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SUMMARY REPORT
of the
LARDER LAKE PROJECT
MEAP CONTRACT KL-105

by

Dave Comba MSc.

N.T.S. 32 D/4

FALCONBRIDGE COPPER LIMITED

Noranda, Quebec

February 9, 1979



010C

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SUMMARY

Falconbridge Copper Limited's property in Hearst and McElroy Townships, Larder Lake Mining Division, qualified under M.E.A.P. (1978) Contract Number KL-105 effective January 17th 1978. The proposed budget expenditure was \$106,750.00 for a M.E.A.P. commitment of \$33,333.33. A financial statement for \$102,478.45 is enclosed along with supporting technical reports, maps, and documents. Work submitted includes line cutting, proton magnetometer and H.E.M. surveys, rock geochem sampling and diamond drilling.

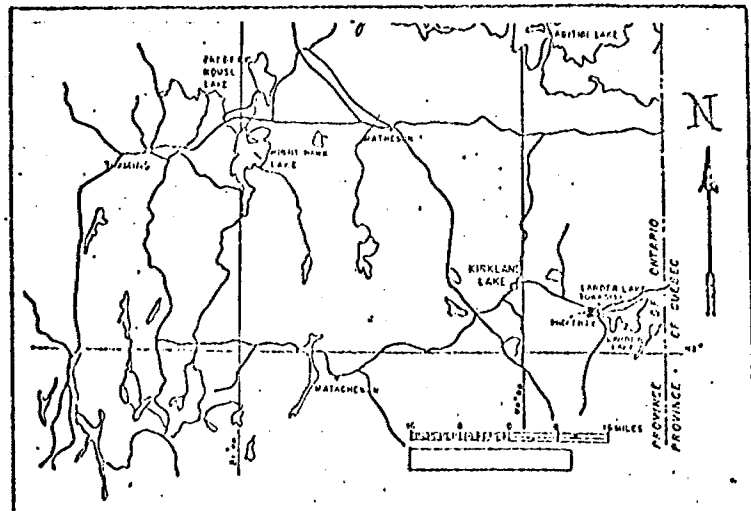
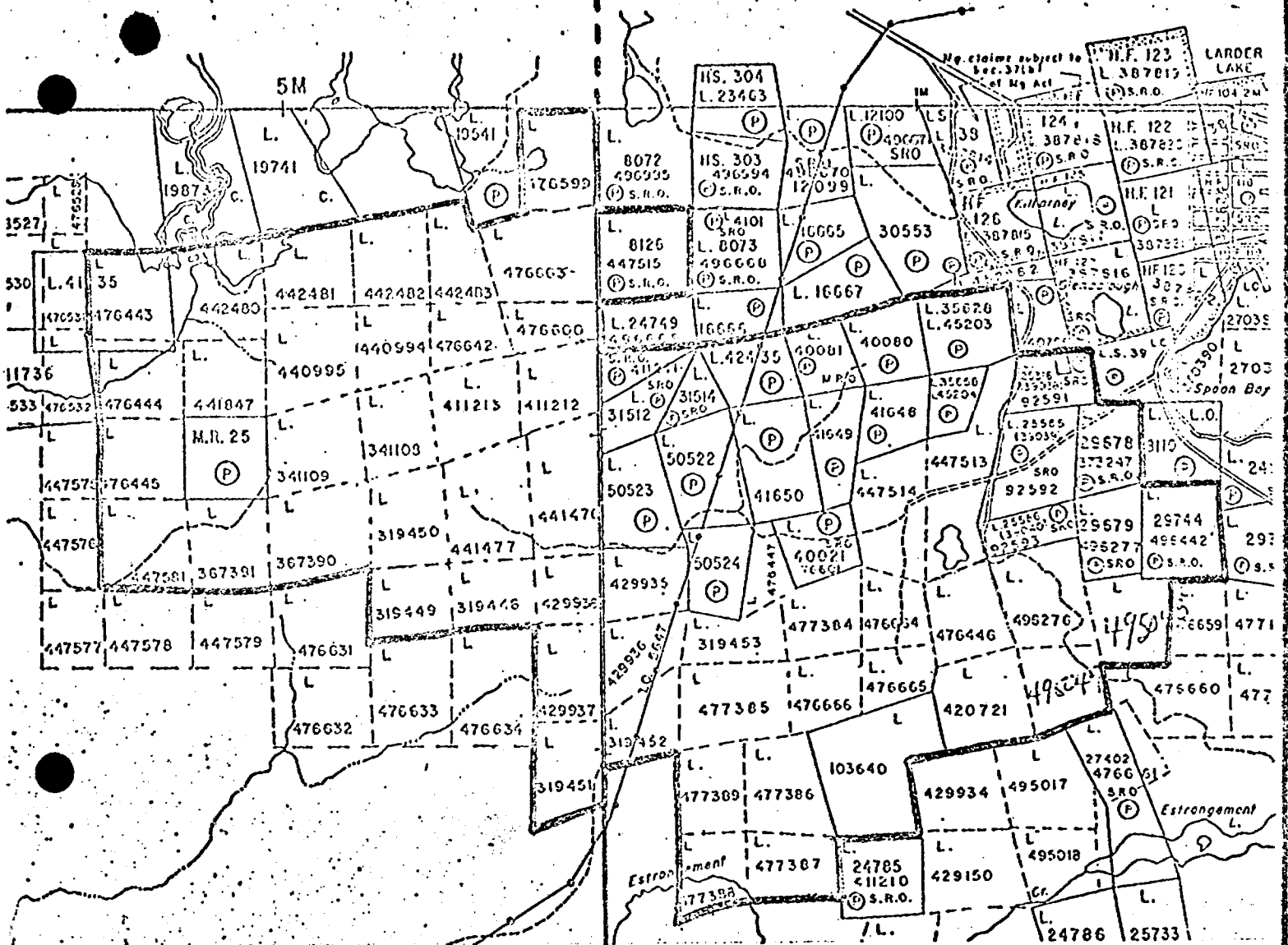
INTRODUCTION

Property examinations in the vicinity of Larder Lake were initiated by the writer in the spring of 1976. Considerable base and precious metal potential was evident in and adjacent to large arcuate structures immediately southwest of the Larder Lake town-site. Interesting copper, lead, zinc, silver and gold values are recorded in government assessment files in Kirkland Lake. Intent upon a comprehensive evaluation of the entire structure, the Company staked and optioned claims in Hearst and McElroy Townships from local prospectors and a junior mining company. The project qualified under M.E.A.P. (1977), Contract Number KL-102 effective June 28, 1977, and M.E.A.P. (1978), Contract Number KL-105 effective January 17th, 1978. The project is on-going; M.E.A.P. has been applied for in 1979.

THE FALCONBRIDGE COPPER EXPLORATION PROGRAM

Work by Falconbridge Copper Limited has included the following in chronological order:

1. Prior to M.E.A.P. (1977)
 - (a) property evaluation
 - (b) diamond drilling on known anomalies. Two holes for 1011'



CLAIM MAP LARDER LAKE PROPERTY

1" = 40 CHAINS

● LOCATION MAP

D. Comba 28/12/78

- (c) cutting of a north-south grid with line spacings at 200' or 400' spacings depending on anticipated out-crop density. Total 68.7 miles.
2. Under M.E.A.P. (1977) Contract #KL-102
- (a) extensive stripping and detailed geological mapping in the field at 1" = 100'. Mapping plotted at 1" = 400'
 - (b) collection of 97 rock geochem samples to assist geological compilation
 - (c) collection of 600 rock geochem samples for copper, lead, and zinc
 - (d) 35.57 line miles of proton magnetometer and Maxmin II H.E.M. survey
 - (e) 2211 feet of AQ diamond drilling to test conductors in favorable geological environments in McElroy Township
3. Under M.E.A.P. (1978) Contract #KL-105
- (a) 15.1 miles of east-west grid lines with 200' spacings
 - (b) 43.1 miles of proton magnetometer and Maxmin II H.E.M. survey
 - (c) collection of 53 rock geochem samples over anomalous zones first detected in 1977 survey
 - (d) 5627' of AQ and BQ diamond drilling in McElroy and Hearst Townships

1978 RESULTS

Technical reports for the following subheadings are included in the M.E.A.P. (1978) file folder.

Geophysical

43.1 miles of proton magnetometer and Maxmin II H.E.M. (two frequencies) surveys were contracted by EXPLORATION SERVICES. The surveys succeeded in delineating and extending known sulphide occurrences and locating new conductors and magnetic anomalies.

Geochemical

Fifty-three rock geochemical samples were collected to detail 1977 geochem anomalies in the vicinity of geophysical conductors. Samples were analyzed for copper, lead and zinc by atomic absorption techniques and the results averaged on an IBM 370 computer. Contour intervals were selected from the multi-

element statistics. Contouring was correlated with known geological and drill data.

The survey succeeded in enhancing existing anomalies.

Diamond Drilling

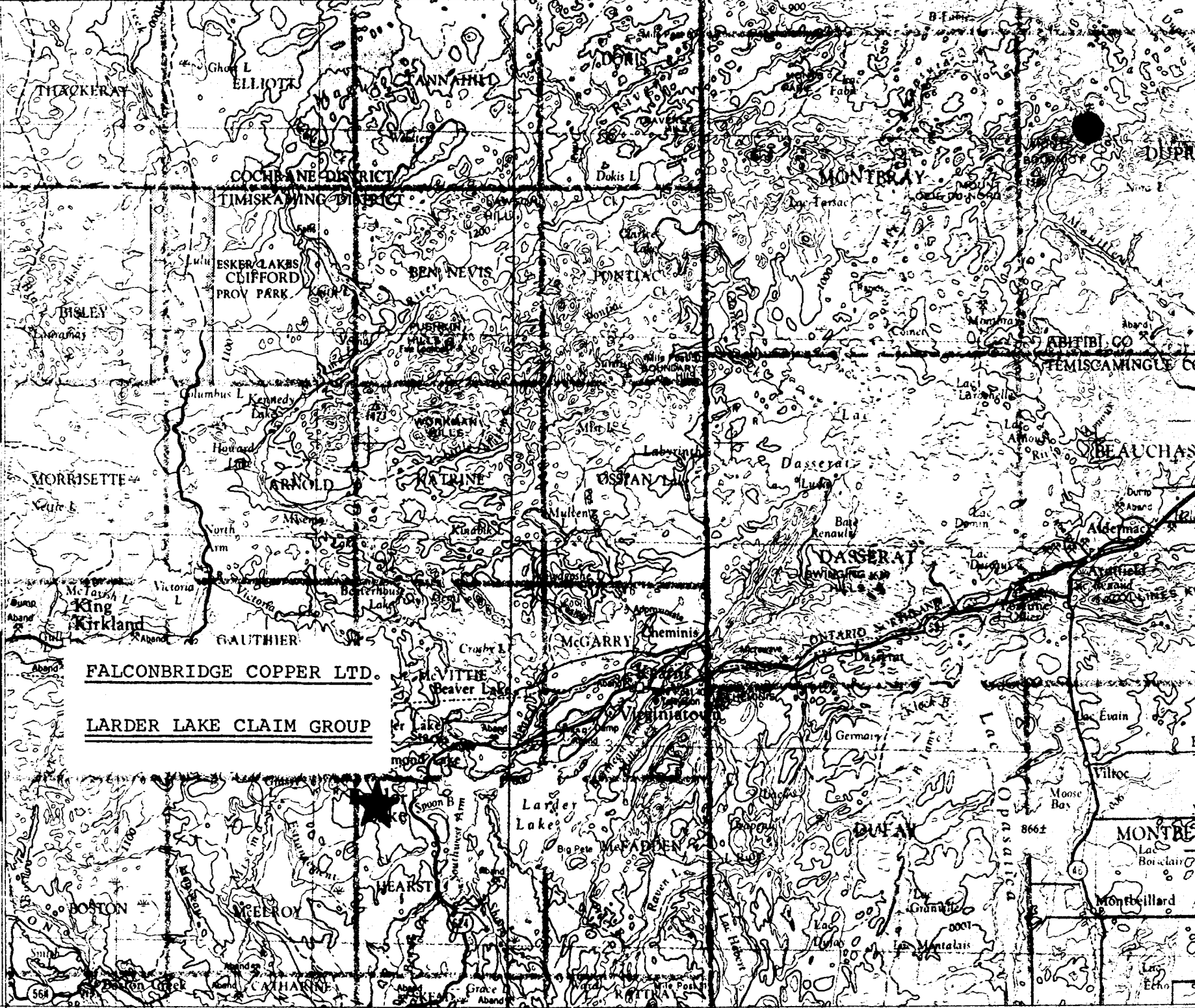
Initial AQ drilling by Contractor A. McKnight Diamond Drilling, Haileybury, Ontario was sufficiently encouraging to warrant a second machine. Hosking Diamond Drilling, Noranda, Quebec completed three holes of BQ drilling for 2042 feet.

CONCLUSIONS

No base metal sulphides of a commercially exploitable nature have been discovered. However, results are sufficiently encouraging to warrant continuing exploration.

Dave Comba

Dave Comba MSc.
Geologist
Falconbridge Copper Limited
Exploration Division



FALCONBRIDGE COPPER LTD.

LARDER LAKE CLAIM GROUP

15

Kirkland Lake 2 m
Suasitika

Kirkland Lake 13 m

48°00'

80°00' PACAUD

45'

30'

15

Englehart

Ville-Marie 45 m

SERVICES EXPLORATION SERVICE



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020

84 RUE GATINEAU STREET
NORANDA, QUE., CANADA
J9X 1N1

Département de l'Énergie
et du Patrimoine
Lives Geophysical
Lives Géophysiques
Programmes d'exploration

Claim Staking
Title Cutting
Geophysical Surveys
Geological Surveys
Exploration Programmes

FALCONBRIDGE COPPER LTD.

G E O P H Y S I C A L S U R V E Y S

LARDER LAKE CLAIM GROUP

McELROY TWP. ONT.

MEAP KL-105

I - INTRODUCTION: Geophysical surveys were undertaken during the month of August, 1978, on a section of a 1977 grid not surveyed previously, on the Larder Lake claim group of FALCONBRIDGE COPPER LTD.

II - PROPERTY: The property consists of 71 contiguous forty acre claims, however the present survey covers in part the following claims:

L 442481, L 442482, L 442483, L 476663, L 440995, L 440994
L 476642 & L 476600.

III - LOCATION & ACCESSIBILITY:

The said claim group is located immediately west of highway 624 and south of highway 66, i.e. to the west, southwest of the town of Larder Lake, Ont.

The claims covered by the present survey are located in the northeast corner of McElroy township.

The area is readily accessible via a bush road which leads southwards from highway 66 at a point 1 mile west of the town of Larder Lake.

IV - GEOPHYSICAL SURVEYS:

The present surveys were carried out on the 1977 grid. A total of 3.2 miles were surveyed between X1 52W and X1 12W, north of the 37 base line.

Magnetometer Survey:

An EXPLORANIUM G 816 proton magnetometer was used for the survey; readings were taken at every 100' intervals

Numerous lens shaped magnetic high anomalies were outlined in the northern part of the surveyed area; they appear to indicate discontinuous magnetic rock units generally trending in an east-west direction. The values range up to 5,000 gammas above background.

Electromagnetic Survey:

An APEX PARAMETRICS Maxmin 11 horizontal loop unit was employed for the survey; readings were taken at every 100' intervals with a coil separation of 300' and with frequencies of 444 and 1777 hz.

Six E.M. conductors were outlined, in part, by the present survey; The E.M. responses obtained are relatively weak on most conductors; most appear to be narrow and under thick overburden. None of the observed conductors are coincident with magnetic anomalies.

Conductor "A" has been outlined between Xl 52W and 44W; its strongest response occurs on Xl 48W at 43N where it appears to be dipping more or less vertically.

Conductor "B" extends from Xl 40W to Xl 36W; its maximum response occurs on Xl 40W at 54+50N.

Conductor "C" also occurs in the northern part of the surveyed area; it extends from Xl 24W to Xl 16W and is recurrent on Xl 12W.

Conductor "D" is stratigraphically parallel but to the south of conductors "B" and "C". Its strongest response is centered at 49+50N on Xl 28W.

Conductor "E" may be an eastward extension of conductor "D"; it has been only partly defined by the present survey on Xl 14W and 12W, however the 1977 survey covered in part the conductor on Xl 20W and 18W.

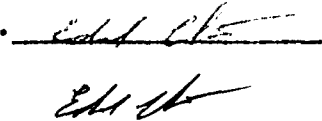
Conductor "F" occurs in the southern part of the surveyed area; it has been outlined on X1 12W only, however it extends eastward as outlined by the 1977 survey.

V - CONCLUSIONS & RECOMMENDATIONS:

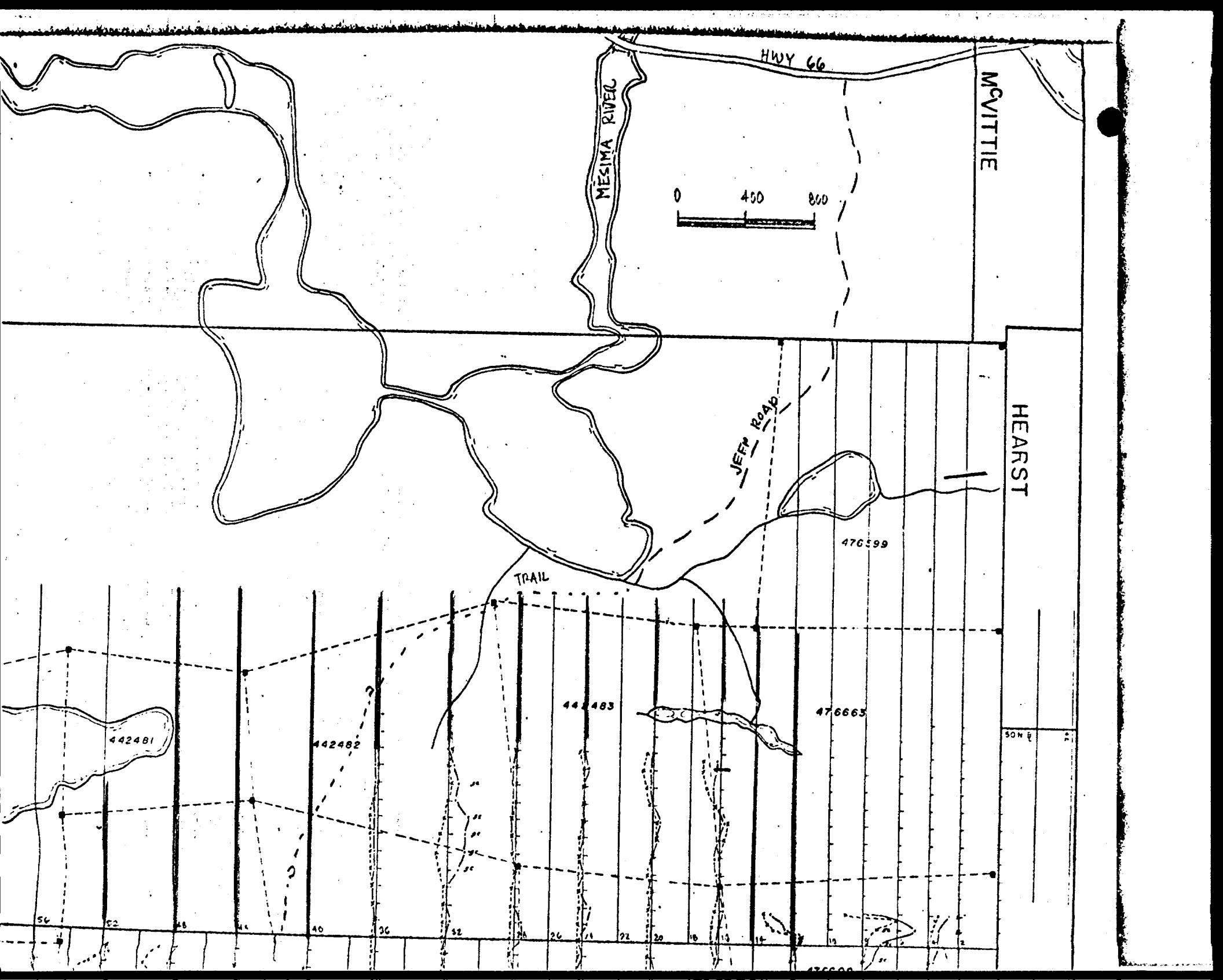
Additional surveys are recommended to better define the conductors outlined to date in this particular area: a coil separation of 400' should be used covering an area of greater extent in order that more penetration and a better coverage may be obtained.

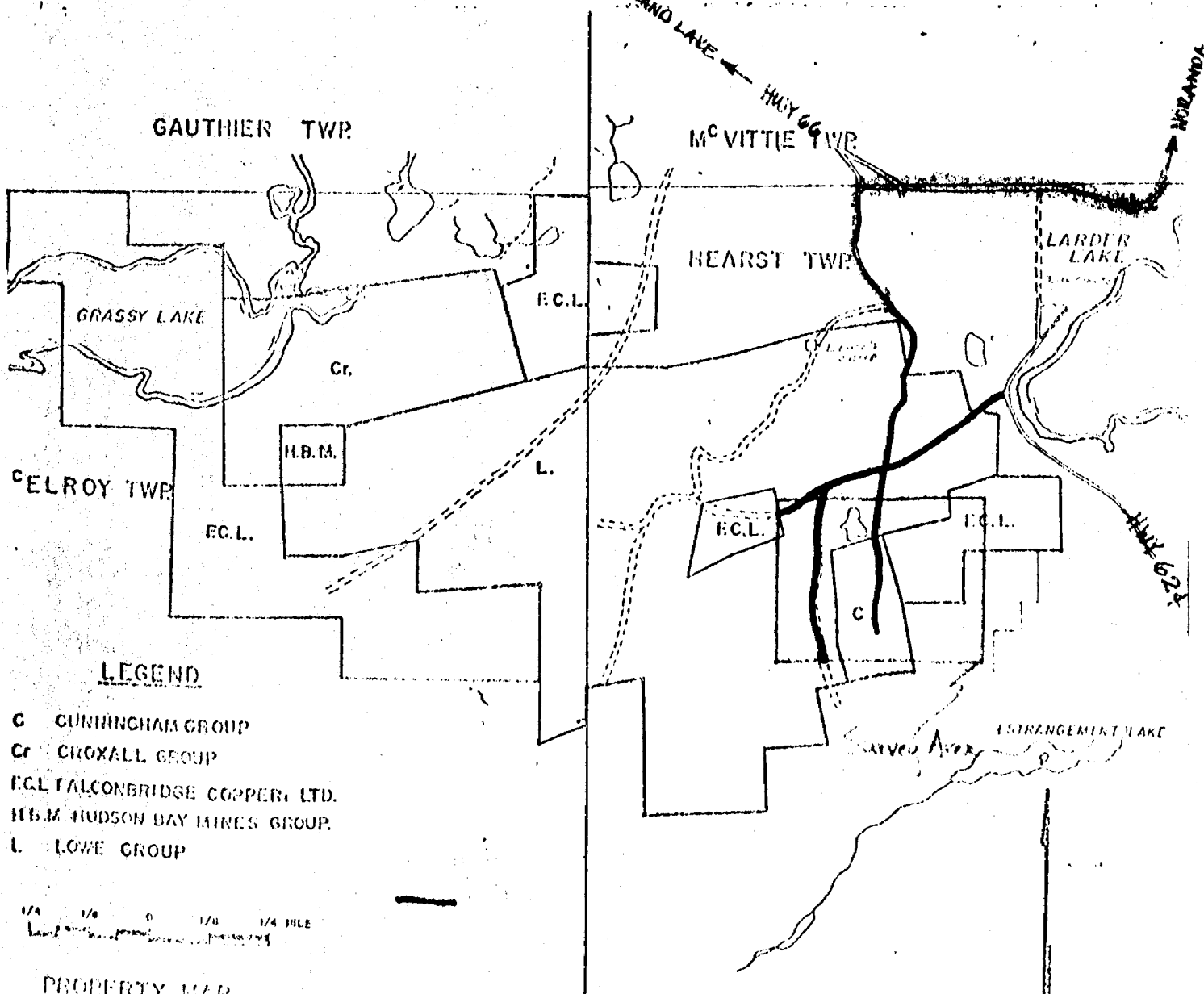
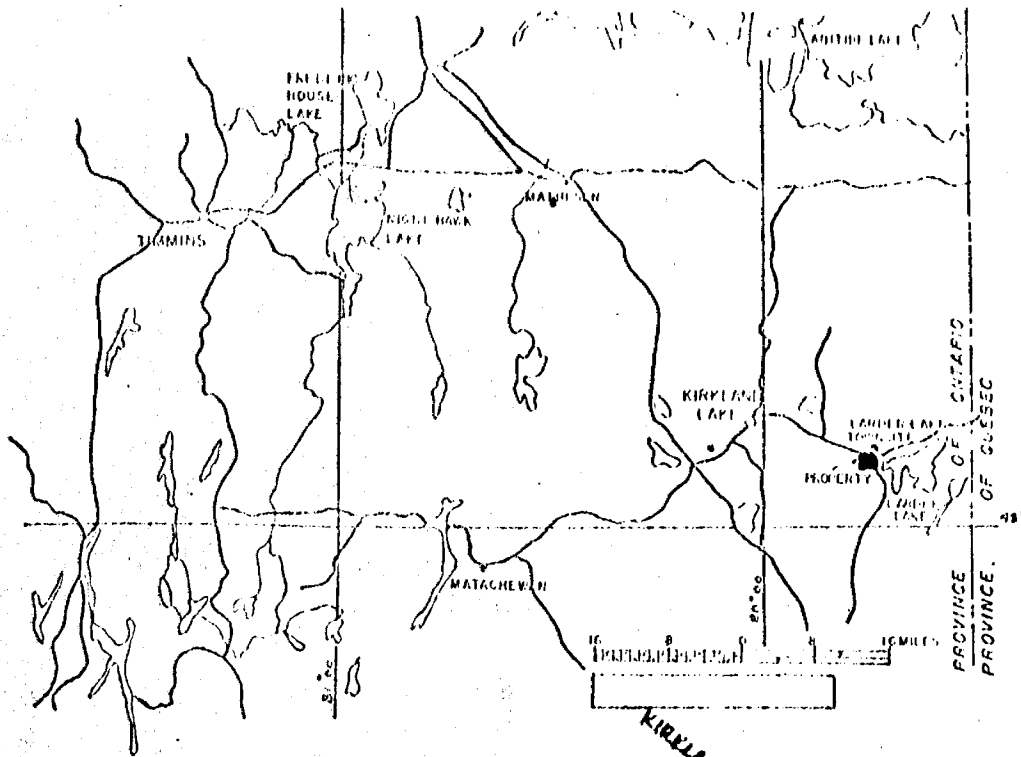
Respectfully submitted:

E.A. Chartré, B.A., B.Sc.



Oct. 15/78.





LEGEND

- C CUNNINGHAM GROUP
- Cr CROXALL GROUP
- F.C.L. FALCONBRIDGE COPPER, LTD.
- H.B.M. HUDSON BAY MINES GROUP
- L LOWE GROUP

PROPERTY MAP

84 RUE GATINEAU STREET
NORANDA, QUE., CANADA
J9X 1N1

Travaux de forage
Exploration de gisements
Etudes géophysiques
Etudes géologiques
Planification d'exploration

Staking
Leasing
Geological Services
Geophysical Services
Exploration Services

FALCONBRIDGE COPPER LTD.

G E O P H Y S I C A L S U R V E Y S

LARDER LAKE CLAIM GROUP

McELROY TWP.

Ontario

MEAP KL-105

Jan. 1979

I - INTRODUCTION: As a complement to previous surveys, detailed electromagnetic surveys were undertaken on part of the Larder Lake property of FALCONBRIDGE COPPER LTD. during the fall of 1978.

II - PROPERTY: The property consists of 71 contiguous 40 acre claims; the present detailed surveys cover parts of the following claims only:

L-442481, L442482, L442483, L476663, L476599, L447515,
L476600, L476642, L440994, L440995.

III - LOCATION & ACCESSIBILITY:

The aforementioned claims are located in the north-eastern corner of McElroy Twp., Ont., immediately south of highway 66.

The area is readily accessible via a bush road which leads southwards from highway 66 at a point 3 miles west of the town of Larder Lake, Ont.

IV - ELECTROMAGNETIC SURVEY:

The surveys were carried out on that part of the 1977 grid system which is bounded to the south by the 37N base line, to the west by X1 54W and to the east by X1 6W.

The first survey was carried out on cross lines 52W, 48W, 44W, 40W and parts of cross lines 36W, 32W, 28W, 24W, 20W, 16W, 14W and 12W with a 300' coil separation, for a total line mile coverage of 3.2 miles.

The second survey was carried out with a 400' coil separation covering cross lines 56W to 6W for a total line mile coverage of 6.0 miles.

A detailed E.M. survey was carried out in 1977 using a coil separation of 200' and frequencies of 3,555 hz and 888hz. This particular survey was undertaken by GEOSOL and covers cross lines 10W to 8E.

All of the above surveys were undertaken using a MAXMIN II horizontal loop unit with frequencies of 444 and 1777hz for the first and second survey..

Numerous anomalies were outlined and are briefly described as follows:

Conductor "A" outlines an intermittant conductive stratigraphic horizon in the northern section of the surveyed area. It has been identified from Xl 40W to Xl 6W; generally speaking it is narrow and weak. Its strongest response occurs on Xl 6W where it is centered at 51+50N.

Conductor "B" is also a very weak conductor; it has been identified on 2 lines only, i.e Xl 32W and Xl 28W. It lies south of the "A" conductor axis and may be a faulted segment of it.

Conductor "C" extends from Xl 24W to Xl 6E. It occurs in the east-central part of the surveyed area. It contains 2 segments having widths in the range of 50'; the first segment occurs between Xl 14W and 8W, centered at approximately 47+50N. The second segment extends from Xl 4W to Xl 2E and it is centered at approximately 44+50N. Conductor "C" is by far the most important one outlined by the present surveys in terms of width and conductivity.


Conductors "D", "E", "F" and "G" are all relatively short, narrow, more or less parallel conductors of strong conductivity lying between the 37N base line and conductor "C".

Conductor "H" is a weak one; it lies in the extreme western section of the surveyed area. Since the out of phase response is negligible this conductor may have been caused by topography.

V - CONCLUSIONS & RECOMMENDATIONS:

Additional surveys would be required in the northern section of the grid area in order that conductor "A" might be better defined, as it now lies at the limit of the cut grid.

Respectfully submitted,

E. Chartré, B.A., B.Sc. 

Jan. 1979.

SERVICES EXPLORATION SERVICE



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84 RUE GATINEAU STREET
NORANDA, QUE., CANADA
J9X 1N1

Adjudgement de Claims
Concession de Licences
Travaux Géophysiques
Travaux Géologiques
Programmes d'Exploration

Claim Staking
Lode Cutting
Geophysical Surveys
Geological Surveys
Exploration Programmes

FALCONBRIDGE COPPER LTD.

G E O P H Y S I C A L S U R V E Y S

LARDER LAKE CLAIM GROUP

HEARST TOWNSHIP

Ontario

MEAP KL-105

I - INTRODUCTION: Because of the folded nature of the stratigraphic horizons, detailed geophysical surveys were undertaken during the months of March and July, 1978, on 3 separate areas of the Larder Lake property of FALCONBRIDGE COPPER LTD., as a complement to previous surveys carried out in the fall of 1977.

II - PROPERTY: The property consists of a group of 71 contiguous forty acre claims; the surveys performed in 1978 cover the following claims only:

L-447514, L-476664, L-476665, L-447513, L-476446, L-92592, L-92593, L-496276, L-495094, L-496277, L-429934, 495017, 495047, P-41648, P-45204, 429935, P-50524, 429936, 319453 & 477385.

III - LOCATION & ACCESSIBILITY:

The aforementioned claims are located in the north-western corner of Hearst Twp., Ont. at an approximate distance of 1.5 miles south of highway 66 and west of highway 624, i.e. immediately southwest of the town of Larder Lake, Ont.

The area of the surveys is readily accessible via the numerous bush roads which lead southwards from highway 66 at a point 1/4 mile west of the town of Larder Lake.

IV - GEOPHYSICAL SURVEYS:

The surveys were carried out on three separate locations referred to as areas "A", "B" and "C", all within or adjacent to the original 1977 grid system.

Area "A" is bounded to the south by the 20N base line, to the west by X1 48E and to the east by X1 60E. It consists of 5 E-W cross lines of 1,200' in length for a total coverage of 1.13 line miles.

Area "B" is bounded to the south by the 20S tie line, to the west by cross line 0+00 and to the east by cross line 16E; the 11 cross lines account for a coverage of 3.33 line miles of survey.

Area "C" consists of 15 E-W cross lines whose lengths are of 3,600' each. Area "C" is located in the extreme southeast corner of the claim group.

Instruments used for the surveys:

A proton G 816 magnetometer was used for the

magnetometer survey; A Maxmin II horizontal loop unit was employed for the E.M. survey using a coil separation of 400' and frequencies of 444 & 1777 hz.

Results of the surveys:

Area "A": The surveys carried out on this area did not reveal the presence of any significant magnetic or electromagnetic anomalies.

Area "B": East-west striking conductors were outlined on this area by the 1977 survey; however, no anomalies were indicated by the 1978 survey.

A strong magnetic response obtained by the 1978 survey confirms data obtained in the 1977 survey, in the extreme south-west portion of the 1978 coverage area.

Area "C": 6 conductors were outlined by the 1978 surveys; these are labeled conductors :A, B, C, D, E & F. Conductors A and B have been partially defined by the 1977 survey.

The E-W trending conductor "A" as outlined in the 1977 survey in proximity to B.L. 20N trends in a N-S direction between X1 44E and 48E as confirmed by the 1978 survey. It appears to terminate between X1 12S and 16S. Conductor "B" has been identified on X1 0 and X1 4S where it lies parallel and east of conductor "A". It merges with conductor "A" on X1 8S.

Conductor "C" has been outlined on X1 16S, 20S, 22S and 24S; it trends in a southwesterly direction for an approximate length of 1,500'. Its strongest response occurs on X1 16S at 59E. The data suggests a possible width of up to 100'. The I.P/O.P. ratio of 3/1 indicate the presence of a good conductor.

Conductors D & E were outlined on X1 26S and 28S. These 2 parallel, narrow and weak conductors also trend in a southwesterly direction.

Conductor F has also been only partly defined because of its close proximity to the eastern limit of the grid. It appears to be centered at 78E on X1 28S; it is weak and of poor conductivity, it is associated with a magnetic anomaly.

V - CONCLUSIONS & RECOMMENDATIONS:

All of the conductors outlined may be considered as potential drill targets; conductor "C" however would rate as a prime target because of its relatively short length, its appreciable width and good conductivity.

Respectfully submitted:

E.A. Chartré: 

July, 1978.

FALCONBRIDGE COPPER LTD.

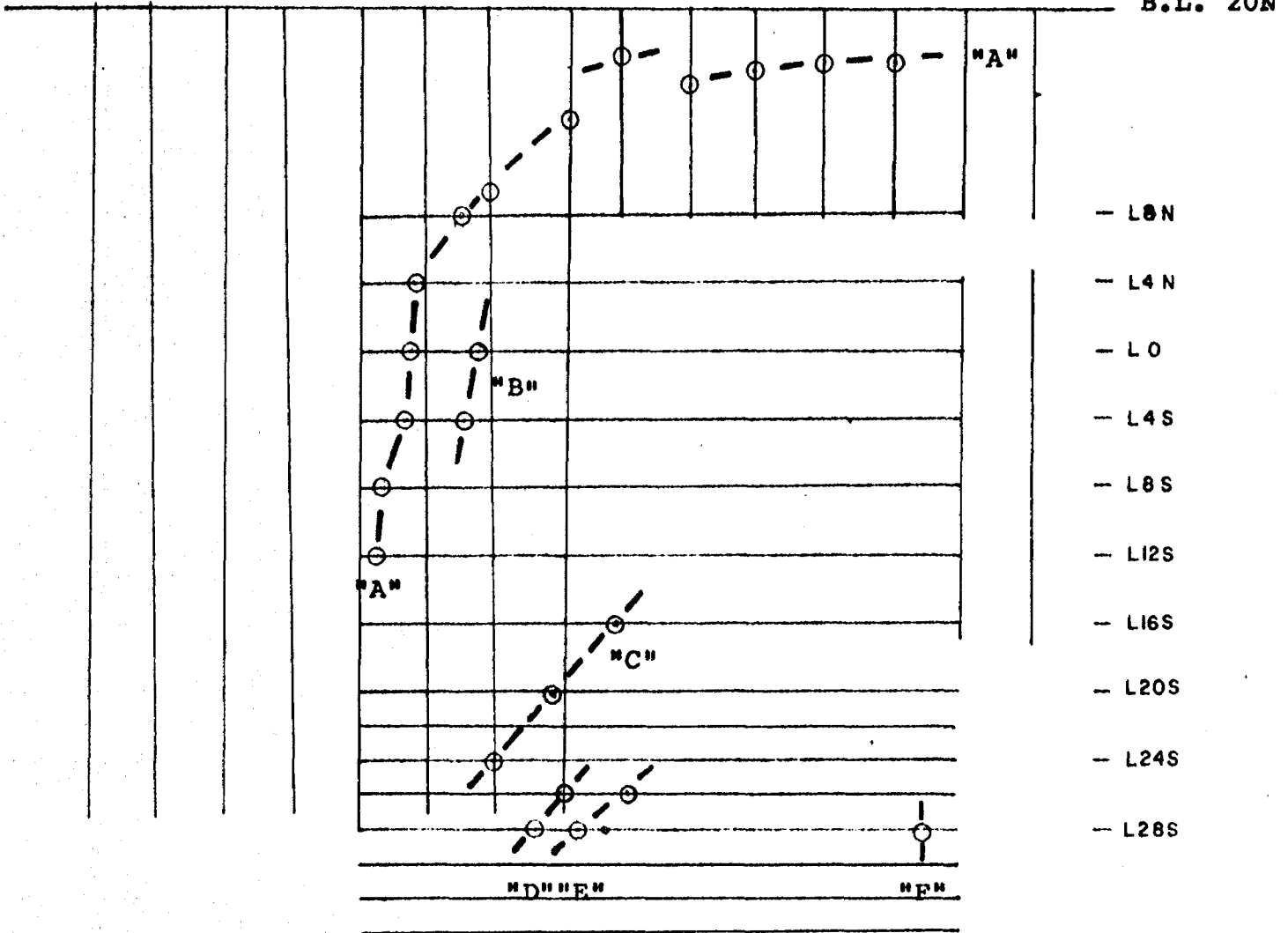
LARDER LAKE PROJECT

CONDUCTOR OUTLINES

4

- L28E
- L32E
- L36E
- L40E
- L44E
- L48E
- L52E
- L56E
- L60E
- L64E
- L68E
- L72E
- L76E
- L80E
- L84E

B.L. 20N



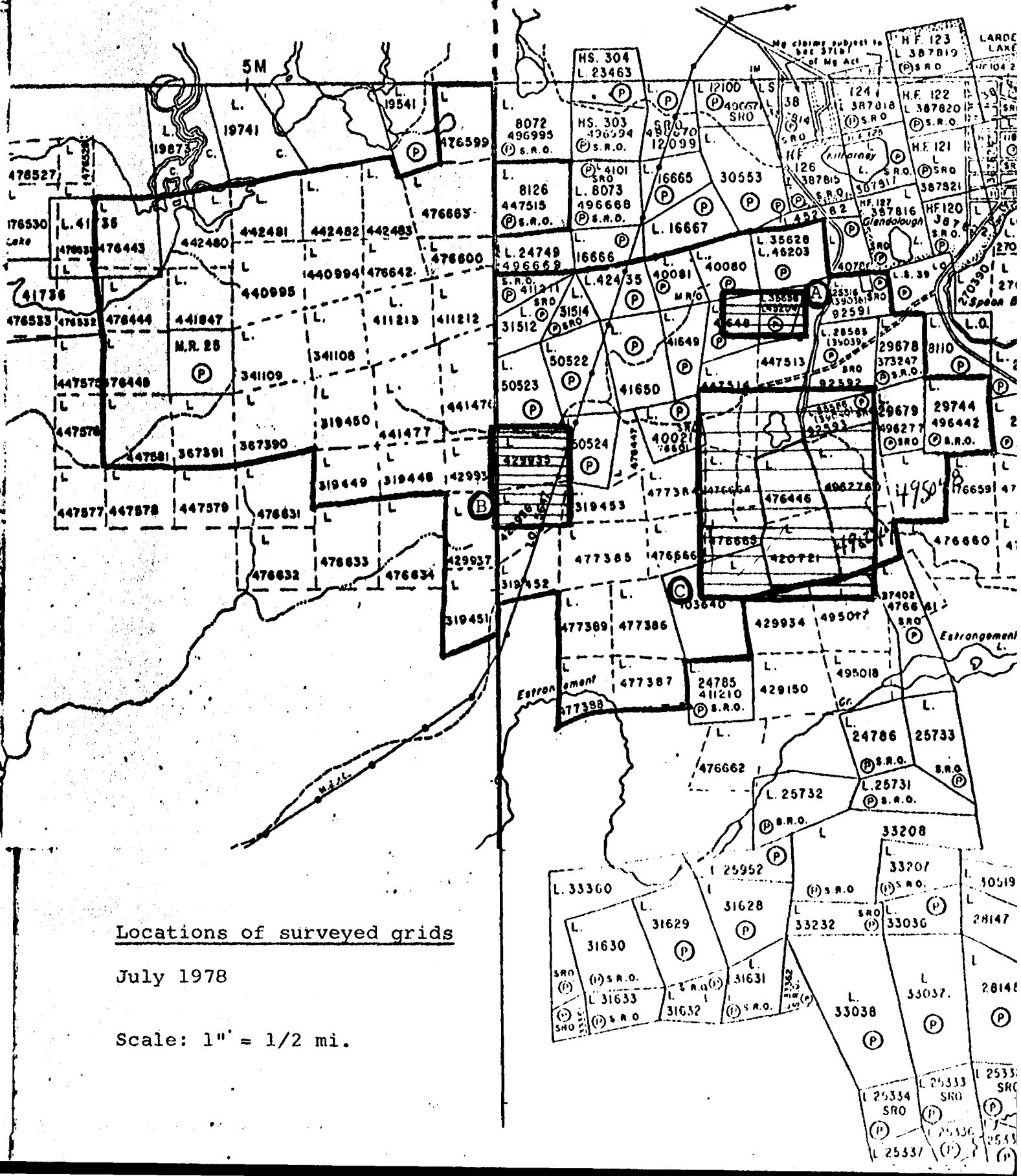
1" = 1,000'

EXPLORATION SERVICES REG'D

1978

← McELROY TOWNSHIP

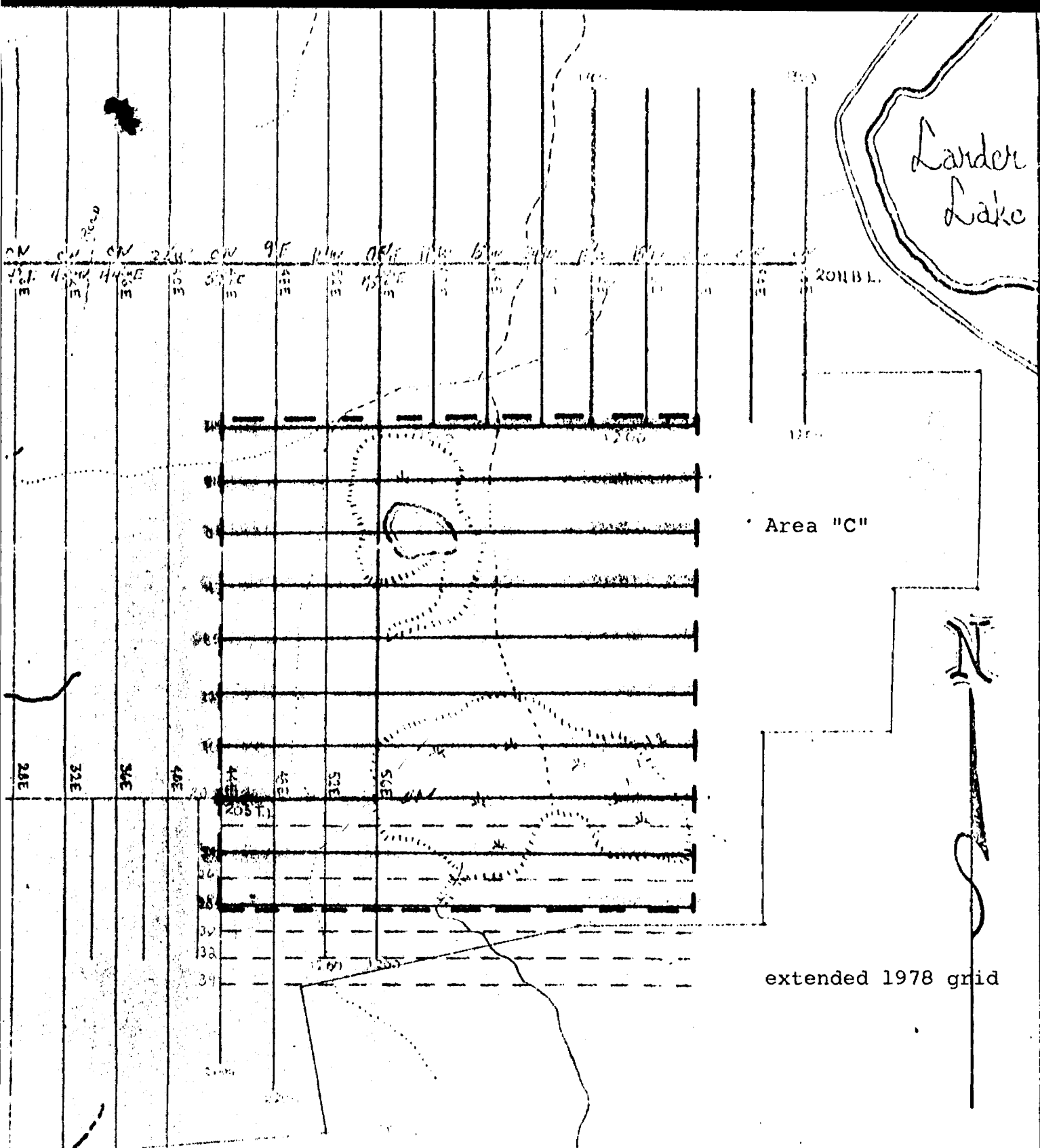
HEARST TOWNSHIP →



Locations of surveyed grids

July 1978

Scale: 1" = 1/2 mi.



FALCONBRIDGE COPPER LIMITED
 LAKE DE LAULI DIVISION
 SKETCH MAP
 PROPOSED LARDER LAKE
 GRID SYSTEM

MEAP KL-105

February 5, 1979

MANUAL WORK CLAIM L 92592 HEARST TOWNSHIP

Work refers to an unsuccessful attempt to reach bedrock while attempting to drill an H.E.M. conductor. Overburden penetration 85'. Drill log, plan and section sketches attached.

Machine employed: Longyear 38 with hydraulic head and chuck.

Drill hole designated LL 78-4. Abandoned after repeated water line freeze ups. Two heaters employed over a horizontal distance of 3000 feet. Vertical rise approximately 50 feet. Below normal temperatures were recorded during the attempt.

Names and addresses of runners and helpers:

Runners:

Alton McKnight, Box 906 Haileybury, Ontario POJ 1K0
Michael Jean, 80 Nickel Street, Cobalt, Ontario POJ 1C0

Helpers:

Emile Savoie, 330 View Street, Haileybury, Ontario POJ 1K0
Claude Jean, 32 Argentite Street, Cobalt, Ontario POJ 1C0

Dates and hours of employment:

January 4, 1979	24 hours
January 5, 1979	30 hours
January 6, 1979	16 hours
January 8, 1979	40 hours
January 9, 1979	36 hours
January 10, 1979	10 hours
January 11, 1979	40 hours
January 13, 1979	40 hours
January 14, 1979	<u>41</u> hours
	277 hours

Days of work 277/3 hours = 92

Supervision by C. D. A. Comba MSc. (Queen's) geologist with Falconbridge Copper Limited. Dates and hours of employment:

January 4, 1979	4 hours
January 10, 1979	4 hours
January 14, 1979	<u>4</u> hours
	12 hours

Days of work $12/3$ hours = 4

Total number of days of work $(92 + 4) = 96$

Invoice included with STATEMENT OF EXPENDITURES FOR REIMBURSEMENT MEAP CONTRACT #KL-105 LARDER LAKE PROJECT, FEBRUARY 15, 1978 to FEBRUARY 15, 1979 this folder.

Dave Comba



32004SE0280 63.3567 HEARST

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ROCK GEOCHEMICAL SURVEY
of the
LARDER LAKE PROPERTY
of
FALCONBRIDGE COPPER LIMITED
by
Dave Comba MSc.
N.T.S. 32 D-4

Noranda, Quebec
February, 1979

MEAP KL-105



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ACCOMPANYING MAPS 1" = 200'

Copper (ppm) - Cu

King Conductor Zone (McElroy-Hearst Townships)

Zinc (ppm) - Zn

King Conductor Zone (McElroy-Hearst Townships)

Lead (ppm) - Pb

King Conductor Zone (McElroy-Hearst Townships)

SUMMARY

Fifty-three rock geochemical samples were collected to detail 1977 geochem anomalies in the vicinity of the King H.E.M. conductor zone. Samples were analyzed for copper, lead and zinc by atomic absorption techniques and the results averaged on an IMB 370 computer. Contour intervals were selected from the multi-element statistics. Contouring was correlated with known geological and drill data.

The survey succeeded in enhancing existing anomalies.

INTRODUCTION

The property is underlain by Archean felsic mafic and ultramafic metavolcanics. Metasediments comprising graphite, shales, thin bedded greywackes and conglomerates conformably and unconformably overly volcanics or are intercalated between flows. Semi-massive to massive sulphides, principally pyrite and pyrrhotite, occur in graphitic horizons inter-bedded with volcanic flows and sediments. Significant concentrations of sphalerite, chalcopyrite and galena may occur with graphite-rich sediments. Hydrothermally altered volcanic rocks frequently occur in the footwall or the main volcanic sediment interface.

Fifty-three rock geochemical samples were collected and analyzed for copper, lead and zinc by atomic absorption techniques. The chemical data have been compiled and plotted to indicate anomalous geochemical patterns. The geochemical abnormalities are assumed to be associated with metal-exhalative processes which are likely to be confined to the walls of pipes or vents through which mineralizing solutions passed and to stratigraphic zones in volcanic rocks and associated sedimentary rocks where the metals were precipitated.

LOCATION AND ACCESS

The claim group is situated on the southwestern outskirts of the Larder Lake Townsite. Highway 624 between Englehart and Larder Lake passes within 100 feet of the easternmost claim. The north boundary lies from 1500 to 5000 feet south of Highway 66 to Kirkland Lake. A number of jeep roads provide excellent access to 30% of the property.

TOPOGRAPHY AND VEGETATION

A north trending esker ridge dominates the east end of the claim groups. The ridge slopes steeply to the east and is utilized by a local ski club. To the west the esker slopes gradually to the township boundary. West of the boundary the

area is characterized by gently undulating hills and broad flat swampy areas. A few larger hills with steep cliff-like slopes are present south and northeast of Grassy Lake. The west end of the property is covered by a wide shallow section of the Mesima River, aptly named Grassy Lake.

PROPERTY

The following optioned and staked claims form a contiguous block of 71 claims in Hearst and McElroy Townships, Ontario:

(1) Lowe Group	46
(2) Croxall Group	11
(3) Cunningham Group	2
(4) The Hudson Bay Mines Ltd's. MR25	1
(5) Falconbridge Copper Limited Group	<u>11</u>
	71

The subject rock geochemical program was carried out over nine claims from two claim groups.

<u>Claim Group</u>	<u>Township</u>	<u>Claim(s)</u>
Falconbridge	Hearst	L-447515
Falconbridge	McElroy	L-476663, L-476600
Croxall	McElroy	L-440994, L-440995, L-442481 L-442482, L-442483, L-476642

PREVIOUS WORK

Two successful geochemical surveys of limited areal extent have been made along the Hearst-McElroy boundary between the four and five miles posts. In chronological order:

(1) Sogemines Development Company Ltd. (1960) Mr. H. D. McLeod took an undetermined number of soil and bedrock samples from claims L-429935 and L-429936. Anomalous lead-zinc values were located in the vicinity of two 1906 era shafts, and west of the #4 post of claim L-429935.

← McELROY TOWNSHIP

HEARST TOWNSHIP →

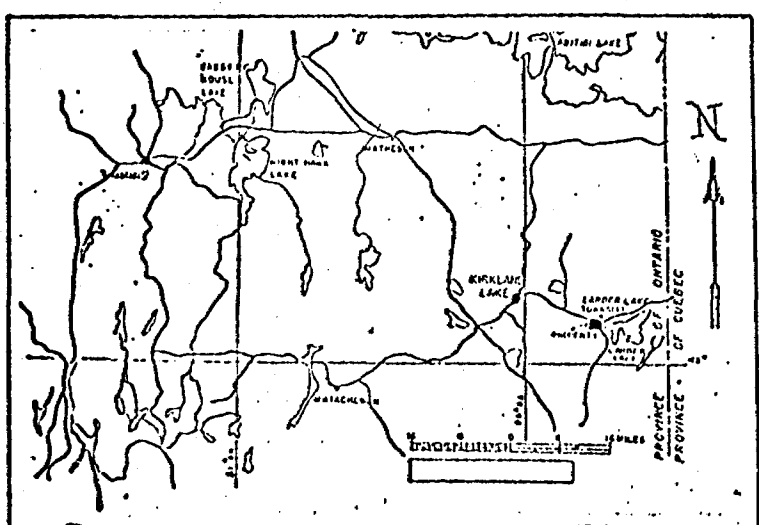
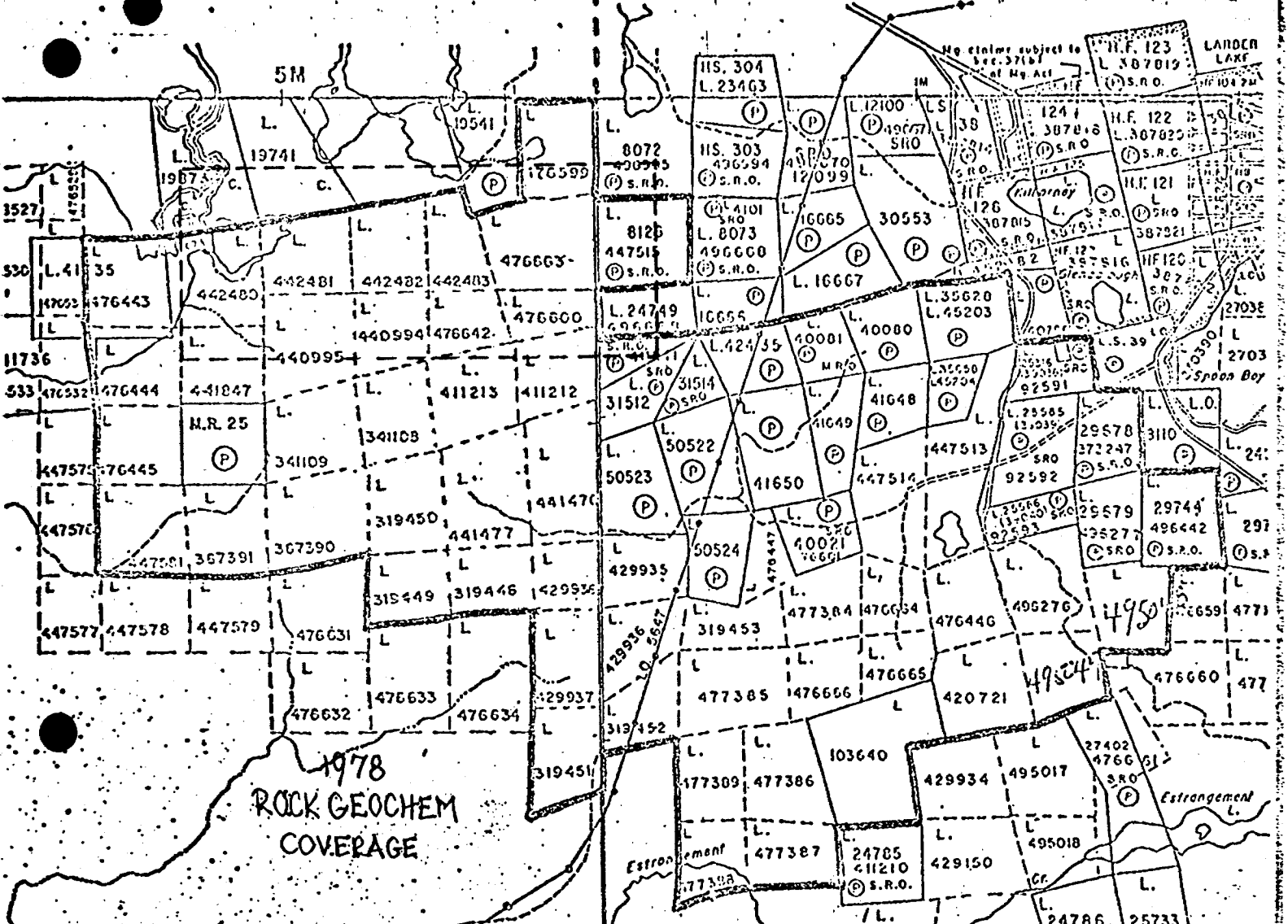


FIGURE I
CLAIM MAP
LARDER LAKE
PROPERTY

1" = 40 CHAINS

LOCATION MAP

(2) Ontario Department of Mines (1972) Dr. W. J. Wolfe, geochemist, carried out test work in the same area sampled by Sogemines. Eighteen "B" horizon soil samples were collected. The area is highly anomalous in zinc with above normal copper and lead concentrations.

A third successful geochemical survey covering most of the property was completed by FALCONBRIDGE COPPER LIMITED in 1977. Six hundred rock geochem samples were collected by four students during September and October 1977. 68.7 miles of north-south grid lines were traversed at line spacings of 200' or 400'. The survey was the first attempt at systematically sampling a large geologic structure in the area with the intent of locating alteration pipes and stratigraphic horizons related to metal-exhalative processes. The survey succeeded in detecting base metal sulphides at the main volcanic sedimentary contact, and also confirmed the existence of other stratigraphic horizons.

THE FALCONBRIDGE COPPER 1978 ROCK GEOCHEM PROGRAM

The purpose of the subject program was to detail 1977 geochemical anomalies on the north limb of a major easterly trending syncline. The trace, known and inferred, of the King H.E.M. conductor lies in close proximity to many of the 1977 rock geochemical anomalies. Samplers were issued reduced Xerox copies of 1" = 100' geological maps to assist in locating outcrops. Every attempt was made to sample new locations rather than resample 1977 stations, hence the relatively low number of samples. In volcanic sequences attempts were made to sample pillow selvages and/or interstices. Weathered rind material was trimmed off all samples. Average sample weight ranged from 0.50 lb. to 0.75 lb.

Primary crushing was achieved by passing each sample through jaw and cone crushers. A riffle table was used to half each sample. The reject portion is permanently stored. The remaining half was pulverized to approximately 160 mesh. One gram of pulp was used for base metal determinations. Pulps are perma-

nently stored.

Each of the 53 samples was analyzed for copper, lead and zinc in the Assay Laboratory of the Company's Lake Dufault Division, Noranda, Quebec. A total of 159 determinations were made by atomic absorption methods. Sample decomposition was achieved by adding 15 ml. of concentrated nitric acid and a few drops of bromine to each gram of pulp. The solution was placed on a hot plate to drive off the bromine. 10 ml. of concentrated hydrochloric acid were added followed, after about 5 minutes, by a further 5 ml. of concentrated hydrochloric acid. The mixture was evaporated to dryness and allowed to cool. 5 ml. of hydrochloric acid and 10-15 ml. of water were added to dissolve the residue and the solution allowed to stand for 15 minutes. Finally 2 ml. of 5% lanthanum chloride solution were added and the solution bulked to 100 ml. with demineralized water.

RESULTS

Chemical data was averaged on an IMB 370 computer, but the sample base proved too small and too anomalous. Table 1 lists the multi-element statistics for the 1977 surface rock survey. Contour intervals were selected as follows:

- contour interval 1 = geometric mean
- contour interval 2 = geometric mean x deviation coefficient
- contour interval 3 = geometric mean x deviation coefficient x deviation coefficient
- contour interval 4 = geometric mean x deviation coefficient³
- contour interval 5 = geometric mean x deviation coefficient⁴

Detailing succeeded in enhancing existing anomalies. Major coincidental anomalies are briefly discussed below.

1. North central portion of claim L-442482. Mafic dykes intrude tholeiitic pillow lavas. Rusty pillow selvages and gossans have been exposed, but stripping is difficult due to the depth of overburden. Outcrop is rare.

APPENDIX A

NAMES AND ADDRESSES OF SAMPLING PERSONNEL

Mr. George Staszak
487 Murdoch Avenue
Noranda, Quebec

Mr. Don MacNeil
49 18th Street
Noranda, Quebec

Mrs. Marylin Bankowski
c/o Geology Department
University of Western Ontario
London, Ontario

Mr. Joe Bankowski
c/o Geology Department
University of Western Ontario
London, Ontario

TABLE 1

MULTI-ELEMENT STATISTICS

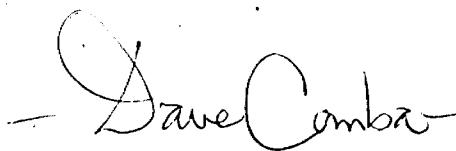
LARDER LAKE 1977 SURFACE ROCK GEOCHEM

MEASURE	ELEMENT	NUMBER	MINIMUM	MAXIMUM	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	DEVIATION COEFFICIENT
ppm	Copper (Cu)	600	12.00	2710.00	95.4	165.22	69.76	1.9792
ppm	Zinc (Zn)	600	16.00	6000.00	104.92	260.76	73.53	1.9775
ppm	Lead (Pb)	600	2.00	268.00	17.37	26.20	12.14	2.1195

2. Northwest corner of claim L-476663, immediately north and east of a small westerly trending pond. The King H.E.M. conductor underlies the pond. Outcrop rare.
3. Southwest corner of claim L-476663. Roughly east-west trending copper zinc values with minor lead. Confused H.E.M. conductors due to numerous intercalated screens of graphite-rich sediments.
4. Northeast corner of claim L-476600. King H.E.M. conductor and conductors associated with the main volcanic sediment interface on the property exist in close proximity. Gossans numerous in all rock types. Volcanic rocks in situ brecciated. Outcrop lacking in key areas.

CONCLUSIONS

The subject survey succeeded in enhancing and delineating anomalous zones first detected in 1977. Additional bedrock geochem data points can only be attained by coring or mechanical stripping.



Dave Comba, MSc.
Geologist
Falconbridge Copper Limited
Exploration Division



32D04SE0280 63.3567 HEARST

050

MEAP KL-105

1978 - 1979

DRILL PROGRAM

on the

LARDER LAKE PROPERTY

of

FALCONBRIDGE COPPER LIMITED

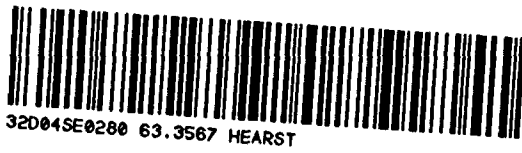
by

Dave Comba MSc.

N.T.S. 32 D-4

Noranda, Quebec

February, 1979



050C

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SUMMARY

Nine AQ and BQ diamond drill holes were completed for 4912 feet. A tenth hole was abandoned in overburden at 85 feet after repeated water line problems.

AQ hole LL 77-3A was drilled on claim L-476663 McElroy Township in late February 1978, after hole LL 77-3 was abandoned at 95 feet in December 1977.

AQ holes LL 78-1 to LL 78-6 are located on claims L-92592 and L-447513 Hearst Township. Hole LL 78-4 was abandoned (temporarily?) at 85 feet. BQ holes LL 78-10 to LL 78-12 are located on claim L-92592 Hearst Township. All "78" prefixed holes were drilled between December 1st 1978 and January 31st 1979.

No base metal sulphides of a commercially exploitable nature have been discovered. Total footage of the subject drill holes 5627 feet. AQ holes (3585') were drilled by McKnight Diamond Drilling, Haileybury, Ontario. BQ holes (2042') were drilled by Hosking Diamond Drilling, Noranda, Quebec.

INTRODUCTION

Semi-massive to massive sulphides, principally pyrite and pyrrhotite, occur in graphitic horizons interbedded with volcanic flows and sediments. Significant concentrations of sphalerite, chalcopyrite and galena may occur with graphite-rich sediments or late calcitic veinlets. In situ brecciated and altered volcanic rocks frequently occur in the footwall of the main volcanic-sediment interface. Sulphides are assumed in part to be related to metal-exhalative processes or remobilizations from accumulations originally deposited by such processes.

Ten holes totalling 5627 feet tested geologically favorable environments and geophysical conductors in McElroy and Hearst Townships.

LOCATION AND ACCESS

The claim group is situated on the southwestern outskirts of the Larder Lake Townsite. Highway 624 between Englehart and Larder Lake passes within 100 feet of the easternmost claim. The north boundary lies from 1500 to 5000 feet south of Highway 66 to Kirkland Lake. Access for the subject drill program in McElroy Township was made via an old lumber road that joins Highway 66 from the south, approximately 600 feet east of the Mesima River bridge. Access for the drilling in Hearst Township was made via an old lumber road that joins Highway 66 from the south, approximately 1000 feet west of the Larder Lake Townsite.

TOPOGRAPHY AND VEGETATION

A north trending esker ridge dominates the east end of the claim group. The ridge slopes steeply to the east and is utilized by a local ski club. To the west the esker slopes gradually to the township boundary. West of the boundary the area is characterized by gently undulating hills and broad flat swampy areas. A few larger hills with steep cliff-like slopes are present south and northeast of Grassy Lake. The west end of the

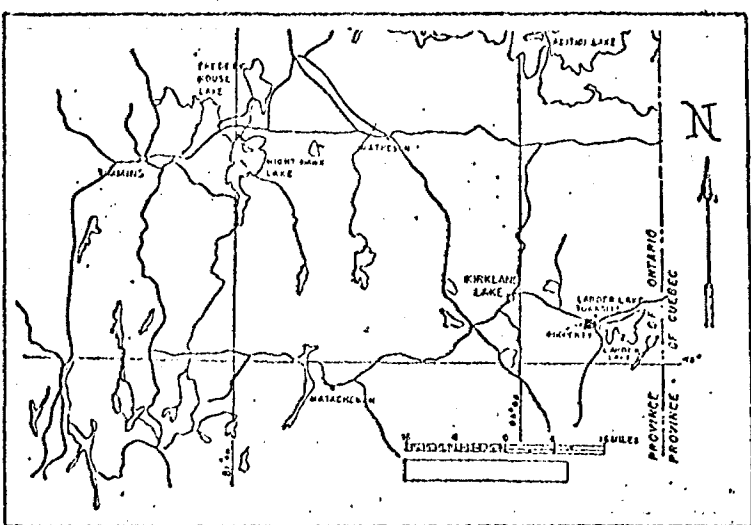
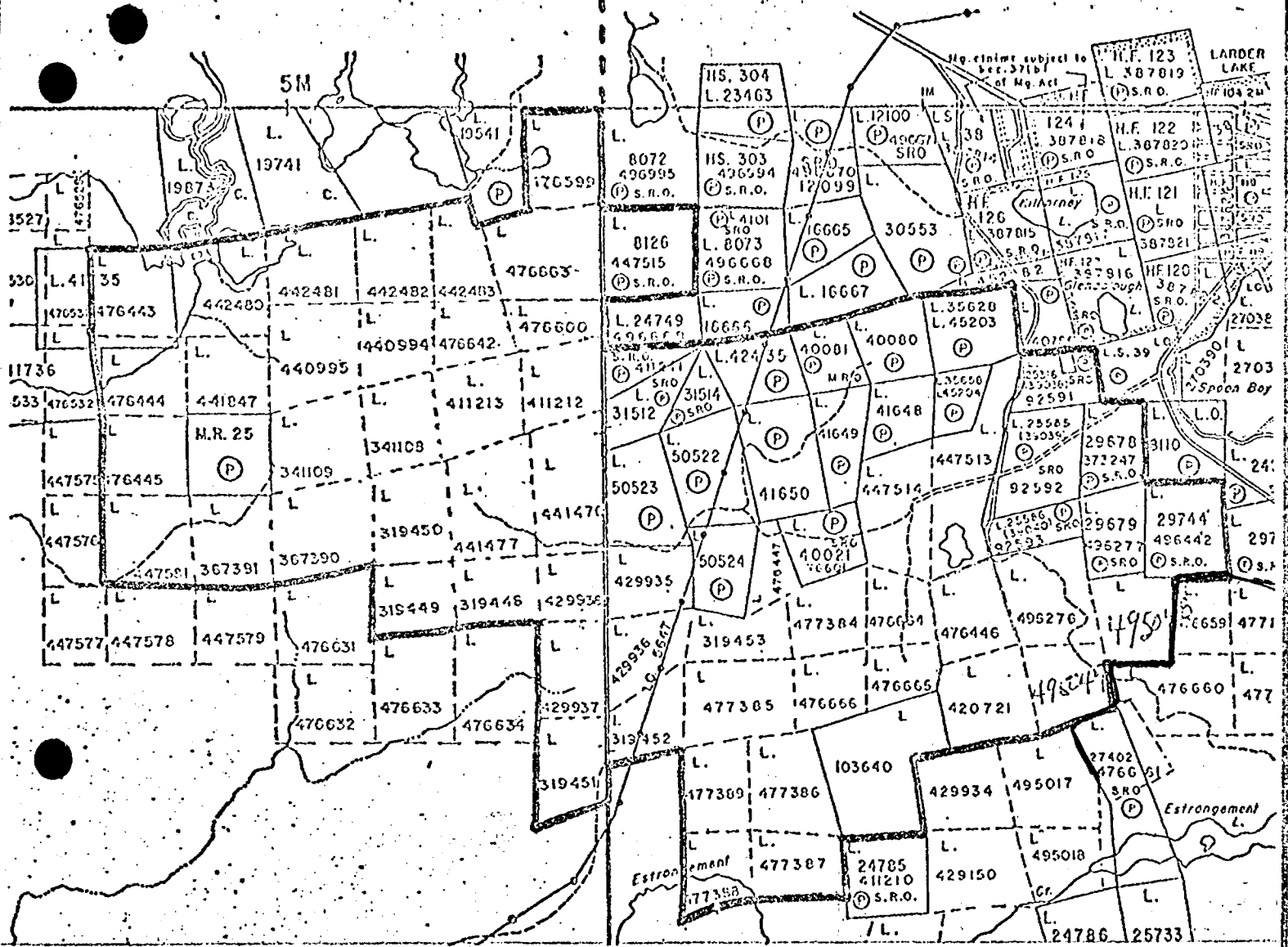


FIGURE 1
CLAIM MAP
LARDER LAKE
PROPERTY

1" = 40 CHAINS

LOCATION MAP

D. Comba 28/12/78

property is covered by a wide shallow section of the Mesima River, aptly named Grassy Lake. Topographic relief on the claim group does not exceed 200'.

The entire area is heavily forested with secondary growth spruce, hemlock, and cedar in wet areas and with balsam, pine, poplar and birch occurring on the better drained slopes. Bedrock exposures account for only 10% of the total area and 90% of these exposures are overgrown with moss.

PROPERTY

The following optioned and staked claims form a contiguous block of 71 claims in Hearst and McElroy Townships, Ontario:

(1) Lowe Group	46
(2) Croxall Group	11
(3) Cunningham Group	2
(4) The Hudson Bay Mines Ltd's. MR-25	1
(5) Falconbridge Copper Limited group	<u>11</u>
	71

The subject drill program was completed on three claims from two claim groups.

<u>CLAIM GROUP</u>	<u>TOWNSHIP</u>	<u>CLAIM</u>	<u>HOLE NUMBER</u>	<u>FOOTAGE</u>
Falconbridge	McElroy	L-476663	LL 77-3A	625'
Lowe	Hearst	L-447513	LL 78-1	401'
Lowe	Hearst	L-92592	LL 78-2	411'
Lowe	Hearst	L-447513 and L-92592	LL 78-3	886'
Lowe	Hearst	L-92592	LL 78-4	85'
Lowe	Hearst	L-92592	LL 78-5	701'
Lowe	Hearst	L-92592	LL 78-6	476'
Lowe	Hearst	L-92592	LL 78-10	478'
Lowe	Hearst	L-92592	LL 78-11	662'
Lowe	Hearst	L-92592	LL-78-12	<u>902'</u>
				5627'

PREVIOUS WORK

At least 69 drill holes are known or are reported to have been drilled on the property. Logs exist in assessment files for approximately two-thirds of the holes. Core from FALCONBRIDGE COPPER LIMITED holes is stored at the Norbec Mine site, Noranda, Quebec. Some core from the AMAX drilling in the late 60's is stored at Lowe's Camp on claim L-40080 (P) Hearst Township, but is in poor condition. All remaining core has been lost. FIGURE 2 indicates the location of the majority of the holes.

THE FALCONBRIDGE COPPER 1978-79 DRILL PROGRAM

In McElroy Township AQ hole LL 77-3A was redrilled from a slightly different position than hole LL 77-3 (abandoned at 95', December 1977). LL 77-3A was collared February 22nd, 1978 and drilled to 625' by month end. This hole completed the winter drill program of 1977-78.

Between December 1st 1978 and January 31st 1979 nine AQ and BQ holes were completed for 4912 feet in Hearst Township. A tenth hole was abandoned in overburden (85 feet) until warmer weather permits extended water lines. Three additional holes were deferred pending a comprehensive evaluation of results. All holes were targeted on an H.E.M. conductor tested by AMAX in 1969 and 1970 (two holes).

Total footage for the subject drill holes is summarized as follows:

<u>AQ HOLE NUMBER</u>	<u>FOOTAGE</u>	<u>CLAIM(S)</u>	<u>TOWNSHIP</u>	<u>REMARKS</u>
LL 77-3A	625'	L-476663	McElroy	Redrilling LL 77-3
LL 78-1	401'	L-447513	Hearst	
LL 78-2	411'	L-92592	Hearst	
LL 78-3	886'	L-447513 and L-92592	Hearst	
LL 78-4	85'	L-92592	Hearst	Abandoned in overburden. Filed as Manual work
LL 78-5	701'	L-92592	Hearst	

<u>AQ HOLE NUMBER</u>	<u>FOOTAGE</u>	<u>CLAIM(S)</u>	<u>TOWNSHIP</u>	<u>REMARKS</u>
LL 78-6	476'	L-92592	Hearst	
LL 78-7				Deferred ✓
LL 78-8				Deferred ✓
LL 78-9				Deferred ✓
<u>BQ HOLE NUMBER</u>	<u>FOOTAGE</u>	<u>CLAIM</u>	<u>TOWNSHIP</u>	<u>REMARKS</u>
LL 78-10	478'	L-92592	Hearst	
LL 78-11	662'	L-92592	Hearst	
LL 78-12	902'	L-92592	Hearst	

All AQ holes, 3585 feet, were drilled by McKnight Diamond Drilling, Haileybury, Ontario. BQ holes, 2042 feet were drilled by Hosking Diamond Drilling, Noranda, Quebec.

RESULTS

AQ Holes LL 77-3A

Location : Latitude 49+15N
 Departure 10+75W
 Azimuth 160°
 Dip 60°
 Depth 625'

Drilled to replace hole LL 77-3. Tested H.E.M. conductor between komatiitic footwall and tholeiitic hangingwall. Intersected graphitic beds intercalated with thin to massive bedded wacke sediments. Graphitic sections contain anomalous concentrations of base metals, principally zinc.

"78" Prefixed AQ and BQ holes

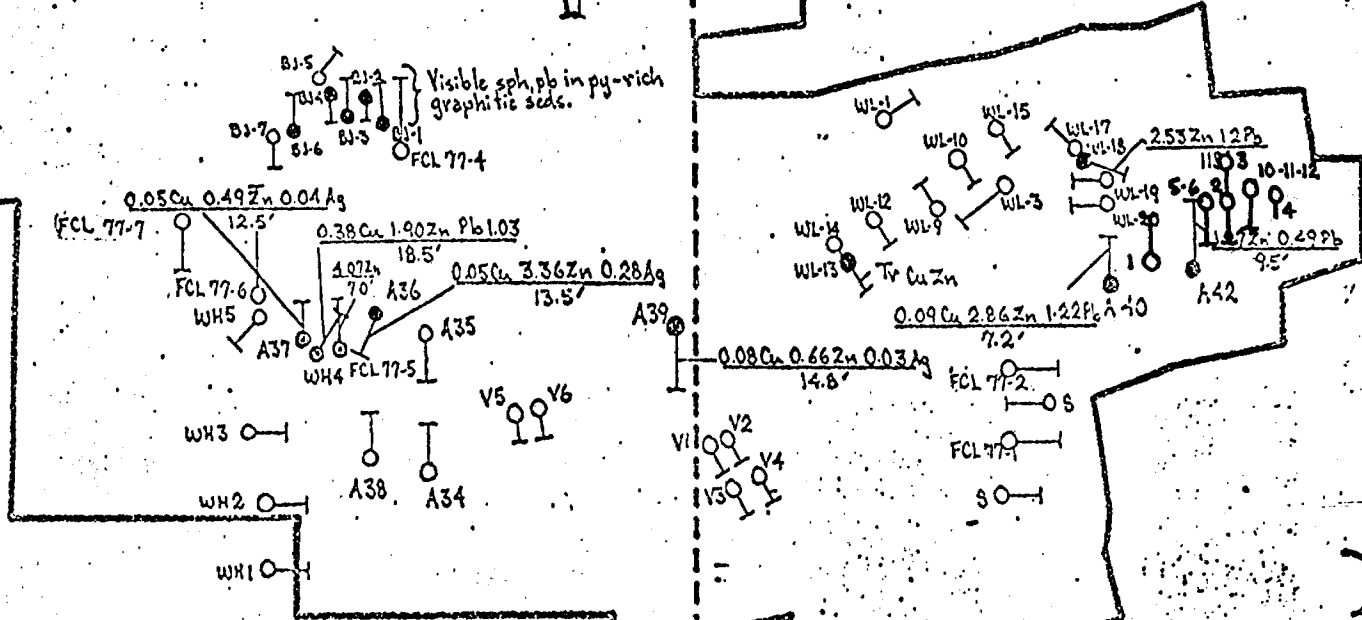
All holes were directed at a roughly east-west trending, mainly steeply north dipping H.E.M. conductor. Two holes drilled into the conductor by AMAX in 1969 and 1970 intersected interesting basemetal values. The nine FALCONBRIDGE COPPER LIMITED holes that cored bedrock intersected massive graphite and carbonaceous sediments intercalated between mafic tholeiitic lavas. Pillow breccias south of the graphitic zone in the structural footwall, are more intensely brecciated than pillow lavas in the structural hangingwall. Brecciation is partly of an in situ nature. Matrix areas in the in situ brecciated and pillow brecciated lavas are

GAUTHIER
McELROY

McVITTIE
HEARST

3A FCL 77-3 (Abandoned)
FCL 77-3A (Proposed)

Visible sph, pb in py-rich
graphitic seqs.



LEGEND

- ⊙ ddh intersection of interesting sulphides
- S - SISCOE 1940
- BJ - BIG JACKPOT MINES LTD 1957.
- WH - WRIGHT HARGREAVES 1954-55.
- WL - WATLING LARDER MINES 1950-51
- V - VITRO MINERALS 1962
- A - AMAX EXPLORATION 1968
- FCL - FALCONBRIDGE COPPER LTD
- FCL DRILLING 1978-1979 MEAP CONTRACT KL-105

SCALE
1530
2640
DATE October 25/77

LARDER LAKE PROJECT
DRILL COVERAGE

FALCONBRIDGE COPPER LIMITED
LAKE DEFAULT DIVISION

DRAWN D. Comba
Revised February 10/78
APPROVED

FIGURE 2

relatively chlorite-rich. Thin chloritic zones may also occur within the sedimentary rocks. Tuffaceous matter forms a minor part of the sequence. All rocks including numerous mafic (dioritic) and lamprophyre dykes are pervasively carbonated to varying intensities. Pyrrhotite is frequently associated with chloritic hyaloclastite-rich screens in the footwall pillow breccias adjacent to the carbonaceous sediments, but may also occur as fine disseminations, streaks and smears in mafic dykes and graphite-rich sediments respectively. Pyrite may occur in the same rock types and habits as pyrrhotite, but also forms massive nodules and beds of nodules up to five feet thick. Anomalous concentrations of basemetals, principally zinc may occur in all rock types. Base metal minerals such as chalcopyrite, sphalerite and galena occur as disseminations and fracture fillings, the latter commonly associated with a carbonate gangue. Silver varies directly with copper content. Gold values rarely exceed 0.001 troy ounces/TON.

AQ Hole LL 78-1

Location :	Latitude	15+50N
	Departure	60+00E
	Azimuth	360°
	Dip	60°
	Depth	401'

AQ Hole LL 78-2

Location :	Latitude	18+00N
	Departure	68+00E
	Azimuth	180°
	Dip	60°
	Depth	411'

AQ Hole LL 78-3

Location :	Latitude	23+00N
	Departure	68+00E
	Azimuth	180°
	Dip	60°
	Depth	886'

AQ Hole LL 78-4

Location :	Latitude	19+00N
	Departure	72+00E
	Azimuth	180°
	Dip	60°
	Depth	85' (abandoned)

AQ Hole LL 78-5

Location : Latitude 17+65N
 Departure 66+00E
 Azimuth 180°
 Dip 75°
 Depth 701'

AQ Hole LL 78-6

Location : Latitude 17+65N
 Departure 66+00E
 Azimuth 180°
 Dip 60°
 Depth 476'

BQ Hole LL 78-10

Location : Latitude 19+50N
 Departure 70+00E
 Azimuth 180°
 Dip 45°
 Depth 478'

BQ Hole LL 78-11

Location : Latitude 19+50N
 Departure 70+00E
 Azimuth 180°
 Dip 60°
 Depth 662'

BQ Hole LL 78-12

Location : Latitude 19+50N
 Departure 70+00E
 Azimuth 180°
 Dip 75°
 Depth 901'

CONCLUSIONS

No base metal sulphides of a commercially exploitable nature have been cored, although the geological environment is interesting.

Dave Comba

Dave Comba, MSc.
 Geologist
 Falconbridge Copper Limited
 Exploration Division

APPENDIX A

Correspondence pertaining to the filing of Larder
Lake AQ drill hole LL 77-3A

ACCOMPANYING DRILL LOGS

LL 78-1	Plan and Section	1" = 100'
LL 78-2	Plan and Section	1" = 100'
LL 78-3	Plan and Section	1" = 100'
LL 78-4	Plan and Section	1" = 100'
LL 78-5	Plan and Section	1" = 100'
LL 78-6	Plan and Section	1" = 100'
LL 78-10	Plan and Section	1" = 100'
LL 78-11	Plan and Section	1" = 100'
LL 78-12	Plan and Section	1" = 100'

A drill log, plan and section for hole LL 77-3A were submitted in duplicate for assessment work on January 8th, 1979, and are not included in this report. Correspondence regarding hole LL 77-3A is included in Appendix A.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE
HOLE NO. LL78-1 PAGE NO. 1

DRILLING COMPANY MCKNIGHT DIAMOND DRILLING		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH 360	TOTAL FOOTAGE 401	DIP OF HOLE AT COLLAR 60°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM #3 POST L447513	MAP REFERENCE NO. 32 D/4	CLAIM NO. L 447513
DATE HOLE STARTED December 1 st 1978	DATE COMPLETED December 6 th , 1978	DATE LOGGED December '78	LOGGED BY D. Comba	45 ft 59	200 ft 55		LOCATION (Tp., Lot, Con. OR Lat. and Long.) HEARST TOWNSHIP	
EXPLORATION CO., OWNER OR OPTIONEE FALCONBRIDGE COPPER LIMITED		DATE SUBMITTED February '79	SUBMITTED BY (Signature) <i>Dave Comba</i>	400 ft 50	ft		PROPERTY NAME LARDER LAKE PROJECT	

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO				
0.0	40.0	OVERBURDEN	Sand with minor gravel component							SiO ₂ %	TiO ₂ %	% Mg
40.0	224.0	IN SITU BRECCIATED PILLOW BRECCIA	Medium grey green 40.0 to 200.0, medium to light grey green 200.0 to 224.0 (bleached) Dark green black veining 40.0 to 224.0 with odd short light green-grey shard-rich section. White veinlets 4-7% 40.0 to approximately 200.0 then 7-10% to 224.0. Thin irregular screens of shaly hyaloclastite 5-10% of rock. In situ brecciation results in angular clasts that can frequently be visually reconstructed back to an unfractured massive lava. Angular clasts range from grit to cobble in size. More rounded discrete clasts resemble normal products of brecciated pillows. Matrix areas to clasts and shards is chlorite-rich. Clasts aphanitic. Chlorite fine grained. Carbonate metamorphism increases in intensity down hole. Contacts gradational at 200.0, but pervasively carbonated rocks are bleached. Silica enrichment possible, especially in bleached sections. White veinlets are carbonate-rich, minor to trace amounts of quartz. Pyrite content 40.0 to 110.0 3-4% of rock. 1% or less occurs as fine wispy tendrils in hyaloclastite-rich screens. 2-3% of pyrite occurs in fractures which frequently coalesce into mesh-like patterns. Pyrite content may exceed 30% over odd section not larger than 0.5 feet. Total iron sulphide content remains approximately the same, but pyrrhotite gradually increases at the expense of pyrite down hole. Po/Py ratio 8:1 200.0 to 224.0. Trace of chalcopyrite in pyrrhotite-rich zones. Volcanics probably tholeiitic basalts, but are carbonate metasomatized and possibly silicified. Mafic and/or lamprophyre dykes: 99.5 to 101.0, 113.5 to 115.8, 132.3 to 134.5, 145.5 to 147.9, 153.7 to 156.3 (with inclusions of host), 159.0 to 162.0, 177.3 to 180.6 and 186.2 to 187.0	45°-50°		15444	49.0	59.0	10.0	58.1	1.78	0.93
						45	183.0	193.0	10.0	53.8	1.63	1.43
						18113	70.0	75.0	5.0	154	320	5.05
						14	75.0	80.0	5.0	138	128	5.97
						15	80.0	85.0	5.0	168	400	6.28
						16	111.0	111.8	0.8	258	434	7.63
						17	143.5	145.5	2.0	145	109	7.50
						18	222.5	224.5	2.0	183	490	8.80
224.0	243.5	SHEARED IN SITU BRECCIATED LAVA AND OR WACKE SEDIMENT WITH PYRRHOTITE AND MASSIVE PYRITE BED	Light and medium grey banding with thin intercalations of dark grey, grey black and bronze. Aphanitic to fine grained (clastic). Banding at approximately 45° to C.A. due to bedding and/or shearing. Moderate to strong carbonate metasomatism plus silicification. 5-10% free carbonate as veinlets in a bleached host. 10-15% chlorite, much higher in some bands. Total sulphide 5-10% 224.0 to 241.0 with Po/Py ratio of 8:1. Total sulphide 20-25% 241.0 to 243.5 with Po/Py ratio of 1:8. 75% massive nodular pyrite 242.0 to 242.3.	45°		18119	226.0	231.0	5.0	142	470	9.90
						20	231.0	236.0	5.0	133	640	8.97
						21	236.0	241.0	5.0	170	880	10.97
						22	241.0	243.5	2.5	490	235	14.85
243.5	262.2	CARBONATED MAFIC DYKE	Medium green-grey. Fine to medium grained. Gabbroic, moderate to strongly carbonate metasomatized. 2-3% free carbonate in fractures. 4-5% disseminated pyrite with concentrations adjacent to chill zones. Inclusions 244.2 to 244.6, 255.5 to 260.6, 260.5 to 260.8									

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. **U78-1** PAGE NO. **2**

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)	PROPERTY NAME
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft			
					ft			

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE*	CORE SPECIMEN FOOTAGE †	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS †		
							FROM	TO		SiO ₂ %	TiO ₂ %	% Mg
262.2	272.2	SULPHIDIC GRAPHITE WITH ALTERED VOLCANICLASTIC	Bands and streaks of light grey, black, bronze, medium to dark grey. Aphanitic to fine grained. Volcaniclastic 262.2 to 263.2 silicified (?) and sheared at 75° to C.A. Massive to thinly bedded and frequently contorted graphite-rich sediment 263.2 to 268.0 and 271.7 to 272.2. Weakly sheared in situ brecciated mafic lava 268.0 to 271.7. Carbonated. 3-4% white carbonated filled fractures overall; 5-10% carbonate veinlets 271.7 to 272.2. 20% iron sulphides, mainly pyrrhotite, 262.2 to 263.2. 15-20% iron sulphide, py/Po ratio 1:1 263.2 to 268.0. 5-10% sulphide Po/Py ratio 8:1 268.0 to 271.7. 15%-20% total sulphide 271.7 to 272.2 with 2 Po/Py ratio of 3:2.	75°		15446	262.2	263.2	1.0	62.6	0.34	0.37
						18123	263.2	266.2	3.0	98	1430	4.07
						24	266.2	268.0	1.8	115	2400	7.55
						25	268.0	271.7	3.7	165	520	8.47
						26	271.7	272.2	0.5	335	2610	7.25
272.2	332.6	ANDESITIC VOLCANICLASTIC	Light to medium green-grey with dark green black veining. Aphanitic. Massive in situ brecciated but not to the same intensity as sections 40.0 to 243.5 Chlorite-rich veinlets less than 5-6%. Shearing at 40-45° to C.A. in relatively chloritic brecciated zones and possible screens of pebbly (lapilli) interflow volcaniclastic sediments. Weak carbonate metasomatism. 3-5% free carbonate less than 1% total iron sulphide Po/Py-8:1	40°-45°		15447	274.0	284.0	10.0	49.7	1.09	1.94
332.6	333.4	SULPHIDIC GRAPHITE	Black with bronze cast. Aphanitic. Bedding vague or absent. Carbonate veinlets 5-10%. Very finely disseminated pyrrhotite 25-30%. Trace chalcocryrite			18127	332.6	333.4	0.8	620	400	16.50
333.4	401.0	ANDESITIC VOLCANICLASTIC	Similar to section 272.6 to 332.6. Mafic dykes: 341.0 to 341.5, 352.0 to 357.1 and 389.4 to 391.4.			15448	391.4	401.0	9.6	48.1	1.15	1.80

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

† Additional credit available. See Assessment Work Regulations.

LATITUDE

FEBRUARY 1979

SCALE 1" = 100'

14 N

15 N

16 N

17 N

18 N

19 N

20 N

0

0

100

100

200

200

300

300

400

400

500

500

ELEVATION

LEGEND



Mafic dyke



Tholeiitic lava, pillowed fractured



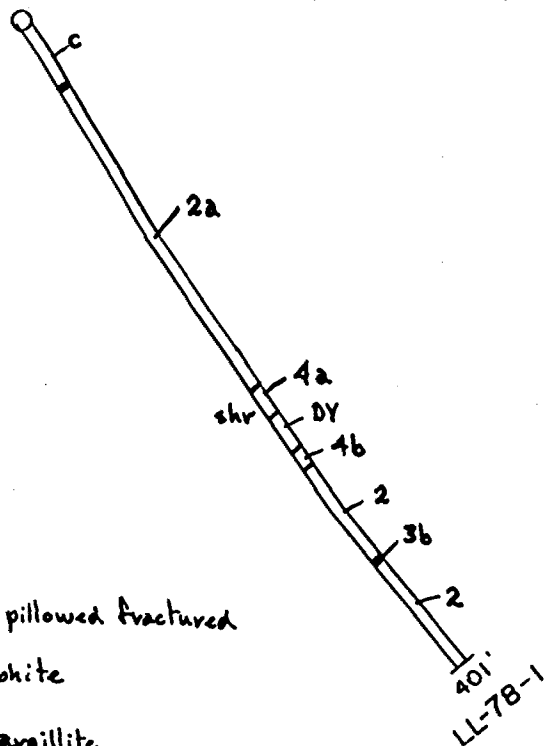
Sulphidic graphite



Sulphide-rich argillite



Tholeiitic in situ brecciated pillow lava

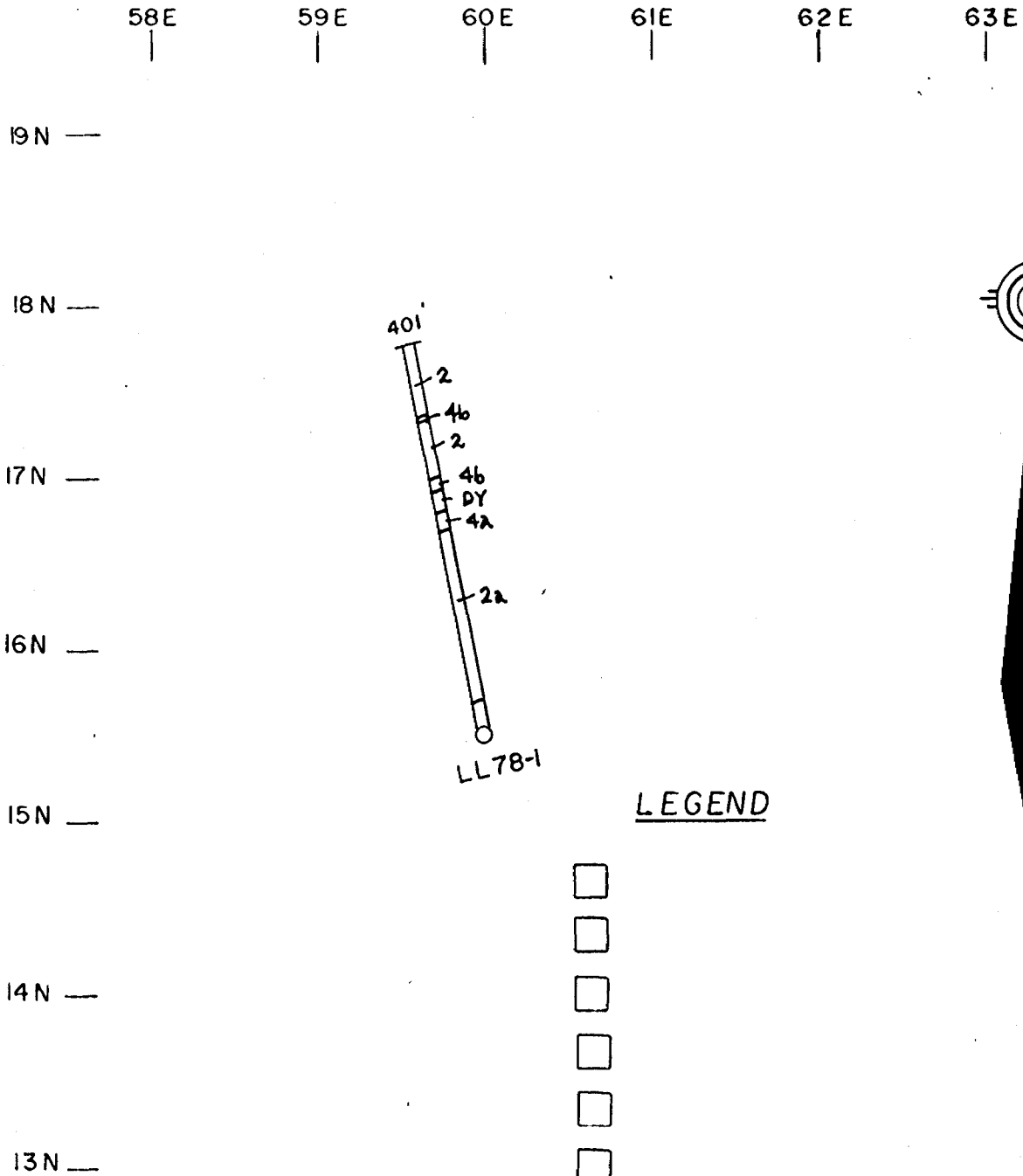


SECTION 60+00 E

FEBRUARY 1979

SCALE 1" = 100'

DRAWN BY R. SAVARD



LARDER LAKE PROJECT

PLAN VIEW

HEARST TOWNSHIP

CLAIM L 447513



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE
HOLE NO. LL78-2
PAGE NO. 1

DRILLING COMPANY McKNIGHT DIAMOND DRILLING		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH 180°	TOTAL FOOTAGE 411	DIP OF HOLE AT collar 60	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM #3 POST N L 92592 760' LL 78-2 130°	MAP REFERENCE NO. 32 D/4	CLAIM NO. L 92592
DATE HOLE STARTED December 9 TH 1978	DATE COMPLETED December 14 TH , 1978	DATE LOGGED December '78	LOGGED BY D. Comba	80 ft 54	NOTE: Claimline has north easterly trend.		LOCATION (Tp., Lot, Con. OR Lot. and Long.) HEARST TOWNSHIP	
EXPLORATION CO., OWNER OR OPTIONEE FALCONBRIDGE COPPER LIMITED		DATE SUBMITTED February '79	SUBMITTED BY (Signature) <i>Dave Comba</i>	275 ft 50			410 ft 47	PROPERTY NAME LARDER LAKE PROJECT

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE †	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS †		
							FROM	TO		SiO ₂ %	TiO ₂ %	% Mg
0.0	75.0	OVERBURDEN	Sand occasional boulder			15449	80.0	90.0	10.0	54.0	1.82	1.47
75.0	213.0	WEAKLY IN SITU BRECCIATED AND-ESITIC VOLCANIC CLASTIC AND PILLOWED LAVA	Light to medium green-grey with green black hairline veinlets. Medium grey section 151.3 to 155.0 speckled with flechy pink. Aphanitic lavas, fine grained dykes. In situ brecciated but not to the same intensity as pillow breccias below 300.0'. Distinct foliation at 45° to C.A., but shearing as low as 30°. Shearing increases noticeably after 155.0 to a maximum at 213.0. Occasional shaly thaloclastite screens are probably pillow selvages (eg) 122.8 to 123.5, 130.5 to 131.0, 131.5 to 131.8 etc. Rounded Yapilli-sized pebbly screens of inter-flow breccia or sediment: 80.0 to 89.0, 97.0 to 98.0, 99.5 to 102.0 and 164.6 to 166.6. 10-12% white carbonate 75.0 to 151.3, 2-3% free white carbonate 151.3 to 155.0 8-10% white carbonate 155.0 to 213.0. Carbonate metasomatism weak at top of intersection but increases irregularly down hole. Section 194.0 to 209.0 is bleached. Some silicification may be present as well. Chlorite 5-7% overall, but many tiny fractures are strongly chloritized for 1-2mm into host lava. Pyrite less than 1-2% overall but increases down section. Hyaloclastite screens often contain semi-massive to massive filaments of pyrite, up to 10% by volume over short sections. Caving 116.5 to 118.5. Fractured broken core 133.0 to 134.3 and 143.5 to 144.0. Mafic and/or lamprophyre dykes: 131.8 to 133.0 and 151.3 to 155.0	45°		50	176.0	186.0	10.0	51.7	1.77	2.06
						18128	147.7	151.3	3.6	ppm Zn	ppm Pb	% Fe
						29	155.0	160.0	5.0	228	44	7.53
						30	160.0	165.0	5.0	295	60	5.92
						31	186.0	191.0	5.0	154	50	6.36
						32	204.0	209.0	5.0	400	115	6.73
						33	209.0	210.0	1.0	153	520	7.80
						34	210.0	213.0	3.0	560	1140	7.37
										278	325	7.47
213.0	268.0	SULPHIDIC GRAPHITE	Black and medium grey banded, white streaks brassy spots. Aphanitic banding in part bedding and in part related to shearing at 40° to 55° to C.A. Tigmatic folds 227.0 to 228.0. Numerous dioritic dykes with contacts ranging from 30° to 80° to C.A.: 219.0 to 219.5, 222.3 to 222.9; 224.7 to 224.9, 233.2 to 234.3, 241.8 to 242.2, 253.7 to 254.5, 256.3 to 256.7 and 262.5 to 263.4. 10-12% white calcitic veinlets, some tigmatically folded. Pyrite present as very fine grained component (sulphidic mud), as nodules and as massive beds 215.8-216.0 and 216.6-216.7. It may also occur as fine disseminations >10% in mafic dykes, and as smears on bedding planes or shear planes. Disseminated reddish halerite in dyke 253.7 to 254.5 and calcitic veinlet (3cm) at 261.5. Minor intercalated sections of minor massive green black chlorite.	45°		18135	213.0	217.0	4.0	ppm Zn	ppm Pb	% Fe
						36	217.0	222.0	5.0	470	580	9.50
						37	222.0	227.0	5.0	273	167	8.25
						38	227.0	232.0	5.0	135	123	4.93
						39	232.0	237.0	5.0	150	173	7.65
						40	237.0	242.0	5.0	273	250	7.46
						41	242.0	247.0	5.0	185	88	6.66
						42	247.0	252.0	5.0	157	190	8.80
						43	252.0	254.5	2.5	1400	187	5.33
						44	254.5	259.5	5.0	4400	258	6.83
						45	259.5	262.0	2.5	890	400	7.15
						46	262.0	263.5	1.5	770	890	10.10
						47	263.5	268.0	4.5	425	818	9.78
										325	2800	8.63

† For features such as foliation, bedding, schistosity, measured from the long axis of the core.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE HOLE NO. LL78-2 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	ft			LOCATION (Tp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)	ft			PROPERTY NAME	
				ft				

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Zn	ppm Pb	% Fe
268.0	276.5	SHEARED IN SITU BRECCIATED MAFIC LAVA	Light to medium grey with green black veining, white streaks, brassy and reddish brown wisps and flecks. Aphanitic sheared in situ brecciated volcanic with thin screens of lighter green-grey hyaloclastite in a chloritic matrix. 10-15% chlorite-rich matrix overall. Gradational decrease down section from the graphitic contact. Weak to moderate pervasive carbonate metasomatism. 1-2% white carbonate in hairline fractures. Weak to moderate shearing at 30° to 50° to C.A. Mafic dyke 374.8 to 375.8. 4% pyrite, occurs mainly as wispy semi-massive filaments in hyaloclastite screens. Less than 2% sphalerite overall, but up to 4-5% in narrow hyaloclastite screens. Galena in veinlets and speckled throughout section.	30°-50°		18148	268.0	269.0	1.0	6400	37900	6.58
						49	269.0	274.0	5.0	7000	3600	7.90
						50	274.0	274.8	0.8	7400	3100	6.75
						51	275.8	276.5	0.7	30000	11900	5.30
276.5	314.0	LAMPROPHYRE DYKE	Medium grey cast, black and white speckled. Fine grained to medium grained. Mafic phenocrysts up to 2mm. Contacts irregular but average 45°. Weakly foliated 276.5 to 277.0. Pervasive carbonate alteration 10-12% free carbonate in veinlets at all angles to C.A.	45°						% SiO ₂	% TiO ₂	% Mg
314.0	409.6	IN SITU BRECCIATED PILLOW BRECCIA	Medium grey with green black veining. Brassy and bronze streaks. Aphanitic. Thin irregular screens with lighter green-grey wispy shard-like hyaloclastite in a chlorite-rich matrix. Hyaloclastite screens probably represent pillow selvages (10-15% of rock). Massive lava between the screens is brecciated. Much of this brecciation occurs as angular clasts with identical matching walls on adjacent clasts. Visually sections can frequently be reconstructed back to an unfractured whole. Chlorite-rich matrix areas increase in volume down hole from 15-20% (314.0 to 373.0) to 20-25% (373.0 to 409.6). Pervasive carbonate metasomatism is strong from 314.0 to 320.0, then gradually decreases down hole. Free white carbonate (vein gangue) 4-6%. <2% pyrite in hyaloclastite screens 314.0 to 373.0, and 1% associated with hairline fractures (often subhorizontal). Gradual increase in sphalerite down hole. Total iron sulphide 373.0 to 409.6 4-8%. Mafic dykes: 362.0 to 366.3 and 381.5 to 382.2. Dyke contacts at high angles to C.A. Fault at 404.0?	80°-85°		15502	328.0	338.0	10.0	55.5	2.06	1.38
						04	393.0	403.0	10.0	51.5	1.53	1.05
						18152	314.0	316.0	2.0	850	355	5.88
						53	373.0	378.0	5.0	455	60	9.90
						54	378.0	381.5	3.5	360	25	7.18
						55	382.2	387.2	5.0	343	28	8.67
						56	387.2	392.2	5.0	390	25	8.15
409.6	411.0	MAFIC DYKE	Medium grey mottled. Fine grained microdiorite. Upper contact fractured and at 30° to C.A. Carbonated. Negligible sulphides.							ppm Zn	ppm Pb	% Fe

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Key

LATITUDE

FEBRUARY 1979

SCALE 1" = 100'

14N

15N

16N

17N

18N

19N

20N

0

0

100

100

200

200

300

300

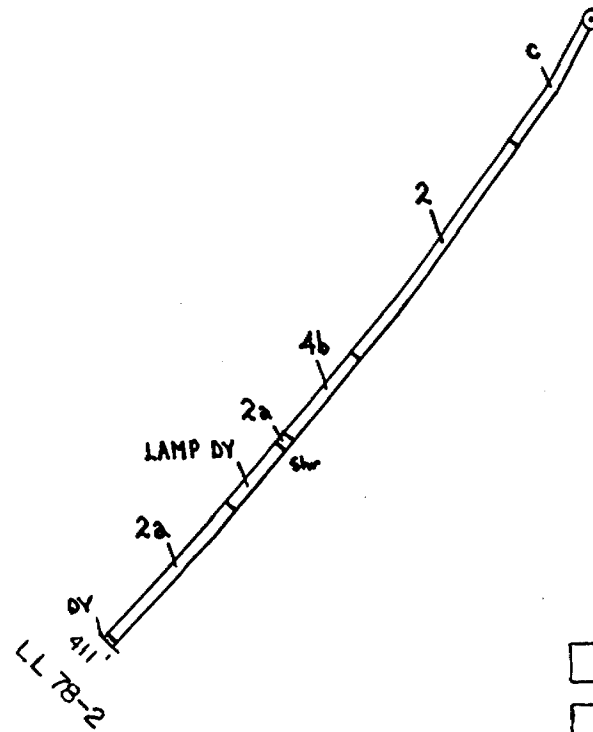
400

400

500

500

ELEVATION



LEGEND

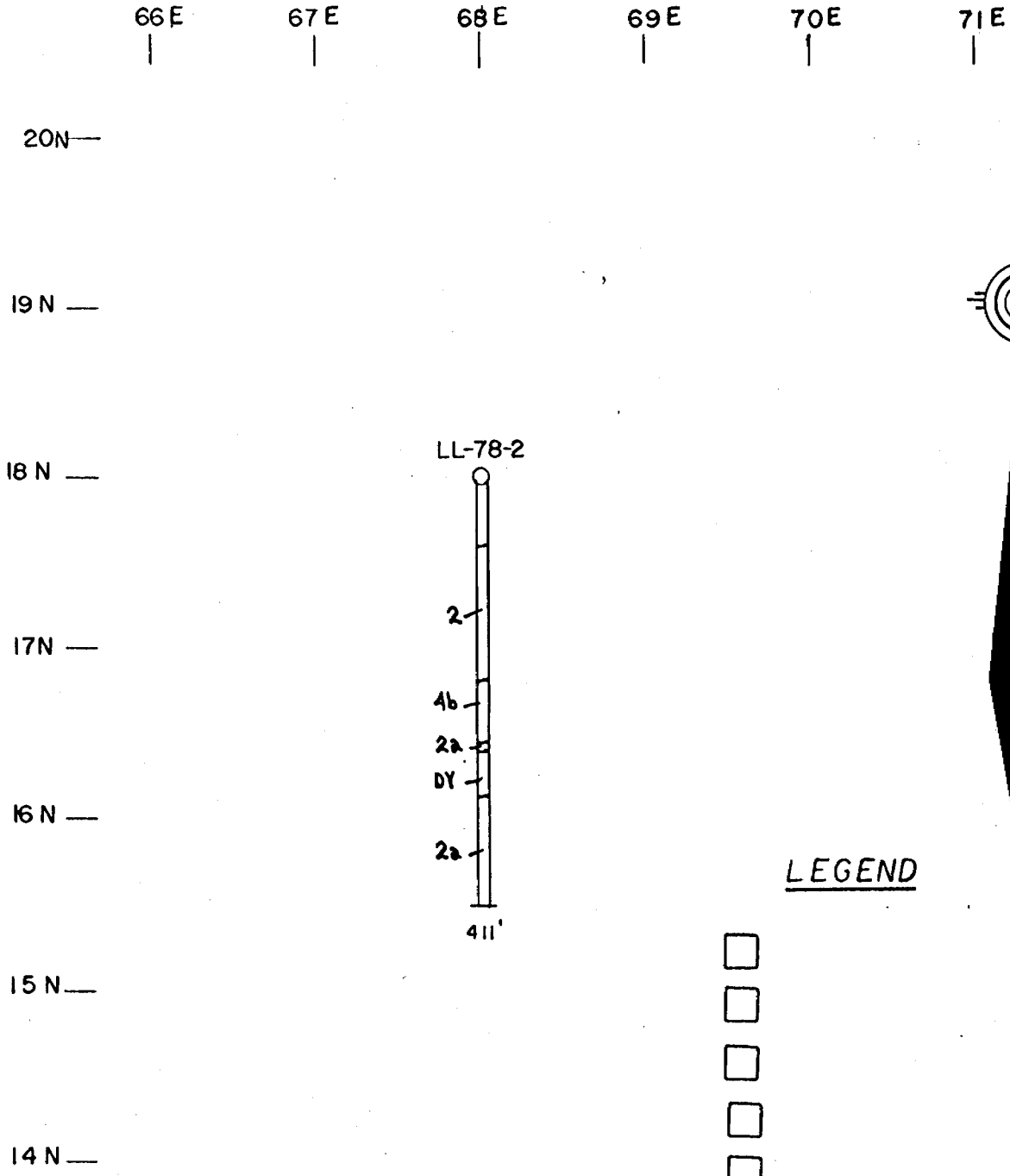
- Lamprophyre dyke
- Mafic dyke
- 4b Sulphidic graphite
- 4a Sulphide-rich argillite
- 2a Tholeiitic in situ brecciated pillow lava
- 2 Tholeiitic lava, pillowed, fractured

SECTION 68+00 E

FEBRUARY 1979

SCALE 1" = 100'

DRAWN BY R. SAVARD



LEGEND

-
-
-
-
-
-

LARDER LAKE PROJECT

PLAN VIEW

HEARST TOWNSHIP

CLAIM L 92592



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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HOLE NO. LL78-3 PAGE NO. 1

MILLING COMPANY MCKNIGHT DIAMOND DRILLING		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH 180°	TOTAL FOOTAGE 886	DIP OF HOLE AT collar 60°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM NOTE: Claim line has a north easterly trend #3 POST N L92592	MAP REFERENCE NO. 32 D/4	CLAIM NO. L447513 & L92592
HOLE STARTED December 15 th 1978	DATE COMPLETED December 30 th 1978	DATE LOGGED January 1979	LOGGED BY D. Comba	100 ft 57	LOCATION (Tp., Lot, Con. OR Lot. and Long.) HEARST TOWNSHIP		PROPERTY NAME LARDER LAKE PROJECT	
EXPLORATION CO., OWNER OR OPTIONEE FALCONBRIDGE COPPER LIMITED		DATE SUBMITTED February 1979	SUBMITTED BY (Signature) <i>Dave Comba</i>	300 ft 45				
				475 ft 30				
				885 ft 20				

FOOTAGE FROM TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE †	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS ‡
						FROM	TO		
0.0	90.0	OVERBURDEN							
90.0	744.0	ANDESITE							
		Light to medium green with numerous white bands at all angles to the C.A. Lavas are aphanitic. Mafic dykes are aphanitic to fine grained. Lamprophyre dykes may be fine to medium grained. Flow structures within the massive lavas are not well developed but amygdulites, pillow selvages and flow breccias are present. All rocks show evidence of carbonate metasomatism. Bleached portions of lava may also be silicified. Chlorite is developed adjacent to hairline fractures, and pervasively in shear zones. Pyrite averages 1% or less but short sections containing in excess of 1% are noted below:							
		90.0 to 99.7 - sheared amygdaloidal flows. Possibly pillowed, most intensely tectonized sections may be pillow selvages. 1-3% pyrite (scattered euhedral crystals up to 2mm) 8-10% free carbonate							
		99.7 to 125.7 - lamprophyre dyke, reacts vigorously to dilute HCl.							
		125.7 to 281.0 - sheared amygdaloidal andesite similar to 90.0 - 99.7. Shearing 20° to 45° to C.A. 1-2% pyrite. 3-4% hematite	20°-45°						
		237.0 to 247.0. 14-15% calcite filled fractures. Fractured and broken core 218.0 to 221.0.							
		281.0 to 342.5 - microdiorite dyke. Upper contact at 35° to 40° to C.A.. Lower contact at 20° to C.A. 3-5% free carbonate. Negligible sulphide	35°-40° 20°						
		342.5 to 354.0 - lamprophyre (?) dyke							
		354.0 to 422.9 - sheared amygdaloidal, possibly pillowed flows. Chlorite-rich shears (3-4% of total section) average 30° to 35° to C.A. <1% pyrite. Weak to moderate bleaching compared to sections 90.0 to 99.7 and 125.7 to 281.0 15-20% carbonate-rich veinlets. Numerous lamp dykes.	30°-35°						
		422.9 to 441.8 - altered and sheared mafic dyke 20-30% of rock foliated at approximately 45°. 5-6% free carbonate, strong pervasive carb.							
		441.8 to 458.0 - massive andesite, uniform, trace pyrite, 5-6% free carbonate							
		458.0 to 473.0 - flow breccia with majority of clasts having partially chilled margins. Clasts are light green and rounded, and are well supported in a medium green fine clastic matrix. Possibly represents spatter cone type "gloppy lava". 4-5% carbonate veinlets							

† Dip to core axis, or foliation, bedding, schistosity, measured from the long axis of the core.

‡ Additional assays should be made on...



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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HOLE NO. LL78-3 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)	PROPERTY NAME
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft			
				ft				
				ft				

FOOTAGE FROM TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE †	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS †			
						FROM	TO		% Cu	ppm Zn	% Fe	
		473.0 to 479.8 - sheared, pillowed (?) andesite. 4-5% carbonate veinlets <1% py										
		479.8 to 498.2 - gabbroic dyke, contacts at 75° to 85° to C.A. Chill zones pervasively carbonated 4-5% free calcite in hairline fractures and thin veinlets	75°-85°									
		498.2 to 531.2 - weakly sheared (60°-65° to C.A.), pervasively uniform 6-8% free carbonate. Possible fault in broken core 527-528.0	60°-65°									
		531.2 to 534.8 - mineralized mafic dyke. Appears felsic but soft. 4-5% free white carbonate stringers. <1% chalcopyrite as partings on numerous hairline fractures			18179	531.2	532.7	1.5	0.37	150	5.40	
					18180	532.7	534.8	2.1	0.25	125	6.55	
		534.8 to 588.0 - tectonized and dyked pillowed andesite. Shearing at low core angles 12-15% free carbonate in veinlets, pervasively carbonate metasomatism <1% pyrite, trace sphalerite 539.0 and minor pyrrhotite. Sulphides concentrated in selvages.										
		588.0 to 599.4 - lamprophyre dyke, contacts <35°, high density dark brown phenocrysts.	<35°									
		599.4 to 615.4 - mafic (?) dyke, microdiorite or lamprophyre										
		615.4 to 640.5 - amygdaloidal andesite. 8-10% free carbonate in veinlets. Trace pyrite. Sheared 615.4 to 636.0, contorted										
		640.5 to 645.6 - porphyritic mafic dyke, weakly feldspar porphyritic. Contacts at 25° to C.A. 1% free white carbonate	25°									
		645.6 to 650.2 - fractured andesitic lava. Carbonated. 30% free white calcitic (?) veinlets. <1% pyrrhotite as fine disseminations and hairline fracture fillings.										
		650.2 to 653.7 - mafic dyke, contacts at 20° to C.A. carbonated	20°									
		653.7 to 744.0 - sheared and fractured pillowed lava. Tectonic features cut C.A. at angles from 20° to 75°. Pervasively carbonated with 10-45% free carbonate in veinlets <1% pyrrhotite (magnetic) overall but up to 10-15% in thin hyaloclastite rich pillow selvages. Traces of chalcopyrite and sphalerite. Pillow selvages sampled over 20 feet 701.0 to 721.0 " 18181										
					18181	701.0	721.0	20.0'	ppm Cu 755	ppm Zn 260	% Fe 12.20	
		* pillow selvages only (Refer log)										

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

† Additional credit available. See Assessment Work Regulations.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. LL78-3 PAGE NO. 3

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT COLLAR	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.		
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)			
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft					
					ft					
PROPERTY NAME										

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE*	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO				
744.0	765.7	MAFIC DYKE	Medium grey-green vaguely mottled, aphanitic to fine grained microdiorite. Lower chill zone fractured, bleached and pyritized after 765.0 (2-3% pyrite with trace sphalerite, galena and chalcocyanite) < 2% free white carbonate in veinlets	50-60								
765.7	835.3	PYRITIFEROUS GRAPHITIC SEDIMENTS	Black and dark grey with brassy bands and spots. Cut by numerous white bands. Aphanitic bedding and/or foliation (cleavage) range from 45° to 90° but average 65° to 80° to C.A. Probable slump features in thinly bedded sections. Pebble to cobble sized clasts of underlying mafic lavas appear after 833.3 and account for 35% of rock. Carbonated. 10-15% free carbonate (calcite?) overall but section 820.0 to 835.3 only contains 3-4%. Overall pyrite 10-15% but many short sections up to 60%. Pyrite often extremely fine grained and present in sufficient quantities to discolor the graphite. 20-25% pyrite 797.0 to 815.0 as nodules and very fine grained semi massive beds. 100% of galena associated with carbonate veinlets. 50% of sphalerite associated with carbonate veins, remainder occurs as flecks (<1mm) and discontinuous lenses up to 2-3 cm parallel to bedding. Pyrrhotite appears after 834.5. Mafic dykes: 788.3 to 789.5, 791.7 to 792.7, 795.6 to 795.9. Core recovery below 95-98% in the following sections: 766.0 to 767.5 (66% est.), 767.5 to 771.0 (70% est.) 773.3 to 776.0 (40% est.) 778.6 to 781.5 (66%).	65-80		18157	765.7	767.5	1.8	5600	1300	4.25
						58	767.5	771.0	3.5	5700	2700	4.00
						59	771.0	773.3	2.3	6000	14300	3.10
						60	773.3	776.0	2.7	14300	16800	4.45
						61	776.0	778.6	2.6	1900	610	4.00
						62	778.6	781.5	2.9	3100	230	5.50
						63	781.5	786.5	5.0	2900	210	5.25
						64	786.5	791.5	5.0	1000	185	2.85
						65	791.5	796.8	5.3	4600	4300	4.30
						66	796.8	802.0	5.2	2200	395	11.90
						67	802.0	807.0	5.0	600	80	12.70
						68	807.0	812.0	5.0	600	58	11.30
						69	812.0	817.0	5.0	2200	98	7.80
						70	817.0	822.0	5.0	2000	100	6.25
						71	822.0	827.0	5.0	2400	50	3.45
						72	827.0	832.0	5.0	1600	65	6.45
						73	832.0	835.3	3.3	800	88	10.15
835.3	886.0	IN SITU BRECCIATED PILLOW BRECCIA	Light to medium grey green with green black veining, bands, streaks and speckles of brass and bronze. Aphanitic. Thin screens of lighter green-grey hyaloclastite in a green black matrix. Matrix chlorite-rich. Matrix areas 20-25%. White calcite veinlets 2-3%. Angular clast with matching walls in broken pillow sections though to be in situ brecciated. Iron sulphides 4-6%. Po/Py ratio 3:2 Trace chalcocyanite and sphalerite. 70-80% of sulphides occur in the thin hyaloclastite screens.									

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Report.

LATITUDE

FEBRUARY 1979

SCALE 1" = 100'

17N

18N

19N

20N

21N

22N

23N

0

0

100

100

200

200

300

300

400

400

500

500

LEGEND



Mafic dyke



Sulphidic Graphite



Sulphide-rich argillite



Tholeiitic in situ brecciated pillow breccia



Tholeiitic lava, pillowed, fractured

ELEVATION

LL-78-3
886

2a

4b

DY

CL-92592

CL-447513

c

2

DRAWN BY R. SAVARD

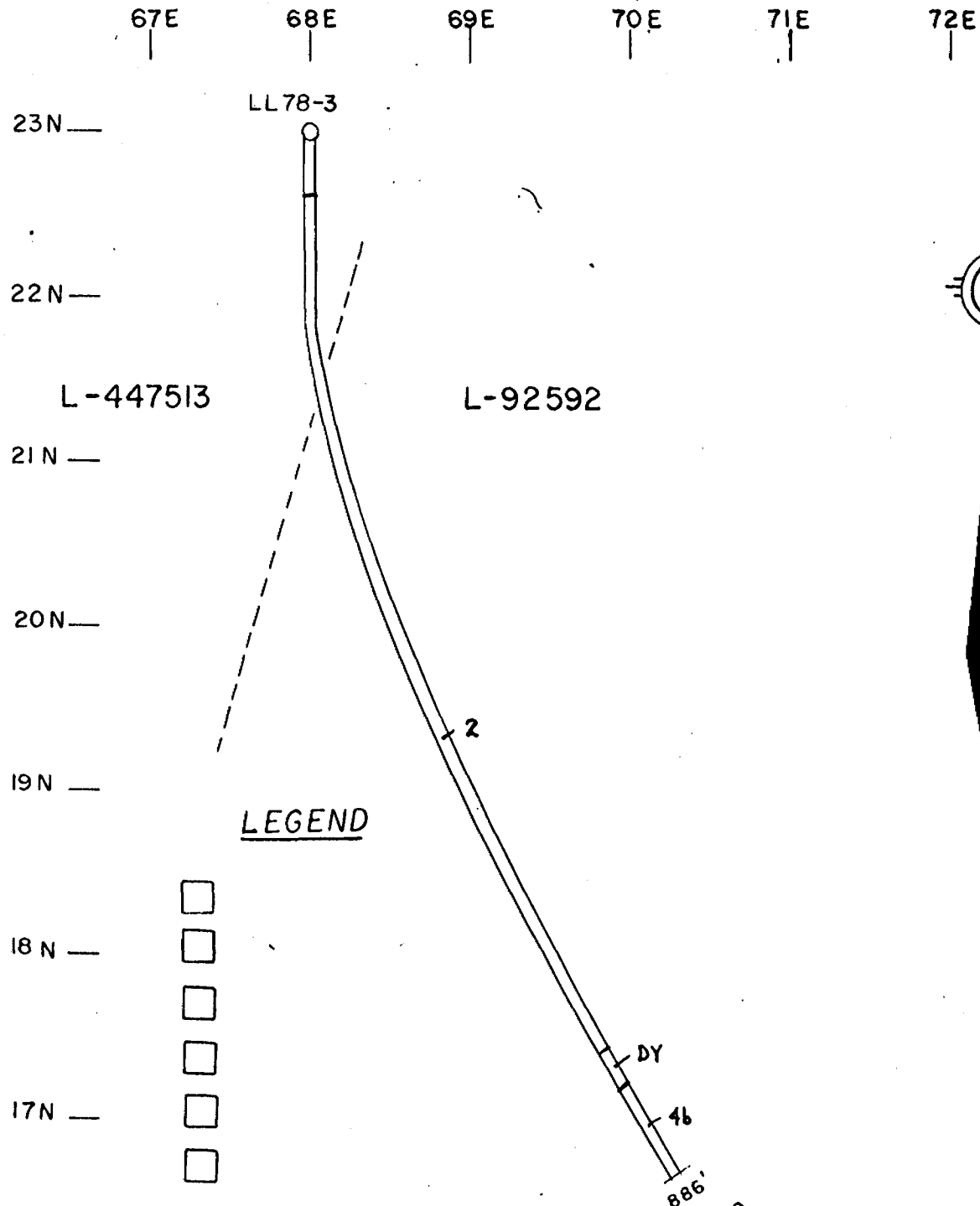
HEARST TWP.

SECTION 68+00E

FEBRUARY 1979

SCALE 1" = 100'

DRAWN BY R. SAVARD



LARDER LAKE PROJECT

PLAN VIEW

HEARST TOWNSHIP

CLAIM L-447513 & L-92592

LATITUDE

FEBRUARY 1979

SCALE 1" = 100'

15 N

16 N

17 N

18 N

19 N

20 N

21 N

0

0

100

100

200

200

300

300

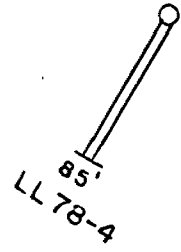
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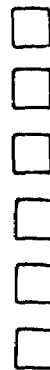
500

500

ELEVATION



LEGEND



SECTION 72+00 E

FEBRUARY 1979

SCALE 1"=100'

DRAWN BY R. SAVARD

70E

71E

72E

73E

74E

75E

21N —

20N —

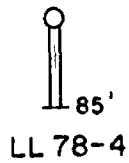
19N —

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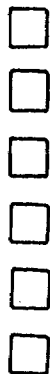
17N —

16N —

15N —



LEGEND



LARDER LAKE PROJECT

PLAN VIEW

HEARST TOWNSHIP

CLAIM L-92592



Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. LL78-5 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.	
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	ft	ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)		
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)	ft	ft		PROPERTY NAME		
				ft	ft				

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE †	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS †		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
	310.5 to 312.5		- carbonated microdiorite (?) dyke 3-5% disseminated pyrite. 15% free carbonate as veinlets. Similar to most dykes in previous section									
	312.5 to 325.0		- bleached pillowed andesite. Selveges at 35-45° to C.A. 6-8% free carbonate. Pervasive carbonate alteration but some silicification is present. Chlorite 5-8% Pyrite < 3% overall is concentrated mainly in pillow selveges.	35-45°								
	325.0 to 345.0		- intensely fractured faulted and altered andesite. Similar to section 203.8 to 310.5 but does not contain any dykes. 4-5% free carbonate vein gangue. Chlorite 20-30% mainly as fine mesh or stockwork fractures. 343.0 to 345.0 is strongly silicified. < 2% pyrite overall however 30-40% pyrite 230.0-231.0 and 10-15% pyrite 343.0-345.0 with trace sphalerite			18228	343.0	345.0	2.0	303	1430	55
345.0	350.0	ARGILLACEOUS SEDIMENT	Dark to medium grey and black bands with white streaks and bronze. Contacts gradational. Primary bedding indistinct. 10-12% free calcite. 10-15% chlorite 35-45% pyrite 349.4 to 349.6 with speck of chalcocopyrite			29	345.0	350.0	5.0	173	1200	190
350.0	460.5	GRAPHITIC SEDIMENTS WITH MAFIC DYKES	Banded dark grey and black with sections of light to medium grey-green. White streaks. Aphanitic to fine grained dykes, apparently dioritic. Sediments are irregularly bedded, bedding is frequently contorted. Foliation or cleavage steepens down hole from 20°-30° to C.A. 350.0 to 386.0, 40° to C.A. at 386.0 to 387.0 & 414.5 to 451.0, 50°-60° to C.A. 453.5 to 460.5. Free carbonate and iron sulphides in crevices down hole as well, as noted below: 350.0 to 386.0 - graphite-rich with five mafic dykes 1-2 feet in width 8-4% free calcite. 3-4% pyrite as rare nodules, partings on cleavage and/or bedding planes and as fracture fillings. Disseminated sphalerite with trace chalcocopyrite in dyke that occupies half the core from 358.2 to 359.2. Sphalerite occurs on cleavage and/or bedding planes in graphite adjacent to dyke, and as fine disseminations in the dyke. Pyrite nodules, long axis at 10-15° to C.A. at 358.1 is cut at right angles to its long axis by a veinlet of chalcocopyrite.	10-15°		18230	350.0	355.0	5.0	268	1560	65
						31	355.0	358.2	3.2	268	870	75
						32	358.2	359.3	1.1	1050	11500	150
						33	359.3	364.3	5.0	292	1530	50
						34	364.3	366.8	2.4	236	1200	50
						35	367.8	370.5	2.7	75	97	30
						36	372.1	372.1	5.0	56	115	10
						37	377.1	382.1	5.0	88	560	20
						38	382.1	385.5	3.4	69	220	15
						39	414.5	419.5	5.0	196	2000	45
						40	419.5	422.0	2.5	84	645	30
						41	422.0	427.0	5.0	66	575	25
						42	427.0	432.0	5.0	115	685	25
						43	432.0	437.0	5.0	80	365	15
						44	437.0	442.0	5.0	158	885	15
						45	442.0	447.0	5.0	253	1350	50
						46	447.0	451.0	4.0	306	1940	65

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

† Additional credit available. See Assessment Note.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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HOLE NO. LL78-5 PAGE NO. 3

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Twp., Lot, Con. OR Lot. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft			
					ft			PROPERTY NAME

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE*	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +			
							FROM	TO		ppm Cu	ppm Zn	ppm Pb	
			386.0 to 387.0 - fractured and brecciated siliceous bands at 40° to C.A. More massive 386.5 to 387.0 6-8% disseminated pyrite and pyrite in hairline fractures	40°		18247	451.0	453.3	2.3	180	815	130	
			387.0 to 414.5 - sheared dioritic dyke fabric at 25° to 40° to C.A. Upper contact fractured at 40°. Lower contact chilled and sharp at 70° to C.A. Strongly and pervasively carbonated. 6-8% free carbonate. 1-2% pyrite as fine dissemination are rare fracture filling.	25-40°			48	453.3	458.3	5.0	234	1400	25
			414.5 to 451.0 - graphitic sediments, 12-14% free carbonate. 30-40% chlorite in fracture zone 440.0 - 443.0. 3-4% py				49	458.3	460.5	2.2	438	4500	50
			451.0 to 453.3 - massive nodular pyrite										
			453.3 to 460.5 - graphitic sediment, argillaceous bands, 8-10% free carbonate. Pyrite 5-6% mainly as nodules. Matrix dyke with 20% - 25% pyrite 456.5 to 457.1 (contacts at 70°)	70°									
701.0		IN SITU BRECCIATED PILLOW BRECCIA	Marbled and banded medium grey and black with white and brassy or bronze streaks. Aphanitic lava. Hydrochlorite-rich screens separate broken pillows. Pillow remnants auto brecciated.										
			460.5 to 532.7 - 3-4% free calcite (?) in late cross cutting veinlets Bleaching present for several feet adjacent to small mafic dykes (B). Iron sulphides 7-8% Po/Py ratio 1:1 Tr chalcopyrite 482.0.										
			532.7 to 533.6 - pyrrhotite-rich argillaceous sediment 5-7% free carbonate. Chlorite 35-40% 532.7 to 533.2 10-15% 533.2 to 533.6 10-15% pyrrhotite 532.7 to 533.2. 50-55% pyrrhotite 533.2 to 533.6 2-4% pyrite. Tr. chalcopyrite.			18290	532.7	533.6	0.9	185	4200	45	
			533.6 to 663.7 - 8-10% free carbonate. Py/Po ratio 1:8, total iron sulphide 8-10%. Section 600.0 - 620.0 15-20% sulphide										
			663.7 to 668.9 - mafic dyke, dioritic 5-8% calcitic veinlets 4% Py.										
			668.9 to 701.0 - 4-5% carbonate argillaceous. Py/Po ratio 3:2 total iron < 3%. 8-10% 669.0 to 671.0 with trace of base metals. White calcite with Pb Zn 670.5 - 671.0.			18291	670.5	671.0	0.5	290	10800	590	

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Note Page 11 of 13



Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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HOLE NO. LL78-6 PAGE NO. 1

DRILLING COMPANY
McKNIGHT DIAMOND DRILLING

HOLE STARTED
January 29TH 1979

DATE COMPLETED
January 31ST 1979

EXPLORATION CO., OWNER OR OPTIONEE
FALCONBRIDGE COPPER LIMITED

COLLAR ELEVATION

BEARING OF HOLE FROM TRUE NORTH
180°

TOTAL FOOTAGE
476'

DIP OF HOLE AT collar | 60°

DATE LOGGED
February 1979

LOGGED BY
D. Comba

DATE SUBMITTED
February 1979

SUBMITTED BY (Signature)
D. Comba

LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM

#3 POST
L 92592

800'

320'

LL78-6

MAP REFERENCE NO.
32 D/4

CLAIM NO.
L447513E L92592

LOCATION (Twp., Lot, Con. OR Lat. and Long.)

HEARST TOWNSHIP

PROPERTY NAME
LARDER LAKE PROJECT

FOOTAGE FROM TO		ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE*	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM TO		SAMPLE LENGTH	ASSAYS +		
0.0	60.6	OVERBURDEN	Sand minor gravel									
60.6	237.3	FRACTURED AND ALTERED ANDESITE	Light to medium grey-green with dark green and white streaks. Andesite is aphanitic. Flow structures in the massive lava are noted below along with changes in alteration and sulphide mineralization.									
	60.6 to 138.5		Fractured altered andesite with mafic dykes. Massive flow with rare screens of vague in situ brecciation. Strong to intensely fractured at all angles. Dyke margins sheared 30-45° to C.A. Open fractures with sand 99.0 to 100.0, 100.0 to 101.0, 105.0 to 106.0. Mafic dykes 109.3 to 110.5, 128.3 to 133.5. Bleached by pervasive carbonate metasomatism 10-15% free carbonate as vein gangue. 3-5% chlorite overall with short massive sections, particularly adjacent to dykes. Dykes less pervasively carbonated. Fine dendritic alteration (Py+chl+carb) 98.0 to 100.0. Less than 1-2% pyrite. Chalcopyrite in hairline fractures 115.5 to 118.5. 2% chalcopyrite in chloritic shear 133.5 to 134.0. Less than 0.5% chalcopyrite in hairline chloritic fractures 137.0 to 138.5.	35-45°						ppm Cu	ppm Zn	ppm Pb
						18292	115.5	118.5	3.0	4400	2100	900
						93	133.5	134.5	0.5	1055	360	175
						94	137.0	138.5	1.5	5100	225	120
	138.5 to 142.0		Foliated carbonate rich mafic dyke. Foliated 30-40° to C.A. Contacts 25-30°. 3-5% free calcite? Tr malachite	30-40°		18295	138.5	142.0	3.5	480	120	30
	142.0 to 150.0		Fractured altered andesite similar to 60.6-138.5. 5-6% free carbonate. 5-8% chlorite in shears and hairline vein stockwork. <0.5% chalcopyrite in chloritic hairline fractures.			18296	142.0	147.0	5.0	3100	115	130
						97	147.0	149.0	2.0	3600	225	65
	150.0 to 159.0		Fine leichen-like dendritic alteration (Py+chl+carb)									
	159.0 to 180.0		Fractured altered andesite, probably pillowed. Possible interflow breccia 179.5 with lapilli-sized rounded clasts. Pervasive carbonate alteration plus 12-14% free carbonate. 3-5% chlorite as fine veinlet stockwork and in pillow selvages(?). <0.5% chalcopyrite 163.0 to 167.0.			18298	163.0	167.0	4.0	8000	160	60
	180.0 to 185.2		Dyked and fractured chloritic shear (20-35° to C.A.) Semimassive chlorite with large calcite veinlets	20-35°								

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Regulations.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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HOLE NO. LL78-6 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.		
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)			
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft					
					ft					
					ft		PROPERTY NAME			

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS †		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
	185.2	224.5	- fractured, pillowed andesite, hyaloclastite-rich selvages. Vague foliation. Well developed shearing in selvages after 200.0. Minor in situ brecciation. Minor bleaching. 3-5% free carbonate, 3-4% chlorite. Less than 1-2% pyrite overall. Pyrite occurs as fine disseminations and odd subhedral etal 2-3mm in calcitic veinlets.	40-50°								
	224.5	228.0	- flow breccia, rounded lapilli sized clasts well supported in a chloritic matrix. Clasts elongated at 40-50° to C.A. Chlorite 15-20% in matrix. Pennsylvanian carb. alt. 2-3% free calcite(?)	40-50°								
	228.0	237.3	- fractured in situ brecciated andesite, probably pillowed. Weak pervasive carbonate, 1-2% calcite(?) veinlets. Chlorite 2% to 232.0, then 4-5% to 237.3. <1% pyrite to 232.5 then 3-5% to 237.3.			18299	232.3	237.3	5.0	600	1600	980
237.3	385.5	SULPHIDIC GRAPHITE RICH ARGILLACEOUS SEDIMENTS WITH INTERCALATIONS	- Dark to medium grey and black banded with green-grey sections and streaks of white, brass and bronze. Very fine clastic. Variations in alteration and sulphide mineralization described below.									
	237.3	240.3	- sphalerite-rich graphite (3-4%) as thin contorted beds and elongate blebs. Trace galena and chalcocite. 239.5 to 240.3. Sheared foliated layering at 50-60° to C.A. 237.3 to 239.0. Primary bedding contorted and truncated by later tectonics. Gabbroic clasts in graphitic matrix 239.0 to 239.5. Contorted, tectonized beds and gouge 239.5 to 240.3. Fault at 240.0-240.3. Gouge chloritic.			18300	237.3	240.3	3.0	548	8600	2000
	240.3	248.0	- fractured, carbonated andesite, 2-3% chlorite, 10-15% calcitic veinlets. <1% pyrite.			18301	240.3	244.0	3.7	1900	3800	4800
	248.0	250.3	- graphitic sediments with pyrite nodules. 1-2% free carbonate, 5-10% chlorite. Semimassive to massive pyrite 249.0 to 249.6. Massive graphite with pyritic fractures 249.6 to 250.3. 20% pyrite overall. <1% sphalerite 249.6 to 250.3.			2	244.0	248.0	4.0	212	350	550
						3	248.0	250.3	2.3	585	3500	250

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

† Additional credit available. See Assessment Work Regulations.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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HOLE NO. LL78-6 PAGE NO. 3

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.	
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	ft			LOCATION (Tp., Lot, Con. OR Lct. and Long.)		
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)	ft			PROPERTY NAME		
				ft					

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE*	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
250.3	252.3		fractured altered mafic igneous rock. Laundered at 35-40° to C.A. Intensely fractured intensely carbonated. 15% carbonate veining. silicified 2-4% overall in patches. 5-6% pyrite with traces of chalcopyrite galena and sphalerite associated with late veinlets.	35-40°		18304	250.3	252.3	2.0	390	2500	290
252.3	288.9		graphite-rich sediment with pyrite beds, nodules and mafic dykes. Massive to weakly bedded bedding contorted. Semimassive pyrite 254.0 to 254.4 and 285.0 to 287.8 (packed nodules) Mafic dykes 259.0 to 261.2, 264.1 to 267.0, 271.0 to 271.8. 10-15% free carbonate to 259.0, 2-3% to 287.8. 1% sphalerite 252.3 to 256.5 Tr chalcopyrite and galena 256.5 to 259.0			18305	252.3	254.0	1.7	820	280	250
						6	254.0	254.4	0.4	320	355	210
						7	254.4	256.5	1.9	3200	655	280
						8	256.5	259.0	2.5	14800	122	920
						9	261.2	264.1	2.9	2000	340	90
						10	267.0	271.0	4.1	1300	340	60
						11	271.8	276.8	5.0	910	340	50
						12	276.8	281.8	5.0	750	290	45
						13	281.8	285.0	3.2	790	150	45
						14	285.0	287.8	2.8	385	740	265
						15	287.8	288.9	1.1	970	280	20
288.9	291.5		pyritic mafic dyke. Contacts at 30° to C.A. 30% pyrite very dark and muddy looking	30°		16	288.9	291.5	2.6	212	215	40
291.5	331.5		carbonaceous waste sediment. Massive to thin bedded (<1 mm to 1 cm) at 30-40° to C.A. but frequently contorted and interrupted by fracturing. Graphitic sediments increase after 307.0 (20-30% overall) Tops 321.0 to 322.0 are up hole. Fault gouge 311.0 to 312.0. 8-10% massive dark chlorite, especially after 300.0. 2-3% free carbonate including vein 309.1 to 309.6.	30-40°		18335	291.5	296.5	5.0	75	158	30
						36	296.5	301.5	5.0	75	60	25
						37	301.5	306.5	5.0	65	64	25
						38	306.5	309.1	2.6	420	7200	65
						39	310.1	312.6	2.5	260	1200	100
						40	312.6	317.6	5.0	55	100	35
						41	317.6	322.6	5.0	85	141	20
						42	322.6	324.8	2.2	120	780	20
						43	326.0	331.5	5.5	150	505	30
331.5	356.7		mafic (microdiorite) dyke. Contacts at 40-45° to C.A.	40-45°		18344	356.7	359.0	2.3	245	1800	50
356.7	359.0		graphitic sediment 1-2% pyrite <0.5% chalcopyrite and sphalerite. Base metals NOT related to calcite veinlets. Pyrobitite present for first time in hole.									

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assay Sheet Rate Page 10.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE
HOLE NO. LL 78-6
PAGE NO. 4

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.	
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	ft			LOCATION (Tp., Lot, Con. OR Lat. and Long.)		
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)	ft			PROPERTY NAME		
				ft					

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
			359.0 to 360.7 - mafic dyke similar to section 331.5 - 356.7									
			360.7 to 365.6 - graphitic sediment similar to section 356.7 to 359.0									
			365.6 to 368.0 - mafic dyke with calcite vein 366.0 to 367.5 1-2% Pyrite	30° 40°		18345	360.7	365.6	5.6	288	2600	50
			368.0 to 385.5 - sulphidic graphite Pyrrhotite only iron sulphide present to 377.0. Po/Py ratio 1:2 to 385.5. Pyrite occurs as nodules and nodular semi massive beds			46	368.0	373.0	5.0	710	9800	100
			3-4% free carbonate veinlets. Massive chlorite in possible fault zone 378.0 to 379.0 Pyrrhotite plus tr			47	373.0	378.0	5.0	540	8600	85
			chalcopyrite present from 356.7 - 377.0 excluding dykes			48	378.0	383.0	5.0	425	2600	80
						49	383.0	385.5	2.5	132	1130	75
385.5	476.0	ALTERED SULPHIDIC IN SITU BRECCIATED PILLOW BRECCIA	Light grey clasts in a green black, brassy or bronze matrix. Aphanitic, massive 12% blasts separated by thin screens of hyaloclastite well supported in a chlorite-rich matrix. Mafic and/or lamprophyre dykes (?) Shandy hyaloclastite becomes very distinct after 427.0, due to decrease in sulphide content. Pervasive carbonate metasomatism. Free carbonate 2-3%. Massive chlorite in possible faults 421.8 - 422.3 450.1 - 450.6 Bleaching to 431.0, weak spotty bleaching to 476.0, especially in and adjacent to hyaloclastite screens Silicification? 30% pyrite to 387.0 15% pyrite to 399.0 Py/Po ratio 1:1 399.0 to 409.0 with 15-20% sulphide Po/Po ratio 1:5 409.0 to 421.8 with 10-15% sulphide. Py/Po ratio 1:10 423.7 to 427.0 with sulphide content 8-10%. Pyrrhotite 3-4% to 442.6 Pyrrhotite 1-2% 443.0 to 476.0.			18350	385.5	389.0	3.5	97	418	140

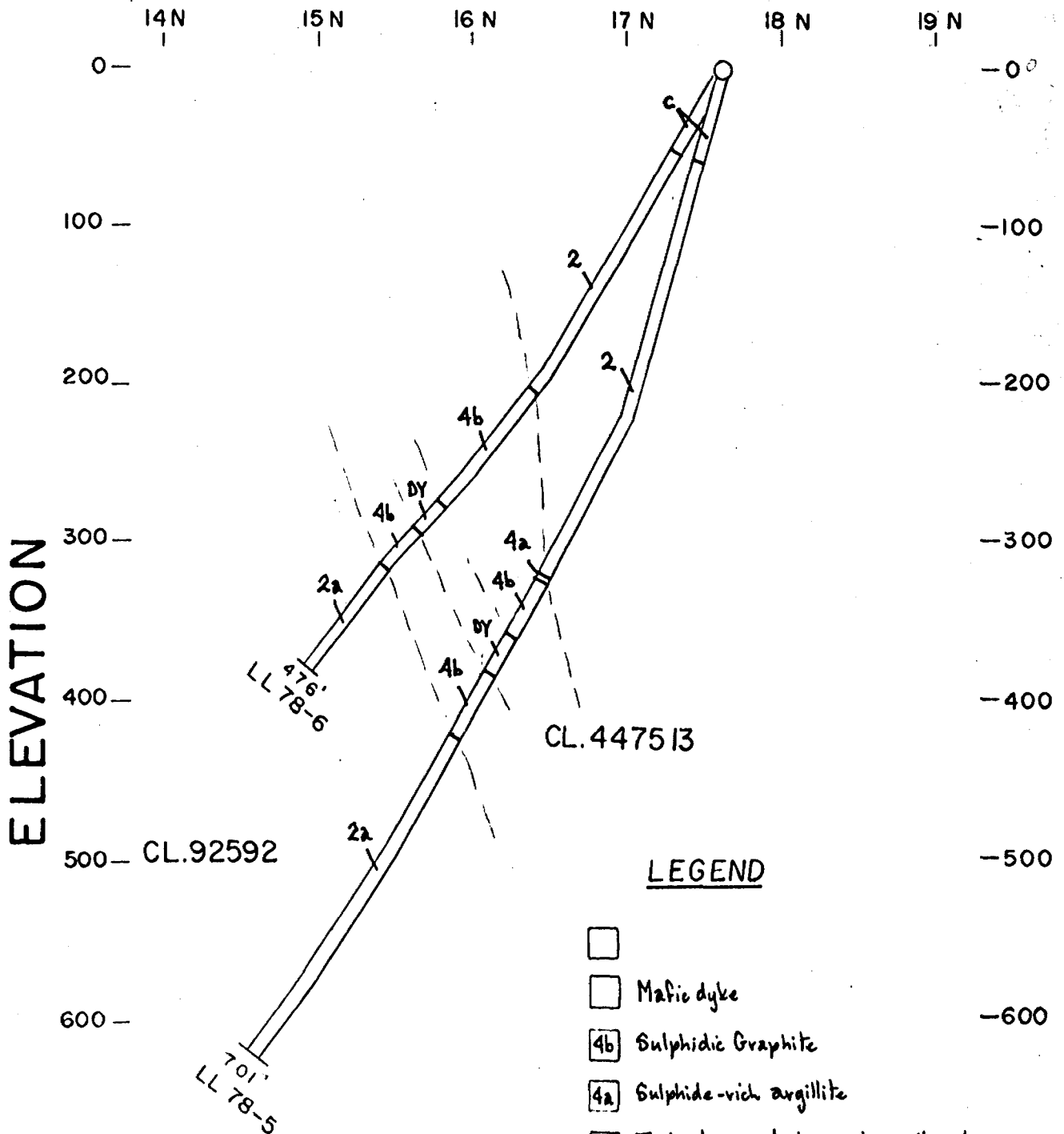
* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Regulations.

LATITUDE

FEBRUARY 1979

SCALE 1" = 100'



ELEVATION

LEGEND

- Mafic dyke
- Sulphidic Graphite
- Sulphide-rich argillite
- Tholeiitic in situ brecciated pillow lava
- Tholeiitic lava, pillowed, fractured

DRAWN BY R.SAVARD

HEARST TWP

SECTION 66+00 E

FEBRUARY 1979

SCALE 1" = 100'

DRAWN BY R. SAVARD

65E 66E 67E 68E 69E 70E
19N —

18N —

17N —

16N —

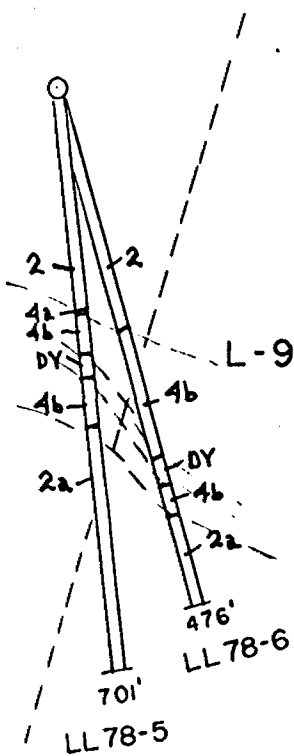
15N —

14N —

13N —

L-447513

L-92592



LEGEND

-
-
-
-
-
-

LARDER LAKE PROJECT

PLAN VIEW

HEARST TOWNSHIP

CLAIM L-447513 & L-92593



DRILL COMPANY HOSKING DIAMOND DRILLING		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH 180°	TOTAL FOOTAGE 477.6	DIP OF HOLE AT collar 45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM 	MAP REFERENCE NO. 32 D/4	CLAIM NO. L 92592
DATE HOLE STARTED January 11 th , 1979	DATE COMPLETED January 18 th , 1979	DATE LOGGED Jan-Feb 1979	LOGGED BY Andre Quillet BSc.	193' ft 38°	70' 45° #3 POST #192592 LL78 #10		LOCATION (Tp., Lot, Con. OR Lot. and Long.) HEARST TOWNSHIP	
EXPLORATION CO., OWNER OR OPTIONEE FALCONBRIDGE COPPER LIMITED		DATE SUBMITTED February '79	SUBMITTED BY (Signature) <i>Andre Quillet</i>	400' ft 34°			PROPERTY NAME LARDER LAKE PROJECT	
				469' ft 31°				

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE*	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
0.0	176.0	OVERBURDEN										
176.0	189.5	BRECCIATED BASALT/ANDESITE	Greenish grey with fractures filled by dark green (chlorite) Aphanitic, uniform, in situ brecciated. Weak foliation at 55° to C.A. Moderate chloritic alteration. Thin carbonate veinlets (1-4 mm) at all angles to CA. 1-2% sulphide (pyrite + TR sphalerite)	55°		18192	185.0	189.5	4.5	137	500	45
189.5	283.5	PYRITIC GRAPHITIC SEDIMENTS, ALTERED AND DYKED	Medium to dark grey and black banded with brassy spots and bands plus white streaks Aphanitic lava, fine clastic sediment, fine grained to medium grained dykes. Pervasive carbonate metasomatism with numerous calcitic (?) veinlets. Massive dark green-black chlorite in lower section.			18193	189.5	194.0	4.5	223	2400	88
						94	194.0	197.0	3.0	205	1600	88
						95	197.0	202.0	5.0	123	613	55
						96	202.0	207.0	5.0	58	263	35
			189.5-226.0 - pyrite + graphite, vague bedding 55°-60° to C.A. Abundant hair like carbonate + sulphide (pyrite) veinlets, mainly developed at 60°-75° to C.A. 1-2% pyrite + TR sphalerite. Locally sections of almost massive nodular pyrite, contacted and elongated. Pyrite also in hairline fractures. 194.0-197.0 andesite dyke, contacts 50-55° to C.A.	55°-60°		97	207.0	212.0	5.0	240	1300	48
						98	212.0	217.0	5.0	174	1060	50
						99	217.0	222.0	5.0	193	1600	80
						200	222.0	226.0	5.0	263	3800	710
			226.0-247.0 - strongly fractured cherty siliceous bands with chlorite quartz, carbonate and sulphides occurring along fractures and cementing (?) host rock. Chloritization increases down section. 1-7% sulphide (pyrite-chalcocopyrite-sphalerite-galena)	50°-55°		18187	226.0	228.0	2.0	20200	2240	3000
						88	228.0	231.0	3.0	5100	1440	5800
						89	231.0	233.5	2.5	515	11000	3800
						18210	233.5	238.5	5.0	250	2200	150
						11	238.5	243.5	5.0	168	790	80
						12	243.5	246.5	3.0	210	220	90
			NOTE 246.5 to 247.0 sent to THORNHILL			18190	247.0	248.0	1.0	10600	28000	11200
			247.0-250.0 - massive black chlorite, fractured, chalcocopyrite, sphalerite			191	249.0	250.0	1.0	5000	34800	18700
						18213	250.0	251.0	1.0	6000	4100	8500
			250.0-283.5 - greenish grey dioritic dyke. Carbonated. 250-251 contains chalcocopyrite, pyrite, sphalerite and galena on fracture planes			14	251.0	254.0	3.0	567	990	460
						15	254.0	255.0	1.0	8000	1600	1280
283.5	426.0	IN SITU BRECCIATED ANDESITE/BASALT PILLOW BRECCIA	Grey green with green black bands and veinlets streaked with brass and bronze. Thin screens of microclastic fragments or shards in chlorite-rich matrix. Broken pillow clasts are auto brecciated, walls frequently match. Distinct zones listed below.									
			283.5-288.0 - slightly bleached with 10% pyrite, minor pyrrhotite									
			357.5-359.5 - microdiorite dyke, also 373.5-378.5 Contacts 30-50° CA	30-50								
			382.8-383.8 - strongly chloritized with 1-2% sulphides (py + po)			18216	411.6	416.6	5.0	240	550	55
			412.0-426.0 - increasing chloritic alteration and bleaching to 425.0				416.6	421.6	5.0	150	650	45
			5-10% iron sulphide, mainly pyrrhotite, in upper half			18186	422.0	42.0	1.0	200	1060	170

* For features such as foliation, bedding, schistosity, measured from the long axis of the core. + Additional credit available. See Assessment Work Regulations.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE
HOLE NO. LL78-10 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)	PROPERTY NAME
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft			
				ft				

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
			423.0 - 424.0 - 75% chlorite, 15-20% pyrite 5% white carbonate. Strongly foliated or banded at 70-75° to C.A.	70-75°		18185	423.0	424.0	1.0	225	1380	420
			424.0 - 425.0 - rapid change in sulphide composition from 15% pyrite to 5-10% sphalerite. Host rock becomes much more siliceous			84	424.0	425.0	1.0	1060	75000	27000
			425.0 - 426.0 - very siliceous with green chlorite and minor carbonate along fracture planes and in primary laminations(?) parallel to weak foliation? 5% sph + clay + gn + py is mainly associated with chlorite and carbonate			83	425.0	428.5	3.5	1050	32800	23700
			426.0 - 428.5 - siliceous volcanic, possibly cherty tuff. Massive. Thin intercalations of chloritic-rich tuff(?) and 10-15% pyrite. Hard to saw. Base metal sulphides as fine disseminations and hairline veinlets in all rocks. Sample to THORNHILL LAB.									
28.5	431.7	DIORITIC DYKE	Medium green grey dyke. Silicified and soaked with sphalerite and galena to 430. Carbonated with numerous veinlets of calcite(?) to 430.0. Samples of mineralized and relatively unmineralized material forwarded to THORNHILL LAB.			18182	428.5	430.0	1.5	195	52500	46500
31.7	477.6	IN SITU BRECCIATED ANDESITE/BASALT PILLOW BRECCIA	Refer section 283.5 to 426.0 for basic description. Rock is strongly bleached at top of section with alteration decreasing gradually down hole. By 460 rock is relatively unaltered (low grade greenschist) 5-7% po minor py at top of section decreases gradually to 1-2% after 460			18181	430.0	431.7	1.7	135	600	200
						18222	431.7	435.0	3.3	200	810	65
						23	435.0	440.0	5.0	155	525	60
						24	440.0	445.0	5.0	103	550	30
						25	445.0	450.0	5.0	82	295	30
						26	450.0	455.0	5.0	110	425	30
						27	455.0	457.5	2.5	130	455	35



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

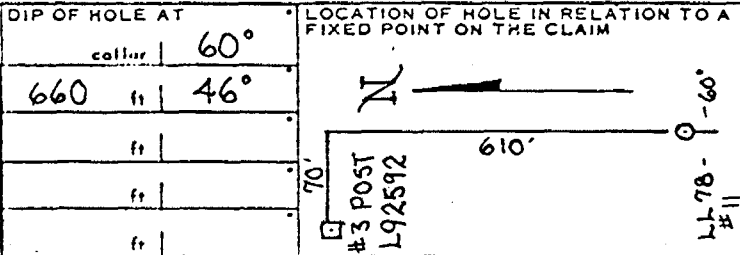
Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. LL78-11 PAGE NO. 1

DRILLING COMPANY
PROSpecting DIAMOND DRILLING
HOLE STARTED
January 18th 1979
DATE COMPLETED
January 23rd, 1979
EXPLORATION CO., OWNER OR OPTIONEE
ALCONBRIDGE COPPER LIMITED

COLLAR ELEVATION
BEARING OF HOLE FROM TRUE NORTH
TOTAL FOOTAGE
DIP OF HOLE AT collar
LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM
MAP REFERENCE NO.
CLAIM NO.
LOCATION (Twp., Lot, Con. OR Lot. and Long.)
PROPERTY NAME



32 D/4
L 92592
HEARST TOWNSHIP
LARDER LAKE PROJECT

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
0.0	150.0	OVERBURDEN										
150.0	272.5	FRACTURED PILLOWED ANDESITE/ BASALT	Greenish grey, aphanitic, massive lava. Vague in situ brecciation with <1% chlorite. Numerous quartz-carbonate veinlets (2mm-2cm), random orientation. Intensity of brecciation increases down hole. Andesitic dykes 165.5-167.0, 190.4-192.0.									
272.5	449.5	SULPHIDIC GRAPHITIC SEDIMENTS WITH MAFIC DYKES	Dark grey to black banded with sections of greenish grey. Brass, bronze and white spots and streaks. Aphanitic to fine grained. Fine clastic. Major differences listed below. Graphitic zones foliated 45° 272.5-307.2 - graphite + pyrite (5-10%) + minor pyrrhotite Tr. sph. cpy 301.0-301.5 - dioritic dyke 307.2-317.5 - dioritic dyke with siliceous "flow banded" zone 307.2-308.0 siliceous zone is fractured normal to banding with cpy in fracture and ss dusty disseminations with py + sph. 309.5 - fault zone (broken rubble core) 317.5-348.2 - pyritic graphite. 4-5% pyrite but sections of semimassive nodules 318.2-319.4, 322.0-322.5, 332.0-332.5. Carbonated. 348.2-349.8 - in situ brecciated basalt. 2-3% py + po Dk. chlorite in fract. 349.8-392.0 - dioritic dyke <1% pyrite as fine dissem. and fract. filling Carbonated. 392.0-449.5 - pyrrhotite-rich graphitic zone (weak to moderately graphitic) 5-6% po + py. Lower contact at 60° to C.A. Andesitic dykes 420.8-421.6, 431.5-432.5, 437.8-439.8.			18250	272.5	277.5	5.0	450	795	65
						51	277.5	282.5	"	395	2100	125
						52	282.5	287.5	"	188	1300	100
						53	287.5	292.5	"	160	1100	145
						54	292.5	297.5	"	260	3400	4150
						55	297.5	302.5	"	220	1500	2580
						56	302.5	307.2	4.7	2400	1100	4820
						57	307.2	308.2	1.0	10000	1030	2450
						58	308.2	309.7	1.5	13500	980	1670
						59	309.7	314.7	5.0	5400	12600	4440
						18 60	314.7	317.6	2.9	600	13100	6120
						61	317.6	318.8	1.2	650	10200	3200
						62	318.8	319.4	0.6	165	990	505
						63	319.4	321.8	2.4	61	175	95
						64	321.8	326.8	5.0	160	540	90
						65	326.8	331.8	"	160	460	50
						66	331.8	336.8	"	80	216	50
						67	336.8	341.8	"	150	525	45
						68	341.8	346.8	"	130	510	40
						69	346.8	348.2	1.4	156	795	40
						18 70	388.6	390.0	1.4	135	380	40
						71	392.0	397.0	5.0	150	435	40
						72	397.0	402.0	5.0	156	400	35
						73	402.0	407.0	"	130	580	35
						74	407.0	412.0	"	125	710	35
						75	412.0	417.0	"	180	565	40
						76	417.0	422.0	"	165	440	40
						77	422.0	427.0	"	185	910	35
						78	427.0	432.0	"	190	660	35



DRILLING COMPANY
SKING DIAMOND DRILLING

COLLAR ELEVATION

BEARING OF HOLE FROM TRUE NORTH
180°

TOTAL FOOTAGE
902

DIP OF HOLE AT collar 75°

LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM

MAP REFERENCE NO. 32 D/4 CLAIM NO. L92592

DATE HOLE STARTED
January 23rd 1979

DATE COMPLETED
January 31st 1979

DATE LOGGED
Jan.-Feb 1979

LOGGED BY
Andre Quellet BSc.

320 ft | 72°



LOCATION (Twp., Lot, Con. OR Lot. and Long.)

EXPLORATION CO., OWNER OR OPTIONEE
FALCONBRIDGE COPPER LIMITED

DATE SUBMITTED
February '79

SUBMITTED BY (Signature)
Andre Quellet

520 ft | 64°
720 ft | 57°
900 ft | 54°

PROPERTY NAME
**HEARST TOWNSHIP
LARDER LAKE PROJECT**

FOOTAGE FROM TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +									
						FROM	TO		ppm Cu	ppm Zn	ppm Pb							
0.0	120.0	OVERBURDEN																
120.0	407.0	BRECCIATED AND FRACTURED PILLOWED ANDESITE																
		Green grey, aphanitic, massive. Rare amygdalae. Hyaloblastite-rich selvages. Carbonated. 2-3% free carbonate in veinlets < 1% iron sulphide, mainly py.																
		273.5-285.3 strongly sheared 10° to c.a. and brecciated	10°															
		281.0-283.0 " " bleached. Tr opy < 1% sulphide (py+po)																
		402.5-407.0 weak to moderate bleaching. Gradual increase in sulphide from < 1% at 402.0 to 3% at 407.0, mainly in fractures																
407.0	617.0	SULPHIDIC GRAPHITIC SEDIMENTS CUT BY MAFIC DYKES																
		Dark grey to black banded with sections of greenish grey. Streaks of white and metallic brass and bronze. Aphanitic to fine grained. Major divisions:				18317	407.3	410.4	3.1	202	213							
		452.2-473.0 - carbonaceous diorite dyke				18	410.4	413.4	3.0	572	620							
		473.0-478.0 - cherty, chloritic siliceous bands 2-8% sulphide (py-gn, opy, sph.) associated with late fractures				19	413.4	416.0	2.6	312	218							
		599.5-599.8 - 60-70% pyrite ss vague beds and compacted nodules				20	416.0	421.0	5.0	360	1120							
		599.8-600.7 - brecciated basalt - chloritic matrix 4-5% sulphides				21	421.0	426.0	5.0	225	735							
		600.7-617.0 - diorite, medium grained massive, uniform. Carbonated 1-3% py+py. (finely dissemin.)				22	426.0	430.5	4.5	285	635							
						23	430.5	434.1	3.6	275	745							
						24	434.1	435.0	0.9	155	203							
						25	435.0	439.9	4.9	410	780							
						26	439.9	444.7	4.8	390	1430							
						27	444.7	449.6	4.9	275	890							
						28	449.6	452.1	2.5	250	920							
						29	452.1	457.1	5.0	95	128							
						30	457.1	462.1	"	135	184							
						31	462.1	467.1	"	135	300							
						32	467.1	472.1	"	145	165							
						33	472.1	473.0	0.9	185	380							
						34	473.0	477.0	4.0	785	2100							
						18351	477.0	478.0	1.0	1025	14600	38000						
						52	478.0	481.5	3.5	790	17500	8200						
						53	481.5	487.7	6.2	355	8500	3000						
						54	487.7	492.7	5.0	705	7600	3500						
						55	492.7	497.7	5.0	340	2300	450						
						56	497.7	501.0	3.3	400	2700	460						
						57	501.0	505.9	4.9	410	2000	220						
						58	505.9	510.9	5.0	200	1200	120						
						59	510.9	515.9	5.0	300	1600	160						

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credits available. See Assessment Work Regulations.



THE MINING ACT - MINISTRY OF NATURAL RESOURCES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. LL78-12 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	ft			LOCATION (Tp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)	ft			PROPERTY NAME	
				ft				

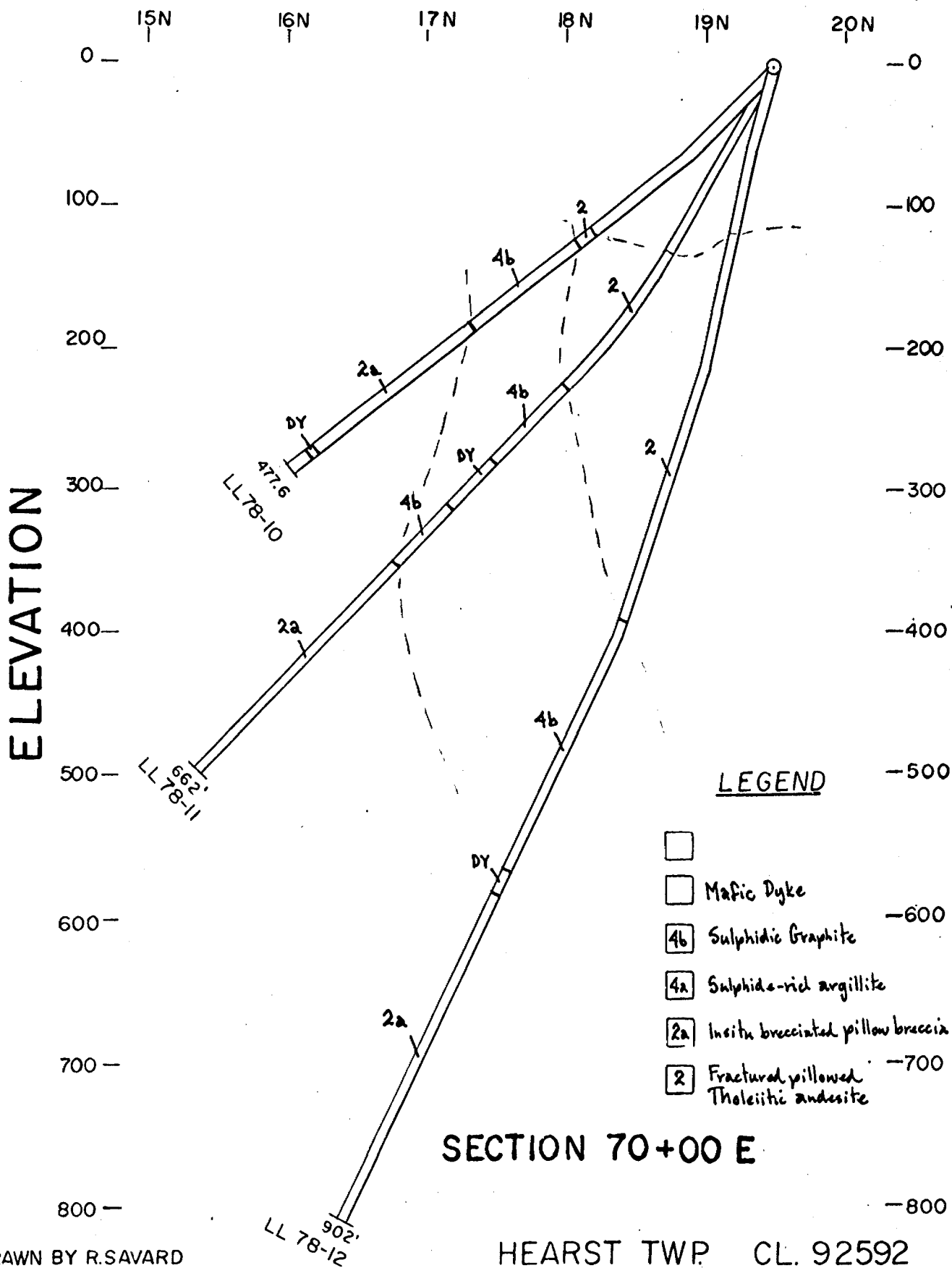
FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +		
							FROM	TO		ppm Cu	ppm Zn	ppm Pb
						18360	515.9	520.0	4.1	145	395	70
						61	520.0	524.8	4.8	280	600	65
						62	524.8	529.8	5.0	250	2600	55
						63	529.8	534.6	4.8	190	445	85
						64	534.6	539.0	4.4	330	800	70
						65	539.0	544.0	5.0	180	665	45
						66	544.0	549.0	5.0	118	647	32
						67	549.0	553.9	4.9	174	703	60
						68	553.9	558.9	5.0	140	605	40
						69	558.9	563.9	5.0	150	660	45
						18370	563.9	568.9	5.0	490	4100	70
						71	568.9	573.9	5.0	330	1400	60
						72	573.9	578.9	5.0	280	1080	50
						73	578.9	583.8	4.9	260	840	90
						74	583.8	588.7	4.9	230	765	35
						75	588.7	593.6	4.9	420	1600	50
						76	593.6	599.5	5.9	195	1800	35
						77	599.5	600.7	1.2	290	700	50
						78	600.7	603.5	2.8	90	214	25
						79	603.5	608.5	5.0	80	103	20
17.0	902.0	IN SITU BRECCIATED ANDESITE/BASALT BROKEN PILLOW BRECCIA	Greenish grey with green black bands and veinlets. Streaked and spotted with white, brass and bronze. Aphanitic, massive lava. Thin screens of hyaloclastite (2mm - 15cm) well supported in a chlorite-rich matrix separates and brecciated clasts. Clasts are frequently brecciated with matching walls. Iron sulphides (py + po + Tr cp) 2-4% overall are concentrated as blebs and wispy filaments in hyaloclastite rich screens. Thicker screens may contain graphitic material. 4-10% sulphide (po-py-Tr cp) 696.4 to 707.3. Pervasive carbonate metasomatism with numerous calcitic fractures. Microdioritic dykes 628.5-629.3, 690.0-690.8, 707.3-715.0, 832.7-836.0, 836.9-837.1, 865.0-866.0, 866.8-868.7.			18380	696.4	701.4	5.0	190	550	40
						81	701.4	706.4	"	120	366	30
						82	706.4	711.4	"	95	285	20
						83	711.4	715.0	36	80	218	30
						84	715.0	720.0	"	235	685	30
						85	720.0	725.0	"	135	630	30
						86	765.5	770.5	"	150	690	30
						87	806.6	808.0	2.4	125	300	60
						88	808.0	813.0	5.0	193	870	20
						89	813.0	818.0	"	192	797	35
						90	818.0	823.0	"	175	615	30
						91	868.7	873.7	"	160	347	28
						92	873.7	878.7	"	165	345	25
						93	878.7	883.6	"	165	318	20

For features such as foliation, bedding, schistosity, measured from the long axis of the core.

LATITUDE

FEBRUARY 1979

SCALE 1" = 100'



LEGEND

- Mafic Dyke
- Sulphidic Graphite
- Sulphide-rich argillite
- In situ brecciated pillow breccia
- Fractured pillowed Tholeiitic andesite

SECTION 70+00 E

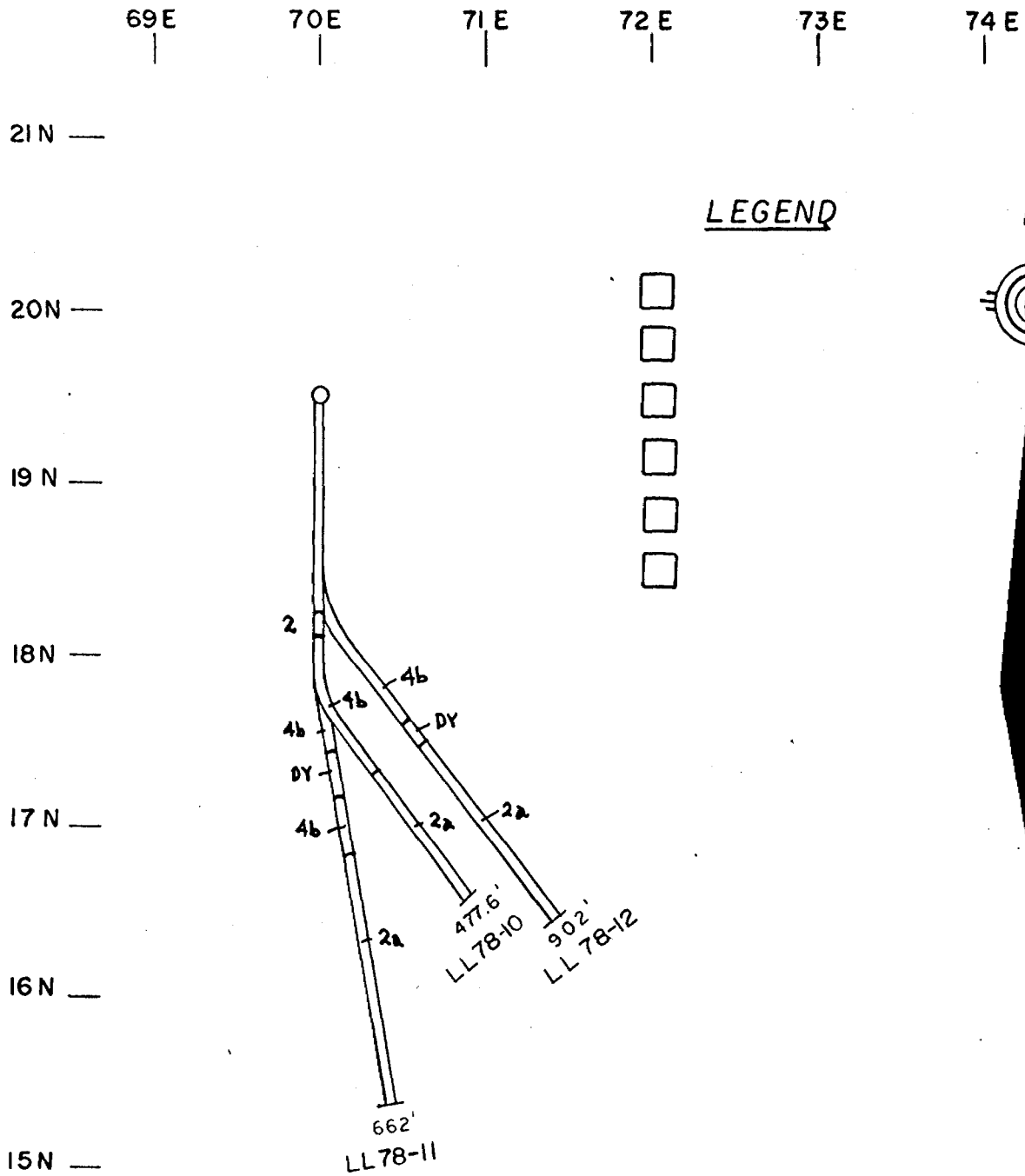
DRAWN BY R.SAVARD

HEARST TWP. CL. 92592

FEBRUARY 1979

SCALE 1" = 100'

DRAWN BY R. SAVARD



LARDER LAKE PROJECT

PLAN VIEW

HEARST TOWNSHIP

CLAIM L-92592

M^cVITTIE TWP

GAUTHIER TWP

HEARST TWP

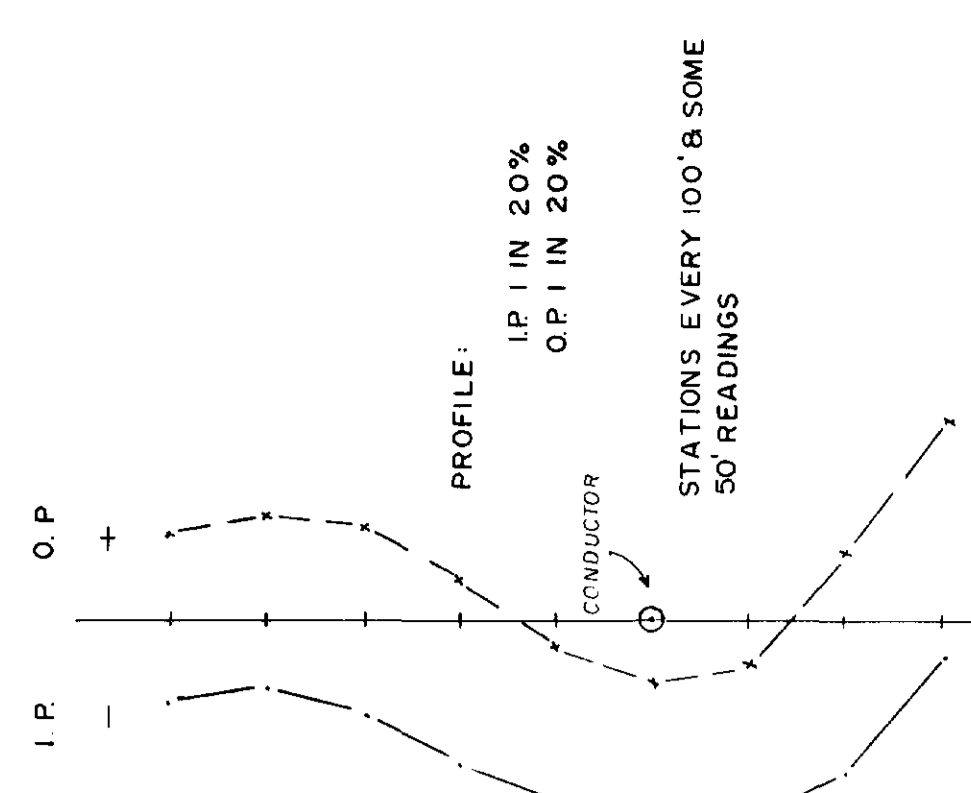
M^cELROY TWP



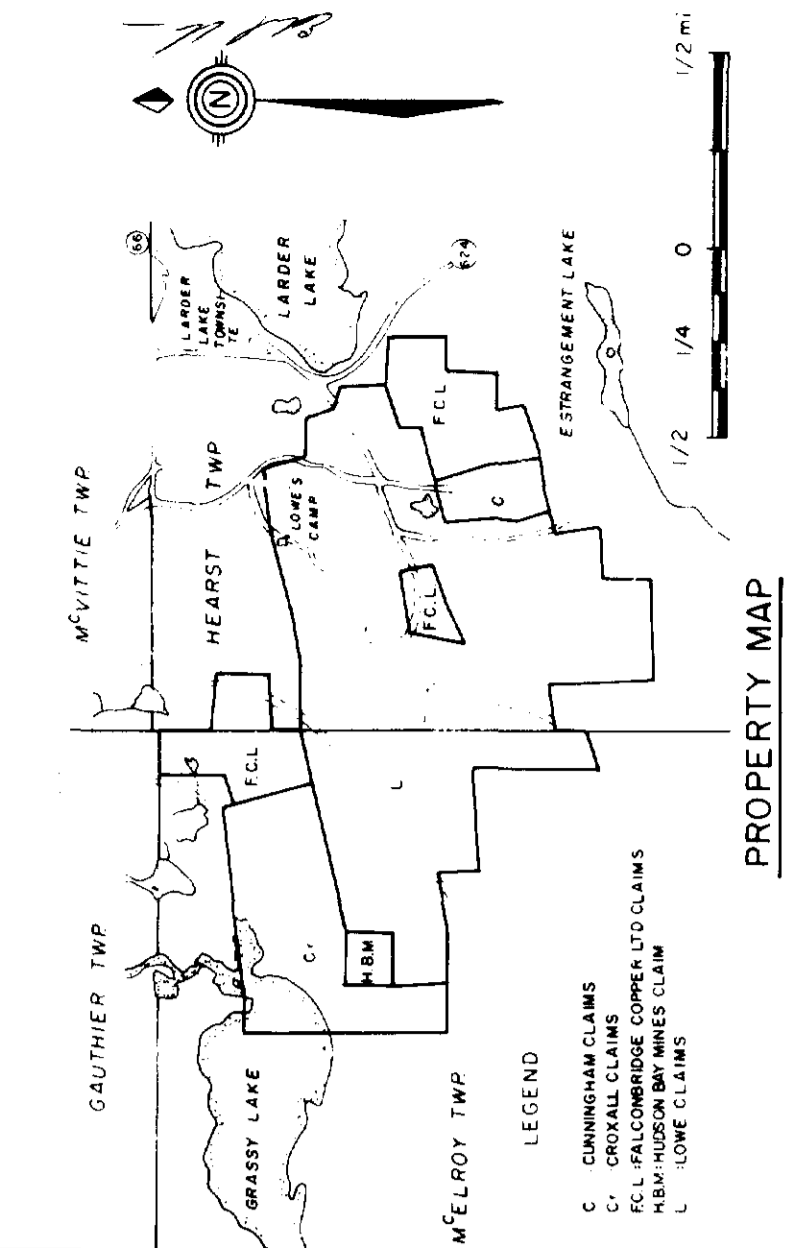
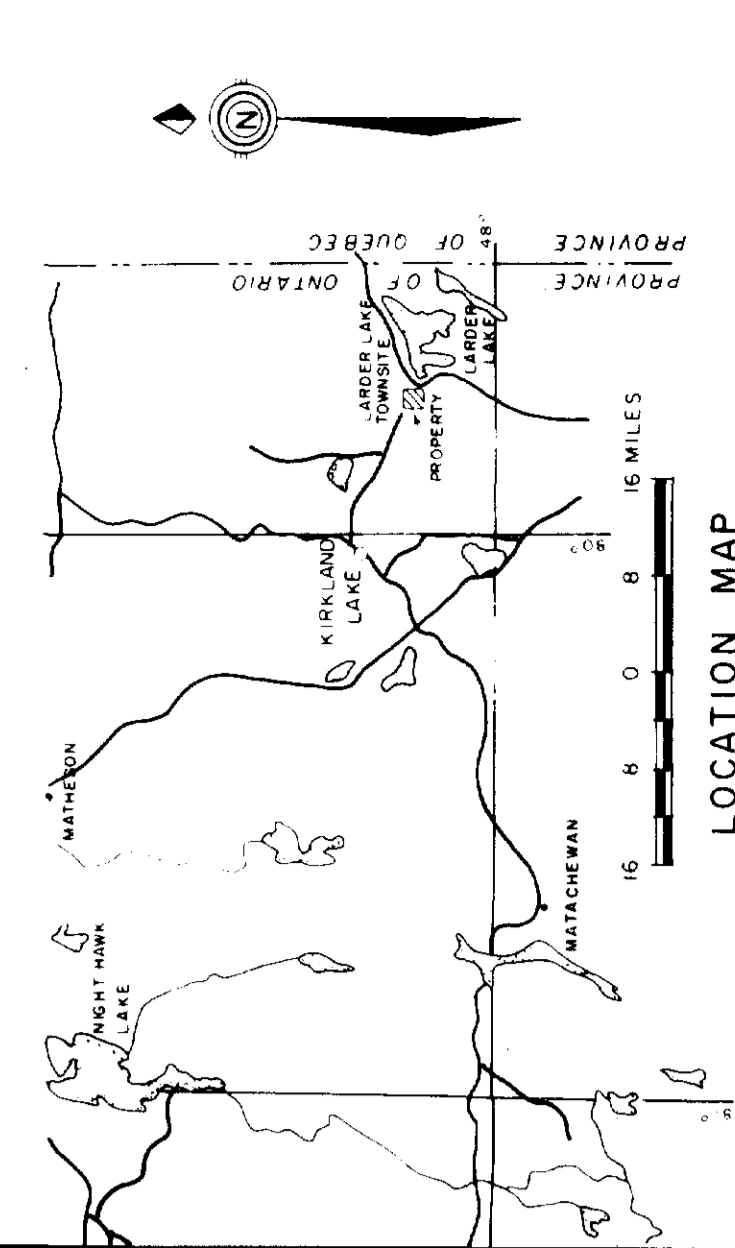
NOTE :
 SURVEY DONE BY GEOSOL IN 1977. INSTRUMENT :
 APEX PARAMETRICS MAX-MIN M 2 H.E.M.
 444 HZ, 400' SEPARATION.

LINES 12 W & 14 W DONE BY SERVICES EXPLORATION
 IN NOV 1978. INSTRUMENT. MAX-MIN M 2 H.E.M.
 444 HZ 400' SEPARATION

LEGEND



INDEX



FALCONBRIDGE COPPER LTD.

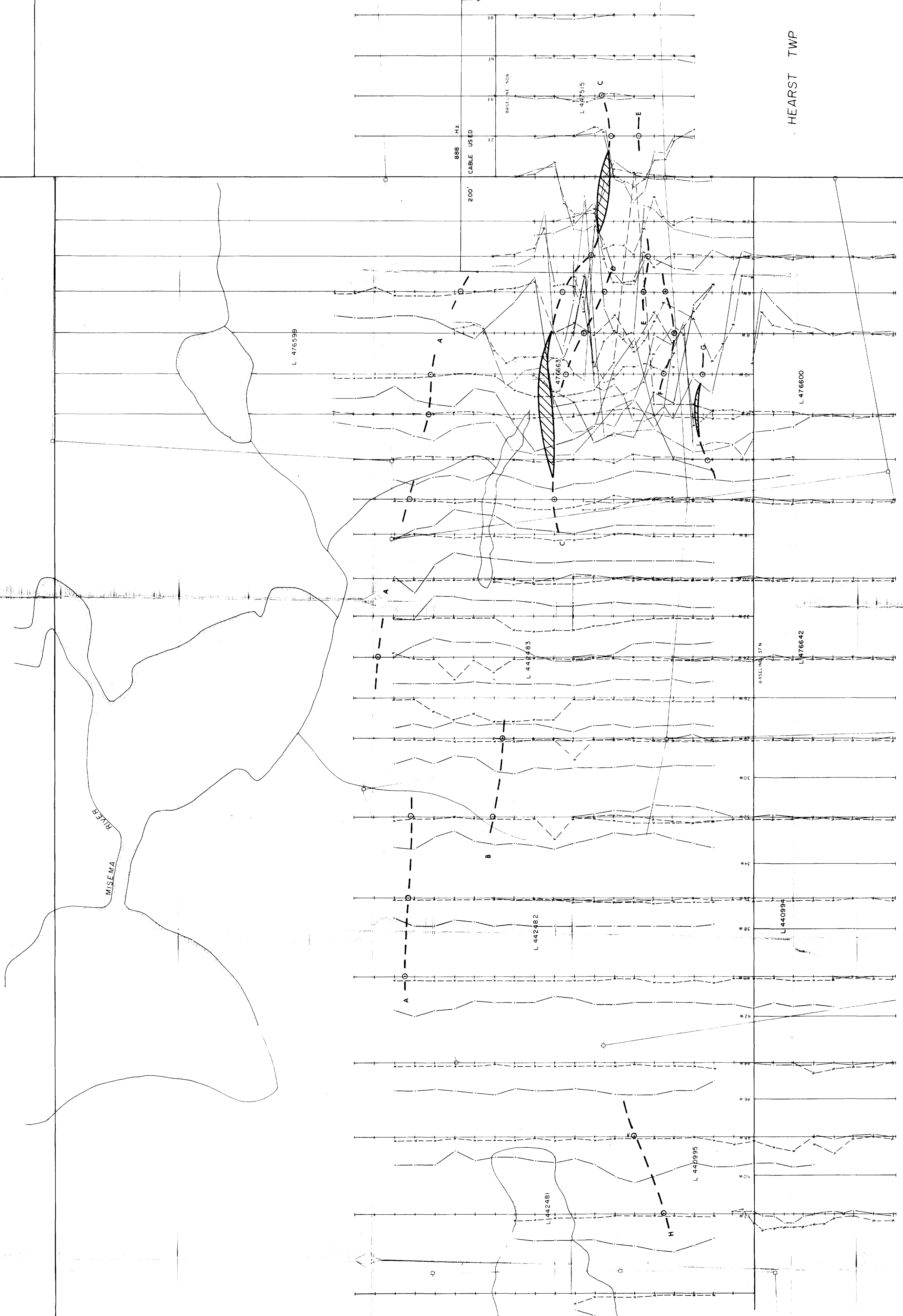
EXPLORATION

H.E.M. SURVEY

444/182

LARDER LAKE PROJECT

DATE : NOV 1978
 DRAWN : P.F.J.
 REVISED :
 SCALE : 1" = 200'



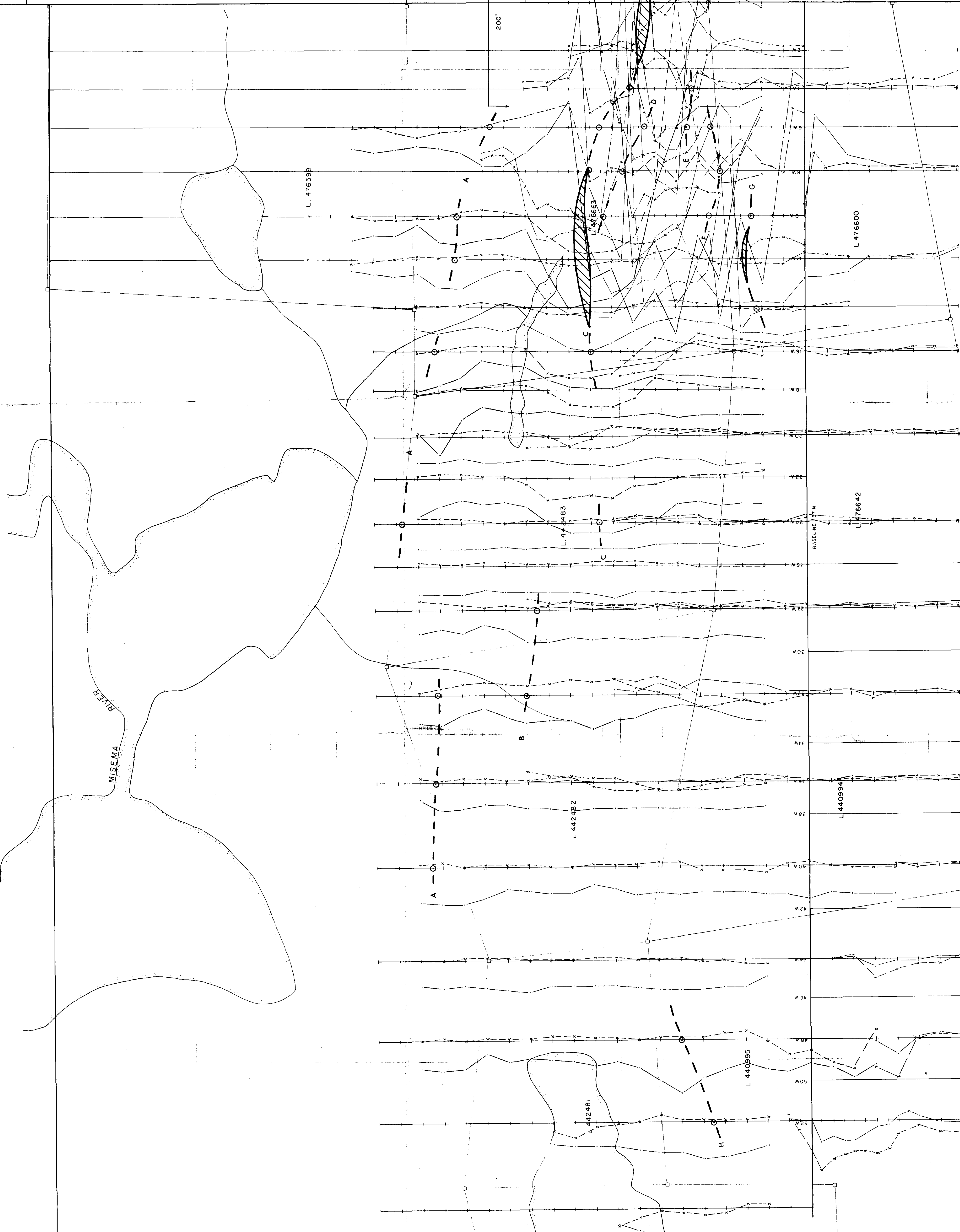
2000

M^cVITTIE TWP

GAUTHIER TWP

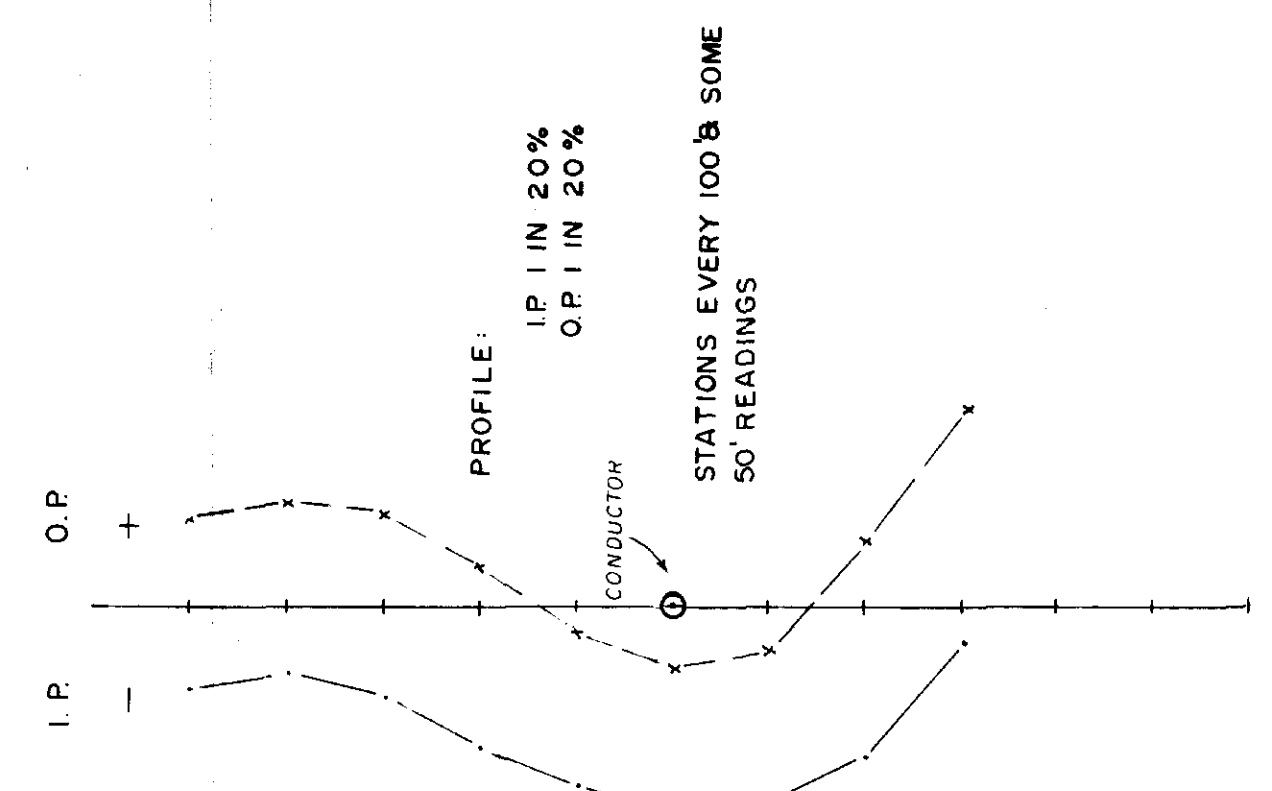
HEARST TWP

M^cELROY TWP

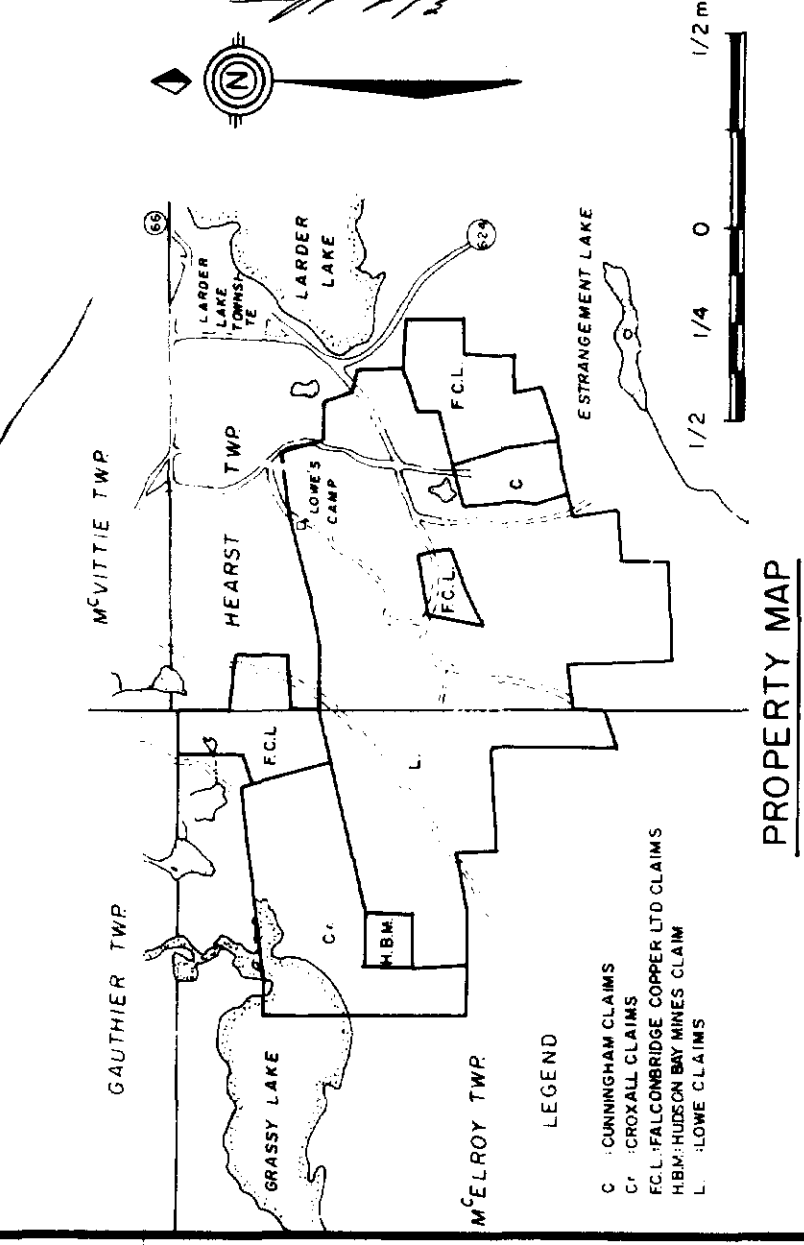
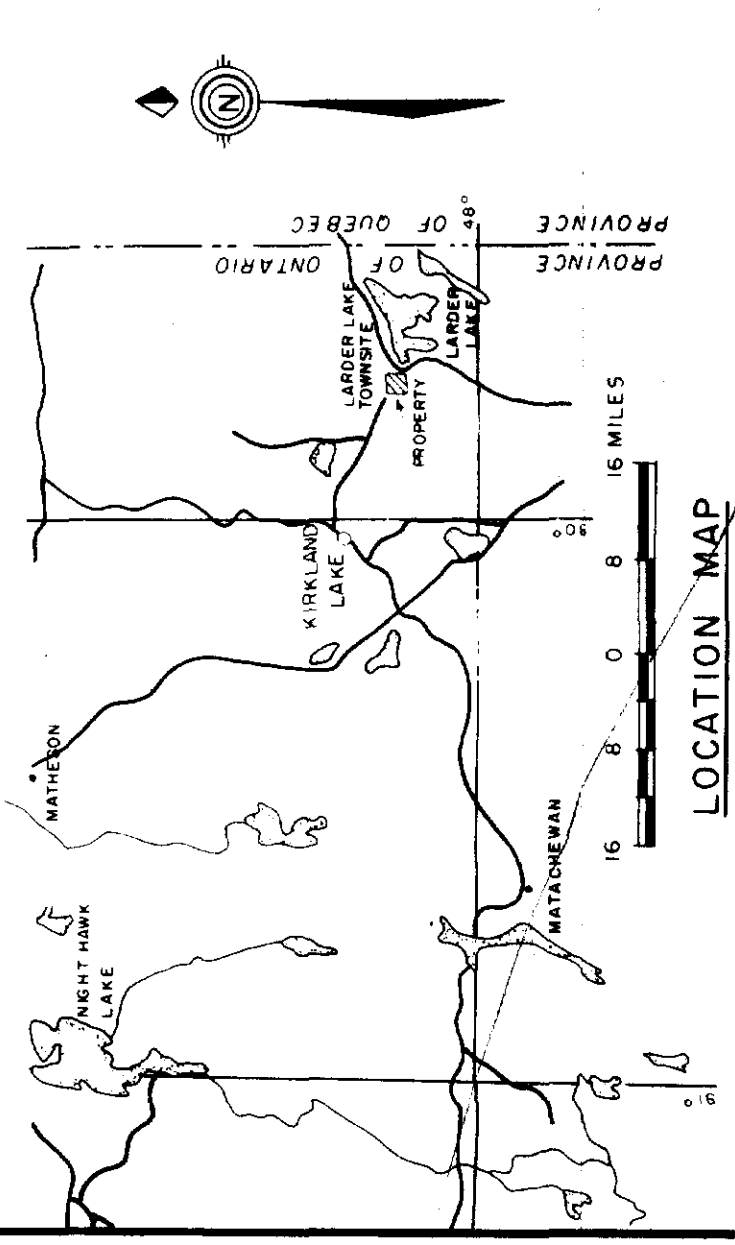


NOTE : SURVEY DONE BY GEOSOL IN 1977. INSTRUMENT :
APEX PARAMETRICS MAX-MIN M.2. H.E.M.
1777 Hz. 400' SEPARATION.
LINES 12 W & 14 W DONE BY SERVICES EXPLORATION
IN NOV. 1978. INSTRUMENT : MAX-MIN M.2. H.E.M.
1777 Hz. 400' SEPARATION.

LEGEND



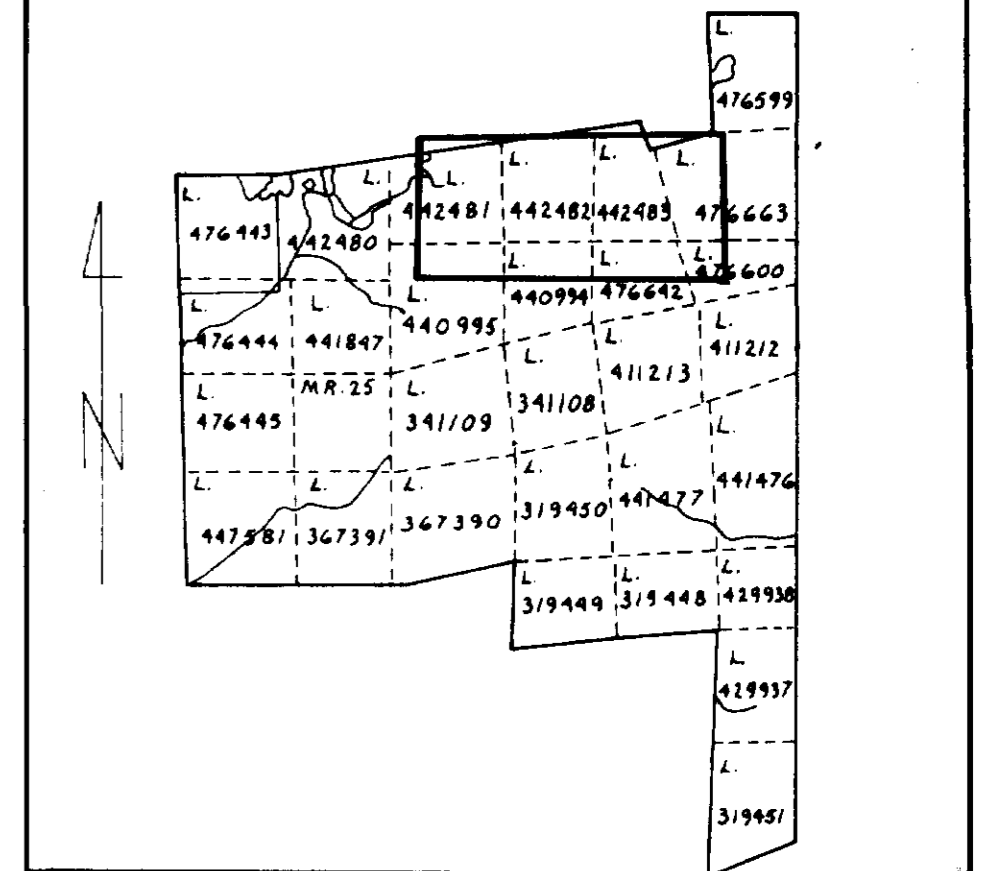
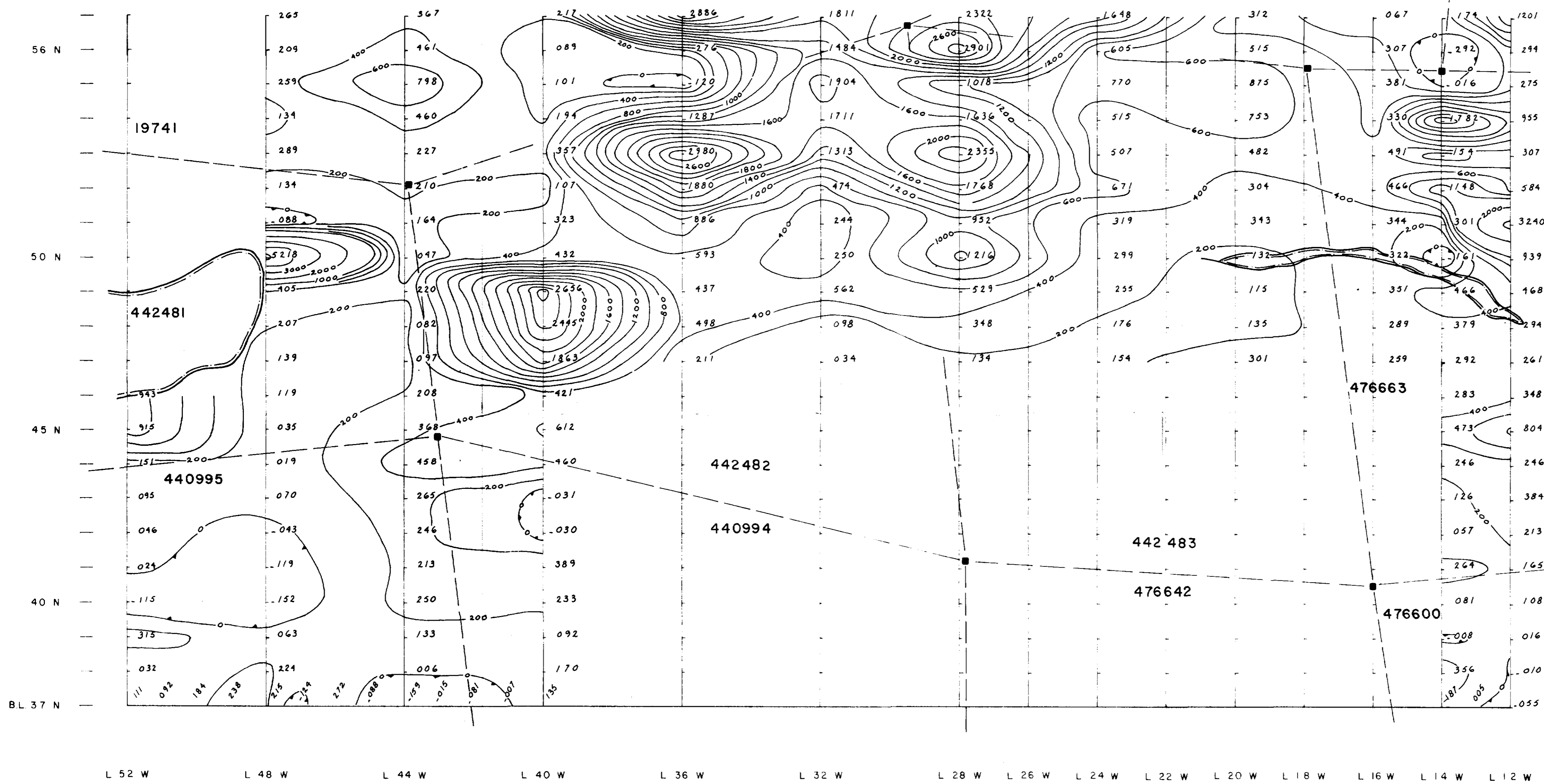
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FALCONBRIDGE COPPER LTD.
EXPLORATION
H.E.M. SURVEY
1777 Hz
LARDER LAKE PROJECT

DATE : NOV. 1978
DRAWN : R.F.A.
REVISÉ :
SCALE : 1" = 200'
APPROVED :





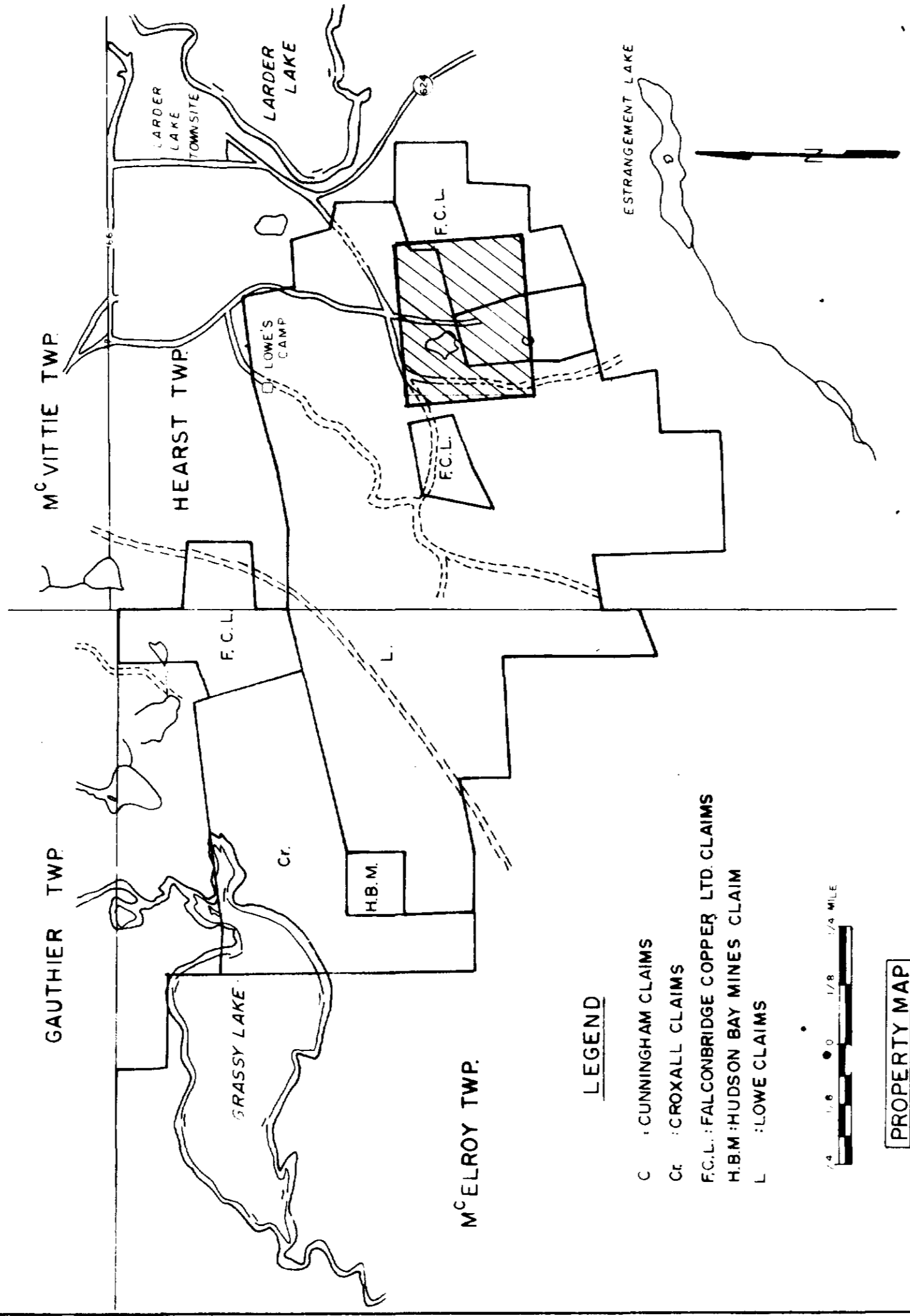
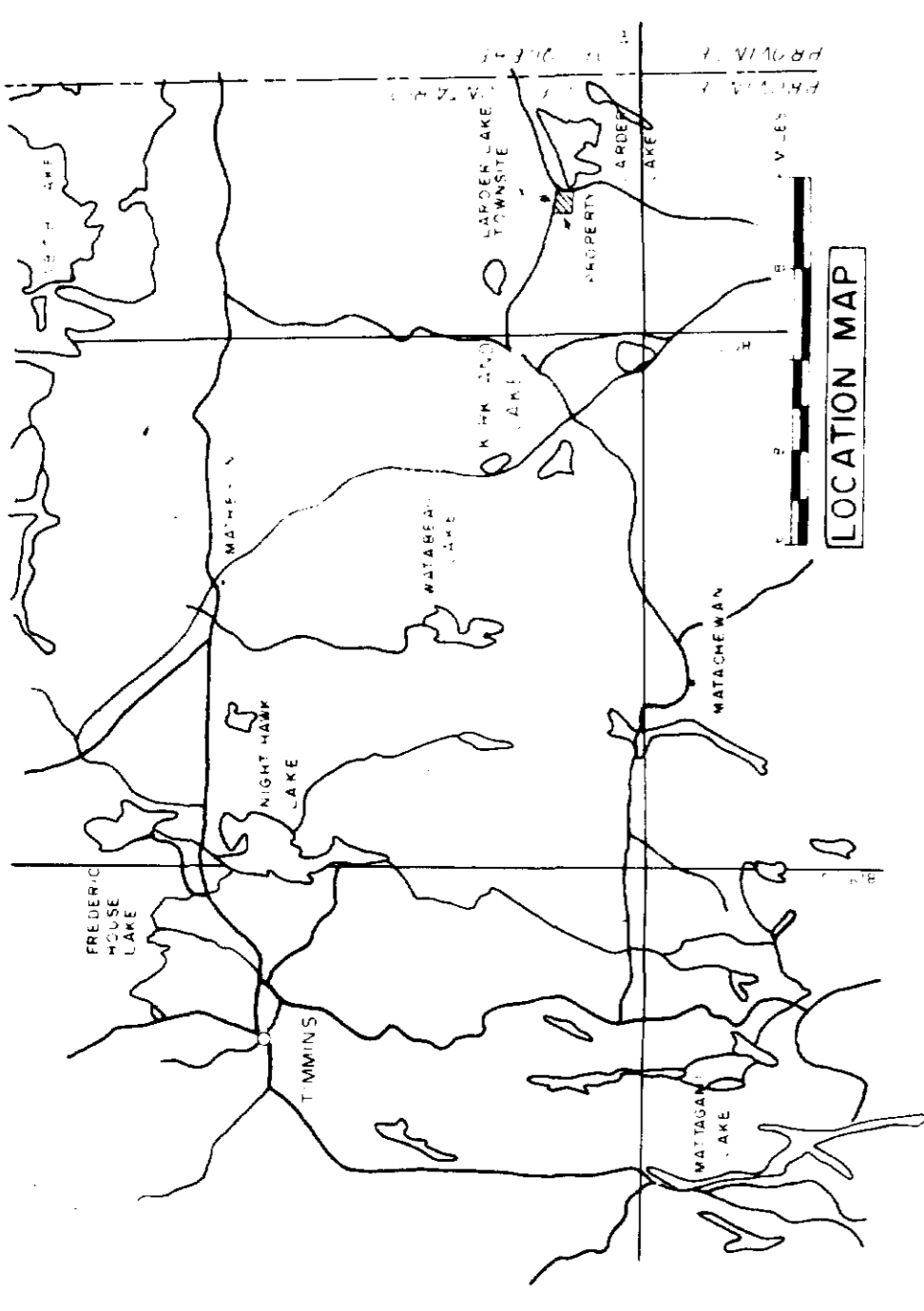
LOCATION PLAN
OF
LARDER LAKE PROJECT

CONTOUR INTERVAL: 200 y
MAGNETIC BASE LEVEL: 59,000 y

MAGNETOMETER SURVEY	
FOR	
FALCONBRIDGE COPPER LTD	
PROJECT: LARDER LAKE	
SURVEYED BY: M.L.R.C. DATE: OCT. 78.	
Instrument: PROTON G-816	DRAWN BY: R.C. SCALE: 1"=200'
TWP: Mc ELROY	SERVICES EXPLORATION SERVICES ENRG. REGD.



INDEX MAPS

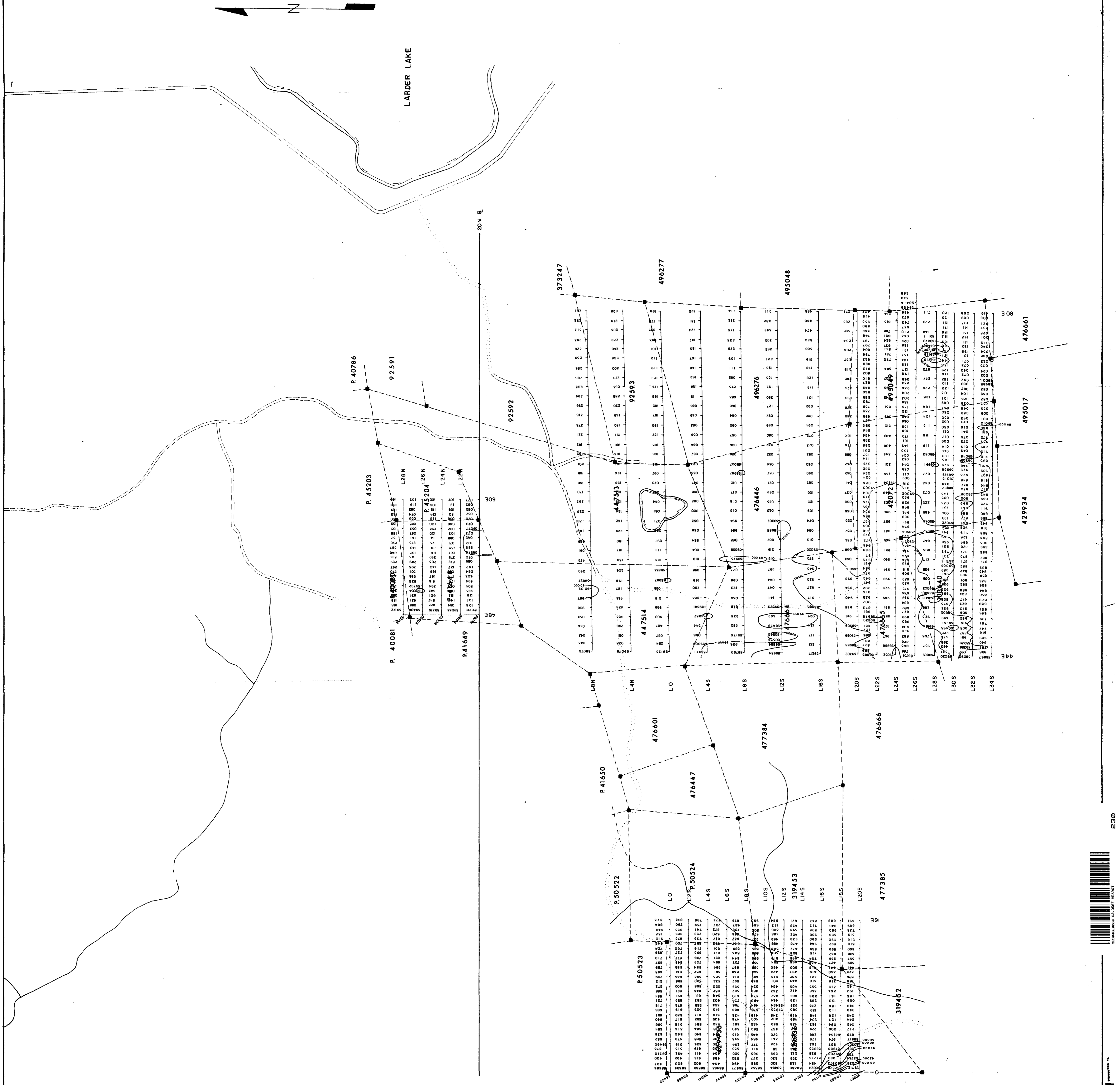


LEGEND
C - CUNNINGHAM CLAIMS
Cr - CROXALL CLAIMS
F.C.L. - FALCONBRIDGE COPPER LTD CLAIMS
H.B.M. - HUDSON BAY MINES CLAIM
L - LOWE CLAIMS

PROPERTY MAP

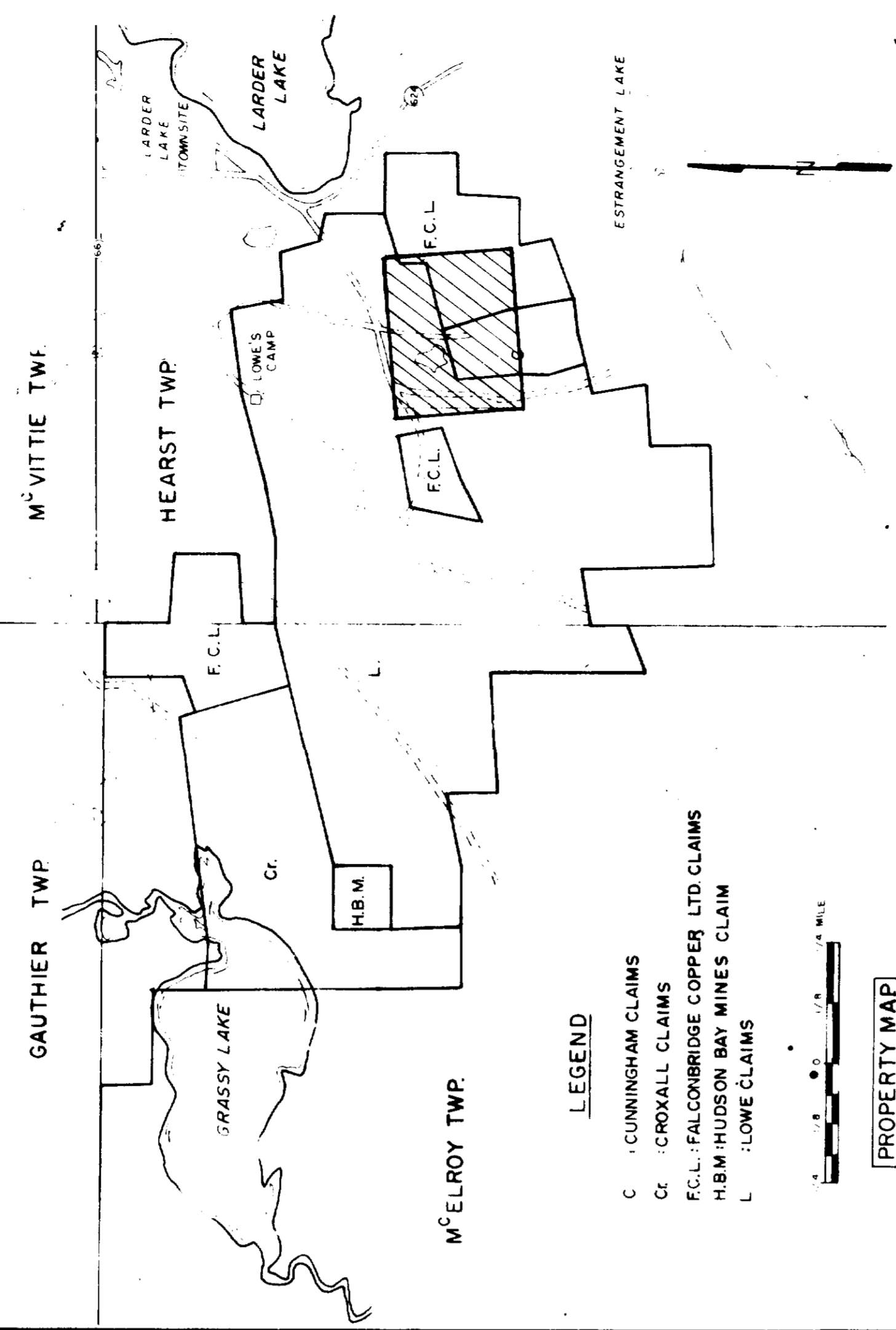
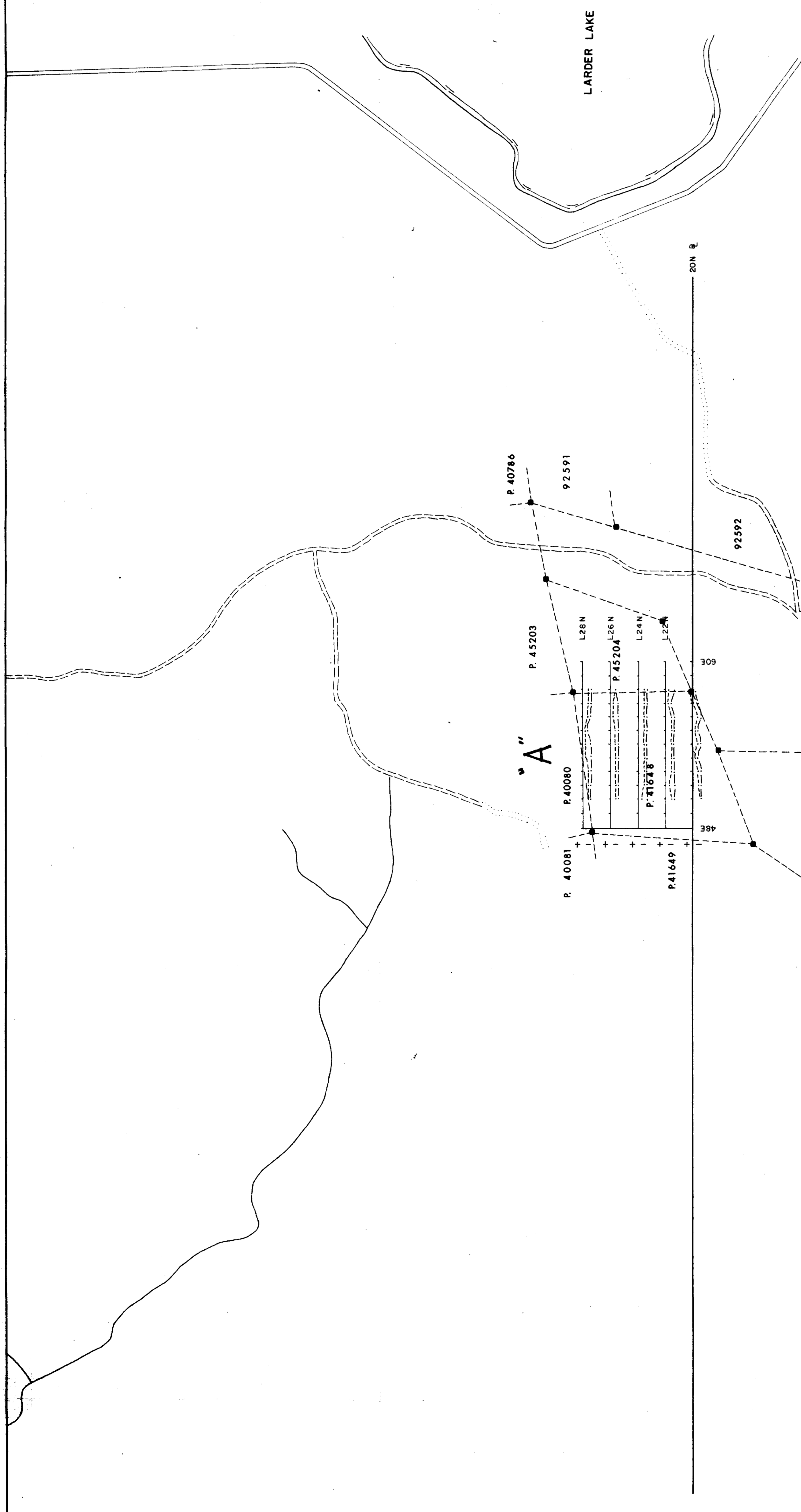
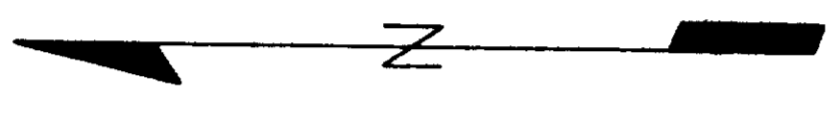
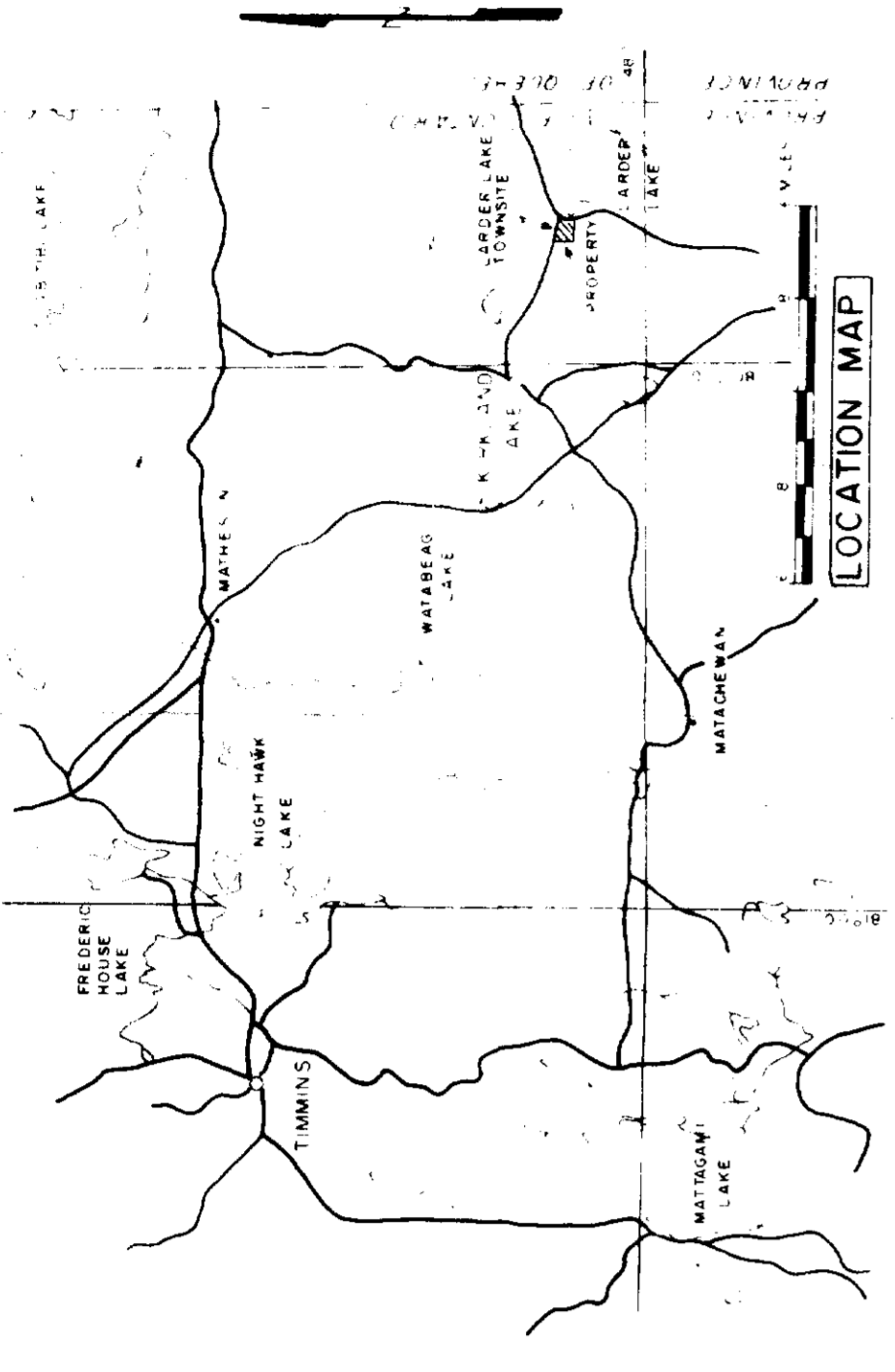
MAGNETOMETER SURVEY
FOR
FALCONBRIDGE COPPER LTD

PROJECT: LARDER LAKE
SURVEYED BY: G.M., P.P.R.C.
DATE: JULY 78
DRAWN BY: R.C.
SCALE: 1" = 400'
ENRCS
SERVICES EXPLORATION SERVICES
REGD.
TWP: HEARST



2330

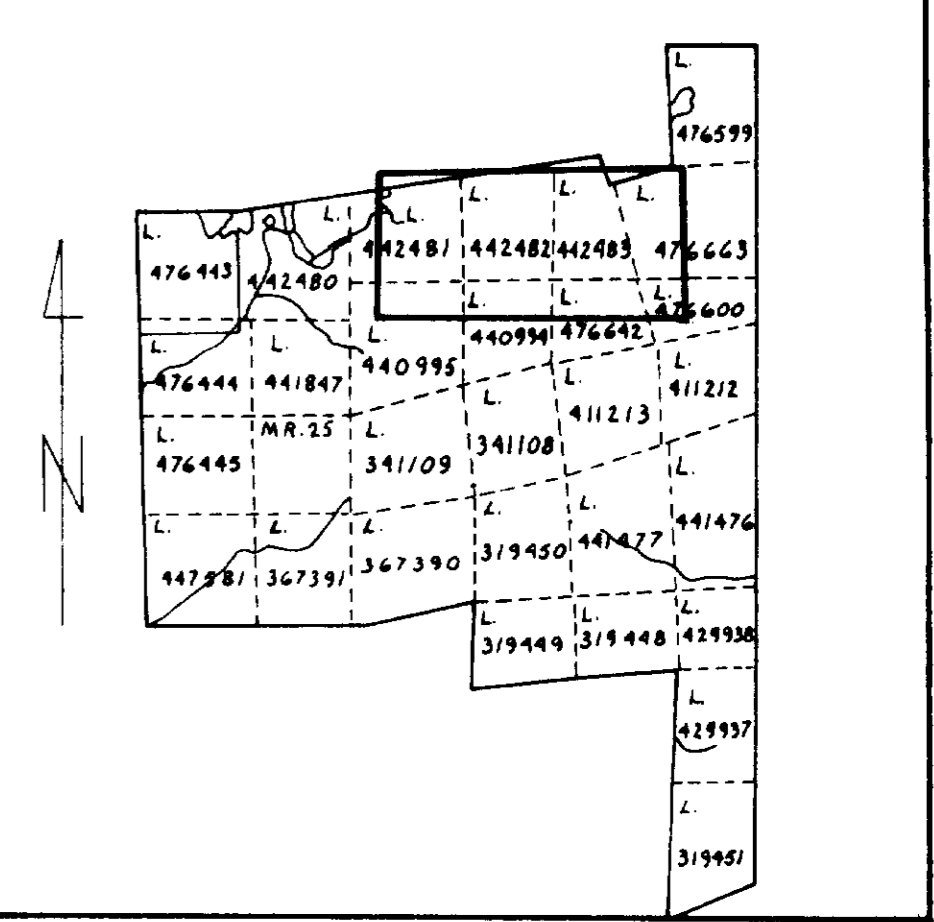
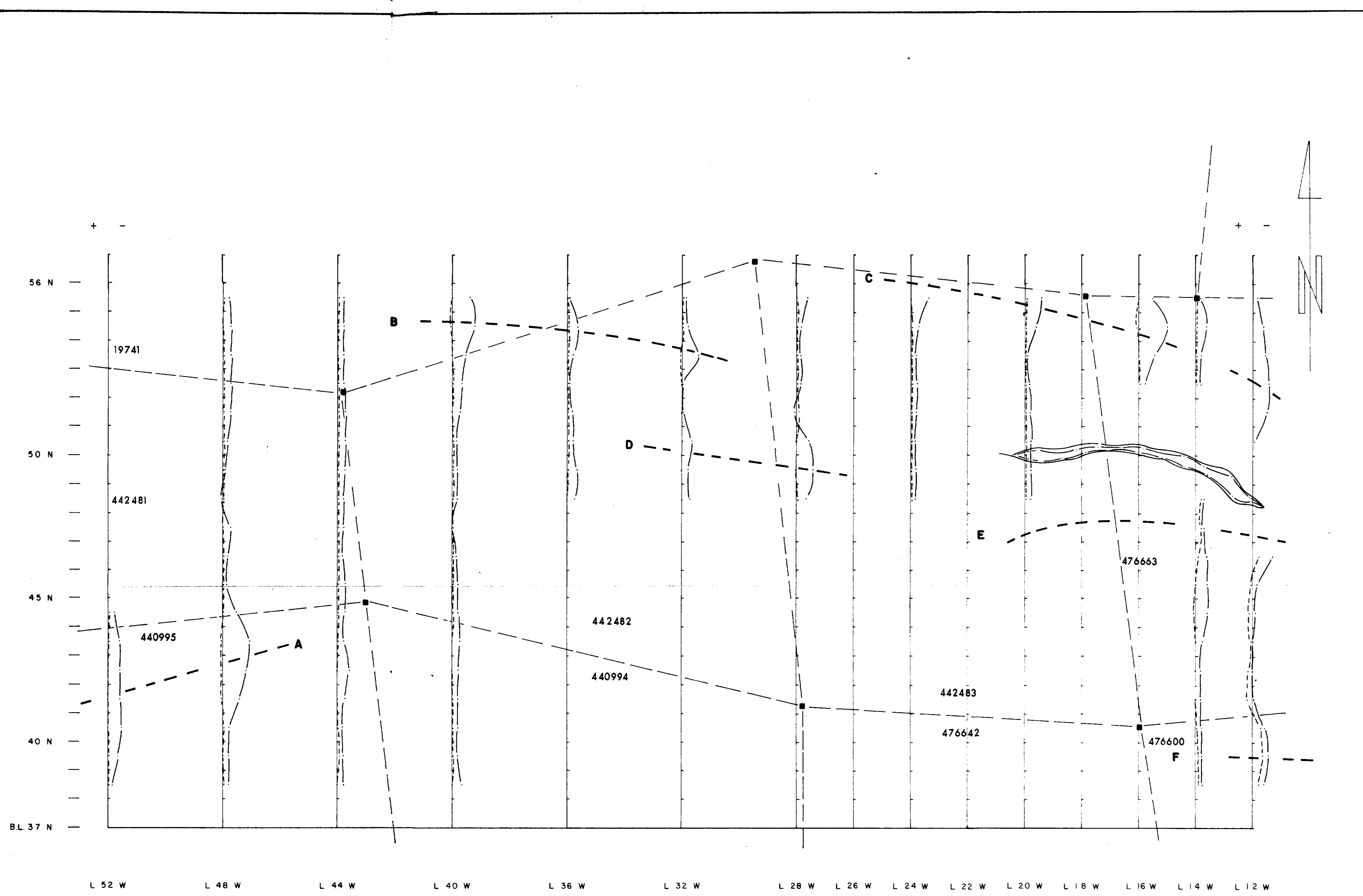
INDEX MAPS



- LEGEND
- C - CUNNINGHAM CLAIMS
 - Cl - CROXALL CLAIMS
 - F.C.L. - FALCONBRIDGE COPPER LTD CLAIMS
 - H.B.M. - HUDSON BAY MINES CLAIM
 - L - LOWE CLAIMS

Coil Separation: 400'	ELECTROMAGNETIC SURVEY FOR FALCONBRIDGE COPPER LTD
Frequency: 444Hz	
OP: 20%	
Instrument: MAXMIN II	PROJECT: LARDER LAKE
TWP: HEARST	SURVEYED BY: BC, ML, RPPC
	DATE: MAY 78
	SCALE: 1" = 400'
	DRAWN BY: RC
	ENR: ENR
	SERVICES: EXPLORATION SERVICES
	REGD: REGD



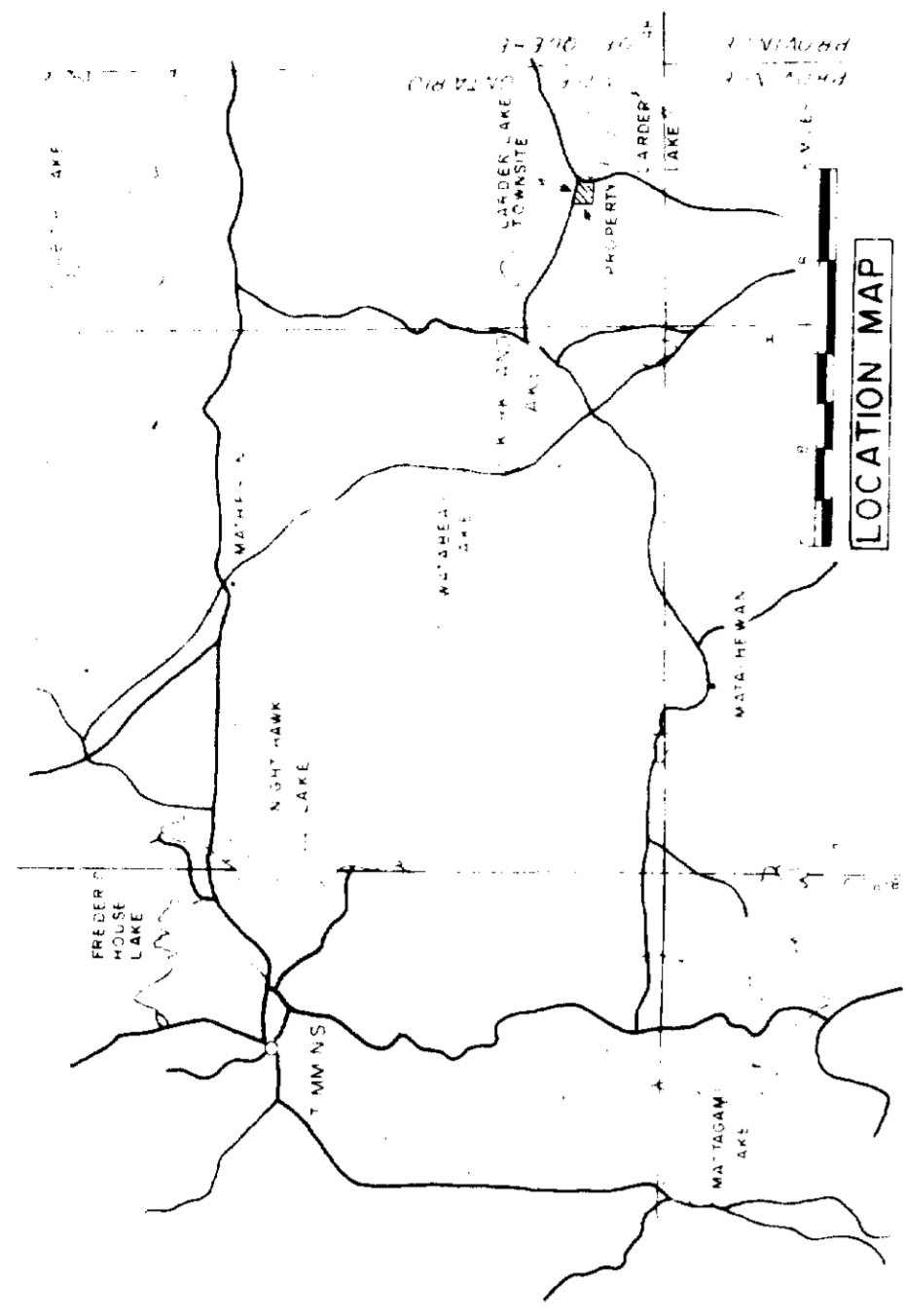


LOCATION PLAN
OF
LARDER LAKE PROJECT

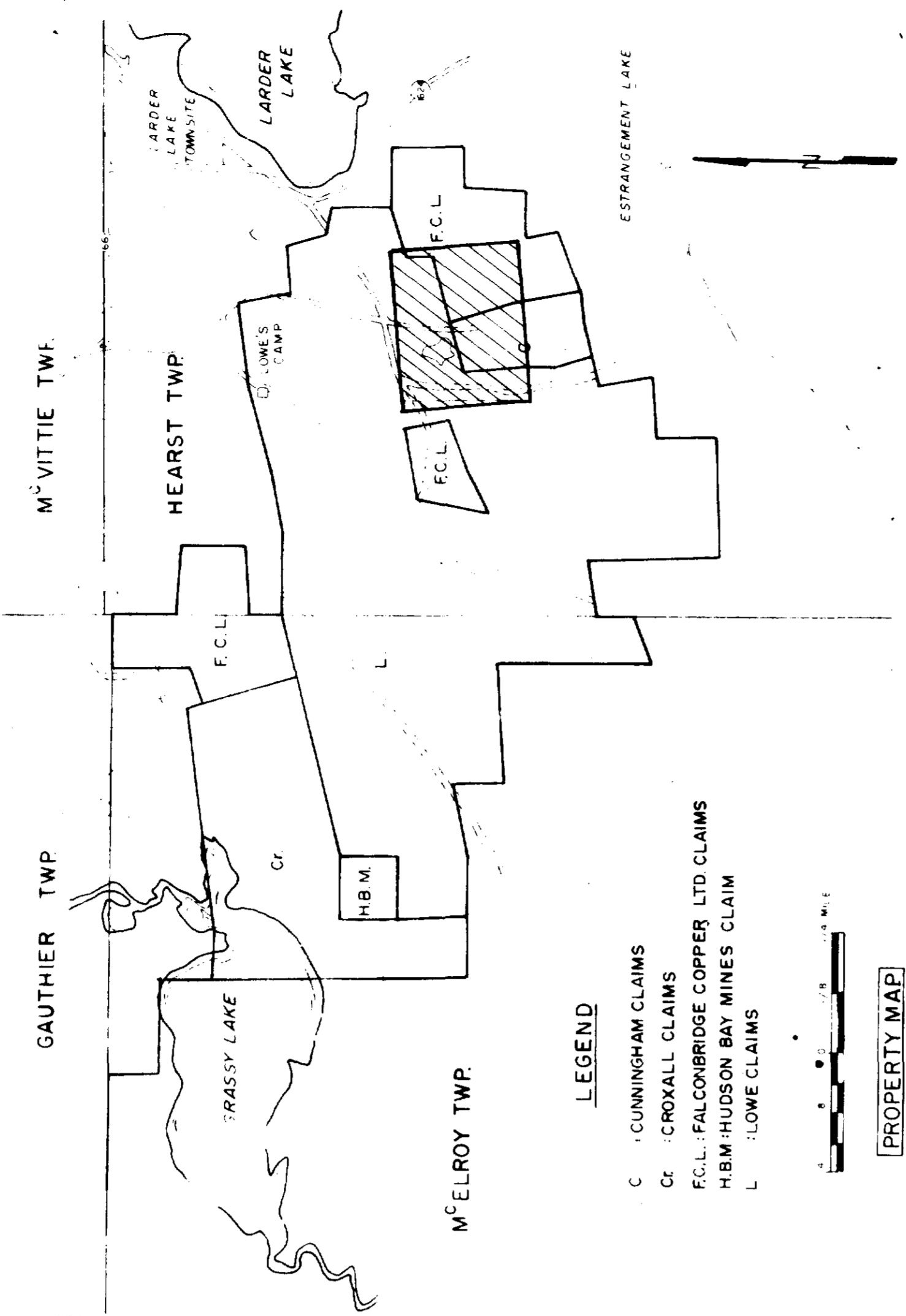
Coil Separation 300 Frequency 444Hz I.P. O.P. 1" = 40% - - Conductor axis	ELECTROMAGNETIC SURVEY FOR FALCONBRIDGE COPPER LTD	
	PROJECT: LARDER LAKE SURVEYED BY: ML, RC DATE: OCT. 78.	DRAWN BY: RC SCALE: 1" = 200' ENRG. REGD.
Instrument: Maxmin II TWP. McELROY	SERVICES EXPLORATION SERVICES	



INDEX MAPS

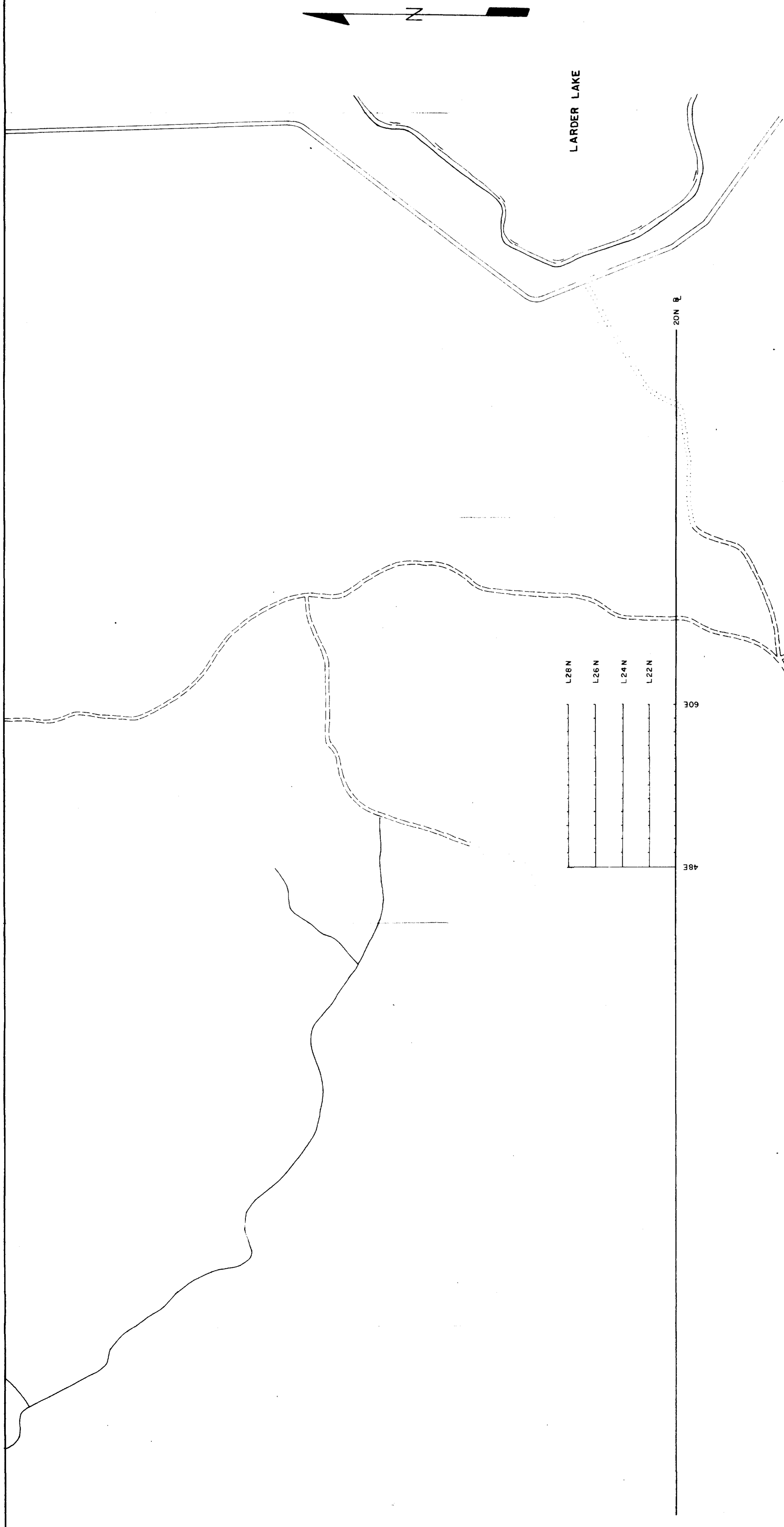


LOCATION MAP

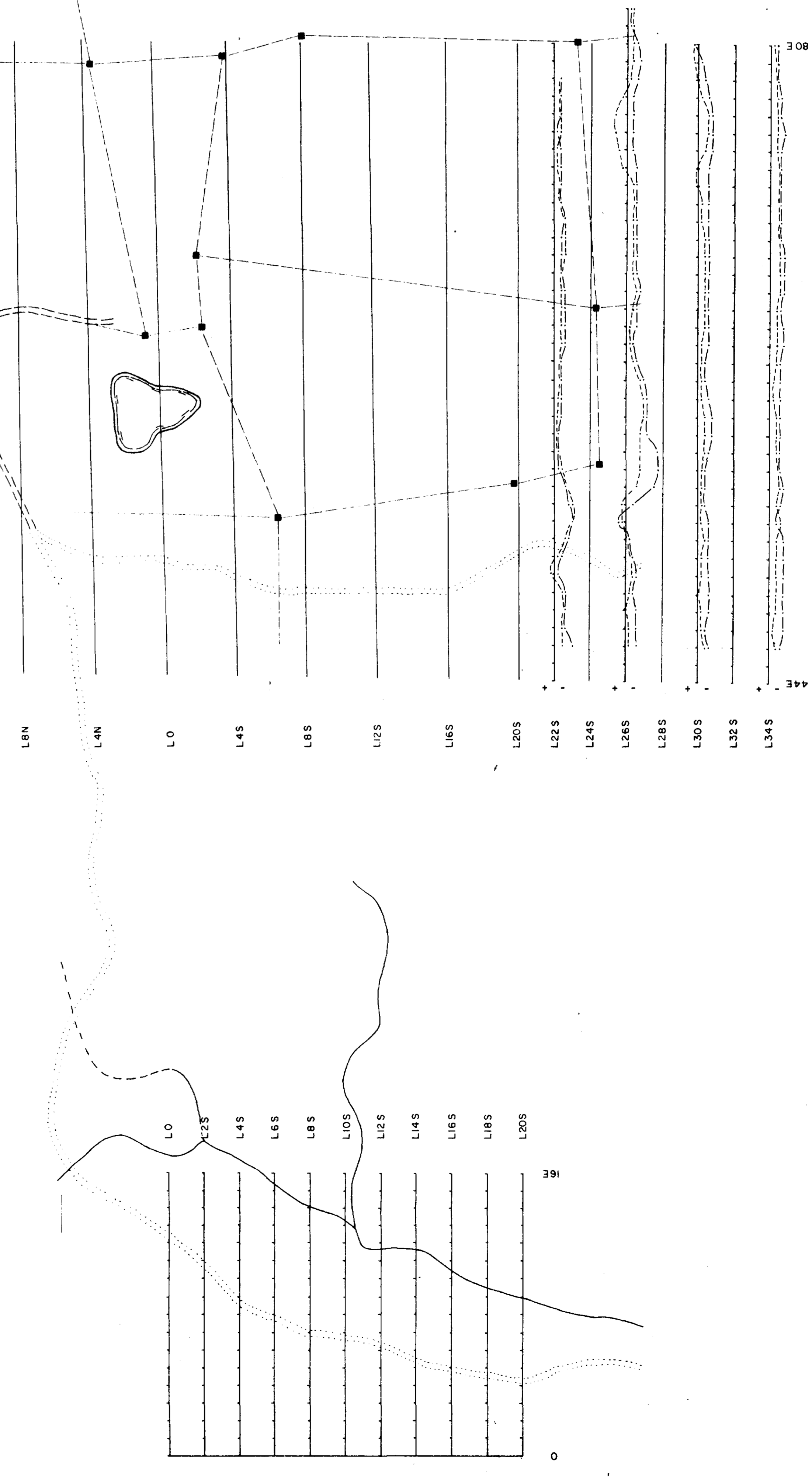


PROPERTY MAP

- LEGEND**
- C CUNNINGHAM CLAIMS
 - Cr CROXALL CLAIMS
 - F.C.L. FALCONBRIDGE COPPER LTD. CLAIMS
 - H.B.M. HUDSON BAY MINES CLAIM
 - L LOWE CLAIMS



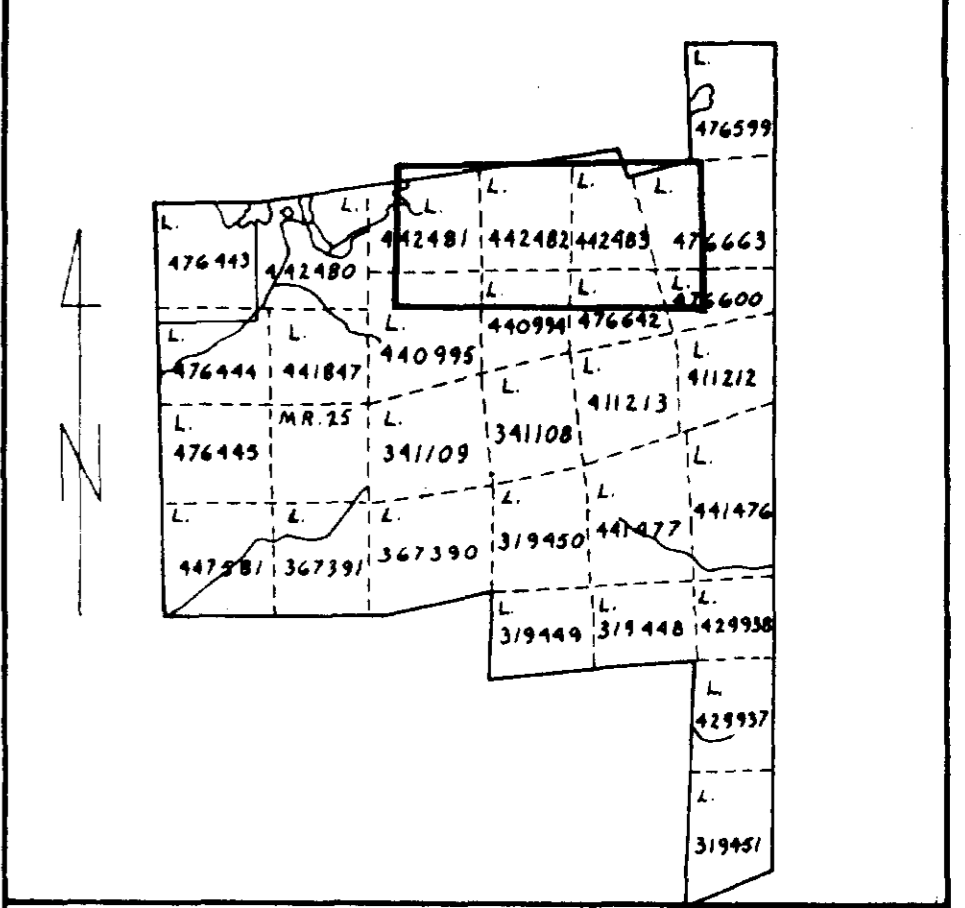
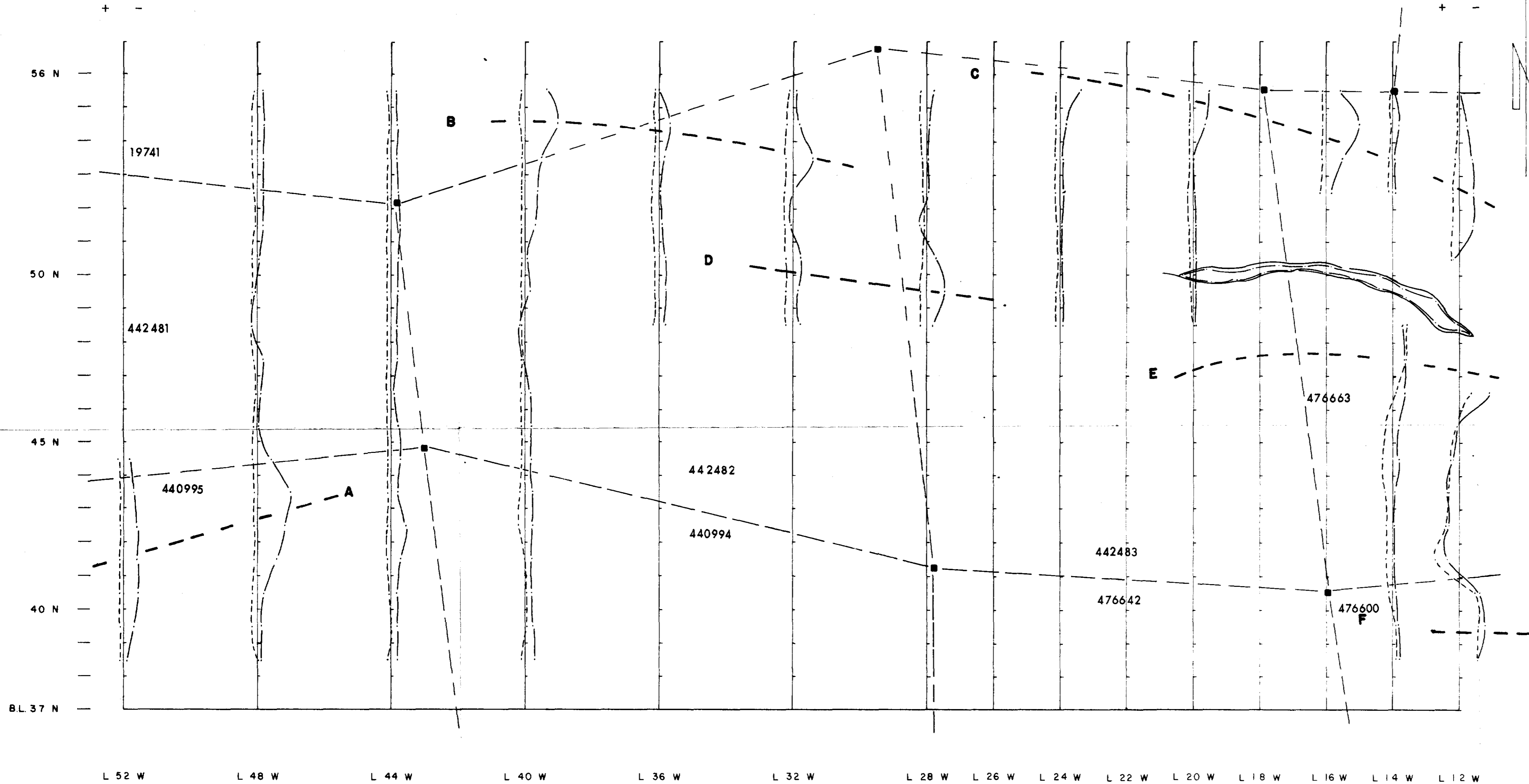
- L28N
- L26N
- L24N
- L22N



10

ELECTROMAGNETIC SURVEY		FOR	
FALCONBRIDGE COPPER LTD		PROJECT LARDER LAKE "C"	
Coil Separation: 600'	Frequency: 444 Hz	SURVEYED BY: EC, ML, RPR	DATE: JULY 78
IP: 10%	OP: 20%	DRAWN BY: RC	SCALE: 1"=400'
Instrument: Max/min II		TWP: HEARST	
SERVICES EXPLORATION SERVICES		FALCONBRIDGE COPPER LTD	



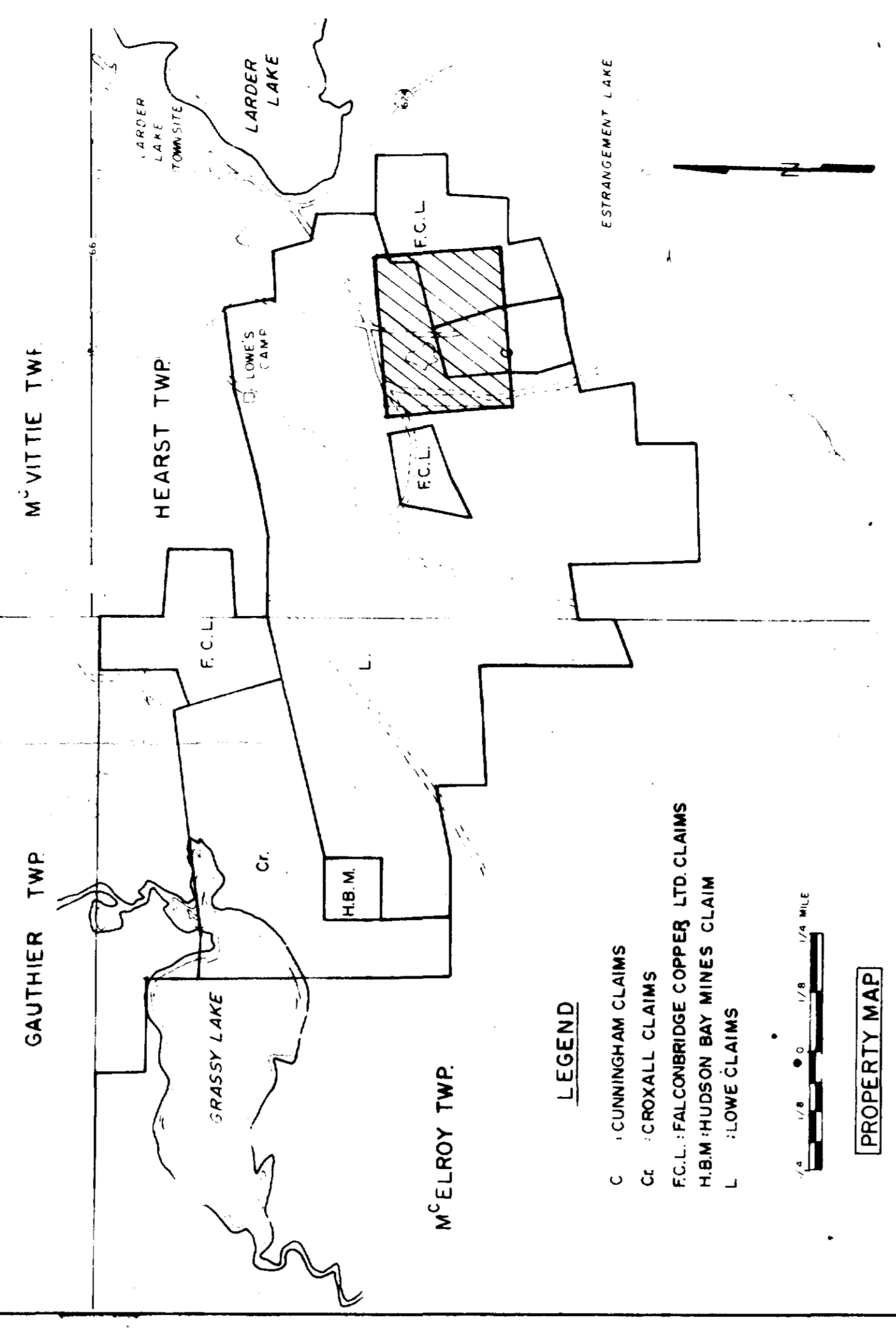
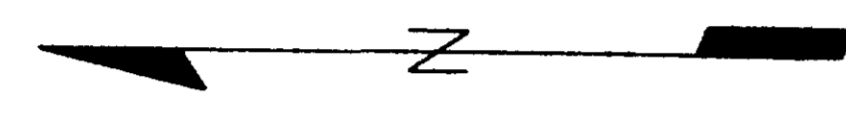
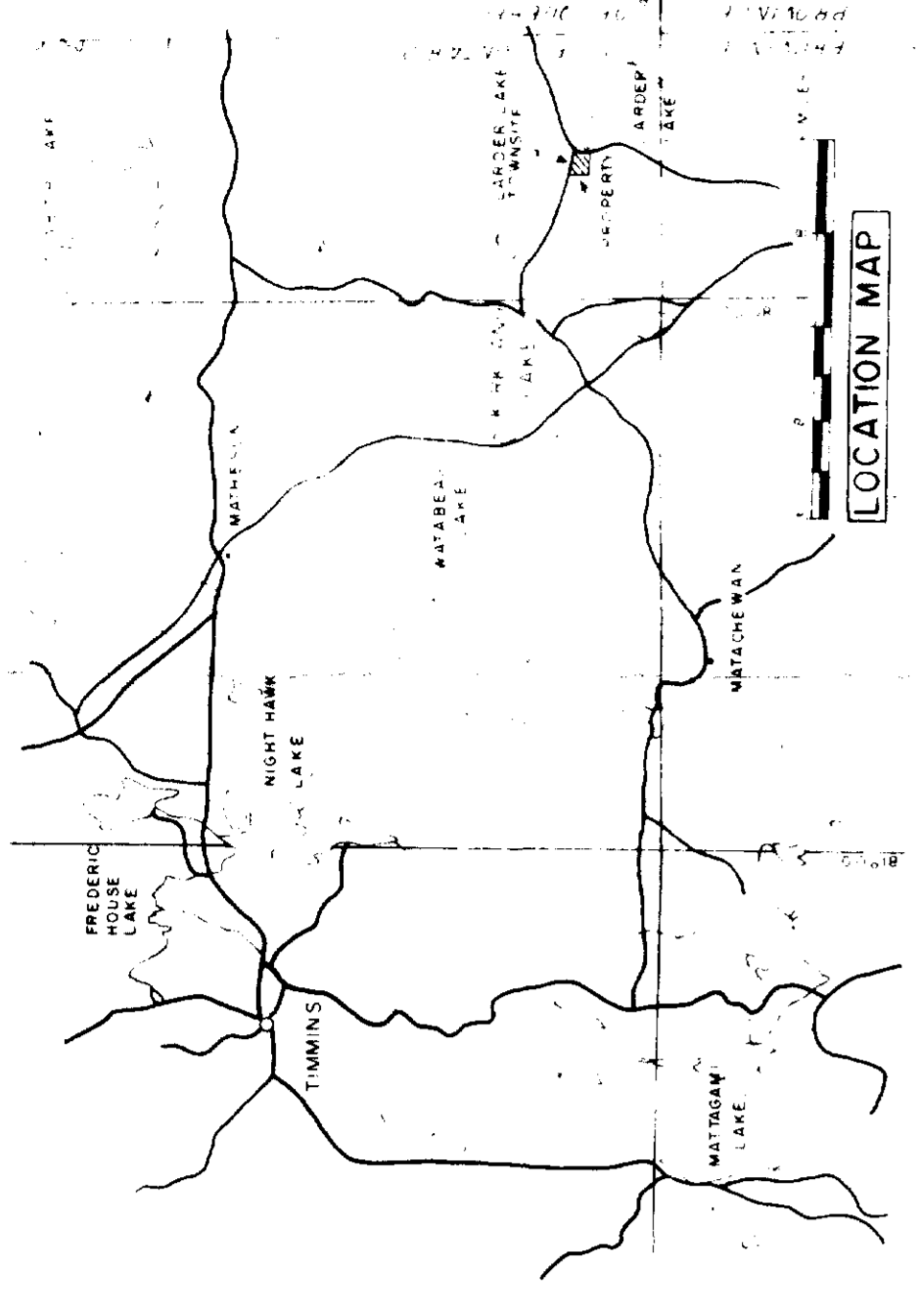


LOCATION PLAN
OF
LARDER LAKE PROJECT

Coil Separation: 300 Frequency: 777 Hz I.P. _____ O.P. _____ 1" = 40%	ELECTROMAGNETIC SURVEY FOR FALCONBRIDGE COPPER LTD	
	PROJECT LARDER LAKE	
Instrument: Maxmin II TWP. McELROY	SURVEYED BY: M.L., R.C. _____ DATE: OCT. 78. DRAWN BY: R.C. _____ SCALE: 1" = 200' SERVICES EXPLORATION SERVICES ENRG. REGD.	



INDEX MAPS



LEGEND
 C - CUNNINGHAM CLAIMS
 CL - CROYALL CLAIMS
 F.C.L. - FALCONBRIDGE COPPER LTD CLAIMS
 H.B.M. - HUNTER BURNHAM MINES CLAIM
 L - LOWE CLAIMS

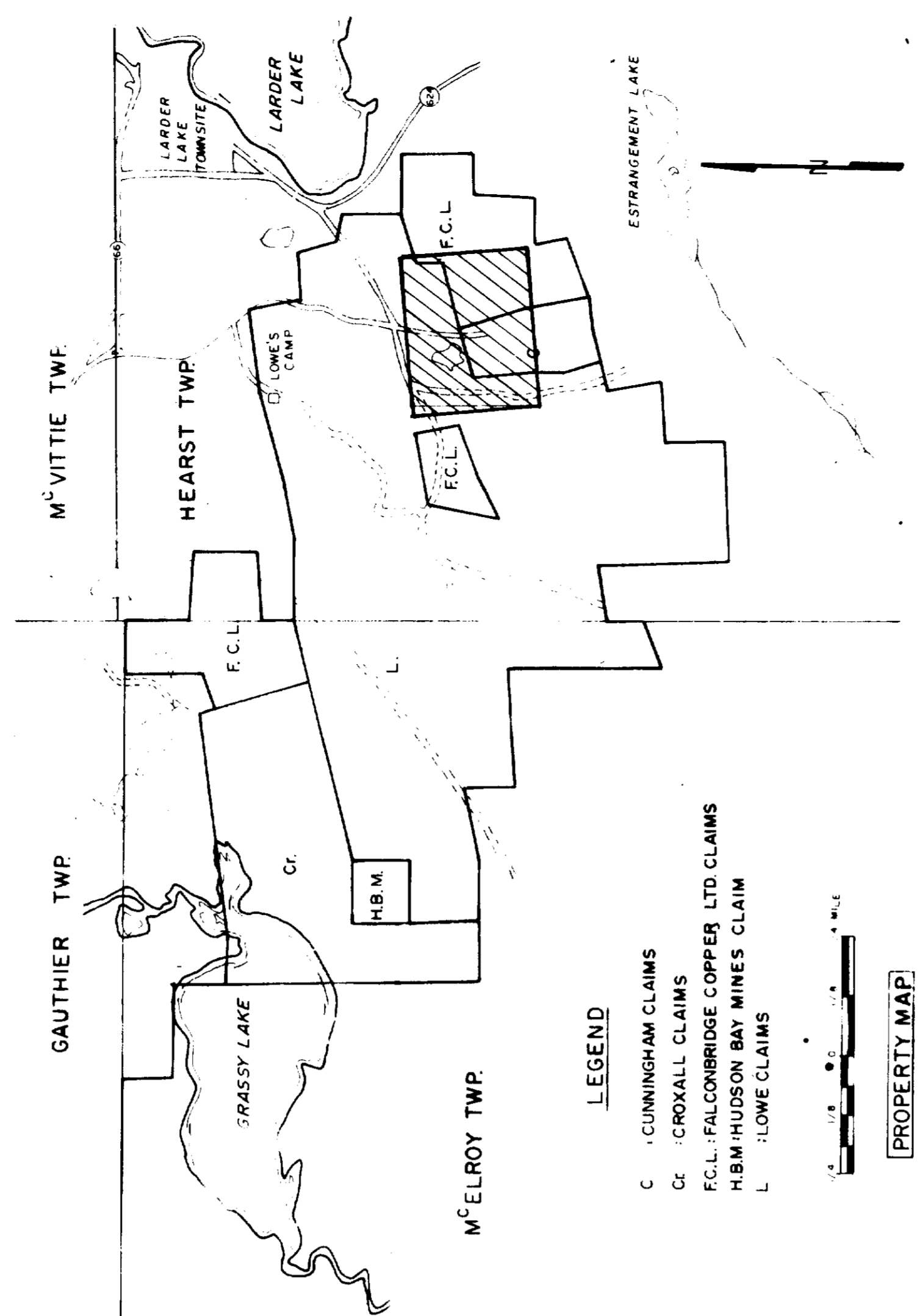
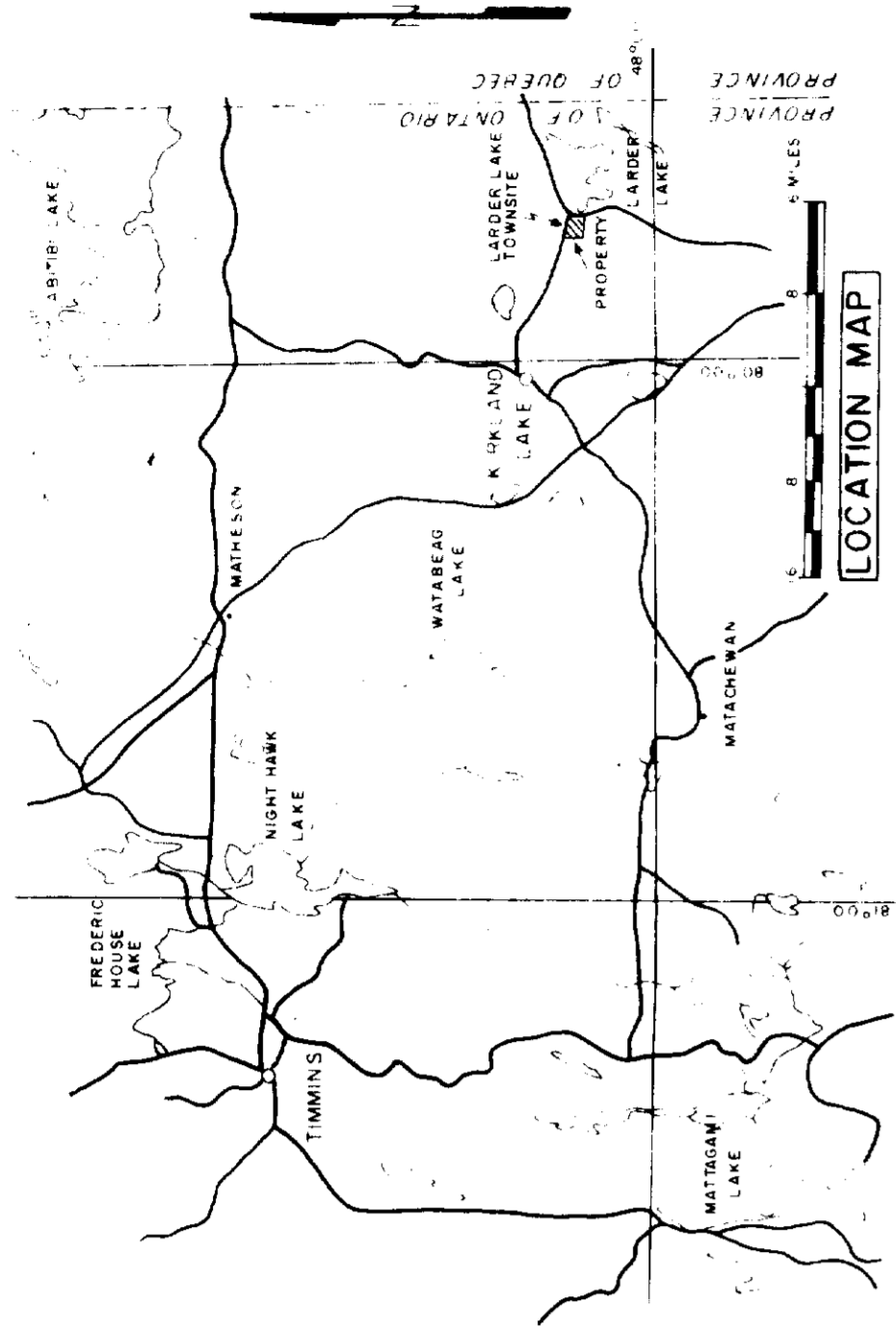


PROPERTY MAP

Coil Separation: 400'	ELECTROMAGNETIC SURVEY		
Frequency: 1277 Hz	FOR		
I.P.:	FALCONBRIDGE COPPER LTD		
OF:	PROJECT: LARDER LAKE		
1" = 20' ±	SURVEYED BY: J.C., M.L., R.P.R.C.		
	DATE: MAY 78		
	DRAWN BY: R.C.		
	INSTRUMENT: MAXMIN II		
	SCALE: 1" = 100'		
	SERVICES: EXPLORATION SERVICES		
	REGD.		

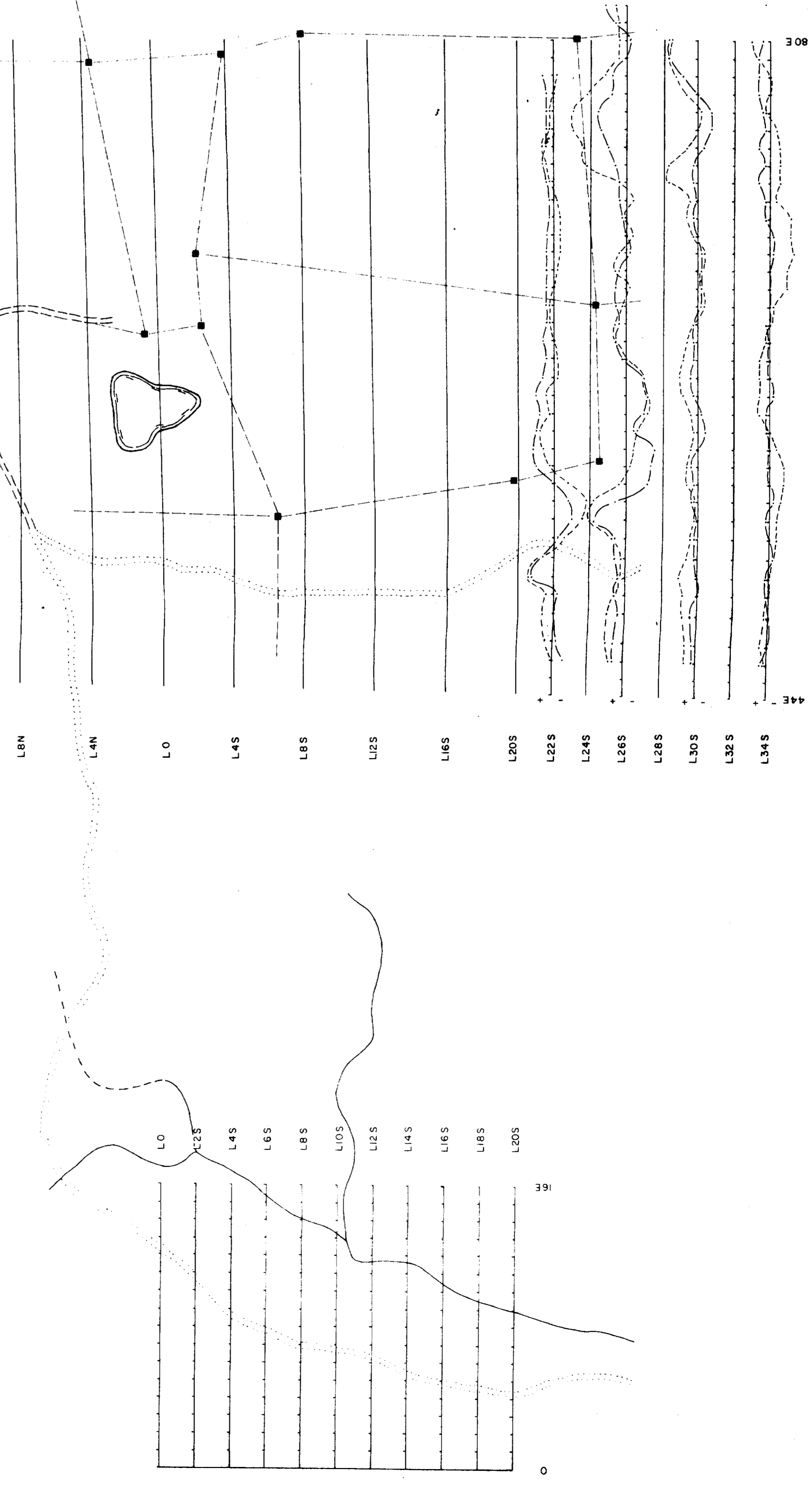
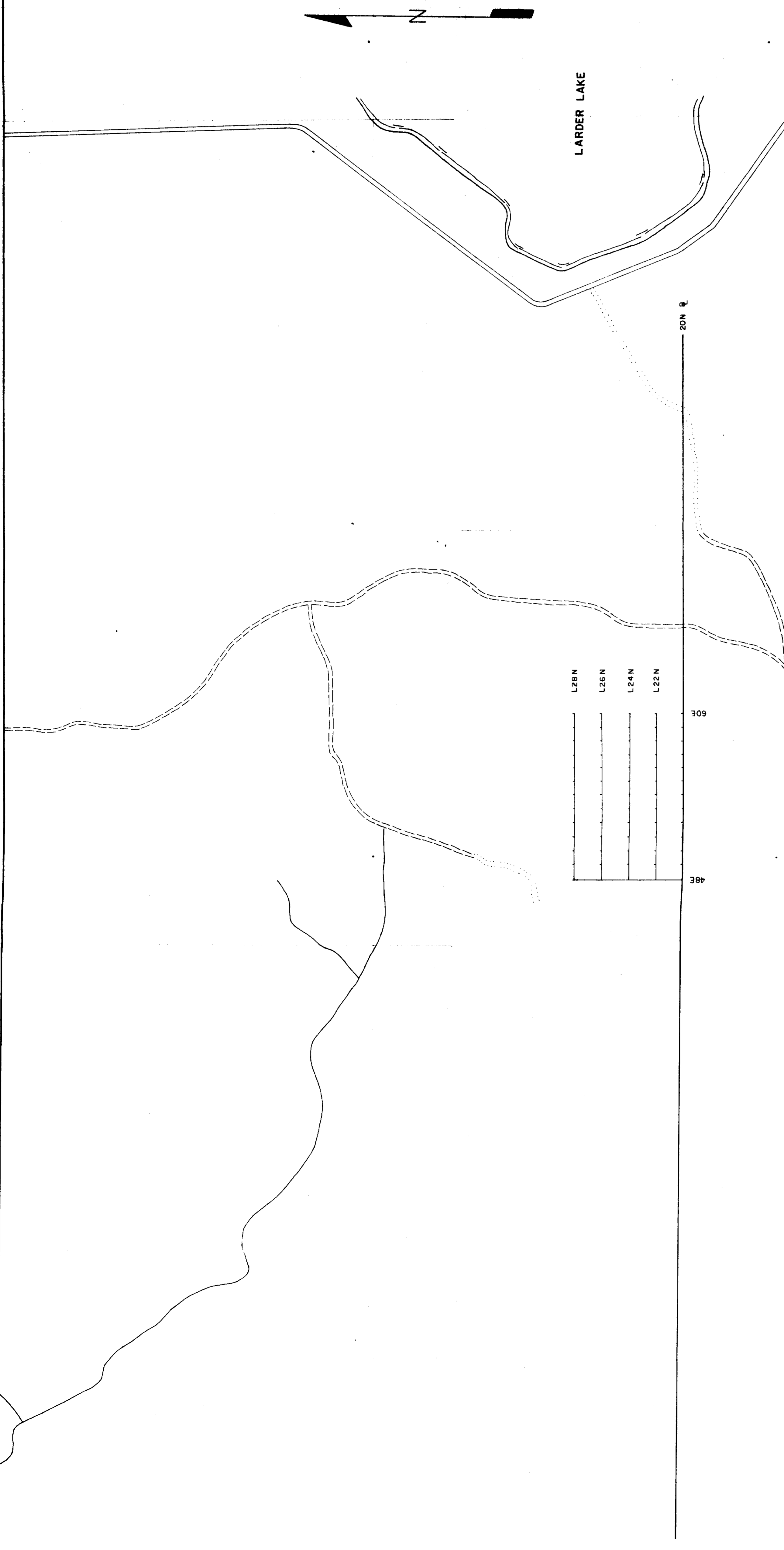


INDEX MAPS



- LEGEND
- C - CUNNINGHAM CLAIMS
 - Cr - CROXALL CLAIMS
 - F.C.L. - FALCONBRIDGE COPPER LTD CLAIMS
 - H.B.M. HUDSON BAY MINES CLAIM
 - L - LOWE CLAIMS

NO. 1977

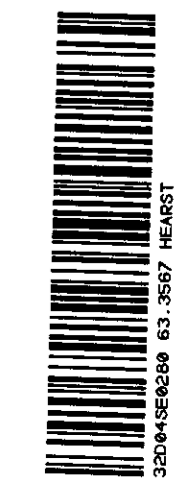


ELECTROMAGNETIC SURVEY
FOR
FALCONBRIDGE COPPER LTD

PROJECT: LARDER LAKE
SURVEYED BY: S.C.M. (P.P.A.)
DRAWN BY: R.E. SERVICES EMPLOYMENT
DATE: 11/77
SCALE: 1" = 200'

Coil Separation: 400'
Frequency: 1777 Hz
IP: 10%
OP: 20%
Maximum: 11'

INSTRUMENTS
TWP: HARRY

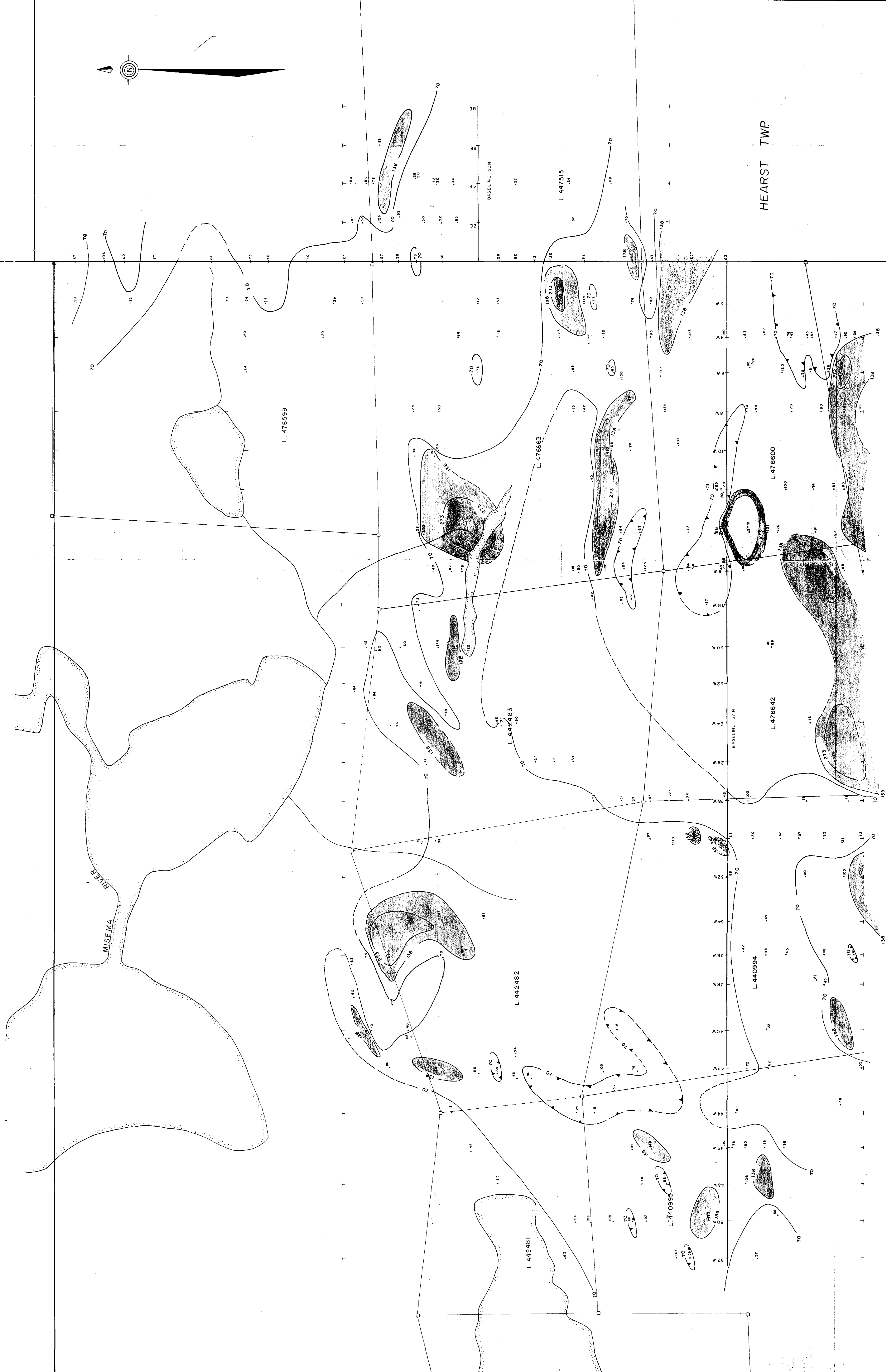


M'VITTIE TWP

GAUTHIER TWP

HEARST TWP

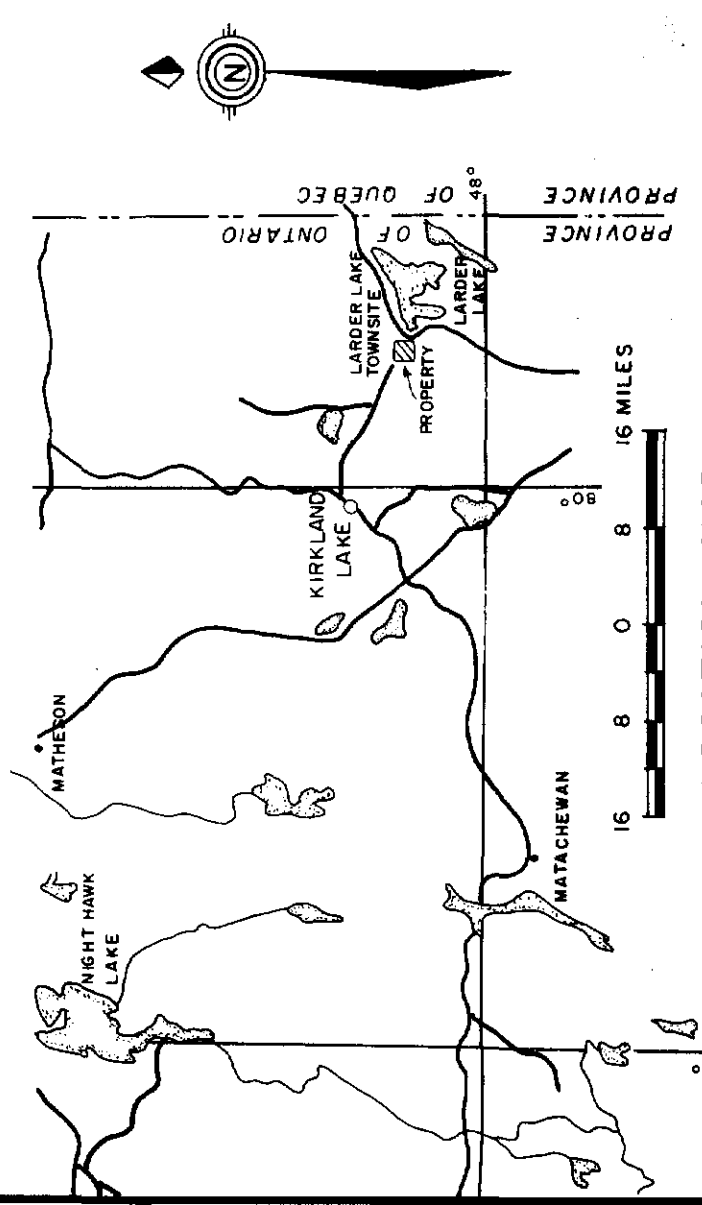
M'ELROY TWP



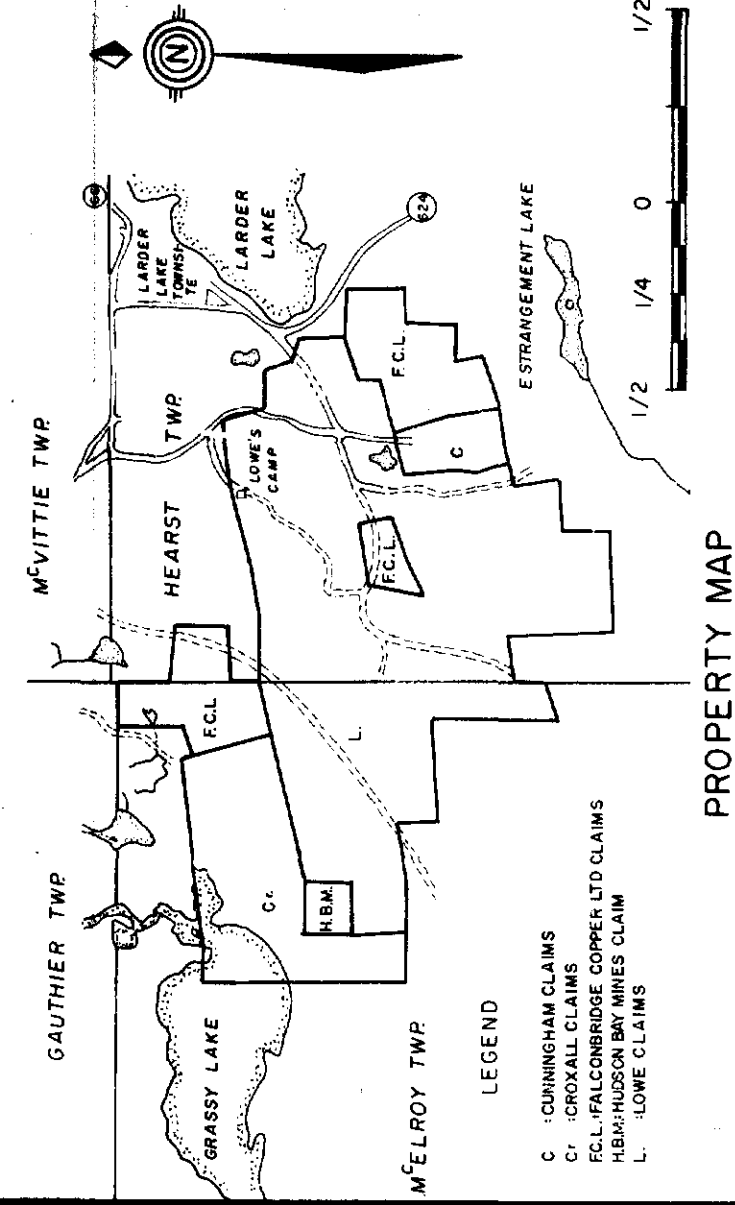
LEGEND

ELEMENT SAMPLE # MIN MAX ARITHMEAN STANDARD DEV GEOM MEAN DEV
 COPPER CU 600 12 270 95.7 165.2 69.76 19792
 CONTOUR INTERVALS GEOM MEAN DEV GEOM MEAN DEV ETC

INDEX



PROPERTY MAP



FALCONBRIDGE COPPER LTD.

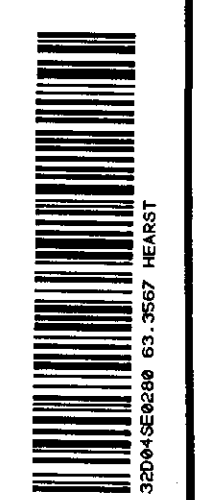
EXPLORATION

Cu GEOCHEM (ppm)

LARDER LAKE PROJECT

DATE: NOV 1978
 DRAWN: J.F.A.
 REVISED:

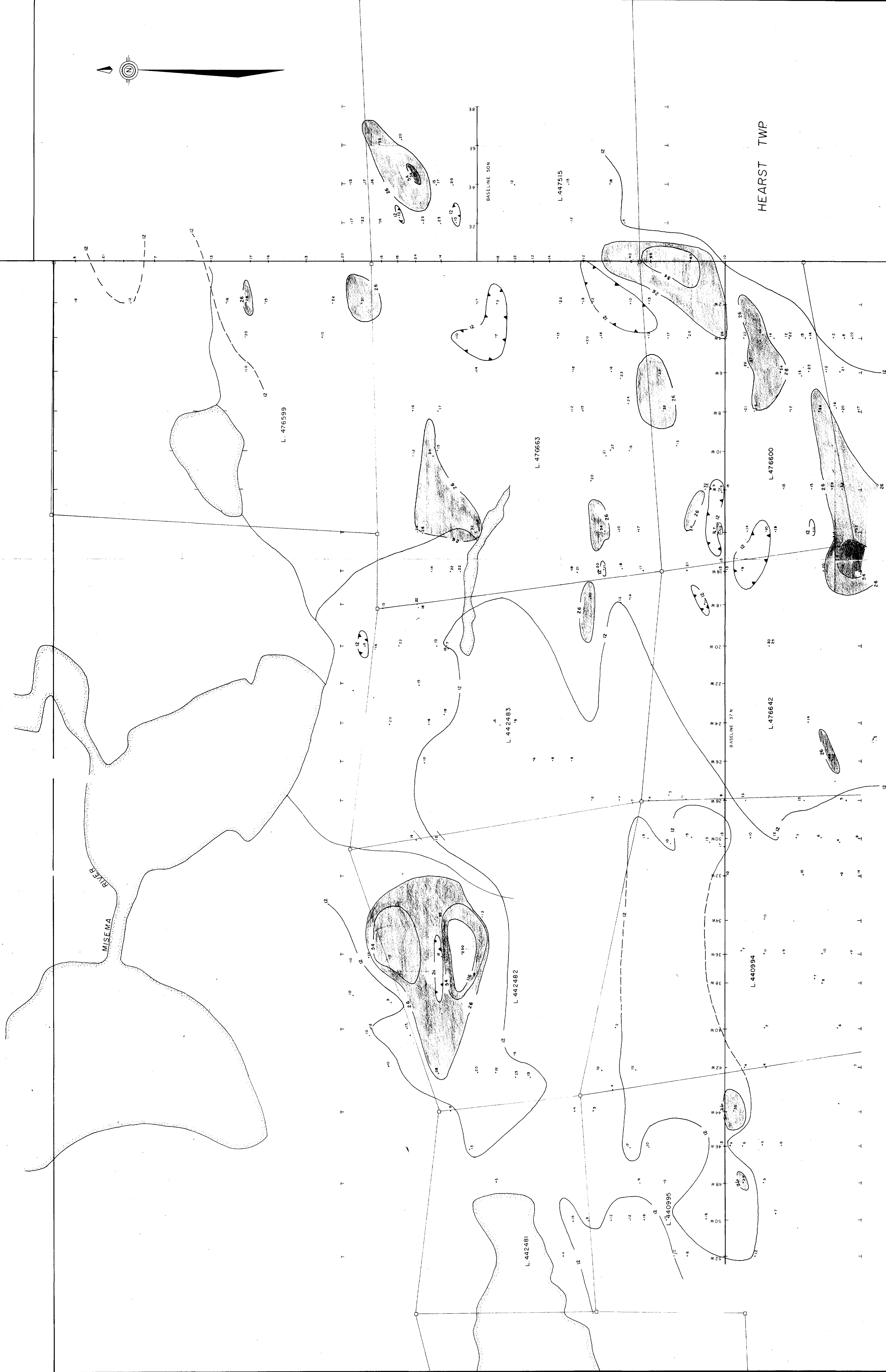
SCALE: 1" = 200'
 APPROVED: J.C.
 11/19/78 J.C.



5000

M^CVITTIE TWP

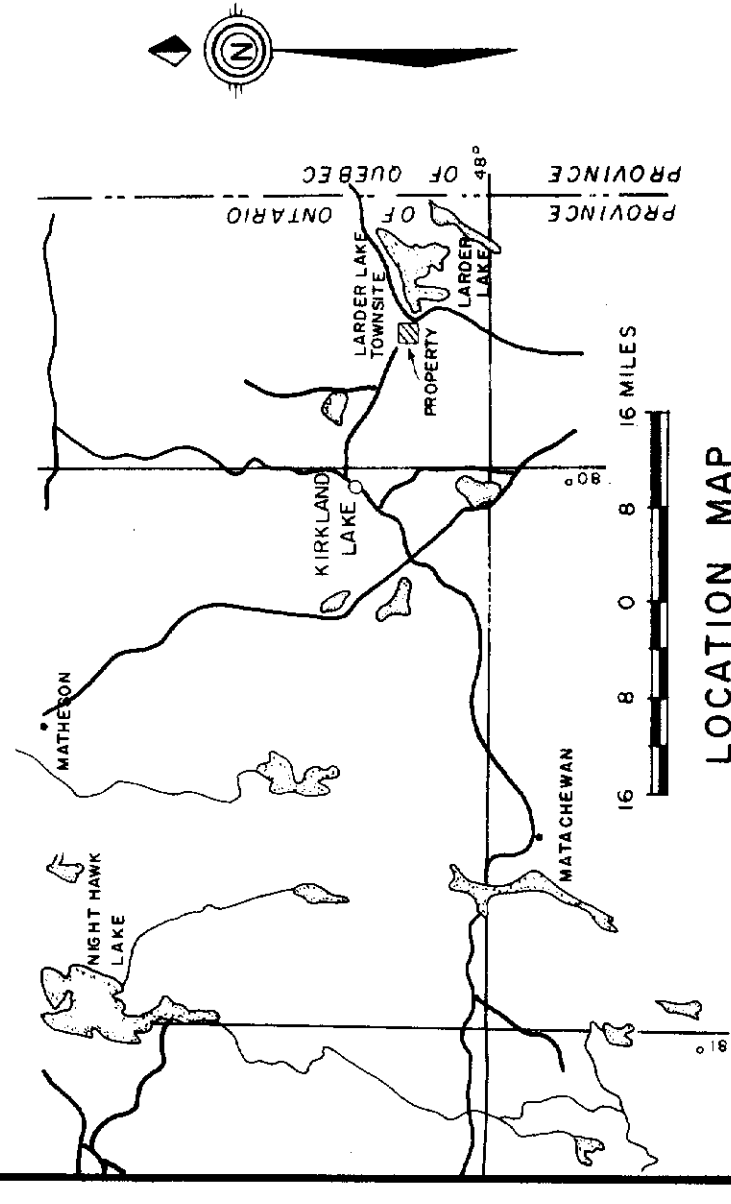
GAUTHIER TV



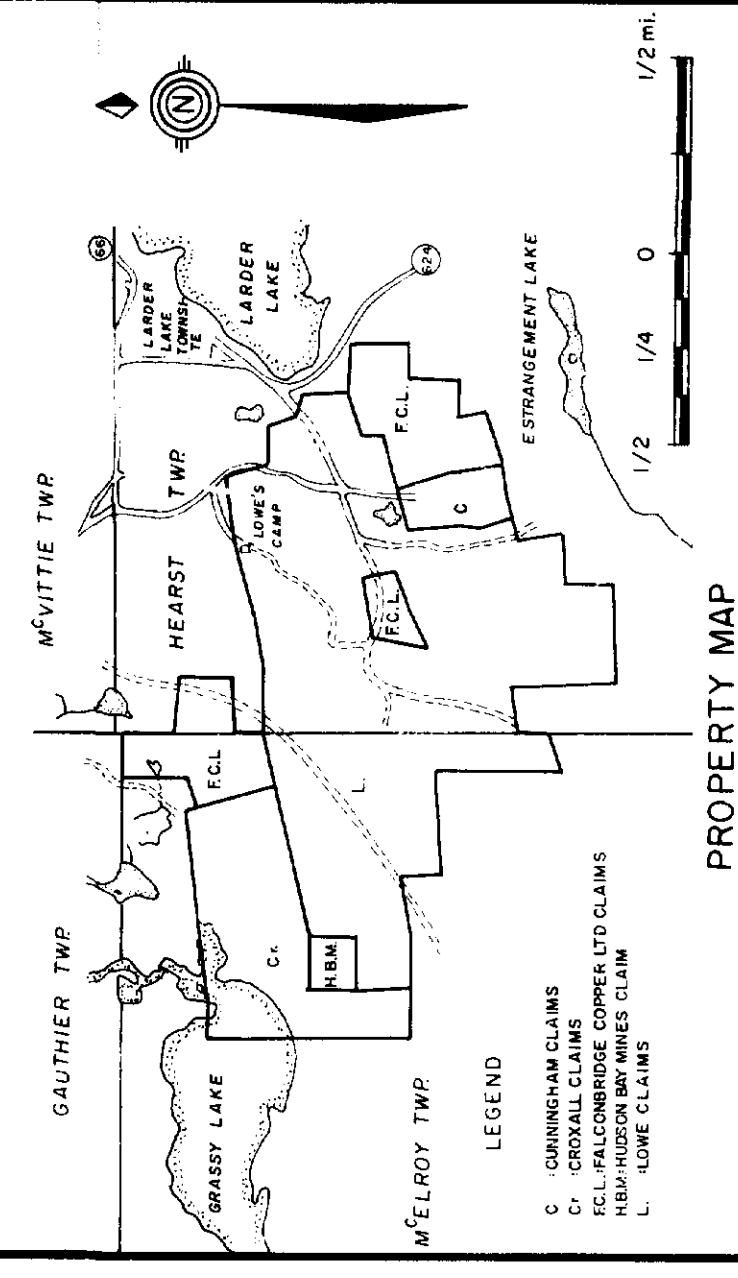
LEGEND

ELEMENT SAMPLE NO MIN MAX ARITH MEAN STANDARD DEV. GEOM. MEAN DEV
 LEAD (Pb) 600 2 268 17.4 26.4 12.14 2.1895
 CONTOUR INTERVALS: GEOM. MEAN, GEOM. MEAN X DEV, GEOM. MEAN X DEV X DEV, ETC.

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PROPERTY MAP



FALCONBRIDGE COPPER LTD.

EXPLORATION

Pb GEOCHEM (ppm)

LARDER LAKE PROJECT

DATE: NOV 1978

DRAWN: P.F.A.

REVISED:

SCALE: 1" = 200'

APPROVED: [Signature]

12/82/78



