



52P08NW0002 2.14013 PETAWANGA LAKE

010

**GEOLOGY AND GEOPHYSICS
PROGRAMS
RILEY CORMAC AREA
AUGUST TO SEPTEMBER, 1990**

Falconbridge
Limited
February, 1991
Daryl Hodges
J.D. Fournier

RECEIVED

MAR 20 1991

MINING LANDS SECTION

2.14013 03



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i) SUMMARY

The Riley Cormac area consists of a 1Km wide, steeply dipping, northeasterly trending felsic sequence bound to the north and south by mafic units. The south contact zone between the felsic sequence and mafic rocks forms an extremely complex corridor of interdigitating fresh and altered, mafic and felsic volcanics and related intrusives. A weak magnetic high shows a broad correlation with the contact zone. The Riley Cormac showing (12.32% Zn from a surface grab sample) and numerous other surface occurrences of copper and zinc are located within this zone. The HLEM survey has outlined four conductors within this corridor. The northern mafic-felsic contact is associated with the strongest HLEM conductor on the grid. A 1961 diamond drill hole (343-1) tested this conductor and intersected 7m of semi massive pyrrhotite hosted by altered felsic volcanics.

ii) CONCLUSIONS

Work to date has successfully outlined areas of hydrothermal alteration associated with base metal occurrences and HLEM conductors. These areas are associated with the contact zone between mafic and felsic sequences.

iii) RECOMMENDATIONS

Recommendations for the Riley Cormac area are:

- 1: Fill-in 1:2500 geological mapping in the western half of the grid.
- 2: Drilling in the area of the Riley Cormac showing.
- 3: Drilling of conductors I, II, III, V AND VI
- 4: Extend the grid over the rest of the property and cover it with geological mapping, HLEM and Mag/VLF.
- 5: Trenching and outcrop stripping to help clarify the geology of the more complex areas.

1.0 INTRODUCTION

1.1 Location

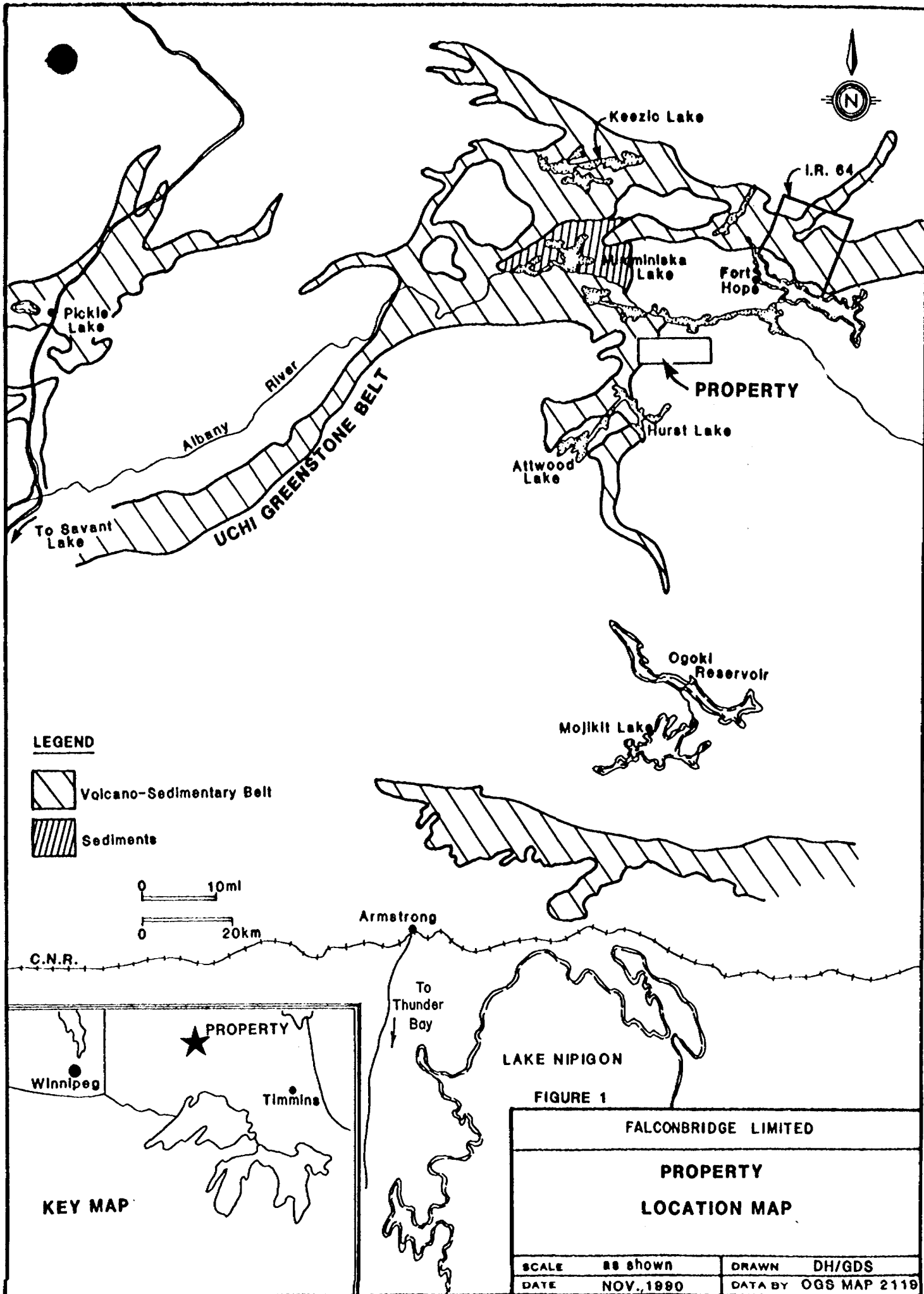
The property is located in the Thunder Bay mining district approximately 125 Km east of Pickle Lake and 100 Km north of Armstrong. NTS 52P/8, Longitude 88° 15' West, Latitude 51° 15' 25'' North (Figure. 1). Claim reference maps are Kawitos Lake G-287 and Petawanga Lake G-378.

1.2 Access



For the 1990 field program access was via float equipped planes chartered out of Armstrong. A winter road passes 5 kilometres north of the property from Pickle Lake, via Miminiska Lake and Fort Hope. Landing strips are present at Fort Hope and Miminiska Lake.

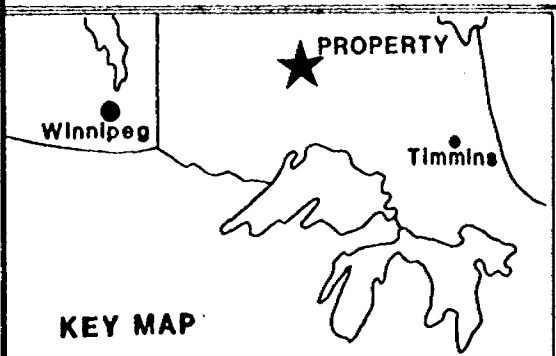
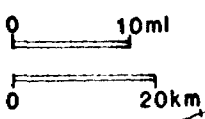
2.0 CLAIM STATUS

All claims covered by this report are owned 100% by Falconbridge Limited. The claims in the Riley Cormac grid area are shown in Figure 2. The claims have been staked at various times in 1989 and 1990. Table 1 provides a list of claims and their due dates. The earliest date for which assessment will be due is March/08/1991.



LEGEND

-  Volcano-Sedimentary Belt
-  Sediments



FALCONBRIDGE LIMITED		
PROPERTY		
LOCATION MAP		
SCALE	AS SHOWN	DRAWN DH/GDS
DATE	NOV., 1990	DATA BY OGS MAP 2119

Table 1. Claim Status, Ryley Cormac Grid Area

CLAIM NUMBER	DATE RECORDED	DUE DATE	COMMENTS
1165263	AUG./24/1990	1991	
1165261	AUG./24/1990	1991	
1165271	AUG./24/1990	1991	
1149125	AUG./24/1990	1991	
1138336	SEP./20/1989	1992	60 days filed: Power stripping
1142075	MAR./08/1990	1992	60 days filed: Power stripping
1149126	AUG./24/1990	1991	
1149127	AUG./24/1990	1991	
1142356	MAR./08/1990	1992	20 days filed: Power stripping
1142354	MAR./08/1990	1992	20 days filed: Power stripping
1138339	SEP./20/1989	1992	60 days filed: Power stripping
1122029	AUG./23/1989	1992	82 days filed: Mag/VLF, power stripping
1122027	AUG./23/1989	1992	60 days filed: Mag/VLF
1138338	SEP./20/1989	1992	
1165858	AUG./24/1990	1991	
1142359	MAR./08/1990	1992	20 days filed: Power stripping
1142358	MAR./08/1990	1992	20 days filed: Power stripping
1142357	MAR./08/1990	1992	20 days filed: Power stripping
1165860	AUG./24/1990	1991	
1165859	AUG./24/1990	1991	
1165267	AUG./24/1990	1991	
1165863	AUG./24/1990	1991	
1165862	AUG./24/1990	1991	
1165861	AUG./24/1990	1991	
1165864	AUG./24/1990	1991	
1165268	AUG 24/ 1990	1991	
1142353	MARCH 8/1990	1992	20 days filed: Power stripping

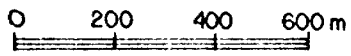
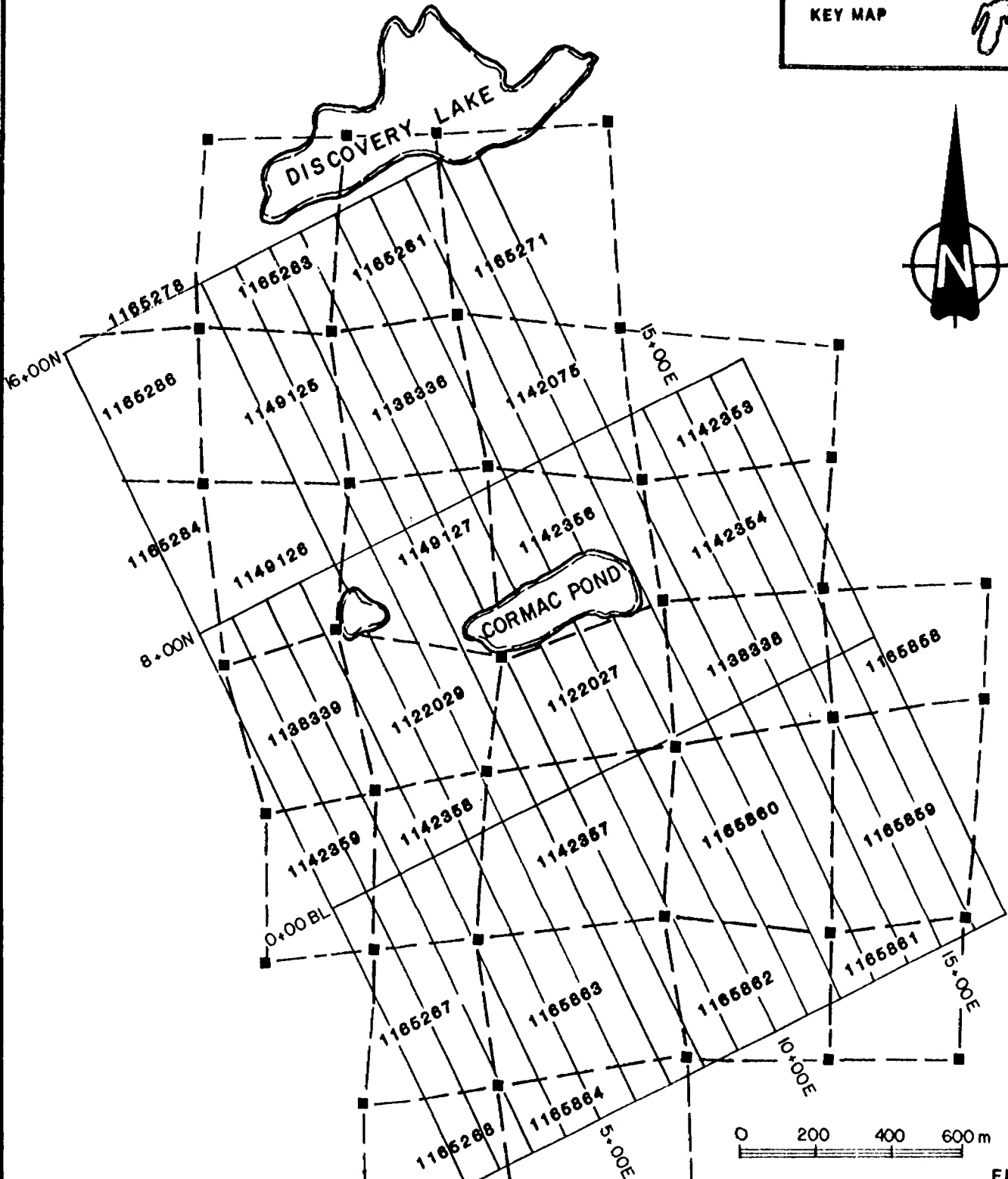
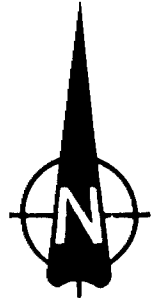
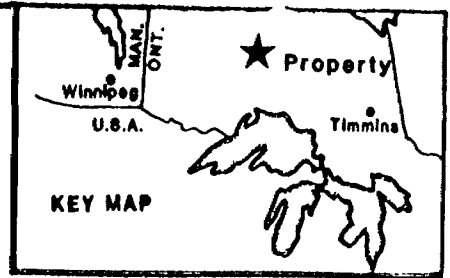


FIGURE 2

- CLAIM LINE
- CLAIM POST
- 1148125 CLAIM NUMBER

FALCONBRIDGE LIMITED			
PARENT OPTION			
Location of Claims in relation to Riley Cormac Grid			
SCALE	as shown	DRAWN	GDS
DATE	Nov. '80	DATA BY	JDF

3.0 PREVIOUS WORK

Prior to Falconbridge involvement, three companies are known to have completed mineral exploration in the Riley Cormac area. Two of these companies were exploring for base metals (Boylen Engineering and New Jersey Zinc) whereas the third company (Goldfields) was exploring for gold. A brief summary of the work done by these companies is presented in Table 2 and significant results are outlined in Table 3.

COMPANY	YEAR	DRILLING	GEOPHYSICS	GEOLOGY
BOYLEN ENGINEERING	1960-1961	6 holes totalling 795m	Ground magniphase EM, ground Mag.	Geological mapping, trenching, line cutting
NEW JERSEY ZINC	1976	2 holes totalling 74m		Prospecting, trenching
GOLDFIELDS	1986		Aerodat Mag., VLF, EM airborne survey	Outcrop stripping, line cutting

Table 2. Previous work done on the Riley Cormac area.

Boylen Engineering Offices			
DDH #	From	To	Comments
343-1	128'	152'	50% Pyrrhotite with minor Pyrite hosted by altered felsic volcanic
343-3	216' 242'	226' 252'	4.27% Zinc 2.14% Zinc
343-4	98' 112'	103' 122'	15% Pyrrhotite-Pyrite-Chalcopyrite 10% Pyrrhotite-Pyrite-Chalcopyrite
New Jersey Zinc Exploration Company (Canada) Limited			
DDH #	From	To	Comments
ATT-1	42'7"	42'8"	Massive Sphalerite band

Table 3 Significant results from previous drilling.

4.0 FALCONBRIDGE LIMITED 1990 WORK PROGRAM

The 1990 work program was focused on the Riley Cormac area. The program consisted of 41.2 Km of line cutting, grid mapping, lithogeochemical sampling and HLEM and Mag surveys. In addition to these surveys, selected outcrop areas were stripped, washed (using wajax pumps) and mapped at 1:100 scale. The outcrop stripping and detailed mapping program were completed on claims TB1122027 and 1138338, which were staked in 1989. The line cutting, geophysics and mapping programs commenced on September 5, 1990. The linecutting and geophysics was undertaken by Northwest Geophysics of Thunder Bay. Mapping was conducted by J.D. Fournier, accompanied by Brian Davis and Ryan Kelly, all Falconbridge employees. The most recent claims on the Ryley Cormac grid were recorded on August 24, 1990.

5.0 GEOLOGY

The Riley Cormac property is part of the Uchi Volcanic Belt which is a subprovince of the Superior Province (Figure 1). The belt is of Archean age and consists of mafic to felsic metavolcanics overlain by metasediments. The rocks are metamorphosed to amphibolite facies. Strike and foliation are generally northeasterly. Exposure is limited due to Pleistocene glacial deposits which cover most of the area.

5.1 Lithology and structure

The Riley Cormac area is underlain by a 1Km wide, northeasterly trending felsic sequence flanked by mafic volcanics to the north and mixed mafic volcanics and gabbro to the south. Pegmatite dykes are present in the northern portion of the grid. Foliation, when present, is parallel to the strike. Foliation and geological contacts generally have a subvertical dip. No major folds were observed and minor folds are rare. Where observed, minor folds are of the similar, isoclinal type. Results from the 1990 geological mapping are compiled on Map # 1 and Map # 2 in the back pockets.

5.2 Felsic volcanics

The unaltered felsic volcanic rocks observed on the Riley Cormac grid consist of a greyish to white sugary matrix with variable amounts of fine grained biotite and quartz eyes. The biotite content varies from 2 to 15%. The individual biotite flakes average 1-2mm in size and usually define a weak foliation. Quartz eyes are present in the southern portion of the felsic sequence package. Here they are rounded to subrounded, grey in colour and their abundance ranges from two to four percent and may be as high as 12%. The northern portion of the felsic sequence is characterized by an almost ubiquitous network of anastomosing biotite-amphibole-garnet bands. These bands are 2 to 10 mm wide and may amount up to 5% of the unit. The abundance of these bands appears to gradually decrease towards the south of the felsic package. Although the orientation of these bands is quite variable, there is a net preference towards a northeasterly trend, parallel to the local foliation and stratigraphy.

5.3 Mafic volcanics

The unaltered mafic volcanic rocks are dark green, fine grained and generally massive. Some rare occurrences of flow contacts and possible pillows have been observed but none were conclusive top indicators. The paucity of primary features may be due to a metamorphic overprint. On the other hand, observation made to the east of our property indicate that "although metamorphic rank and the degree of tectonic deformation has been moderately high, primary features such as pillows, individual pyroclastic fragments, amygdules and so on are readily discernable in most places" (Wallace, 1981). These observations may suggest that in fact, there are very few primary features present and that we are dealing with a thick sequence of amorphous massive flows.

5.4 Gabbros

The gabbros are basically coarse grained amphibolites. They are dark green, massive, with 15 to 25 % coarse (3 to 6mm) rounded amphibole clusters, probably pseudomorphing pyroxenes. These amphibole clusters give the rock a very characteristic spotty look and pitted weathered surface.

5.5 Altered volcanics

The occurrence of altered volcanics exposed on surface is restricted to the contact zone between the felsic package and the southern mafic package (Figure 4). The contact zone consists of a 200 m wide, northeasterly trending corridor in which the felsic and mafic volcanics are complexly interdigitated. The distribution of alteration within this corridor is sporadic. Variation in the intensity of alteration from moderate to unaltered within a single outcrop is a common occurrence. Field assessment of the degree of alteration is based on the mineral assemblage observed. Weakly altered rocks are defined as having minor amounts of one or more of staurolite, garnet, amphibole. Moderately altered rocks are defined as those rocks in which the dominant minerals comprise one or more of staurolite, garnet and in felsic volcanics, amphibole. Garnet is the most commonly observed alteration mineral. It is present in both mafic and felsic volcanics. Locally, garnet content may reach up to 25%. Staurolite is less widespread than garnet. It has been observed only in altered felsic volcanics. An increase in the abundance of staurolite seems to be accompanied with a decrease in the abundance of garnet. The overall distribution of alteration seems to be patchy. The alteration zones observed were very irregularly shaped and up to 30 m across. The complex geometry of the alteration zone is visible at the outcrop scale. Detailed 1:100 maps of stripped outcrops display the complexity of the alteration zone. These maps are included in the back of the report (Maps 3, 4 and 5). The extent of the alteration zones is uncertain due to the poor exposure. Wherever a moderately altered zone was observed, it was usually as the core of a larger weakly altered zone. This distribution of alteration within the above mentioned corridor is suggestive of a network of small pipes within a hydrothermal system.

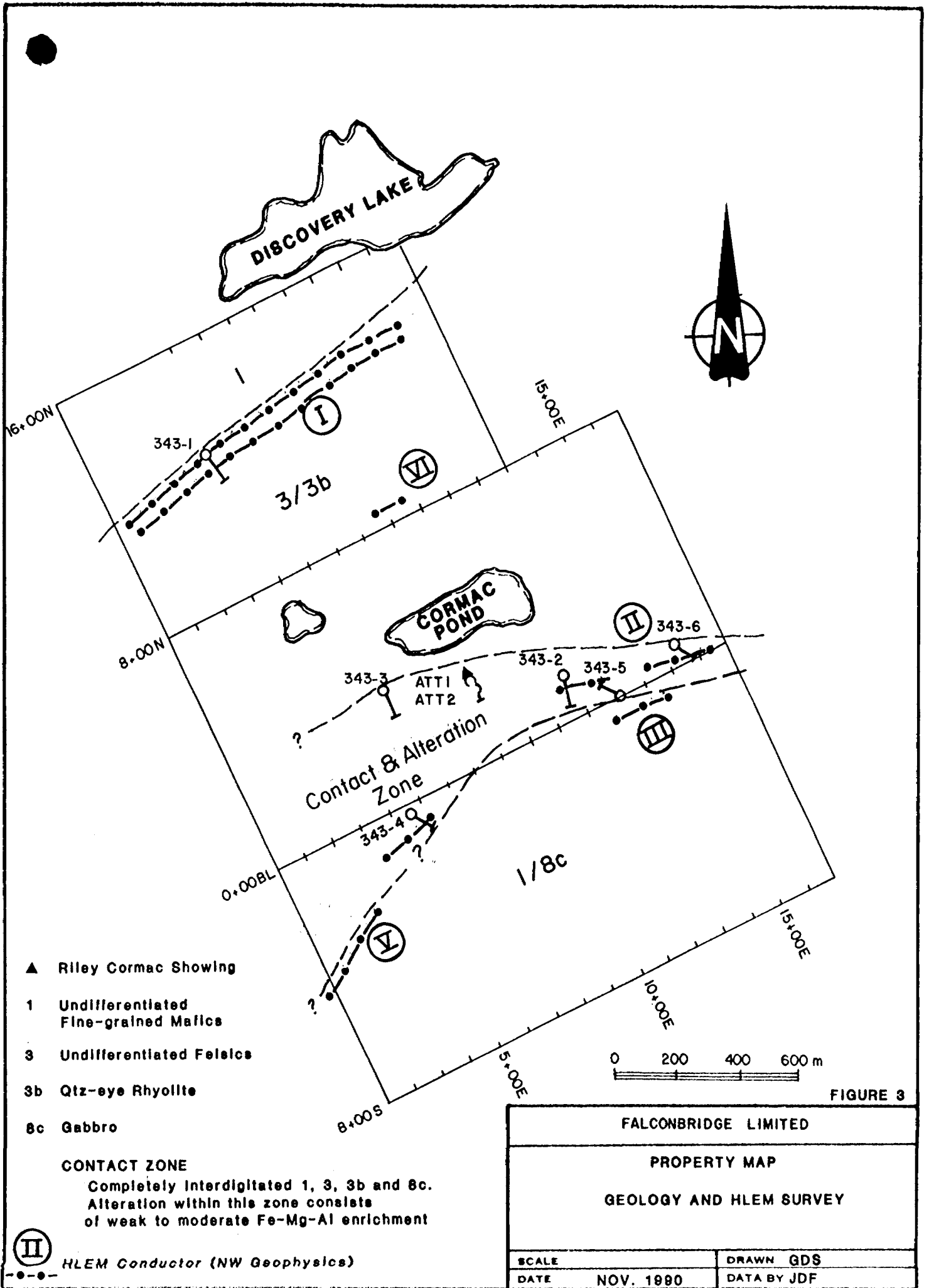


FIGURE 3

FALCONBRIDGE LIMITED	
PROPERTY MAP	
GEOLOGY AND HLEM SURVEY	
SCALE	DRAWN GDS
DATE NOV. 1980	DATA BY JDF

- ▲ Riley Cormac Showing
- 1 Undifferentiated Fine-grained Malice
- 3 Undifferentiated Felsics
- 3b Qtz-eye Rhyolite
- 8c Gabbro

CONTACT ZONE
 Completely interdigitated 1, 3, 3b and 8c.
 Alteration within this zone consists of weak to moderate Fe-Mg-Al enrichment

Ⓜ HLEM Conductor (NW Geophysics)

THE EXPECTED FIGURE(S) HAVE BEEN MOVED TO
THE MAP SECTION OF THIS FILE.

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Peta wanga Lake 210

6.0 HLEM AND MAG SURVEYS

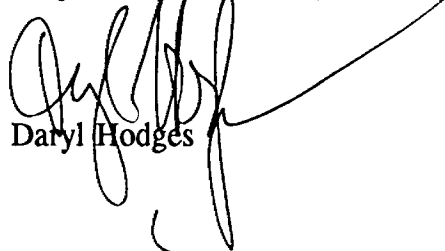
Results from these surveys are included in the back of the report (Maps 6,7 and 8). The HLEM survey was conducted using a MAXMIN 1 instrument, coil separation was 100m, readings were taken every 25m and the frequency used were 440Hz and 1777Hz. The HLEM survey outlined six significant conductors (Figure 3, Maps 6 and 7 back pocket). The Mag survey (Map 8) was conducted using an OMNI system measuring the total field, readings were taken every 25m except in the vicinity of the Riley Cormac showing where the station spacing was reduced to 12.5m. All the grid cross lines (35 Km total) were surveyed.

7.0 CORRELATION OF GEOLOGY AND GEOPHYSICS

Figure 3 correlates the six conductors outlined by the HLEM survey with the geology of the Riley Cormac area. None of the conductors can be accounted for by the surficial geological information currently available. All conductors, except for conductor VI are associated with a mafic/felsic contact zone. Conductor I is associated with the contact zone between the main felsic package and the northern mafic volcanic package. This conductor has been drill tested in 1961 by ddh 343-1 (Figure 3) which intersected 7m of semi massive pyrrhotite hosted by sericitized garnetiferous felsic volcanics. The remaining four conductors (II, III, IV, V) are all more or less coincident or just to the south of the complex contact zone between the main felsic package and the southern mafic package.

The magnetics have assisted in defining the gross stratigraphic variation (Figure 4) and outlining the area of the contact zone alteration.

Respectfully Submitted,



Daryl Hodges

2.9583

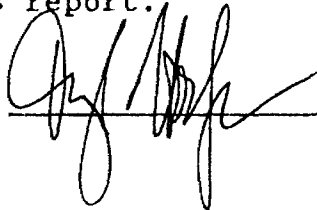
STATEMENT OF QUALIFICATIONS

I, Jean-Denis Fournier, of the City of Winnipeg, Province of Manitoba,

DO SOLEMNLY DECLARE THAT:

1. I have graduated from the University of Alberta (1987) with a BSc Specialization in Geology.
2. I have practiced my profession since 1985.
3. I am responsible for gathering and supervising the gathering of the data presented in this report.
4. I have no financial interest in the property described in this report.

WITNESS:





Jean-Denis Fournier
Falconbridge Limited

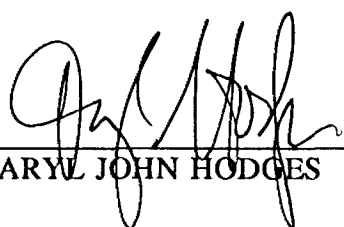
STATEMENT OF QUALIFICATIONS

This is to confirm that I, DARYL JOHN HODGES of 155 Borebank Street, Winnipeg, Manitoba, do certify that:

1. I am a graduate geologist of the University of Waterloo (BSc 1982, MSc 1987)
2. I have been involved in mineral exploration since 1977.
3. I am a Project Geologist with Falconbridge Limited since 1987.
4. I have no financial interest in the claims covered by this report, of which I am responsible, nor do I expect to receive any interest.

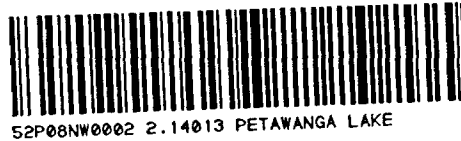


WITNESS



DARYL JOHN HODGES

18.03.91.
DATE



900

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Mining Lands Section
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

Telephone: (705) 670-7264
Fax: (705) 670-7262

Your File: W. 9140.107, 108
Our File: 2.14013

July 5, 1991

Mining Recorder
Ministry of Northern Development
and Mines
435 James Street, South
P. O. Box 5000
Thunder Bay, Ontario
P7C 5G6

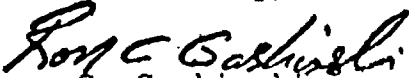
Dear Sir/Madam:

RE: Notice of Intent dated June 5, 1991 for Geological and
Geophysical (Electromagnetic and Magnetometer) Surveys
on mining Claims TB.1138336 et al. in Kawitos and
Petawanga Lake Areas.

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

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

Yours sincerely,


Ron. C. Gashinski,
Provincial Manager, Mining Lands
Mines & Minerals Division

CD
LJS/jl
Enclosure:

cc: Falconbridge Limited
Toronto, Ontario

Falconbridge Limited
Winnipeg, Manitoba

✓ Assessment Files Office
Toronto, Ontario

Resident Geologist
Thunder Bay, Ontario



DOCUMENT No.
W9140-107

- Instructions**
- Please type or print
 - Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type
 - If number of mining claims traversed exceeds space on this form, attach a list
 - Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch

Report of Work
(Geophysical, Geological and Geochemical Surveys)

Mining Act

Type of Survey(s) Geological	Mining Division Thunder Bay	Township or Area Kaministiquia Petawanga Lakes
Recorded Holder(s) Falconbridge Limited	219013	Prospector's Licence No. A21647
Address P.O. Box 40 Commerce Court Toronto, Ontario M5L 1B4		Telephone No. (204) 888-9860
Survey Company Falconbridge Limited 100-3074 Portage Avenue Winnipeg, MB R3K 0Y2		
Name and Address of Author (of Geo-Technical Report) Daryl Hodges 100-3074 Portage Ave. Winnipeg, MB R3K 0Y2		Date of Survey (from & to) 05th 09th 90 27th 09th 91

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days (This includes line cutting)	- Electromagnetic - Magnetometer	see - att - list
For each additional survey: using the same grid: Enter 20 days (for each)	- Other Geological Geochemical	40
Man Days Complete reverse side and enter total(s) here	- Electromagnetic - Magnetometer - Other Geological Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic Magnetometer Other	
Total miles flown over claim(s). Date _____ Recorded Holder or Agent (Signature) _____		

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
TB	1165263	TB	1142357		
TB	1165261	TB	1165860		
TB	1165271	TB	1165859		
TB	1149125	TB	1165267		
TB	1138336	TB	1165863		
TB	1142075	TB	1165862		
TB	1149126	TB	1165861		
TB	1149127	TB	1165864		
TB	1142356	TB	1165268		
TB	1142354	TB	1142353		
TB	1138339				
TB	1122029				
TB	1122027				
TB	1138338				
TB	1165858				
TB	1142359				
TB	1142358				

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MINING LANDS SECTION

MINING LANDS SECTION

Total number of mining claims covered by this report of work **27**

Certification Verifying Report of Work

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

Name and Address of Person Certifying
Daryl Hodges 100-3074 Portage Avenue Winnipeg, Manitoba R3K 0Y2

Telephone No. **(204) 888-9860** Date **Feb. 8, 1991** Certified By (Signature) *Daryl Hodges*

For Office Use Only

Total Days Cr. Recorded 1080	Date Recorded Mar 19/91	Mining Recorder <i>[Signature]</i>
Date Approved as Recorded		Provincial Manager, Mining Lands

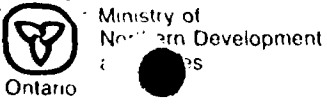
SEE REVISED WORK STATEMENT

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DOCUMENT No.
W9140. 108

- Instructions**
- Please type or print.
 - Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type
 - If number of mining claims traversed exceeds space on this form attach a list.
 - Technical Reports and maps in duplicate should be submitted Mining Lands Section, Mineral Development and Lands Branch

Report of Work
(Geophysical, Geological and Geochemical Surveys)

Type of Survey(s) Geophysical (Electromagnetic, Magnetometer)	Mining Division Thunder Bay	Township or Area Kawitoc/Petawanga Lake
Recorded Holder(s) Falconbridge Limited	2.14013	Prospector's Licence No. A21647
Address P.O. Box 40 Commerce Court West Toronto, Ontario M5L 1B4		Telephone No. (204)888-9860
Survey Company Northwest Geophysics		
Name and Address of Author (of Geo-Technical Report) Daryl Hodges c/o Falconbridge Limited 100-3074 Portage WPG, MB		Date of Survey (from & to) 05, 09, 90 21, 09, 90

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic - Magnetometer	see <u>20</u> att. <u>30</u> list
For each additional survey: using the same grid: Enter 20 days (for each)	- Other Geological Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical - Electromagnetic - Magnetometer - Other Geological Geochemical	Days per Claim
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic Magnetometer Other	Days per Claim
Total miles flown over claim(s).		
Date	Recorded Holder or Agent (Signature)	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
TB ✓	1165263 ✓	TB ✓	1142357 ✓		
TB ✓	1165261 ✓	TB ✓	1165860 ✓		
TB ✓	1165271 ✓	TB ✓	1165859 ✓		
TB ✓	1149125 ✓	TB ✓	1165267 ✓		
TB ✓	1138336 ✓	TB ✓	1165863 ✓		
TB ✓	1142075 ✓	TB ✓	1165862 ✓		
TB ✓	1149126 ✓	TB ✓	1165861 ✓		
TB ✓	1149127 ✓				
TB ✓	1142356 ✓	TB ✓	1165864 ✓		
TB ✓	1142354 ✓	TB ✓	1165268 ✓		
TB ✓	1138339 ✓	TB ✓	1142353 ✓		
TB ✓	1138338 ✓				
TB ✓	1165858 ✓				
TB ✓	1142359 ✓				
TB ✓	1142358 ✓				

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APR 10 1991

MINING LANDS SECTION

Total number of mining claims covered by this report of work	25
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Certification Verifying Report of Work

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

Name and Address of Person Certifying
Daryl Hodges c/o Falconbridge Limited 100-3074 Portage Ave. Winnipeg, MB R3K 0Y2

Telephone No. **(204) 888-9860** Date **Feb 8, 1991** Certified By (Signature) *Daryl Hodges*

For Office Use Only

Total Days Cr. Recorded 1000	Date Recorded Mar 19/91	Mining Recorder <i>[Signature]</i>
Date Approved/Recorded		Provincial Manager, Mining Lands

SEE REVISED WORK STATEMENT

Received Stamp

25



Date June 5, 1991

Mining Recorder's Report of Work No. W.9140.107

Recorded Holder: **Falconbridge Limited**

Township or Area: **Kawitog and Petawanga Lakes**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ days	TB. 1122027
Magnetometer _____ days	1122029
Radiometric _____ days	1138336
Induced polarization _____ days	1138338-39
Other _____ days	1142075
	1142353-54
	1142356 to 359 incl.
	1149125 to 127 incl.
	1165261
Section 77 (19) See "Mining Claims Assessed" column	1165263
	1165267-68
Geological <u>32.7</u> days	1165271
Geochemical _____ days	1165858 to 864 incl.
Men days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (18) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

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



Date June 5, 1991

Mining Recorder's Report of Work No. W.9140.108

Recorded Holder Falconbridge Limited

Township or Area Kawitos and Petawanga Lakes

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic 16.1 days	TB.1138336
Magnetometer 16.1 days	1138338-39
Radiometric days	1142075
Induced polarization days	1142353-54
Other days	1142356 to 359 incl.
	1149125 to 127 incl.
	1165261
	1165263
	1165267-268
	1165271
Section 77 (10) See "Mining Claims Assessed" column	1165858 to 864 incl.
Geological days	
Geochemical days	
Men days <input type="checkbox"/>	Airborne <input type="checkbox"/>
Special provision <input checked="" type="checkbox"/>	Ground <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

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

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(10) - 60.

Table 1. SPECIAL PROVISIONS FILING							
CLAIM #	% COVERAGE	Assessment Applied					TOTAL FILED (DAYS)
		LINE CUTTING	GEOLOGICAL	GEOCHEMISTRY	GEOPHYSICS		
		(DAYS)	(DAYS)	ROCK (DAYS)	MAG (DAYS)	HLEM (DAYS)	
TB-1145263 1185383	55	11	11		11	11	44
1185261	85	17	17		17	17	68
1185271	53	10.6	10.6		10.6	10.6	42.4
1149125	100	20	20		20	20	80
1138338	100	20	20		20	20	80
1142075	88	17.2	17.2		17.2	17.2	68.8
1149128	45	9	9		9	9	36
1149127	100	20	20		20	20	80
1142356	100	20	20		20	20	80
1142354	100	20	20		20	20	80
1138339	100	20	20		20	20	80
1122029	100		20			20	40
1122027	100		20			20	40
1138338	100	20	20		20	20	80
1185858	58	11.2	11.2		11.2	11.2	44.8
1142359	65	13	13		13	13	52
1142358	100	20	20		20	20	80
1142357	100	20	20		20	20	80
1185880	100	20	20		20	20	80
1185859	69	13.8	13.8		13.8	13.8	55.2
1185267	100	20	20		20	20	80
1185883	100	20	20		20	20	80
1185882	89	17.8	17.8		17.8	17.8	71.2
1185881	29	5.8	5.8		5.8	5.8	23.2
1185884	47	9.4	9.4		9.4	9.4	37.8
1185268	46	9.2	9.2		9.2	9.2	36.8
1142353	51	10.2	10.2		10.2	10.2	40.8
TOTAL		395.2	435.2		395.2	435.2	1660.8

2. 14013



Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

June 8/91

Mining Lands Section
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

Telephone: (705) 670-7264
Fax: (705) 670-7262

File: 2.14013

May 8, 1991

Falconbridge Ltd.
100-3074 Portage Avenue
Winnipeg, Manitoba
R3K 0Y2

Dear Sir/Madam:

Re: Geology & Geophysical Surveys submitted on mining claims:
TB 1165263 et al. in Kawitos and Petawanga Lake Areas.

Enclosed are the plans (in duplicate) for the above-mentioned Geophysical survey. In order to complete your submission, please provide the following information (in duplicate):

1. Inphase and quadrative readings on the HLEM plans
2. The nature of the overburden, swamp, forest cover, etc. on traversed lines where no outcrops are found, complete this data on Geological plans.
3. On the Data Statement complete the first three (3) areas on page two (2); include number of stations and readings, instrument type, model and accuracy.

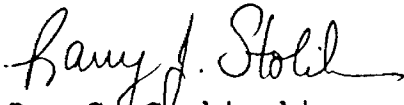
When submitting this information, please quote file 2.14013 and submit it to this office no later than thirty (30) days from date of this letter.

.../2

-2-

For further information, please contact Larry J. Stoliker at
(705) 670-7264.

Yours sincerely,



for Ron C. Gashinski
Provincial Manager, Mining Lands
Mines & Minerals Division

LJS/jl
Enclosure

cc: Mining Recorder
Thunder Bay, Ontario
W. 9140.107 & 108

Falconbridge Ltd.
P. O. Box 40
Commerce Court
Toronto, Ontario
M5L 1B4



FALCONBRIDGE LIMITED

Suite 100 - 3074 Portage Ave.
Winnipeg, Manitoba, R3K 0Y2
Fax 204/885-4152 Telephone 204/888-9860

2.14013

RECEIVED

Mr. L. Stoliker
Mining Lands Section
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

MAY 22 1991
#23
MINING LANDS SECTION

May 13, 1991
File: 5-76

RE: Geology and Geophysical surveys, Kawitos Lake area
YOUR FILE: 2.14013

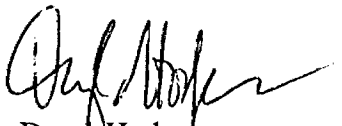
Dear Mr. Stoliker:

Please find enclosed the following:

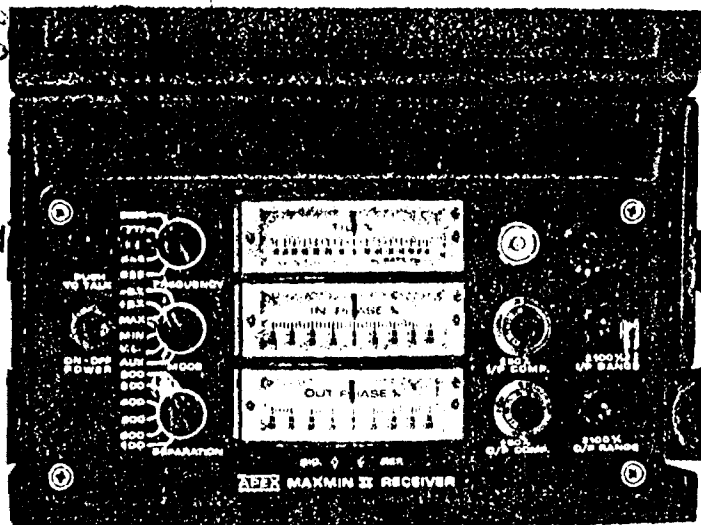
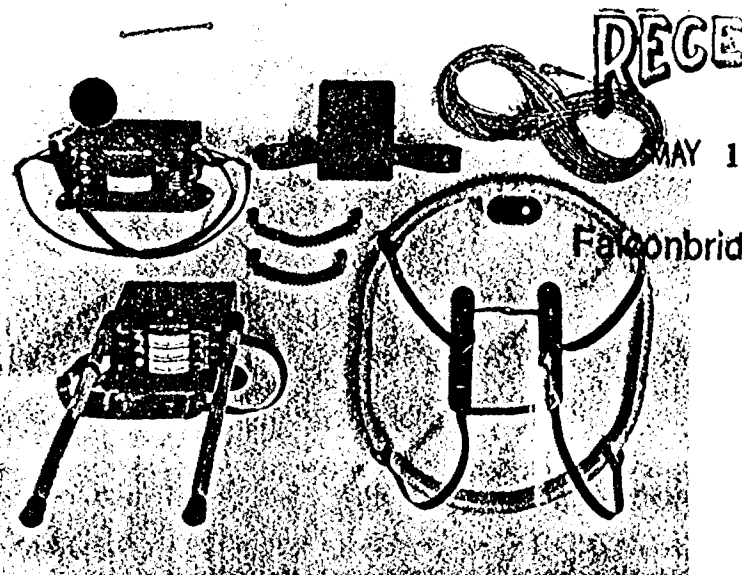
- 1) Two copies of HLEM Survey, showing in-phase and quadrature readings, profiles and claim numbers (referred to as Figure 6,7)
- 2) Two copies of Geological plans showing the nature of the forest cover and other such pertinent information, based on the mapping traverses along the grid lines.
- 3) A revised Technical Data Statement, as per your request.

I wish to thank you for pointing out these inconsistencies and trust you will find everything in order.

FALCONBRIDGE LIMITED


Daryl Hodges
Senior Project Geologist

cc: Thunder Bay Mining Recorder
W.9140.107 & 108
T. Masciotra



2.14013

SPECIFICATIONS:

This will do for Maxmin I

- Frequencies:** 222, 444, 888, 1777 and 3555 Hz.
- Modes of Operation:**
 - MAX:** Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with reference cable.
 - MIN:** Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
 - V.L.:** Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.
- Coil Separations:** 25, 50, 100, 150, 200 & 250m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIF). Coil separations in VL mode not restricted to fixed values.
- Parameters Read:**
 - In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
 - Tilt-angle of the total field in V.L. mode.
- Readouts:**
 - Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
 - Tilt angle and null in 90mm edgewise meters in V.L. mode.
- Scale Ranges:**
 - In-Phase: $\pm 20\%$, $\pm 100\%$ by push-button switch.
 - Quadrature: $\pm 20\%$, $\pm 100\%$ by push-button switch.
 - Tilt: $\pm 75\%$ slope.
 - Null (V.L.): Sensitivity adjustable by separation switch.
- Readability:**
 - In-Phase and Quadrature: 0.5 %.
 - Tilt: 1%
- Repeatability:** $\pm 0.5\%$ to $\pm 1\%$ normally, depending on conditions, frequencies and coil separation used.
- Transmitter Output:**
 - 222Hz : 175 Atm²
 - 444Hz : 160 Atm²
 - 888Hz : 100 Atm²
 - 1777Hz : 60 Atm²
 - 3555Hz : 30 Atm²
- Receiver Batteries:** 9V trans. radio type batteries (4). Life: approx. 35hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.
- Transmitter Batteries:** 12V 7.5Ah Gel-Cell rechargeable batteries (2 x 6V in series).
- Reference Cable:** Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.
- Voice Link:** Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.
- Indicator Lights:** Built-in signal and reference warning lights to indicate erroneous readings.
- Temperature Range:** -40°C to +60°C (-40°F to +140°F).
- Receiver Weight:** 6kg (13 lbs.)
- Transmitter Weight:** 13kg (29 lbs.)
- Shipping Weight:** Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification.

APEX

PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612

Cables: APEXPARA TORONTO

Telex: 06-966773 NORDVIK TOR



Specifications

Dynamic Range	18,000 to 110,000 gammas. Roll-over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
Automatic Fine Tuning	± 15% relative to ambient field strength of last stored value
Display Resolution	0.1 gamma
Processing Sensitivity	± 0.02 gamma
Statistical Error Resolution	0.01 gamma
Absolute Accuracy	± 1 gamma at 50,000 gammas at 23°C ± 2 gamma over total temperature range
Standard Memory Capacity	
Total Field or Gradient	1,200 data blocks or sets of readings
Tie-Line Points	100 data blocks or sets of readings
Base Station	5,000 data blocks or sets of readings
Display	Custom designed, ruggedized liquid crystal display with an operating temperature range from -40°C to +55°C. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
RS 232 Serial I/O Interface	2400 baud, 8 data bits, 2 stop bits, no parity
Gradient Tolerance	6,000 gammas per meter (field proven)
Test Mode	A. Diagnostic testing (data and programmable memory) B. Self Test (hardware)
Sensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy.
Gradient Sensors	0.5 meter sensor separation (standard), normalized to gammas/meter. Optional 1.0 meter sensor separation available. Horizontal sensors optional.
Sensor Cable	Remains flexible in temperature range specified, includes strain-relief connector
Cycling Time (Base Station Mode)	Programmable from 5 seconds up to 60 minutes in 1 second increments
Operating Environmental Range	-40°C to +55°C; 0-100% relative humidity; weatherproof
Power Supply	Non-magnetic rechargeable sealed lead-acid battery cartridge or belt; rechargeable NiCad or Disposable battery cartridge or belt; or 12V DC power source option for base station operation.
Battery Cartridge/Belt Life	2,000 to 5,000 readings, for sealed lead acid power supply, depending upon ambient temperature and rate of readings
Weights and Dimensions	
Instrument Console Only	2.8 kg, 238 x 150 x 250mm
NiCad or Alkaline Battery Cartridge	1.2 kg, 235 x 105 x 90mm
NiCad or Alkaline Battery Belt	1.2 kg, 540 x 100 x 40mm
Lead-Acid Battery Cartridge	1.8 kg, 235 x 105 x 90mm
Lead-Acid Battery Belt	1.8 kg, 540 x 100 x 40mm
Sensor	1.2 kg, 56mm diameter x 200mm
Gradient Sensor (0.5 m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0 m separation - optional)	2.2 kg, 56mm diameter x 1300mm
Standard System Complement	Instrument console; sensor; 3-meter cable, aluminum sectional sensor staff, power supply, harness assembly, operations manual.
Base Station Option	Standard system plus 30 meter cable
Gradiometer Option	Standard system plus 0.5 meter sensor

2.14013

EDA Instruments Inc.
4 Thorncliffe Park Drive
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: Instruments Toronto
(416) 425 7800

In U.S.A.
EDA Instruments Inc.
5151 Ward Road
Wheat Ridge, Colorado
U.S.A. 80033
(303) 422 9112

Printed in Canada



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

Type of Survey(s) ELECTROMAGNETIC, MAGNETIC, GEOLOGICAL
Township or Area KAWITOS LAKE AREA
Claim Holder(s) Falconbridge Limited
100 - 3074 Portage Ave. Wpg, MB R3K 0Y2
Survey Company Northwest Geophysics
Author of Report J.D. Fournier, Daryl Hodges
Address of Author c/o Falconbridge Limited
Covering Dates of Survey September 5 to 27, 1990
(linecutting to office)
Total Miles of Line Cut 41.2 km (25.6 miles)

MINING CLAIMS TRAVERSED
List numerically

TB (prefix)	1165263 (number)
	1165261
	1165271
	1149125
	1138336
	1142075
	1149126
	1149127
	1142356
	1142354
	1138339
	1122029
	1122027
	1138338
	1165858
	1142359
	1142358
	1142357
	1165860
	1165859
	1165267
	1165863
	1165862
	1165861
	1165864
	1165268
	1142353

If space insufficient, attach list

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

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

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

DATE: _____ SIGNATURE: _____
Author of Report or Agent

Res. Geol. _____ Qualifications 2.9583 - D. Hodges
THIS REPORT - J. Fournier

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 27

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

HLEM AND MAGNETIC SURVEYS

Number of Stations 1323 Number of Readings 2646(HLEM) 1323 (Mag)
Station interval 25 metres Line spacing 100 metres
Profile scale 1cm = 25% (HLEM Survey)
Contour interval not applicable

MAGNETIC

Instrument EDA OMNI (see attached spec. sheet)
Accuracy - Scale constant + 1 gamma at 50,000 gammas at 23°C.
Diurnal correction method
Base Station check-in interval (hours) Automated Base Station Programmed at 5 second interval
Base Station location and value

ELECTROMAGNETIC

Instrument MAXMIN I (See attached spec. sheet)
Coil configuration Horizontal Loop
Coil separation 100 - metre separation
Accuracy + 0.5% to + 1% depending on conditions and frequency used.
Method: [] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency 1776 Hz (specify V.L.F. station)
Parameters measured in-phase, out-of-phase

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [] Time Domain [] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth -- include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

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

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

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____



FALCONBRIDGE LIMITED

Suite 100 - 3074 Portage Ave.
Winnipeg, Manitoba, R3K 0Y2
Fax 204/885-4152 Telephone 204/888-9860

Mining Lands Section
159 Cedar Street
Fourth Floor
SUDBURY, Ontario

March 19, 1991

RE: Assessment Filing, Special Provisions, Thunder Bay District

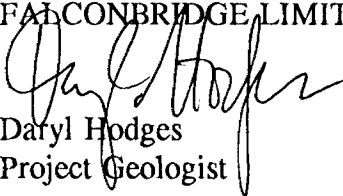
Dear Sir,

Enclosed please find two copies of a report entitled *Geology and Geophysics Programs, Ryley Cormac Area August to September, 1990*. The Technical Data Statement is included in an Appendix within the report. Also enclosed are copies of the Report of Work forms submitted to Thunder Bay. Due to the relative shape of the grid to the claim block and the presence of bodies of water on the grid, it was not possible to have complete coverage of the grid. We have therefore calculated the assessment credits in a prorata fashion per survey and have included a detailed breakdown in a Table included in the report.

We trust you will find everything in order, however should you have any questions, please call at (204) 888 9860.

Sincerely,

FALCONBRIDGE LIMITED


Daryl Hodges
Project Geologist

cc: A Masciotra

RECEIVED

MAR 20 1991

MINING LANDS SECTION

2 . 1 4 0 1 3



FALCONBRIDGE LIMITED

Suite 100 - 3074 Portage Ave.
Winnipeg, Manitoba, R3K 0Y2
Fax 204/885-4152 Telephone 204/888-9860

Thunder Bay Mining Recorder
435 James Street,
Thunder Bay, Ontario

March 19, 1991

RE: Assessment filing under Special Provisions

Dear Sir,

Enclosed please find one original and one copy of a Report of Work for some of our claims in the Thunder Bay Mining District. The claims are located on Petawanga sheet G-378, near the Albany River. The work covers a combined geological and geophysical program completed in September, 1990. Owing to the shape of the grid and the presence of bodies of water, it was not possible to completely cover all claims adequately and we have taken this into account with our distribution of work credits. Included with this Report of Work are the Table showing the detailed breakdown per survey, a copy of the grid map showing claim coverage and copies of the Technical Data Statement sent to Sudbury.

I trust you will find everything in order. If you have any questions please do not hesitate to call me at (204) 888-9860.

Sincerely,

FALCONBRIDGE LIMITED

Daryl Hodges
Project Geologist

attch.

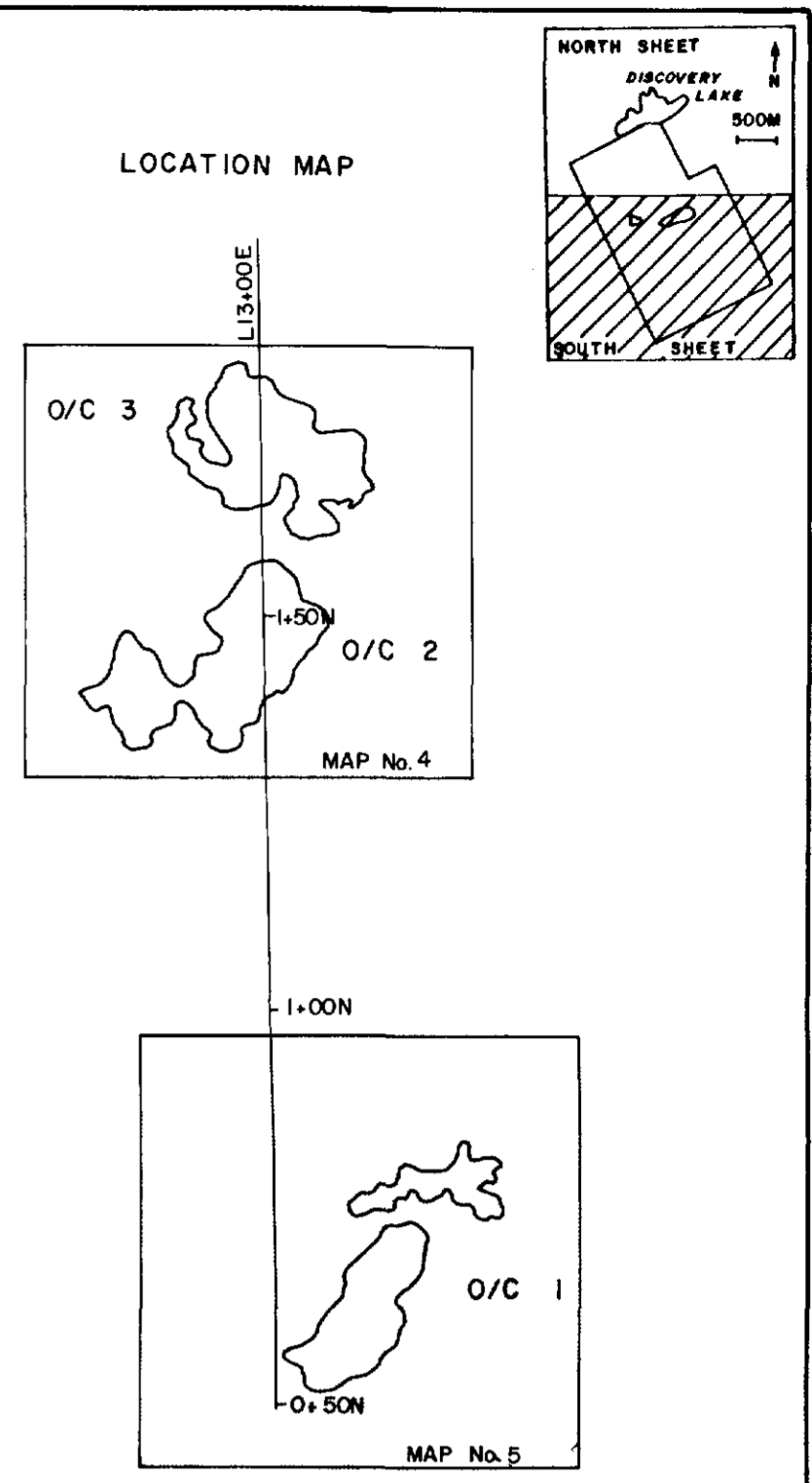
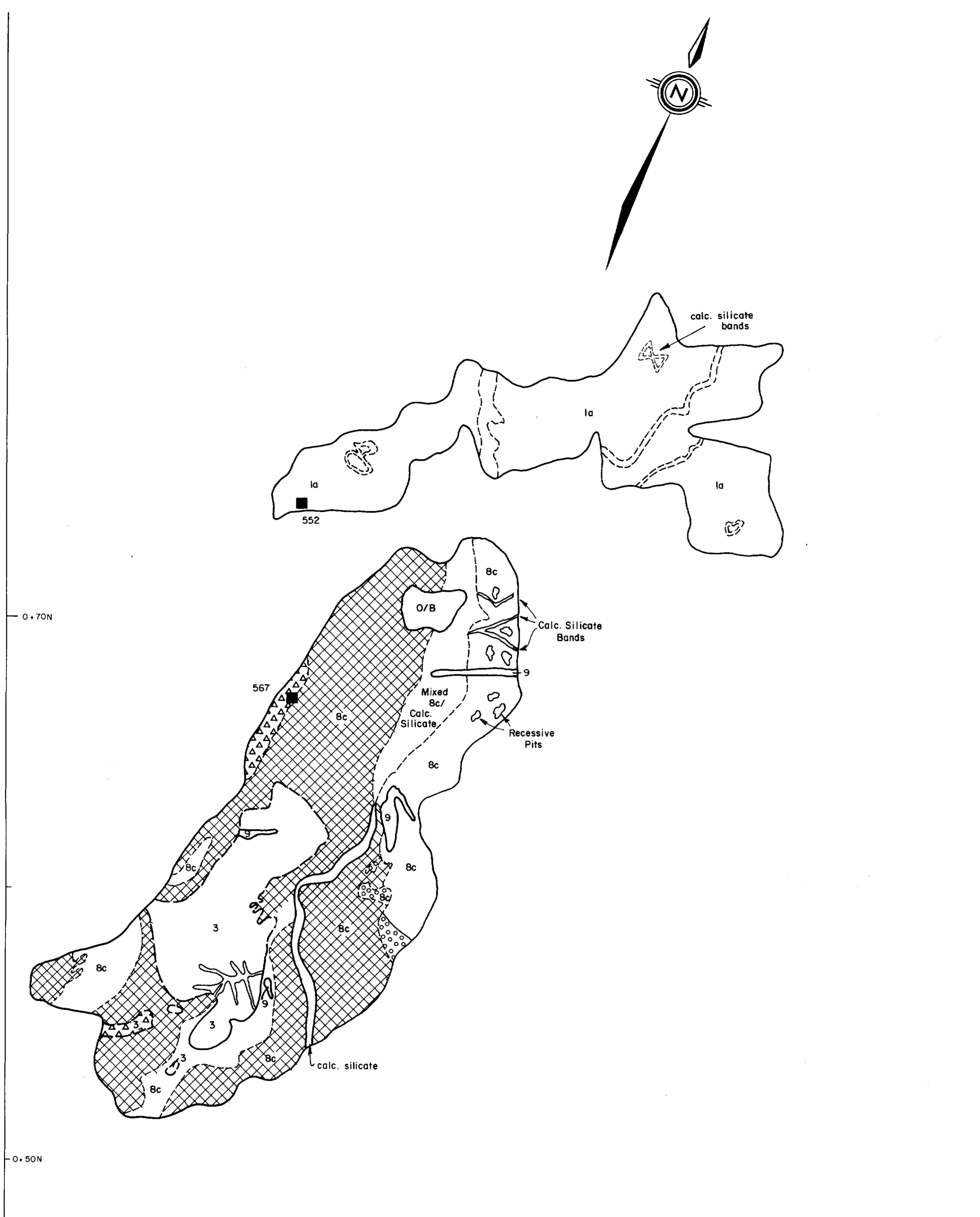
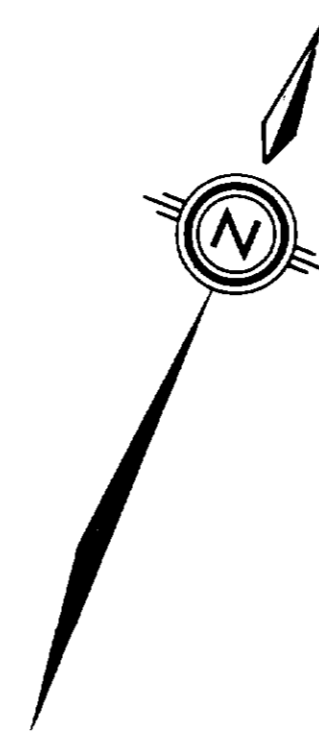
cc: A. Masciotra
Mining Lands, Sudbury

RECEIVED

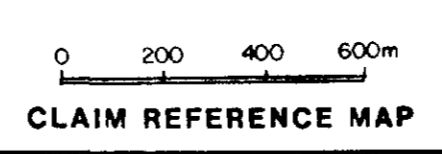
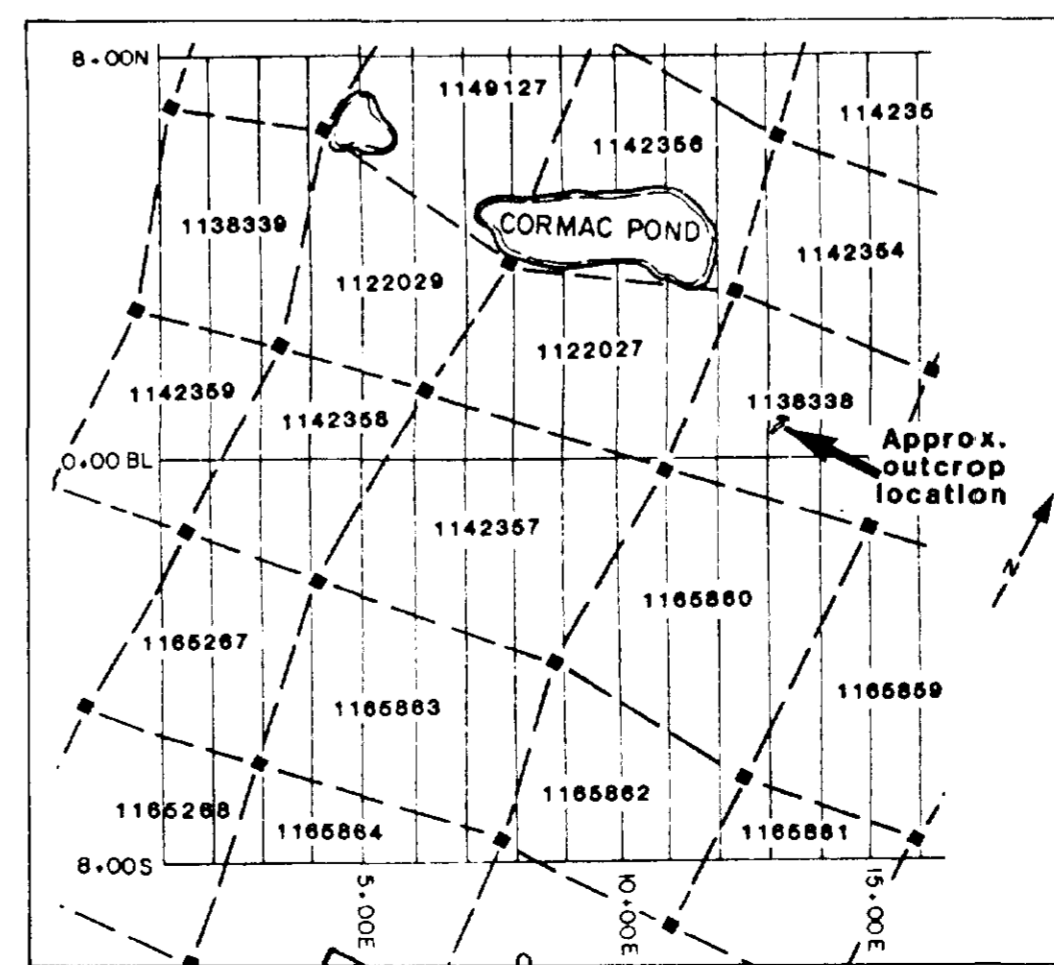
MAR 20 1991

MINING LANDS SECTION

2 . 1 4 0 1 3



- GEOLOGY LEGEND -
- 1 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 1a MAFIC FLOW : MASSIVE
 - 1b MAFIC FLOW : PILLOWED
 - 2 INTERMEDIATE VOLCANICS (UNDIFFERENTIATED)
 - 3 FELSIC VOLCANICS (UNDIFFERENTIATED)
 - 3a FELSIC FLOW
 - 3b QUARTZ-EYE RHYOLITE
 - 3d QUARTZ-FELDSPAR PHYRIC RHYOLITE
 - 3v RHYOLITE CROSSCUT BY ANASTOMOSING GARNET-AMPHIBOLE VEINS
 - 4 CHEMICAL SEDIMENTS
 - 4c SEMI-MASSIVE SULPHIDES
 - 4d MASSIVE SULPHIDES
 - 4e TUFFACEOUS EXHALITE
 - 5 CLASTIC SEDIMENTS
 - 5b SANDSTONE/ARKOSE
 - 5c GREYWACKE
 - 5d ARGILLITE
 - 5g MUDSTONE
 - 7 FELSIC PLUTONICS
 - 7d PEGMATITE
 - 8 MAFIC PLUTONICS
 - 8c GABBRO
 - 9 QUARTZ VEIN
 - 523 LITHOGEOCHEM SAMPLES (prefixed by W800)
- Carbonate Alteration**
dominant mineral comprises one or more of: Calcite, Dolomite, Ankerite, Siderite
- Strong Al enrichment**
dominant mineral comprises one or more of: Kyanite, Silimanite, Andalusite, Sericite
- Strong Fe-Mg-Al enrichment**
dominant mineral comprises one or more of: Chlorite, Anthophyllite, Cordierite
- Moderate Fe-Mg-Al enrichment**
dominant mineral comprises one or more of: Staurolite, Garnet, Amphibole, Biotite
- Weak Fe-Mg-Al enrichment**
minor amounts of one or more of any of the above minerals
- Ca-Fe enrichment**
dominant mineral one or more of: Epidote, Ankerite, Calcite
- Silicification**



MAP 5

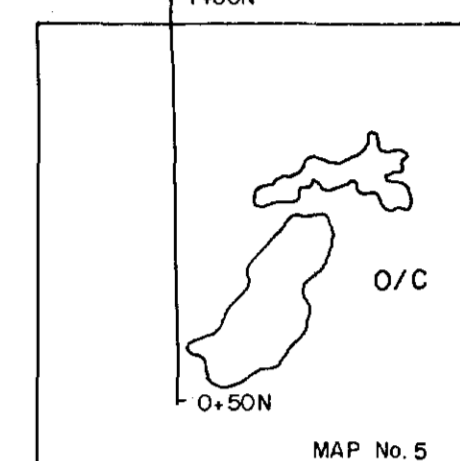
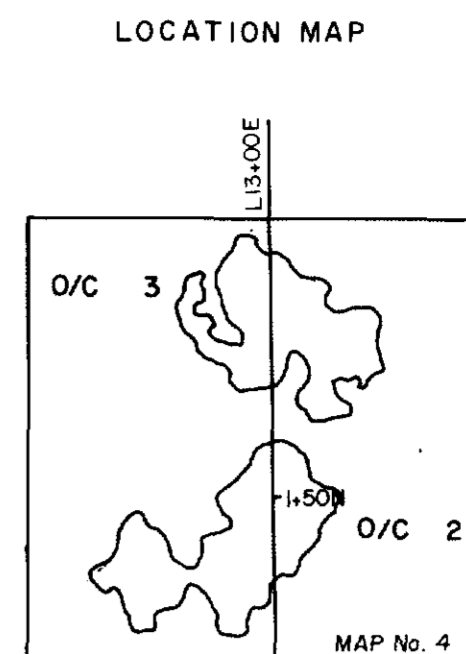
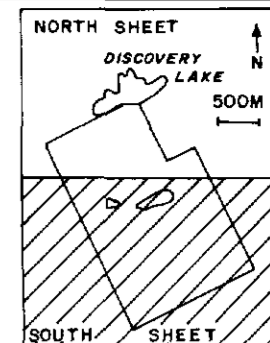
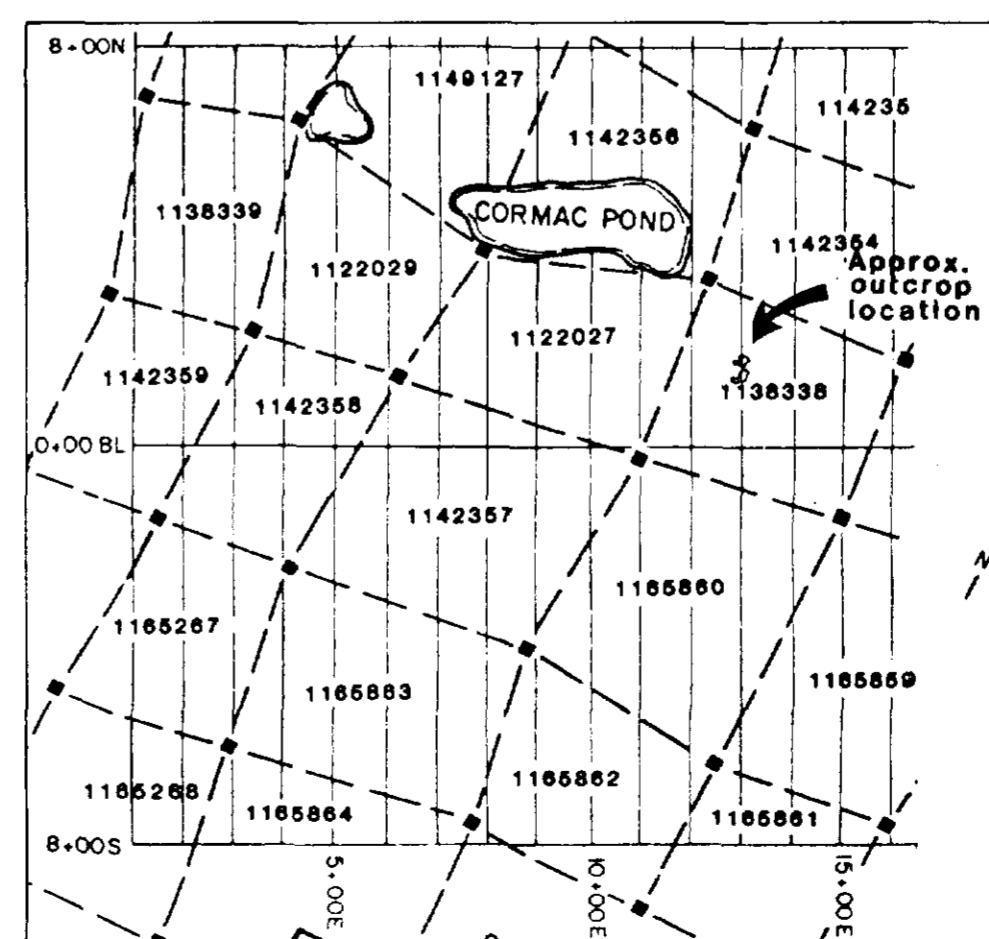
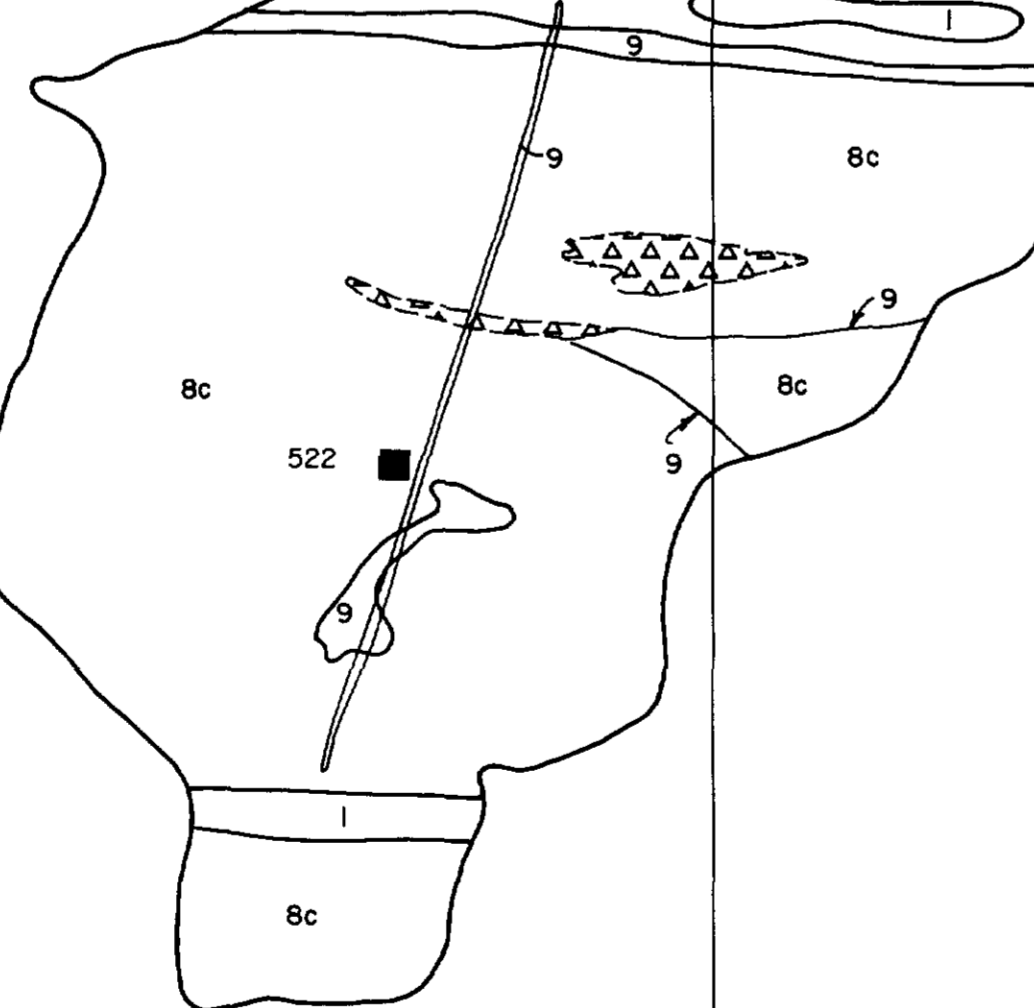
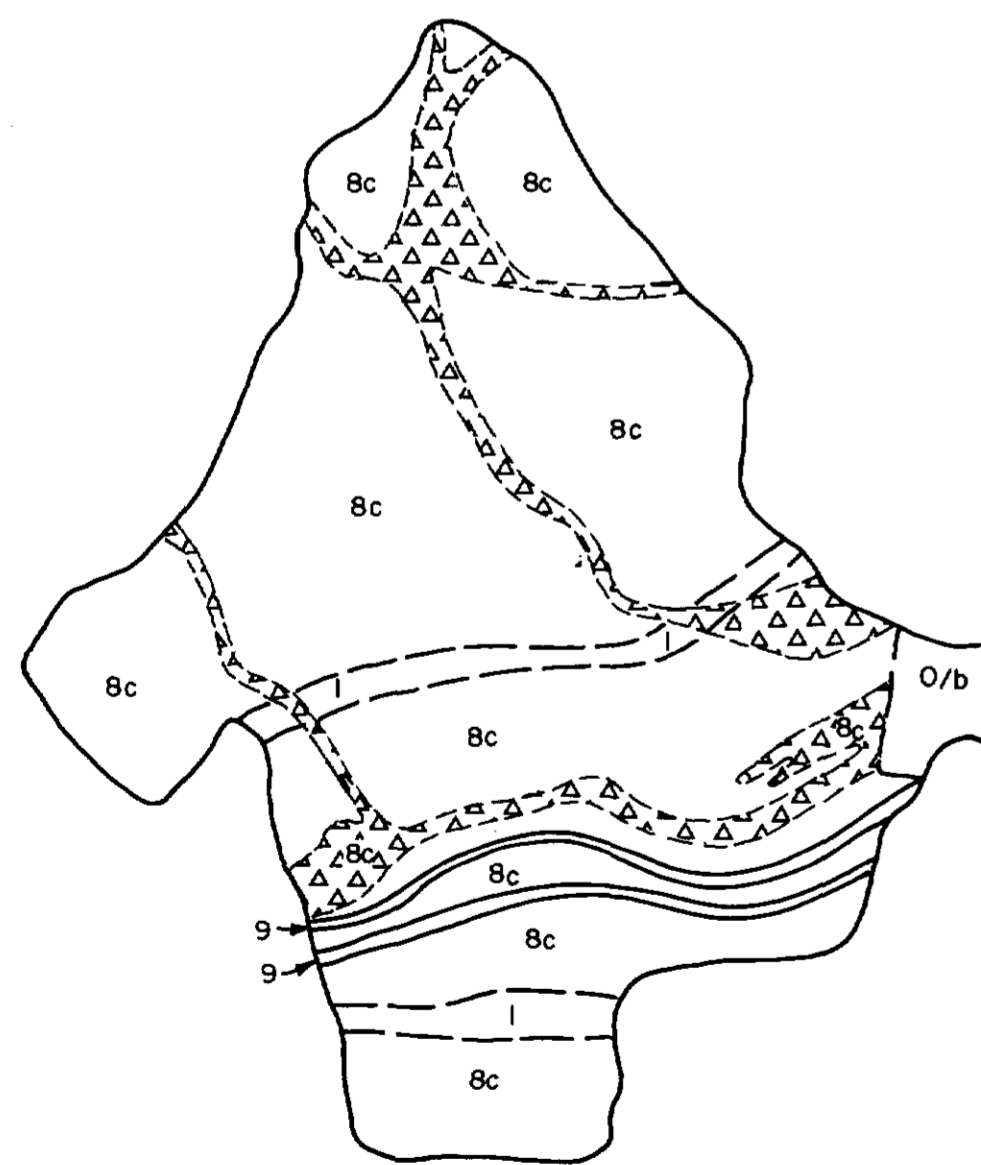
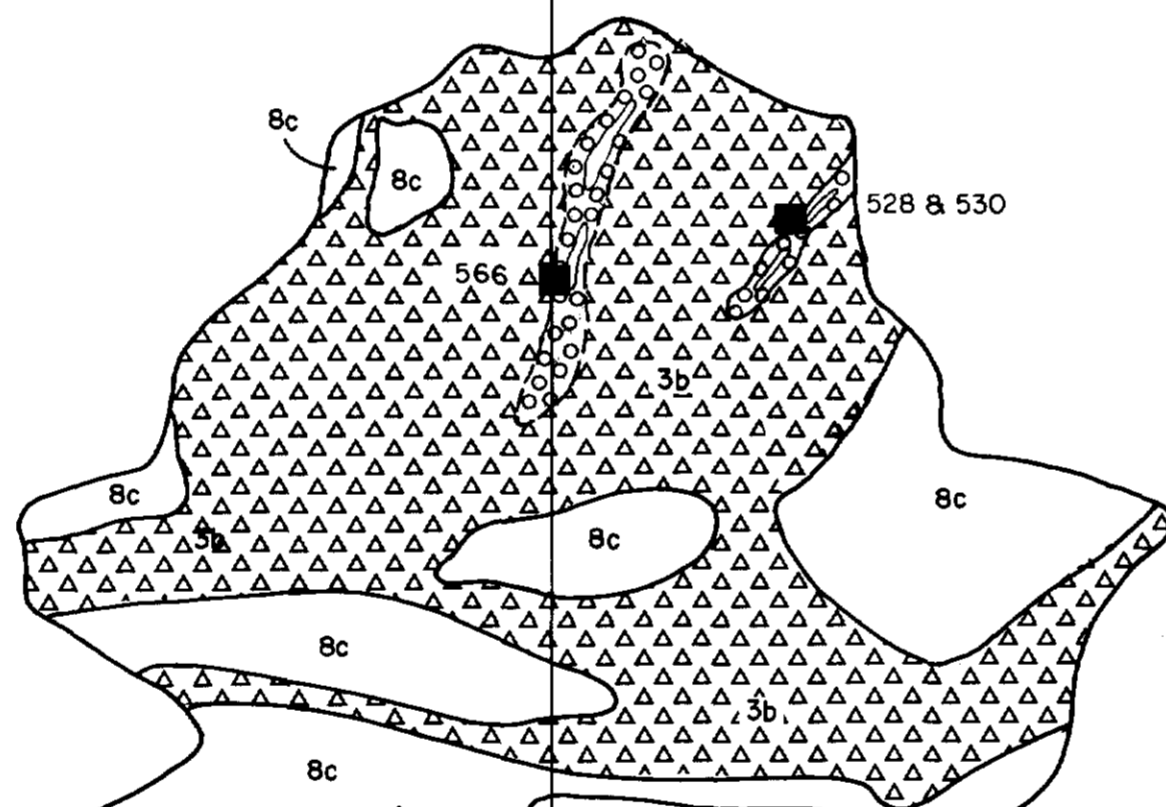
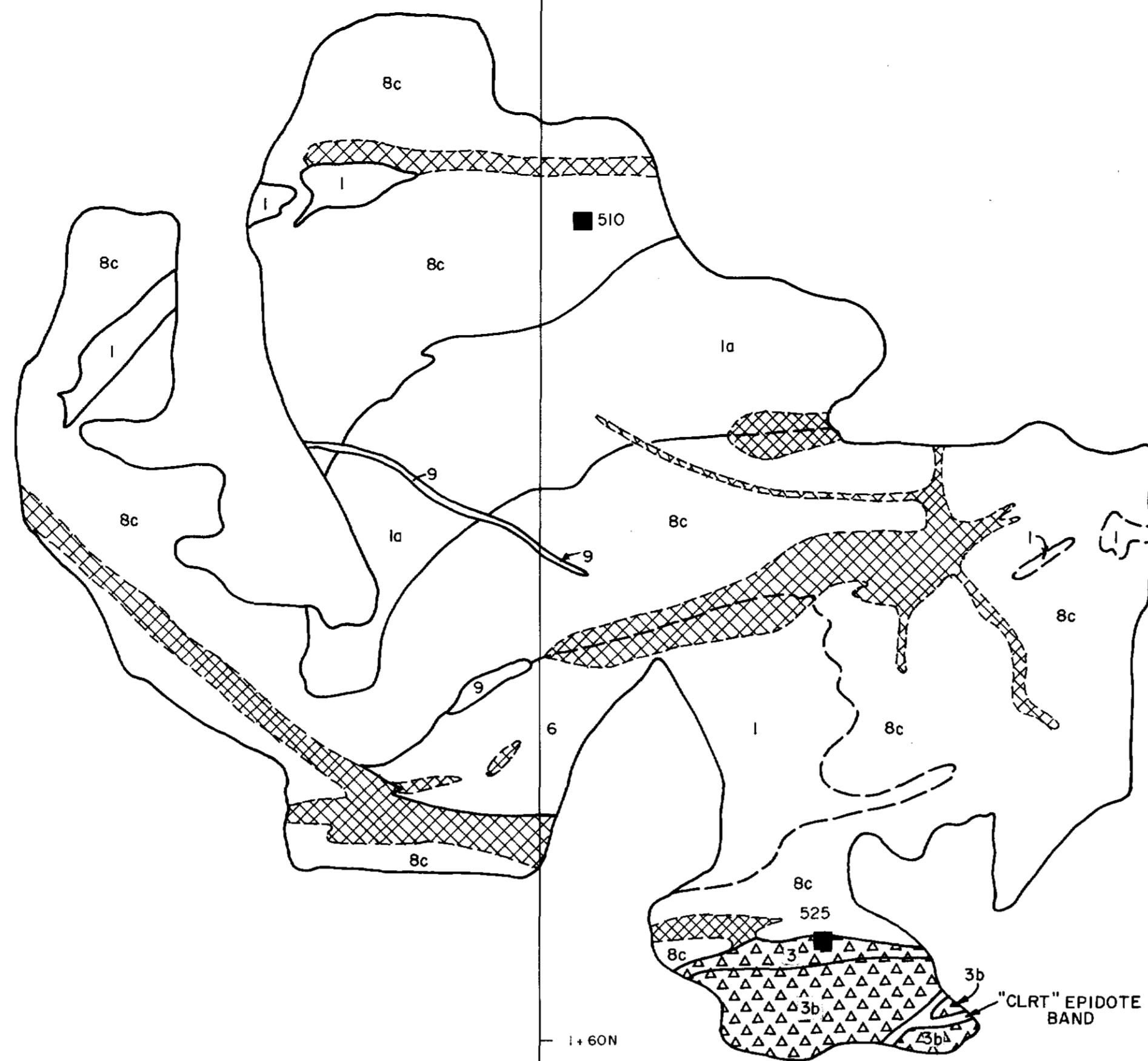
FALCONBRIDGE LIMITED

DETAILED GEOLOGY
RYLEY CORMAC SHOWING
LINE 13 AREA
PARENT OPTION

0 2 4 6 8 10m

DATE DEC. 1990	DRAWN GDS
NTS REF	DATA JDF





- GEOLOGY LEGEND -

- 1 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 1a MAFIC FLOW : MASSIVE
 - 1b MAFIC FLOW : PILLOWED
- 2 INTERMEDIATE VOLCANICS (UNDIFFERENTIATED)
- 3 FELSIC VOLCANICS (UNDIFFERENTIATED)
 - 3a FELSIC FLOW
 - 3b QUARTZ-EYE RHYOLITE
 - 3d QUARTZ-FELDSPAR PHYRIC RHYOLITE
 - 3v RHYOLITE CROSSCUT BY ANASTOMOSING GARNET-AMPHIBOLE VEINS
- 4 CHEMICAL SEDIMENTS
 - 4c SEMI-MASSIVE SULPHIDES
 - 4d MASSIVE SULPHIDES
 - 4e TUFFACEOUS EXHALITE
- 5 CLASTIC SEDIMENTS
 - 5b SANDSTONE/ARKOSE
 - 5c GREYWACKE
 - 5d ARGILLITE
 - 5g MUDSTONE
- 7 FELSIC PLUTONICS
 - 7d PEGMATITE
- 8 MAFIC PLUTONICS
 - 8c GABBRO
- 9 QUARTZ VEIN
- 523 LITHOGEOCHEM SAMPLES (prefixed by WB00)

- ALTERATION LEGEND -

- Carbonate Alteration**
dominant mineral comprises one or more of:
Calcite, Dolomite, Ankerite, Siderite
- Strong Al enrichment**
dominant mineral comprises one or more of:
Kyanite, Sillimanite, Andalusite, Sericite
- Strong Fe-Mg-Al enrichment**
dominant mineral comprises one or more of:
Chlorite, Anthophyllite, Cordierite
- Moderate Fe-Mg-Al enrichment**
dominant mineral comprises one or more of:
Staurolite, Garnet, Amphibole, Biotite
- Weak Fe-Mg-Al enrichment**
minor amounts of one or more of any of the above minerals
- Ca-Fe enrichment**
dominant mineral one or more of:
Epidote, Ankerite, Calcite
- Silicification**

MAP 4

FALCONBRIDGE LIMITED

DETAILED GEOLOGY
RYLEY CORMAC SHOWING
LINE 13 AREA
PARENT OPTION



DATE	DEC. 1990	DRAWN	GDS
NTS REF		DATA	JDF



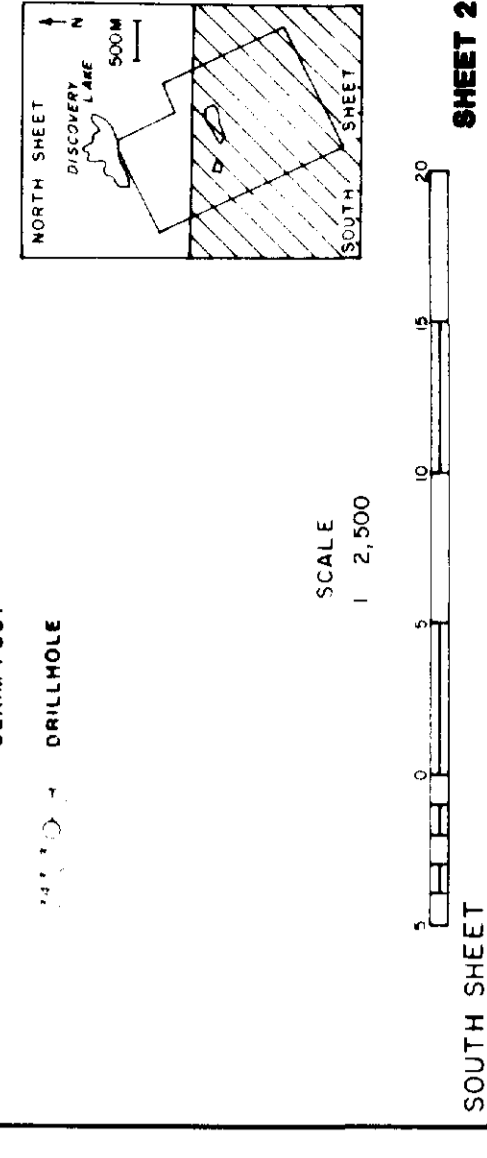
52P66N0002 2.14013 PETAKANGA LAKE



- GEOLOGY LEGEND -**
- 1 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 2 MAFIC VOLCANICS (DIFFERENTIATED)
 - 3 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 4 MAFIC VOLCANICS (DIFFERENTIATED)
 - 5 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 6 MAFIC VOLCANICS (DIFFERENTIATED)
 - 7 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 8 MAFIC VOLCANICS (DIFFERENTIATED)
 - 9 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 10 MAFIC VOLCANICS (DIFFERENTIATED)
 - 11 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 12 MAFIC VOLCANICS (DIFFERENTIATED)
 - 13 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 14 MAFIC VOLCANICS (DIFFERENTIATED)
 - 15 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 16 MAFIC VOLCANICS (DIFFERENTIATED)
 - 17 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 18 MAFIC VOLCANICS (DIFFERENTIATED)
 - 19 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 20 MAFIC VOLCANICS (DIFFERENTIATED)
 - 21 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 22 MAFIC VOLCANICS (DIFFERENTIATED)
 - 23 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 24 MAFIC VOLCANICS (DIFFERENTIATED)
 - 25 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 26 MAFIC VOLCANICS (DIFFERENTIATED)
 - 27 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 28 MAFIC VOLCANICS (DIFFERENTIATED)
 - 29 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 30 MAFIC VOLCANICS (DIFFERENTIATED)
 - 31 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 32 MAFIC VOLCANICS (DIFFERENTIATED)
 - 33 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 34 MAFIC VOLCANICS (DIFFERENTIATED)
 - 35 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 36 MAFIC VOLCANICS (DIFFERENTIATED)
 - 37 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 38 MAFIC VOLCANICS (DIFFERENTIATED)
 - 39 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 40 MAFIC VOLCANICS (DIFFERENTIATED)
 - 41 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 42 MAFIC VOLCANICS (DIFFERENTIATED)
 - 43 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 44 MAFIC VOLCANICS (DIFFERENTIATED)
 - 45 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 46 MAFIC VOLCANICS (DIFFERENTIATED)
 - 47 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 48 MAFIC VOLCANICS (DIFFERENTIATED)
 - 49 MAFIC VOLCANICS (UNDIFFERENTIATED)
 - 50 MAFIC VOLCANICS (DIFFERENTIATED)

- ALTERATION LEGEND -**
- 1 Alteration A1 enrichment
 - 2 Alteration A2 enrichment
 - 3 Alteration A3 enrichment
 - 4 Alteration A4 enrichment
 - 5 Alteration A5 enrichment
 - 6 Alteration A6 enrichment
 - 7 Alteration A7 enrichment
 - 8 Alteration A8 enrichment
 - 9 Alteration A9 enrichment
 - 10 Alteration A10 enrichment
 - 11 Alteration A11 enrichment
 - 12 Alteration A12 enrichment
 - 13 Alteration A13 enrichment
 - 14 Alteration A14 enrichment
 - 15 Alteration A15 enrichment
 - 16 Alteration A16 enrichment
 - 17 Alteration A17 enrichment
 - 18 Alteration A18 enrichment
 - 19 Alteration A19 enrichment
 - 20 Alteration A20 enrichment
 - 21 Alteration A21 enrichment
 - 22 Alteration A22 enrichment
 - 23 Alteration A23 enrichment
 - 24 Alteration A24 enrichment
 - 25 Alteration A25 enrichment
 - 26 Alteration A26 enrichment
 - 27 Alteration A27 enrichment
 - 28 Alteration A28 enrichment
 - 29 Alteration A29 enrichment
 - 30 Alteration A30 enrichment
 - 31 Alteration A31 enrichment
 - 32 Alteration A32 enrichment
 - 33 Alteration A33 enrichment
 - 34 Alteration A34 enrichment
 - 35 Alteration A35 enrichment
 - 36 Alteration A36 enrichment
 - 37 Alteration A37 enrichment
 - 38 Alteration A38 enrichment
 - 39 Alteration A39 enrichment
 - 40 Alteration A40 enrichment
 - 41 Alteration A41 enrichment
 - 42 Alteration A42 enrichment
 - 43 Alteration A43 enrichment
 - 44 Alteration A44 enrichment
 - 45 Alteration A45 enrichment
 - 46 Alteration A46 enrichment
 - 47 Alteration A47 enrichment
 - 48 Alteration A48 enrichment
 - 49 Alteration A49 enrichment
 - 50 Alteration A50 enrichment

- GEOLOGY SYMBOLS -**
- 1 Outcrop
 - 2 Geological boundary, defined
 - 3 Geological boundary, assumed
 - 4 Symbol
 - 5 Ground lines
 - 6 Road
 - 7 Lake
 - 8 Swamp
 - 9 Claim boundary
 - 10 Claim post
 - 11 Drillhole



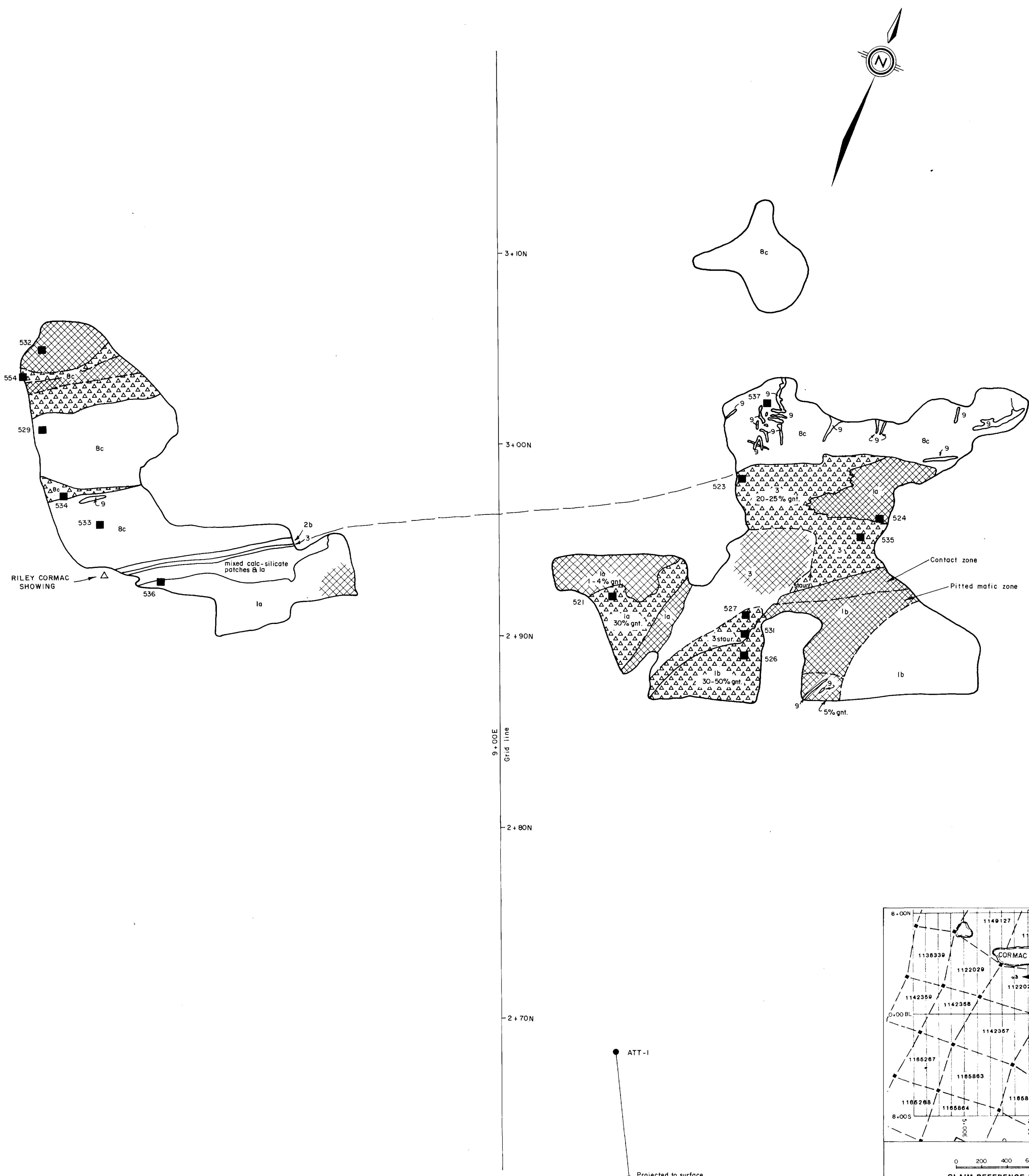
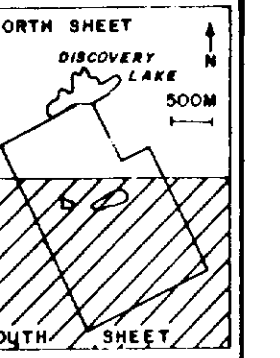
FALCONBRIDGE LIMITED

PARENT OPTION
RILEY CORMAC AREA
GEOLOGY

2.14013

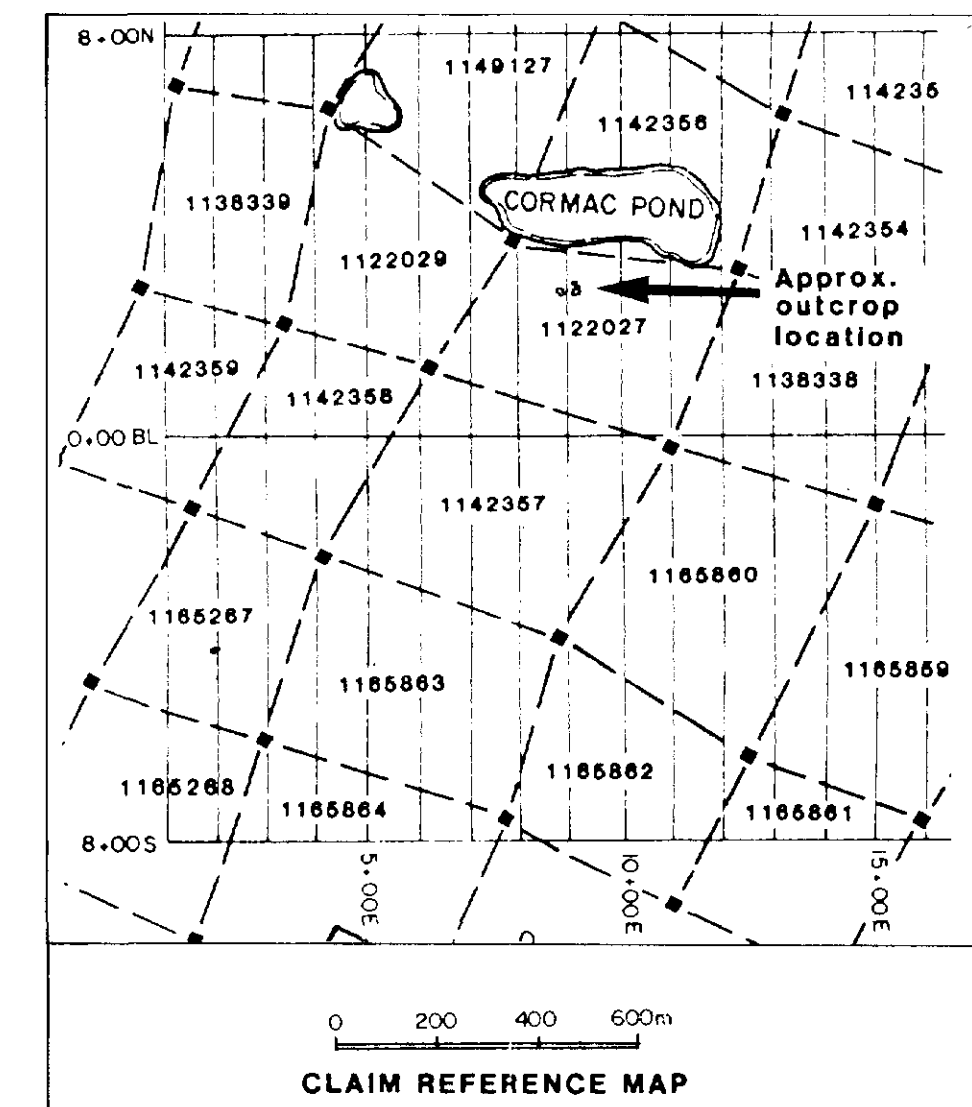
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- GEOLOGY LEGEND -**
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 - 7d PEGMATITE
 - 8 MAFIC PLUTONICS
 - 8c GABBRO
 - 9 QUARTZ VEIN
- 523 ■ LITHOGEOCHEM SAMPLES (prefixed by W800)

- ALTERATION LEGEND -**
- Carbonate Alteration
dominant mineral comprises one or more of: Calcite, Dolomite, Ankerite, Siderite
 - Strong Al enrichment
dominant mineral comprises one or more of: Kyanite, Sillimanite, Andalusite, Sericite
 - Strong Fe-Mg-Al enrichment
dominant mineral comprises one or more of: Chlorite, Anthophyllite, Cordierite
 - Moderate Fe-Mg-Al enrichment
dominant mineral comprises one or more of: Biotite, Garnet, Amphibole, Biotite
 - Weak Fe-Mg-Al enrichment
minor amounts of one or more of any of the above minerals
 - Ca-Fe enrichment
dominant mineral one or more of: Epidote, Ankerite, Calcite
 - Silicification
 - Sulphide enrichment
 - Banded and Disseminated Sulphides
 - Disseminated Sulphide Mineralization



MAP 3

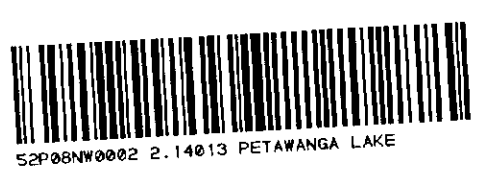
FALCONBRIDGE LIMITED

DETAILED GEOLOGY
RILEY CORMAC SHOWING
LINE 9 AREA

PARENT OPTION

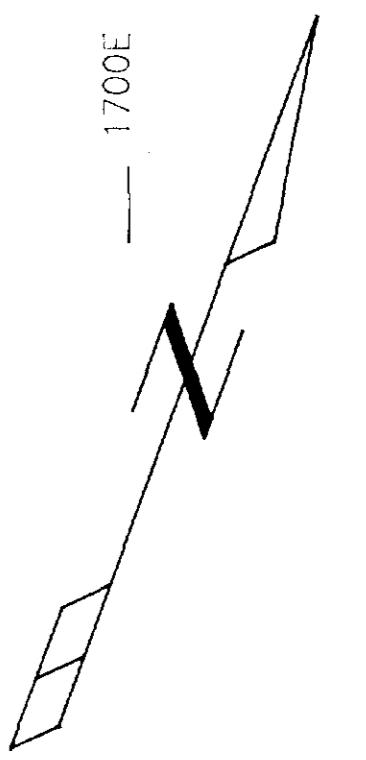
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DATE DEC. 1990	DRAWN GDS
NTS REF	DATA JDF

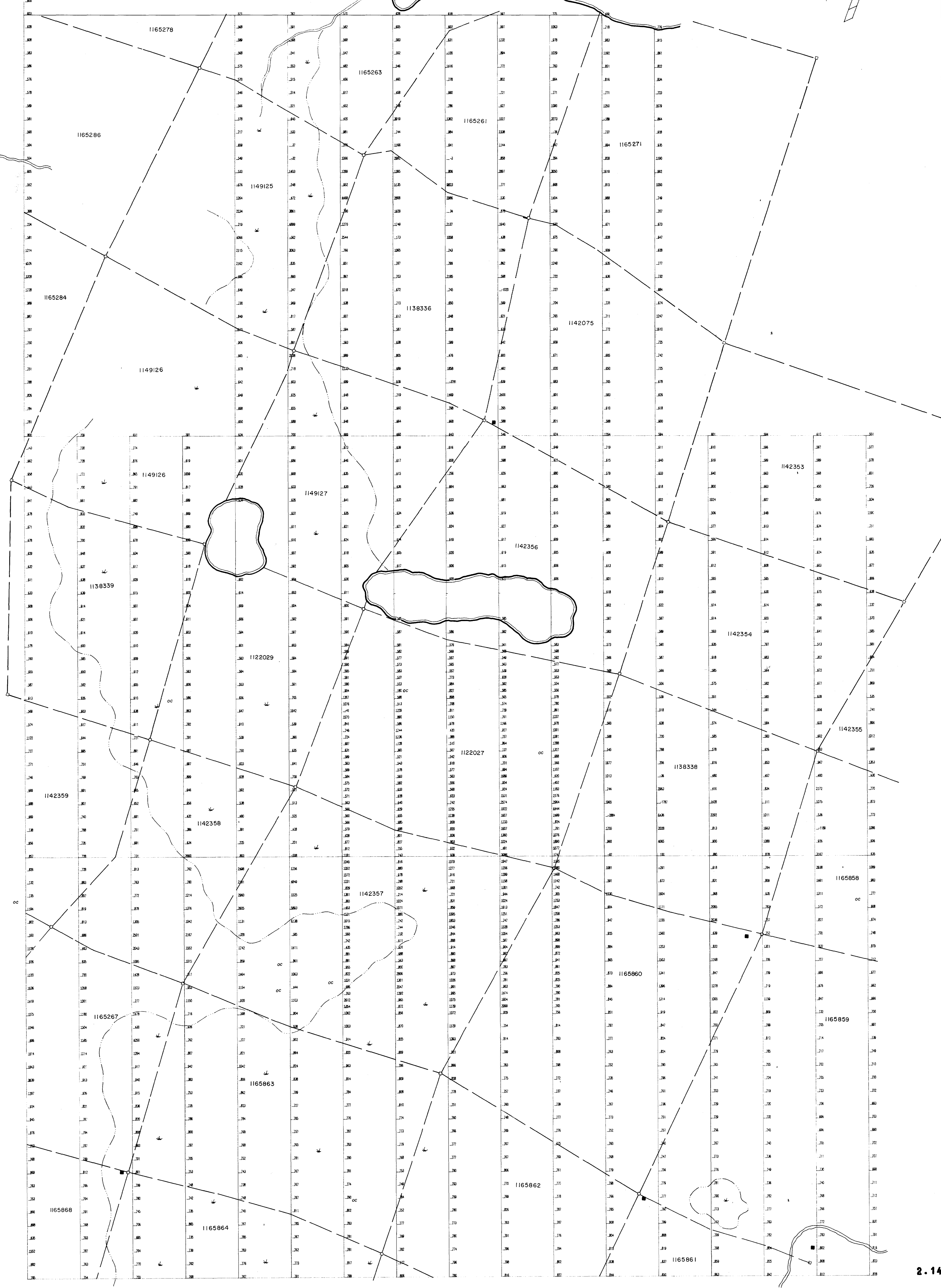


100E 200E 300E 400E 500E 600E 700E 800E 900E 1000E 1100E 1200E 1300E 1400E 1500E 1600E 1700E

DISCOVERY L.



1600N
1500N
1400N
1300N
1200N
1100N
1000N
900N
800N
700N
600N
500N
400N
300N
200N
100N
0+00 BASELINE
100S
200S
300S
400S
500S
600S
700S
800S



2.14013

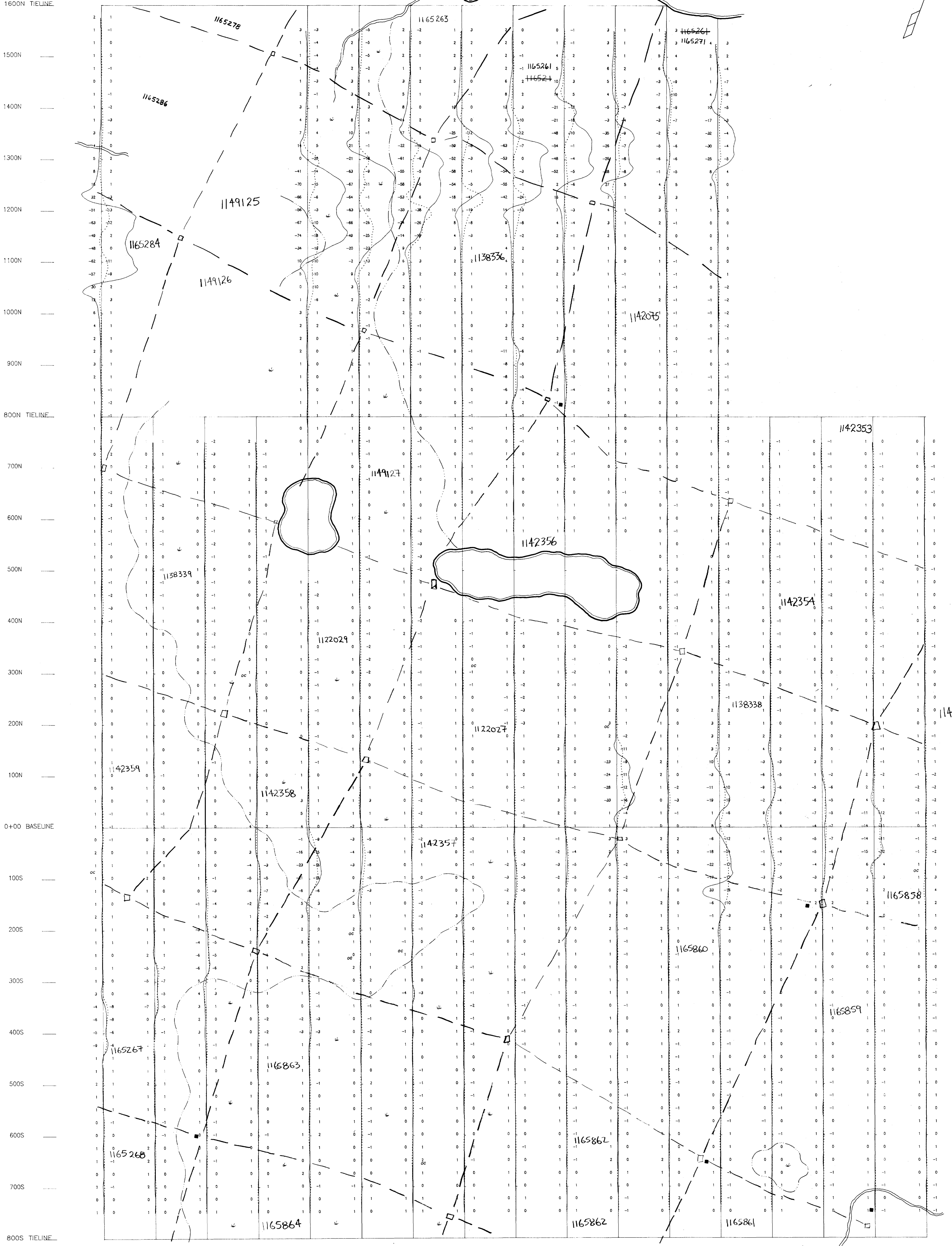
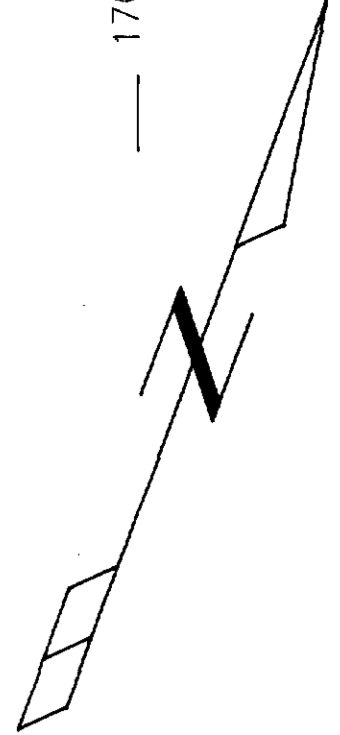
MAP B

Instrument : OMNI
Field : TOTAL
Datum : 56000.0 NT
Contour interval :
Conductor Axis :
0m 50m 100m

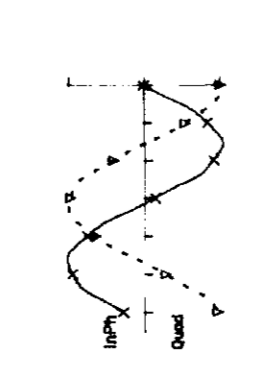
FALCONBRIDGE LIMITED
MAGNETOMETER SURVEY
PROJECT: PARENT OPTION PROJECT #: 540
BASELINE AZIMUTH : 70 Deg.
SCALE = 1 : 2500 DATE : 9/25/90
SURVEY BY : NWG NTS : 52 P/8
FILE: MFALCO
NORTHWEST GEOPHYSICS LTD.



DISCOVERY L.



□ CLAIM POST
--- CLAIM LINE
1165859 CLAIM NUMBER
(THUNDER BAY MINING DIVISION)



Instrument : MAXMIN 1
Cable Spacing : 100m
Vertical Scale : 1 cm = 25%
Frequency : 1760 Hz
In Phase :
Quadrature :



2.14013

SHEET 6.7

FALCONBRIDGE LIMITED	
HLEM SURVEY	
FREQ. 1760 HERTZ	
PROJECT: PARENT OPTION	PROJECT # : 540
BASELINE AZIMUTH : 70 Deg.	
SCALE = 1: 2500	DATE : 9/25/90
SURVEY BY : NWC	NTS : 52 P/8
FILE: HFALCON	
NORTHWEST GEOPHYSICS LTD.	

