010

THE HANNA MINING COMPANY

MAGNETIC SURVEY

HANNA CLAIM GROUP

CLAIMS 239126 to 239186, 239188 to
239206, 239208 to 239212, 239215 to
239250, 251707 to 251709

RED LAKE MINING DIVISION, ONTARIO

December 29th, 1970

TABLE OF CONTENTS

PROPERTY AND LOCATION

The Hanna claim group includes 124 claims, 239126 to 239186, 239188 to 239206, 239208 to 239212, 239215 to 239250 and 251707 to 251709. The claims located within the Stoughton Lake (M 2043) and McVicar Lake (M 2741) claim maps are in the Red Lake Mining Division, approximately 100 miles north of Sioux Lookout and 60 miles west of Pickle Lake.

OWNERSHIP

The claims are held by The Hanna Mining Company, 100 Erieview Plaza, Cleveland, Ohio 44114.

ACCESS

Access to the claim group can be gained by aircraft from Sioux Lookout or Pickle Lake.

GEOLOGY

The geology of the Hanna claim group is shown on the O.D.M. Preliminary Geological Map of the Lang-Cannon Lakes area west half, (Fenwick - 1969).

The area is overlain by a mantle of recent sediments and is underlain by a Precambrian complex of metasediments, volcanics and intrusives of Archean age.

Intermediate to basic volcanics with intercalated bands of iron formation underlie most of the area. A band of felsic volcanics located south of Lang Lake extends northeastward to the south shore of Andy Lake.

A felsic intrusive plug-like feature has been mapped in the southwest corner of the property south of Lang Lake.

The rocks trend from north to east and dip from very steeply to vertical.

Several faults have been interpreted from the field results. A syncline plunging east northeast was noted along the north boundary of the property.

MAGNETIC SURVEY

Procedure and Personnel

The magnetic survey was part of a larger program covering three adjoining properties (MacMillan, Bochawna and Hanna) in the Lang Lake area. All of the Hanna claims were covered by the survey.

Grid System

A transit-controlled grid system was established over the property in two phases. During the winter season (February 13th, 1970 to April 1st, 1970) Baseline No. 3 was surveyed along Lang Lake and Andy Lake. The baseline direction is east through the west portion of the property to the boundary of claims 239147 and 239156, where the direction changes to N73°E. Picket lines were run at right angles to the baseline at 400 foot intervals over the ice and cut 150 feet beyond the shoreline.

During the summer season (May 31st, 1970 to September 15th, 1970) baselines 1, 2, and 4 were established parallel to Baseline No. 3. The picket lines were cut to the lakeshores or the property boundary. A total of 82 line miles were cut, including 11 miles of baseline.

Personnel employed for the line cutting were:

Contract for Picket lines on Lake - J. D. MacMillan, 213 N. Windermere Ave., Thunder Bay, Ontario — February 1970

Contract for Picket Lines on Land - D. Shields, P. O. Box 248, Red Lake, Ontario August 1970

Chaining and Baseline

		Days
J. Crowe, Fort Severn, Ontario	July 28 - August 10	11
E. Crowe, Fort Severn, Ontario	July 28 - August 10	14
L. Ori, 174 Glen Cedar Road, Toronto, Ontario	July 30 - August 31	22
W. D. Edwards, 42 Lloyd St., St. Catharines, Ontario	July 1 - August 31	17
T. Keil, 33 Ezra Avenue, Waterloo, Ontario	June 27 - August 31	22
H. Giroux, P.O. Box 94, Warren, Ontario	July 30 - August 31	11
P. Hibbins, 2 Minden Crescent, Toronto 18, Ontario	July 1 - August 15	20
T. Carlson, P.O. Box 318, Red Lake, Ontario	Aug. 13 - August 20	8
L. Fritz, 581 Balloil Avenue, Toronto, Ontario	Feb. 15 - Feb. 25	11
C. W. Harpur, 581 Balloil Avenue, Toronto, Ontario	Feb. 10 - Feb. 25	15

The magnetic survey was carried out using two models of the Scintrex Fluxgate magnetometer. The MF-1 was used during the winter season and the MF-2 was used during the summer season. Both instruments had a sensitivity of 10 gammas on the 1,000 scale.

Magnetometer readings were taken normally at 50 foot intervals along the section lines and at 25 foot intervals in anomalous areas. Readings were taken at 100 foot intervals along the baselines. A total of 8,810 readings were taken. All readings were corrected to the baseline base stations.

Personnel carrying out the magnetic survey were:

		Days
Nelson Hogg, Consultant, 805-69 Yonge St., Toronto 215, Ontario	Feb. 10 - Nov. 30	
C. W. Harpur, Party Chief, 581 Balloil Avenue, Toronto, Ontario	Feb. 20 - Feb. 28	4
	July 1 - Aug. 31	19
L. Fritz, 581 Balloil Avenue, Toronto, Ontario	Feb. 15 - March 15	4
G. Bosshart, 805-69 Yonge St., Toronto 215, Ont.	March 8 - May 31	70
D. Sannes, 805-69 Yonge St., Toronto 215, Ontario	Sept. 20 - Sept. 30	8
W. D. Edwards, 42 Lloyd St., St. Catharines, Ont.	Aug. 31 - Sept. 8	8
T. Keil, 33 Ezra Ave., Waterloo, Ontario	Aug. 4 - Aug. 8	3
L. Richardson, 15 Merritt Parkway, Port Colborne, Ontario	Aug. 11 - Aug. 15	4

Preparation of Maps and Reports

B. Hodgins, 96 George Henry Blvd., Willowdale, Ontario	Dec. 1 - Dec. 23	17

Maps

The grid covering the Lang Lake project area was layed out over 14 sheets, 45" x 35". The sheet numbers and locations are noted at the bottom of each map. The baselines and section lines were layed out and all readings plotted.

Separate contour intervals were used for the two phases of the survey. The winter results were contoured every 100 gammas to 2,000 gammas (±) every 1,000 gammas to 10,000 gammas (±) and every 10,000 gammas thereafter.

The summer results were contoured every 200 gammas to 1,000 gammas (±), every 1,000 gammas to 10,000 gammas (±) and every 10,000 gammas thereafter.

The hundred gamma contour lines are lighter than the thousand gamma contour lines.

Closed contours surrounding magnetic lows have hachures.

The magnetic base stations were different for each phase of the program and thus the contouring is not continuing across the shore lines where the winter program was terminated. This does not affect the interpretation of the results because the magnetic trends are similar.

INTERPRETATION

The results of the survey will be divided into three parts for discussion. They include the north section, the south section and the lineament dividing the two sections.

The north section includes that area north of a lineament projected from the MacMillan property south of the narrows on Lang Lake onto Hanna claim 239133 through the Hanna claim group along the south shore of Lang Lake into Andy Lake.

The south section includes that area south of the lineament.

The north section is characterized by numerous amomalous magnetic readings. Magnetite is present in the area within short lenses of iron formation.

The iron formation occurs mainly in the intermediate to basic volcanic rocks of this north section and appears to be terminated along the previously described lineament. This feature may be a continuation of the fault noted at the west end of Lang Lake. The lineament coincides with the projected fault on the O.D.M. geological map along the south shore of Lang Lake.

The south section includes very few lenses of iron formation as noted from the survey results. The area has little magnetic relief but basement rock features are discernable. The felsic intrusive contacts are outlined on claims 239145, 239146, 239156, 239161 and 239160. Low magnetic readings noted within the contact zone, continue southward to the property boundary, thus indicating the intrusive body extends south of the property.

Several sub-parallel linear features which strike to the northeast were located between Lang Lake and Shonia Lake in the south center of the property. These features appear to parallel the geological trend to the northeast. Thus they may represent distinctive bands of felsic and intermediate volcanics.

CONCLUSIONS

The magnetic survey located bands of magnetite iron formation within the Hanna claim group and also delineated contacts between rock units. All anomalous areas are interpreted to indicate the presence of magnetite.

The magnetic anomalies are of no interest except to assist in the interpretation of electromagnetic results in the same area. These will be discussed in the report of the electromagnetic survey, which will be submitted at a later date.

Fenwick, K. G. - 1969 Preliminary Geological Map No. P 581
Lang - Cannon Lakes Area (West Half)
Ontario Department of Mines, 1969

Respectfully submitted,

Beverly L. Hodgins

Beverly L. Hodgins,
Geologist

December 29th, 1970

SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

(a) substantial and systematic coverage of each claim
(b) line spacing not exceeding 400 foot intervals
(c) stations not exceeding 100 foot intervals or
(d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

PERFORMANCE & COVERAGE CREDITS

ASSESSMENT WORK DETAILS

STOUGHTON LAKE & McVICAR LAKE

Township or Area: Stoughton Lake & McVicar Lake

Type of Survey: Magnetometer MAGNETOMETER
A separate form is required for each type of survey

Chief Line Cutter or Contractor: Shields D. Shields D. SHIELDS
Name: BOX 248, RED LAKE, ONTARIO
Address: Box 248, Red Lake, Ontario

Party Chief: C. W. Harpur C.W. HARPUR
Name: 58 BALLOIL AVENUE, TORONTO, ONTARIO
Address: 58 Balloil Avenue, Toronto, Ontario
581 Balloil Avenue Toronto, Ontario

Consultant: Nelson Ne son Hogg NELSON HOGG
Name: 805-69 YONGE ST., TORONTO 215
Address: 805 - 69 Yonge St., Toronto 2 5, Ont.

COVERING DATES

Line Cutting: FEB 15-MARCH 31, & 15-JULY 31, 1970
Feb. 15-March 31, & June 15-July 31, 1970

Field: Feb. 15 5-March 31, and Sept. 1 1-October 15, 1970
Instrument work, geological mapping, sampling etc.

Office: April 1 April 1-30 and December 1-23, 1970

INSTRUMENT DATA

Make, Model and Type: Scintrex MF1 and MF2 (MF1, MF2)

Scale Constant or Sensitivity: 10 gammas at 1,000 scale (1,000 sca e)

Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count: -

Number of Stations Within Claim Group: 8,680

Number of Readings Within Claim Group: 8,810 8,810

Number of Miles of Line cut Within Claim Group: 82

Number of Samples Collected Within Claim Group: -

CREDITS REQUESTED

	20 DAYS per claim	40 DAYS per claim	Includes (Line cutting)
Geological Survey	☐	☐	
Geophysical Survey	☐	XXX	Show Check ✓
Geochemical Survey	☐	☐	

DATE: December 22, 1970

SIGNED: Nelson Hogg

MINING CLAIMS TRAVERSED

List numerically

SEE ATTACHED LIST

TOTAL: 124 124

If space insufficient, attach list

Send in duplicate to:
FRED W. MATTHEWS
SUPERVISOR-PROJECTS SECTION
DEPARTMENT OF MINES & NORTHERN AFFAIRS
WHITNEY BLOCK
QUEEN'S PARK
TORONTO, ONTARIO

Performance and coverage credits do not apply to airborne surveys

List of
List of claims held by The Hanna Mining Company
Stoughton Lake McVicar Lake Area (M.2741)
Stoughton Lake (M 2043) and McVicar Lake Area (M 2741)
To December 21, 1970
To accompany Report of Work - December
TOTAL
TOTAL - 124 claims

KRL	239126	40 days
	239127	40
	239128	40
	239129	40
	239130	40
	239131	40
	239132	40
	239133	40
	239134	40
	239135	40
	239136	40
	239137	40
	239138	40
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	239164	40
	239165	40
	239166	40
	239167	40
	239168	40
	239169	40
	239170	40

	239		40
KRL	239171	171	40 days
	239172	172	40
	239173	173	40
	239174	174	40
	239175	175	40
	239176	176	40
	239177	177	40
	239178	178	40
	239179	179	40
	239180	180	40
	239181	181	40
	239182	182	40
	239183	183	40
	239184	184	40
	239185	185	40
	239186	186	40
61 claims			

KRL	239188		40 days
	239189	189	40
	239190		40
	239191		40
	239192		40
	239193		40
	239194		40
	239195		40
	239196		40
	239197		40
	239198		40
	239199		40
	239200		40
	239201		40
	239202	202	40
	239203		40
	239204		40
	239205		40
	239206		40
19 claims			

KRL	239208		40 days
	239209		40
	239210		40
	239211		40
	239212		40
5 claims			

	239		
KRL	239215	215	40 days
	239216	216	40
	239217	217	40
	239218		40
	239219		40
	239220		40
	239221		40
	239222		40
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	239224		40
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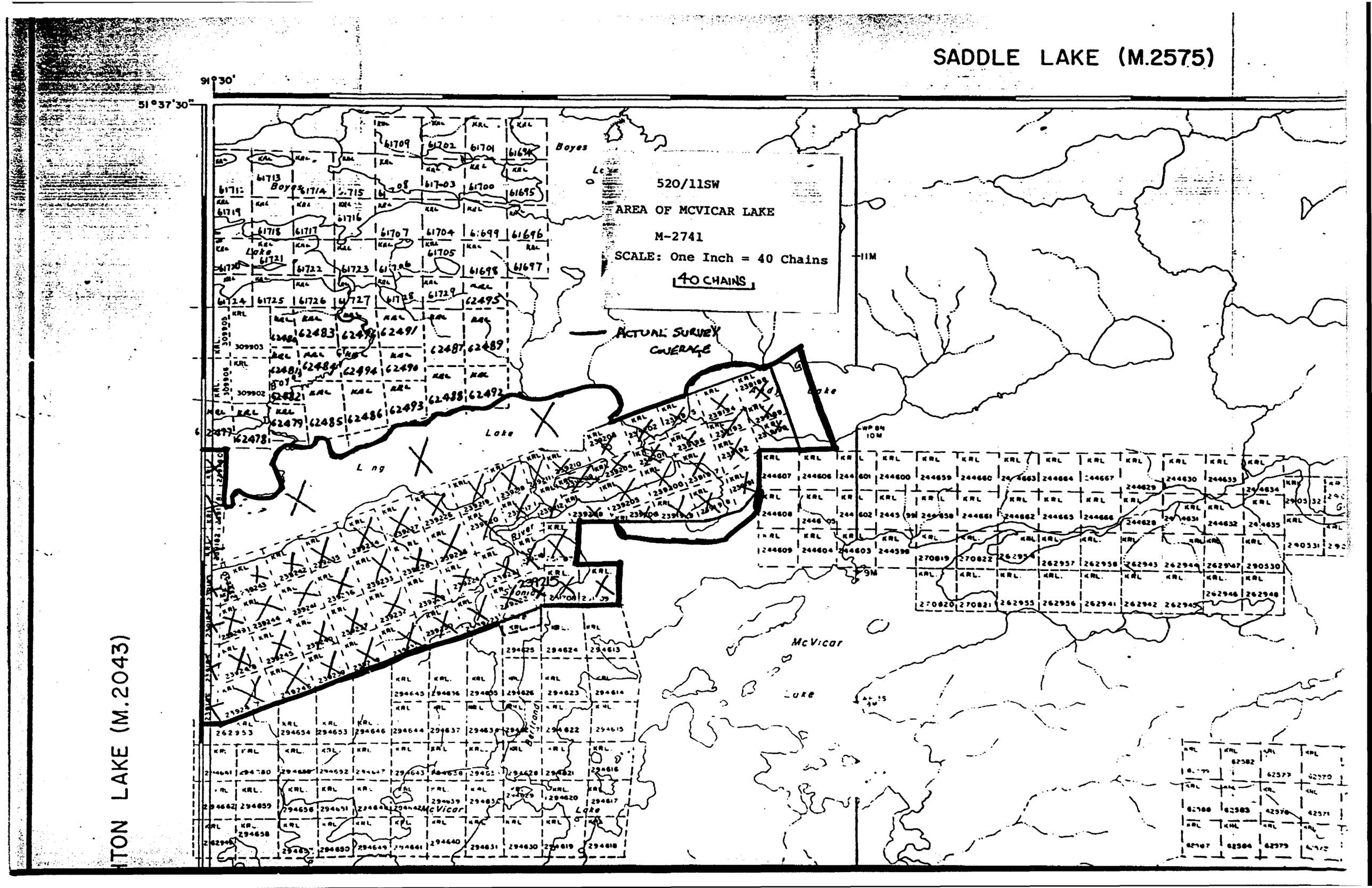
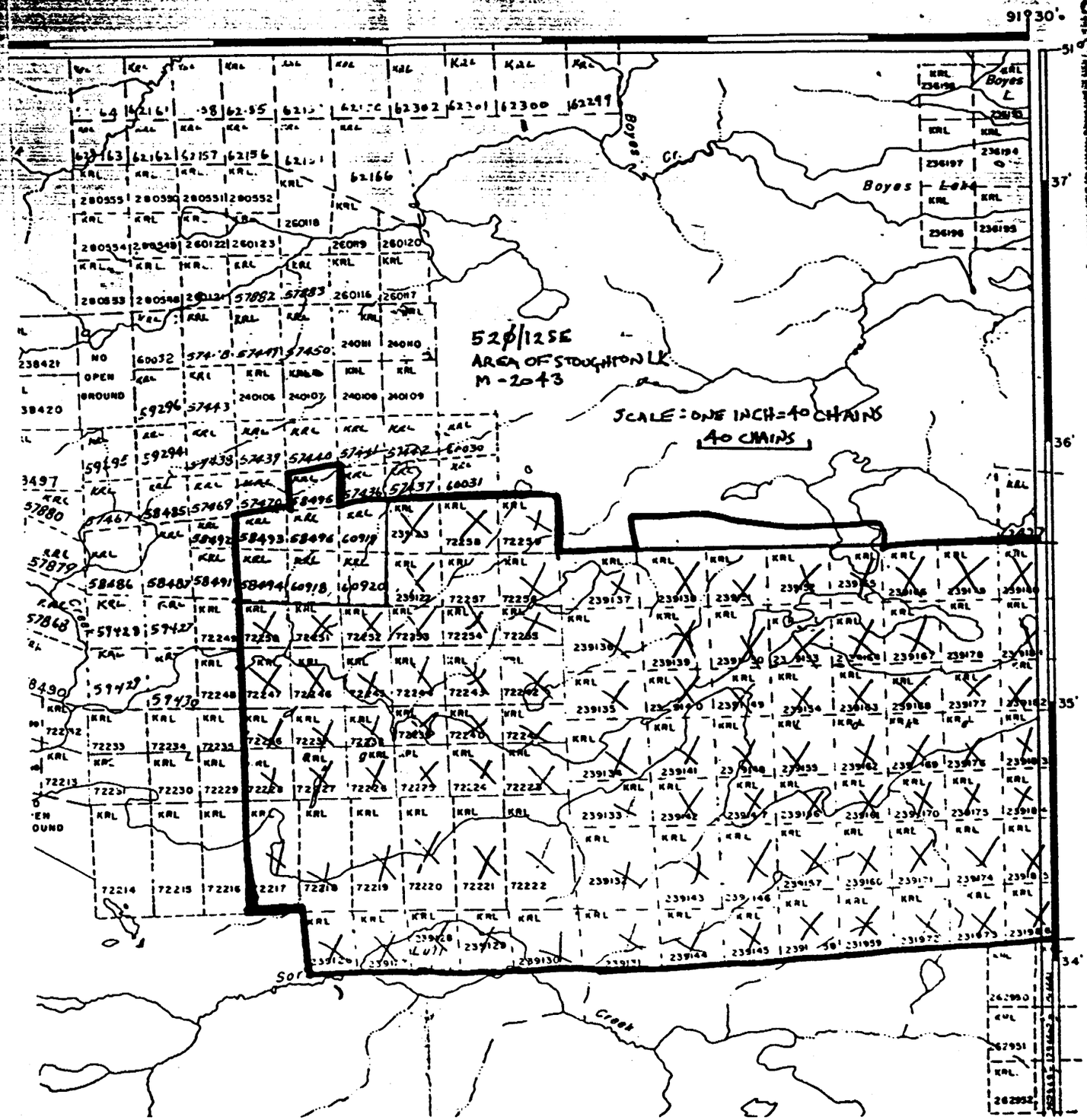
	239238		40
	239239		40
	239240		40
	239241		40
	239242		40
	239243		40
	239244		40
	239245		40
	239246		40
	239247		40
	239248		40
	239249		40
	239250		40
36 claims			

KRL	251707	40 days
	251708	40
	251709	40
3 claims		



TON LAKE (M.2043)



AREA OF Claim Map

STOUGHTON LAKE

DISTRICT OF KENORA
(PATRICIA PORTION)

RED LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.

NOTES

400' reserve around all lakes and rivers to Dept. of Lands & Forests.

SEE ACCOMPANYING

MAP(S) IDENTIFIED AS

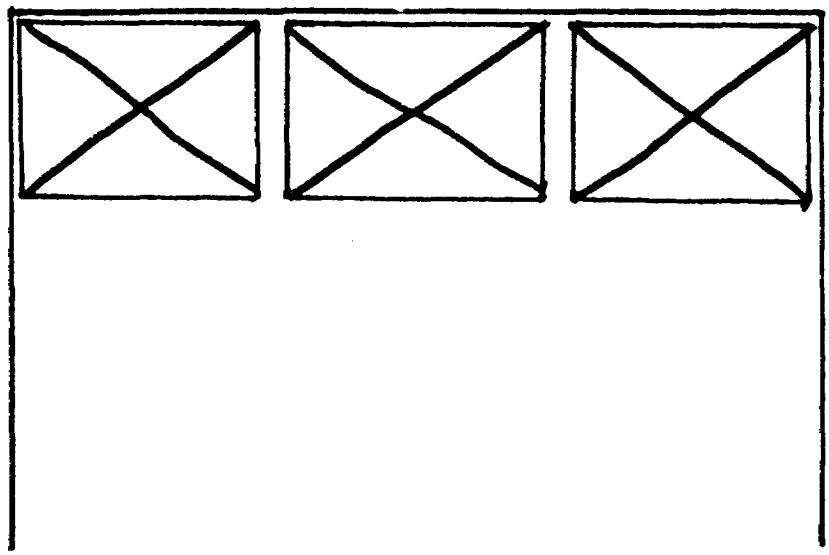
52Ø/11SW-0023 #1-3

LOCATED IN THE MAP

CHANNEL IN THE

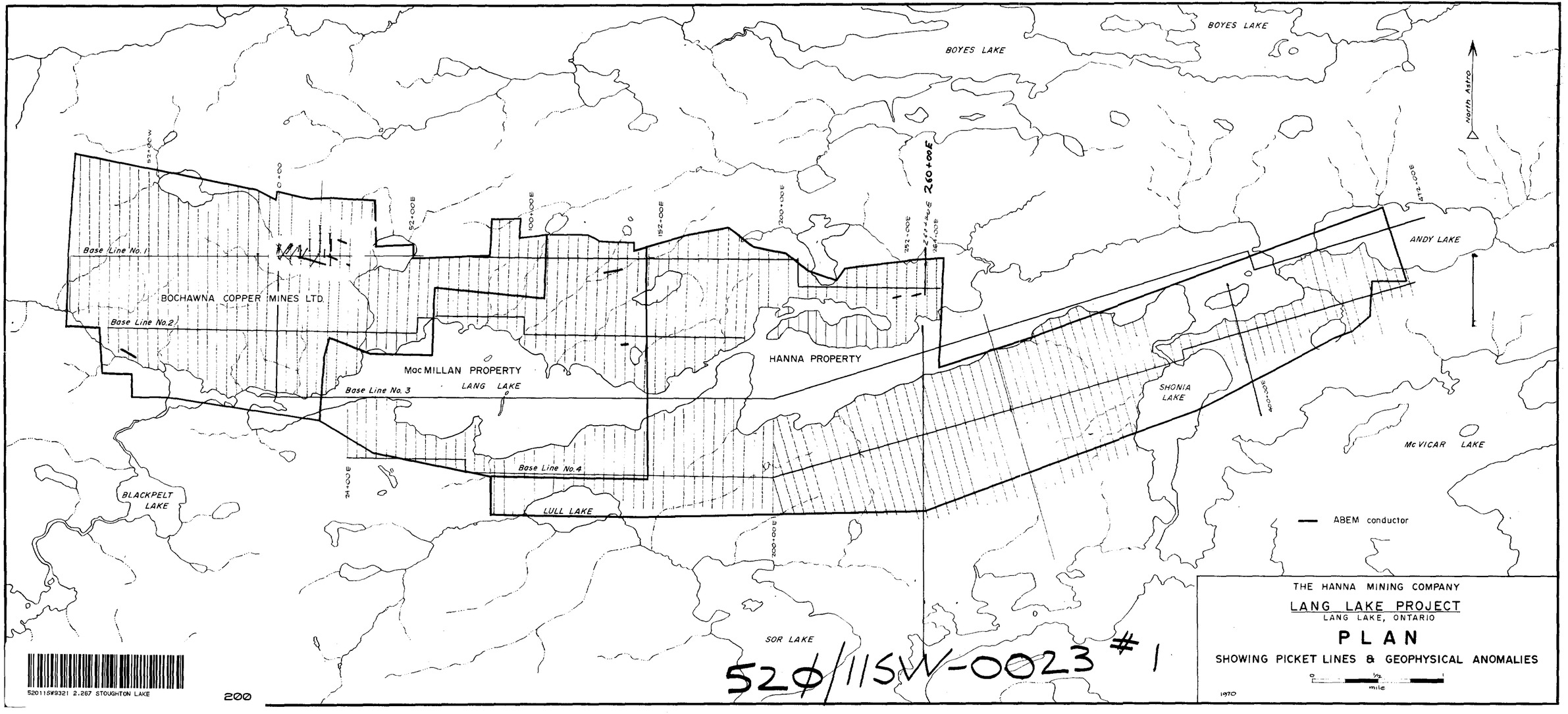
FOLLOWING SEQUENCE

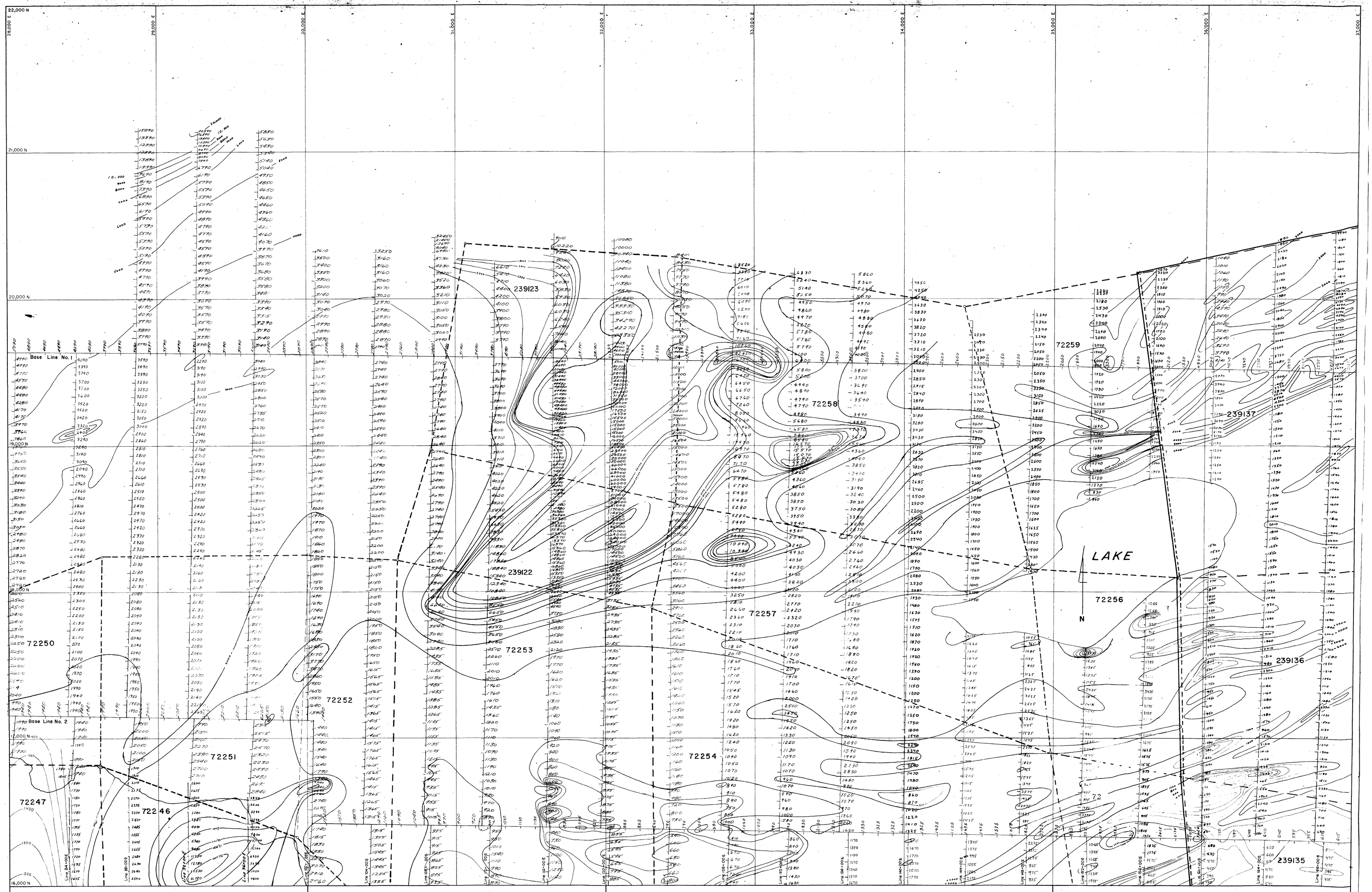
(X)

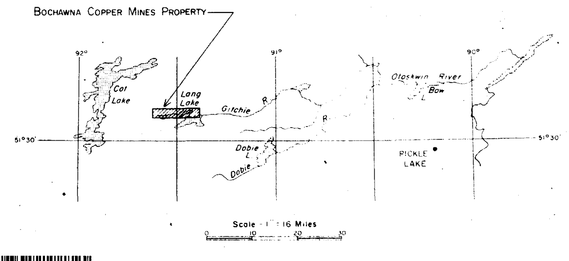


FOR ADDITIONAL INFORMATION SEE MAPS

52Ø/11SW-0023 # 4-10


BOYES LAKE
BOYES LAKE
North Astro
52+00W
0+00
52+00E
100+00E
152+00E
200+00E
252+00E
264+00E
260+00E
472+00E
Base Line No. 1
Base Line No. 2
Base Line No. 3
Base Line No. 4
BOCHAWNA COPPER MINES LTD.
Mac MILLAN PROPERTY
LANG LAKE
HANNA PROPERTY
ANDY LAKE
SHONIA LAKE
400+00S
Mc VICAR LAKE
BLACKPELT LAKE
24+00E
LULL LAKE
200+00E
SOR LAKE
ABEM conductor
THE HANNA MINING COMPANY
LANG LAKE PROJECT
LANG LAKE, ONTARIO
PLAN
SHOWING PICKET LINES & GEOPHYSICAL ANOMALIES
0
1/2
1
mile
1970
52O/11SW-0023 #1
520115W9321 2.267 STOUGHTON LAKE
200





PROPERTY LOCATION MAP

1	2	3	4	5	6
7	8	9	10	11	12

SHEET INDEX

NOTE
INSTRUMENT SHARPE MFI, MODEL 321
The readings are of the vertical COMPONENT

HUNDRED
RED GAMMA CONTOURS
THOUSAND
THOUSAND GAMMA CONTOURS
CLOSED MAGNETIC LOWS

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

MAGNETIC MAP

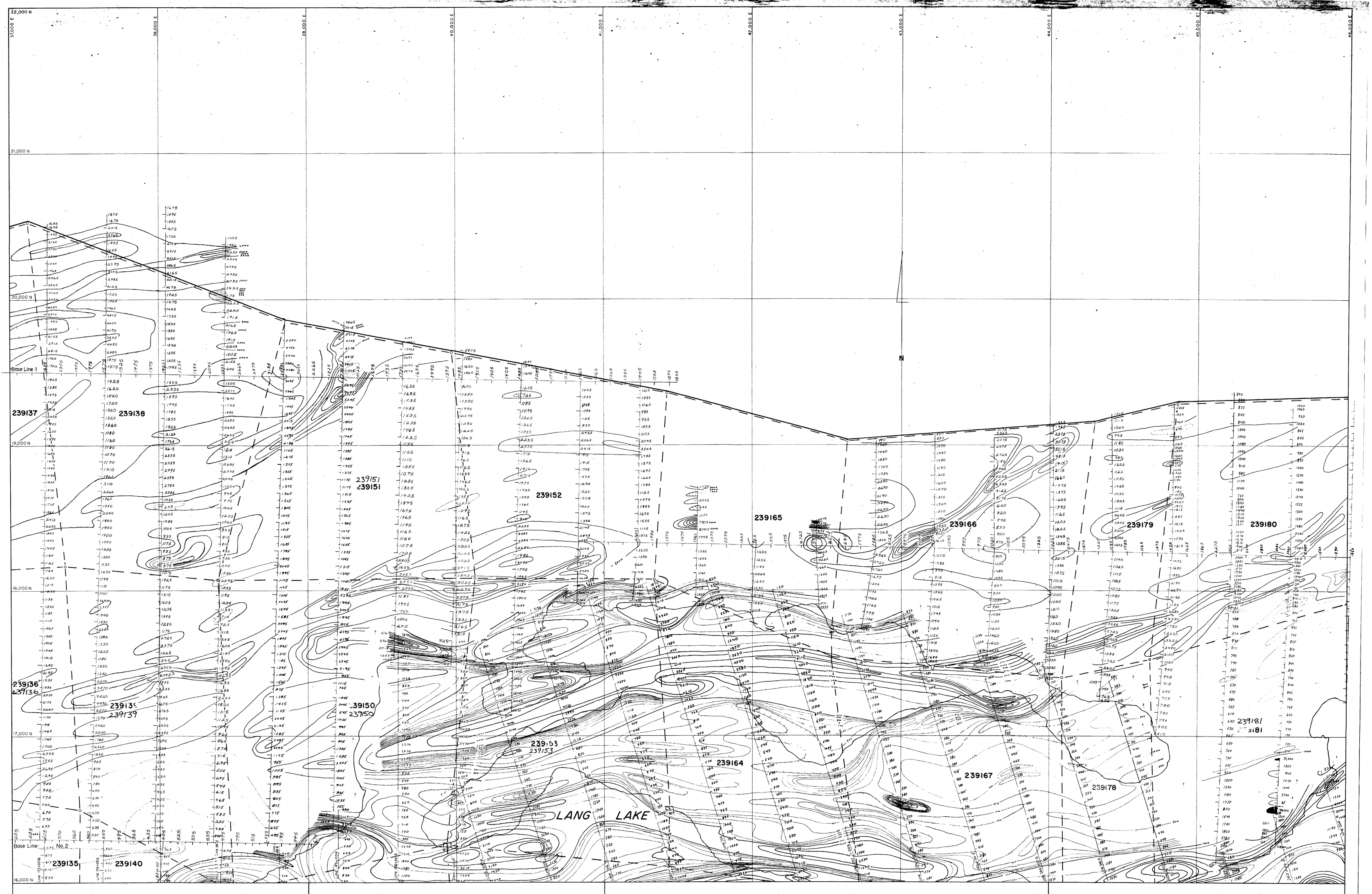
9267

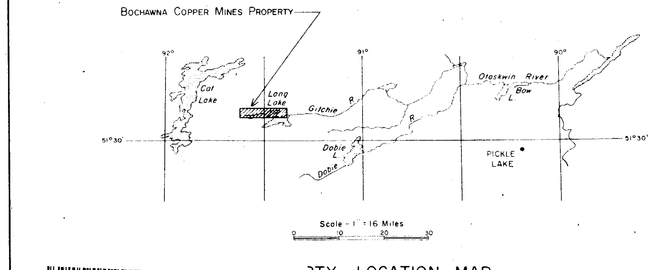
SCALE - 1" = 200'

200 FEET 0 200 400 600 FEET

Work by:	Interpretation by:	Revised:
Date:	Date: 18-29-70	Revised:
		N.T.S. No. 52-O-11

52O/11SW-0023 #2





RTY LOCATION MAP

1	2	3	4	5	6
7	8	9	10	11	12

SHEET INDEX

NOTE
INSTRUMENT-SHARPE MF1, MODEL 321
The readings are of the vertical component.

HUNDRED GAMMA CONTOURS
THOUSAND GAMMA CONTOURS
CLOSED MAGNETIC LOWS

52 ϕ/11SW-0023 #3

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

2767

MAGNETIC MAP

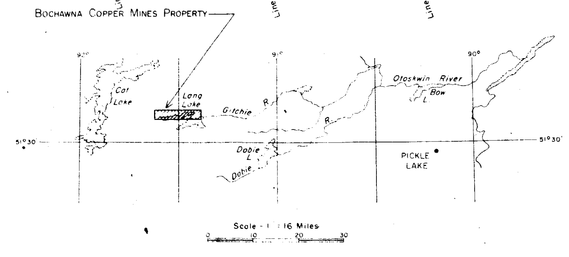
SCALE - 1" = 200'

200 FEET 0 200 400 600 FEET

Work by:	Interpretation by: Barrett F. Hodgson	Revised:
Date:	Date: 12-29-70	Revised: N.T.S. No. 52-O-11

52O11SW3321 2.267 STOUGHTON LAKE

220



ERTY LOCATION MAP

1	2	3	4	5	6
7	8	9	10	11	12

SHEET INDEX

NOTE

INSTRUMENT: SHARPE MF1, MODEL 321

The readings are of the vertical component.

HUNDRED GAMMA CONTOURS

THOUSAND GAMMA CONTOURS

CLOSED MAGNETIC LOWS

N

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

MAGNETIC MAP

2267

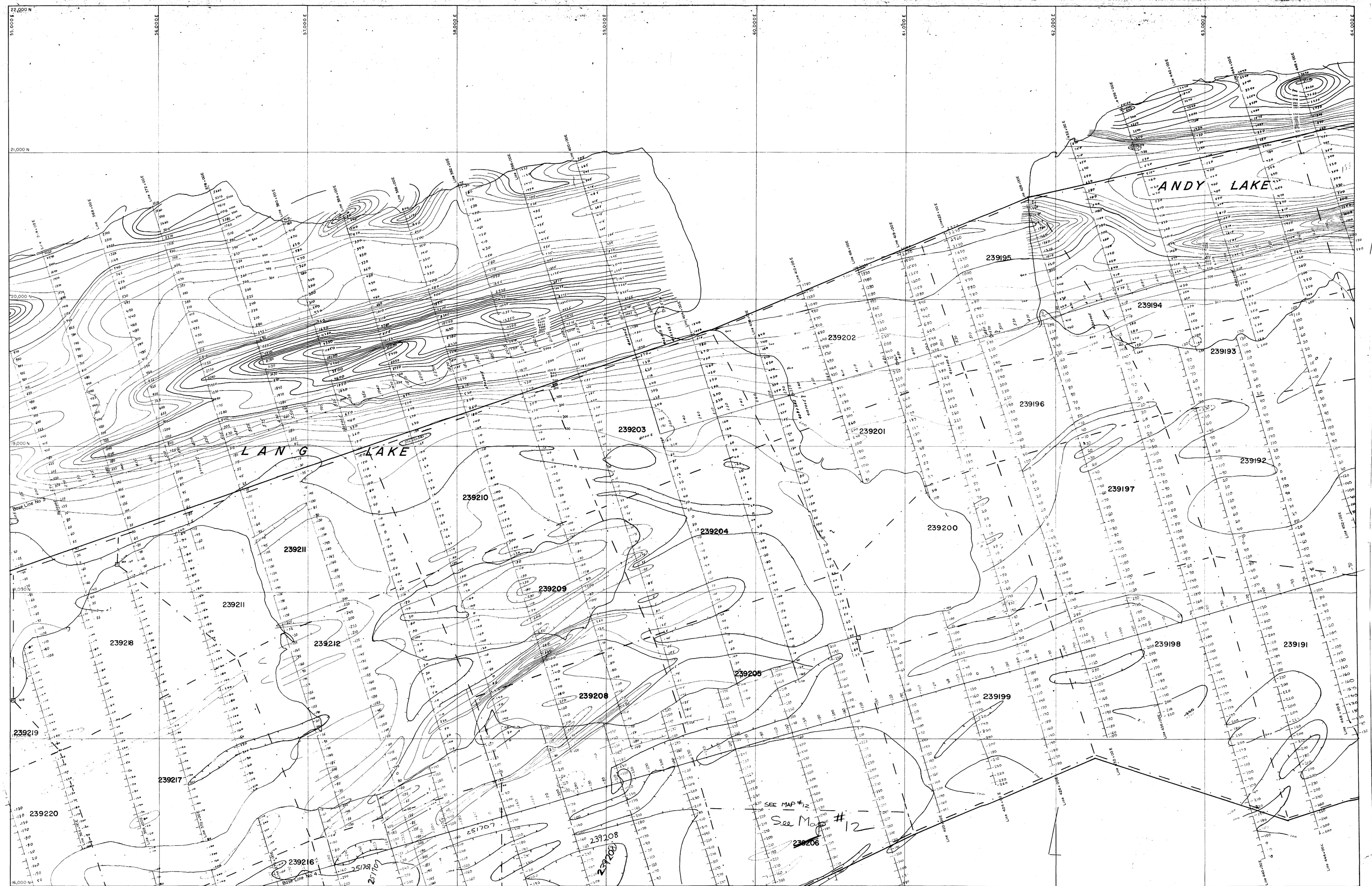
SCALE - 1" = 200'

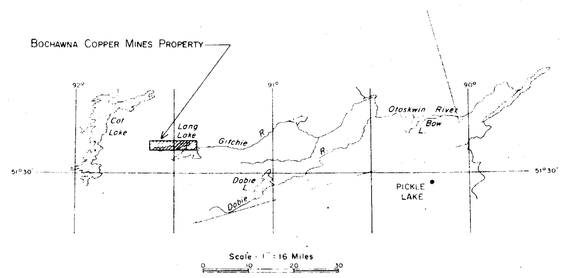
200 FEET 0 200 400 600 FEET

Work by:	Interpretation by:	Revised:
Date:	Date: 12-29-70.	Revised:
		N.T.S. No. 52-O-11

52O/11SW-0023 #4

2.267





PERTY LOCATION MAP

1	2	3	4	5	6
7	8	9	10	11	12

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NOTE
INSTRUMENT: SHARPE MF1, MODEL 321
The readings are of the vertical component.

HUNDRED GAMMA CONTOURS
THOUSAND GAMMA CONTOURS
CLOSED MAGNETIC LOWS

52φ/11SW-0023 #5

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

MAGNETIC MAP

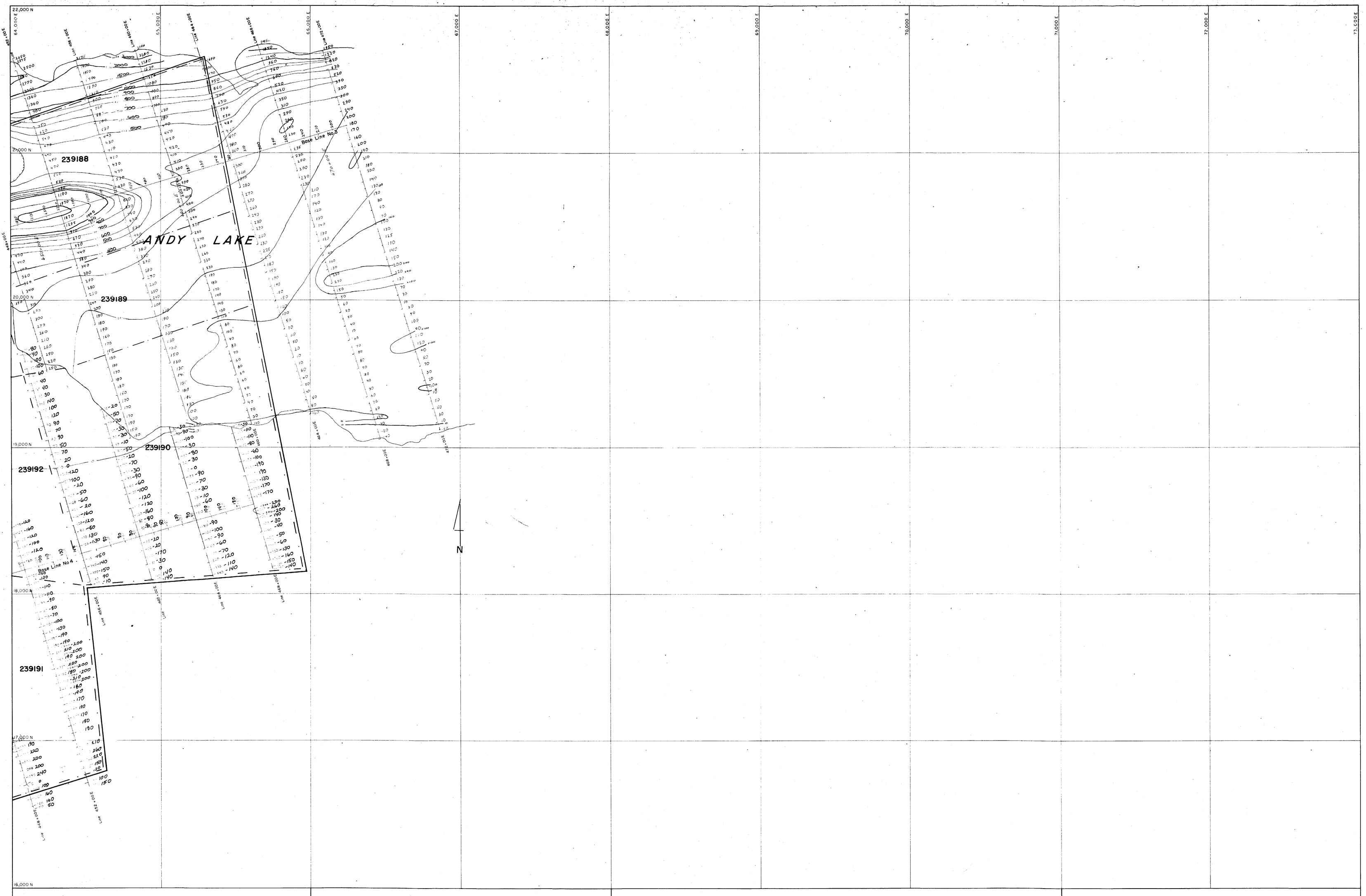
2.267

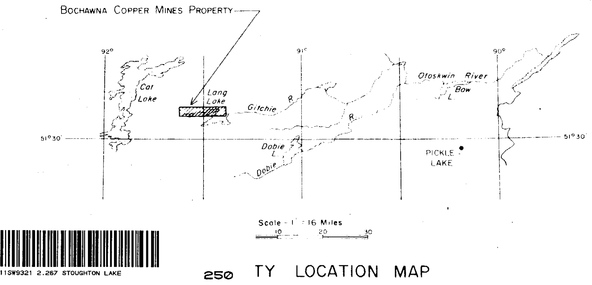
SCALE - 1" = 200'

200 FEET 0 200 400 600 FEET

Work by:	Interpretation by B.L. Halpenny	Revised:
Date:	Date: 12-29-78	Revised:
		N.T.S. No. 52-O-11

2.267





250 TY LOCATION MAP

1	2	3	4	5	6	6A
7	8	9	10	11	12	12A

SHEET INDEX

NOTE
INSTRUMENT: SHARPE M F I, MODEL 321
The readings are of the vertical component

HUNDRED GAMMA CONTOURS
THOUSAND GAMMA CONTOURS
CLOSED MAGNETIC LOWS

52ϕ/115W-0023 #6

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

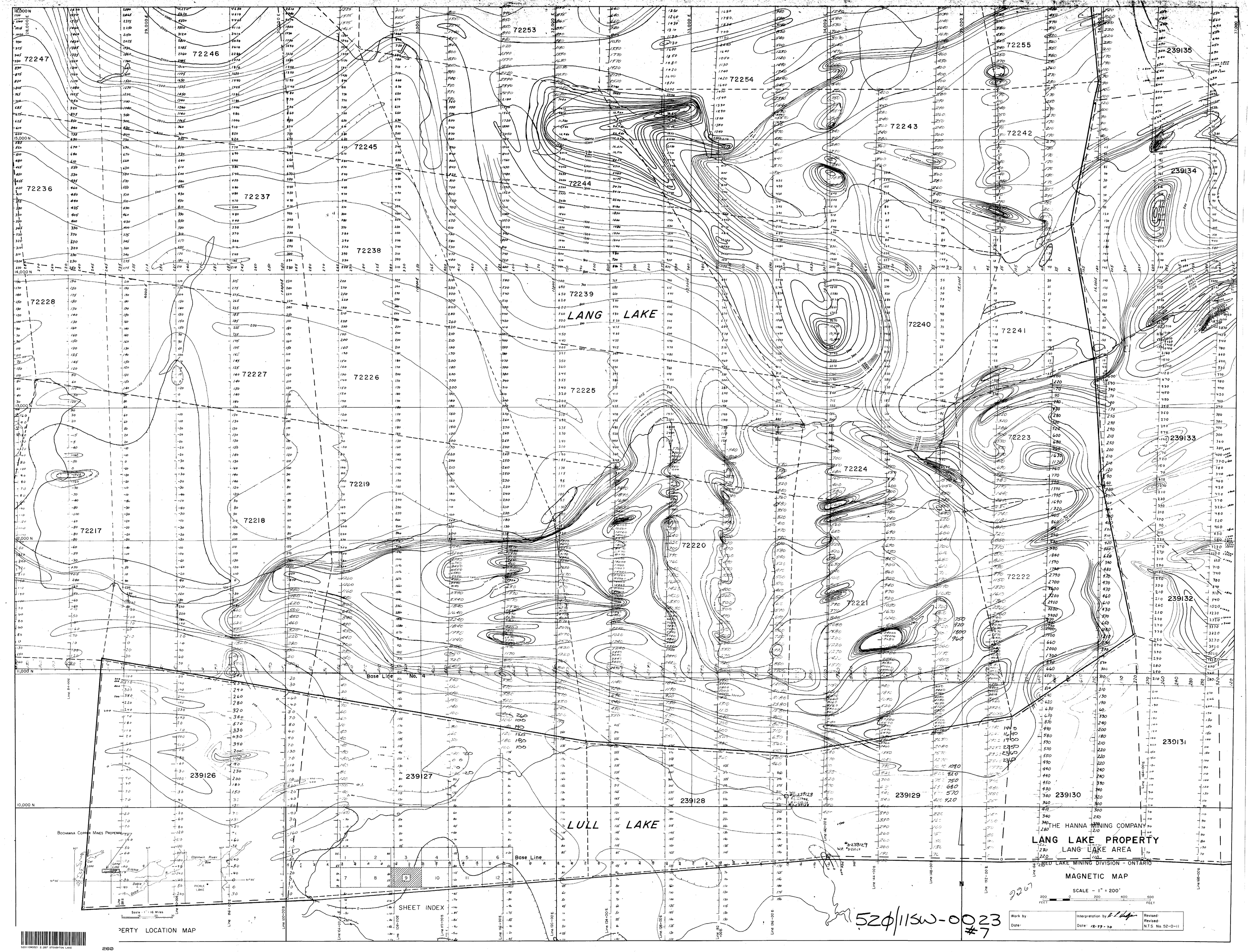
2.267 MAGNETIC MAP

SCALE - 1" = 200'

200 FEET 0 200 400 600 FEET

Work by	Interpretation by Bruce J. Hughes	Revised:
Date:	Date: 12-29-70	Revised:
		N.T.S. No 52-O-11

2.267



LANG LAKE

BASE LINE No. 3

BASE LINE No. 4

Base Line No. 4

NOTE

INSTRUMENT SHARPE, MFI, MODEL 327

The readings are of the vertical component

HUNDRED GAMMA CONTOURS

THOUSAND GAMMA CONTOURS

CLOSED MAGNETIC LOWS

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

MAGNETIC MAP

SCALE 1" = 200'

Work by

Date:

Interpretation by B.L. Nadeyin

Date: 12-29-70

Revised:

Revised:

N.T.S. No. 52-O-11

52O/11SW-0023 #8

BOCHANNA COPPER MINES PROPERTY

PICKLE LAKE

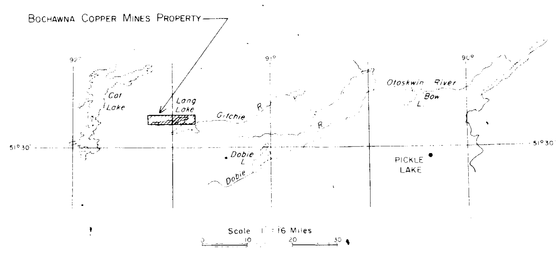
Scale 1" = 16 Miles

PROPERTY LOCATION MAP

SHEET INDEX

52O11SW9021 2.267 STOUGHTON LAKE

270



PROPERTY LOCATION MAP

1	2	3	4	5	6
7	8	9	10	11	12

SHEET INDEX

NOTE
INSTRUMENT SHARPE MFI, MODEL 321
The readings are of the vertical component.

HUNDRED GAMMA CONTOURS
THOUSAND GAMMA CONTOURS
CLOSED MAGNETIC LOWS

52φ/11SW-0023 #10

THE HANNA MINING COMPANY

LANG LAKE PROPERTY

LANG LAKE AREA

RED LAKE MINING DIVISION - ONTARIO

MAGNETIC MAP

2.267

SCALE - 1" = 200'

200 FEET 0 200 400 600 FEET

Work by:	Interpretation by: R. J. Hodgson	Revised:
Date:	Date: 12-29-70	Revised:
		N.T.S. No. 52-O-11

2.267

2.267