: Minor Occurrence

NTS: 53C/13SW

LATITUDE: 52° 46' 20"N LONGITUDE: 93° 45' 25"W

LOCATION: About 120 miles north of Red Lake, and on the southern shore of Bear Head Lake.

MAP REFERENCES: OGS Map P.1548 (1:250,000) 1978
ODM Map 2262, 1 inch to 4 miles (1:253,440) 1973
ODM Map P.768, 1 inch to 2 miles (1:126,720) 1972

NTS 53E

(Minor Occurrence) Ag, Pb, Au, Cu, py

COMMODITIES: Silver, lead, gold, copper, pyrite

STATUS: Minor Occurrence

NTS: 53E/1SW

LATITUDE: 53° 03' 15"N LONGITUDE: 94° 16' 07"W

LOCATION: Approximately 6 miles southeast of Varve Clay Lake.

MAP REFERENCES: OGS Map P.1553 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.430, 1 inch to 2 miles (1:126,720) 1967

NTS 53F

(Minor Occurrence) (1) sp, py

COMMODITIES: Sphalerite, pyrite

STATUS: Minor Occurrence

NTS: 53F/3SE.

LATITUDE: 53° 00' 07"N LONGITUDE: 93° 14' 47"W

LOCATION: Approximately 3 miles east of Sandborn Bay, and 2 miles south of Sandy Lake.

MAP REFERENCES: OGS Map P.1553 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.431, 1 inch to 2 miles (1:126,720) 1969

(Minor Occurrences) (2) Cu, mo, py, py, gn

COMMODITIES: Copper, molybdenite, pyrite, pyrrhotite, galena

STATUS: Minor Occurrences

NTS: 53F/14NE

LATITUDE: 53° 52' 42"N LONGITUDE: 93° 07' 37"W
53° 52' 48" 93° 07' 25"

LOCATION: About one mile southeast of Sandy Mack Lake and 6 miles northwest of Lingman Lake.

MAP REFERENCES: OGS Map P.1553 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.431, 1 inch to 2 miles (1:126,720) 1967

(Minor Occurrence) (3) Cu, Pb, Zn, py, po

COMMODITIES: Copper, lead, zinc, pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53F/14NE

LATITUDE: 53° 54' 11"N LONGITUDE: 93° 04' 02"W

LOCATION: Northwest of Seeker Lake and about 8 miles northwest of Lingman Lake.

MAP REFERENCES: OGS Map P.1553 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.431, 1 inch to 2 miles (1:126,720) 1967

(Minor Occurrence) (4) Cu, py, po, asp

COMMODITIES: Copper, pyrite, pyrrhotite, arsenopyrite

STATUS: Minor Occurrence

NTS: 53F/14NE

LATITUDE: 53° 53' 55"N LONGITUDE: 93° 00' 40"W

LOCATION: Northern tip of Seeker Lake and about 3 miles northwest of Lingman Lake.

MAP REFERENCES: OGS Map P.1553 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.431, 1 inch to 2 miles (1:126,720) 1967

(Minor Occurrence) (5) py, cp, po, mo

COMMODITIES: Pyrite, chalcopyrite, pyrrhotite, molybdenite

STATUS: Minor Occurrence

NTS: 53F/14NE

LATITUDE: 53° 53' 06"N LONGITUDE: 93° 06' 16"W

LOCATION: Southeast of Sandy Mack Lake and about 6.5 miles northwest of Lingman Lake.

MAP REFERENCES: OGS Map P.1553 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.431, 1 inch to 2 miles (1:126,720) 1972

NTS 53G

NAME: INCO LIMITED gf

COMMODITY: Graphite

STATUS: Minor Occurrence

NTS: 53G/5NW

LATITUDE: 53° 23' 15"N LONGITUDE: 91° 48' 00"W

LOCATION: Approximately 240 miles northeast of Red Lake, 120 miles east of the Ontario-Manitoba boundary, and on the eastern shore of Blackwater Bay in Severn Lake.

DESCRIPTION:

GEOLOGY: An Early Precambrian metavolcanic-metasedimentary-metagabbroic sequence forms two belts; namely the Muskrat Dam Lake belt and the Rottenfish River belt, in the area.

The isoclinally folded Muskrat Dam Lake belt is about 65 miles long, ranges in width from 4 to 11 miles and trends generally east.

The Rottenfish River belt is about 17 miles long, has an average width of 2 miles and trends north.

"In both belts, metavolcanics range in composition from mafic to felsic; mafic metavolcanics generally form flows; intermedite metavolcanics form about equal volumes of flows and volcanic breccia; and felsic units are dominantly pyroclastic. In the metasedimentary formations, metagreywacke and metasiltstone predominate although slate and metaconglomerate are locally abundant, especially in the upper formation. Marble and calc-silicate gneiss and granofels are locally present.

"Narrow layers of ferruginous metasediments and metamorphosed iron formation are present in all but the lower mafic metavolcanic formation and the meta-sedimentary-metavolcanic formation of undetermined stratigraphic position.

"Uralitized and metamorphosed gabbro and diorite form at least four sills and one irregular body in the Muskrat Dam Lake belt and several sills in the Rottenfish River belt. The sills have a maximum thickness of 7,800 feet and several have been traced along strike for more than 15 miles.

"The metavolcanic-metasedimentary-metagabbroic assemblage has been variously metamorphosed to the greenschist, almandine amphibolite, and hornblende hornfels facies.

"Felsic intrusive activity appears to have been initiated during the period of volcanism and sedimentation, because some felsic porphyry dikes were intruded by metagabbro sills. The composite granitic batholiths postdate the metagabbro: the first stage in their development was the local intrusion of diorite, syenodiorite, and mafic-rich trondhjemite; the second stage was the widespread intrusion of granite magma ranging in composition from tonalite to quartz monzonite. Trondhjemite and quartz monzonite predominate in the batholiths.

"Rare post-batholith diabase dikes form three sets which have slightly different compositions and which trend north-northeast, north-northwest, and west-northwest. Several other late mafic dikes were found, one of which appears to contain altered glass." (Ayres 1969, p.8).

MINERALOGY: Diamond drilling at this locality showed graphite, pyrite and pyrrhotite mineralization in the intrusive metagabbro and metadiorite.

HISTORY OF DEVELOPMENT: 1971: A 196-foot hole was drilled by INCO.

MAP REFERENCES: OGS Map P.1552 (1:250,000) 1978
ODM 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.217, 1 inch to 1/2 mile (1:31,680) 1964
ODM Map 2163, 1 inch to 1 mile (1:63,360) 1969
ODM Map P.433, 1 inch to 2 miles (1:126,720) 1967

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Blackwater Bay, District Kenora, Patricia PORTION, 53° 15', 91° 45'.
ODM GR 74, p. 7-8,63 (1969)
ODM MP 27, p. 23-26 (1969)
ODM MP 28, p. 11,22-25 (1969)
OGS Toronto AFRO File, Blackwater Bay Diamond Drill Report No. 10

(Minor Occurrences) gf

COMMODITY: Graphite

STATUS: Minor Occurrences

NTS: 53G/5NE

LATITUDE:	53° 28' 15"N	LONGITUDE:	91° 38' 30"W
	53° 26' 33"		91° 30' 58"
	53° 27' 45"		91° 33' 45"

LOCATION: Approximately 1-3 miles east of Muskrat Dam Lake.

DESCRIPTION: See INCO LIMITED listed under GRAPHITE for GEOLOGY and MINERALOGY, p. 299.

HISTORY OF DEVELOPMENT: 1971: INCO Limited drilled a 302-foot hole.

MAP REFERENCES:
OGS Map P.1552 (1:250,000) 1978
ODM Map 2272, 1 inch to 4 miles (1:253,440) 1974
ODM Map 2164, 1 inch to 1 mile (1:63,360) 1969
ODM Map P.433, 1 inch to 2 miles (1:126,720) 1967
ODM Map P.217, 1 inch to 1/2 mile (1:31,680) 1964

SELECTED REFERENCES: OGS Toronto Geoscience Data Centre, File Muskrat Dam Lake, District Kenora, Patricia P., 53°15', 91°30'
ODM GR 74, p. 7-8,63 (1969)
ODM MP 27, p. 23-26 (1969)
ODM MP 28, p. 11,22-25 (1969)
OGS Toronto AFRO File, Muskrat Dam Lake Diamond Drill Report No. 29

NAME: INCO LIMITED gf

COMMODITY: Graphite

STATUS: Minor Occurrences

NTS: 53G/5SW

LATITUDE: (1)	53° 15' 45"N	LONGITUDE:	91° 58' 40"W
(2)	53° 19' 53"		91° 49' 24"
(3)	53° 22' 20"		91° 47' 40"
(4)	53° 21' 30"		91° 50' 45"

LOCATION: Approximately 240 miles northeast of Red Lake and 120 miles east of the Ontario-Manitoba boundary.

DESCRIPTION: See INCO LIMITED listed under GRAPHITE for GEOLOGY and MINERALOGY, p. 299.

HISTORY OF DEVELOPMENT:

1970: At location (3) one hole was drilled to a depth of 186.2 feet by INCO Limited.

1971: A 703-foot hole was drilled at location (1) by INCO Limited.

MAP REFERENCES: OGS Map P.1552 (1:250,000) 1978
ODM Map 2272, 1 inch to 4 miles (1:253,440) 1974
ODM Map 2163, 1 inch to 1 mile (1:63,360) 1969
ODM Map P.433, 1 inch to 2 miles (1:126,720) 1967
ODM Map P.215, 1 inch to 1/2 mile (1:31,680) 1964

SELECTED REFERENCES: OGS Toronto AFRO File, Kippen Lake Diamond Drill Reports No. 10, 14, 21
ODM GR 74, p. 7-8,63 (1969)
ODM MP 27, p. 23-26 (1969)
ODM MP 28, p. 11,22-25 (1969)

NAME: INCO LIMITED gf

COMMODITY: Graphite

STATUS: Minor Occurrences

NTS: 53G/6NE

LATITUDE:	(1) 53° 25' 16"N	LONGITUDE:	91° 14' 30"W
	(2) 53° 25' 56"		91° 13' 25"
	(3) 53° 25' 56"		91° 08' 10"

LOCATION: Approximately 240 miles northeast of Red Lake and 120 miles east of Red Lake.

DESCRIPTION: See INCO LIMITED listed under GRAPHITE for GEOLOGY and MINERALOGY, p. 299.

HISTORY OF DEVELOPMENT:

1970: A 180-foot hole was drilled at (2).

1971: One hole totalling 503 feet was drilled at (3).

1972: At (1) a 404-foot hole was drilled.
All holes were done by INCO Limited.

MAP REFERENCES: OGS Map P.1552 (1:250,000) 1978
ODM Map 2272, 1 inch to 4 miles (1:253,440) 1974
ODM Map 2164, 1 inch to 1 mile (1:63,360) 1969
ODM Map P.433, 1 inch to 2 miles (1:126,720) 1967
ODM Map P.220, P.221, 1 inch to 1/2 mile (1:31,680) 1964

SELECTED REFERENCES: ODM GR 74, p. 7-8,63 (1969)
ODM MP 27, p. 23-26 (1969)
ODM MP 28, p. 11,22-25 (1969)
OGS Toronto Geoscience Data Centre, Munekum Lake, District Kenora, Patricia Portion, 53°15, 91°00'
OGS Toronto AFRO File, Misquamaebin Lake Diamond Drill Reports No. 10, 15, 18

(Minor Occurrence) (1) cp, py, po

COMMODITIES: Chalcopyrite, pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53G/5SW

LATITUDE: 53° 16' 21"N LONGITUDE: 91° 48' 48"W

LOCATION: About 2.5 miles east of Kippen Lake.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map 2163, 1 inch to 1 mile (1:63,360) 1969
ODM Map P.216, 1 inch to 1/2 mile (1:31,680) 1964

(Minor Occurrence) (2) sp, gn, Ag, py, po

COMMODITIES: Sphalerite, galena, silver, pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53G/15NE

LATITUDE: 53° 52' 26"N LONGITUDE: 90° 36' 49"W

LOCATION: Southwestern shore of Southorn Lake.

MAP REFERENCES: OGS Map P.1522 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map 2045, 1 inch to 2 miles (1:126,720) 1964

NTS 53H

NAME: INCO LIMITED po, py, gf

COMMODITIES: Pyrrhotite, pyrite, graphite

STATUS: Minor Occurrences

NTS: 53H/5NW

LATITUDE: (1) 53° 26' 05"N LONGITUDE: 89° 55' 10"W
(2) 53° 26' 30" 89° 50' 35"

LOCATION: Approximately 27 miles south of Big Trout Lake.

DESCRIPTION:

GEOLOGY: The showings occur in the Nemeigûsabins Lake Arm of the Big Trout Lake belt. The Nemeigusabins Lake arm strikes southeast from Leopard Point, and is at least 5 miles wide at Nemeigusabins Lake. The arm is bounded by granitic rocks on the northeast and partly by faulting and granitic rocks on the southwest.

The Nemeigusabins Lake arm is an isoclinally folded syncline that steeply overturns towards the southwest, and fold axis appears to terminate southwest of Big Island.

"Mafic to intermediate metavolcanics are dominant rocks outcropping within the Nemeigusabins Lake arm of the Big Trout Lake belt. These rocks are massive, schistose, and commonly have well-developed pillow structures. The rocks are typically greenish black on weathered outcrop surface and dark greenish black to black on fresh surface. The rocks are composed principally of chlorite, actinolite, and minor calcite." (Thurston et al 1979, p.42).

The diamond drill logs submitted by INCO Limited showed the mineralization occurring in andesite, rhyolite and peridotite.

MINERALOGY: In hole (1), "Minor pyrite, pyrrhotite and graphite were reported. [And] One percent combined sulphide was reported from 65.8 to 68.6 m...."

In hole (2), "Pyrite, pyrrhotite, and minor graphite, varying from 2 to 70 percent total sulphide were encountered from 22.8 to 25.9 m, 34.0 to 36.4 m, 62.5 to 64.1 m, 66.4 to 68.6 m, and 69.6 to 69.9 m...." (Thurston et al 1979, p.47).

HISTORY OF DEVELOPMENT: 1970: Two holes totalling 93.6 m each was drilled by INCO Limited.

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971,1973

SELECTED REFERENCES: OGS Toronto AFRO File Nemeigusabins Lake, Diamond Drill Reports No. 10, 13
OGS GR 193, p. 11,42-45,47 (1979)
ODM GR 23, p. 24 (1964)

NAME: INCO LIMITED py, po, gf

COMMODITIES: Pyrite, pyrrhotite, graphite

STATUS: Minor Occurrence

NTS: 53H/12SW

LATITUDE: 53° 31' 10"N LONGITUDE: 89° 54' 30"W

LOCATION: About 22 miles south of Big Trout Lake.

DESCRIPTION: See INCO LIMITED listed under GRAPHITE for GEOLOGY, MAP and SELECTED REFERENCES, p. 299.

MINERALOGY: The mineralization consists of pyrite and pyrrhotite which constitute up to 4 percent of the rock. Graphitic streaks are encountered throughout the drill hole and locally up to 8 percent sulphide is present.

HISTORY OF DEVELOPMENT: 1970: One hole totalling 524 feet was drilled by INCO Limited.

NAME: INCO LIMITED po, py, gf

COMMODITIES: Pyrrhotite, pyrite, graphite

STATUS: Minor Occurrence

NTS: 53H/5NW

DESCRIPTION: Listed under GRAPHITE - INCO Limited

(Minor Occurrences) (1) po, py, cp

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrences

NTS: 53H/5NW

LATITUDE: 53° 26' 37"N LONGITUDE: 89° 53' 28"W
53° 25' 49" 89° 50' 35"
53° 25' 49" 89° 48' 30"

LOCATION: South of Big Trout Lake.

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971,1973

(Minor Occurrences) (2) py, cp, po

COMMODITIES: Pyrite, chalcopyrite, pyrrhotite

STATUS: Minor Occurrences

NTS: 53H/12NW

LATITUDE: 53° 44' 19"N LONGITUDE: 89° 47' 36"W
53° 44' 50" 89° 45' 34"

LOCATION: About 12 miles south of Big Trout Lake.

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971,1973

(Minor Occurrence) (3) po, py, cp

COMMODITIES: Pyrrhotite, pyrite, chalcopyrite

STATUS: Minor Occurrence

NTS: 53H/12NE

LATITUDE: 53° 41' 45"N LONGITUDE: 89° 42' 24"W

LOCATION: About 16 miles southeast of Big Trout Lake.

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971,1973

NAME: INCO LIMITED py, po, gf

COMMODITIES: Pyrite, pyrrhotite, graphite

STATUS: Minor Occurrence

NTS: 53H/12SW

DESCRIPTION: Listed under GRAPHITE - INCO Limited

(Minor Occurrences) (4) py, po, cp

COMMODITIES: Pyrite, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 53H/12SW

LATITUDE: 53° 30' 21"N LONGITUDE: 89° 56' 37"W
53° 31' 13" 89° 53' 14"
53° 31' 45" 89° 50' 59"

LOCATION: South of Big Trout Lake.

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971,1973

(Minor Occurrence) (5) py, cp, Au

COMMODITIES: Pyrite, chalcopyrite, gold

STATUS: Minor Occurrence

NTS: 53H/13SW

LATITUDE: 53° 46' 29"N LONGITUDE: 89° 57' 18"W

LOCATION: Southeast point of Big Island, Big Trout Lake.

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map 2292, 1 inch to 4 miles (1:253,440) 1974
ODM Map P.712, 1 inch to 2 miles (1:126,720) 1971,1973

NAME: INCO LIMITED Fe, Ti

COMMODITIES: Iron, titanium

STATUS: Minor Occurrence

NTS: 53H/13SW

LATITUDE: 53° 47' 07"N LONGITUDE: 89° 50' 35"W

LOCATION: About 2 miles southeast of Big Trout Lake and 6 miles southwest of Sandy Bank Lake.

DESCRIPTION:

GEOLOGY: The showing occurs in the Big Trout Lake Complex. The complex is a highly altered, large discordant mafic body that intrudes the Big Trout Lake belt. The bulk of the complex closely approximates anorthositic gabbro.

"The anorthosite complex forms a broad belt, in places several miles wide, from Minko Bay eastward along the north shore of Big Trout Lake. A similar belt trends along the southern part of Big Trout Lake. The complex is thought to form a thick sill that has been folded into a steeply plunging anticline, of which the north and south belts are the limbs of the fold. Secondary folding is suggested by the local thickening and change in the direction of linear features.

"The rocks of the complex appear to be massive in most outcrops, but large-scale banding is evident, separating the complex into amphibolitic gabbro, pyroxene gabbro, anorthositic gabbro, gabbroic anorthosite, and relatively small and infrequent pure anorthosite bands. Evidence of repeated local banding and gneissosity can be found in several localities. The colour of the rock varies from light grey to dark green, depending on the mafic content. The contact of the complex with the volcanic rocks is characterized by a gabbroic zone that is high in magnetite and ilmenite. This contact, of the anorthosite with the volcanic rocks, is the stratigraphic bottom of the sill, and the magnetite-ilmenite concentration probably represents fractional settling-out of these minerals from the anorthositic melt. That the magnetite-ilmenite mineralization is indigenous to the complex and not a re-crystallization phenomenon of "greenstone" is brought out by two facts; the volcanic rocks as a whole contain almost no ilmenite and little magnetite; secondly, a polished-section examination of the minerals shows exsolution textures of ilmenite in magnetite. The exsolution indicates slow cooling of the melt, a fact also brought out by the coarseness of the rock and the ubiquitous zoning of plagioclase feldspar." (Hudec 1964, p.12).

MINERALOGY: "Mineralogically, the anorthosite body is composed of plagioclase feldspar of about An_{60} composition, augite, and amphibole, in varying proportions to give the earlier-mentioned types of rock. Excessive alteration, in part deuteric, in part hydrothermal, has altered the highly calcic plagioclase into zoisite, epidote, and calcite, and has altered the pyroxene and amphibole into chlorite. The plagioclase is in places partly,in other places completely, replaced." (Hudec 1964, p.12).

MAP REFERENCES: OGS Map P.1551 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODM Map 2045, 1 inch to 2 miles (1:126,720) 1964

SELECTED REFERENCES: ODM GR 23, p. 11-14,32 (1964)
OGS GR 193, p. 11,27-42 (1979)
ODM MRC 11, p. 243 (1968)

NTS 53J

NAME: CARB LAKE CARBONATITE COMPLEX Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53J/13SW

LATITUDE: 54° 46' 45"N LONGITUDE: 92° 00' 00"W

LOCATION: Approximately 35 miles northeast of Stull Lake, 110 miles northwest of Big Trout Lake and 6 miles southeast of the Manitoba-Ontario boundary.

DESCRIPTION:

GEOLOGY: "The Carb Lake carbonatite complex lies within the Kenyon Subprovince of the Superior Province. This subprovince is characterized geophysically by a strong linear, WNW-trending aeromagnetic pattern (ODM-GSC 1970). Mapping by Bennett and Riley (1967) and Riley and Davies (1967) indicated that Early Precambrian felsic intrusive rocks outcrop east of the Carb Lake carbonatite.

"The core from holes 3 and 4 of Big Nama Creek Mines Limited and Larandona Mines Limited examined by the author, is composed dominantly of pink to grey white sovite with minor amounts of biotite, magnetite, and phlogopite. The core contains minor zones (up to 1-2 m) of silico-carbonatite (greater than 30 percent silicate and oxide minerals) and biotitite (greater than 70 percent biotite with minor magnetite). Thin zones, less than 0.3 m (1 foot) wide, of nearly pure magnetite are locally present. The carbonatite is well banded at 30-45 degrees to the core axis, and all rock types: sovite, silicocarbonatite, biotite, and magnetite, are so intimately mixed that pure samples of any one type greater than 15 cm long are difficult to obtain. The silicocarbonatite and biotitite often contain numerous, nearly pure, carbonate segregations or veins which look like breccia. Several thin (less than 2 mm wide) seams of fibrous blue-green amphibole were noted.

"The core is unusual in that it is very vuggy. The vugs are roughly elongated parallel to the banding, in places exceed 1 cm in diameter, and are lined with pyrite, fluorite, and euhedral carbonate crystals. Some of the vugs appear to follow fractures and may be near-surface, solution-deposition phenomena rather than miarolitic cavities....

"The lack of outcrop makes structural interpretation difficult. A regional aeromagnetic map (ODM-GSC 1970a) of the area suggests that the intrusion may be located along a northwest-trending lineament.

"Mineralogic banding in the core drilled at a 50 degree plunge, varys from 30 to 50 degrees to the core axis, and indicates that the banding in the intrusion is vertical or nearly vertical." (Sage 1976, p.56-58).

MINERALOGY: "Examination of drill core and thin sections indicated that the dominant rock type encountered in drilling is a pale pink to grey or white carbonate containing scattered books of reddish-brown biotite or phlogopite, scattered grains of magnetite, wisps of fibrous amphibole, and lenses of apatite grains. In thin sections the carbonate forms about 80 percent of the carbonatite and is a granular mosaic of about equal amounts of dolomite and

calcite, although in any given samples either dolomite or calcite usually predominates. The phlogopite is pale brown in thin section but has a red titaniferous(?) rim. Pale coloured to colourless apatite ranges from less than 1 to 25 percent and forms individual prisms in carbonate and monmineralic lenses up to an inch long composed of elliptical grains. The amphibole is bluish-green to blue and is believed to be eckermannite and sodic actinolite." (Bennett and Riley 1969, p.40).

Pyrite, hematite, vermiculite, fluorite, pyrochlore and the rare earth minerals synchysite and ancylite were identified by X-ray diffraction methods.

HISTORY OF DEVELOPMENT:

1967-70: A combined aeroradiometric and aeromagnetic survey, ground magnetic survey, and four holes totalling 1,849 feet were drilled. The work was done jointly by Larandona Mines Ltd. and Big Nama Creek Mines Ltd.

REMARKS: The intrusive body is approximately 3.1 miles^2 with pyrochlore forming 3 to 5 percent of the minerals in two thin sections. Spectographic analysis of a boulder indicated 2 percent cerium and 1 percent lanthanum.

MAP REFERENCES:
OGS Map P.1555 (1:250,000) 1978
OGS Map P.2238, 1 inch to 1/4 mile (1:15,840) 1979
ODM Map 2177, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.426, 1 inch to 2 miles (1:126,720) 1967
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.452, 3 inches to 200 miles - 1968
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

SELECTED REFERENCES:
ODM MRC 14, p. 35-36 (1971)
ODM MP 27, p. 40-43 (1969)
Canadian Mines Handbook, p. 210 (1970-71)
OGS Toronto AFRO File 63.2317, Carb Lake Report No. 10
OGS Toronto Geoscience Data Centre, File Carb Lake, District Kenora, Patricia Portion, 54°45', 92°00'
Resident Geologist's Files, OMNR, Red Lake: 53K/16NE
ODM MP 67, p. 56-58 (1976)
CDEMR,GSC Econ. Geol. Rept. No. 28, p. 119-120 (1974)

NAME: CARB LAKE CARBONATITE COMPLEX — Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53J/13SW

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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NAME: CARB LAKE CARBONATITE COMPLEX — Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53J/13SW

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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NAME: CARB LAKE CARBONATITE COMPLEX — Cb, (Nb), Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53J/13SW

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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(Minor Occurrences) (1) — py, Cu, po, cp

COMMODITIES: Pyrite, copper, pyrrhotite, chalcopyrite

STATUS: Minor Occurrences

NTS: 53J/1SW

LATITUDE: 54° 02' 10"N, 54° 01' 45" LONGITUDE: 90° 13' 32"W, 90° 13' 18"

LOCATION: Southwest of Witegon River.

MAP REFERENCES:
OGS Map P.1555 (1:250,000) 1978
ODM Map 2177, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

(Minor Occurrence) (2) — Cu, py, po

COMMODITIES: Copper, pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53J/3NE

LATITUDE: 54° 08' 06"N LONGITUDE: 91° 05' 38"W

LOCATION: About 6 miles north of Blackbear River.

MAP REFERENCES:
OGS Map P.1555 (1:250,000) 1978
ODM Map 2177, 1 inch to 4 miles (1:253,440) 1969
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

(Minor Occurrence) (3) — Cu, py

COMMODITIES: Copper, pyrite

STATUS: Minor Occurrence

NTS: 53J/10NW

LATITUDE: 54° 41' 05"N LONGITUDE: 90° 48' 43"W

LOCATION: Six miles southeast of Sachigo River.

MAP REFERENCES:
OGS Map P.1555 (1:250,000) 1978
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969
ODM Maps 2177 & 2178, 1 inch to 4 miles (1:253,440) 1969

NAME: CARB LAKE CARBONATITE COMPLEX — Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53J/13SW

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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NTS 53K

NAME: CARB LAKE CARBONATITE COMPLEX — Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53K/16SE

LATITUDE: 54° 46' 02"N LONGITUDE: 92° 00' 37"W

LOCATION: About 7 miles east of the Manitoba-Ontario boundary and 35 miles northeast of Stull Lake.

DESCRIPTION:

GEOLOGY: "The Carb Lake carbonatite complex lies within the Kenyon Subprovince of the Superior Province. This subprovince is characterized geophysically by a strong linear, WNW-trending aeromagnetic pattern (ODM-GSC 1970). Mapping by Bennett and Riley (1967) and Riley and Davies (1967) indicated that Early Precambrian felsic intrusive rocks outcrop east of the Carb Lake carbonatite.

"The core from holes 3 and 4 of Big Nama Creek Mines Limited and Larandona Mines Limited examined by the author, is composed dominantly of pink to grey white sovite with minor amounts of biotite, magnetite, and phlogopite. The core contains minor zones (up to 1-2 m) of silico-carbonatite (greater than 30 percent silicate and oxide minerals) and biotitite (greater than 70 percent biotite with minor magnetite). Thin zones, less than 0.3 m (1 foot) wide, of nearly pure magnetite are locally present. The carbonatite is well banded at 30-45 degrees to the core axis, and all rock types: sovite, silicocarbonatite, biotite, and magnetite, are so intimately mixed that pure samples of any one type greater than 15 cm long are difficult to obtain. The silicocarbonatite and biotitite often contain numerous, nearly pure, carbonate segregations or veins which look like breccia. Several thin (less than 2 mm wide) seams of fibrous blue-green amphibole were noted.

"The core is unusual in that it is very vuggy. The vugs are roughly elongated parallel to the banding, in places exceed 1 cm in diameter, and are lined with pyrite, fluorite, and euhedral carbonate crystals. Some of the vugs appear to follow fractures and may be near-surface, solution-deposition phenomena rather than miarolitic cavities....

"The lack of outcrop makes structural interpretation difficult. A regional aeromagnetic map (ODM-GSC 1970a) of the area suggests that the intrusion may be located along a northwest-trending lineament.

"Mineralogic banding in the core drilled at a 50 degree plunge, varys from 30 to 50 degrees to the core axis, and indicates that the banding in the intrusion is vertical or nearly vertical." (Sage 1976, p.56-58).

MINERALOGY: "Examination of drill core and thin sections indicated that the dominant rock type encountered in drilling is a pale pink to grey or white carbonate containing scattered books of reddish-brown biotite or phlogopite, scattered grains of magnetite, wisps of fibrous amphibole, and lenses of apatite grains. In thin sections the carbonate forms about 80 percent of the carbonatite and is a granular mosaic of about equal amounts of dolomite and

calcite, although in any given samples either dolomite or calcite usually predominates. The phlogopite is pale brown in thin section but has a red titaniferous(?) rim. Pale coloured to colourless apatite ranges from less than 1 to 25 percent and forms individual prisms in carbonate and monomineralic lenses up to an inch long composed of elliptical grains. The amphibole is bluish-green to blue and is believed to be eckermannite and sodic actinolite." (Bennett and Riley 1969, p.40).

Pyrite, hematite, vermiculite, fluorite, pyrochlore and the rare earth minerals synchysite and ancylite were identified by X-ray diffraction methods.

HISTORY OF DEVELOPMENT:

1967-70: A combined aeroradiometric and aeromagnetic survey, ground magnetic survey, and four holes totalling 1,849 feet were drilled. The work was done jointly by Larandona Mines Ltd. and Big Nama Creek Mines Ltd.

REMARKS: The intrusive body is approximately 3.1 miles^2 with pyrochlore forming 3 to 5 percent of the minerals in two thin sections. Spectographic analysis of a boulder indicated 2 percent cerium and 1 percent lanthanum.

MAP REFERENCES:
OGS Map P.1555 (1:250,000) 1978
OGS Map P.2238, 1 inch to 1/4 mile (1:15,840) 1979
ODM Map 2177, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.426, 1 inch to 2 miles (1:126,720) 1967
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.452, 3 inches to 200 miles - 1968
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

SELECTED REFERENCES:
ODM MRC 14, p. 35-36 (1971)
ODM MP 27, p. 40-43 (1969)
Canadian Mines Handbook, p. 210 (1970-71)
OGS Toronto AFRO File 63.2317, Carb Lake Report No. 10
OGS Toronto Geoscience Data Centre, File Carb Lake, District Kenora, Patricia Portion, 54°45', 92°00'
Resident Geologist's Files, OMNR, Red Lake: 53K/16NE
ODM MP 67, p. 56-58 (1976)
CDEMR,GSC Econ. Geol. Rept. No. 28, p. 119-120 (1974)

NAME: CARB LAKE CARBONATITE COMPLEX — Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53K/16SE

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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NAME: CARB LAKE CARBONATITE COMPLEX — Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53K/16SE

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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NAME: CARB LAKE CARBONATITE COMPLEX — Cb (Nb), Ce, La, verm

COMMODITIES: Columbium (niobium), cerium, lanthanum vermiculite

STATUS: Minor Occurrence

NTS: 53K/16SE

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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(Minor Occurrence) (1) — Cu, py, po, bn

COMMODITIES: Copper, pyrite, pyrrhotite, bornite

STATUS: Minor Occurrence

NTS: 53K/2SW

LATITUDE: 54° 05' 16"N LONGITUDE: 92° 46' 28"W

LOCATION: About 4 miles southwest of McHenry Lake.

MAP REFERENCES: OGS Map P.1555 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

(Minor Occurrence) (2) — py, po

COMMODITIES: Pyrite, pyrrhotite

STATUS: Minor Occurrence

NTS: 53K/2SW

LATITUDE: 54° 06' 37"N LONGITUDE: 92° 55' 43"W

LOCATION: Southern part of Pierce Lake.

MAP REFERENCES: OGS Map P.1555 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

(Minor Occurrence) (3) — py, po, sp, Au, Cu

COMMODITIES: Pyrite, pyrrhotite, sphalerite, gold, copper

STATUS: Minor Occurrence

NTS: 53K/7NE

LATITUDE: 54° 25' 08"N LONGITUDE: 92° 30' 54"W

LOCATION: Stull Lake area.

MAP REFERENCES: OGS Map P.1555 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

(Minor Occurrence) (4) py, sp, cp

COMMODITIES: Pyrite, sphalerite, chalcopyrite

STATUS: Minor Occurrence

NTS: 53K/7NE

LATITUDE: 54° 22' 34"N LONGITUDE: 92° 36' 46"W

LOCATION: Stull Lake area.

MAP REFERENCES: OGS Map P.1555 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

(Minor Occurrence) (5) Au, py

COMMODITIES: Gold, pyrite

STATUS: Minor Occurrence

NTS: 53K/7SE

LATITUDE: 54° 22' 18"N LONGITUDE: 92° 31' 35"W

LOCATION: Stull Lake area.

MAP REFERENCES: OGS Map P.1555 (1:250,000) 1978
ODM Map 2178, 1 inch to 4 miles (1:253,440) 1969
ODM Map P.526, 1 inch to 25 miles (1:1,584,000) 1969

NAME: CARB LAKE CARBONATITE COMPLEX Cb, Ce, La, verm

COMMODITIES: Columbium, cerium, lanthanum, vermiculite

STATUS: Minor Occurrence

NTS: 53K/16SE

DESCRIPTION: Listed under CERIUM - Carb Lake Carbonatite Complex

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45a Sturgeon River Gold Area, District of Thunder Bay, Ontario, by Bruce, E.L., and Laird, H.C.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1935-6. Published 1936.

46d Superior Junction-Sturgeon Lake Area, District of Kenora, Ontario, by Horwood, H.C.; Ontario Department of Mines, scale 1:126,720 or 1 inch to 2 miles. Geology 1936. Published 1937.

47g North Spirit Lake Area, District of Kenora (Patricia Portion), Ontario, by Bateman, J.D.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1937. Published 1938.

48a Atikokan Area, District of Rainy River, Ontario, by Moore, E.S.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1937. Published 1939.

48b Steeprock Lake Area, District of Rainy River, Ontario, by Bartley, M.W.; Ontario Department of Mines, scale 1:15,840 or 1 inch to 1/4 mile. Geology 1938. Published 1939.

48d Eagle Lake Area, District of Kenora, Ontario, by Moorhouse, W.W.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1938. Published 1939.

49a Red Lake Area, West Sheet, District of Kenora (Patricia Portion), Ontario, by Horwood, H.C.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1937, 1938 and 1939. Published 1940.

49q Caribou-Pikitigushi Area, District of Thunder Bay, by Gussow, W.C.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1939. Published 1940.

50e Dryden-Wabigoon Area, District of Kenora, Ontario, by Satterly, J.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1939, 1940. Published 1941.

51b Fort Hope Area, District of Kenora (Patricia Portion), Ontario, by Prest, V.K.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1940, 1941. Published 1942.

1950-2 Gullwing Lake-Sunstrum Area, District of Kenora, Ontario, by Harding, W.D.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1947, 1948. Published 1950.

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1960-G Lumby Lake Area, Districts of Kenora and Rainy River, Ontario, by Woolverton, R.S.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1951, 1952. Published 1960.

2045 Big Trout Lake Area, Kenora District, Patricia Portion, by Hudec, P.P.; Ontario Department of Mines, scale 1:126,720 or 1 inch to 2 miles. Geology 1960, 1961. Published 1964.

2056 Georgia Lake Area, Thunder Bay District, by Pye, E.G.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1956, 1958, 1959. Published 1964.

2065 Atikokan-Lakehead Sheet, Kenora, Rainy River and Thunder Bay Districts, by Pye, E.G., and Fenwick, K.G.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1962-63. Published 1965.

2069 Ewart-Forgie Area, Kenora District, by Davies, J.C.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1961-1962. Published 1965.

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2100 Crescent Lake Area, Thunder Bay District, by Pye, E.G.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1959, 1962. Published 1966.

2102 Tashota-Geraldton Sheet, Thunder Bay and Cochrane Districts, by Pye, E.G., Harris, F.R., Fenwick, K.G., and Baillie, J.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1964, 1965. Published 1966.

2115 Kenora-Fort Frances Sheet, Kenora, Rainy River Districts, by Davies, J.C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1963-1965. Published 1967.

2127 Greenwater Lake Sheet, Thunder Bay District, by Hodgkinson, J.M.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1962, 1963. Published 1967.

2128 Kashabowie Sheet, Thunder Bay District, by Hodgkinson, J.M.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1962, 1963. Published 1967.

2137 Nipigon-Schreiber Sheet, Thunder Bay District, by Pye, E.G.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 4 miles or 1:253,440. Geological compilation 1966. Published 1968.

2148 Ontario Mineral Map, by Ministry of Natural Resources; Ontario Department of Mines, scale 1:1,584,000 or 1 inch to 25 miles. Compilation includes material up to December 1966. Published 1968.

2156 Root Lake Sheet, Kenora District, by Clifford, P.M.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1963, 1964. Published 1968.

2159 Miniss Bay Sheet, Lake St. Joseph, Kenora and Thunder Bay Districts, by Clifford, P.M.; Ontario Department of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1963, 1964. Published 1968.

2163 Sandhill Crane Island Sheet, Kenora District, by Ayres, L.D.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1963, 1964. Published 1969.

2164 Axe Lake Sheet, Kenora District, by Ayres, L.D.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1963, 1964. Published 1969.

2169 Sioux Lookout-Armstrong Sheet, Kenora and Thunder Bay Districts, by Davies, J.C., Pryslak, A.P., and Pye, E.G.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1965, 1966. Published 1970.

2172 Eayrs Lake-Starnes Lake Area, Thunder Bay District, by Kaye, L.; Ontario Department of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1965, 1966. Published 1969.

2175 Red Lake-Birch Lake Sheet, Kenora District, by Ferguson, S.A., Brown, D.D., Davies, J.C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1966, 1967. Published 1970.

2177 Swan Lake-Sachigo River Sheet, Kenora District, by Bennett, G, and Riley, R.A.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1967-1968. Published 1969.

2178 Stull Lake-Sandy Lake Sheet, Kenora District, by Bennett, G, Riley, R.A. and Davies, J.C.; Ontario Department of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1967. Published 1969.

2183 Ontario Marl Deposits, by Guillet, G.R.; Ontario Department of Mines, scale 1:1,013,760 or 1 inch to 16 miles. Compilation 1968. Published 1969.

2207 Devon and Pardee Townships and Stuart Location, Thunder Bay District, by Geul, J.J.C.; Ontario Department of Mines and Northern Affairs, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1967. Published 1970.

2217 Steep Rock Lake Area, Rainy River District, by Shklanka, R.; Ontario Department of Mines and Northern Affairs, scale 1:12,000 or 1 inch to 1000 feet. Geology 1964, 1965. Published 1972.

2218 Cat Lake-Pickle Lake, Kenora and Thunder Bay Districts, by Sage, R.P., Breaks, F.W., and Troup, W.; Ontario Division of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1972. Published 1975.

2232 Nipigon-Schreiber, Thunder Bay District, by Carter, M.W., McIlwaine, W.H., and Wisbey, P.A.; Ontario Division of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Revised compilation 1970-1. Published 1973.

2233 Black Sturgeon Lake Sheet, Thunder Bay District, by Coates, M.E.; Ontario Department of Mines and Northern Affairs, scale 1:63,360 or 1 inch to 1 mile. Geology 1967. Published 1971.

2234 Frazer Lake Sheet, Thunder Bay District, by Coates, M.E.; Ontario Department of Mines and Northern Affairs, scale 1:63,360 or 1 inch to 1 mile. Geology 1967. Published 1971.

2235 Disraeli Lake Sheet, Thunder Bay District, by Coates, M.E.; Ontario Department of Mines and Northern Affairs, scale 1:63,360 or 1 inch to 1 mile. Geology 1967. Published 1971.

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2237 Fort Hope-Lansdowne House Sheet, Cochrane, Kenora and Thunder Bay Districts, by Thurston, P.C., Carter, M.W., and Riley, R.A.; Ontario Department of Mines and Northern Affairs, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1969. Published 1972.

2242 Vermilion Lake Sheet, Kenora District, by Johnston, F.J.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1965, 1966. Published 1972.

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2265 Ball Township, Kenora District, by Riley, R.A.; Ontario Division of Mines, scale 1:12,000 or 1 inch to 1000 feet. Geology 1970-71. Published 1975.

2267 Lower Shebandowan Lake, Thunder Bay District, by Morin, J.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1970. Published 1973.

2268 Granite Bay, Sturgeon Lake, Kenora and Thunder Bay Districts, by Trowell, N.F.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1969. Published 1974.

2269 Bell Lake, Kenora and Thunder Bay Districts, by Trowell, N.F.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1969. Published 1974.

2270 Trout Lakes, Kenora District, by Ayres, L.D.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1965, 1967. Published 1973.

2278 Rice Bay, Rainy Lake, Rainy River District, by Harris, F.R.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1968, 1969. Published 1974.

2279 Seine Bay, Rainy Lake, Rainy River District, by Harris, F.R.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1969. Published 1974.

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2292 Big Trout Lake-North Caribou Lake, Kenora District, by Bennett, G., Riley, R.A., Thurston, P.C., Siragusa, G.M., and Sage, R.P.; Ontario Division of Mines, Geological Compilation Series, scale 1:253,440 or 1 inch to 4 miles. Geological compilation 1969, 1973. Published 1974.

2294 Dorothea, Sandra and Irwin Townships, Thunder Bay District, by Mackasey, W.O.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1967. Published 1974.

2295 Mulcahy Township, Kenora District, by Riley, R.A.; Ontario Division of Mines, scale 1:12,000 or 1 inch to 1000 feet. Geology 1968. Published 1976.

2297 Finlayson Lake, Rainy River District, by Fenwick, K.G.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1967, 1968. Published 1976.

2298 Marmion Lake, Rainy River District, by Fenwick, K.G.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1967, 1968. Published 1976.

2302 MacNicol and Tustin Townships, Kenora District, by Pryslak, A.P.; Ontario Division of Mines, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1967. Published 1974.

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2304 Black Bay Peninsula, Thunder Bay District, by McIlwaine, W.H., and Wallace, H.; Ontario Division of Mines, scale 1:63,360 or 1 inch to 1 mile. Geology 1970. Published 1975.

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2358 Clay and Shale Deposits of Ontario, by Guillet, G.R.; Ontario Geological Survey, scale 1:2,000,000. Compilation 1962, 1963, 1965. Published 1976.

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2398 Conant, Jutten, and Smye Townships, Thunder Bay District, by Bond, W.D., and Edwards, G.R.; Ontario Geological Survey, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1972. Published 1978.

2409 Upper Manitou Lake, Kenora District, by Blackburn, C.E.; Ontario Geological Survey, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1973. Published 1978.

2417 Wottam Lake, Kenora and Thunder Bay Districts, by Wallace, H.; Ontario Geological Survey, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1974-5. Published 1978.

2421 Schistose Lake, Kenora District, by Edwards, G.R.; Ontario Geological Survey, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1974. Published 1980.

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P.92 Geogia Lake Area, District of Thunder Bay, by Pye, E.G.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1956, 1958, 1959. Published 1961.

P.144 Ewart Township, District of Kenora, by Davies, J.C.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1961. Published 1962.

P.177 Lakehead-Shebandowan Sheet, District of Thunder Bay, by Pye, E.G., and Fenwick, K.G.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1962. Revised 1963. Published 1963.

P.183 Ignace-Atikokan Sheet, Districts of Thunder Bay, Rainy River, Kenora, by Pye, E.G., and Fenwick, K.G.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1962, 1963. Published 1963.

P.187 Lac Des Iles Sheet, District of Thunder Bay, by Pye, E.G., and Fenwick, K.G.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1963. Published 1963.

P.188 Quetico Sheet, Districts of Thunder Bay and Rainy River, by Pye, E.G., and Fenwick, K.G.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1963. Published 1963.

P.215 Gruneau Lake Area, Patricia Portion, District of Kenora, by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1963. Published 1964.

P.216 Kippen Lake Area, Patricia Portion, District of Kenora, by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1963. Published 1964.

P.217 Muskratdam Lake Area, Patricia Portion, District of Kenora, by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1963. Published 1964.

P.220 Cooney Lake Area, Patricia Portion, District of Kenora, by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1963. Published 1964.

P.221 Misquamaekin Lake Area, Patricia Portion, District of Kenora, by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1963. Published 1964.

P.223 Shebandowan Lake (West) Area, District of Thunder Bay, by Hodgkinson, J.M.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1962, 1963. Published 1964.

P.242 Manitou Lakes Sheet, Districts of Kenora and Rainy River, by Davies, J.C.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1963, 1964. Published 1964.

P.267 Mojikit Lake Sheet, District of Thunder Bay, by Pye, E.G., and Harris, F.R.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1964. Published 1965.

P.281 Lake of the Woods Sheet, Districts of Kenora and Rainy River, by Davies, J.C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1964, 1965. Published 1965.

P.286 Fort Frances Area, District of Rainy River, by Davies, J.C.; Ontario Department of Mines, scale 1 inch to 1 mile. Geology 1964. Published 1965.

P.292 Entwine Lake Area, District of Kenora, by Davies, J.C.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1964. Published 1965.

P.293 Rainy Lake Sheet, District of Rainy River, by Davies, J.C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1965. Published 1965.

P.309 Rainy River Sheet, District of Rainy River, by Davies, D.C.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1965. Published 1965.

P.336 Vermilion Lake Area, West Part, District of Kenora, by Johnston, F.J.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1965. Published 1966.

P.337 Vermilion Lake Area, East Part, District of Kenora, by Johnston, F.J.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1965. Published 1966.

P.338 Red Lake Area, District of Kenora, by Ferguson, S.A.; Ontario Department of Mines, Geological Compilation Map, scale 1 inch to 1 mile. Geological compilation 1965, 1966. Published 1966.

P.339 Eayrs-Starnes Lakes Area, West Part, District of Thunder Bay, by Kaye, L.; Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1965. Published 1966.

P.349 Snakeweed Lake Area (Fredart-Whitemud Lakes Area), Patricia Portion, District of Kenora, by Fenwick, K.G.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1965. Published 1966.

P.352 Savant-Caribou Lakes Sheet, District of Thunder Bay, by Davies, J.C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1966. Published 1966.

P.354 Miniss Lake Sheet, Districts of Kenora and Thunder Bay, by Davies, John C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1966. Published 1966.

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P.407 Lac Seul Sheet, District of Kenora, by Davies, J.C., and Pryslak, A.P.; Ontario Department of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geological compilation 1966-67. Published 1967.

P.416 Obonga Lake Area, West Part, District of Thunder Bay, by Kustra, C.R.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1966. Published 1967.

P.417 Obonga Lake Area, East Part, by Kustra, C.R.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1966. Published 1967.

P.421 Abram Lake Area (West Part), District of Kenora, by Johnston, F.J.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1966. Published 1967.

P.422 Trout Lakes Area, South Trout Lake Sheet, District of Kenora (Patricia Portion), by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1965, 1967. Published 1967, re-issued 1968 with additional geology.

P.426 Operation Lingman Lake, Stull Lake Sheet, District of Kenora (Patricia Portion), by Riley, R.A., and Davies, J.C.; Ontario Department of Mines, scale 1 inch to 2 miles. Geology 1967. Published 1967.

P.430 Operation Lingman Lake, Varveclay Lake Sheet, District of Kenora (Patricia Portion), by Bennett, G., and Riley, R.A.; Ontario Department of Mines, scale 1 inch to 2 miles. Geology 1967. Published 1967.

P.431 Operation Lingman Lake, Finger Lake Sheet, District of Kenora (Patricia Portion, by Bennett, G., and Riley, R.A.; Ontario Department of Mines, scale 1 inch to 2 miles. Geology 1967. Published 1967.

P.433 Operation Lingman Lake, Muskrat Dam Lake Sheet, District of Kenora (Patricia Portion), by Riley, R.A., and Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 2 miles. Geology 1963, 1964 and 1967. Published 1967.

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P.463 Black Sturgeon Lake Area (East Half), District of Thunder Bay, by Coates, M.E.; Ontario Department of Mines, scale 1 inch to 1 mile. Geology 1967. Published 1968.

P.467 Pardee Township and Stuart Location, District of Thunder Bay, by Geul, J.J.C.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1967. Published 1968.

P.471 Tustin-Bridges Area, MacNicol Township, District of Kenora, by Pryslak, A.P.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1967. Published 1968.

P.472 Tustin-Bridges Area, Tustin Township, District of Kenora, by Pryslak, A.P.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1967. Published 1968.

P.479 Dorothea Township, District of Thunder Bay, by Mackasey, W.O.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1967. Published 1968.

P.505 Bridges Township, District of Kenora, by Pryslak, A.P.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.522 Watten Township (West Half), District of Rainy River, by Harris, F.R.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.523 Watten Township (East Half), District of Rainy River, by Harris, F.R.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.526 Northern Patricia Portion, District of Kenora, by Ayres, L.D.; Ontario Department of Mines, scale 1:1,584,000 or 1 inch to 25 miles. Geological compilation 1969. Published 1969.

P.528 North Shoal Lake Area (East Sheet), District of Kenora, by Davies, J.C.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.529 Cloud Bay Area (West Part), District of Thunder Bay, by Geul, J.J.C.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.530 Cloud Bay Area (East Part), District of Thunder Bay, by Geul, J.J.C.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.538 Setting Net Lake Area, District of Kenora (Patricia Portion), by Ayres, L.D.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.542 Finlayson Lake Area (West Half), District of Rainy River, by Fenwick, K.G.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1967, 1968. Published 1969.

P.543 Finlayson Lake Area (East Half), District of Rainy River, by Fenwick, K.G.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1967, 1968. Published 1969.

P.544 Docker Township, District of Kenora, by Pryslak, A.P.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1968. Published 1969.

P.562 Operation Fort Hope, Lansdowne House-Fort Hope Sheet, Districts of Kenora (Patricia Portion) and Thunder Bay, by Thurston, P.C., and Carter, M.W.; Ontario Department of Mines, scale 1 inch to 2 miles. Geology 1969. Published 1969. Revised July 1970.

P.564 Operation Fort Hope, Attwood-Caribou Lakes Sheet, Districts of Kenora (Patricia Portion) and Thunder Bay, by Thurston, P.C., Carter, M.W., and Riley, R.A.; Ontario Department of Mines, scale 1 inch to 2 miles. Geology 1969. Published 1969.

P.567 Mulcahy Township, District of Kenora (Patricia Portion), by Riley, R.A.; Ontario Department of Mines, scale 1 inch to 800 feet. Geology 1968. Published 1969.

P.581 Lang-Cannon Lakes Area (West Half), District of Kenora (Patricia Portion), by Fenwick, K.G., Ontario Department of Mines, scale 1 inch to 1/2 mile. Geology 1969. Published 1970.

P.586 Rainy Lake Area (West Part), District of Rainy River, by Harris, F.R.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1969. Published 1970.

P.587 Rainy Lake Area (East Part), District of Rainy River, by Harris, F.R.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1969. Published 1970.

P.592 Dent Township, District of Kenora (Patricia Portion), by Pryslak, A.P.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1969. Published 1970.

P.593 Mitchell Township, District of Kenora (Patricia Portion), by Pryslak, A.P.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1969. Published 1970.

P.594 Western Peninsula Area (West Sheet), District of Kenora, by Davies, J.C.; Ontario Department of Mines, scale 1 inch to 1/4 mile. Geology 1969. Published 1970.

P.624 Black Bay Peninsula and Vicinity, Fluor Island Sheet, District of Thunder Bay, by McIlwaine, W.H., Wallace, Henry, d'Apollonia, S.J., and Keeler, R.G.; Ontario Department of Mines and Northern Affairs, scale 1 inch to 1/4 mile. Geology 1970. Published 1971.

P.626 Black Bay Peninsula and Vicinity, Spar Island Sheet, District of Thunder Bay, by McIlwaine, W.H., Wallace, Henry, and d'Apollonia, S.J.; Ontario Department of Mines and Northern Affairs, scale 1 inch to 1/4 mile. Geology 1970. Published 1971.

P.634 Corless Township, District of Kenora (Patricia Portion), by Pryslak, A.P.; Ontario Department of Mines and Northern Affairs, Geological Series, scale 1 inch to 1/4 mile. Geology 1970. Published 1971.

P.670 Glitter Lake Area (West Part), District of Thunder Bay, by Trowell, N.F.; Ontario Department of Mines and Northern Affairs, Geological Series, scale 1 inch to 1/4 mile. Geology 1970. Published 1971.

P.711 Operation Winisk Lake, Weagamow Lake, District of Kenora (Patricia Portion), by Thurston, P.C., Sage, R.P., and Siragusa, G.M.; Ontario Department of Mines and Northern Affairs, Geological Series, scale 1 inch to 2 miles. Geology 1971. Published 1971.

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P.715 Operation Winisk Lake, Wapikopa Lake Sheet, District of Kenora (Patricia Portion), by Thurston, P.C., Sage, R.P., and Siragusa, G.M.; Ontario Department of Mines and Northern Affairs, Geological Series, scale 1 inch to 2 miles. Geology 1971. Published 1971.

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P.738 Lang-Cannon Lakes Area (Eastern Part), District of Kenora (Patricia Portion), by Fenwick, K.G., and Srivastava, P.; Ontario Department of Mines and Northern Affairs, Geological Series, scale 1 inch to 1/2 mile. Geological compilation 1971, geological field work 1971. Published 1972.

P.742 Off Lake-Burditt Lake Area (Eastern Part), District of Rainy River, by Blackburn, C.E.; Ontario Department of Mines and Northern Affairs, Geological Series, scale 1 inch to 1/2 mile. Geology 1971. Published 1972.

P.760 North Spirit Lake Area (Eastern Part), District of Kenora, Patricia Portion, by Wood, J.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1971. Published 1972.

P.761 Quest Lake-Sturgeon Lake Area (Western Half), Districts of Thunder Bay and Kenora, by Trowell, N.F.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1971. Published 1972.

P.763 Goodall Township, District of Kenora, Patricia Portion, by Pryslak, A.P.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1971. Published 1972.

P.768 Favourable Lake-Poplar Hill Area, Deer Lake Sheet, District of Kenora (Patricia Portion), by Ayres, L.D., Raudsepp, M., Averill, S.A., and Edwards, G.R.; Ontario Division of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geology and geological compilation 1968-1972. Published 1972.

P.769 Favourable Lake-Poplar Hill Area, Indian Village-Moose Mountain Sheet, District of Kenora (Patricia Portion), by Ayres, L.D., Raudsepp, M., Averill, S.A., and Edwards, G.R.; Ontario Division of Mines, Geological Compilation Series, scale 1 inch to 2 miles. Geology and geological compilation 1968-1972. Published 1972.

P.792 Ball Township, District of Kenora (Patricia Portion), by Riley, R.A.; Ontario Division of Mines, Geological Series, scale 1 inch to 1000 feet. Geology 1970, 1971. Published 1972.

P.803 Conant Township, District of Thunder Bay, by Bond, W.D.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1972. Published 1973.

P.805 Smye Township, District of Thunder Bay, by Bond, W.D.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1972. Published 1973.

P.806 Operation Pickle Lake, Upper Windigo Lake-Horseshoe Lake, District of Kenora (Patricia Portion), by Sage, R.P., Breaks, F.W., and Troup, W.R.; Ontario Division of Mines, Geological Series, scale 1 inch to 2 miles. Geology 1972. Published 1973.

P.807 Operation Pickle Lake, Forester Lake-Wigwascence Lake, District of Kenora (Patricia Portion), by Sage, R.P., Breaks, F.W., and Troup, W.R.; Ontario Division of Mines, Geological Series, scale 1 inch to 2 miles. Geology 1972. Published 1973.

P.808 Operation Pickle Lake, Bamaji Lake-Lake St. Joseph, District of Kenora (Patricia Portion), by Sage, R.P., Breaks, F.W., and Troup, W.R.; Ontario Division of Mines, Geological Series, scale 1 inch to 2 miles. Geology 1972. Published 1973.

P.809 Operation Pickle Lake, Achapi Lake-Misehkow River, District of Kenora (Patricia Portion), by Sage, R.P., Breaks, F.W., and Troup, W.R.; Ontario Division of Mines, Geological Series, scale 1 inch to 2 miles. Geology 1972. Published 1973.

P.817 Quaternary Geology and Industrial Mineral Resources of the City of Thunder Bay, by Burwasser, G.J.; Ontario Division of Mines, Geological Series, scale 1:50,000. Geology 1971. Published 1973.

P.831 Rowan Lake Area, District of Kenora, by Kaye, L.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1972. Published 1973.

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P.932 Earngey Township and Part of Birkett Township, District of Kenora (Patricia Portion), by Thurston, P.C., Raudsepp, M., and Wilson, B.C.: Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1973. Published 1974.

P.933 Houghton-Hough Lakes Area, District of Thunder Bay, by W.D. Bond; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1973. Published 1974.

P.961 Upper Manitou Lake Area, District of Kenora, by Blackburn, C.E.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile. Geology 1973. Published 1974.

P.962 Operation Ignace-Armstrong, Pashkokogan-Caribou Lakes Sheet, District of Thunder Bay, by Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M., and Bowen, R.P.; Ontario Division of Mines, Geological Series, scale 1 inch to 2 miles or 1 cm to 1.26 km. Geology 1973. Published 1974.

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P.964 Operation Ignace-Armstrong, Ignace-Graham Sheet, Districts of Thunder Bay, Kenora, and Rainy River, by Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M., and Atkinson, S.; Ontario Division of Mines, Geological Series, scale 1 inch to 2 miles. Geology 1973. Published 1974.

P.969 Uranium and Thorium Deposits of Ontario, Northwestern Sheet, District of Kenora (Patricia Portion), by Robertson, James A.; Ontario Division of Mines, Mineral Deposits Series, scale 1 inch to 16 miles. Compilation 1973, 1974. Published 1975.

P.992 Miminiska Lake Area, District of Kenora (Patricia Portion), by Wallace, Henry; Ontario Division of Mines, Geological Series, scale 1:31,680 or 1 inch to 1/2 mile. Geology 1973, 1974, 1975. Published 1976.

P.1000 Pipestone Lake Area (Northern Half), District of Kenora, by Edwards, G.R.; Ontario Division of Mines, Geological Series, scale 1 inch to 1/4 mile or 1:15,840. Geology 1974. Published 1975.

P.1009 Crow River Area, District of Kenora (Patricia Portion), by Pye, E.G.; Ontario Division of Mines, Geological Series, scale 1 inch to 1000 feet or 1:12,000. Geology and compilation 1951. Published 1975.

P.1025 Pipestone Lake Area, District of Kenora, by Beard, R.C., and Garratt,G.; Ontario Division of Mines, Kenora Data Series, scale 1 inch to 1/4 mile or 1:15,840. Data compiled 1974. Published 1975.

P.1028 Operation Kenora-Sydney Lake, Umfreville-Separation Lakes Sheet, District of Kenora, by Breaks, F.W., Bond, W.D., McWilliams, G.H., Gower, C.F., Findlay, D., and Stone, Denver; Ontario Division of Mines, Geological Series, scale 1 inch to 1 mile or 1:63,360. Geology 1974. Published 1975.

P.1031 Operation Kenora-Sydney Lake, Gordon-Big Canyon Lakes Sheet, District of Kenora, by Breaks, F.W., Bond, W.D., McWilliams, G.H., Gower, C.F., and Findlay, D.; Ontario Division of Mines, Geological Series, scale 1 inch to 1 mile or 1:63,360. Geology 1974. Published 1975.

P.1059 Dent Township, District of Kenora (Patricia Portion), by Pryslak, A.P., and Valliant, W.W.; Ontario Division of Mines, Red Lake Data Series, scale 1 inch to 1/4 mile or 1:15,840. Data compiled 1975. Published 1975.

P.1071 Skinner Township, District of Kenora (Patricia Portion), by Pryslak, A.P., and Valliant, W.W.; Ontario Division of Mines, Red Lake Data Series, scale 1 inch to 1/4 mile or 1:15,840. Data compiled 1975. Published 1976.

P.1093 Armit Lake Area, Districts of Kenora and Thunder Bay, by Palonen, P.A., and Speed, A.A.; Ontario Division of Mines, Sioux Lookout Data Series, scale 1:15,840 or 1 inch to 1/4 mile. Data compiled 1975. Published 1976.

P.1199 Operation Kenora-Ear Falls, Bruce-Bluffy Lakes Sheet, District of Kenora, by Breaks, F.W., Bond, W.D., Desnoyers, D.W., Stone, Denver, and Harris, N.; Ontario Division of Mines, Geological Series, scale 1:63,360 or 1 inch to 1 mile. Geology 1975. Published 1976.

P.1203 Operation Kenora-Ear Falls, Dryden-Vermilion Bay Sheet, District of Kenora, by Breaks, F.W., Bond, W.D., Westerman, C.J., and Harris, N.; Ontario Division of Mines, Geological Series, scale 1:63,360 or 1 inch to 1 mile. Geology 1975. Published 1976.

P.1204 Operation Kenora-Ear Falls, Sandybeach-Route Lakes Sheet, District of Kenora, by Breaks, F.W., Bond, W.D., Harris, N., Westerman, C.J., and Desnoyers, D.W.; Ontario Division of Mines, Geological Series, scale 1:63,360 or 1 inch to 1 mile. Geology 1975. Published 1976.

P.1212 Earngey Township, District of Kenora (Patricia Portion), by Pryslak, A.P., and Valliant, W.W.; Ontario Division of Mines, Red Lake Data Series, scale 1:15,840 or 1 inch to 1/4 mile. Data compiled 1975, 1976. Published 1976.

P.1216 Goodall Township, District of Kenora (Patricia Portion), by Pryslak, A.P., and Valliant, W.W.; Ontario Geological Survey, Red Lake Data Series, scale 1:15,840 or 1 inch to 1/4 mile. Data compiled 1976. Published 1977.

P.1502 Caley Lake Area, District of Kenora (Patricia Portion), by Palonen, P.A., and Speed, A.A.; Ontario Geological Survey, Sioux Lookout Data Series, scale 1:15,840 or 1 inch to 1/4 mile. Data compiled 1977. Published 1977.

P.1504 Drum Lake Area, District of Kenora (Patricia Portion), by Palonen, P.A., and Speed, A.A.; Ontario Geological Survey, Sioux Lookout Data Series, scale 1:15,840 or 1 inch to 1/4 mile. Data compiled 1977. Published 1977.

P.1521 Ontario Mineral Potential, Thunder Bay Sheet, District of Thunder Bay, by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1522 Ontario Mineral Potential, Quetico Sheet, Districts of Thunder Bay and Rainy River, by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1523 Ontario Mineral Potential, International Falls-Roseau Sheet, District of Rainy River, by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

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P.1529 Ontario Mineral Potential, Ignace Sheet, Districts of Thunder Bay, Kenora, and Rainy River, by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1978. Published 1978.

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P.1537 Ontario Mineral Potential, Sioux Lookout Sheet, Districts of Kenora and Thunder Bay, by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1538 Ontario Mineral Potential, Lac Seul Sheet, District of Kenora, by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1539 Ontario Mineral Potential, Pointe du Bois Sheet, District of Kenora (Patricia Portion), by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

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P.1548 Ontario Mineral Potential, North Spirit Lake Sheet, District of Kenora (Patricia Portion), by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1551 Ontario Mineral Potential, Asheweig River Sheet, District of Kenora (Patricia Portion), by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1552 Ontario Mineral Potential, Makoop Lake Sheet, District of Kenora (Patricia Portion), by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1553 Ontario Mineral Potential, Opasquia Lake-Island Lake Sheet, District of Kenora (Patricia Portion), by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1555 Ontario Mineral Potential, Thorne River-Stull Lake Sheet, District of Kenora (Patricia Portion), by Springer, Janet; Ontario Geological Survey, Mineral Deposits Series, scale 1:250,000. Compilation 1977, 1978. Published 1978.

P.1975 Confederation Lake Area, District of Kenora (Patricia Portion), by Thurston, P.C., and Jackson, M.C.; Ontario Geological Survey, Geological Series, scale 1:63,360. Geology 1975, 1976. Published 1978.

P.2077 Stoughton Lake Area, District of Kenora (Patricia Portion), by Panagapko, D.A., and Gibson, J.C.; Ontario Geological Survey, Red Lake Data Series, scale 1:15,840. Data compiled 1980. Published 1980.

P.2081 Okanse Lake Area, District of Kenora (Patricia Portion), by Panagapko, D.A., and Gibson, J.C.; Onatrio Geological Survey, Red Lake Data Series, scale 1:15,840. Data compiled 1980. Published 1980.

P.2098 Clearwater Bay-Lake of the Woods Area, District of Kenora, by Rivett, Scott, and MacTavish, A.D.; Ontario Geological Survey, Kenora Data Series, scale 1:15,840. Data compiled 1980. Published 1980.

P.2119 Shabu Lake Area, District of Kenora (Patricia Portion), by Panagapko, D.A., and Gibson, J.C.; Ontario Geological Survey, Red Lake Data Series, scale 1:15,840. Data compiled 1980. Published 1980.

P.2159 Steep Rock Lake Area, Rainy River District, by Schnieders, B.R., and McConnell, C.D., Ontario Geological Survey, Thunder Bay Data Series, scale 1:15,840. Data compiled 1980, 1981. Published 1981.

P.2217 Operation Miniss-Tully Lakes, Chamberlain Narrows (Lac Seul) Sheet, Districts of Kenora and Thunder Bay, by Breaks, F.W., Bond, W.D., Stone, Denver, and Desnoyers, D.W.; Ontario Geological Survey, Geological Series, scale 1:63,360. Geology 1976. Published 1979.

P.2218 Operation Miniss-Tully Lakes, Hooker-Fitchie Lakes Sheet, Districts of Kenora and Thunder Bay, by Breaks, F.W., Bond, W.D., Stone, Denver, and Desnoyers, D.W.; Ontario Geological Survey, Geological Series, scale 1:63,360. Geology 1976. Published 1979.

P.2238 "Carb" Lake Carbonatite Complex, District of Kenora (Patricia Portion), by Sage, R.P., and Wright, W.; Ontario Geological Survey, Geological Series, scale 1:15,840. Geology 1976. Published 1979.

P.2247 Slate Falls Area (Western Part), District of Kenora (Patricia Portion), by Wallace, Henry; Ontario Geological Survey, Geological Series, scale 1:15,840. Geology 1977, 1978. Published 1979.

P.2318 Tarp Lake Area, District of Kenora (Patricia Portion), by Speed, A.A., and Maxwell, G.J.; Ontario Geological Survey, Sioux Lookout Data Series, scale 1:15,840. Data compiled 1979. Published 1980.

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P.2372 Lateral Lake Area (East Half), District of Kenora, by Page, R.O., and Christie, B.J.; Ontario Geological Survey, Geological Series, scale 1:15,840. Geology 1979. Published 1980.

Geological Survey of Canada

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