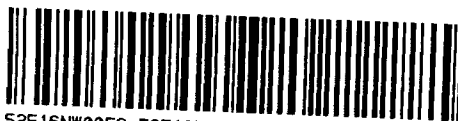


52 F / 16 NW - 0042

Load: - 16/35mm

2.3611



S2F16NW0056 S2F16NW0042 ECHO

010

3611

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT 609

WILKINSON OPTION

GEOCHEMISTRY REPORT

INTRODUCTION

This report summarizes the results of a soil geochemical survey over parts of fourteen contiguous, unpatented mining claims in Echo Township (M.2236), Patricia Mining Division, Ontario.

The claims are recorded as follows:

- PA 498263-269, incl.
- PA 437114-116, incl.
- PA 437433-434, incl.
- PA 437436-437, incl..

The work was performed during July of 1980 by a Noranda Exploration Company, Limited field crew.

LOCATION

The property is located on Highway 72, south of Franciscan Lake, about 25 miles southwest of Sioux Lookout.

GENERAL GEOLOGY

According to ODM Map 1950-1, Echo Township, the area is underlain by a northeast-tending sequence of volcanics and sediments. From the northwest these are: acid pyroclastics, iron formation and greywacke with schistose equivalents.

The westernmost four claims are in pyroclastics with most of the remainder in greywacke. The iron formation lies conformably between these two, seldom reaching 200 feet in thickness. Iron formation is absent where a tongue of pyroclastics extends easterly into the southeast corner of the property.

It is uncertain if sections of the iron formation are stratigraphically separate or a single folded unit.

LINECUTTING

A grid was cut and chained in January of 1980. The baseline is in two sections along the south boundary and has an astronomic bearing of 090°. Winglines are at 100-meter intervals and stations are picketed at 25-meter intervals.

PREVIOUS WORK

EM and Mag surveys were completed in the winter of 1980. Geological and I.P. surveys were conducted in the summer of 1980.

PLEISTOCENE AND RECENT GEOLOGY

Overburden is generally sandy till with recent organic deposits in poorly drained areas. The general ice movement is believed to have been SW to SSW.

The soil cover, developed on the well-drained sectors of the property can be classified as a grey-brown podzolic soil with extremely limited development of the B horizon.

VEGETATION AND DRAINAGE

The property is generally well drained. In the west drainage is through swamp but in the east a creek cuts the property. There are flood areas due to heavier drainings along this creek.

Vegetation is mainly spruce and balsam.

SAMPLING

Samples were collected for 100 to 125 meters down-ice and down-drainage from known EM conductors. Samples were taken at the 25 m pickets on the previously established grid. One hundred and six (106) samples were collected from 106 proposed sites.

At each station a 200 g sample was taken using a grub hoe and stored in a standard 4" by 10" manilla kraft bag.

Sample depth varied considerably, but generally was just above the soil-till interface.

SAMPLE PREPARATION AND ANALYSIS

The samples were dried and individually sieved to -80 mesh. A hot acid leach process was used to extract the metals of interest: Cu, Zn, Ag. The analytical procedure is outlined below:

- 1) 200 mg of sample as placed in a test tube with 3 ml of 25% HNO₃.
- 2) The mixture was held at 90°C in a water bath for two hours.
- 3) The mixture was diluted to 10 ml with distilled, deionized water, agitated, allowed to settle and filtered.
- 4) The solution was analyzed for Cu, Zn, Ag by atomic absorption spectrophotometry. A Varian 475 model spectrophotometer was used with an acetylene-air fuel mixture. The instrument was calibrated by use of standard solutions.

Concentrations were read directly in parts per million, with precisions of 1 ppm for Cu and Zn, and .1 ppm for Ag.

Preparation and analysis were completed by the Noranda geochemistry laboratory, Box 30, Bathurst, N.B. E2A 2N6.

DATA REDUCTION AND PRESENTATION

Background value is taken as the mean of the data distribution. Threshold value is taken as one standard deviation (1σ) over the mean sample value.

Anomalous values are those which exceed the mean plus two standard deviations.

$$\sigma = \left(\frac{\sum (x - \bar{x})^2}{n-1} \right)^{\frac{1}{2}}$$

- σ = standard deviation
n = total number of analyses for the element in question.
x = sample value
 \bar{x} = mean sample value.

The accompanying maps are contoured at the first and second confidence levels and at the third confidence level where justified, i.e. at threshold and anomalous and at mean+ 3σ where warranted.

<u>RESULTS</u>	<u>MEAN</u>	<u>+ σ</u>	<u>+ 2σ</u>	<u>+ 3σ</u>
Cu	17	25	34	43
Zn	79	119	160	201
Ag	0.8	1.2	1.6	1.9

RECOMMENDATIONS

The potential of this ground is minimal and no further work is warranted.

Respectfully submitted,



Michael E. Grant
Project Geologist

October 31, 1980



52F16NW0056 52F16NW0042 ECHO

020

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT 609

WILKINSON OPTION

GEOLOGY REPORT

INTRODUCTION

This report summarizes the results of a geological survey over fourteen contiguous, unpatented mining claims in Echo Township (M.2236), Patricia Mining Division, Ontario.

The claims are recorded as follows:

- PA 498263-269, incl.
- PA 437114-116, incl.
- PA 437433-434, incl.
- PA 437436-437, incl..

The work was performed during June and July of 1980 by a Noranda Exploration Company, Limited field crew.

LOCATION

The property is located on Highway 72, south of Franciscan Lake, about 25 miles southwest of Sioux Lookout.

PREVIOUS WORK

EM and magnetometer surveys were completed in the winter of 1980. Soil geochemistry and geology surveys were performed during the summer of 1980.

REGIONAL GEOLOGY

According to O.D.M. Map 1950-1, the area is underlain by a south-facing sequence of mafic lavas, felsic pyroclastics, chemical and clastic sediments. The property is in the upper portion of this, containing pyroclastics, iron-rich chemical sedimentary and clastic sedimentary units.

PROPERTY GEOLOGY

The pyroclastic rocks are mainly fine-grained felsic tuffs with some intermediate tuffs and a tuff-breccia agglomerate which is probably a lahar.

The felsic rocks are pale grey to pale grey-green, foliated, silicified and consist of feldspar and quartz with occasional minor carbonate and pyrite. Some samples contain up to 5% sericite.

The intermediate tuffs are darker in colour than the felsic rock and are often grey and white or black and white mottled. They consist of plagioclase with lesser quartz and about 10% chlorite on average. Minor carbonate and pyrite are more common than in the felsic rocks.

The lahar unit consists of sub-angular clasts of felsic tuff in a very siliceous, fine-grained, foliated, black matrix which contains numerous secondary K-feldspar blasts. The felsic clasts are up to 10 cms by 30 cms in size, somewhat elongated parallel to the foliation and exhibit no previous foliation. The K-feldspar blasts are up to 5 mms in size and appear to be post-deformation.

The chemical sediments are oxide and sulphide facies iron formation. The pyrite unit which appears to be quite thin, lies below the oxide unit. The oxide facies iron formation is banded in some localities, with bands to 1 cm, but often is weathered to a coarse quartz sandstone. This "sandstone" may be intensely stained with hematite due to oxidation of magnetite and locally contains euhedral magnetite crystals. Where exposed in a road cut near the north boundary, the iron formation is a rather featureless dark red-brown rock in which banding may be obscured by the intense hematization.

No sulphides other than pyrite were seen in the sulphide facies unit.

The sediments show deformation more than the other units, with the fine-grained sections being quartz-plagioclase-biotite schists.

Coarse clastic rocks are pebble and cobble conglomerates consisting of sub-angular to rounded clasts of felsic tuff in a matrix of quartz and plagioclase with occasional biotite. There is no biotite in the clasts. Foliations generally transect clasts.

STRUCTURE

Foliations are generally about 060° and vertical. Foliations appear to be parallel to bedding, especially in the fine-grained clastic sediments, and outline a fold in the units in the west part of the property. The fold is reflected in the magnetics.

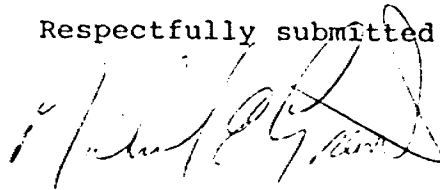
MINERALIZATION

No mineralization other than the iron formation was found. Magnetite and pyrite were the only metallic minerals seen.

RECOMMENDATIONS

The potential of this ground is minimal and no further work is warranted.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Michael E. Grant", written over a horizontal line.

October 31, 1980

Michael E. Grant
Project Geologist



52F16NW0056 52F16NW0042 ECHO

030

Noranda Exploration Company, Limited

PROJECT 609

WILKINSON OPTION

I.P. REPORT

INTRODUCTION

This report summarizes the results of an I.P.-Resistivity survey over parts of fourteen contiguous, unpatented mining claims in Echo Township (M.2236, Patricia Mining Division, Ontario.

The claims are recorded as follows:

PA 498263-269, incl.
PA 437114-116, incl.
PA 437433-434, incl.
PA 437436-437, incl..

The work was performed during June and July of 1980 by a Noranda Exploration Company, Limited field crew.

PREVIOUS WORK

EM and magnetometer surveys were completed in the winter of 1980. Soil geochemistry and geology surveys were completed in the summer of 1980.

REGIONAL GEOLOGY

According to O.D.M. Map 1950-1, the area is underlain by a south-facing sequence of mafic lavas, felsic pyroclastics and chemical and clastic sediments. The property is underlain by felsic and intermediate pyroclastics, iron formation and greywacke-type sediments.

INDUCED POLARIZATION AND APPARENT RESISTIVITY SURVEY

This survey was conducted to test for disseminated mineralization away from the highly conductive iron formation. A Sabre Electronics Model 20 unit was used to measure I.P. frequency effect and apparent resistivity. A dipole-dipole array with a 50-meter dipole length and a single separation were used to take readings every 50 meters. Frequencies of 0.3 Hz and 5.0 Hz were used.

RESULTS

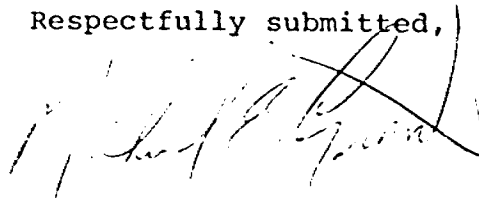
Along the flanks of known EM conductors and in areas where magnetics suggested the presence of iron formation, frequency effect anomalies of 15% and more were found. A number of discrete anomalies up to 5% were located in the sediments. These have no resistivity features.

There is also a very broad frequency effect anomaly of 5% to 8% which corresponds to the area of pyroclastic rocks in the west part of the property. This area has fairly high apparent resistivity of about 2000 to 5000 ohm-meters. However, geological and assay results in this area were not encouraging.

CONCLUSIONS AND RECOMMENDATIONS

Geophysical results are not sufficiently encouraging in the light of geological and assay data to warrant any further work on the property.

Respectfully submitted,



October 31, 1980

Michael E. Grant
Project Geologist



52F16NW0056 52F16NW0042 ECHO

900

File _____



Ministry of Natural Resources

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

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

RECEIVED

150 16 1980

MINING LANDS SECTION

Type of Survey(s) GEOLOGICAL
 Township or Area Echo
 Claim Holder(s) Don Wilkinson
Box 345, Dryden, Ontario P8N 2Z1
 Survey Company Noranda Exploration Co., Ltd.
 Author of Report M. E. Grant
 Address of Author Box 2656, Thunder Bay
 Covering Dates of Survey June 23-October 31, 1980
 (linecutting to office)
 Total Miles of Line Cut _____

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)	
PA	498263	✓
PA	498264	✓
PA	498265	✓
PA	498266	✓
PA	498267	✓
PA	498268	✓
PA	498269	✓
PA	437114	✓
PA	437115	✓
PA	437116	✓
PA	437433	✓
PA	437434	✓
PA	437436	✓
PA	437437	✓
TOTAL CLAIMS		14

If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

ENTER 40 days (includes
line cutting) for first
survey.
ENTER 20 days for each
additional survey using
same grid.

	DAYS per claim
Geophysical	
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	20
Geochemical	

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

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

DATE: Oct. 31/80 SIGNATURE: [Signature]
 Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken PA 437114, 437434, 437437, 498263, 498264, 498265, 498266 (Total 7 claims)

Total Number of Samples 106
Type of Sample sandy clay, open humus
Average Sample Weight 200 grams
Method of Collection grub hoe

Soil Horizon Sampled B, some A
Horizon Development fair to poor
Sample Depth 6" to 15"
Terrain moderate relief

Drainage Development good
Estimated Range of Overburden Thickness up to 100' in valleys

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis -80 mesh

General Samples were dried and sieved to collect the -80 mesh fraction.

ANALYTICAL METHODS

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

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

Field Analysis tests, Extraction Method, Analytical Method, Reagents Used

Field Laboratory Analysis, No. tests, Extraction Method, Analytical Method, Reagents Used

Commercial Laboratory 318 tests, Name of Laboratory Noranda Exploration, Extraction Method hot acid leach, Analytical Method A.A., Reagents Used HNO3

General 200 mg digested in 3 ml 25% HNO3; diluted to 10 ml, filtered, analyzed by atomic absorption.



Ministry of Natural Resources

File _____

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

RECEIVED

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

FC 16 1980

LANDS SECTION

Type of Survey(s) INDUCED POLARIZATION
 Township or Area Echo Township
 Claim Holder(s) Don Wilkinson
Box 345, Dryden, Ontario P8N 2Z1
 Survey Company Noranda Exploration Co., Ltd.
 Author of Report M. E. GRANT
 Address of Author P.O. BOX 2656, Thunder Bay
 Covering Dates of Survey June 23-October 31, 1980
 (linecutting to office)
 Total Miles of Line Cut _____

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)	
PA	437114	✓
PA	437115	✓
PA	437116	✓
PA	437433	✓
PA	437436	✓
PA	498263	✓
PA	498265	✓
PA	498267	1/4
PA	498268	✓
PA	498269	✓

If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

ENTER 40 days (includes
line cutting) for first
survey.
ENTER 20 days for each
additional survey using
same grid.

	DAYS per claim
Geophysical	
-Electromagnetic	_____
-Magnetometer	_____
-Radiometric	_____
-Other	20
Geological	_____
Geochemical	_____

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

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

DATE: Oct. 31/80

SIGNATURE: [Signature]
 Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 10

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy - Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: Fixed transmitter Shoot back In line Parallel line

Frequency _____

(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

Instrument Sabre Electronics Model 20

Method Time Domain Frequency Domain

Parameters -- On time _____ Frequency 0.3 Hz 5.0 Hz

-- Off time _____ Range _____

-- Delay time _____

-- Integration time _____

Power _____

Electrode array Dipole-Dipole

Electrode spacing 50 meters

Type of electrode Steel Stake, Porous Pots



Ministry of
Natural
Resources

Ontario

Your file:

May 21, 1981

Our file: 2.3611

Mr. Albert Hanson
Mining Recorder
Ministry of Natural Resources
P.O. Box 669
Sioux Lookout, Ontario
POV 2T0

Dear Mr. Hanson:

Re: Geochemical, Geological and Geophysical (Induced Polarization)
Survey on Mining Claims PA. 437114 et al, in the Township of
Echo. File No. 2.3611

The Geochemical, Geological and Geophysical (Induced Polarization)
assessment work credits as listed with my Notice of Intent dated
May 1, 1981 have been approved as of the above date.

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

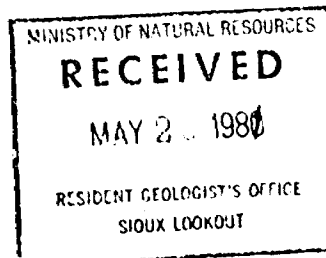
Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

John
/bk

cc: Don Wilkinson
Dryden, Ontario

cc: M.E. Grant
Thunder Bay, Ontario

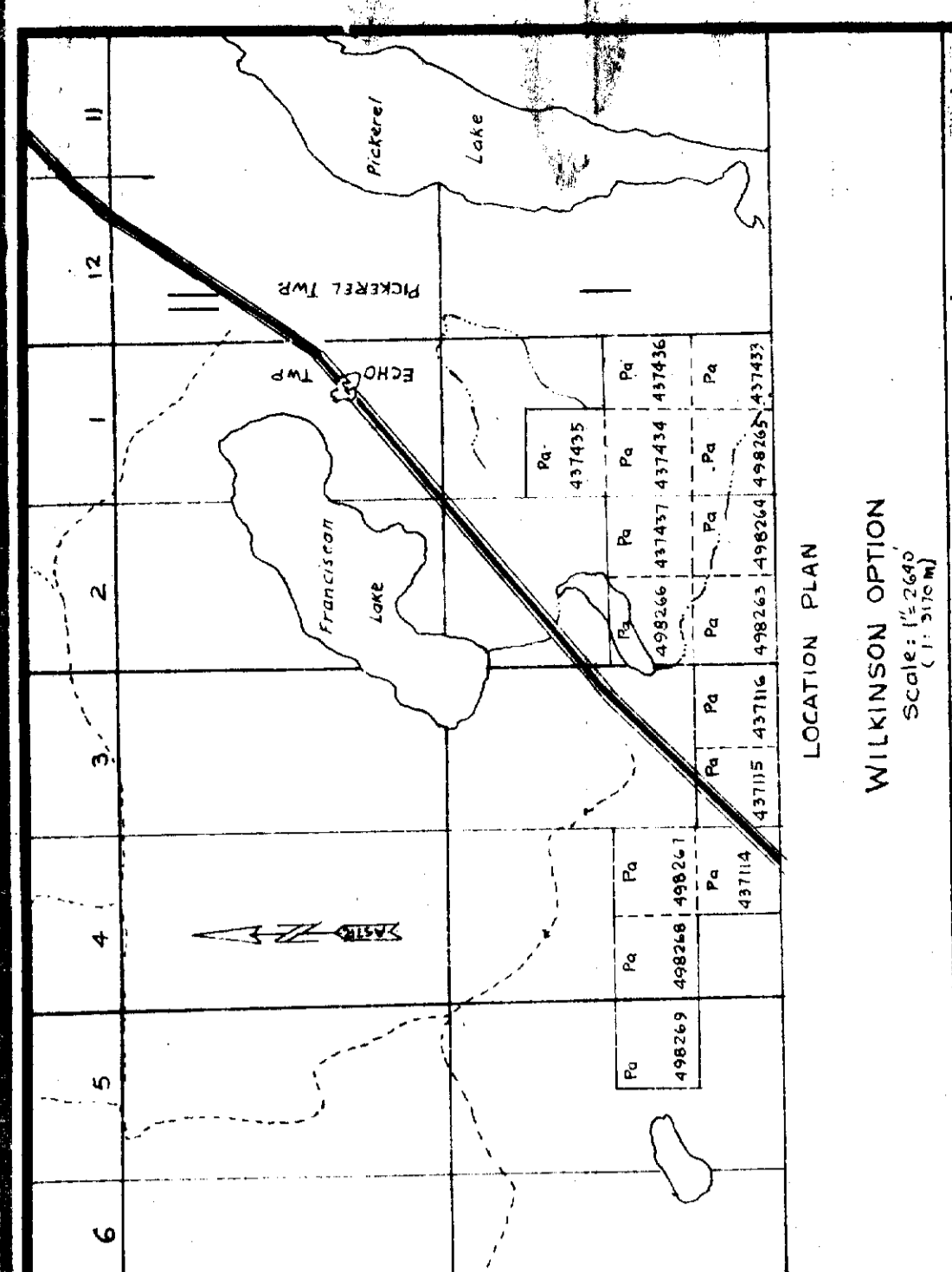
cc: Resident Geologist
Sioux Lookout, Ontario



FOR ADDITIONAL
INFORMATION

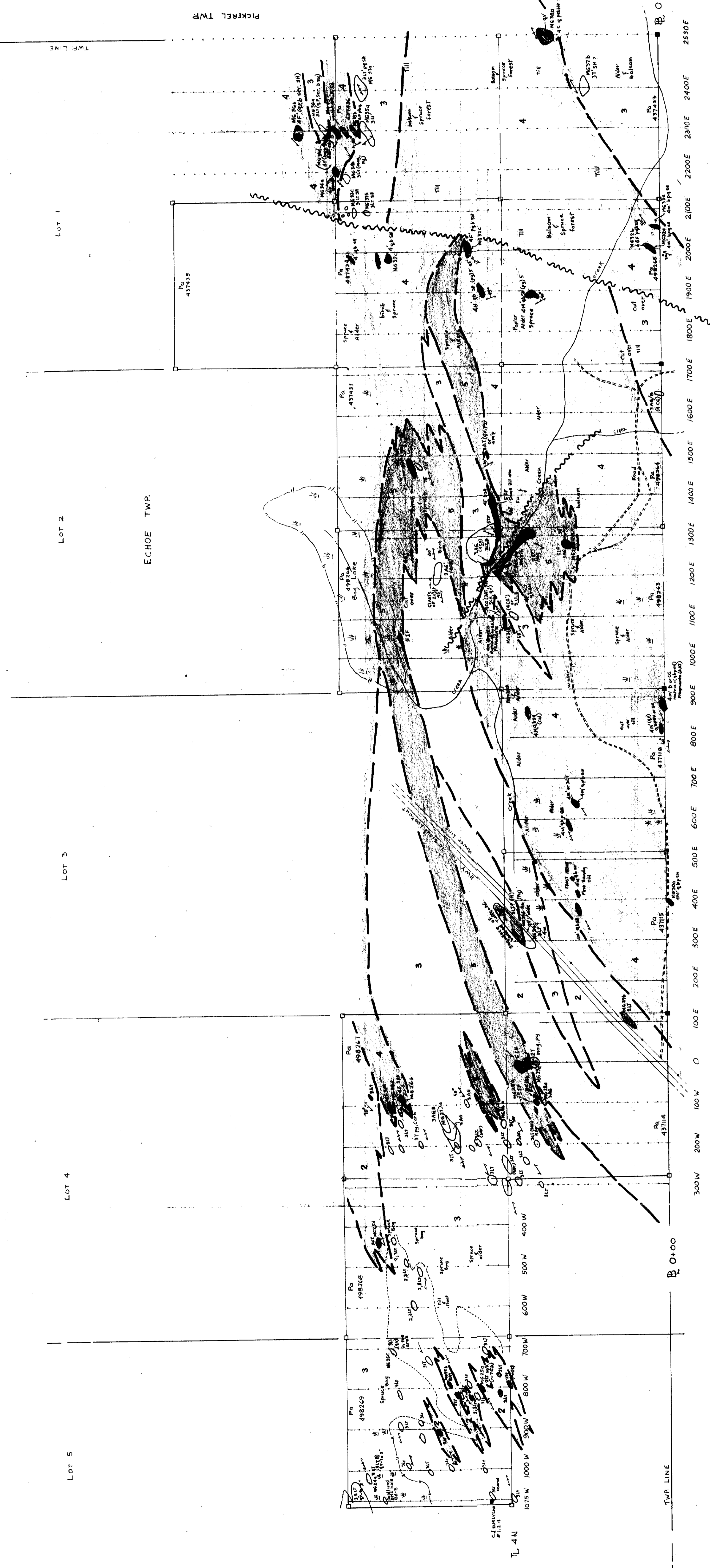
SEE MAPS:

52F/16NW-0042 # (1-6)



CON. II

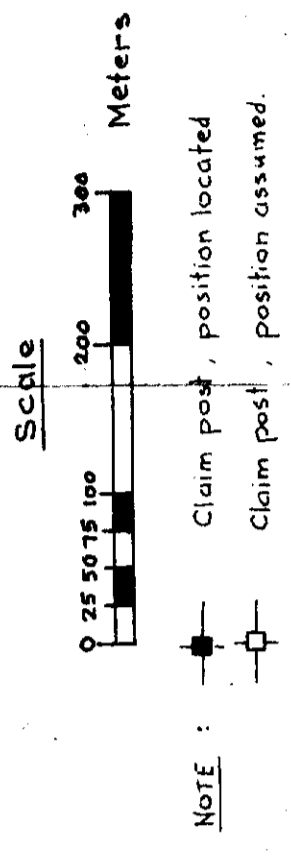
CON. I



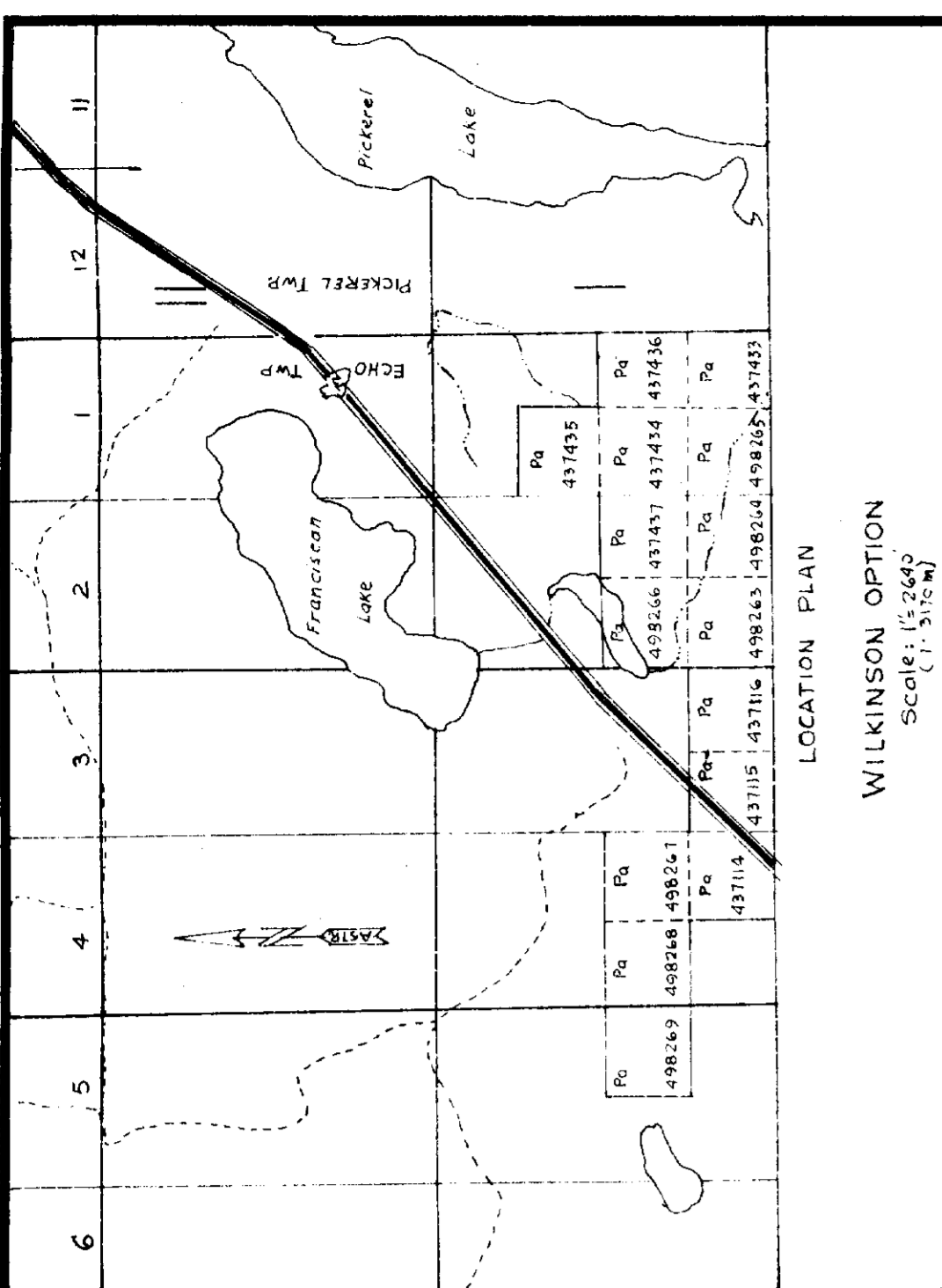
- LEGEND**
- ARCHEAN**
 - CHEMICAL SEDIMENTS**
 - IF - Iron formation
 - CLASTIC SEDIMENTS**
 - F - Fine grained clastics
 - M - Medium grained clastics
 - CG - Conglomerate
 - FELSIC VOLCANICS**
 - AG - Agglomerate
 - LT - Lappali tuff
 - AT - Ash
 - INTERMEDIATE VOLCANICS**
 - LT - Lappali tuff

- METAMORPHIC SUBDIVISIONS**
METAMORPHIC EQUIVALENTS INDICATED BY (see 5)
- TEXTURES**
- GN - Gneissic
 - SF - Schistose
- Abbreviations**
- q - quartz
 - pl - plagioclase
 - b - biotite
 - ser - Sericite
 - qv - quartz vein
 - py - Pyrite
 - mag - magnetite
 - carb - carbonate
- Symbols**
- fault
 - Geological contact - approximate
 - outcrop
 - swamp
 - low ground?
 - solution-dip sinkhole, indicated, vertical
- M628a - Sample number / location

Open before the 1st of July



REVISIONS	
NO.	DATE
1	2007/07/27
2	2008/02/22
APPROVED	
PROJECT: WILKINSON OPTION ECHOE TOWNSHIP PATRICIA MINING DIVISION	
PROJECT NO. 609	DATE: June, July, 1996
SURVEYED BY: M. SEANT	SCALE: 1:50,000
DRAWN BY: J.M.F.	
DWG. NO.	
52 F/16 NW-0048 #1	
NORANDA EXPLORATION CO. LTD. OFFICE: THUNDER BAY, ONT.	



REVISIONS

APPROVED

I. P. SURVEY
 APPARENT RESISTIVITY (mV/m)
 WILKINSON OPTION

PROJECT: WILKINSON OPTION
 ECHO TOWNSHIP
 PATRICIA MINING DIVISION

PROJ. NO: 609
SURVEYED BY: S. W. W. #14848
DATE: June, July, 1986
N.T.S.: 1:10,000
SCALE: 1" = 1000'
DWG. NO: 2

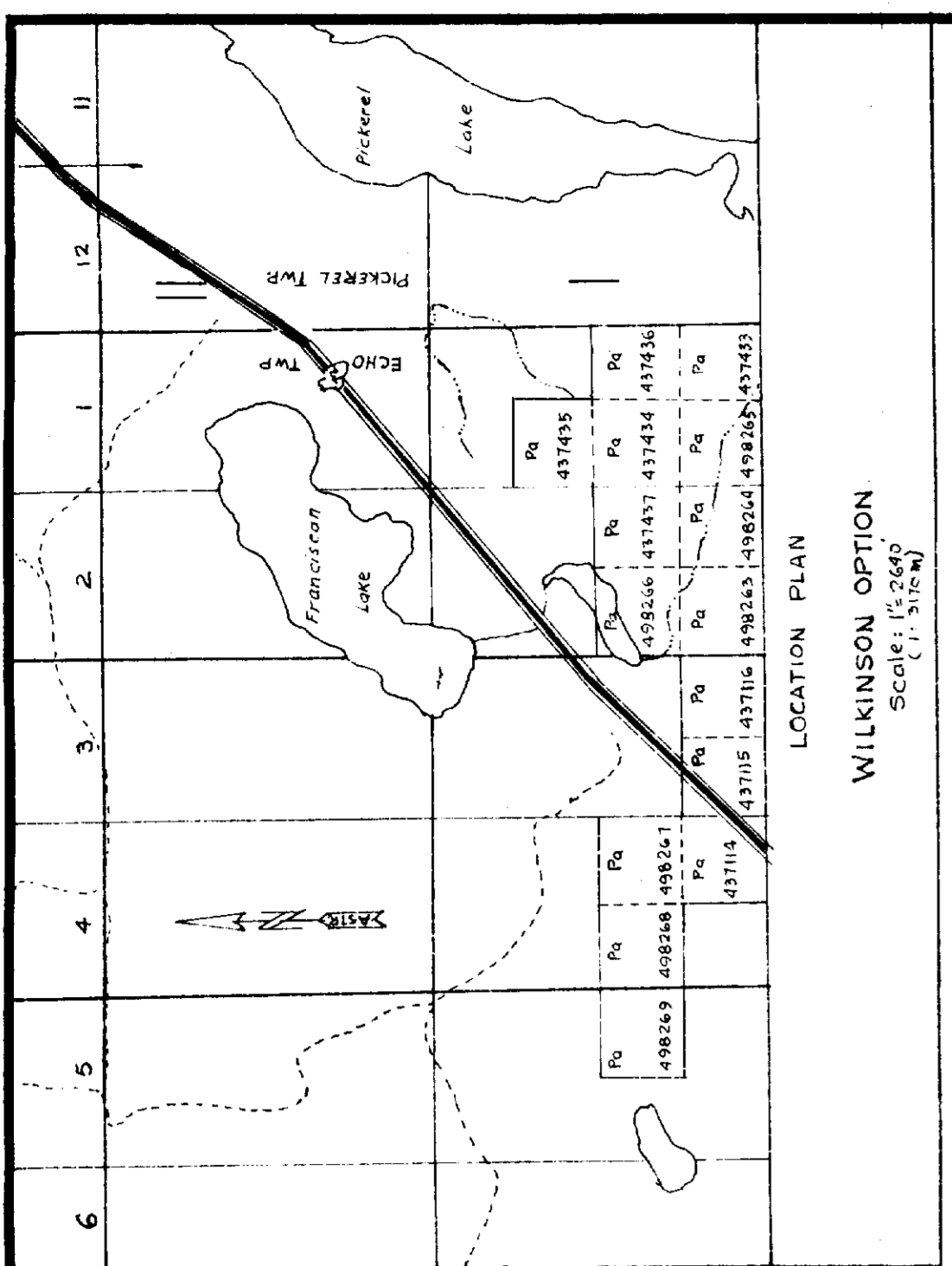
NORANDA EXPLORATION CO. LTD.
 OFFICE: THUNDER BAY, ONT.

LEGEND

Instrument : Sibre #20
 Array : Dipole - dipole
 Dipole Length : 50 meters
 Separation : 1m
 Frequencies : 0.5 Hz / 5.0 Hz
 Contour Intervals (mV): 300, 500, 1000, 2000, 3000, 4000, 5000

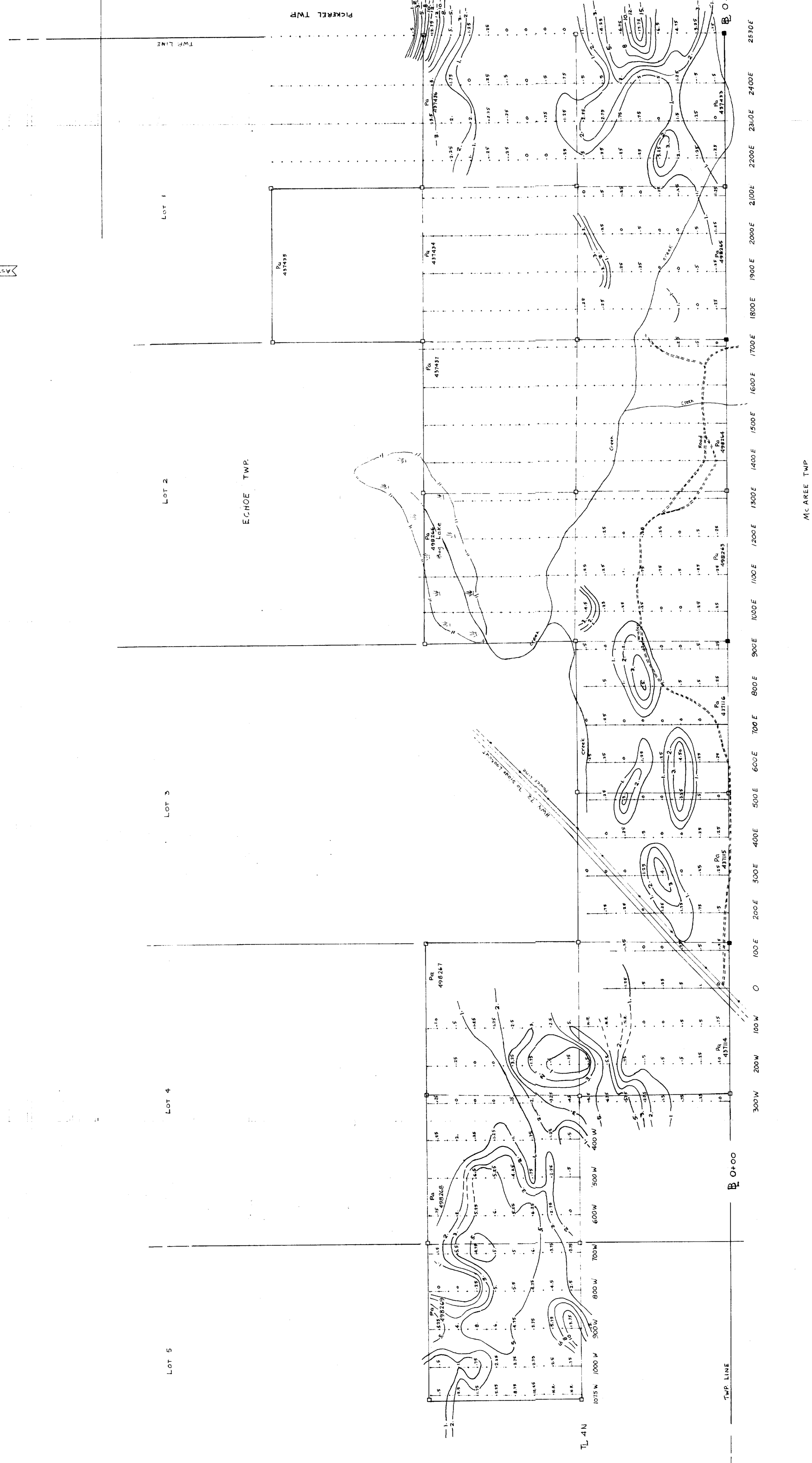
Scale: 0 50 100 200 300 400 Meters

NOTE 1) Claim post, position located
 Claim post, position assumed
NOTE 2) N.P. No reading



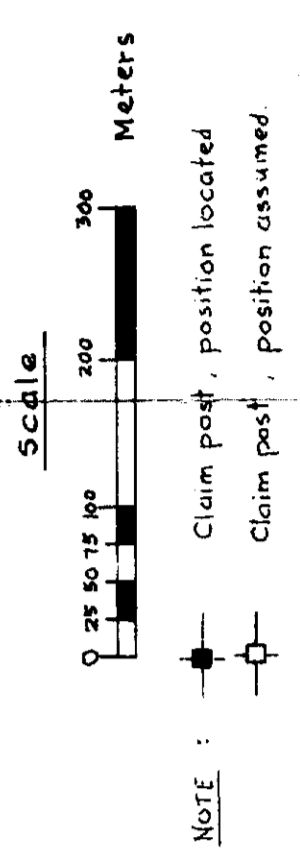
CON II

CON I



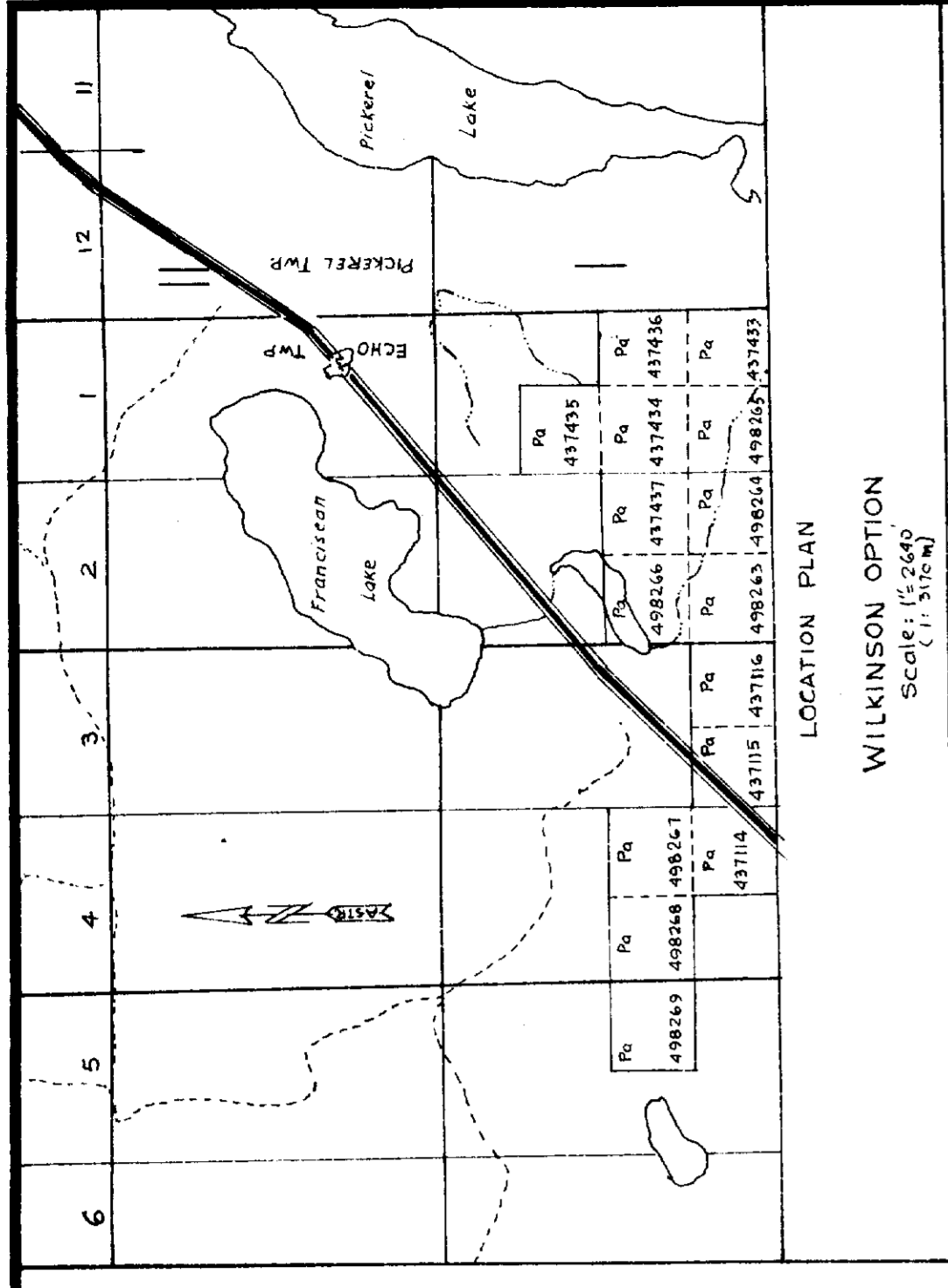
LEGEND

Instrument : Sibre #20
 Array : Dipole - dipole
 Dipole Length : 50 meters
 Separation : 11.1
 Frequencies : 0.5 Hz / 30Hz
 Contour Interval (%): 10, 30, 50, 80, 10, 12, 15

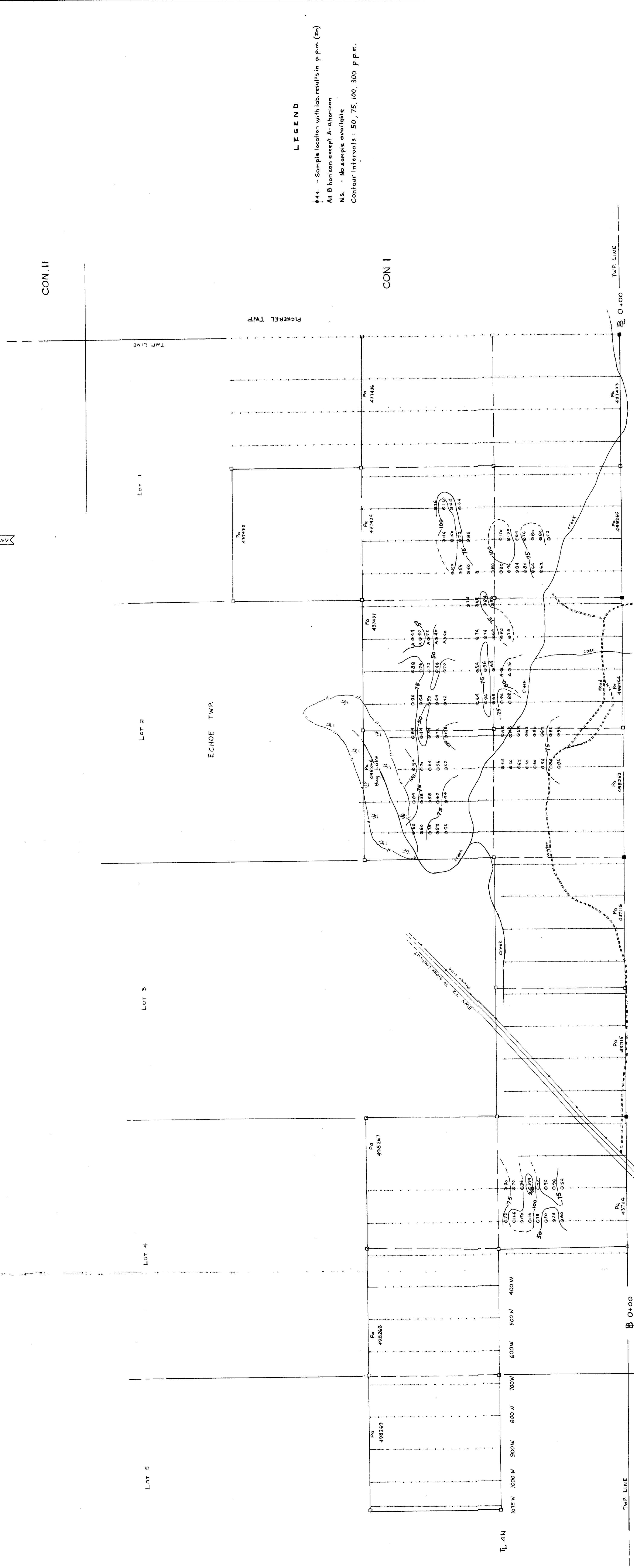


REVISED	1 P SURVEY
	Present Frequency Effect
	WILKINSON OPTION
	ECHO TOWNSHIP
	PATRICK MINING DIVISION
	PROJECT : WILKINSON OPTION
	SURVEYED BY : S. S. S. STUDENT'S DATE : June, July, 1989
	DRAWN BY : A. M. X. SCALE
	DWG. NO
	NORANDA EXPLORATION CO. LTD.
	OFFICE : THUNDER BAY, ONT.

52 F/16 NW -0042 #3

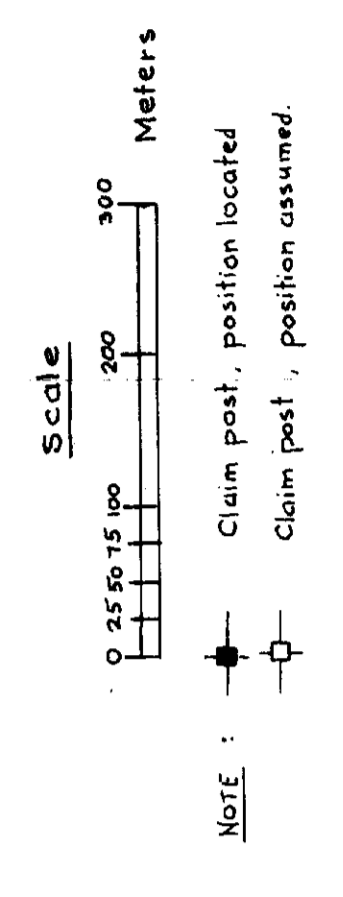


WILKINSON OPTION
Scale: 1:5240
(1" = 200')



LEGEND

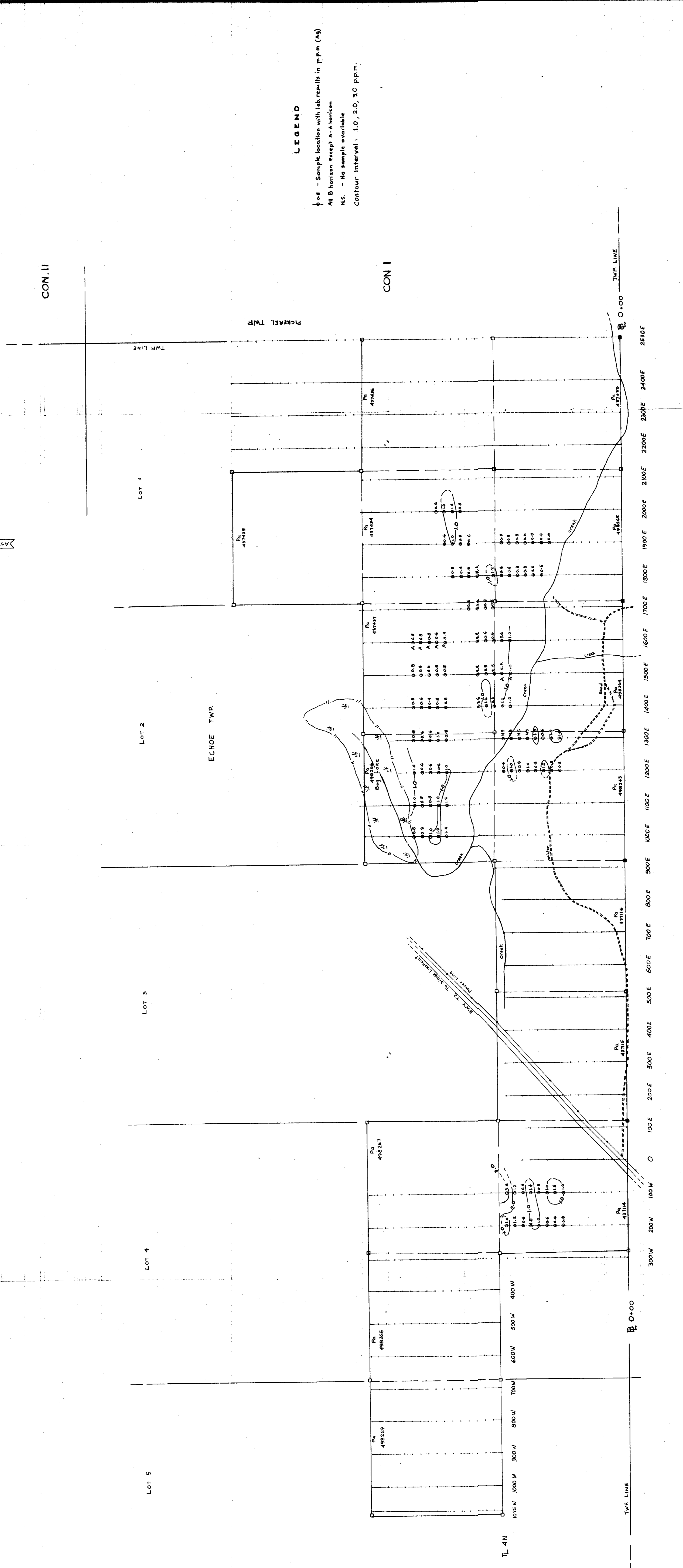
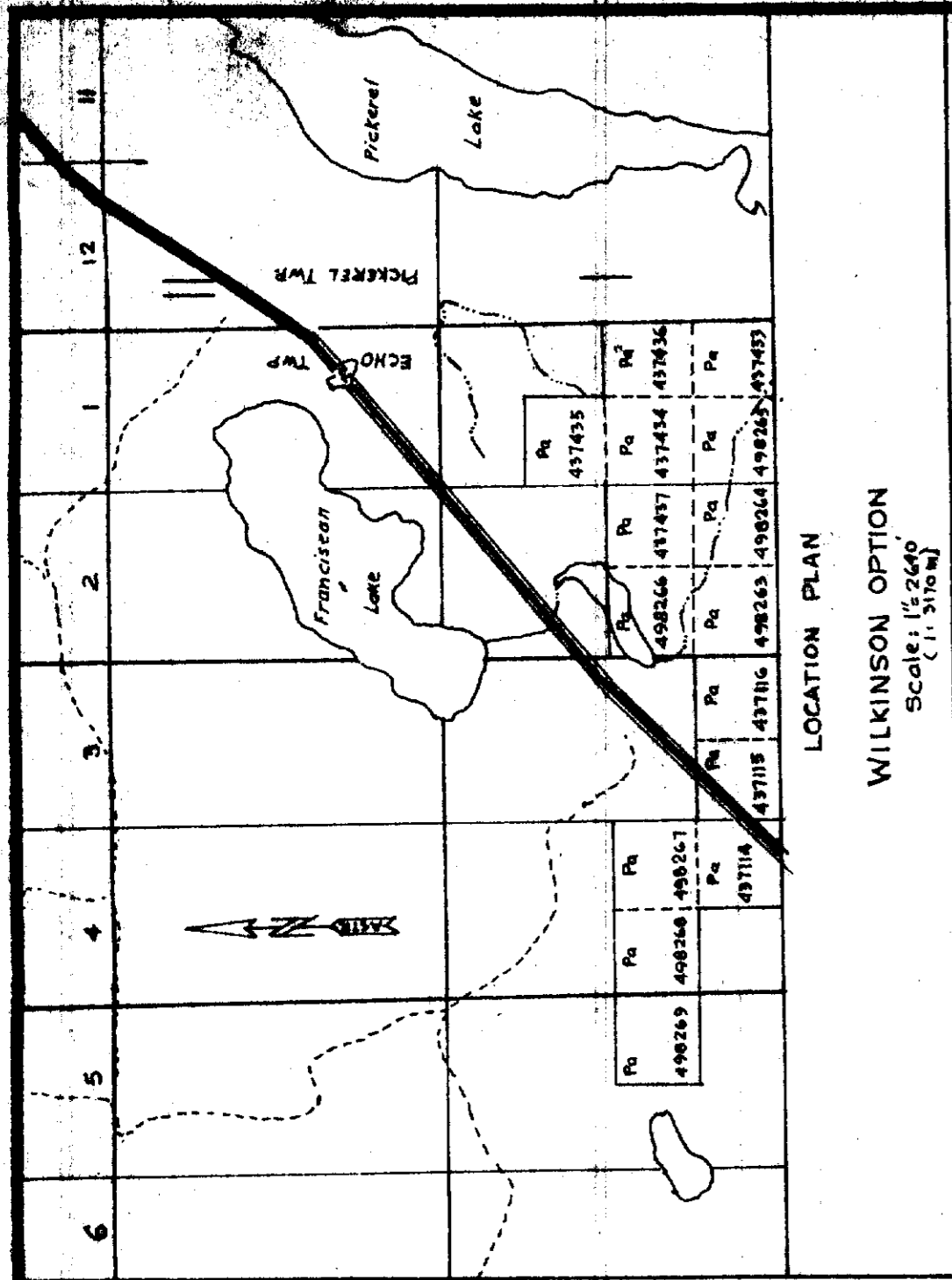
- 44 - Sample location with lab results in p.p.m. (ppm)
- All B horizon except A horizon
- NS - No sample available
- Contour intervals: 50, 75, 100, 300 P.P.M.



REVISED	SOIL SAMPLING (2r) WILKINSON OPTION
APPROVED	ECHO TOWNSHIP PATRICIA MINING DIVISION
PROJECT	WILKINSON OPTION
SURVEYED BY	DATE
DRAWN BY	SCALE
DWG. NO.	

2364

NORANDA EXPLORATION CO. LTD.
OFFICE: TRINIDAD, ONT.



LEGEND

S - Sample location with lab results in p.p.m. (Ag)
 All B horizon except A-A horizon
 NS - No sample available
 Contour interval: 1.0, 2.0, 3.0 p.p.m.

2.3611

REVISED	SOIL SAMPLING (Ag)	ECHO TOWNSHIP
APPROVED	WILKINSON-OPTION	PATRICIA MINING DIVISION
PROJECT	WILKINSON-OPTION	DATE: August 1988
DRAWN BY	J. S. BIRN	SCALE
DWG. NO.		
NORANDA EXPLORATION CO. LTD.		

