010

#### GEOLOGICAL SURVEY

## OF A GROUP OF 20 CLAIMS, NEAR FINLAND, ONTARIO

(BETWEEN KENORA AND FORT FRANCIS)

for

RECEIVED

Walter Cummings MICHO LANDS SECTION

240 Markland Drive,
Etobicoke, Ontario
M9C 1R3

by

June 13 A. 383

Michael Ogden, B.A.Sc., P.Eng. Toronto, Ontario.

November 1988



Ø10C

#### TABLE OF CONTENTS

													Page
INTRODUCTION	•	•	•	•	•	•	•	•	•	•	•	•	1
REFERENCES	•	•	•	•	•	•	•	•	•	•	•	•	1
PROPERTY, LO	CATI	ON .	AND	ACCES	SS	•	•	•	•	•	•	•	. 2
HISTORY .	•	•	•	•	•	•	•	•	•	•	•	•	2
GENERAL GEOL	OGY	•	•	•	•	•	•	•	•	•	•	•	4
ROCK TYPES	•	•	•	•	•	•	•	•	•	•	•	•	5
STRUCTURE	•	•	•	•	•	•	•	•	•	•	•	•	6
CONCLUSIONS	•	•	•	•	•	•	•	•	•	•	•	•	6
RECOMMENDATE.	ONS												7

#### INTRODUCTION

Having heard about some zinc in the Finland area, a search of the assessment files revealed that Canadian Nickel Company had intersected some interesting sulphide mineralization in three drill holes during 1972 and 1973.

Their intersections of zinc and copper sulphides associated with gabbro overlying more acidic rocks was reminiscent of the Zenmac zinc orebody north of Schreiber, Ontario. There, the massive zinc and copper lies at the bottom of a gabbro with a series of highly altered lavas beneath it. All that reaches the surface is the up dip, minor mineralization, and a halo of rock alteration extending 3 or 4 kilometres along the acidic lava series.

The similarity was such that the potential seemed worthy of investigation so the ground was staked. Gold is not mentioned in any of the logs and in 1972 or 1973 it is unlikely that routine assaying for gold was done so there is also a gold potential.

#### REFERENCES

- Assessment files of M.N.R. on Grenville Street, Toronto. In particular for the Canadian Nickel Company drill logs and also the aeromagnetic maps of the area.
- 2. O.D.M. Vol.53, Part 5, 1954. Geology of Emo Area by Fletcher and Irvine.
- 3. Geosience Report 140, "Off Lake Burditt Lake Area" by Chas. Blackburn of M.N.R., 1976.
- 4. Geological Compilation Series: Kenora Fort Francis Map 2443, 1979.

#### PROPERTY, LOCATION AND ACCESS

The property consists of 20 claims, all of which are portions of certain lots, in Mather and Potts Townships. It lies one lot west of the road from Emo to Clearwater Lake some 21 kilometers north of Emo and 5 kilometres south of Clearwater. Emo is a little town on the Rainy River, 33 kilometres west of Forth Francis on Highway No.11.

The claims are numbered and described as follows:

1001124	=	NE	portion	S1/2	Lot	4,	Conc.II,	Potts	Twp.,	recorded	Dec.22/87
1001135	=	NW	11	11	11		**	71	**	11	Dec. 22/87
1011872	=	SW	*1	11	11		11	11	11	11	Dec.22/87
1020550	=	SE	11	17	***		11	71	11	11	Dec.22/87
1020551	=	NE	11	N1/2	11		Conc.I,	11	17	11	Dec.22/87
1020552	=	NW	**	11	11		11	77	17	**	Dec. 22/87
1020553	=	SW	**	97	11		11	11	11	11	Dec. 22/87
1020554	=	SE	11	17	***		17	11	11	11	Dec.22/87
1020555	=	NE	11	S1/2	**		77	11	71	***	Dec. 22/87
1020556	=	NW	11	11	17		11	77	11	11	Dec. 22/87
1020557	=	SW	11	<b>11</b>	***		11	11	11	ŧŧ.	Dec. 22/87
1020558	=	SE	71	11	17		11	***	17	11	Dec.22/87
1020559	=	NE	portion	N1/2	Lot	2,	Conc.VI,	Mather	Twp.	, 11	Dec.22/87
1020560	=	NW	11	**	11		11	11	11	11	Dec.22/87
1020957	=	SW	11	77	11		11	**	11	17	Dec.22/87
1020958	=	SE	**	**	11		91	11	17	**	Dec.22/87
1020959	=	NE	11	S1/2	**		71	71	**	11	Dec.22/87
1020960	=	NW	77	11	**		91	11	17	***	Dec.22/87
1063158	=	NE	17	N1/2	Lot	3,	11	**	97	11	Jul.12/88
1063159	=	SE	11	11	11	-	P1	*1	11	91	Jul.12/88

### HISTORY

This ground was held by the canadian exploration arm of International Nickel Company during the early seventies (CANICO). It had been staked as part of a joint venture with Hudson Bay Oil and Gas to explore a large area southeast of the Lake of the Woods.

The assessment files (Ref.1) contain drill logs of this work and the accompanying plan and drill sections "Canico - Finland Holes" are reconstructed from those logs. There was no field plan, or electromagnetic map in the file. The little sketches that accompany the drill logs and show the holes in relation to the claim corners do not match the latitude and departure of the holes, the error being in the order of 100 to 150 feet. However, I am almost certain that their first hole, No.48577, is properly located on the accompanying geological survey plan. We found a good, old, bush road leading by that location and an elongated clearing for the hole and stiff leg. The other holes are located by their logged location with respect to the first one. There are some old roads and partial clearings in their vicinity but the locations are less certain.

From the drill hole layout it is clear that the original aeroelectromagnetic anomaly that induced them to stake the property was subsequently found on the ground to lie between the 3 drill holes and strike to the northwest.

The first hole (48577) encountered a little zinc and copper sulphides in the upper portions in gabbro. Then at 189 feet in very fine grained rhyolitic tuff and quartz breccia there was almost a foot of 25% pyrrhotite in streaks and blebs with pyrite and chalcopyrite, followed by 1.3 feet of 50% massive pyrrhotite with 1% chalcopyrite and sphalerite. Lesser mineralization continued and at 205 feet there was almost half a foot of 20% massive sphalerite. The hole continued, very chloritic until the end at 226 feet.

Their second hole (48578) was drilled towards the first from 455 feet ahead of it. There was no gabbro in this hole as in the first one, which was about one-half gabbro. The usual dacitic rocks of the hole were barren, but a couple of short sections (one-half to 2 feet) of the central

45 feet of schist had 3 to 5% sulphides, mostly pyrrhotite and pyrite with a little chalcopyrite. This hole stopped at 190 feet, leaving an unexplored gap between it and the first hole of what seems to be 180 feet.

The third hole (48595) was drilled a year later, 600 feet along strike to the northwest and parallel to the second one. It encountered mostly granitic rocks with some gabbro in the centre that carried scattered sulphides. At 217 feet near the end of a granitic section there was 3 feet of minor banded sulphides, pyrrhotite, pyrite and chalcopyrite, with one 4-inch band of 30% sulphides. Amphibolite followed that with 5 feet of scattered pyrite and magnetite.

No further work is known to have been done and the ground eventually came open again.

#### GENERAL GEOLOGY

The property lies within the 6 to 16 kilometre wide zone of basic lavas with some interbedded acidic types that extends south-south-west from Sioux Lookout, through the Dryden area, Manitou Lakes and Pipestone Lake, and seems to go on into Minnesota.

This steeply dipping series of volcanics is reflected on the aeromagnetic maps by a band of irregular high magnetics and on the gravity maps of Canada it shows as an undulating high reflecting the dense nature of the basic rocks.

The Finland stock of quartz monzonite has intruded the series within a couple of kilometres of the property to the northwest. A similar stock, "the Black Hawk", lies 5 kilometres to the west. Then there is a great granodioritic batholith underlying most of Fleming Township to the east.

With all this nearby granite the rocks exposed on the property are highly altered, to the amphibolite phase. No greenschist volcanics were seen, so what they were originally is very uncertain.

#### ROCK TYPES

The rocks seem now to be the amphibolite facies of a series of basic to acid lavas with occasional interbeds of sediments, all of which are now often altered to gneisses and sometimes a schist. Reference 2 calls them altered sediments and Reference 3, altered volcanics. Rather than enter into the argument I prefer to call them as they appear to be from field examination:

Gabbro gneiss is a black to very dark grey, rice to table salt grained rock, made up of mostly hornblende with some biotite and a little quartz. It is now an alternating series of dark grey to black bands varying from one-half to 3 or 4 feet in length. Some of the bands are occasionally garnetiferous.

Diorite gneiss is very similar to the above except that it appears to be less basic as it is grey to light grey in colour and may have some quartz.

Quartz diorite is a grey to light grey usually massive, rice size grained rock found in the northwestern part of the property that might be an intrusive. In fact it could be the edge of the Finland Stock termed a granodiorite by Blackburn (Reference 3).

Feldspar porphyrys of a few inches to a few feet in width occur crosscutting the foliation and the bedding. The phenocrysts are grape to apple size and sometimes a little quartz veining occurs alongside the dykes.

Rhyolite is a light grey to white rock, fine of grain, which is rarely exposed on the property. A little was found in the first and second holes of the Canico drilling, some of it mineralized.

#### STRUCTURE

North of the property, where the volcanic sequence is still of greenschist facies, Blackburn (Reference 3) has shown the series to be a homocline, almost vertical, with tops facing southeast. Presumably this condition extends into the more altered rocks of the property. The Canico holes display a dip to the southwest in claim 1020559 so that by here the beds are probably overturned. The great Quetico Fault system cuts eastwest across the country from 1 to 3 kilometres south of the claim block. In fact within half a kilometre all the shearing is east-west. The apparent righthand throw of this fault system has been estimated to be close to 100 kilometres.

Elsewhere along the fault the formations bend normally into the fault zone consistent with the concept of the righthand movement. Here they do not, but rather, they curve into the area of the fault zone as though it were a lefthand horizontal throw. Thus there may be another tight fold just beyond these last exposures creating a sharp "S" fold structure closer to the main fault. This kind of thing happened about 10 miles west of Mine Centre, but on a grand scale (Reference 4).

#### CONCLUSIONS

1. The degree of alteration and intensity of folding seems to increase toward the south end of the property as the Quetico Fault is approached, which is as expected. Hence the southern 4 claims, in the swamp, may be underlain by complex geology.

- 2. The zinc and copper sulphides found disseminated in some of the previous drilling and occasionally in narrow massive bands should be re-investigated to see if the quantity improves with depth.
- 3. The average 30° core angle in the first hole, combined with the 60° angle of intersection in the second and third holes, and the 45° dip of all holes, gives the true dip of the formations to be about 75° to the southwest.
- 4. The first and second holes drilled by Canico do not adequately cover the ground between them. There appears to be some 180 feet of untested rock in the immediate vicinity of the old E.M. anomaly.

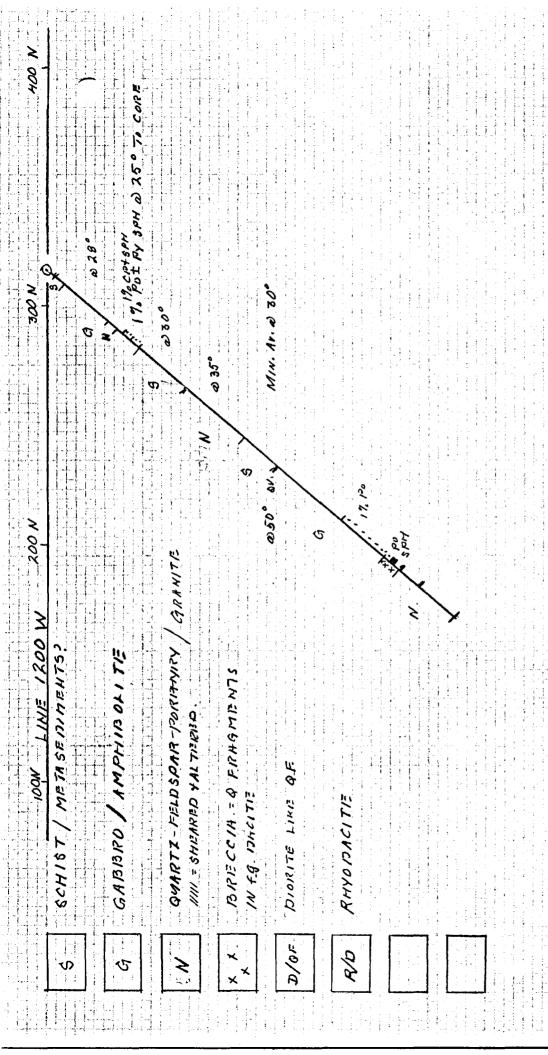
#### RECOMMENDATIONS

- 1. Relocate the old aeroelectromagnetic anomaly on the ground with vertical loop E.M. equipment. It should be detailed on lines 200 feet apart for its entire length within the property,
- 2. Select a series of samples of the rocks in the vicinity of the old drill holes and see if gold, copper or zinc exists in unusual quantities in any of them.
- 3. Run a biogeochemical line of sampling over the first drill hole and well on beyond the second one looking for an anomalous metal zone. Sample interval should be around 50 feet, tree bark is better than forest litter, and the only ubiquitous tree is poplar, but there is not much prior data on poplar.
- 4. A line or two of Self Potential survey might pick up the near surface sulphide mineralization.

- 5. A line of magnetometer surveying over the first hole and beyond to and including the lake would:
  - (a) confirm the dip of the formations;
  - (b) show the intensity of the apparent magnetometer low that is indicated on the aeromagnetic maps to lie in or under the lake.
- 6. If any encouragement is obtained by the above, a couple of lines of gravity survey with attendant level survey over the electrical anomaly would indicate the likelihood of a massive ore body at depth.
- 7. If such is indicated some deep holes of 1000 to 2000 feet will be required to probe the zone.

Respectfully submitted.

Michael Ogden, B.A.Sc., P.Eng.

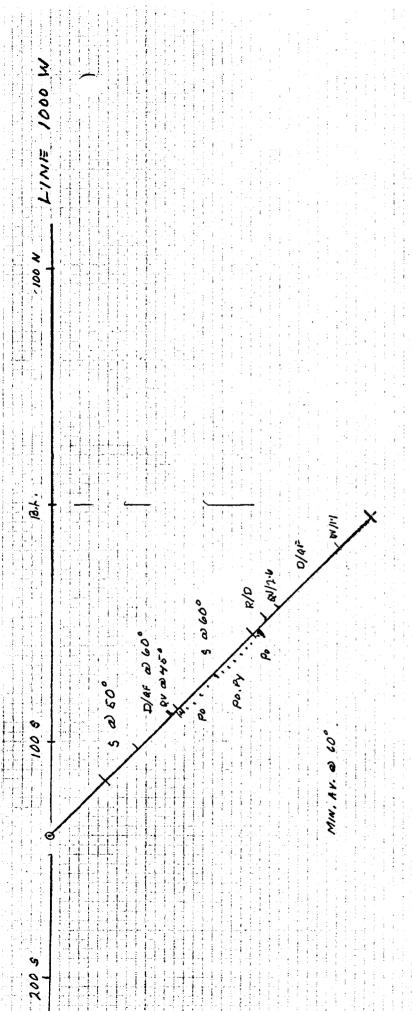


CANICO/1-INLAND HOLE 48577 FACING N.W.

11N= 40 FT.

OGBIEN

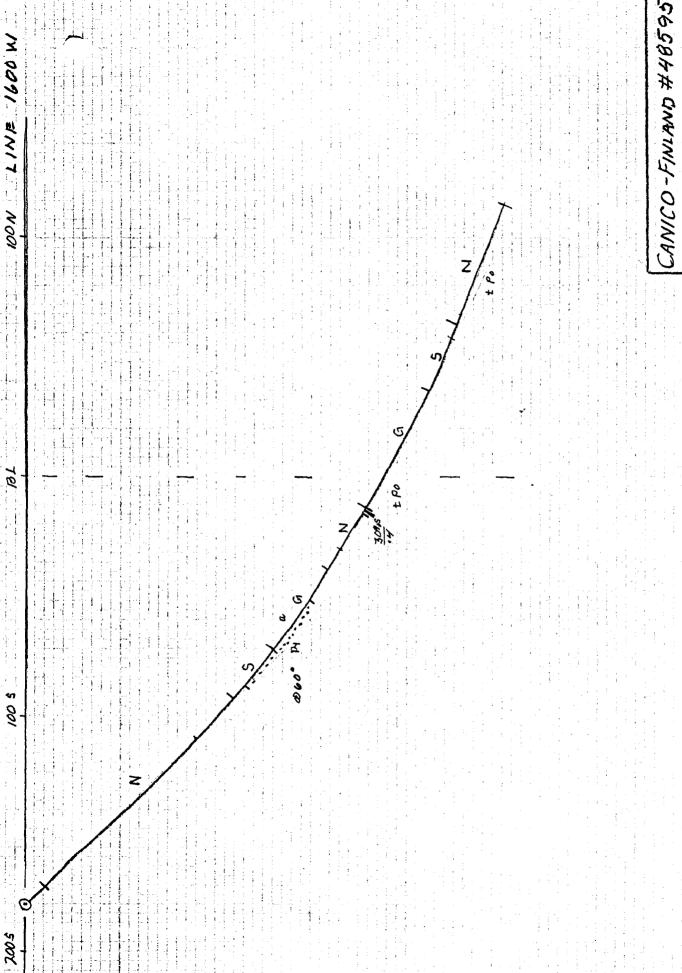
JAN 88



CANICO-FINLAND #48578 FACING N.W.

1 IN = 40 FT OGDEN

JAN 88



CANICO-FINLAND #48595 FACING NIM

11N. =40FT OGDEN



Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

December 15, 1988

Mining Recorder
Ministry of Northern Development and Mines
808 Robertson Street
P.O. Box 5200
Kenora, Ontario
P8N 3X9

Dear Sir:

Re: Notice of Intent dated November 28, 1988 - Geological Survey submitted on Mining Claims K 1001124 et al in Mather & Potts Township

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

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

Yours sincerely,

W.R. Cowan

Provincial Manager, Mining Lands

Mines & Minerals Division

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

Mr. Walter M. Cummings 240 Markland Drive Etobicoke, Ontario M9C 1R3 Resident Geologist Kenora, Ontario

Mining Lands Section

Your file: W8801-288

Our file: 2.11817

Toronto, Ontario

M5S 1Z8

ONTARIO GEOLOGICAL SURVEY

ASSESSMENT FILES

**OFFICE** 

DEC 28 1988

RECEIVED

3rd floor, 880 Bay Street

Telephone: (416) 965-4888

Mr. Michael Ogden R.R. #4 Stouffville, Ontario L4A 7X5



Ministry of Northern Development and Mines

## Report of Work

MICHABL OGIDEN, PR 4 STOUFFVILLE

(Geophysical, Geological,

Geochemical and Expenditures)

Instructions: — Please type or print.

— If number of mining claims traversed exceeds space on this form, attach a list.

Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.

Do not use shaded areas below.

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Date Certified

Alev . 11 /88

## Report of Work

(Geophysical, Geological, Geochemical and Expenditures

DOCUN W880



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## **Technical Assessment Work Credits**

	File
	2.11817
Date	Mining Recorder's Report of
November 28,1988	Work No W8801-288

Recorded Holder

Walter M. Cummi	ngs
Township or Area	·
Mather and Pott	s Townships
Type of survey and number of	
Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic days	
Magnetometer days	
	K-1001124
Radiometricdays	1001135
Induced polarization days	1011872
madea polarizationaays	1020550 to 60 inclusive
Other days	1020957 to 60 inclusive
	1063159
Section 77 (19) See "Mining Claims Assessed" column	
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Geologicaldays	
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Credits have been reduced because of partial	
coverage of claims.	
Credits have been reduced because of corrections to work dates and figures of applicant.	
to work dates and rigures of applicant.	
Special credits under section 77 (16) for the following min	
10 4500 00010	
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K-106315	8
K 100313	
No credits have been allowed for the following mining claim	ms
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; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

NOTES

400' surface rights reservation along the shores of all lakes and rivers

RICHARDSON TP M 2115

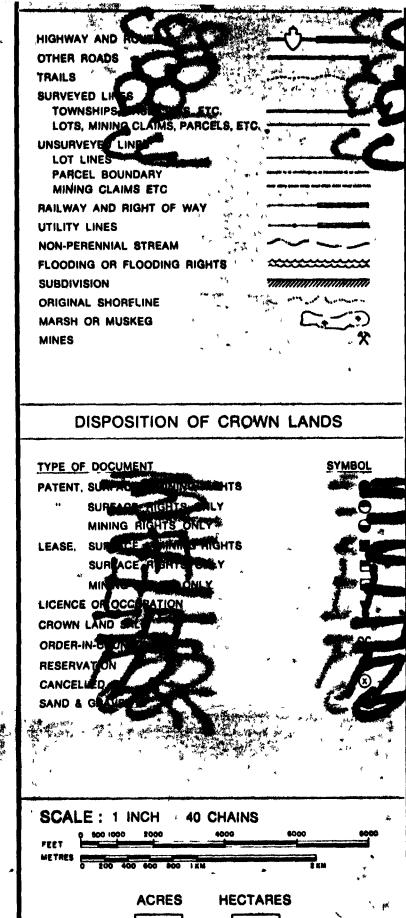
This Township lies within the Corporation of the Township of Chapple

Areas withdrawn from staking under Section 43 of the Mining Act (R.S 0 1970) Order No. File `Date Disposition

> KENORA MINING DIV. JUL 15 1988 7:8:9:10:11:12:1:2:3:4:5:8

Pinewood F 2901 2 P 2901 OFF LAKE CORNER BLACK HAWK 2124 Š Tp KINGSFORD TAIT CHAPPLE MATHERFORD 12 10 9 DOBIE Tp. M. 2079

POTTS Tp. M. 2109



TOWNSHIP

# MATHER

DISTRICT

RAINY RIVER MINING DIVISION

KENORA



Ministry of Natural Resources

Ontario

and Mapping Branch



200

MENARY Tp. M.2068 HIGHWAY AND ROUTE No 400' surface rights reservation along the shores SENN Tp. OTHER ROADS of all lakes and rivers TRAILS SURVEYED LINES TOWNSHIPS BASE LINES ETC This Township lies within the Corporation of the Township of Chapple LOTS, MINING CLAIMS, PARCELS, ETC UNSURVEYED LINES LOT LINES PARCEL BOUNDARY P0118 MINING CLAIMS ETC RAILWAY AND RIGHT OF WAY SAND & GRAVEL UTILITY LINES NON PERENNIAL STREAM Boundary MTC Gravel Pit File 8132 FLOODING OR FLOODING RIGHTS **◎** M T C Pi1 417 SUBDIVISION " Pit 416 ORIGINAL SHORELINE MARSH OR MUSKEG 011 Lake DISPOSITION OF CROWN LANDS SYMBOL TYPE OF DOCUMENT PATENT SURFACE & MINING RIGHTS HESERVES MTL SURFACE RIGHTS ONLY 1-8-10 IN MIN HOLLS ALLOW THE HILLIAM MINING RIGHTS ONLY 11) 3 LEASE SURFACE & MINING RIGHTS  $\infty$ SURFACE RIGHTS ONLY 0 MINING RIGHTS ONLY W 2 LICENCE OF OCCUPATION 7  $\Xi$ CROWN LAND SALE 10225 1 ORDER IN-COUNCIL RESERVATION Q. KENON MINING DIV. Areas withdrawn from staking under Section CANCELLED R RUK. 1 SAND & GRAVEL Disposition Date EMING RICHARDSON P 848817 JAN 1 9 1988 780104142112345 SCALE 1 INCH 40 CHAINS ACRES + HECTARES FINLAND 16 40 TOWNSHIP 5 POTTS Just DISTRICT RAINY RIVER MINING DIVISION KENORA Ministry of Natural (A) Resources 12 Surveys and Mapping Branch
Plan No Ontario KINGSFORD Tp M 2089 M 2097 MATHER Tp. 12 74 M.2109 Whitney Block Queen's Park, Toronto 210

LEGENU

MOIES

