2.1392

010

RECEIVED
SEP 17 1974
PROJECTS UNIT

GEOLOGICAL REPORT

on the

WILKINSON LAKE PROPERTY

of

NEW METALORE MINING COMPANY LTD.

in

ELMHIRST TOWNSHIP, ONTARIO

September, 1974

George W. Chilian

INTRODUCTION AND HISTORY

The Wilkinson Lake claims were acquired as a gold prospect by New Metalore Mining Company Ltd. in August, 1973. The original discovery was made prior to 1936 when some shallow diamond drilling was conducted by Mining Corporation of Canada. In the fall of 1973 New Metalore stripped and blasted open the easterly extension of the discovery vein, and conducted five miles of detailed Induced Potential, Resistivity and Magnetometer Surveys to cover the showing and surrounding area.

LOCATION AND ACCESSIBILITY

The property is located in the northeast part of Elmhirst Township, approximately 160 miles north of Thunder Bay, Ontario.

The quartz vein of economic interest lies 100 feet east of an all-weather trucking road, which was constructed by the Domtar and Abitibi paper companies within the past three years.

The property can be reached by driving from the Nezah Station on the Trans Canada Highway #11, nine miles north on secondary Highway #801 to the Sturgeon River, and then northeasterly 10 miles on the Domtar road. The property is also accessible by small plane to Wilkinson Lake.

In recent years most of the area surrounding the access route north of Highway #11 has been extensively timbered and scarified to within 200 to 300 feet of the lakes and waterways, causing the topography to be relatively desolate in appearance. The area has a gentle relief in comparison to the prominent diabase hills and escarpments that occur a few miles west around Lake Nipigon, and the scarification has uncovered many small outcrops under a generally light mantle of sand, gravel and clay overburden.

GENERAL GEOLOGY

The Geology of this property is composed of two principle rock components. These have been previously mapped as (1) an acid intrusive and (2) a felsic volcanic. Although the intrusive is highly silicious, it has a magnetic halo of 200 to 400 gammas higher than the volcanic on ground survey, and the core of the intrusive also gives a magnetic high just west of the map area on airborne survey. The intrusive rock may be classified as a granodiorite.

The volcanic rocks are predominently fresh and massive and consist of a light green to gray matrix, usually with white feldspar phenocrysts up to one quarter inch in size. Just north of the map area the volcanic component is exposed as a coarse agglomerate, indicating that the whole unit may be a volcanic sediment grading to a fine grained tuff. The volcanic rocks may be classified as rhyolites and/or rhyodacites.

Two or more north-south trending Keweenawan diabase dikes cut both the intrusive and volcanic rocks in sequence without interruption.

Predominently sugary textured quartz veins, ranging in size from a few inches to over 20 feet in width, are found within both the intrusive and volcanic rocks, usually trending sub-parallel to the contact of the two rock types.

ECONOMIC POTENTIAL

Exploration activity to date has been concentrated on a large quartz vein in a massive porphyritic rhyolite, located approximately 700 feet northwest of Wilkinson Lake on mining claim #T.B. 335128. The country rock has been intensely schisted for several feet or more on both sides of the vein. The schist is highly chloritic and fairly well mineralized with fine crystalline pyrite. The 18 foot wide quartz vein has been exposed by stripping for 70 feet in length before being obscured by overburden at both ends. The vein strikes from 300 degrees to 330 degrees in sequence from east to west respectively, and dips at 78 degrees to the south.

There are at least two ages of quartz, which vary in appearance from white to blue and sugary to vitreous. On surface, the quartz is rusty in streaks from sulphide weathering.

At the easterly part of the exposure, the vein is well mineralized for 2 to 3 feet from the footwall with galena, sphalerite, chalcopyrite, and pyrite, in that order of abundance. Chip samples taken from the footwall, in white and vitreous quartz, well mineralized with sulphides, indicate a zone averaging approximately 2% copper, 2% zinc, 2% lead, 0.15 ounces gold and 1.50 ounces silver per ton across three to four feet. Chip samples taken from the hangingwall, in sugary blue quartz, sparsely mineralized with pyrite and minor chalcopyrite in fine massive veinlets, indicate a zone averaging approximately 0.33 ounces gold and 2.00 ounces silver per ton across four to five feet. Two selected grab samples of well mineralized quartz taken by the writer from the footwall and hangingwall assayed 9.85 ounces silver and 0.59 ounces gold respectively. Chip samples taken across the centre of the vein, in sugary white quartz, with minor reddish quartz (not oxidized), sparsely mineralized with sulphides, indicate a lower average of 0.05 ounces gold and 0.25 ounces silver per ton across several feet.

The mineralized schist, comprising the walls on either side of the vein, also carries low values in gold (0.02 to 0.09 ounces per ton).

At the westerly part of the exposure, the vein is almost exclusively mineralized with sparse iron pyrite and minor pyrrhotite. The pyrite occurs in fine massive veinlets and coarse crystals up to

½ inch in size. No chip samples were currently taken from the westerly exposure; however, a single drill hole put down in this proximity in 1936 showed fine visible gold, with individual assays up to 0.47 ounces per ton.

Another large quartz vein, located entirely within the acid intrusive near the volcanic contact, about 700 feet southwest of the main vein, has been trenched during early prospecting. This vein is also weathered rusty on surface, similar to the main vein, although it is very sparsely mineralized with isolated cubes of fine pyrite. Two representative grab samples taken from this vein by the writer gave only low gold values (0.01 to 0.02 ounces per ton) with no silver.

SUMMARY AND RECOMMENDATIONS

Important precious metal and base metal values have been obtained across significant widths on the main quartz vein in a favourable geological environment. Induced Potential, Resistivity and Magnetometer Surveys have been completed, and indicate that the structure and the minerals associated with the economic values continues (possibly even in a larger concentration) for several hundred feet on-strike of the surface exposure. An airborne Electromagnetic survey has also indicated an anomaly on the extension of this trend just off-shore of Wilkinson Lake.

The continuity of the main quartz vein should be investigated by drilling a series of short (200 foot), flat (40 degrees) holes, and then drilling steeply (60 to 70 degrees) to vertical depths of at least 200 to 300 feet under the most promising intersections. If any consistantly encouraging values are obtained along the main vein, other anomalous indications in the area should also be tested by drilling. It is further recommended that the drilling be conducted with AXT size core (1¼ inches in diameter) to obtain a more efficient assay of the gold and silver values.

PUBLISHED REFERENCES

1. Mackasey, W. O., and Wallace, H., Elmhirst Township, District of Thunder Bay, Ontario Department of Mines, Preliminary Map P. 801, 1973.

2. Bruce, E. L., Sturgeon River Gold Area; Ontario Department of Mines, Annual Report, (MAP No. 45a) 1936.

3. W.W. Moorhouse, South Onaman Area, Ontario Department of Mines, Map No. 47H, 1938.

4. North Wind Lake, Ontario Department of Mines, Airborne Magnetic Survey, MAP 2136G, 1962.

G.W. Chilian

SEPTEMBER, 1974.

GEORGE W. CHILIAN, B.A.

McPHAR GEO

REPORT ON THE
INDUCED POLARIZATION, RESISTIVITY
AND MAGNETIC SURVEY
ON THE
ELMHIRST TOWNSHIP PROPERTY

ELMHIRST TWP., THUNDER BAY M.D. ONTARIO.
FOR NEW METALORE MINING CO. LTD.

---

1. INTRODUCTION

At the request of Mr. G.W. Chillian, President of New Metalore Mining Co. Limited, we have carried out an induced polarization, resistivity and magnetic survey on the Company Property in Elmhirst Twp., Ontario. The property is located at the north-western edge of Wilkinson Lake, at 49° 49' North Latitude and 87° 38' West Longitude.

Preliminary geological mapping indicates that the majority of the survey area is underlain by archean rhyolites. The south-west portion of the area is underlain by granodiorite. A number of diabase dikes and quartz veins have been mapped in the area. Two fault zones have been inferred from previous geophysical work and strike approximately southwest-northeast across the property.

A McPhar P-660 frequency IP unit was used for the resistivity and IP survey, operating at 0.3 and 5.0 Hz. Two McPhar M-700 Fluxgate Magnetometers were used for the magnetic survey. A third M-700 Fluxgate

Magnetometer and a Rustrak recorder were used at a Base Station in order to monitor the diurnal change in the magnetic field.

Resistivity and Induced Polarization measurements were recorded on three dipole separations (N = 1,2,3) using 100' dipoles and 50' dipoles. Magnetic measurements of the vertical component of the magnetic field were recorded at 50' stations over the survey area.

The survey was conducted over the following claims, believed to be owned or held under option by New Metalore Mining Co. Limited.

TB 352111-1
TB 352109-3
TB 335128-3
TB 352108-2
TB 383003

Seventeen north-east, south-west resistivity and induced polarization lines were surveyed. Magnetic surveying was carried out on twenty-one northeast-southwest lines.

2. PRESENTATION OF RESULTS

The induced polarization and resistivity results are shown on the following data plots in the manner described in the notes preceding this report.

Line	Electrode Intervals	Dwg. No.
1100W	100'	I.P. 6116-1
900 W	100'	I.P. 6116-2

Line	Electrode Intervals	Dwg. No.
700 W	100'	I.P-6116-3
500 W	100'	I.P.6116-4
400 W	100'	I.P.6116-5
250 W	100'	I.P.6116-6
200 W	50'	I.P.6116-7
100 W	50'	I.P.6116-8
50 W	50'	I.P.6116-9
0	50'	I.P.6116-10
50E	50'	I.P.6116-11
100 E	100'	I.P.6116-12
100E	50'	I.P.6116-13
200 E	50'	I.P.6116-14
300 E	50'	I.P.6116-15
500 E	100'	I.P.6116-16
700 E	100'	I.P.6116-17

Also enclosed with this report is Dwg. I.P.P. 4926, a plan map of the Elmhirst Twp. Grid at a scale of 1" = 100'. The definite, probable and possible Induced Polarization anomalies are indicated by bars, in the manner shown on the legend, on this plan map as well as on the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Contour maps of the Metal Factor values for 50' and 100' dipoles at N = 1 and N = 3 are also included.

50' dipole, N = 1	Dwg. Misc. 4928
50' dipole, N = 3	Dwg. Misc. 4929
100' dipole, N = 1	Dwg. Misc.4930
100' dipole, N = 3	Dwg. Misc 4931

A logarithmic contour interval has been used on the M.F. contour maps.

Since the Induced Polarizarion measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the electrode interval length, i.e. when using 200' electrode intervals the position of a narrow sulphide body can only be determined to lie between two stations 200' apart. In order to definitely locate and fully evaluate, a narrow, shallow source, it is necessary to use shorter electrode intervals. In order to locate sources at some depth, larger electrode intervals must be used, with a corresponding increase in the uncertainties of location. Therefore, while the centre of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

The magnetic data are plotted in contour form on Dwg. M-4927 at a scale of 1" = 100'. A contour interval of 100 gammas was used in areas exhibiting steep magnetic gradients. The contour interval was reduced to

20 gammas in areas of more moderate relief.

The claim boundary information shown on Dwg. I.P.P. 4926 has been taken from maps made available by the staff of New Metalore Mining Co. Limited.

3. DISCUSSION OF RESULTS

A large number of weakly anomalous I.P. responses are apparent within the survey area. Three types of anomalies may be distinguished:

1) Narrow zones with moderate I.P. response extending to depth.
2) Broad weakly anomalous zones associated with the narrow zone.
3) Broad, weakly anomalous zones which are not associated with the narrow zones.

The individual survey lines will be discussed separately in Part A and then any correlation of the I.P. response with the magnetic contours will be noted in Part B.

Part A

Line 1100W (100' dipoles)

Two weakly anomalous zones are apparent on this line. One extending from 5S to 2S, the other from 2N to 5N. The low M.F. values would indicate only minor amounts of conductive mineralization.

Line 900W (100' dipoles)

A broad, weak anomaly is located between 1N and 6N. The zone appears to weaken at depth.

Line 700W (100' dipoles)

A broad moderate anomaly is located between 1N and 4N. The M. F. values increase near surface between 2N and 4N.

Line 500W (100' dipoles)

Two narrow anomalous zones are located on this line. A definite anomaly is located between 1S and O. The zone extends to depth with decreasing M. F. values. A probable isolated near-surface anomaly is located between 1N and 2N.

Line 400W (100' dipoles)

A weakly anomalous zone is apparent between 1S and 1N. The remainder of the line exhibits background M. F. and P. F. E. values.

Line 250W (100' dipoles)

Three anomalous zones are located on this line. A possible anomaly is located at depth between 5S and 4S. A probable anomaly is located between O and 1N. The zone shows increased M. F. and lower resistivity near surface, indicating a shallow source. A second possible anomaly is indicated between 2N and 3N.

Line 200W (50'. dipoles)

A broad anomalous zone is located between 1.5S and 1.5N. The M. F. values increase near surface between 0.5S and 0.5N.

Line 100W (50' dipoles)

A broad moderately anomalous zone is located between 7.5S and 3S. Two possible near surface anomalies are located north of this zone; one extending from 2S to 1S, the other from 0.5S to O.

Line 50W (50' dipoles)

A broad anomalous zone is located between 3S and O. The zone weakens to the north between 1S and O, exhibiting M.F. values of approximately 2.0. A probable anomaly is indicated at the extreme southern end of the line.

Line O (50' dipoles)

A shallow anomaly is apparent between 3.5S and 1.5S. Between 0.5N and 1.5N a weak surface anomaly is indicated. A possible anomaly is indicated at the south end of the line between 5S and 5.5S.

Line 50E (50' dipoles)

A weak anomaly is indicated between 3.5S and 1.5S. The zone becomes shallower in the north between 2.5S and 1.5S.

Line 100E (100'dipoles and 50' dipoles)

Line 100E was surveyed using both 100' and 50' dipoles. On the 100' dipole separation, a possible anomaly is indicated between 4S and 2S. This anomaly is shown in more detail on the 50' dipole survey. The anomaly is located between 3.5S and 2S and extends to depth in the region 3.5S to 3S. A possible anomaly has been located on the 50' dipole survey between 0 and 1N.

Line 200E (50' dipoles)

Two anomalous zones are indicated on this line. A weak, near-surface anomaly extends from 3.5 to 2S. A second probably anomaly is located betwen 1.5N and 2.5N.

Line 300E (50'dipoles)

A broad weakly anomalous zone is located between 6S and 3S. A slight increase in M.F. is noted near surface in the region 5.5S to 6S. Two possible anomalies are indicated on the north portion of the line; between 2.5N and 3N and between 4N and 4.5N.

Line 500E (100' dipoles)

A weakly anomalous zone is apparent between 7S and 4S. The zone extends to depth in the region of 5S.

Line 700E (100' dipoles)

A weak near surface anomaly is apparent between 4S and 2S.

Part B

Many of the I.P. anomalies considered in Part A are coincident with magnetic features.

The broad weak I.P. responses observed on the western sections of Lines L-1100W, L-900W and L-700W are coincident with a broad low. This is probably a zone of very weakly disseminated mineralization within the rhyolite.

On Line L-500W a definite I.P. response occurs over a marked magnetic low. This zone warrants further investigation. The broad, probable I.P. anomaly on Line L-400W appears to be associated with the same magnetic feature.

On L-2+50W a local magnetic high of approximately 1750 gammas is located just south of the Base Line and is probably caused by a diabase dike which has been mapped just south of the magnetic anomaly. The I.P. response between O and 1N on L-2+50W may be related to alteration caused by this intrusive. An I.P, response obtained with 50' dipoles on L-200W is coincident with a pronounced magnetic low, just east of diabase. This magnetic and I.P. coincidence warrants further investigation.

On the south-east portion of the grid from L-100W to L-50E a broad magnetic high is apparent from station 300S to the southern edge of the grid. The western edge of this feature is marked by a broad

I.P. anomaly extending from 3S to the southern edge of the grid. On Lines L-0+50W, L-0+00W, L-0+50E and L0+100E, broad I.P. anomalies extend from the northern edge of the magnetic feature to the north for approximately 200 feet. The I.P. anomaly on Line 0+50W extends further to the north, ending at the Base Line. A magnetic anomaly of approximately 1000 gammas is coincident with this I.P. anomaly.

The broad weak anomalies located south of the Base Line on Line L-200E, L-300E, L 500E and L-700E are associated with a broad magnetic low. These I.P. anomalies possibly represent weak sulphide concentration within the rhyolite.

A number of possible drill hole locations are recommended on the basis of the I.P. and magnetic surveys. In all cases it is expected that only minor amounts of sulphide will be encountered; however, the presence of gold within these zones may result in an upgrading of the economic significance of the anomalies. When the results of a few of the holes have been obtained a re-evaluation of the drilling program may be warranted.

The following drill hole locations are recommended:

Drill Hole	Collar Location	Dip Angle (From the horizontal)	Direction	Depth
DD2	L-500W, 1.05S	45°	Grid North	150'
DD3	L-200W, 0.5N	45°	Grid South	100'

Drill Hole	Collar Location	Dip Angle (from the horizontal)	Direction	Depth
DD1	L-700W, 2.5N	45°	Grid North	150'
DD4	L-100W, 5.75S	45°	Grid North	100'
DD5	L-100E, 2.75S	45°	Grid South	150'

McPHAR GEOPHYSICS COMPANY.

D.J. Misener

D.J. Misener
Geophysicist.

Robert A. Bell

R.A. Bell
Geophysicist.

Dated: December 11, 1973.

STATEMENT OF COST

New Metalore - NW Ontario.

I.P. Survey.

Dates: September 19 - October 5, 1973.

Crew: D. MacKay, G.Brunne.

1.91 miles - 50' spreads @ $850.00/mile	$1,623.50
2.34 miles - 100' spreads @ $700.00/mile	$1,568.00
	$3,191.50

Breakdown of above

10-3/4 days operating		$304.64
2 days travel	)	
¼ day preparation	) 5¼ days @	
1 day bad weather	) $100.00/	
2 days standby	) day	$525.00
1 day breakdown		

Expenses - prorated with Mag Survey.

Freight	$21.51	
Air fare (1)	$42.26	
Truck Rent	253.52	
Veh. expense	310.05	
Meals and Accom.	617.61	
Taxis	16.91	
Telephone & Telegraph	21.48	
	$1,283.34	
+ 10%	128.33	
		$1,411.67

Extra Labour:
A. Wood
B. Stevens
T. Reid

Extra Labour -	$791.70	
+ 20%	$158.34	
		$950.14
		$3,191.50.

McPHAR GEOPHYSICS COMPANY.

Robert A. Bell

R.A. Bell
Geophysicist.

Dated: December 11,1973.

STATEMENT OF COST

New Metalore - N.W. Ontario.

Mag Survey.

Dates: September 29 - October 1, 1973.

Crew: D. MacKay, G. Brunne.

4.15 miles Mag Survey $207.50.

Breakdown of above

3 days operating		$115.77

Expenses - prorated with I.P. Survey

Air fare (1)	$2.74	
Truck Rent	$16.48	
Veh. expense	20.15	
Meals and Accom.	40.15	
Freight	1.39	
Taxis	1.09	
	$83.39	
+ 10%	8.34	
		$91.73
		$207.50

McPHAR GEOPHYSICS COMPANY.

Robert A. Bell

Dated: December 11, 1973.

R.A. Bell

Geophysicist.

ASSESSMENT DETAILS

PROPERTY:	Elmhirst Twp. Property	MINING DIVISION:	Thunder Bay
SPONSOR:	New Metalore Mining Co. Ltd.		
LOCATION:	Elmhirst Twp.	PROVINCE:	Ontario
TYPE OF SURVEY:	Induced Polarization		
X LINE CUTTING MAN DAYS:	55	DATE STARTED:	Sept 19/73
OPERATING MAN DAYS:	82.5	DATE FINISHED:	Oct 5/73
CONSULTING MAN DAYS:	3	NUMBER OF STATIONS:	345
DRAUGHTING MAN DAYS	15	NUMBER OF READINGS:	2502
TOTAL MAN DAYS	100.5	MILES OF LINE SURVEYED:	4.15

CONSULTANTS:

D. Jim Misener, 208 Lord Seaton Drive, Willowdale, Ontario.

R.A. Bell, 55 Roanoke Road, Don Mills, Ontario.

FIELD TECHNICIANS:

D. MacKay, Loring, Ontario.
G. Brunne, Port Loring, Ontario.

DRAUGHTSMEN:

R. Peer, 38 Torrens Avenue, Toronto 6, Ontario.
N. Lade, 299 Jasper Avenue, Oshawa, Ontario.
V. Young, 64 Highcourt Crescent, Scarborough, Ontario.

McPHAR GEOPHYSICS COMPANY

Dated: December 11, 1973.

Robert A. Bell

R. A. Bell
Geophysicist.

ASSESSMENT DETAILS

PROPERTY: Elmhirst Twp. Property MINING DIVISION: Thunder Bay

SPONSOR: New Metalore Mining Co. Ltd.

LOCATION: Elmhirst Twp. PROVINCE: Ontario

TYPE OF SURVEY: Magnetic

OPERATING MAN DAYS: 6 DATE STARTED: Sept 29/73

EQUIVALENT 8Hr. MAN DAYS: 9 DATE FINISHED: Oct 1/73

CONSULTING MAN DAYS: 2 NUMBER OF STATIONS: 528

DRAUGHTING MAN DAYS: 7 NUMBER OF READINGS: 579

TOTAL MAN DAYS: 18 MILES OF LINE SURVEYED: 5.28

CONSULTANTS:

D. Jim Misener, 208 Lord Seaton Drive, Willowdale, Ontario.

R.A. Bell, 55 Roanoke Road, Don Mills, Ontario.

FIELD TECHNICIANS:

D. MacKay, Loring, Ontario.
G. Brunne, Port Loring, Ontario.

DRAUGHTSMEN:

R. Peer, 38 Torrens Avenue, Toronto 6, Ontario.
N. Lade, 299 Jasper Avenue, Oshawa, Ontario.
R. Koenig, 3125 Lawrence Avenue East, Apt. #702, Scarborough, Ontario.

McPHAR GEOPHYSICS COMPANY.

Robert A. Bell

Dated: December 11, 1973.

R.A. Bell
Geophysicist.

McPHAR GEOPHYSICS

NOTES ON THE THEORY, METHOD OF FIELD OPERATION, AND PRESENTATION OF DATA FOR THE INDUCED POLARIZATION METHOD

Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i.e. by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d. c. current is allowed to flow through the rock; i. e. as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces, to appreciably reduce the amount of current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d. c. voltage used to create this d. c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the per cent frequency effect or F. E. are a measurement of the polarization in the rock mass. However, since the measurement of the degree of polarization is related to the apparent resistivity of the rock mass it is found that the metal factor values or M. F. are the most useful values in determining the amount of polarization present in the rock mass. The MF values are obtained by normalizing the F. E. values for varying resistivities.

The induced polarization measurement is perhaps the most powerful geophysical method for the direct detection of metallic sulphide mineralization, even when this mineralization is of very low concentration. The lower limit of volume per cent sulphide necessary to produce a recognizable IP anomaly will vary with the geometry and geologic environment of the source, and the method of executing the survey. However, sulphide mineralization of less than one per cent by volume has been detected by the IP method under proper geological conditions.

The greatest application of the IP method has been in the search for disseminated metallic sulphides of less than 20% by volume. However, it has also been used successfully in the search for massive sulphides in situations where, due to source geometry, depth of source, or low resistivity of surface layer, the EM method can not be successfully applied. The ability to differentiate ionic conductors, such as water filled shear zones, makes the IP method a useful tool in checking EM anomalies which are suspected of being due to these causes.

In normal field applications the IP method does not differentiate between the economically important metallic minerals such as chalcopyrite, chalcocite, molybdenite, galena, etc., and the other metallic minerals such as pyrite. The induced polarization effect is due to the total of all electronic conducting minerals in the rock mass. Other electronic conducting materials which can produce an IP response are magnetite, pyrolusite, graphite, and some forms of hematite.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points in distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current electrodes is an integer number (n) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (nX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (n); i.e. (n) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (n) used.

In plotting the results, the values of the apparent resistivity, apparent per cent frequency effect, and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. (See Figure A.) The resistivity values are plotted above the line as a mirror image of the metal factor values below. On a second line, below the metal factor values, are plotted the values of the per cent frequency effect. In some cases the values of per cent frequency effect are plotted as superscripts of the metal factor value. In this second case the frequency effect values are not contoured. The lateral displacement of a given value is determined by the location along the survey line of the center point between the current and potential electrodes. The distance of the value from the line is determined by the distance (nX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. The plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field results, model study results and theoretical investigations. The position of the electrodes when anomalous values are measured is important in the interpretation.

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the induced polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 25 feet to 2000 feet for (X). In each case, the decision as to the distance (X) and the values of (n) to be used is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

The diagram in Figure A demonstrates the method used in plotting the results. Each value of the apparent resistivity, apparent metal factor, and apparent per cent frequency effect is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i. e. the depth of the measurement is increased. When the F. E. values are plotted as superscripts to the MF values the third section of data values is not presented and the F. E. values are not contoured.

The actual data plots included with the report are prepared utilizing an IBM 360/75 Computer and a Calcomp 770/763 Incremental Plotting System. The data values are calculated, plotted, and contoured according to a programme developed by McPhar Geophysics. Certain symbols have been incorporated into the programme to explain various situations in recording the data in the field.

The IP measurement is basically obtained by measuring the difference in potential or voltage (ΔV) obtained at two operating frequencies. The voltage is the product of the current through the ground and the apparent resistivity of the ground. Therefore in field situations where the current is very low due to poor electrode contact, or the apparent resistivity is very low, or a combination of the two effects; the value of (ΔV) the change in potential will be too small to be measurable. The symbol "TL" on the data plots indicates this situation.

In some situations spurious noise, either man made or natural, will render it impossible to obtain a reading. The symbol "N" on the data plots indicates a station at which it is too noisey to record a reading. If a reading can be obtained, but for reasons of noise there is some doubt as to its accuracy, the reading is bracketed in the data plot ( ).

In certain situations negative values of Apparent Frequency Effect are recorded. This may be due to the geologic environment or spurious electrical effects. The actual negative frequency effect value recorded is indicated on the data plot, however the symbol "NEG" is indicated for the corresponding value of Apparent Metal Factor. In contouring negative values the contour lines are indicated to the nearest positive value in the immediate vicinity of the negative value.

The symbol "NR" indicates that for some reason the operator did not attempt to record a reading although normal survey procedures would suggest that one was required. This may be due to inaccessible topography or other similar reasons. Any symbol other than those discussed above is unique to a particular situation and is described within the body of the report.

METHOD USED IN PLOTTING DIPOLE-DIPOLE INDUCED POLARIZATION AND RESISTIVITY RESULTS

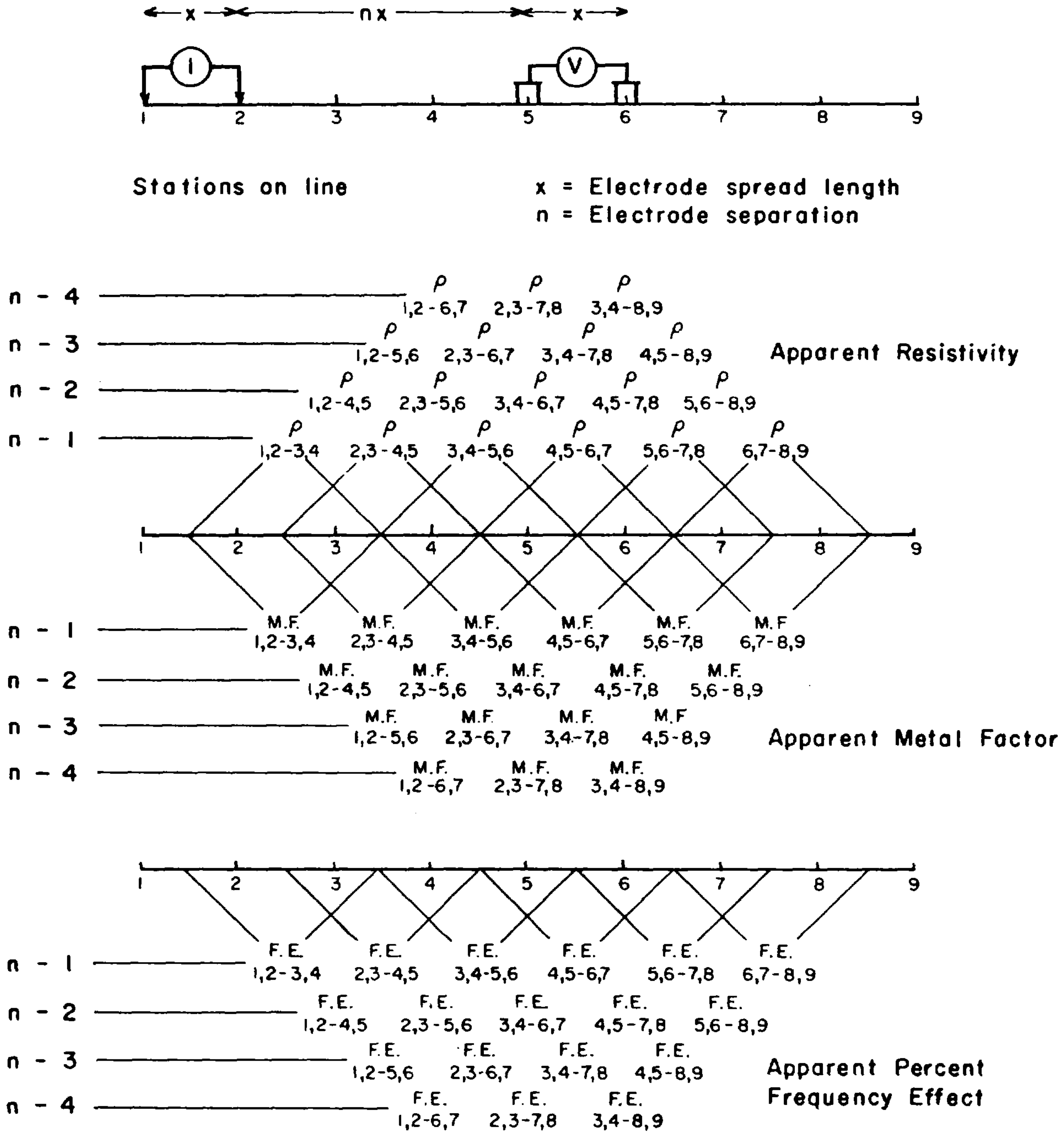
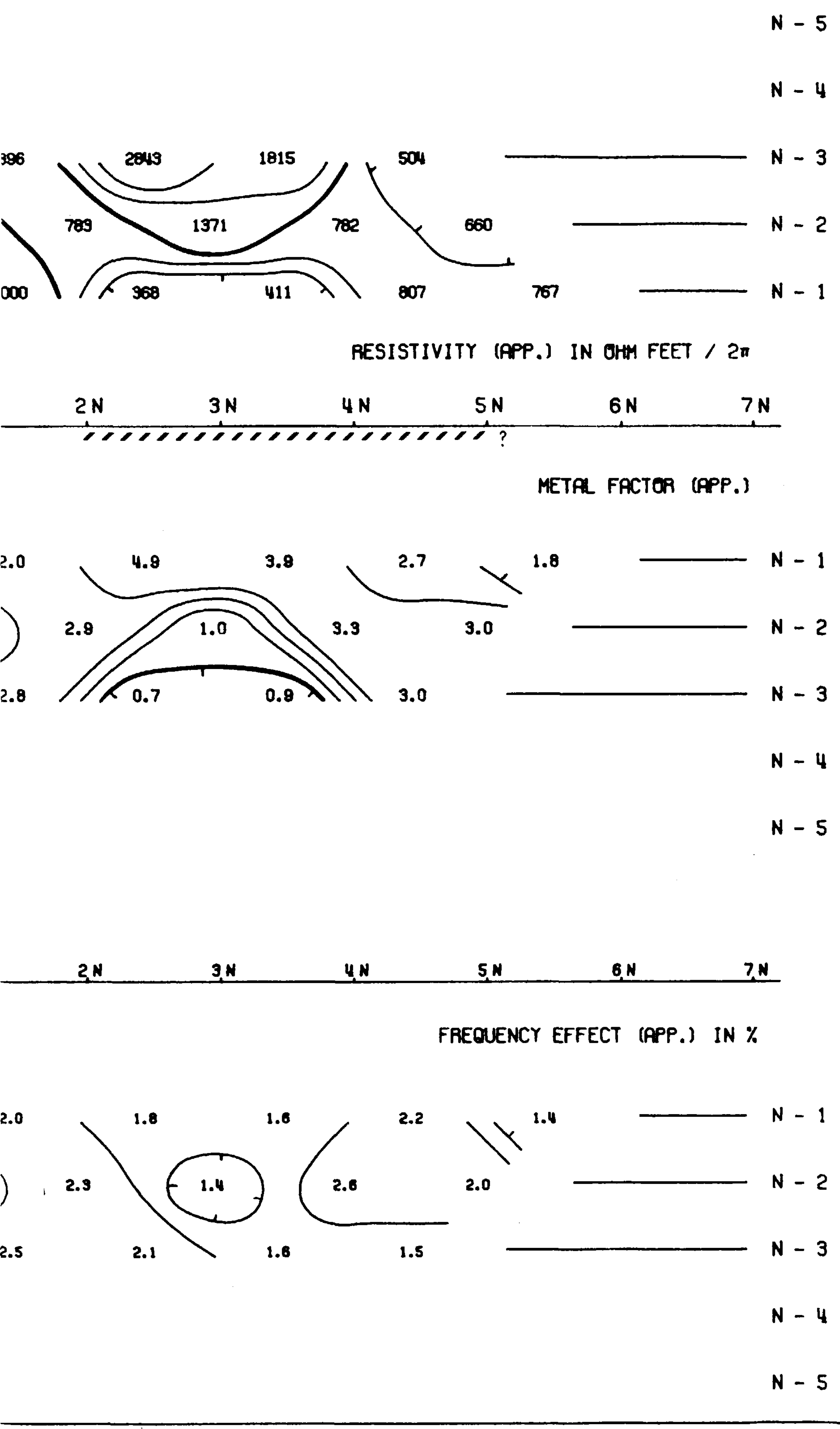


Fig. A



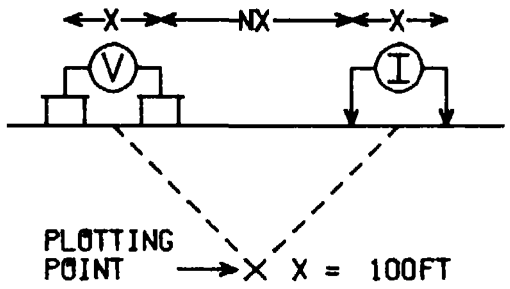
DWG. NO.- I.P.- 6116-1

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 1100W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬
PROBABLE ▮▮▮▮▮▮▮▮▮▮
POSSIBLE ⁄ ⁄ ⁄ ⁄ ⁄

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: OCT 1973

APPROVED:

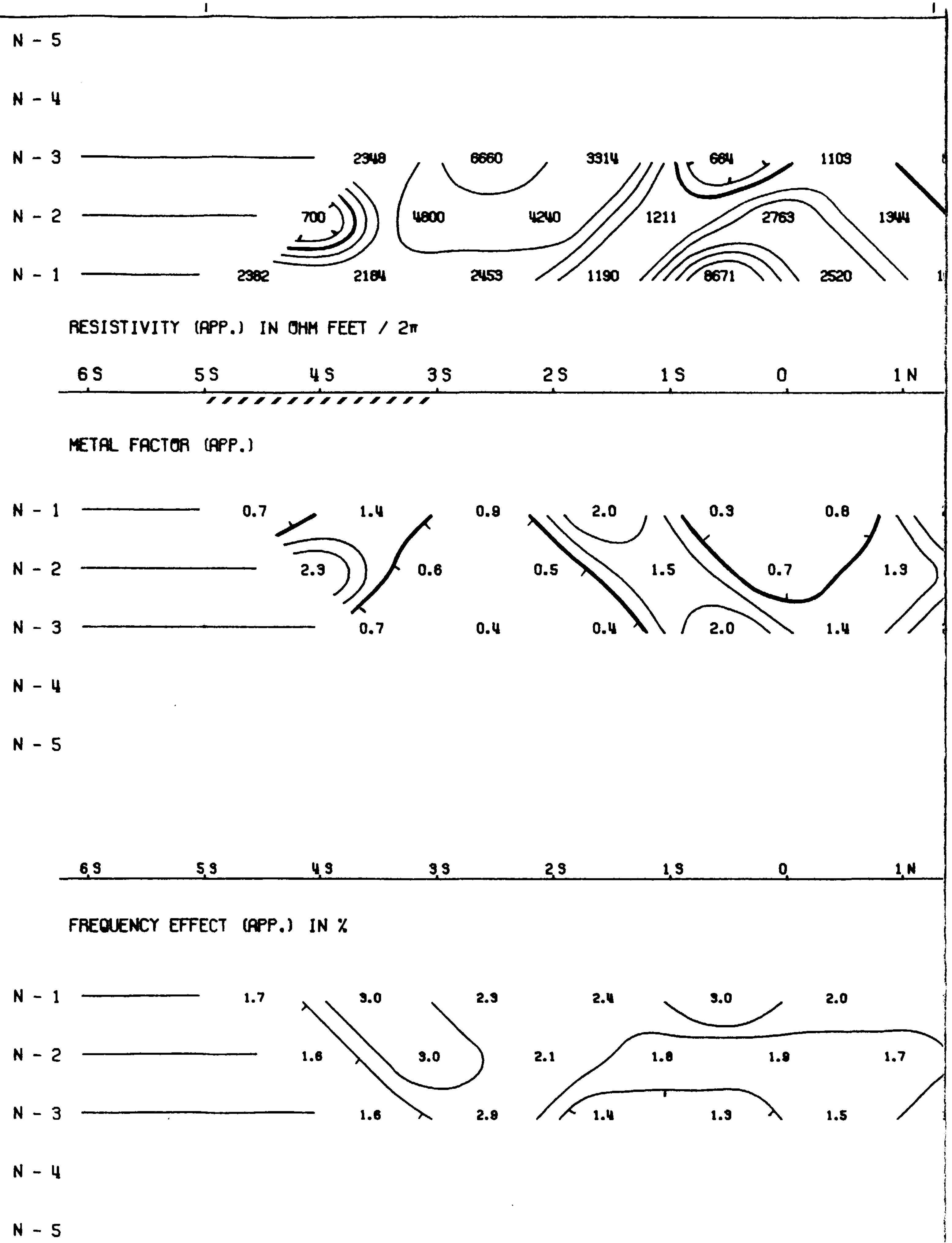
DATE:

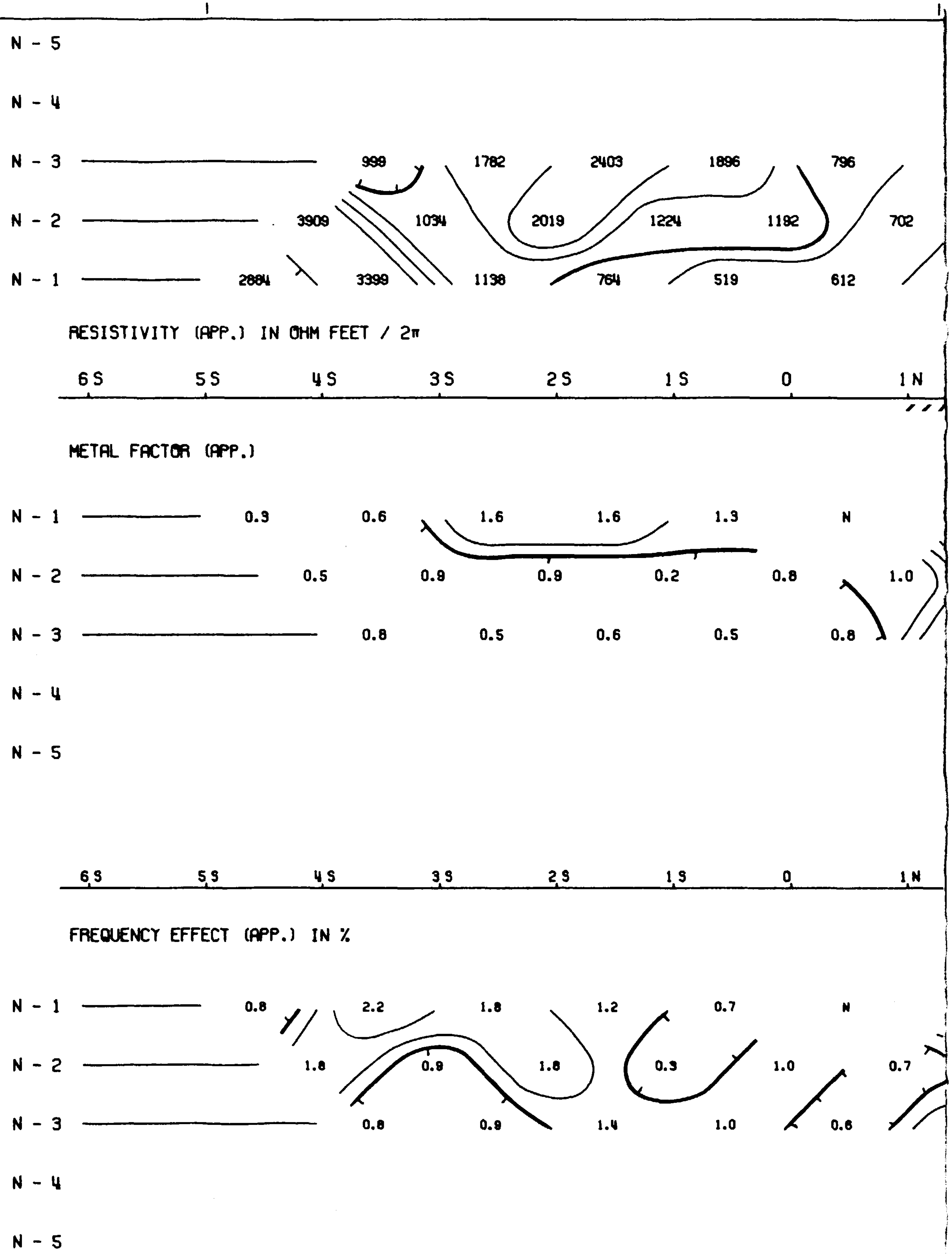
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

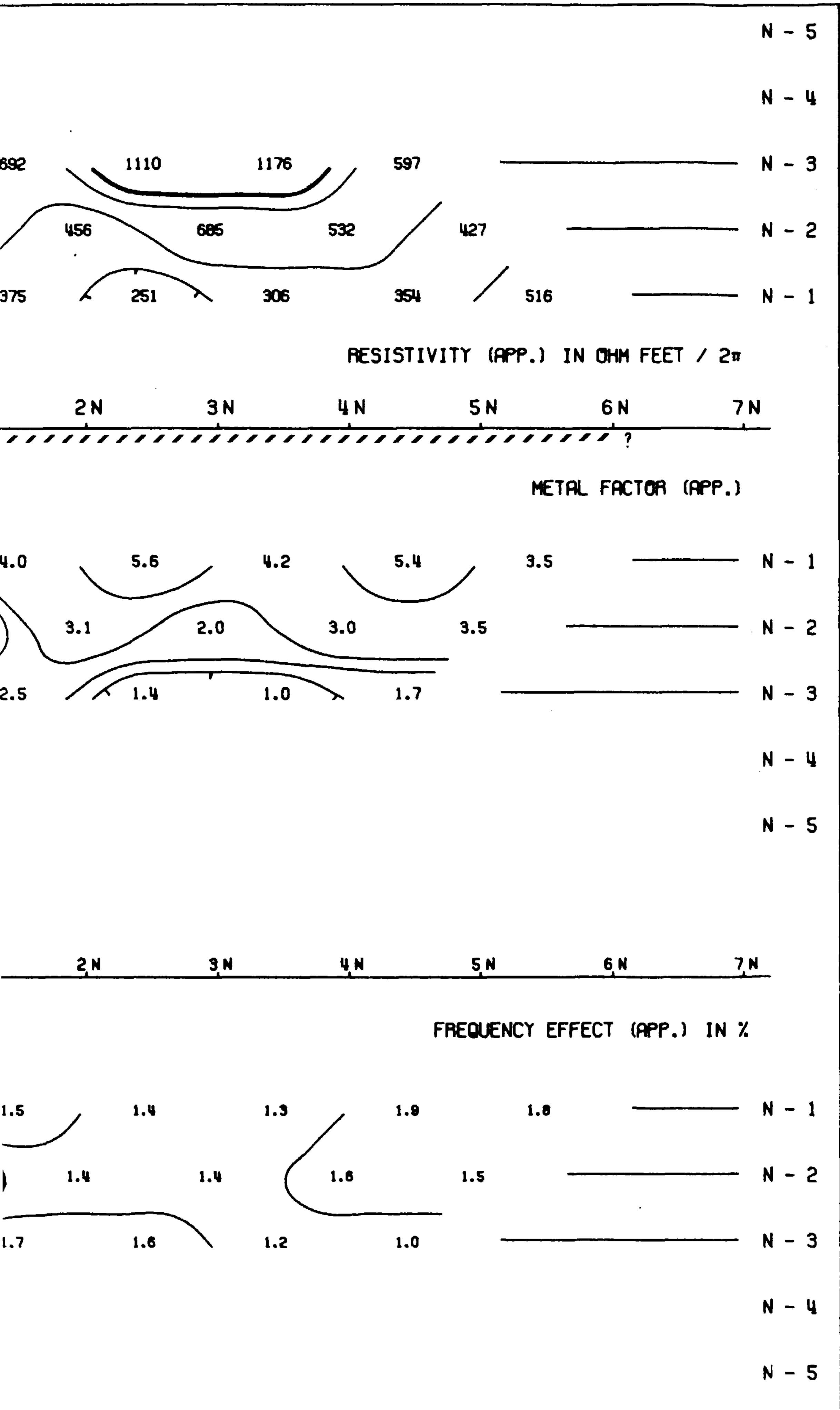
McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY MCPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3
N - 2
N - 1
2348
6660
3314
684
1103
700
4800
4240
1211
2763
1344
2382
2184
2453
1190
8671
2520
RESISTIVITY (APP.) IN OHM FEET / 2π
6S
5S
4S
3S
2S
1S
0
1N
METAL FACTOR (APP.)
N - 1
N - 2
N - 3
N - 4
N - 5
0.7
1.4
0.9
2.0
0.3
0.8
2.3
0.6
0.5
1.5
0.7
1.3
0.7
0.4
0.4
2.0
1.4
6S
5S
4S
3S
2S
1S
0
1N
FREQUENCY EFFECT (APP.) IN %
N - 1
N - 2
N - 3
N - 4
N - 5
1.7
3.0
2.9
2.4
3.0
2.0
1.6
3.0
2.1
1.8
1.9
1.7
1.6
2.9
1.4
1.3
1.5


N - 5
N - 4
N - 3
999
1782
2403
1896
796
N - 2
3909
1034
2019
1224
1182
702
N - 1
2884
3399
1138
764
519
612
RESISTIVITY (APP.) IN OHM FEET / 2π
6S
5S
4S
3S
2S
1S
0
1N
METAL FACTOR (APP.)
N - 1
0.3
0.6
1.6
1.6
1.3
N
N - 2
0.5
0.9
0.9
0.2
0.8
1.0
N - 3
0.8
0.5
0.6
0.5
0.8
N - 4
N - 5
6S
5S
4S
3S
2S
1S
0
1N
FREQUENCY EFFECT (APP.) IN %
N - 1
0.8
2.2
1.8
1.2
0.7
N
N - 2
1.8
0.9
1.8
0.3
1.0
0.7
N - 3
0.8
0.9
1.4
1.0
0.6
N - 4
N - 5



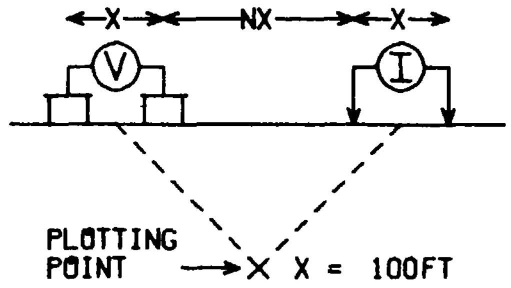
DWG. NO.- I.P.-6116-2

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 900W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ▮▮▮▮▮▮▮▮
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: OCT 1973

APPROVED:

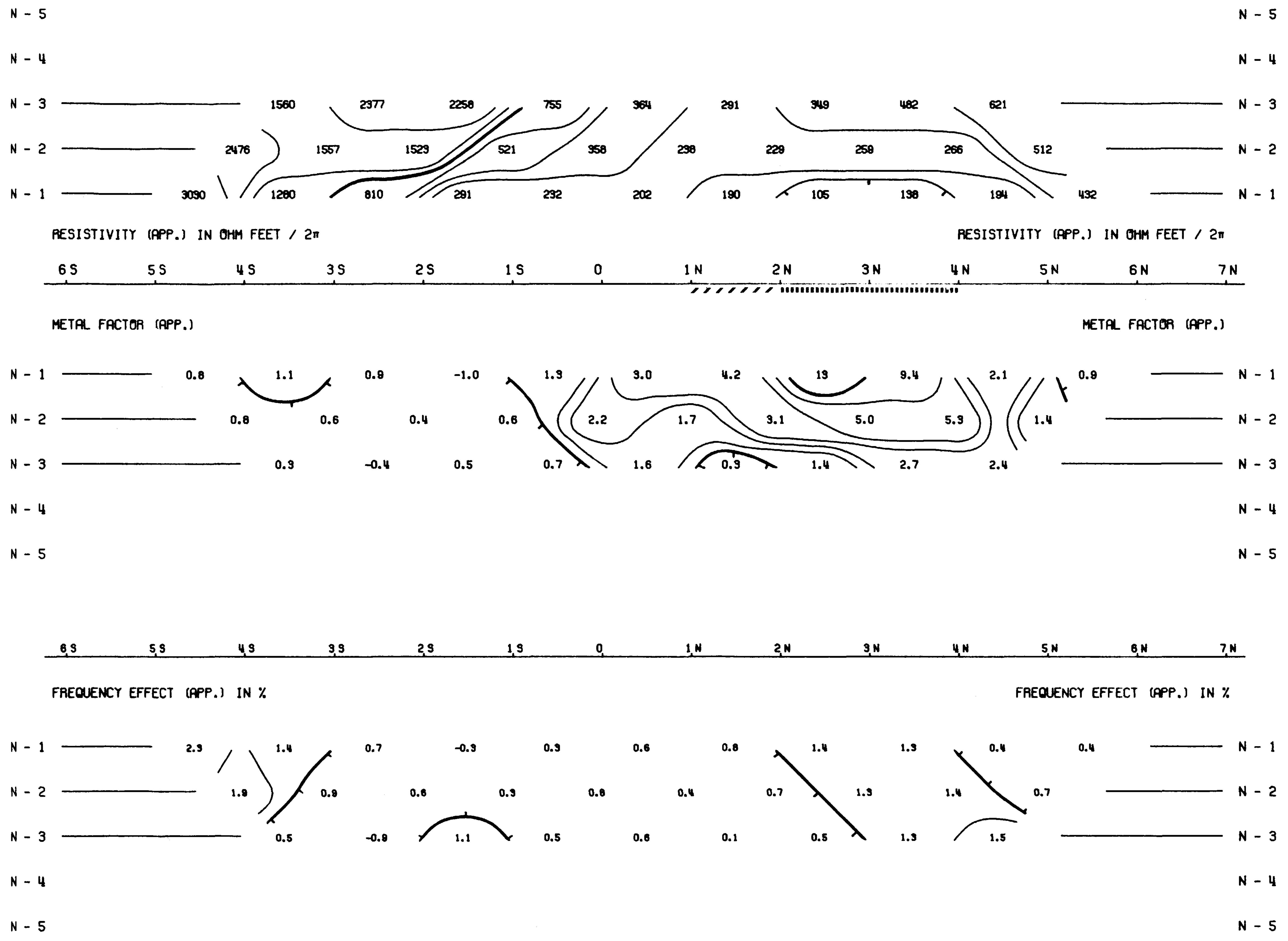
DATE:

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION



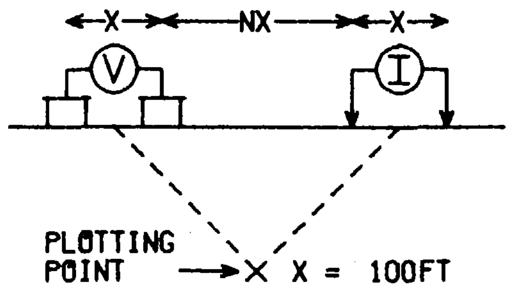
DWG. NO.- I.P.-6116-3

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 700W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬
PROBABLE ▮▮▮▮▮
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: OCT 1973

APPROVED

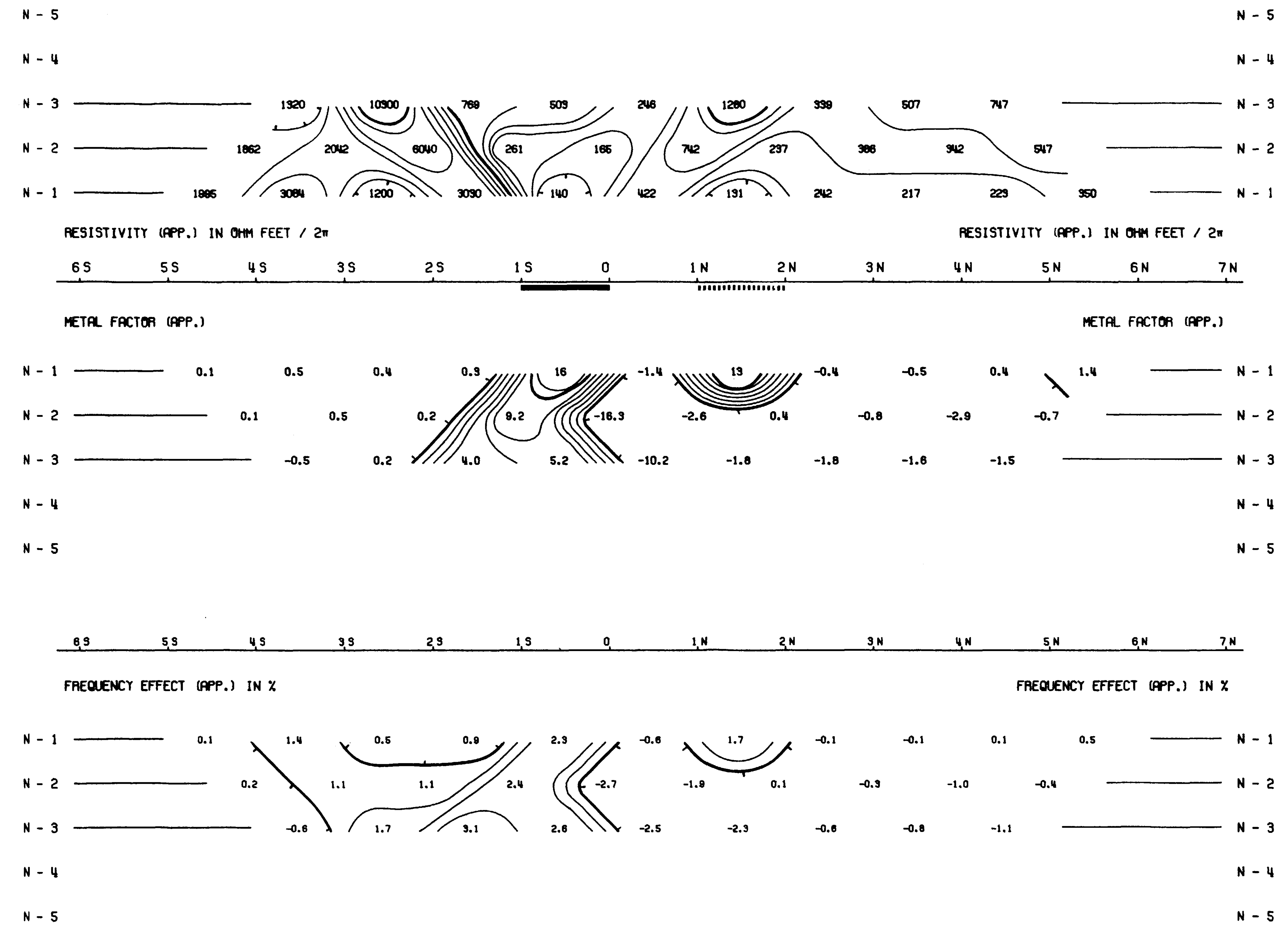
DATE

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY MCPHAR COMPUTER DIVISION



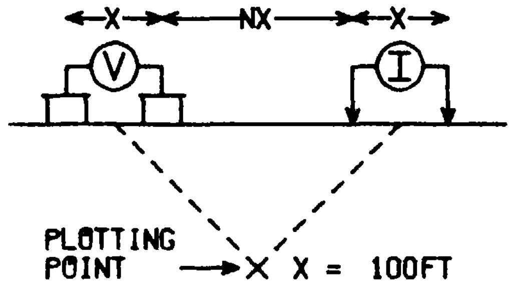
DWG. NO.- I.P.-6116-4

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 500W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬
PROBABLE ▮▮▮▮▮▮▮▮▮▮▮▮▮▮
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: OCT 1973

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

AP[illegible]

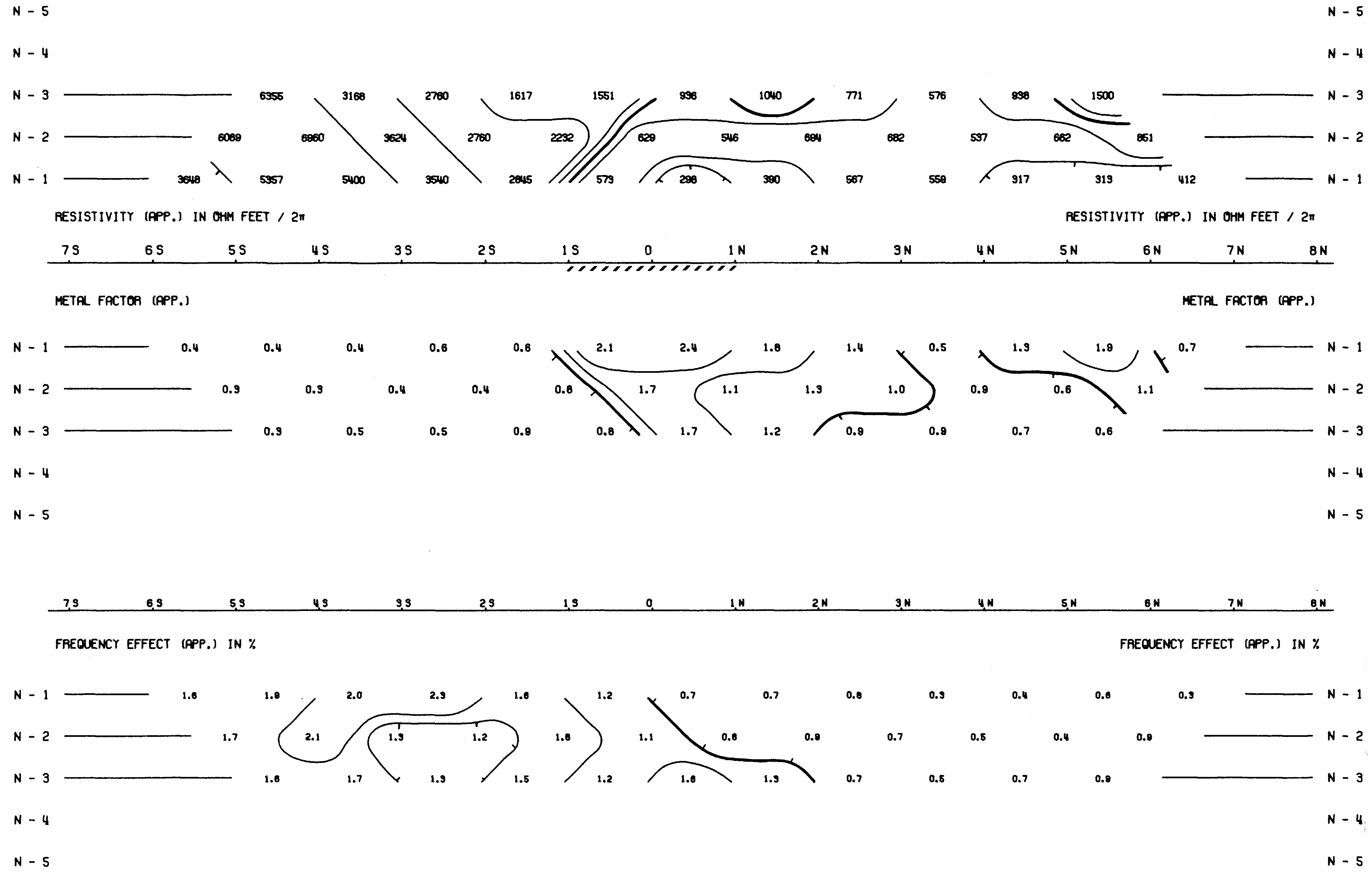
DATE: Dec 7/73

McPHAR GEOPHYSICS LIMITED

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION



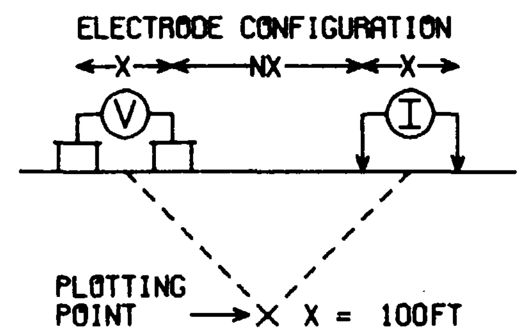
DWG. NO.- I.P.-6116-5

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 400W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ▮▮▮▮▮▮
POSSIBLE ⁄⁄⁄⁄⁄

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: OCT 1973

APPROVED: DJ [illegible]

DATE: [illegible]/73

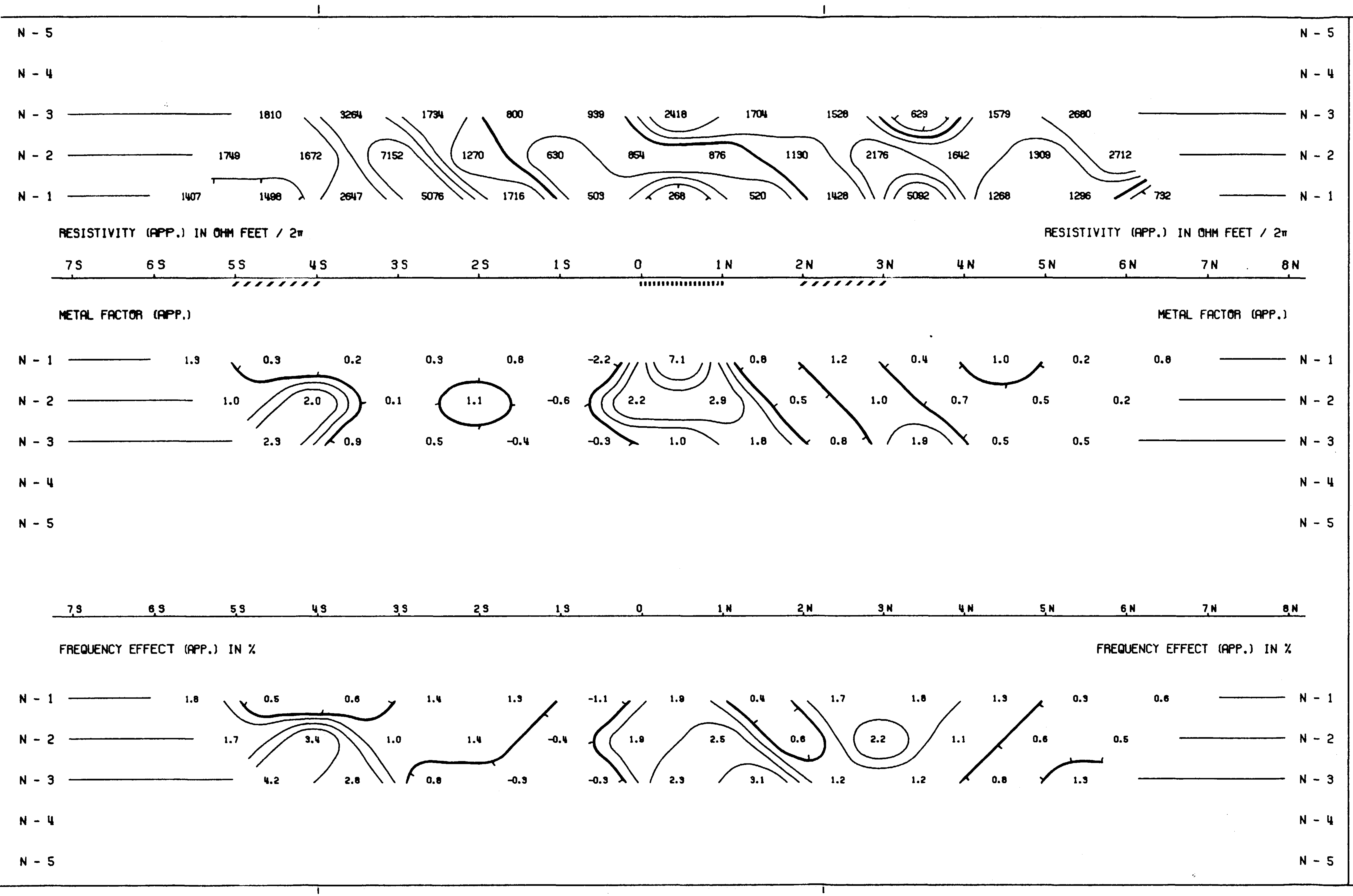
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS LIMITED

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION



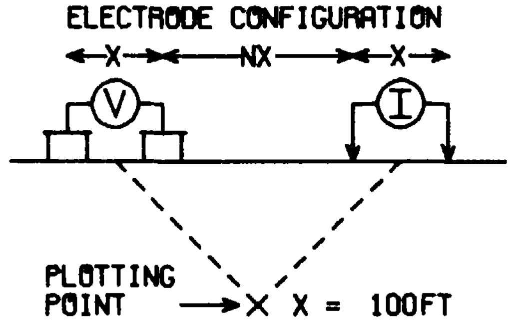
DWG. NO.- I.P.-6116-6

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 250W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE	▬
PROBABLE	▮▮▮▮▮
POSSIBLE	/////

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: OCT 1973

APPROVED:

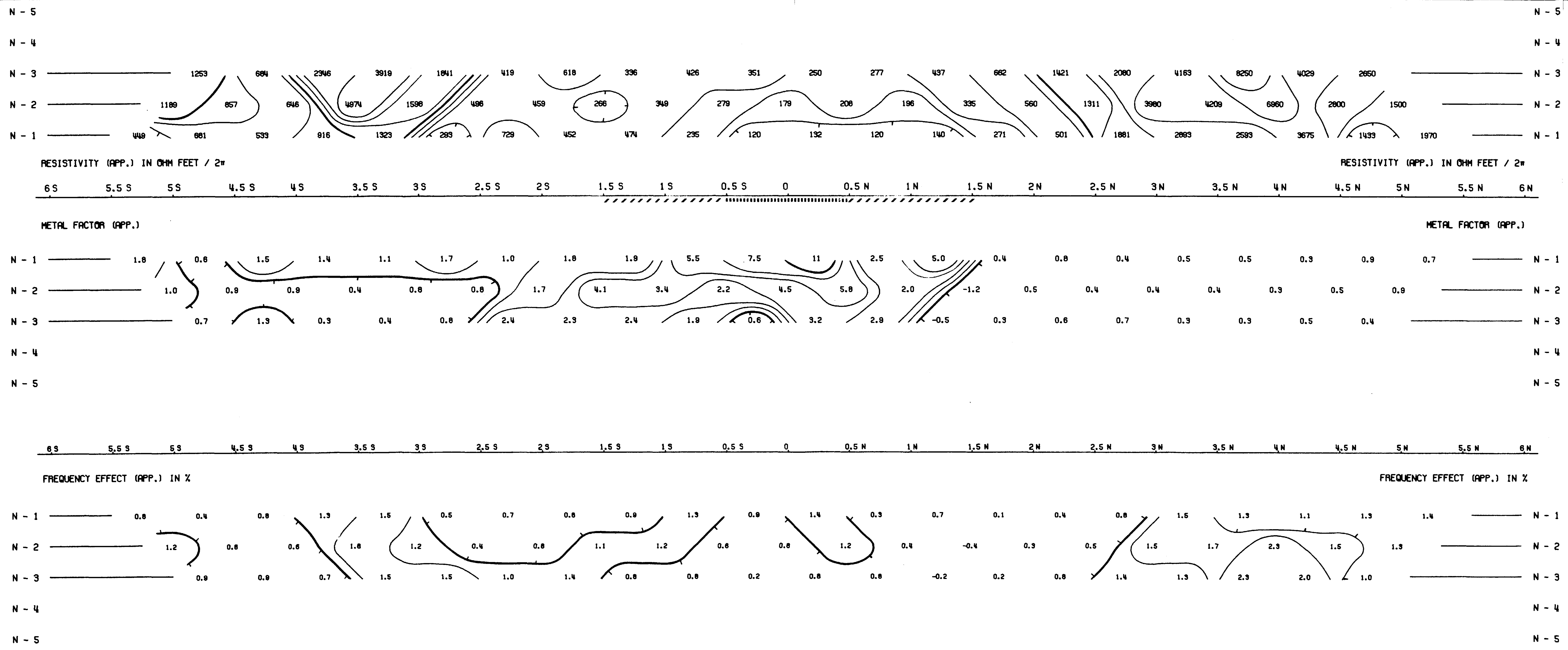
DATE: Dec 7/73

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION



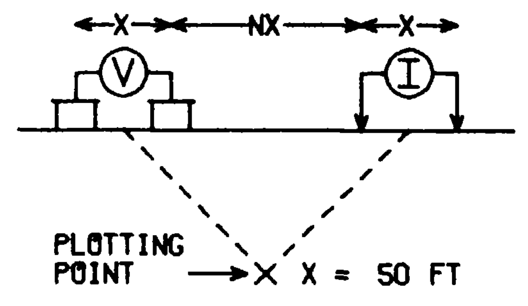
DWG. NO.- I.P.-6116-7

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 200W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ||||||||||||
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED: D.J.

DATE: Dec 6/73

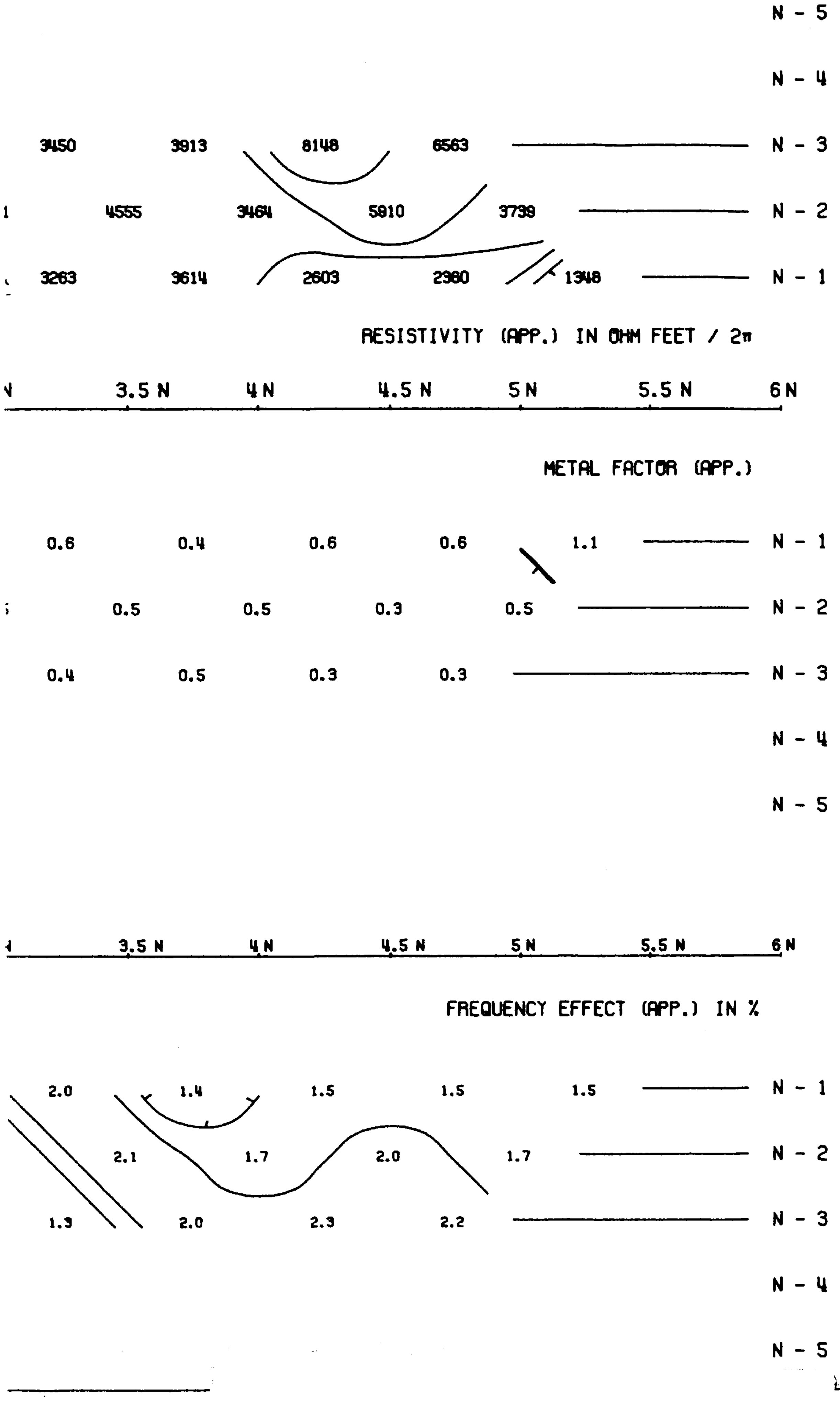
MCPHAR GEOPHYSICS LIMITED

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY MCPHAR COMPUTER DIVISION



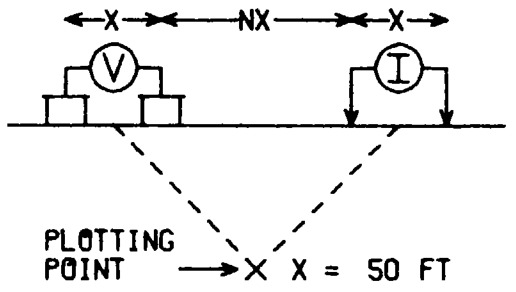
DWG. NO.- I.P.-6116-8

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 100W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ▮▮▮▮▮▮▮
POSSIBLE /////

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED: PJ M

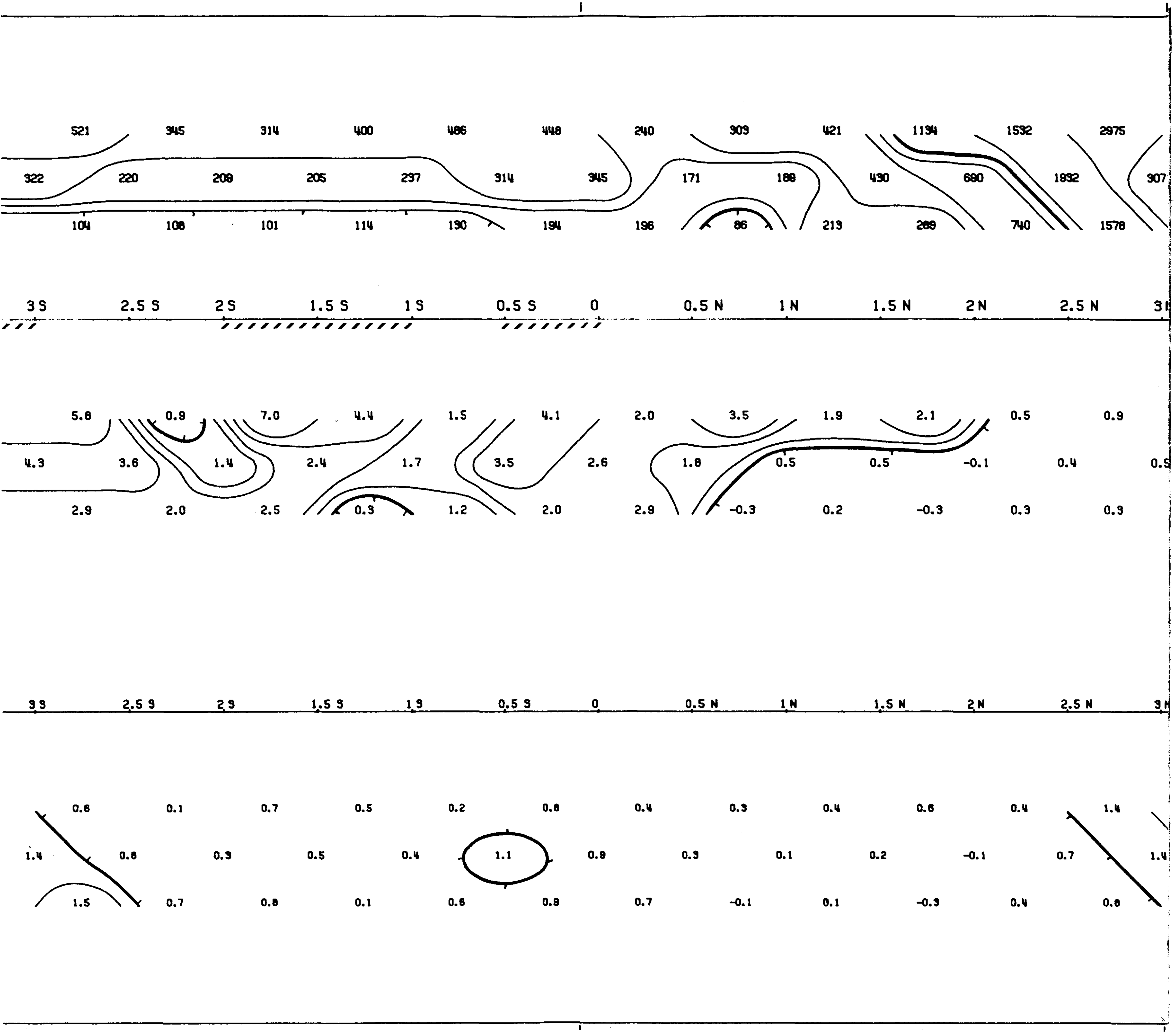
DATE: Dec 2/73

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

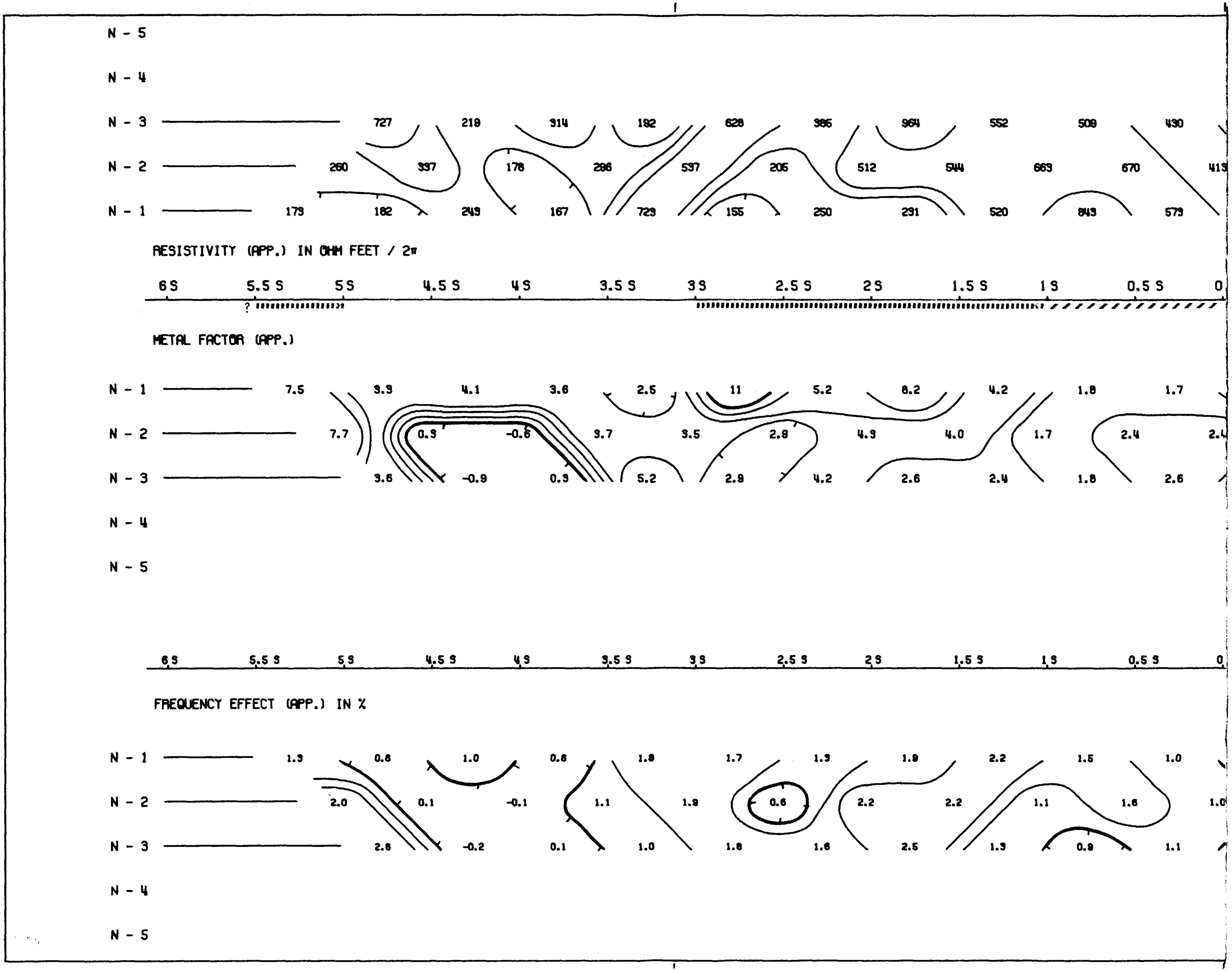
McPHAR GEOPHYSICS

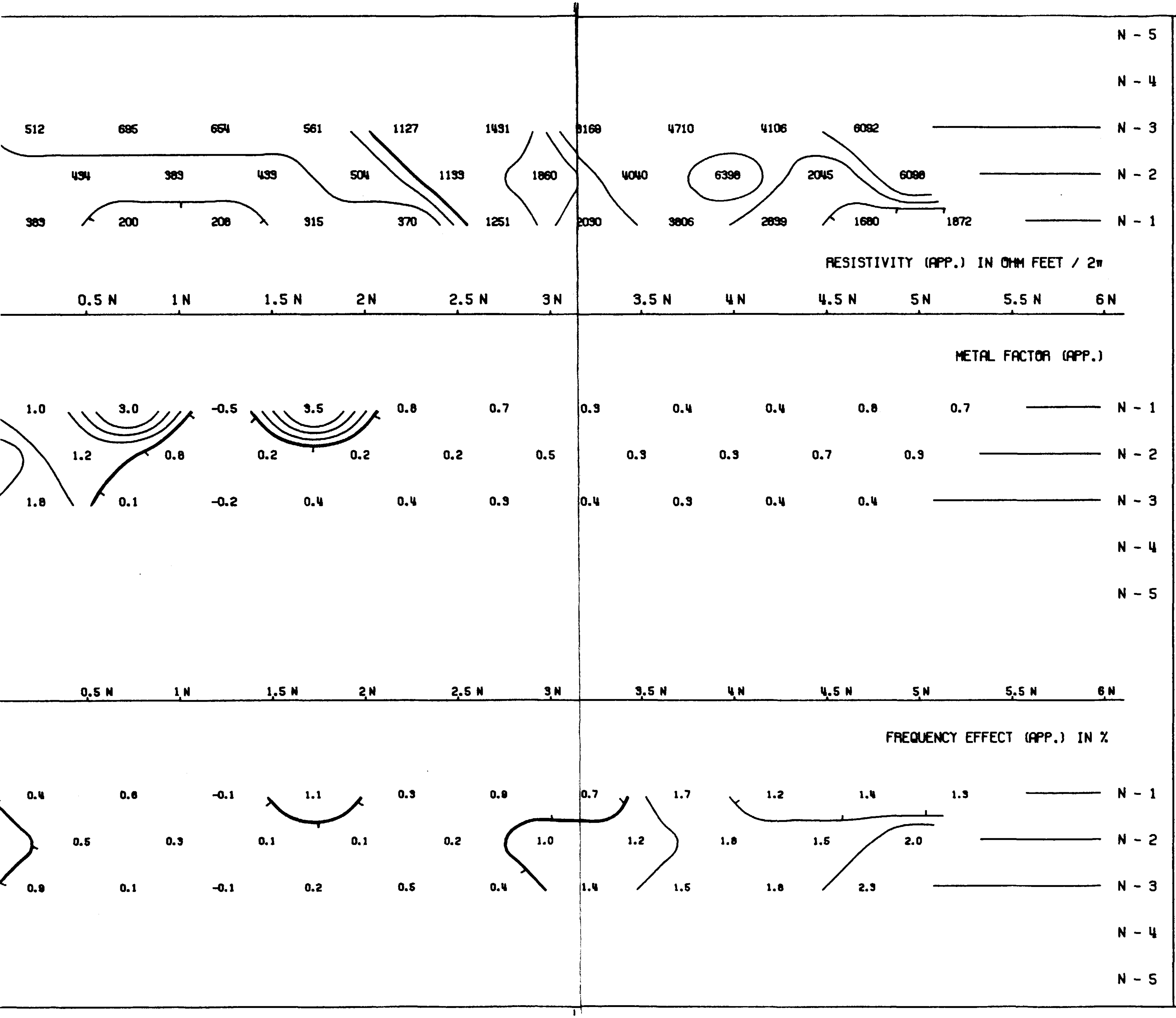
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION



521 345 314 400 486 448 240 303 421 1134 1532 2975
322 220 208 205 237 314 345 171 188 430 680 1832 307
104 108 101 114 130 194 196 86 213 289 740 1578
3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0 0.5 N 1 N 1.5 N 2 N 2.5 N 3 N
5.8 0.9 7.0 4.4 1.5 4.1 2.0 3.5 1.9 2.1 0.5 0.9
4.3 3.6 1.4 2.4 1.7 3.5 2.6 1.8 0.5 0.5 -0.1 0.4 0.5
2.9 2.0 2.5 0.3 1.2 2.0 2.9 -0.3 0.2 -0.3 0.3 0.3
3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0 0.5 N 1 N 1.5 N 2 N 2.5 N 3 N
0.6 0.1 0.7 0.5 0.2 0.8 0.4 0.3 0.4 0.6 0.4 1.4
1.4 0.8 0.3 0.5 0.4 1.1 0.9 0.3 0.1 0.2 -0.1 0.7 1.4
1.5 0.7 0.8 0.1 0.6 0.9 0.7 -0.1 0.1 -0.3 0.4 0.8


N - 5
N - 4
N - 3
N - 2
N - 1
727 219 314 192 628 386 964 552 509 430
260 337 178 286 537 205 512 544 663 670 413
173 182 249 167 729 155 250 231 520 843 579
RESISTIVITY (APP.) IN OHM FEET / 2π
6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0
?
METAL FACTOR (APP.)
7.5 3.3 4.1 3.6 2.5 11 5.2 8.2 4.2 1.8 1.7
7.7 0.3 -0.6 3.7 3.5 2.9 4.3 4.0 1.7 2.4 2.4
3.6 -0.9 0.3 5.2 2.9 4.2 2.6 2.4 1.8 2.6
6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0
FREQUENCY EFFECT (APP.) IN %
1.3 0.6 1.0 0.6 1.8 1.7 1.3 1.9 2.2 1.5 1.0
2.0 0.1 -0.1 1.1 1.9 0.6 2.2 2.2 1.1 1.6 1.0
2.6 -0.2 0.1 1.0 1.8 1.6 2.5 1.3 0.9 1.1



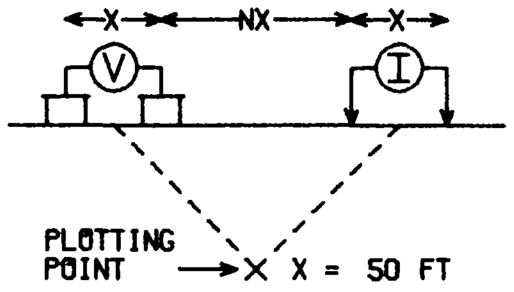
DWG. NO.- I.P.-6116-9

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 50W

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬
PROBABLE ||||||||||
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED: DJ [illegible]

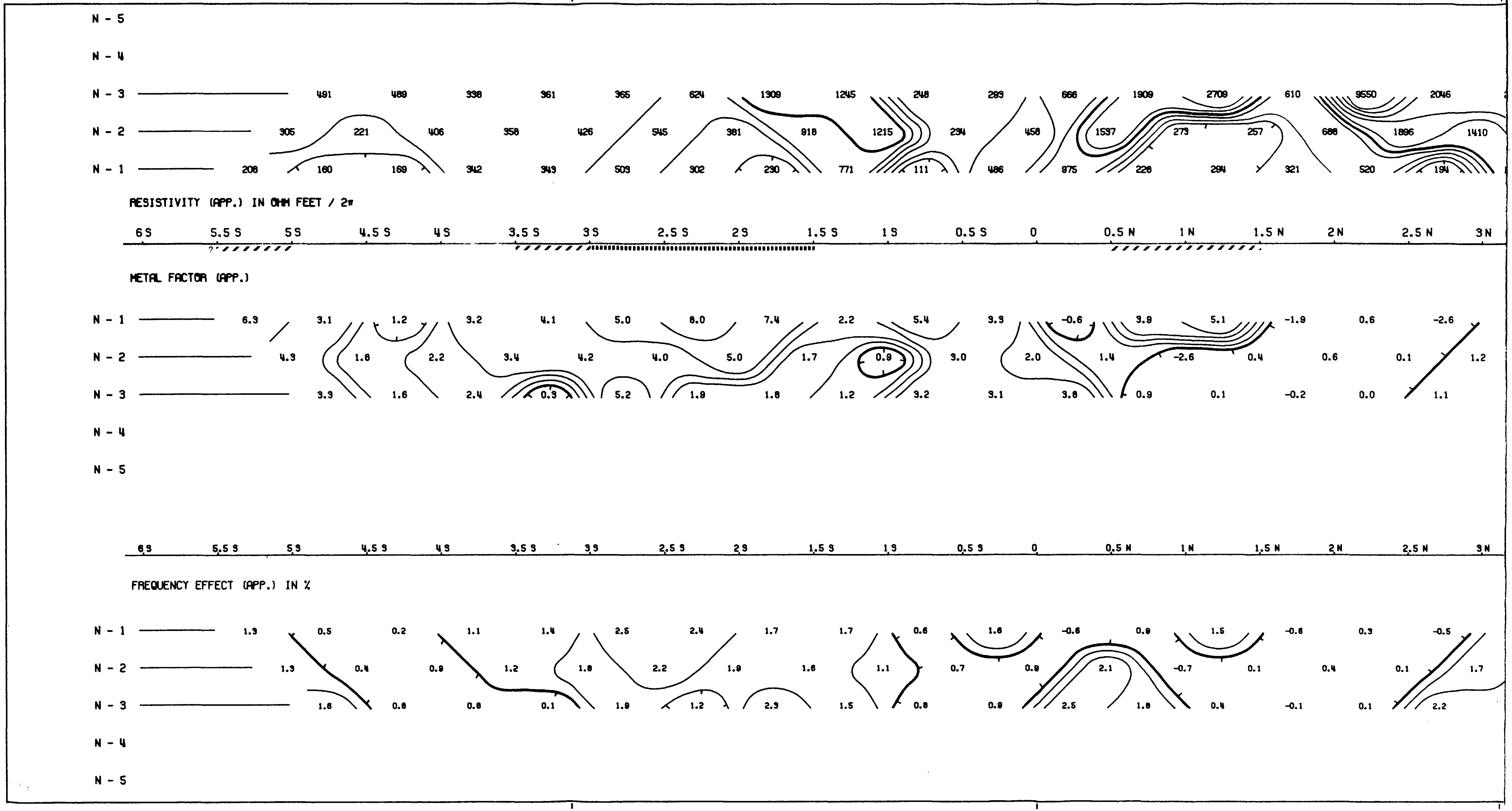
DATE: Dec 9/73

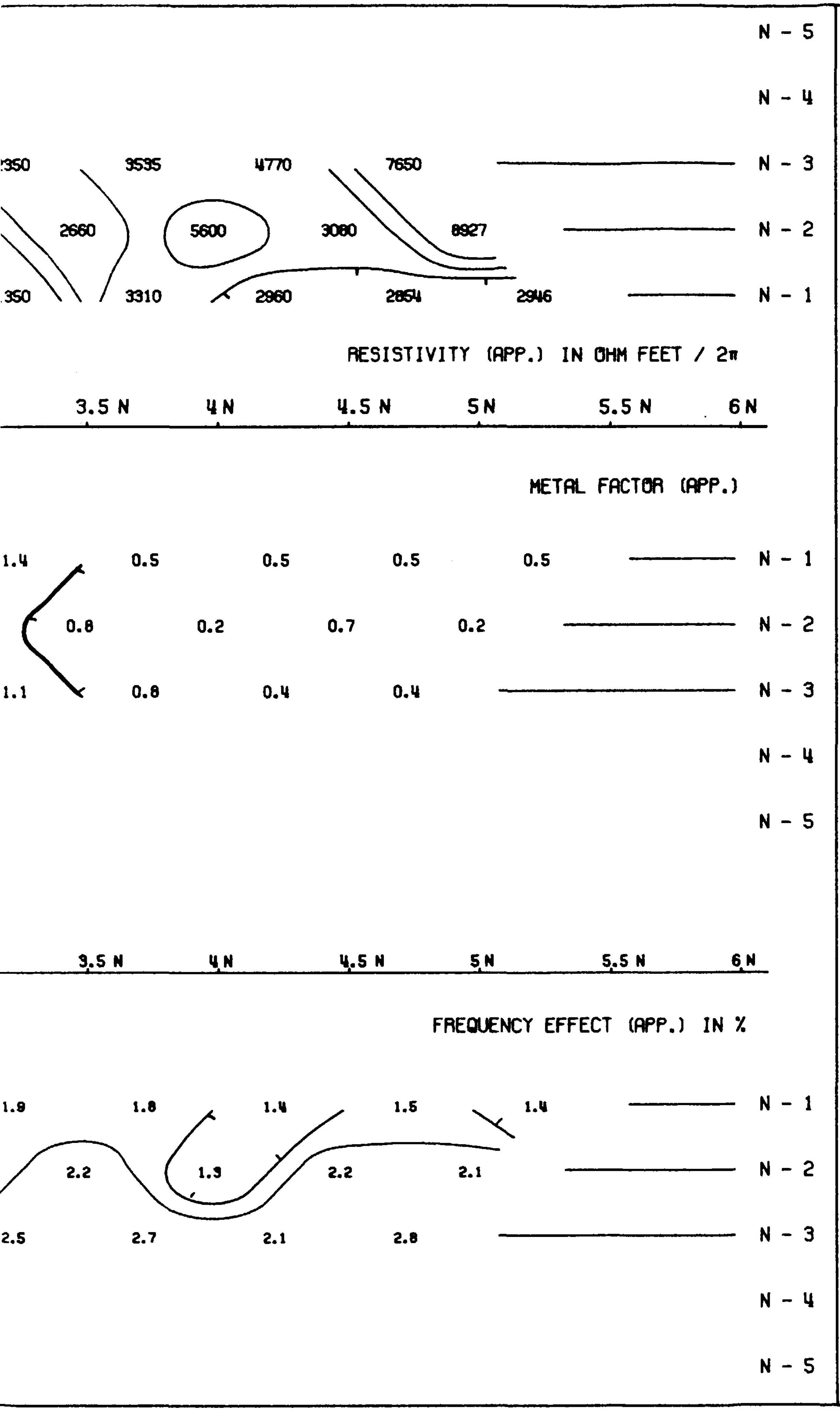
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3 491 489 338 361 365 624 1309 1245 248 289 666 1909 2709 610 9550 2046
N - 2 305 221 406 358 426 545 381 918 1215 234 458 1537 273 257 688 1896 1410
N - 1 208 160 169 342 343 503 302 230 771 111 486 975 228 294 321 520 194
RESISTIVITY (APP.) IN OHM FEET / 2π
6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0 0.5 N 1 N 1.5 N 2 N 2.5 N 3 N
?
METAL FACTOR (APP.)
N - 1 6.3 3.1 1.2 3.2 4.1 5.0 8.0 7.4 2.2 5.4 3.3 -0.6 3.9 5.1 -1.9 0.6 -2.6
N - 2 4.3 1.8 2.2 3.4 4.2 4.0 5.0 1.7 0.9 3.0 2.0 1.4 -2.6 0.4 0.6 0.1 1.2
N - 3 3.3 1.6 2.4 0.3 5.2 1.9 1.8 1.2 3.2 3.1 3.8 0.9 0.1 -0.2 0.0 1.1
N - 4
N - 5
6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0 0.5 N 1 N 1.5 N 2 N 2.5 N 3 N
FREQUENCY EFFECT (APP.) IN %
N - 1 1.3 0.5 0.2 1.1 1.4 2.5 2.4 1.7 1.7 0.6 1.6 -0.6 0.9 1.5 -0.8 0.3 -0.5
N - 2 1.3 0.4 0.9 1.2 1.8 2.2 1.9 1.6 1.1 0.7 0.8 2.1 -0.7 0.1 0.4 0.1 1.7
N - 3 1.6 0.8 0.8 0.1 1.9 1.2 2.3 1.5 0.8 0.9 2.5 1.8 0.4 -0.1 0.1 2.2
N - 4
N - 5



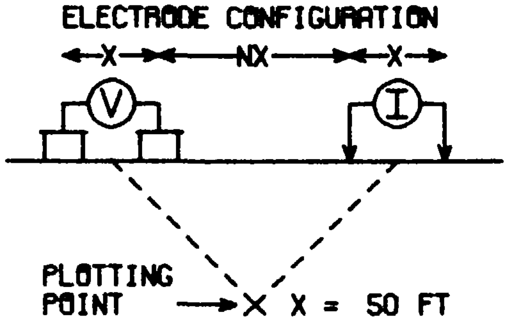
DWG. NO.- I.P.- 6116-10

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 0

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ||||||||||||
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED:

DATE: Dec. 2/73

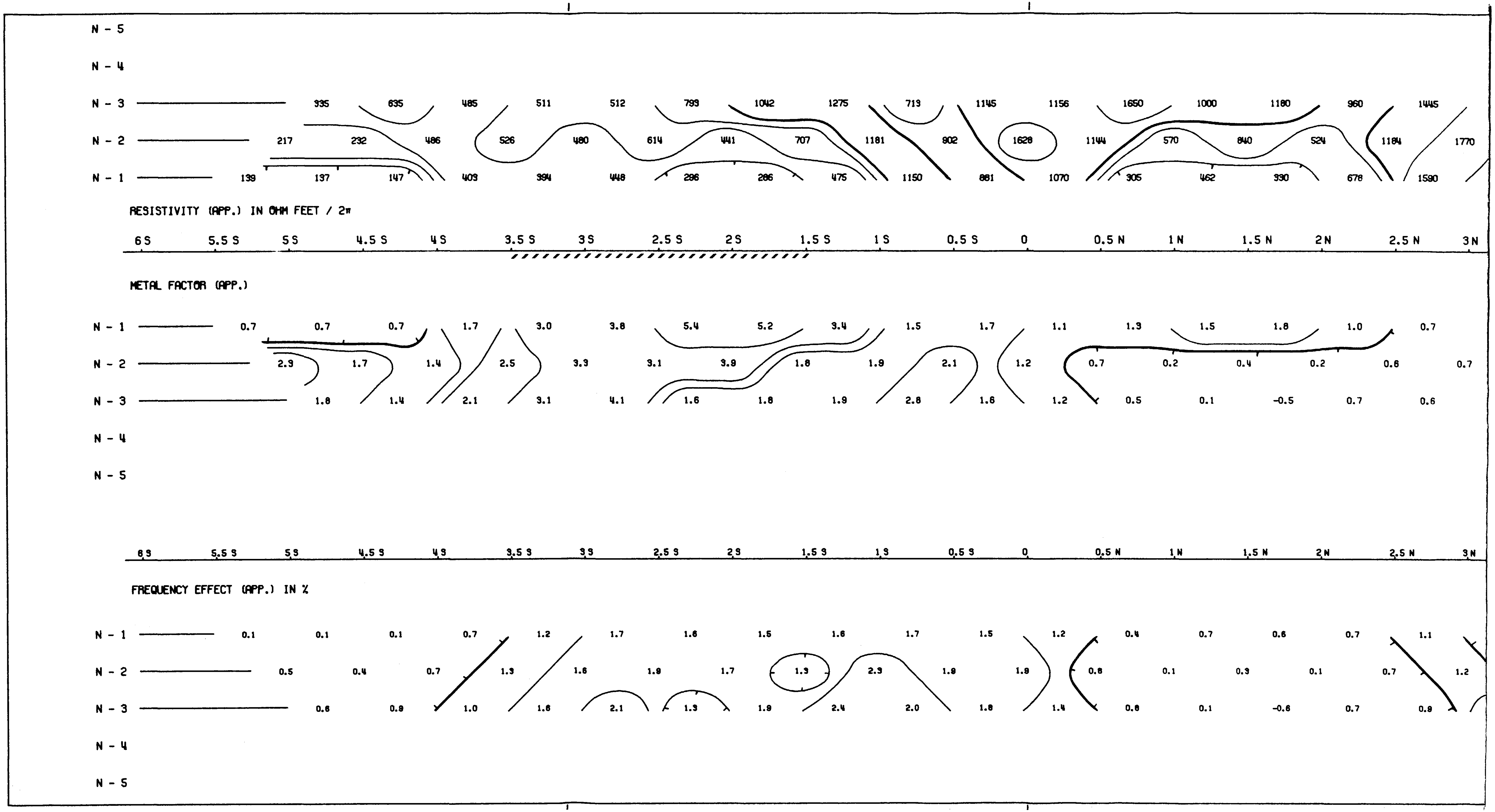
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

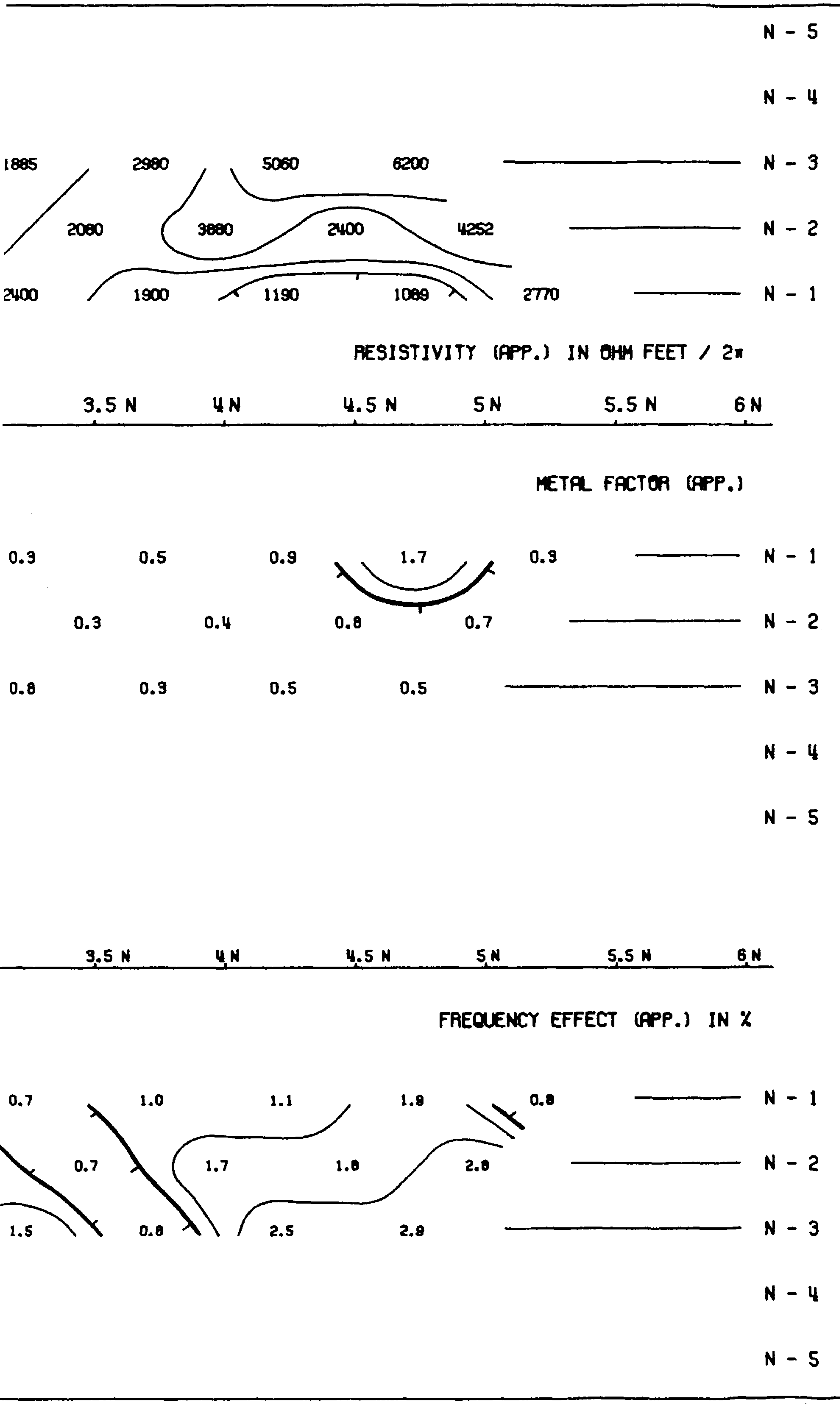
McPHAR GEOPHYSICS LIMITED

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3 335 635 485 511 512 793 1042 1275 713 1145 1156 1650 1000 1180 960 1445
N - 2 217 232 486 526 480 614 441 707 1181 802 1628 1144 570 840 524 1184 1770
N - 1 139 137 147 403 394 448 296 286 475 1150 881 1070 305 462 390 678 1590
RESISTIVITY (APP.) IN OHM FEET / 2π
6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0 0.5 N 1 N 1.5 N 2 N 2.5 N 3 N
METAL FACTOR (APP.)
N - 1 0.7 0.7 0.7 1.7 3.0 3.8 5.4 5.2 3.4 1.5 1.7 1.1 1.3 1.5 1.8 1.0 0.7
N - 2 2.9 1.7 1.4 2.5 3.3 3.1 3.9 1.8 1.9 2.1 1.2 0.7 0.2 0.4 0.2 0.6 0.7
N - 3 1.8 1.4 2.1 3.1 4.1 1.6 1.8 1.9 2.8 1.6 1.2 0.5 0.1 -0.5 0.7 0.6
N - 4
N - 5
6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S 0 0.5 N 1 N 1.5 N 2 N 2.5 N 3 N
FREQUENCY EFFECT (APP.) IN %
N - 1 0.1 0.1 0.1 0.7 1.2 1.7 1.6 1.5 1.6 1.7 1.5 1.2 0.4 0.7 0.6 0.7 1.1
N - 2 0.5 0.4 0.7 1.3 1.6 1.9 1.7 1.3 2.3 1.9 1.9 0.8 0.1 0.3 0.1 0.7 1.2
N - 3 0.6 0.9 1.0 1.6 2.1 1.3 1.9 2.4 2.0 1.8 1.4 0.8 0.1 -0.6 0.7 0.9
N - 4
N - 5

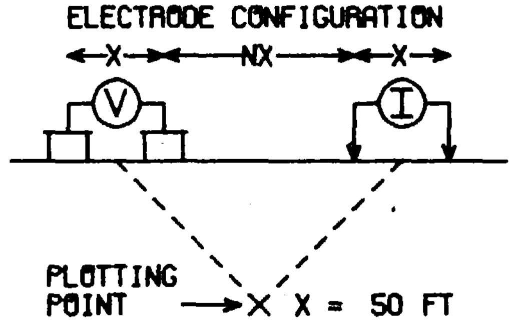


DWG. NO.- I.P.-6116-11

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 50E



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬
PROBABLE ▥
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: [illegible]

APPROVED: DJ M[illegible]

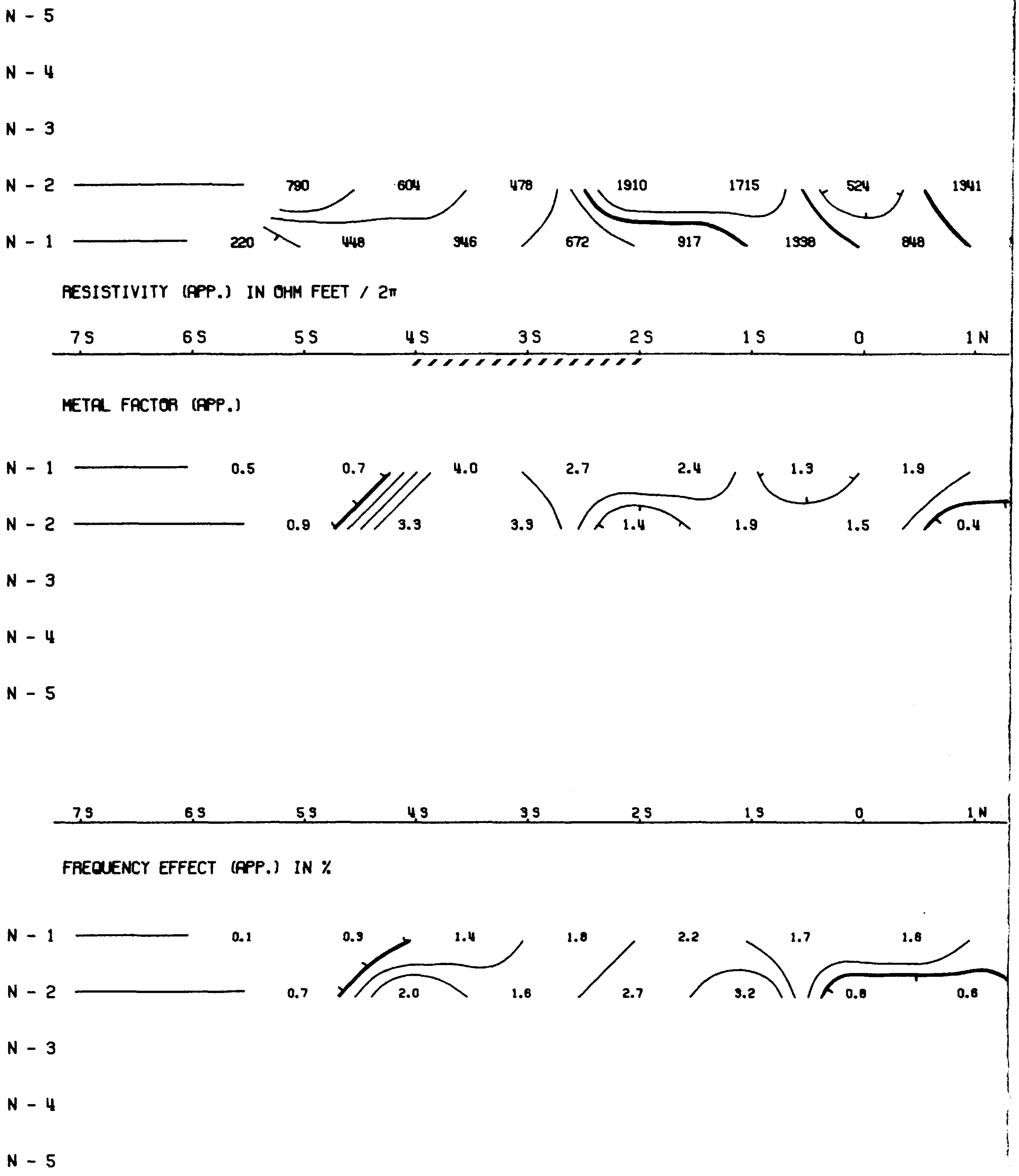
DATE: Dec [illegible]/73

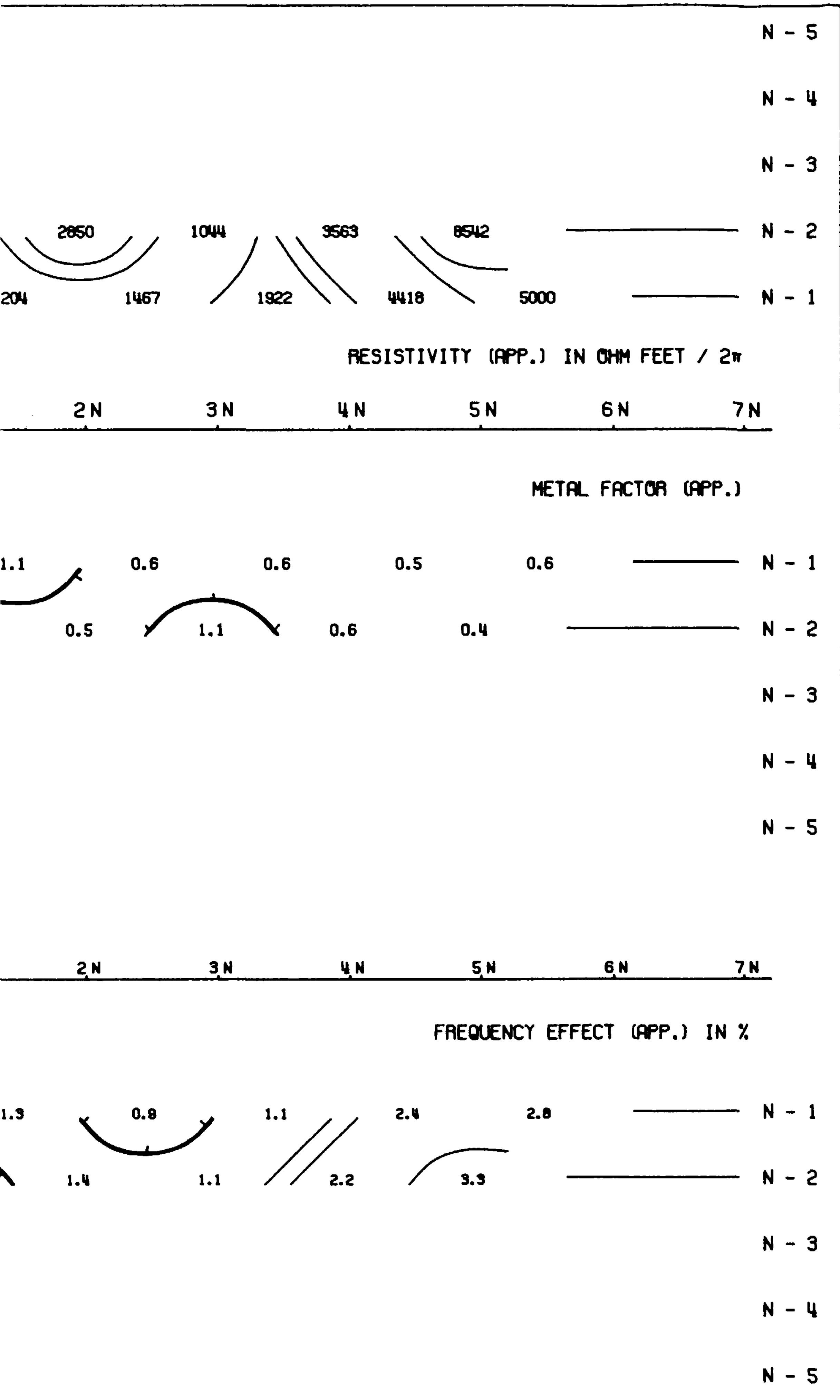
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3
N - 2
790
604
478
1910
1715
524
1341
N - 1
220
448
346
672
917
1338
848
RESISTIVITY (APP.) IN OHM FEET / 2π
7S
6S
5S
4S
3S
2S
1S
0
1N
METAL FACTOR (APP.)
N - 1
0.5
0.7
4.0
2.7
2.4
1.3
1.9
N - 2
0.9
3.3
3.9
1.4
1.9
1.5
0.4
N - 3
N - 4
N - 5
7S
6S
5S
4S
3S
2S
1S
0
1N
FREQUENCY EFFECT (APP.) IN %
N - 1
0.1
0.3
1.4
1.8
2.2
1.7
1.8
N - 2
0.7
2.0
1.6
2.7
3.2
0.8
0.6
N - 3
N - 4
N - 5



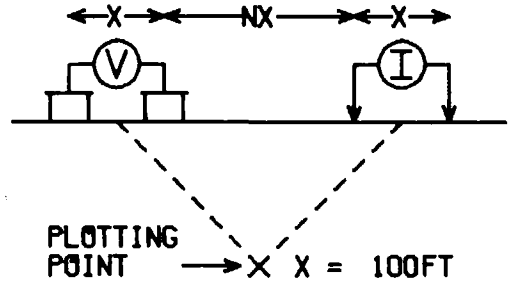
DWG. NO.- I.P.-6116-12

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 100E

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ||||||||||||
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED: DJ

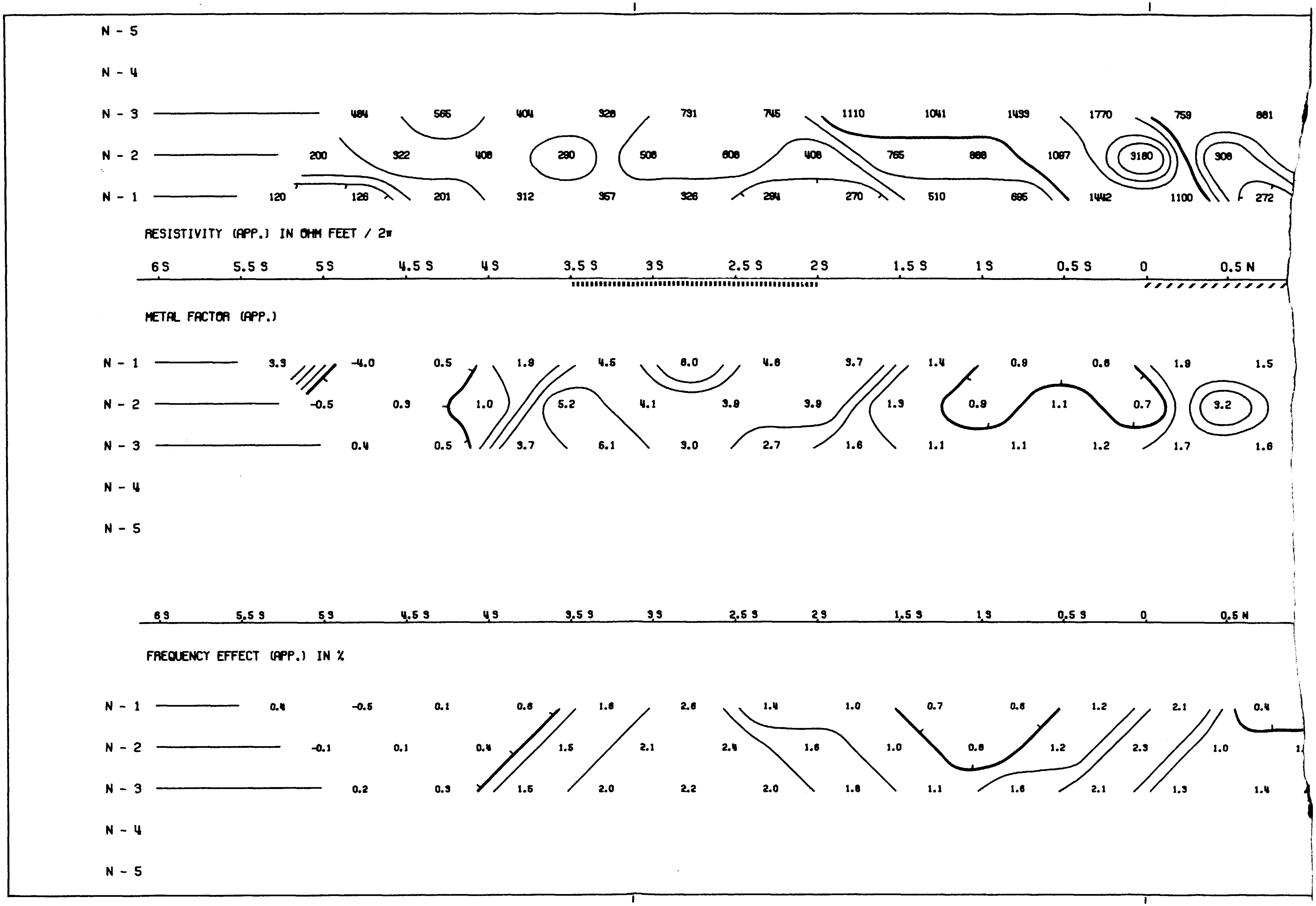
DATE: Dec 7/73

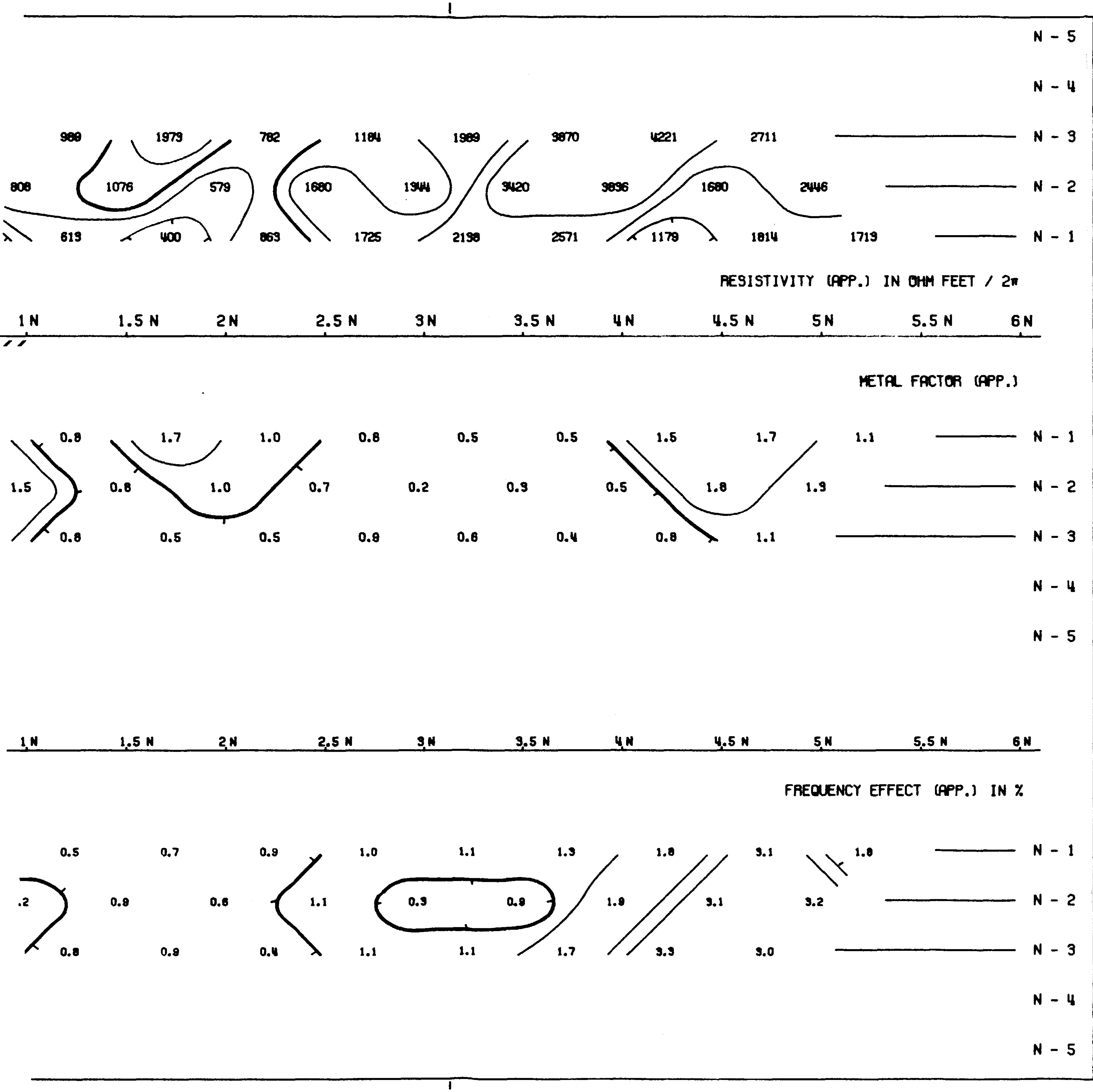
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3
484
565
404
328
731
745
1110
1041
1439
1770
759
881
N - 2
200
322
408
280
508
608
408
765
888
1087
3180
308
N - 1
120
126
201
312
357
326
284
270
510
695
1442
1100
272
RESISTIVITY (APP.) IN OHM FEET / 2π
6 S
5.5 S
5 S
4.5 S
4 S
3.5 S
3 S
2.5 S
2 S
1.5 S
1 S
0.5 S
0
0.5 N
METAL FACTOR (APP.)
N - 1
3.9
-4.0
0.5
1.9
4.5
8.0
4.8
3.7
1.4
0.9
0.8
1.9
1.5
N - 2
-0.5
0.9
1.0
5.2
4.1
3.9
3.9
1.9
0.9
1.1
0.7
3.2
N - 3
0.4
0.5
3.7
6.1
9.0
2.7
1.6
1.1
1.1
1.2
1.7
1.6
N - 4
N - 5
6 S
5.5 S
5 S
4.5 S
4 S
3.5 S
3 S
2.5 S
2 S
1.5 S
1 S
0.5 S
0
0.5 N
FREQUENCY EFFECT (APP.) IN %
N - 1
0.4
-0.5
0.1
0.6
1.6
2.6
1.4
1.0
0.7
0.6
1.2
2.1
0.4
N - 2
-0.1
0.1
0.4
1.5
2.1
2.4
1.6
1.0
0.8
1.2
2.3
1.0
N - 3
0.2
0.9
1.5
2.0
2.2
2.0
1.8
1.1
1.6
2.1
1.3
1.4
N - 4
N - 5



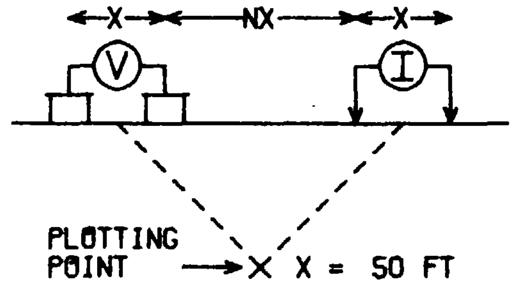
DWG. NO.- I.P.-6116-13

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 100E

ELECTRODE CONFIGURATION



X = 50 FT

SURFACE PROJECTION
OF ANOMALOUS ZONES
DEFINITE ▬
PROBABLE ▮▮▮▮▮▮▮▮▮▮▮
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED:

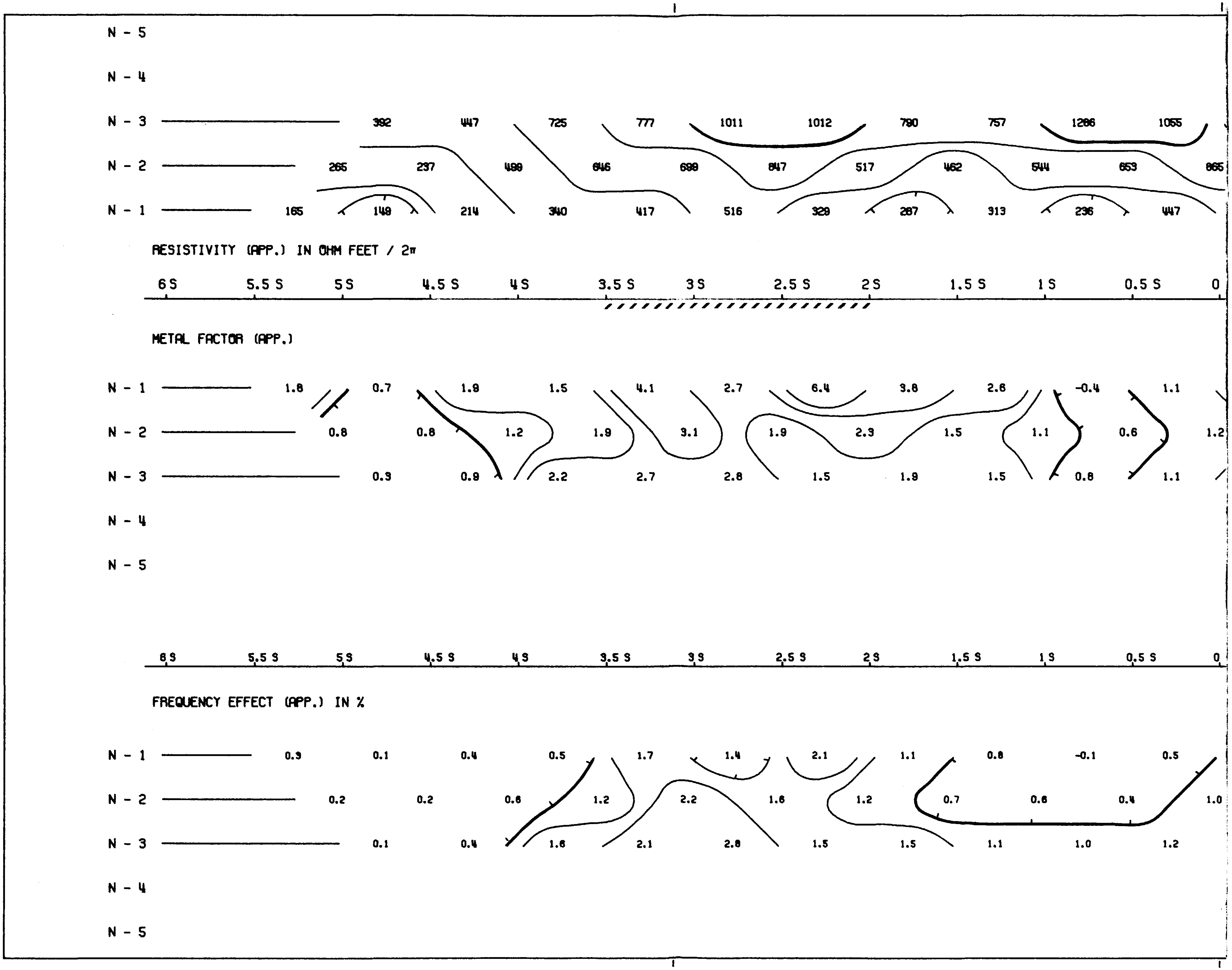
DATE: [illegible]/73

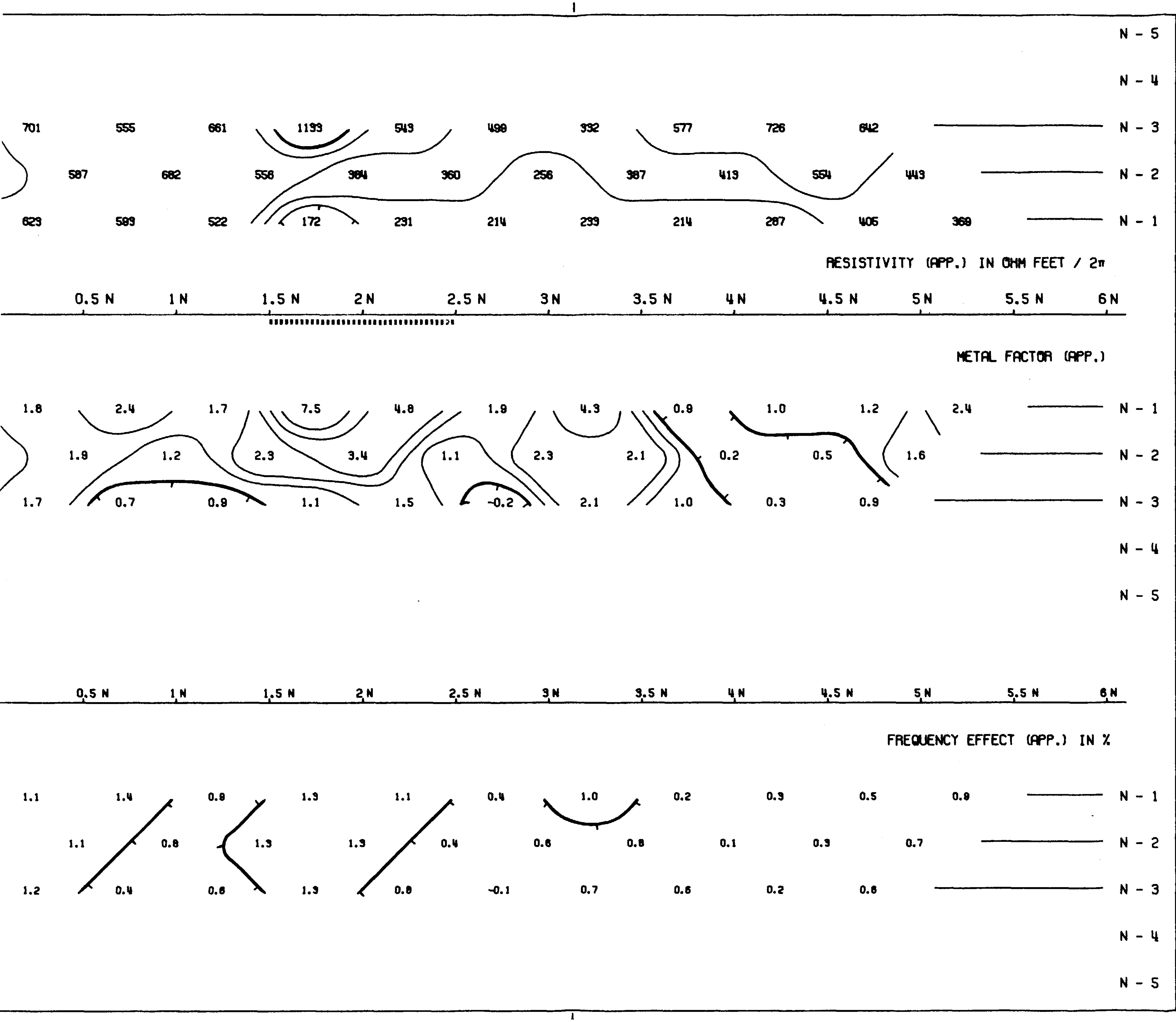
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3
392
447
725
777
1011
1012
790
757
1286
1055
N - 2
265
237
499
646
698
847
517
462
544
653
865
N - 1
165
149
214
340
417
516
329
287
313
236
447
RESISTIVITY (APP.) IN OHM FEET / 2π
6 S
5.5 S
5 S
4.5 S
4 S
3.5 S
3 S
2.5 S
2 S
1.5 S
1 S
0.5 S
0
METAL FACTOR (APP.)
N - 1
1.8
0.7
1.9
1.5
4.1
2.7
6.4
3.8
2.6
-0.4
1.1
N - 2
0.8
0.8
1.2
1.9
3.1
1.9
2.3
1.5
1.1
0.6
1.2
N - 3
0.3
0.9
2.2
2.7
2.8
1.5
1.9
1.5
0.8
1.1
N - 4
N - 5
6 S
5.5 S
5 S
4.5 S
4 S
3.5 S
3 S
2.5 S
2 S
1.5 S
1 S
0.5 S
0
FREQUENCY EFFECT (APP.) IN %
N - 1
0.3
0.1
0.4
0.5
1.7
1.4
2.1
1.1
0.8
-0.1
0.5
N - 2
0.2
0.2
0.6
1.2
2.2
1.6
1.2
0.7
0.6
0.4
1.0
N - 3
0.1
0.4
1.6
2.1
2.8
1.5
1.5
1.1
1.0
1.2
N - 4
N - 5



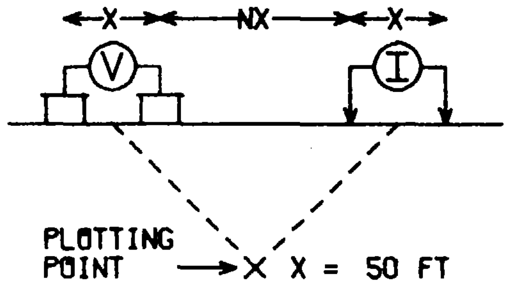
DWG. NO.- I.P.-6116-14

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 200E

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬
PROBABLE ┅
POSSIBLE ⁄⁄⁄⁄⁄

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED: DJ Wiener

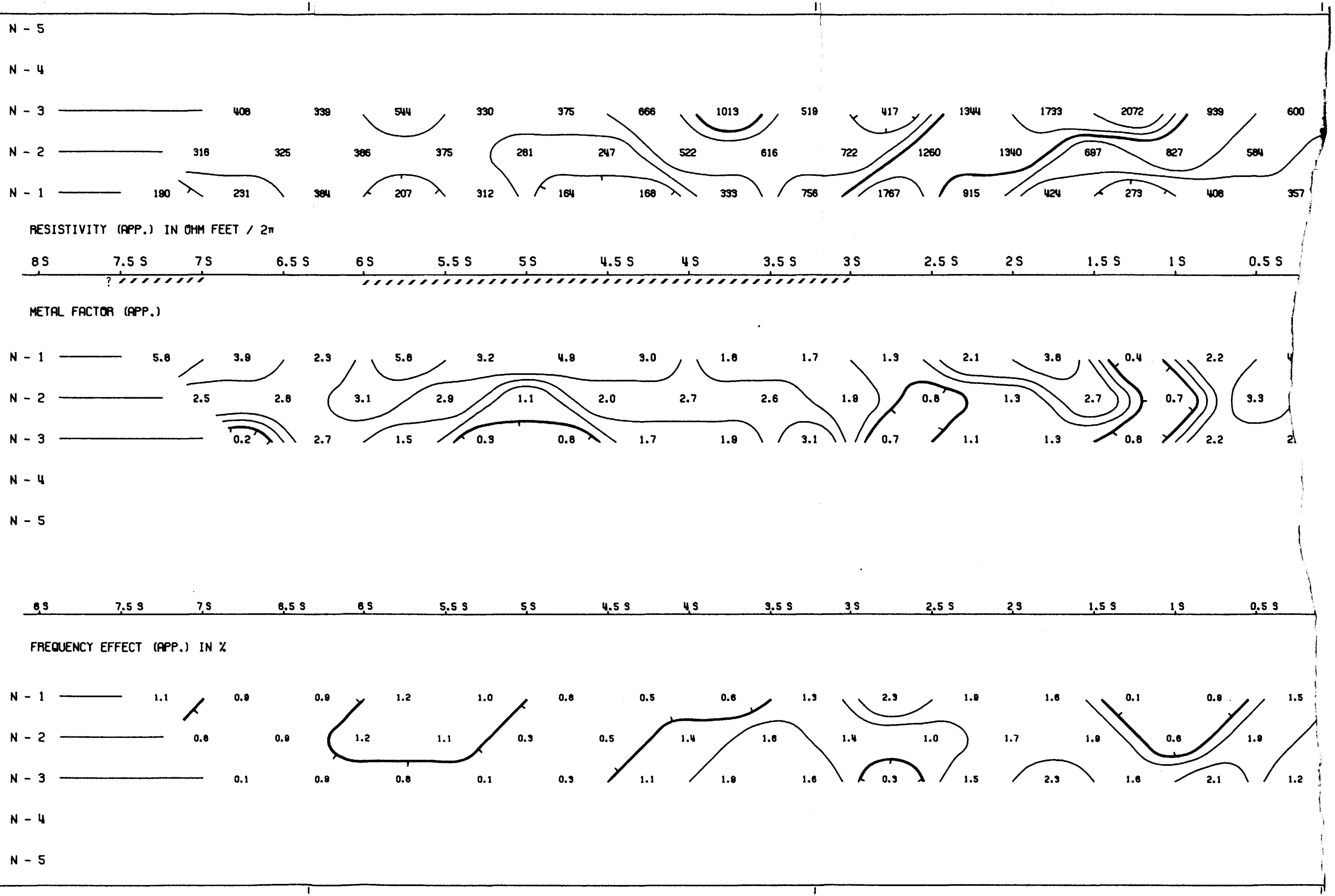
DATE: 10/73

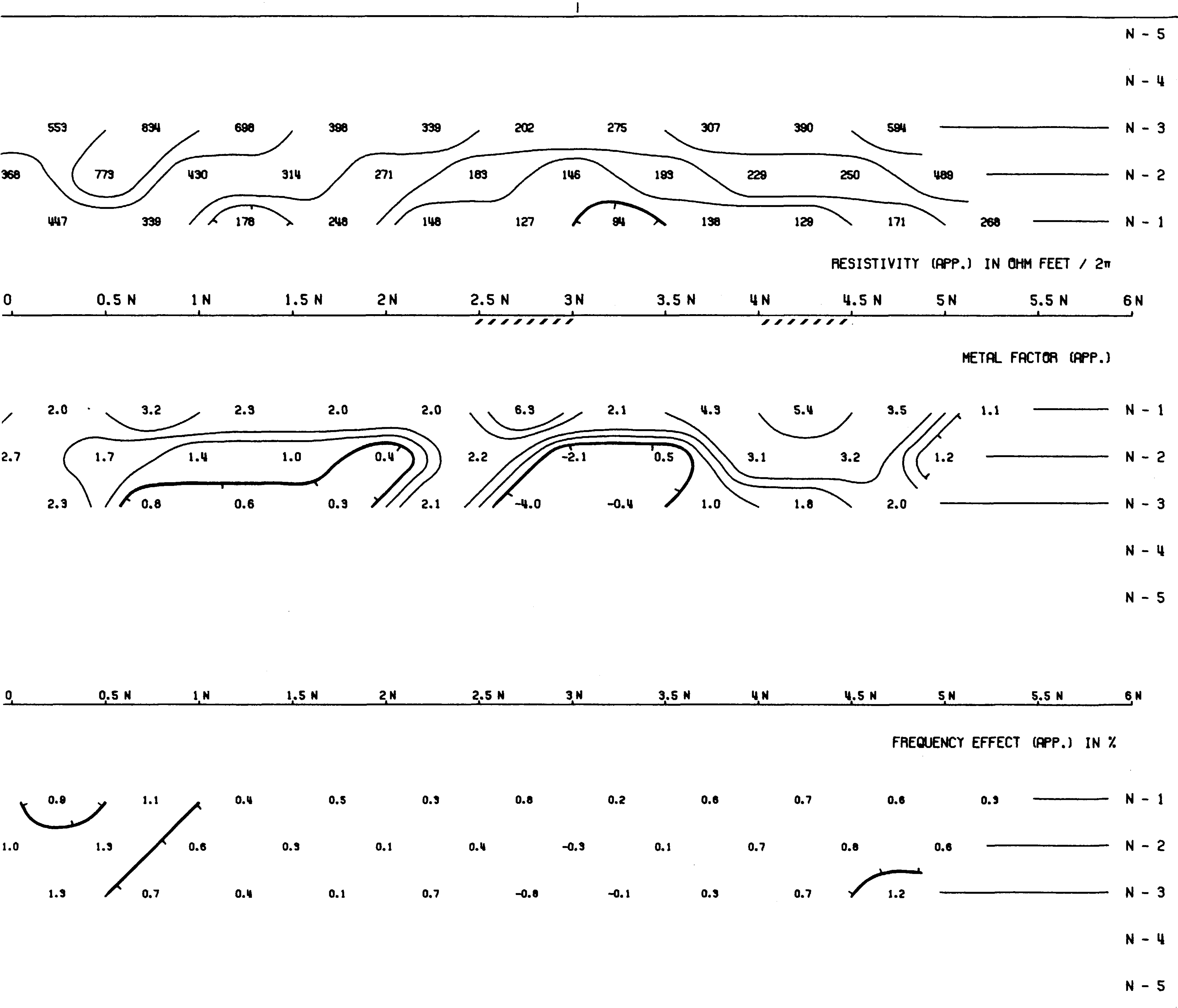
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3 408 339 544 330 375 666 1013 519 417 1344 1733 2072 939 600
N - 2 316 325 386 375 281 247 522 616 722 1260 1340 697 827 584
N - 1 180 231 384 207 312 164 168 333 756 1767 915 424 273 408 357
RESISTIVITY (APP.) IN OHM FEET / 2π
8 S 7.5 S 7 S 6.5 S 6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S
?
METAL FACTOR (APP.)
N - 1 5.8 3.9 2.3 5.8 3.2 4.9 3.0 1.8 1.7 1.3 2.1 3.8 0.4 2.2 4
N - 2 2.5 2.8 3.1 2.9 1.1 2.0 2.7 2.6 1.9 0.8 1.3 2.7 0.7 3.3
N - 3 0.2 2.7 1.5 0.3 0.8 1.7 1.9 3.1 0.7 1.1 1.3 0.8 2.2 2
N - 4
N - 5
8 S 7.5 S 7 S 6.5 S 6 S 5.5 S 5 S 4.5 S 4 S 3.5 S 3 S 2.5 S 2 S 1.5 S 1 S 0.5 S
FREQUENCY EFFECT (APP.) IN %
N - 1 1.1 0.9 0.9 1.2 1.0 0.8 0.5 0.6 1.3 2.3 1.9 1.8 0.1 0.9 1.5
N - 2 0.8 0.9 1.2 1.1 0.3 0.5 1.4 1.6 1.4 1.0 1.7 1.9 0.6 1.9
N - 3 0.1 0.9 0.8 0.1 0.3 1.1 1.9 1.6 0.3 1.5 2.3 1.6 2.1 1.2
N - 4
N - 5



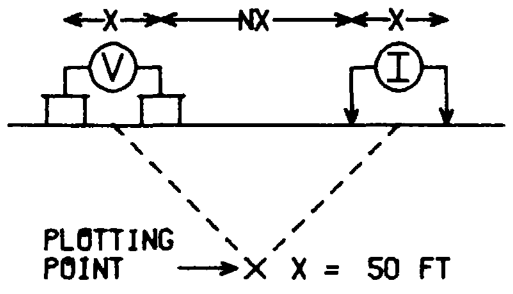
DWG. NO.- I.P.-6116-15

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 300E

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬
PROBABLE ||||||||||
POSSIBLE / / / / /

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED D.G. Mussner

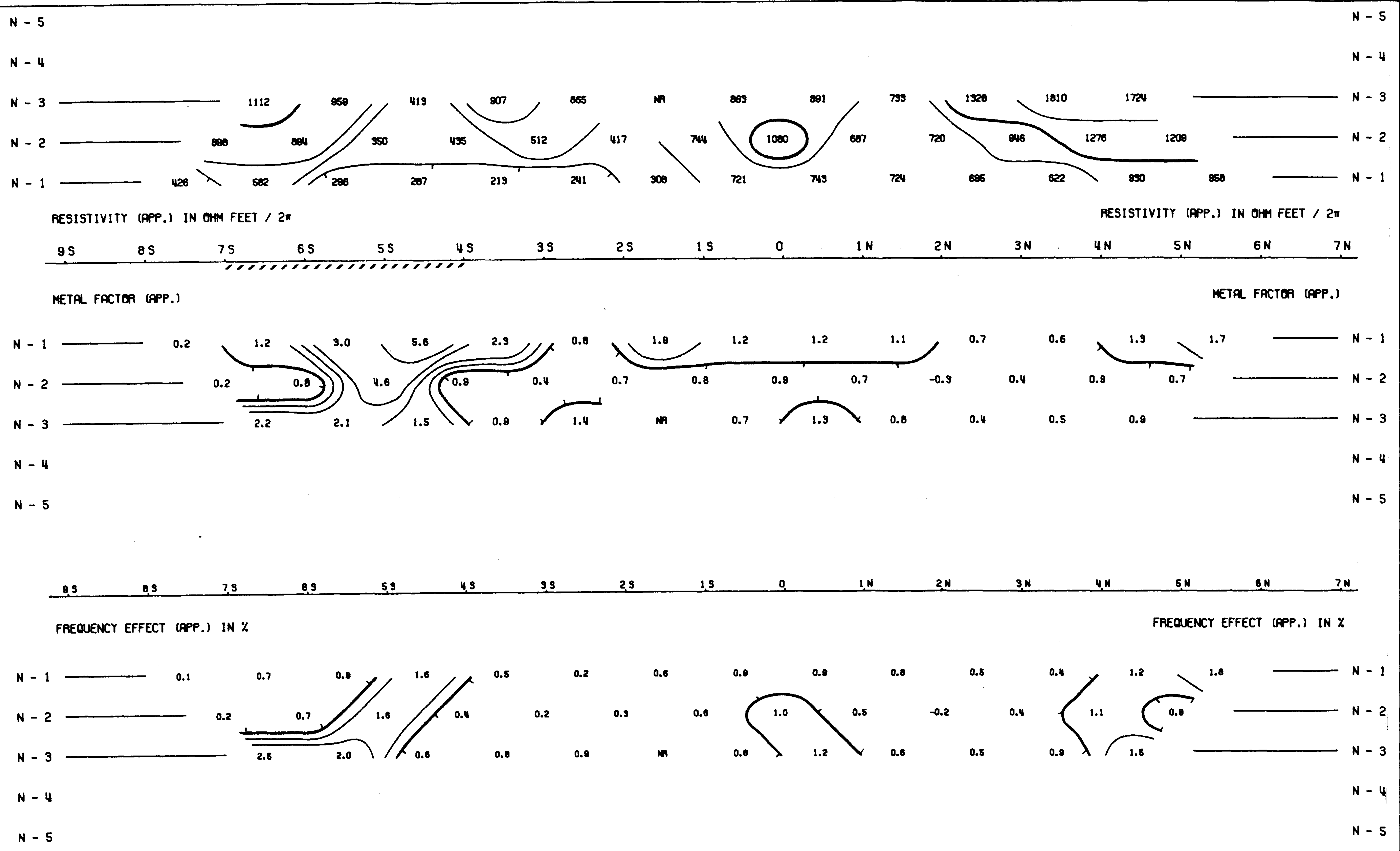
DATE Dec 7/73

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION



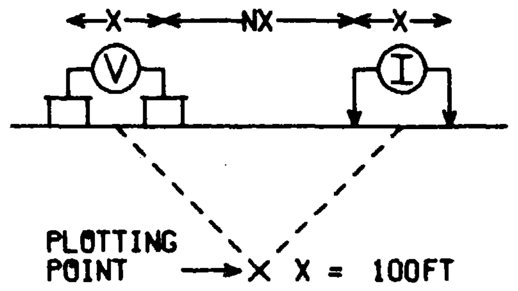
DWG. NO.- I.P.-6116-16

NEW METALORE MINING COMPANY LTD.,

ELMHIRST TWP., THUNDER BAY M.D.,
ONTARIO.

LINE NO.- 500E

ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬▬▬
PROBABLE ||||||||||||
POSSIBLE /////

FREQUENCIES: 0.31-5.0 HZ

DATE SURVEYED: SEP 1973

APPROVED: DJ Moerner

DATE: Oct/73

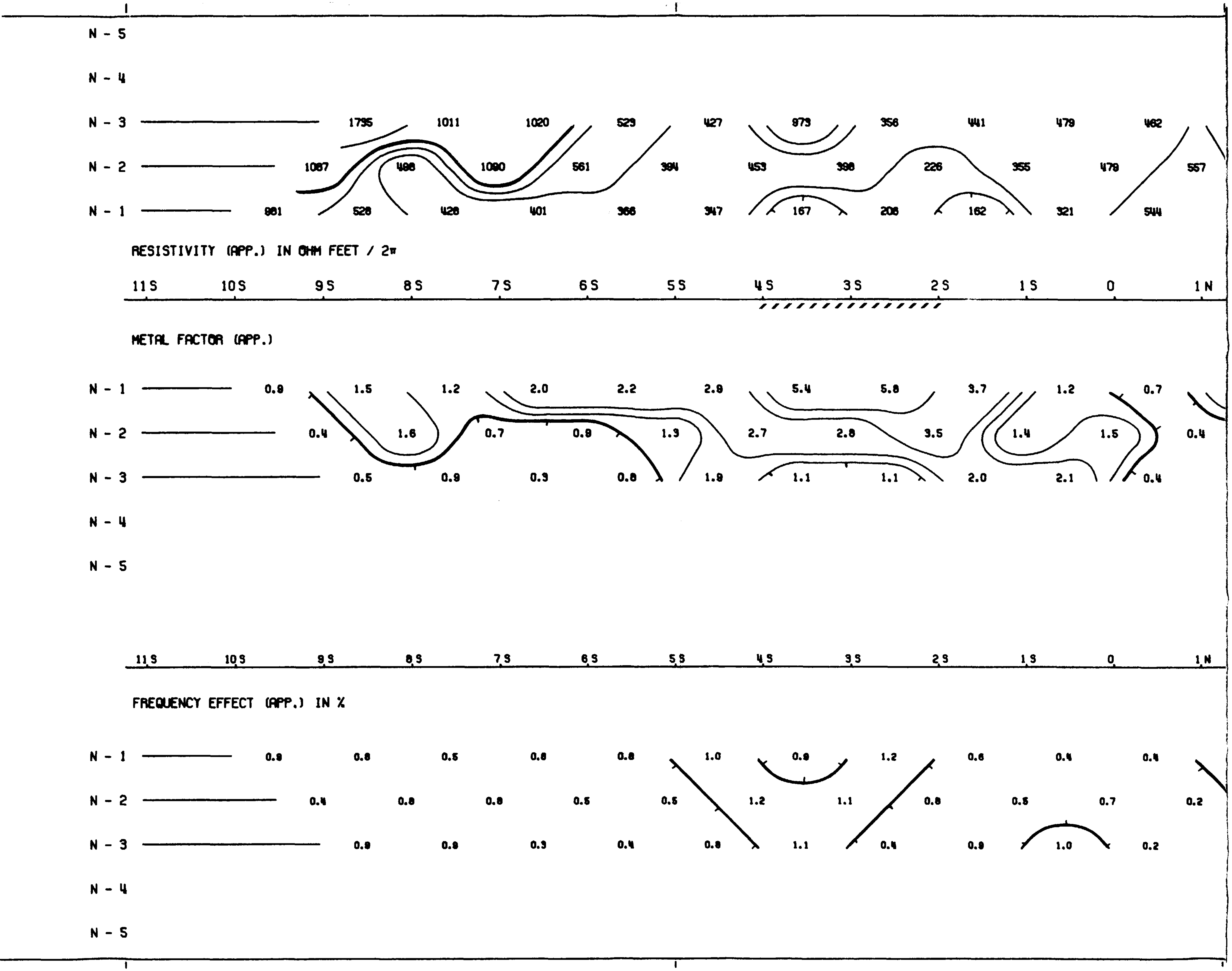
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS LIMITED

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION


N - 5
N - 4
N - 3 1795 1011 1020 529 427 979 356 441 479 462
N - 2 1087 498 1090 561 394 453 398 226 355 479 557
N - 1 981 528 428 401 366 347 167 208 162 321 544
RESISTIVITY (APP.) IN OHM FEET / 2π
11S 10S 9S 8S 7S 6S 5S 4S 3S 2S 1S 0 1N
METAL FACTOR (APP.)
N - 1 0.9 1.5 1.2 2.0 2.2 2.9 5.4 5.8 3.7 1.2 0.7
N - 2 0.4 1.6 0.7 0.9 1.3 2.7 2.8 3.5 1.4 1.5 0.4
N - 3 0.5 0.9 0.3 0.8 1.9 1.1 1.1 2.0 2.1 0.4
N - 4
N - 5
11S 10S 9S 8S 7S 6S 5S 4S 3S 2S 1S 0 1N
FREQUENCY EFFECT (APP.) IN %
N - 1 0.9 0.8 0.5 0.8 0.8 1.0 0.9 1.2 0.6 0.4 0.4
N - 2 0.4 0.8 0.8 0.5 0.5 1.2 1.1 0.8 0.5 0.7 0.2
N - 3 0.9 0.9 0.3 0.4 0.8 1.1 0.4 0.9 1.0 0.2
N - 4
N - 5

File 21392

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
TECHNICAL DATA STATEMENT

RECEIVED

TO BE ATTACHED AS AN APPEN
FACTS SHOWN HERE NEED NO
TECHNICAL REPORT MUST CONTAIN IN

42E13SE0035 2.1392 KABY LAKE

900

Type of Survey **Magnetometer**

Township or Area **Elmhirst**

Claim holder(s) **New Metalore Mining Co. Ltd.**

Author of Report **D. J. Misener**

Address **208 Lord Seaton Dr., Willowdale, Ont.**

Covering Dates of Survey August 21, October 6, 73
(linecutting to office)

Total Miles of Line cut 4.15

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	40
–Radiometric	
–Other	
Geological	
Geochemical	

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

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

DATE: Jan 10, 74 SIGNATURE:
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

same
T.B. 335128
[redacted]
T.B. 383003 ½ covered
20 days

Linecutting credits have been included in this assessment.

If space insufficient, attach list

TOTAL CLAIMS 2

PROJECTS SECTION

Res. Geol. ____ Qualifications on this file

Previous Surveys 63.3130 Not for assessment credits (MEAP)

Checked by ____ date ____

GEOLOGICAL BRANCH ____

Approved by LD date ____

GEOLOGICAL BRANCH ____

Approved by ____ date ____

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 528 Number of Readings 579

Station interval 50 Feet

Line spacing 50 Feet to 200 Feet

Profile scale or Contour intervals 20 Gammas
(specify for each type of survey)

MAGNETIC

Instrument Two McPhar M-700 Fluxgate

Accuracy - Scale constant 20 Gammas to 100 Gammas

Diurnal correction method A Third M-700 and Rustrak Recorder

Base station location

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

Time domain Frequency domain

Frequency Range

Power

Electrode array

Electrode spacing

Type of electrode

File 2.1392

RECEIVED
JAN 15 1974
PROJECTS SECTION

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.

Type of Survey: I.P.
Township or Area: Elmhirst
Claim holder(s): New Metalore Mining Co. Ltd.

Author of Report: D. J. Misener
Address: 208 Lord Seaton Dr., Willowdale, Ont.
Covering Dates of Survey: August 21 - October 6, 1973 (linecutting to office)
Total Miles of Line cut: 5.28

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	IP
Geological	
Geochemical	

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

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

DATE: Jan 10, 74 SIGNATURE: Geo Chilian
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
T.B.	335128 3/4 not covered
T.B.	352108 3/4
T.B.	352109 3/4
T.B.	352111 1/2
T.B.	383003

Area of claims not covered = 2 3/4

$5 \times 20 = 100 \div (5 + 2\frac{3}{4})$
$= \underline{13 \text{ days}}$ per claim.

If space insufficient, attach list

TOTAL CLAIMS 5

OFFICE USE ONLY

PROJECTS SECTION
Res. Geol. ______ Qualifications on this file
Previous Surveys ______

Checked by ______ date ______

GEOLOGICAL BRANCH ______

Approved by LD date ______

GEOLOGICAL BRANCH ______

Approved by ______ date ______

Show instrument technical data in each space for
type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 345 Number of Readings 2502

Station interval 50 Feet and 100 Feet

Line spacing 50 Feet to 200 Feet

Profile scale or Contour intervals 0.5 Units
(specify for each type of survey)

MAGNETIC

Instrument

Accuracy - Scale constant

Diurnal correction method

Base station location

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 McPhar P-660

Time domain Frequency domain

Frequency 0.3 & 5.0 H2 Range

Power

Electrode array Three Dipole

Electrode spacing 50 and 100 Foot Dipoles

Type of electrode

File 2.1392

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
TECHNICAL DATA STATEMENT

RECEIVED
JAN 15 1974
PROJECTS SECTION

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

Type of Survey: Geological
Township or Area: ~~Elmhirst~~
Claim holder(s): New Metalore Mining Co. Ltd.

Author of Report: George W. Chilian
Address: R.R.#1, Vittoria, Ontario
Covering Dates of Survey: August 21 - October 10, 1973
(linecutting to office)
Total Miles of Line cut: 6.28

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

Geochemical

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

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

DATE: Jan 10, 74 SIGNATURE: Geo Chilian
Author of Report or Agent

PROJECTS SECTION
Res. Geol. ____ Qualifications on this file
Previous Surveys ____

Checked by ____ date ____

GEOLOGICAL BRANCH ____

Approved by LD date ____

GEOLOGICAL BRANCH ____

Approved by ____ date ____

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

same

T.B. 335128

3/4 not covered

T.B. 352108

[redacted]

3/4

T.B. 352111

1/2

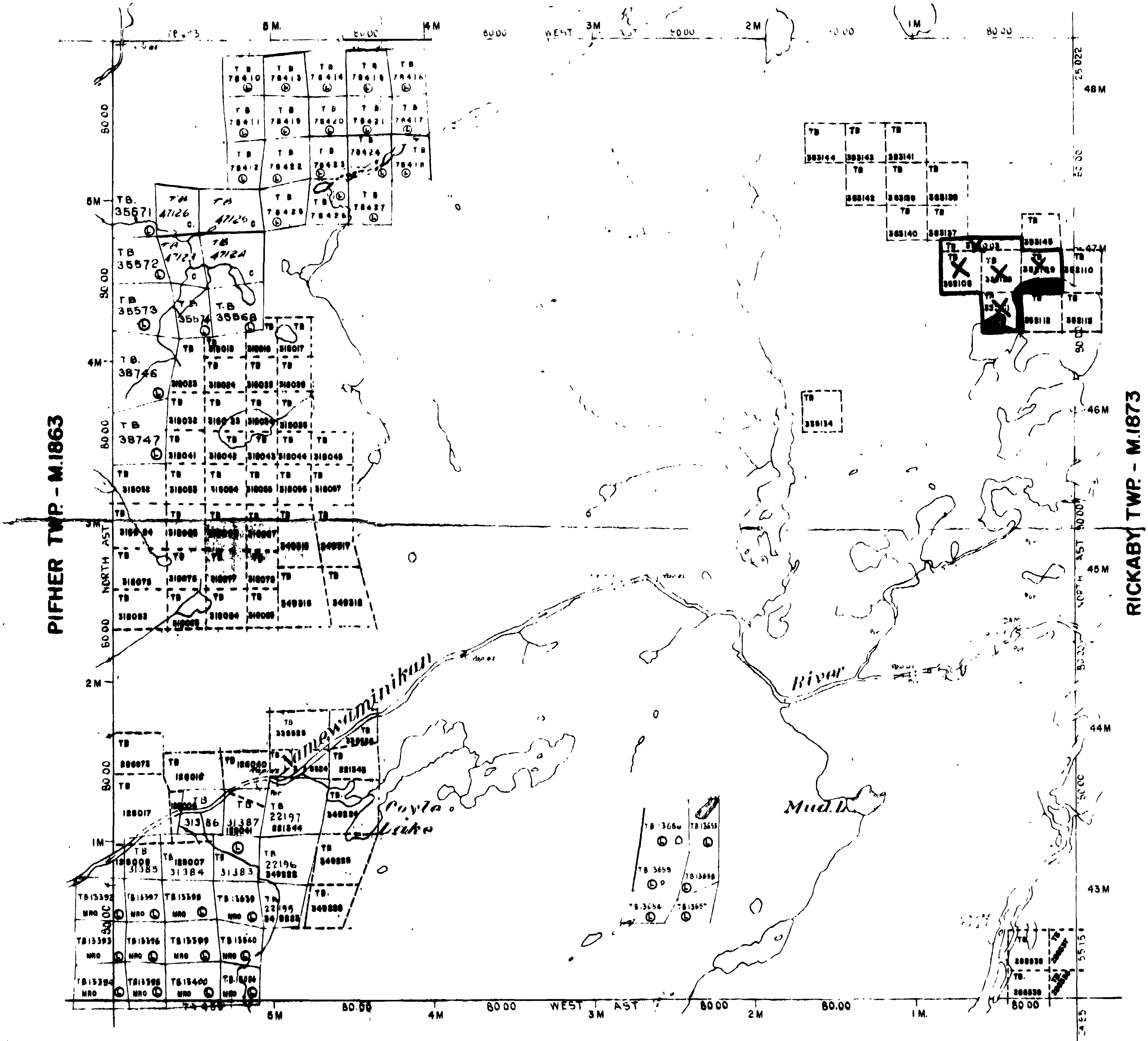
T.B. 383003

Area of claims not covered = 2

4×20 = 80 ÷ (4+2)
= 13 days per claim.

If space insufficient, attach list

TOTAL CLAIMS 4



42E13SE0035 2.1392 KABY LAKE

200

NOTES

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

• MINING LANDS •
DATE OF ISSUE
JAN 16 1974
MINISTRY
OF NATURAL RESOURCES

File - 2.1392

LEGEND

PATENTED LAND	Ⓟ or ● *
PATENTED FOR SURFACE RIGHTS ONLY	◓ *
LEASE	Ⓛ
LICENSE OF OCCUPATION	L.O.
CROWN LAND SALES	C.S.
LOCATED LAND	Loc.
CANCELLED	C.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
HIGHWAY & ROUTE NO.	⑰
ROADS	━━━
TRAILS	------------
RAILWAYS	-+-+-+-
POWER LINES	—•—•—
MARSH OR MUSKEG	
MINES	⚒

* used only with summer resort locations or when space is limited

TOWNSHIP OF

ELMHIRST

DISTRICT OF

THUNDER BAY

THUNDER BAY

MINING DIVISION

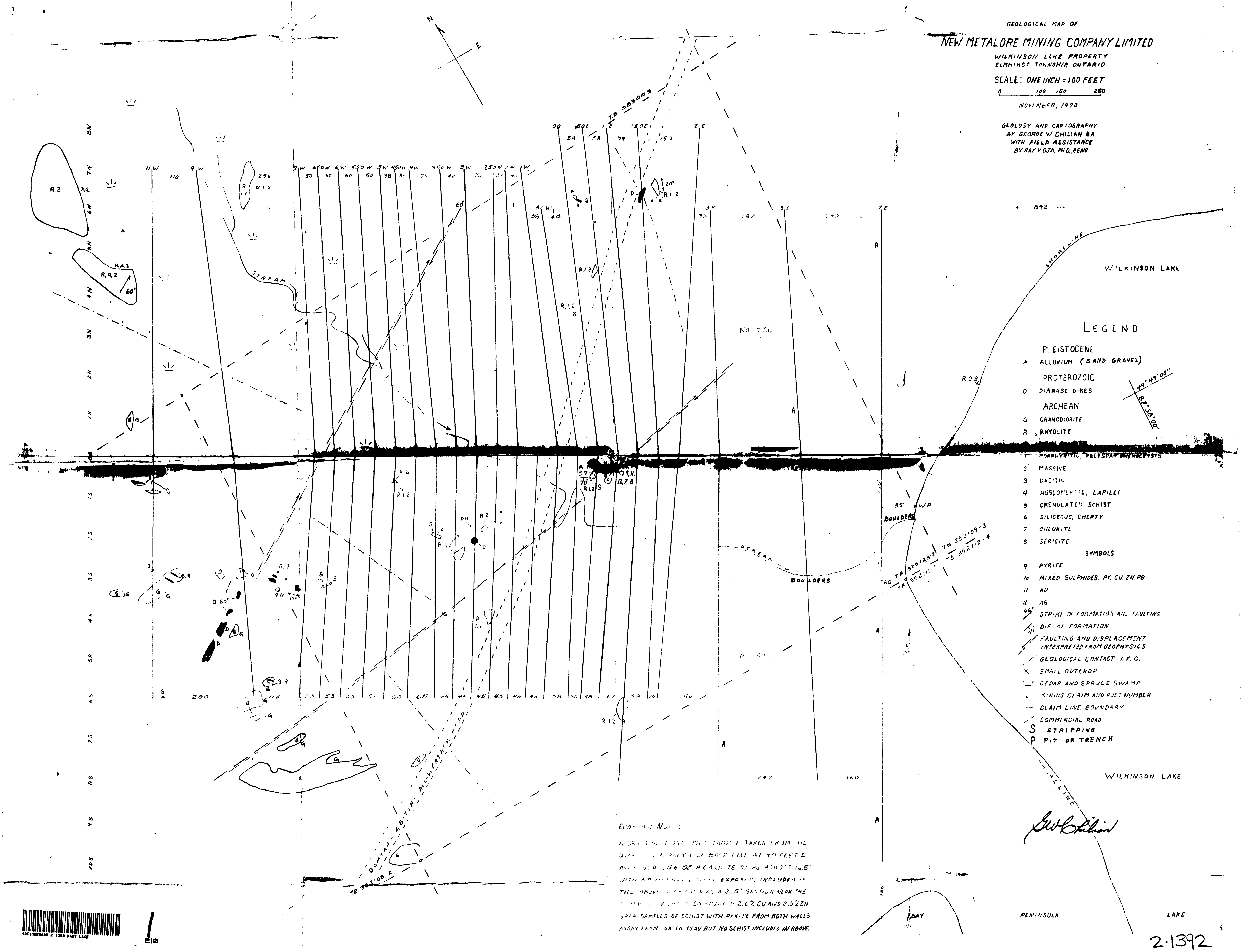
SCALE : 1 INCH 40 CHAINS (1/2 MILE)

DR N G	PLAN NO. M.1705
DATE FEB 71	

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH



GEOLOGICAL MAP OF

NEW METALORE MINING COMPANY LIMITED

WILKINSON LAKE PROPERTY
ELMHIRST TOWNSHIP ONTARIO

SCALE: ONE INCH = 100 FEET

0 100 150 250

NOVEMBER, 1973

GEOLOGY AND CARTOGRAPHY
BY GEORGE W CHILIAN B.A
WITH FIELD ASSISTANCE
BY RAY V. OJA, PH.D., P.ENG.

LEGEND

PLEISTOCENE

A ALLUVIUM (SAND GRAVEL)

PROTEROZOIC

D DIABASE DIKES

ARCHEAN

G GRANODIORITE

R RHYOLITE

1 PORPHYRITIC, FELDSPAR PHENOCRYSTS

2 MASSIVE

3 DACITIC

4 AGGLOMERATE, LAPILLI

5 CRENULATED SCHIST

6 SILICEOUS, CHERTY

7 CHLORITE

8 SERICITE

SYMBOLS

9 PYRITE

10 MIXED SULPHIDES, PY, CU, ZN, PB

11 AU

12 AG

66° STRIKE OF FORMATION AND FAULTING

70 DIP OF FORMATION

FAULTING AND DISPLACEMENT INTERPRETED FROM GEOPHYSICS

GEOLOGICAL CONTACT I.F.G.

× SMALL OUTCROP

CEDAR AND SPRUCE SWAMP

▫ MINING CLAIM AND POST NUMBER

— CLAIM LINE BOUNDARY

COMMERCIAL ROAD

S STRIPPING

P PIT OR TRENCH

G W Chilian

ECONOMIC NOTE:

A CR[illegible] CH[illegible] SAMPLE TAKEN FROM THE Q[illegible] SOUTH OF BASE LINE AT 40 FEET E A[illegible] .126 OZ AU AND 75 OZ AU ACROSS 16.5' WITH NO [illegible] EXPOSED. INCLUDED IN THE ABOVE [illegible] WAS A 2.5' SECTION NEAR THE [illegible] SO ASSAY [illegible] 2.6% CU AND 2.5% ZN GRAB SAMPLES OF SCHIST WITH PYRITE FROM BOTH WALLS ASSAY FROM .03 TO .10 AU BUT NO SCHIST INCLUDED IN ABOVE.

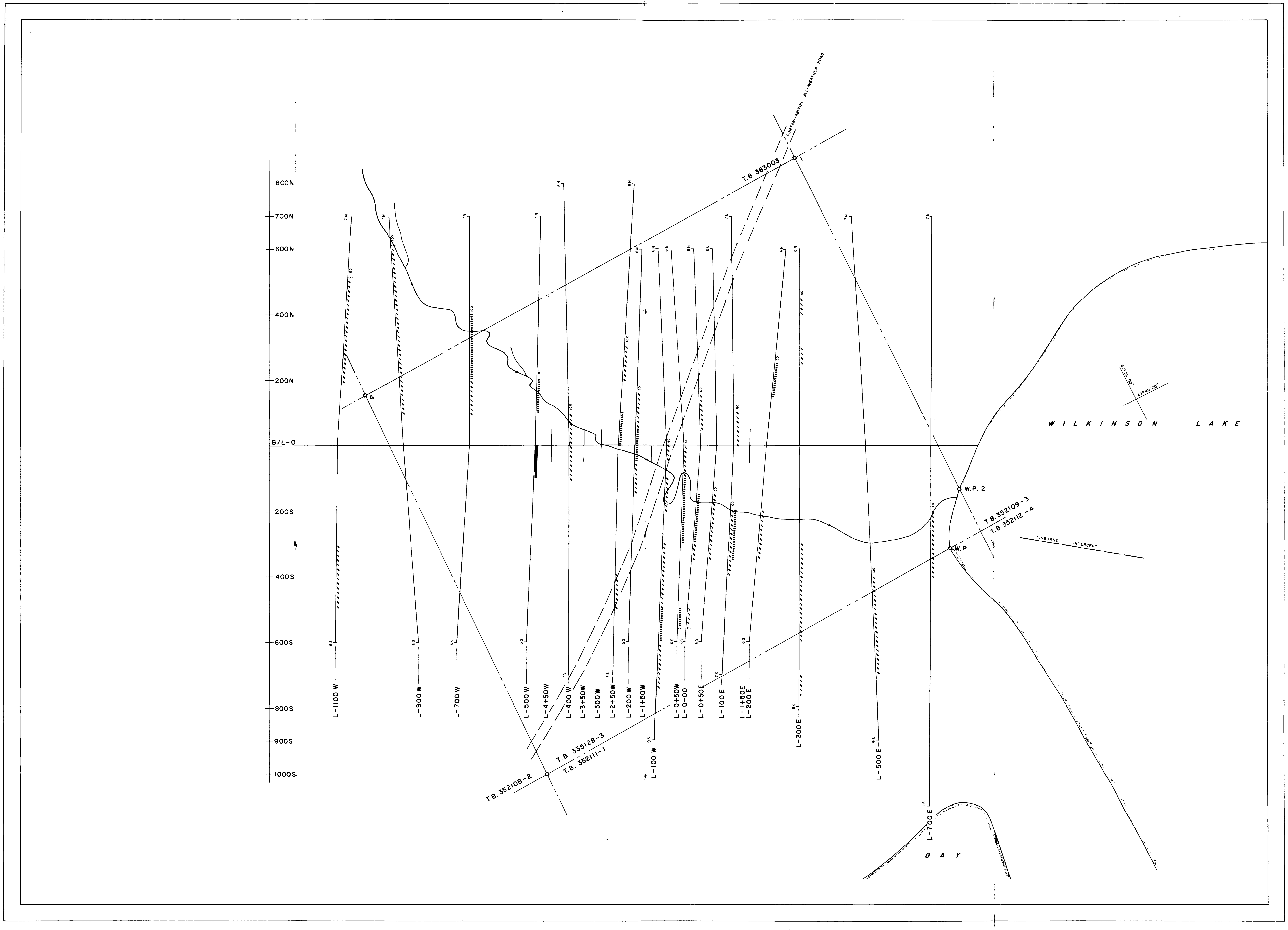
42E13SE0035 2.1392 KABY LAKE

210

2.1392

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY
PLAN MAP



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE ▬
PROBABLE ┅
POSSIBLE ⟋⟋⟋

Number at the end of anomaly
indicates spread used

220

NEW METALORE MINING COMPANY LIMITED

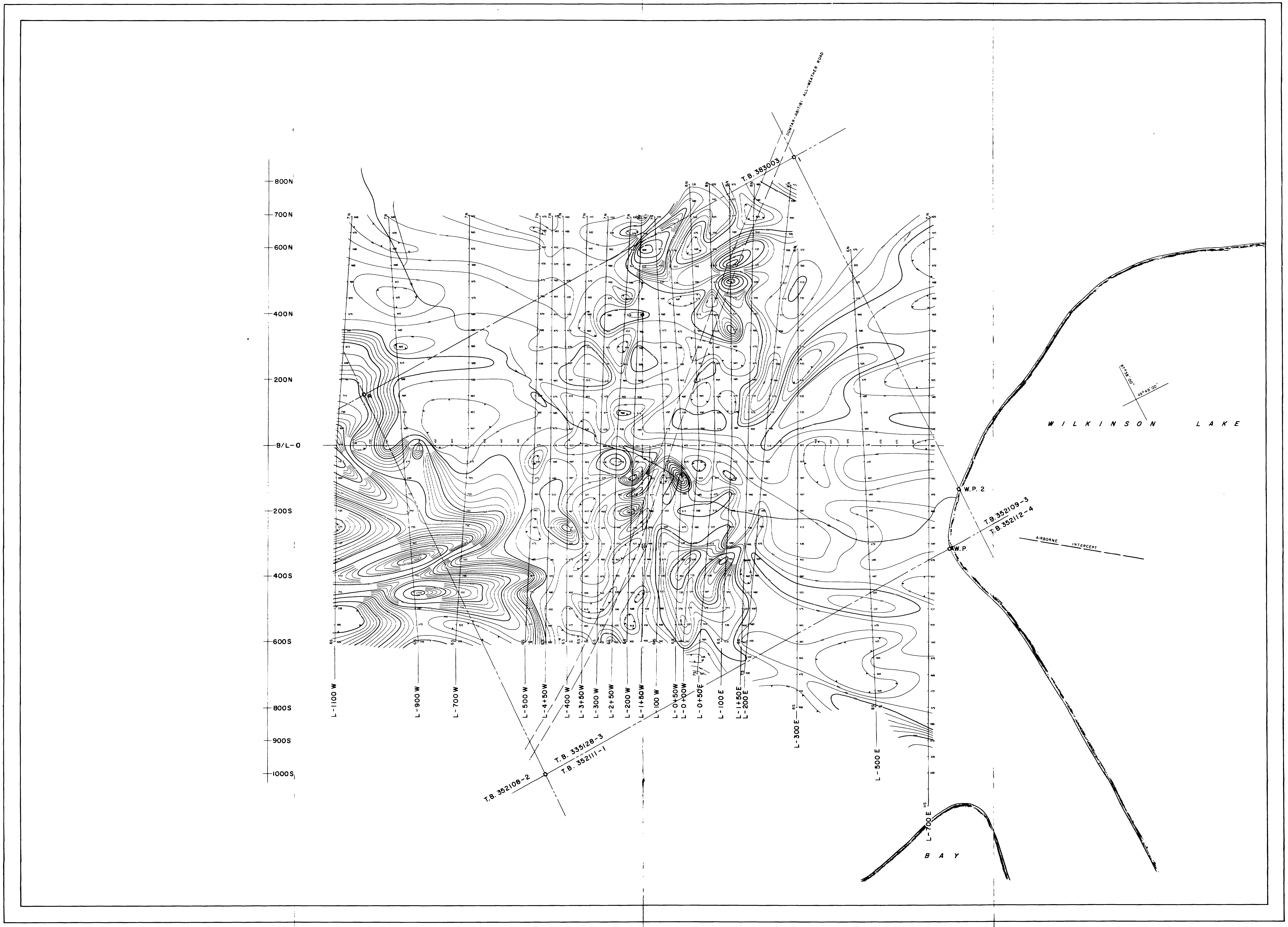
ELMHIRST TWP., THUNDER BAY M.D., ONTARIO.

SCALE
One inch = One hundred feet

DRAWN
DATE NOV 1973
APPROVED D J Misener
DATE 9/73

DWG.I.P.P 4926

McPHAR GEOPHYSICS
GROUND MAGNETOMETER SURVEY
PLAN MAP



CONTOUR INTERVAL 20 GAMMAS

100 GAMMA CONTOUR

20 GAMMA CONTOUR

RELATIVE LOW

NEW METALORE MINING COMPANY LIMITED

ELMHIRST TWP., THUNDER BAY M.D., ONTARIO.

SCALE
One inch = One hundred feet

DRAWN BY
DATE
APPROVED:
O J Mc
DATE 9/73

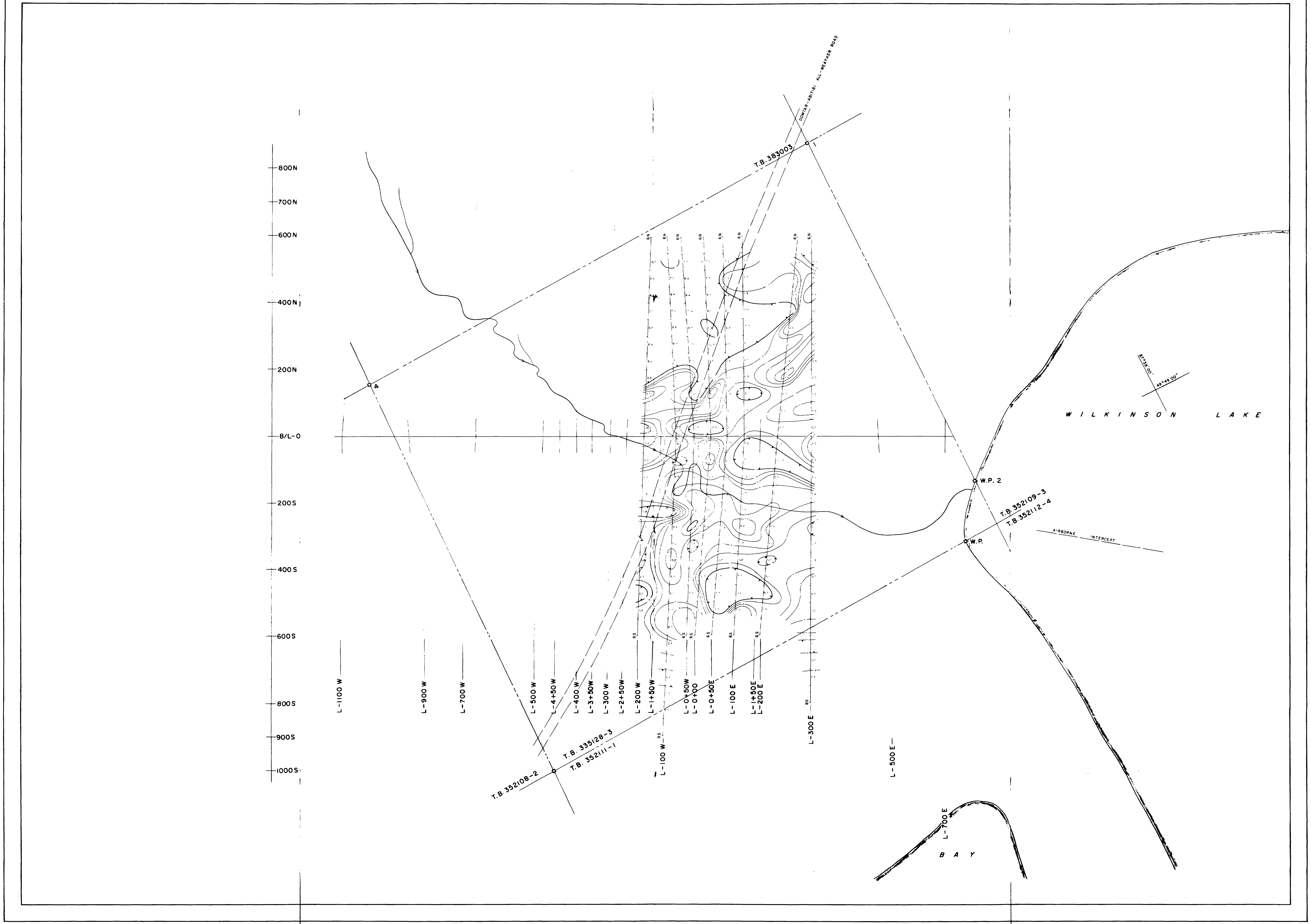
230

DWG. M-4927

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



NEW METALORE MINING COMPANY LIMITED

ELMHIRST TWP., THUNDER BAY M.D. ONTARIO

METAL FACTOR VALUES FOR 50' DIPOLES, N=1

SCALE

One inch = One hundred feet

NOTE

LOGARITHMIC CONTOUR INTERVAL
1, 1 5, 2, 3, 5, 7 5, 10

RELATIVE LOW

DRAWN: R.I.K.
DATE: NOV 1973
APPROVED: DJ. Misener
DATE Dec 7/73

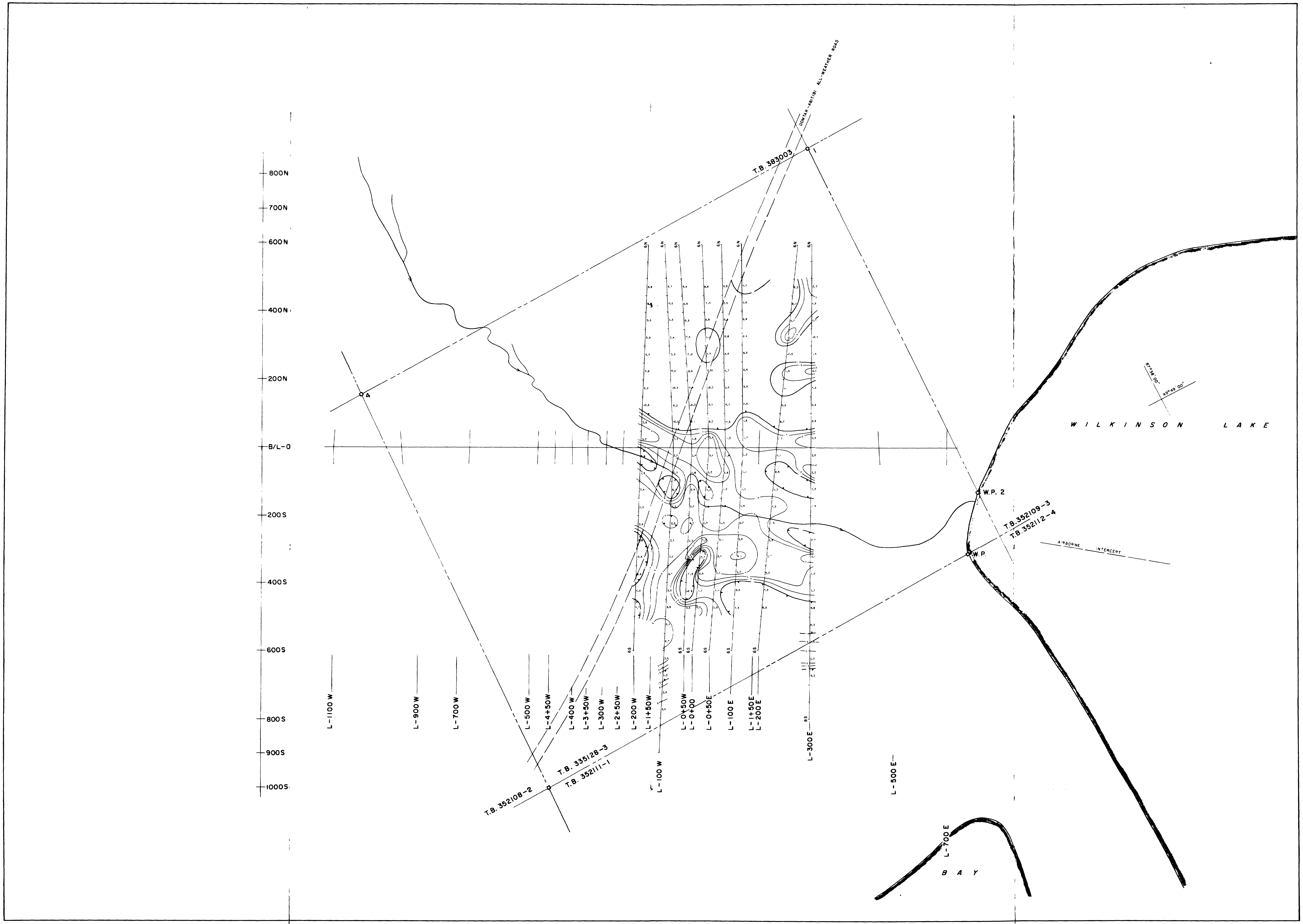
DWG. MISC. 4928

240

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



NOTE
LOGARITHMIC CONTOUR INTERVAL
1, 1·5, 2, 3, 5, 7 5, 10
RELATIVE LOW

NEW METALORE MINING COMPANY LIMITED

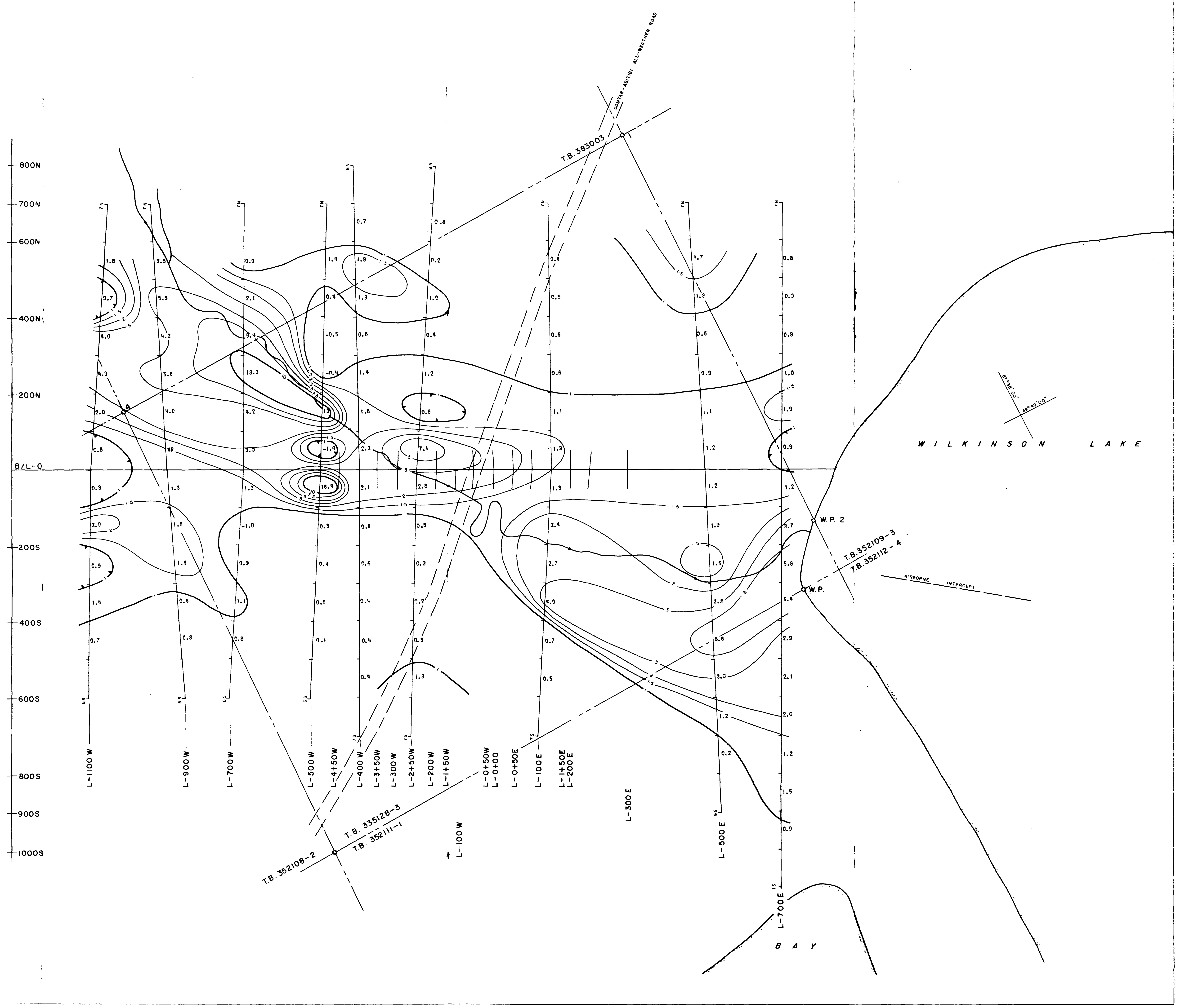
ELMHIRST TWP., THUNDER BAY M.D. ONTARIO
METAL FACTOR VALUES FOR 50' DIPOLES, N=3
SCALE
One inch = One hundred feet

DRAWN:
APPROVED: D.J. Misener
DATE:

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



NEW METALORE MINING COMPANY LIMITED

ELMHIRST TWP., THUNDER BAY M.D. ONTARIO

METAL FACTOR VALUES FOR 100' DIPOLES, N= I

SCALE

One inch = One hundred feet

NOTE
LOGARITHMIC CONTOUR INTERVAL
1, 1 5, 2, 3, 5, 7·5, 10
RELATIVE LOW

42E13SE0035 2.1392 KABY LAKE

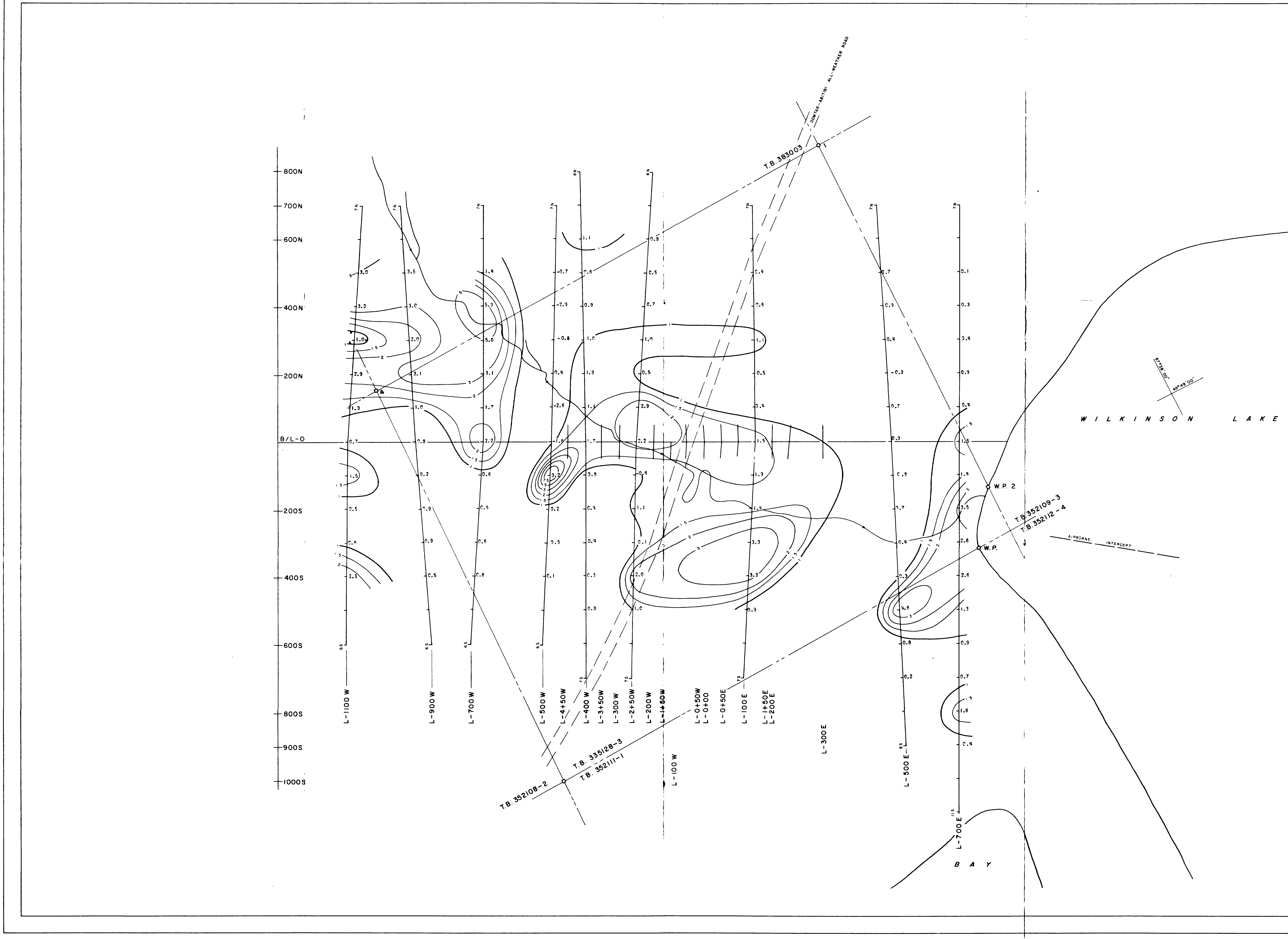
260

DWG MISC. 4930

McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



NOTE
LOGARITHMIC CONTOUR INTERVAL
1, 1.5, 2, 3, 5, 7.5, 10
RELATIVE LOW

NEW METALORE MINING COMPANY LIMITED

ELMHIRST TWP., THUNDER BAY M.D. ONTARIO

METAL FACTOR VALUES FOR 100' DIPOLES, N=2

SCALE

One inch = One hundred feet

DRAWN E R P
DATE LM / NOV 1973
APPROVED D.J. Misener
DATE Dec 7/73

DWG. MISC. 4931