

# 6323

A REPORT ON GEOCHEMICAL AND GEOPHYSICAL SURVEYS

OF THE

MAC GROUP

(Including the Mac (110), RMKS (117), RMK (118),  
Jim (190), Brad (189), and Horn (241) claims)

Three Sisters Range, Liard M.D., B.C.

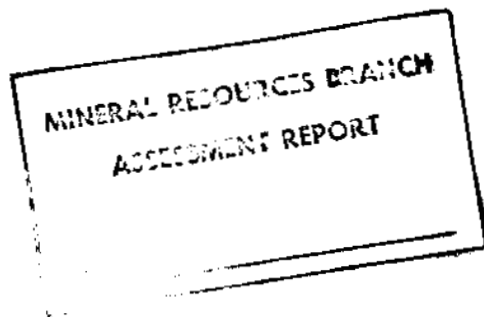
58° 10' N. Lat  
129° 30' W. Long.  
NTS No. 104-I-3W, 4E

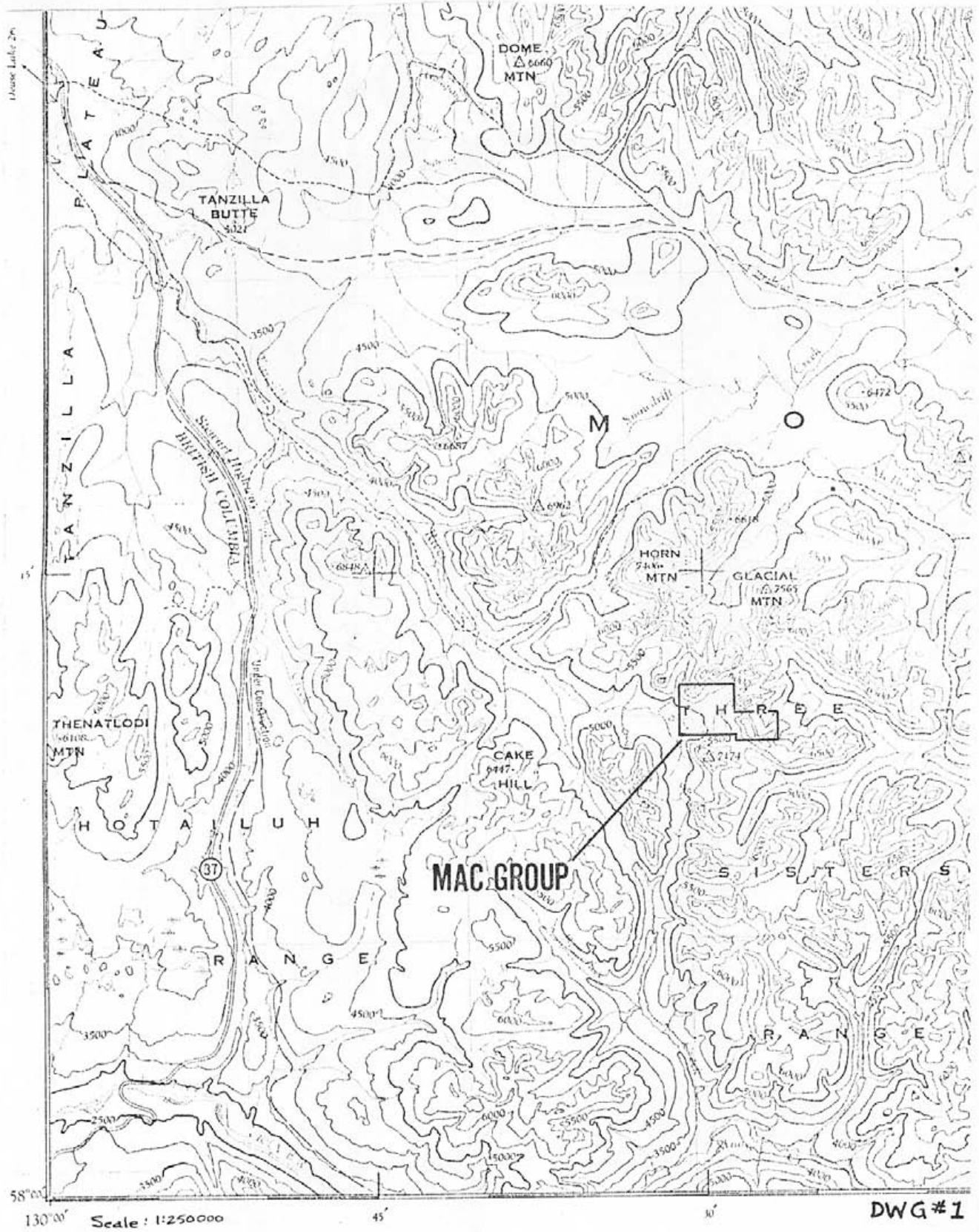
Prepared for Tormex Resources Ltd. (holder)  
1511-715 5th Ave.,  
Calgary, Alberta

By

T.L. Sadlier-Brown  
and  
A E. Nevin, P.Eng.

Work performed between Aug 14/77 and Nov 4/76





M  
43

LOCATION MAP: MAC GROUP, LIARD M.D. N.T.S. SHEET 104-I-SW.

TABLE OF CONTENTS

	<u>Page</u>
1.0 <u>INTRODUCTION</u>	1
1.1 Claims and Ownership	1
1.2 Location and Access	1
1.3 Topography and Physiography	1
1.4 History and Work Done	2
1.5 Geological Statement	2
2.0 <u>GEOCHEMISTRY</u>	2
2.1 Scope and Specifications	2
2.2 Observations	3
3.0 <u>GEOPHYSICS: IP SURVEY</u>	3
3.1 Scope and Specifications	3
3.2 Observations and Conclusions: Summary by T. Gledhill	5
4.0 <u>GEOPHYSICS: MAGNETOMETER SURVEY</u>	6
5.0 <u>GEOPHYSICS: REFRACTION SEISMIC SURVEY</u>	6
5.1 Scope and Specifications	7
5.2 Observations and Conclusions: Report by G. Shore	7
6.0 <u>DISCUSSION AND CONCLUSIONS</u>	12
7.0 <u>RECOMMENDATIONS</u>	12
<u>Appendix</u>	
A List of Personnel	
B Declaration of Costs	
C Statement of Qualifications:	G. Beier
	T. Sadlier-Brown
	G. Shore
D Engineers Certificate	
<u>Maps</u>	
1 Location Map	Front
2 Claim Map	rear pocket
3 Soil Geochemistry: Cu	" "
4 Soil Geochemistry: Mo	" "
5 Magnetometer Map	" "
6 IP - Magnetometer Compilation	" "
7 IP - Cu Geochemistry Compilation	" "
8 IP- Plan	" "
IP Pseudosections: 24N, 32N, 40N, 48N, 56N, 64N	Back

## 1.0 INTRODUCTION

### 1.1 Claims and Ownership

The Mac Group contains six metric claims comprising a total of 35 units all legally and beneficially owned by Tormex Resources Ltd. of 1511 Norcen Tower, 715 - 5th Avenue, Calgary, Alberta. They are described as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Date Recorded</u>
Mac	110	16	May 10, 1976
RMKS	11T	2	June 11, 1976
RMK	118	3	June 11, 1976
Brad	189	4	Aug 24, 1976
Jim	190	4	Aug 24, 1976
Horn	241	6	Nov 3, 1976

### 1.2 Location and Access

The Group is situated in the Three Sisters Range at the head of the Tanzilla River 26 miles southeast of the community of Dease Lake, B.C. Access during the course of the present survey was by helicopter from Dease Lake but a bulldozer trail leading up the Tanzilla valley from the vicinity of the B.C. Rail right of way to within about 3 miles of the claims would be passable to tracked vehicles.

### 1.3 Topography and Physiography

The claim group lies for the most part in an east-west trending glacial valley partly occupied by two small lakes at an elevation of about 5000 feet A.S.L. The northern and southern parts of the group, however, are in steeply sloping to precipitous mountainous terrain. The entire area is above tree line and vegetation consists only of grass, a few alders, and some buckbrush. Drainage from most of the claims is from the north, east and south to the lakes and then westerly to the Tanzilla River which is a tributary of the Stikine. Overburden is non-existent on the steep slopes of the Three Sisters Range but near slope bases at the edge of the valley there is a considerable concentration of colluvial material. This generally overlies glacial deposits which fill the valley to substantial depth except in the eastern part of the claims where outcrop is present within the valley itself. Striae and glacial moraines indicate that

most of the drift travelled southwesterly down the small valley to the northeast of the westernmost lake then westerly down the Tanzilla.

#### 1.4 History

Molybdenite and chalcopyrite were discovered in float, and later in place by prospecting crews working in the Three Sisters Range during the summer of 1971. The showings were subsequently staked by L.J. Elliott interests of Calgary and a geochemical sampling program was carried out. In 1973 additional geochemical work was done but the original claims were allowed to lapse.

The present owners acquired the ground during the spring and summer of 1976 and initiated the program described in this report. During the summer of 1976 a geochemical sampling was carried out to augment the two previous surveys and an IP survey was done followed by a limited detailed magnetometer survey. In the fall of 1976 an area of interest defined by the IP survey was tested using refraction seismic methods to determine overburden depth as an aid in selecting drill sites.

#### 1.5 Geological Statement

The claims are underlain by upper mesozoic granitic rocks; mainly diorites, quartz diorites, and monzonites, of the Hotailuh batholith. On the ridges in the northern part of the property the intrusives contain patches of metamorphic rocks as xenoliths or roof pendants.

Mineralization occurs disseminated in scattered altered zones within the intrusive, in veins and disseminations associated with the metamorphics, and as massive siliceous veins within the granitic rock itself. An example of the latter type of mineralization occurs in the eastern part of the property on the RMK claim. Massive to nearly massive chalcopyrite and pyrite occur with quartz in angular float. The sulphides however have not positively been traced to their source. The geochemical and geophysical surveys described below were in part intended for this purpose.

### 2.0 GEOCHEMISTRY

#### 2.1 Scope and Specification

The geochemical sampling carried out during the 1976 field

season augments work done by the previous owners and was carried out mainly east of the area previously sampled. About 235 samples were taken from B horizon material in as much as this was possible. Samples were dug from holes 6 to 8 inches deep using a mattock, placed in paper bags numbered with grid coordinates and sent to Bondar-Clegg and Company Ltd. of North Vancouver, B.C.

Analytical procedures include drying at 80°C for 10 to 24 hours, sieving to -80 mesh then digesting a 1 gm sample in hot 70% HClO<sub>4</sub> and concentrated HNO<sub>3</sub>. The resulting solution is tested by atomic absorption spectrophotometer. Results given in ppm Cu and Mo are plotted on the accompanying maps.

## 2.2 Observations

Copper values are highest in areas near outcrop specifically south of the lake in the vicinity of the base line and 0+00 line, south of the eastern lake in the vicinity of the eastern part of line 56N and at several points on lines 32N, 48N and 64N. The first two anomalies mentioned can at least partially be explained by small scattered sulphide occurrences on the mountainside in their vicinity. Those in the eastern part of the grid on lines 32N, 48N, and to some extent 40N may have a similar source but may also relate to the RMK sulphide occurrence.

No distinct Cu geochemical coincidence with the IP survey is developed but there are three potentially interesting marginal associations. They are located at 64N, 24W, at 56N, 0 to 5E, and at 48N, 35E.

With the exception of the eastern part of line 40N (from 7E to 28E) molybdenum values throughout the grid were found to be generally low. Several small patches of disseminated molybdenite in intrusive rocks are known in this area and may be sufficient to explain these above background values. Similar occurrences are present south of the eastern lake and are felt to be the source of the Mo detected in line 0. Moderate Mo values on line 40N (21 - 24W) are in an area of deep overburden and are probably related to glacial float.

## 3.0 GEOPHYSICS: IP SURVEY

### 3.1 Scope and Specifications

The IP survey was carried out by George Beier of Gledhill

- 4 -

Consultants Ltd., Geophysical Contractors of 21 Sandalwood Crescent, Don Mills, Ontario using a McPhar P. 650 IP unit. A description of the theory, method, and specifications of the survey is given by T. Gledhill, P.Eng. as follows:

"Induced Polarization (IP) surveys refer to a measurement of the blocking or back voltage - polarization of metallic conductors in a medium of ionic solution conduction.

This electro-chemical relationship occurs whenever metallic-type minerals such as base metal sulphides have an electrical current pass through them. In ordinary resistivity surveys, the current travels by conduction through the ions present in the water content of the ground. This is possible because almost all of the minerals have a much higher resistivity than the aqueous portion of the ground. A group of "metallic" type minerals have specific resistivities much lower than the ground water.

The IP effect occurs at the interfaces, where the mode of conduction from ionic in solutions to electronic in the metallic minerals is present in the rock.

This blocking action or induced polarization which depends on the energies necessary to allow ions to give up or receive electrons from the metallic surface, increases with the time that a direct current is allowed to pass through the rock. Thus as ions accumulate against the metallic interface the resistance to current flow increases. In time these excess ions reduce the amount of current flow through the metallic particle. This phenomena is repeated at each of the infinite number of solution-metal interfaces present in the metallic rich rock.

When the direct current voltage that is used to cause a direct current is cut off, then the charged ions forming the polarization return to their normal position. This movement of charge creates a small, but measurable current flow on the surface of the ground.

Using an alternating current source, the effective resistivity of the system will change with the frequency of

- 5 -

the switching.

The recorded values of the per cent frequency effect or F.E. are a measurement of the polarization in the rock mass. An often more useful quantity is the metal factor (M.F.) which is obtained by normalizing the F.E. for varying resistivities.

IP is used in the search for disseminated metallic sulphides of less than 20% by volume.

Field procedure in most IP surveys is as follows:

Current is applied to the ground at two points  $x$  feet apart. The potentials are measured at two other points  $x$  feet apart in line with the current electrodes and the separation of the near current and potential electrodes is  $nx$  where  $n=1,2,3$ , etc.

The measurements are made along a picket line with constant distance  $nx$  feet employed between the nearest current and potential electrodes and several values of  $n$  may be employed ( $n=1,2,3$ , etc.)

In plotting the results, the values of the apparent resistivity, metal factor, the percentage frequency effect measured for each set of electrodes are plotted at the intersection of two imaginary lines drawn from the centre of the current and potential electrodes at  $45^\circ$  to the surface to meet at a mid point below the electrode array. Each of the three quantities are plotted in upright psuedo-sections."

### 3.2 Observations and Conclusions

IP data from lines 24N, 32N, 40N, 48N, 56N, and 64N are plotted in pseudosections included with this report and in plan on drawing 8. Drawings 6 and 7 are compilations prepared to permit comparison with the geochemical and magnetic survey results.

Mr. Gledhill's summary of the IP survey and his recommendations are as follows:



- 6 -

"Six dipole-dipole traverses were run over the Tanzilla copper-moly prospect. The anomalies were in general moderate in magnitude but occurred on each traverse.

Two anomalies occur. One on the east side of the baseline from line 40N to 56N and perhaps beyond. Magnetics were not available over this zone. This anomaly warrants trenching or drilling.

The second anomaly parallels the first one and is (northwest) of the baseline. It correlates with a magnetic low. Such magnetic lows often correlate with metal bearing intrusives in other occurrences in B.C. This is a first priority target for trenching or drilling."

#### 4.0 MAGNETOMETER SURVEY

Following completion of the IP survey described above Mr. Beier carried out a detailed magnetometer survey over the area where the strongest IP response occurred. The instrument used was a Sharpe MF-1 magnetometer. As Mr. Gledhill has observed in the foregoing chapter, a magnetic low was found to coincide well with the IP high on lines 20N through 40N. Magnetic results are shown plotted in gammas on drawing 5 and included with the IP anomaly on drawing 6 for purposes of comparison.

#### 5.0 GEOPHYSICS: REFRACTION SEISMIC SURVEY

##### 5.1 Scope and Specifications

General geological observations and the opinion of the geophysical consultants during the course of the survey work suggested that the overburden in the vicinity of the primary drilling target (32N, 13-15W and 24N, 14W) might be deep. Consequently a contract was let to Deep Grid Analysis Ltd., of Richmond Hill, Ontario and Vancouver, B.C. to carry out a Refraction Seismic Survey over the area of interest for purposes of estimating depth to bedrock. A Huntco FS-3 Seismic unit was used and both hammer and plate and charges (dynamite) were used to propagate the signal. Results are given in a report by Mr. Greg Shore of Deep Grid Analysis Ltd. and included in its entirety below.

## 5.2 Observations and Conclusions: Report by G. Shore

Hammer seismic investigation of overburden depth was carried out at your request on October 28 and 30, 1976 at proposed drill sites at 13+00W and 15+00W, line 32N and 14+00W line 24N on the Tanzilla property near Dease Lake, B.C.

### 15+00W and 15+00W, line 32N

A compressional refraction spread was applied westerly along line 32N from geophone station at 10+00W to the signal limits of the instrument. Layers of increasingly high velocity overburden were observed (fig.1). While a possible contact with a 25,000 ft/sec velocity layer (within the velocity expectations for the inferred granite bedrock) can be seen in the final 100 feet of the record, the clarity of the recorded arrivals is not such that a definite identification of bedrock can be made. From the refractive data alone it may be concluded that the overburden is:

- a. at least 230 feet deep, but not limited to 230 feet.
- b. of a nature characterized by an increasing degree of compaction with depth, with a large proportion of boulders or rock fragments below -82 feet.

A split spread reflection survey was applied to 14+00W, with hammer points up to 300 feet east and west of the center. Wavelength filtering was used to remove non-reflected events from the printout. The large amount of noise which nonetheless passed the filtering devices indicates large boulders throughout the overburden (reflecting energy at near-vertical angles acceptable to the filtering correlator). The record shows numerous sets of reflections known by reference to the refraction survey depth characteristics to originate at intra-overburden interfaces. It is not possible to identify any of the earlier reflections (Fig.2) as bedrock, and since the indicated velocities average about 5000 ft/sec apparently well beyond 150 feet, with no indication of granite velocities, it must be assumed that bedrock is at a depth in excess of 200 feet. The reflection indicated on the west spread at 250 feet may or may not originate at bedrock.

.../2

2/...

The difference in apparent velocities with the refraction mode (11,500 ft/sec) and the reflection mode (4800-5100 ft/sec) may be reconciled with a stratigraphic model describing occasional layers of high density boulder and/or rock materials interbedded with unconsolidated glacial/alluvial debris. These horizontal boulder layers act as high velocity acoustic conductors carrying refracted waves at speeds far in excess of the average velocity of the surrounding materials. Due to limited thickness, the layers may not be individually detected; therefore the velocity of these conductors will appear to be the true average velocity of the larger whole section. The reflected waves, travelling perpendicularly to these interbedded layers, are passed at the velocity of each successive layer, and thus represent a truer average velocity for the section. Should this model in fact represent the existing conditions, then the minimum depth indications provided by the refraction survey may in fact be too deep.

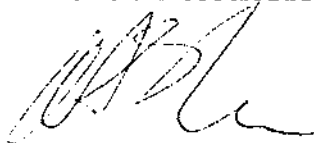
14+00W, line 24N

A single reflection series was operated with geophones at 14+00W, hammer west at intervals to 300 feet. A number of reflections are again noted (fig.3) with reflections at -168 and -247 feet corresponding with similar depth reflections at line 32N. Once again, the considerable content of noise-producing boulders in the overburden, and apparent stratification, precludes definite identification of a bedrock reflection.

Information from the first drill-hole may permit a closer interpretation of the results and provide guidelines for further seismic investigations in the area. But in view of the unexpected noise levels encountered, consideration should be given to electrical sounding for future evaluations in the area, particularly over anomalous IP responses, dependent upon demonstration by initial drilling of unambiguous electrical conditions (lack of potentially conductive clay beds etc.).

Respectfully submitted,

DEEP GRID ANALYSIS LIMITED



Greg Shore.

COMPRESSION  
REFRACTION  
SEISMIC

PROJECT: TANZILLA      DATE: 28/10/76      BY: G. Shore  
GEOPHONE STATION: 10+00W L 32N ARRAY DIRECTION: West  
SURFACE CONDITIONS: 0-4" frost; 3" org. over sand.  
INSTRUMENT: Huntec FS-3 Hammer Seismic

Fig. 1

Purpose: Overburden evaluation prior to drilling.

*Dry glacial/alluvial debris.*

Surface  
V<sub>1</sub> = 2500 ft/sec  
- 17.5 feet

*Glacial/alluvial debris - probably water-saturated. Water table may be near -17.5 feet.*

V<sub>2</sub> = 7600 ft/sec  
  
- 82 feet

*Glacial/alluvial debris, with higher proportion of boulders and/or broken rock, with probability of distinct horizons of large boulders and rock fragments interbedded with finer materials.*

V<sub>3</sub> = 11,500 ft/sec

----- approx. - 230 feet

*Possible top of granite at -230 feet. Signal is approaching discrimination limit of instrumentation. Noise and energy scatter due to boulders precludes positive identification of this interface.*

V<sub>4</sub> = 25,000 ft/sec

REFLECTION  
SEISMIC

PROJECT: TANZILLA      DATE: 30/10/76    BY: G. Shore.  
GEOPHONE STATION: 14+00W L32N    LINE ORIENTATION: Split, E-W  
SURFACE CONDITIONS: 0-4" frost; 3" org. to sand  
INSTRUMENT: Huntec FS-3 Hammer Seismic

Fig. 2

Purpose: Overburden evaluation prior to drilling.

Effective measurement  
position: 14+00W L32N

West  
Spread

East  
Spread

----- Surface -----

*Large quantities of early noise approaching nearly perpendicular to correlating array indicates large boulders present. Numerous sets of reflections appear on the record, some probably due to intra-overburden interfaces, as at -106 feet.*

V=  
4800  
ft/sec (av.)  
to -151 ft.

V=  
5100  
ft/sec (av.)  
to -166 ft.

*Major interface at -151 to -166 feet, which may be bedrock or may be a well-defined boulder horizon.*

-151 feet -----

*Suggestion of a reflection at -250 feet may in fact be bedrock reflection...such a depth is more closely supported by refraction data.*

----- -166 feet

-250 feet -----

REFLECTION  
SEISMIC

PROJECT: TANZILLA      DATE: 30/10/76      BY: G. Shore  
GEOPHONE STATION: 14+00W L24N      LINE ORIENTATION: single west  
SURFACE CONDITIONS: 0-4" frost; 3" org. to sand  
INSTRUMENT: Huntec FS-3 Hammer Seismic

Fig. 3

Purpose: Overburden evaluation prior to drilling.

Effective measurement  
position: 14+00W L24N

\_\_\_\_\_ Surface

As in fig. 2 indications  
of large boulders, and  
probable boulder or broken  
rock horizons within the  
overburden.

V=  
5500  
ft/sec (av.)  
to -168 ft.

Reflections at -127, -168,  
-225, -247 feet are within a  
velocity norm of 5500 ft/sec,  
suggesting intra-overburden  
interfaces; the reflection at -247  
feet may or may not be bedrock.

\_\_\_\_\_ -127 feet

\_\_\_\_\_ -168 feet

\_\_\_\_\_ -225 feet

\_\_\_\_\_ -247 feet

## 6.0 DISCUSSION AND CONCLUSIONS

IP and magnetometer results indicate two areas considered by the geophysical consultants to be good targets for drilling. The first is a north south trending zone between 40N, 8E and 60N, BL. The other, which has been assigned the highest priority also trends north south and lies between 64N, 32W and 24N, 12W. Geological information in the area of highest priority is lacking owing to the overburden cover which has been estimated from seismic data to exceed 230 feet in thickness. Nevertheless showings on the mountainsides north and west of the anomalous area as well as the interesting high grade massive sulphide float occurrence in the eastern part of the grid lend considerable geological support to the interpretation that the anomaly is caused by sulphides in the valley bottom.

## 7.0 RECOMMENDATIONS

The high priority anomaly should be tested by drilling, preferably diamond drilling although percussion drilling would also be satisfactory. Three vertical holes are recommended although, once overburden thickness has been determined, an angled hole might also be considered. Recommended setups are as follows:

DDH 1	32N	13W
DDH 2	32N	15W
DDH 3	24N	14W

The holes should be budgeted to go to a depth of about 400 feet each for a total of 1200 feet of drilling.

Additional prospecting with a contingency for trenching, should be carried out on or near line 56N between 0 and 6E as well as in the vicinity of the spot Cu highs in the southern part of lines 40N and 48N near the massive sulphide float occurrence.


An estimate of the costs of the program outlined above and based on using a self propelled track mounted drilling rig with both ground and air support is as follows:

Geology and supervision	\$ 3,750
Technical assistant	2,500
Travel, Meals, Accommodation	3,550
Expendable field supplies	650
Helicopter	1,500
Drilling: Mobilization & demob. & support	5,000
1200' @ \$11.50/ft. allow	14,000
Report preparation, recording, gov't feet	1,650
Contingency	3,000
	<hr/>
TOTAL	\$35,600

Respectfully submitted,

NEVIN SADLIER-BROWN GOODBRAND LTD.

  
\_\_\_\_\_  
T.L. Sadlier-Brown

  
\_\_\_\_\_  
Andrew E. Nevin, P. Eng.

TLSB/hm



APPENDIX A

## Personnel Employed on the Mac Project: 1976 Field Season

G. Beier: Sept 19-Sept 29 - 11 days @ \$150/diem	\$ 1,650
T. McCrory: Aug 14-24, Sept 8, Sept 19-30, 22 days @ \$80/diem	1,840
Roy Crew: Aug 14-24, Sept 19-30, 22 days @ \$50/diem	1,100
John Gonzales: Oct 28-31/76, 4 days @ \$55/diem	220
A.E. Nevin: Aug 19, 1 day @ \$200/diem	200
T. Sadlier-Brown: Aug 14 - Nov 4, 17 days @ \$180/diem	3,060
G. Shore: Oct 28 - Nov 2, 6 days @ \$75/diem	450
	<hr/>
TOTAL	\$ 8,520

APPENDIX B

## Statement of Costs Incurred: Mac Group Assessment 1976 Field Season

Wages and fees	\$ 8,370
Living expenses 82 man-days	1,353
Vehicle expenses (pickup truck, Dease L. area)	390
Helicopter Charter: Dease Lake to Claims	2,050
Instrument Rental IP Survey	3,850
Instrument Rental Seismic Survey	200
Instrument Rental Magnetometer Survey	200
Analytical Costs	352
Report Preparation	675
	<hr/>
	\$ 17,440

Costs are categorized as follows:

Line cutting and grid preparation	350
IP survey	7,603
Magnetometer survey	560
Seismic survey	1,624
Geochemical survey	3,300
Supervision & Administration	3,002
Miscellaneous	1,000
	<hr/>
	\$ 17,439

I hereby declare that the above statement is an accurate representation of the costs incurred during the 1976 work program on the Mac Group.


---

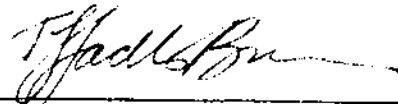
T.L. Sadlier-Brown

APPENDIX C

STATEMENT OF QUALIFICATIONS

I, Timothy L. Sadlier-Brown hereby state:

1. That I am a consulting geologist and partner in the firm of Nevin Sadlier-Brown Goodbrand Ltd. with offices at 503 - 134 Abbott Street, Vancouver, B.C., V6B 2K4
2. I was educated at Carleton University in Ottawa, Ontario.
3. I have been actively engaged in geological field work for 17 years as a technical officer with the Geological Survey of Canada and as an exploration geologist with several corporations and consulting firms.
4. Since 1965 I have acted in the field of exploration geology in positions of responsibility and have been a principal in the firm of Nevin Sadlier-Brown Goodbrand Ltd. since 1972.
5. I personally carried out the geological examinations and supervised the field work described in this report.
6. I have no interest direct or indirect in the properties or securities of Tormex Resources Ltd. nor do I expect to receive such interest.



---

T.L. Sadlier-Brown

June 17, 1977

---

---

---

APPENDIX C

GREGORY A. SHORE  
GEOPHYSICIST

Specialized professional competence

- + Design and execution of all types of ground geophysical surveys for mining, geothermal and petroleum exploration; regional reconnaissance ground geophysics; high resolution, deep penetration electrical methods; marine resistivity; instrumentation design; research and development of survey systems for specific target/environment characteristics

Representative assignments with the firm

- + Conventional ground geophysical exploration programs for base metals throughout Canada, and in U.S.
- + High power deep resistivity survey, Meager Creek Geothermal Project (Phase II)
- + Research, design and execution, regional Self-potential survey, Meager Creek Geothermal Project (Phase III)
- + High power, specialized array IP survey, Pine Point, NWT
- + Research and design of basic geophysical survey approach for Meager Creek Geothermal Project (Phase IV) including design and construction of interactive computer-controlled instrumentation (which summarizes and displays continuously updated three-dimensional results for operator use in guiding field crew movements)
- + Design and construction of multiple dipole marine resistivity system for offshore petroleum and civil engineering applications
- + Porphyry copper IP survey in central B.C. with detailed electrical and seismic drill-site selection assists

Other professional experience

- + Ground geophysical survey program operation and management, instrument evaluations and operator training programs throughout Canada, in western U.S., Ireland, Portugal, Southwest Africa, with Barringer Research, Shore Magnetics Ltd., Huntco (70) Ltd., Toronto, totalling six years

Academic background

- + Automation Electronics; Industrial Electronics, RCA Institute, Montreal
- + Industrial Engine Mechanics and Power Transmission Systems, Provincial Institute of Automotive and Allied Trades, Toronto 1965
- + General and Communications Electronics, Radio College of Canada, Toronto 1964

Professional associations

- + British Columbia Geophysical Society
- + Canadian Geothermal Resources Association

APPENDIX C

Qualifications and Experience

George Beier; Geophysical Operator  
Gledhill Consultants Ltd.  
21 Sandalwood Place  
Don Mills, Ontario

Employed as Geophysical Operator & Technician since 1957. Experience has included operation and interpretation of various types of ground geophysical methods including EM, Magnetometer & IP. Previous employers have been Sulmac Exploration (1951 - 1959), Gledhill Consultants (1959 - 1965, 1969 - 1977), and McPhar Geophysics (1966 - 1969).

---

---

---

APPENDIX D - CERTIFICATE

I, Andrew E. Nevin hereby certify that:

1. My residence address is 962 Montroyal Blvd., North Vancouver, B.C., my office address is 5th floor - 134 Abbott Street, Vancouver, B.C. V6B 2K4, and that I am a Geologist by occupation.
2. I hold a B.Sc. in Geophysics from St. Lawrence University, an M.A. in Geology from University of California, Berkeley, and a Ph.D. in Geology from University of Idaho. I have been practicing my profession since 1961, and I am a member of the Association of Professional Engineers (Geological) of the Province of British Columbia, and a Registered Professional Geologist in the State of Idaho.
3. I have reviewed the data on the Recent program on the Mac Group, as set forth in the accompanying report, and I personally examined the prospect during the course of the field work.
4. I hold no direct or indirect interest in the properties or securities of Tormex Resources nor do I expect to receive any such interest.

  
Andrew E. Nevin, Ph.D., P.Eng.

June 17, 1977

---

---

---

NEVIN SADLIER-BROWN GOODBRAND LTD  
CONSULTING GEOLOGISTS - VANCOUVER, B.C.

TORMEX RESOURCES LTD

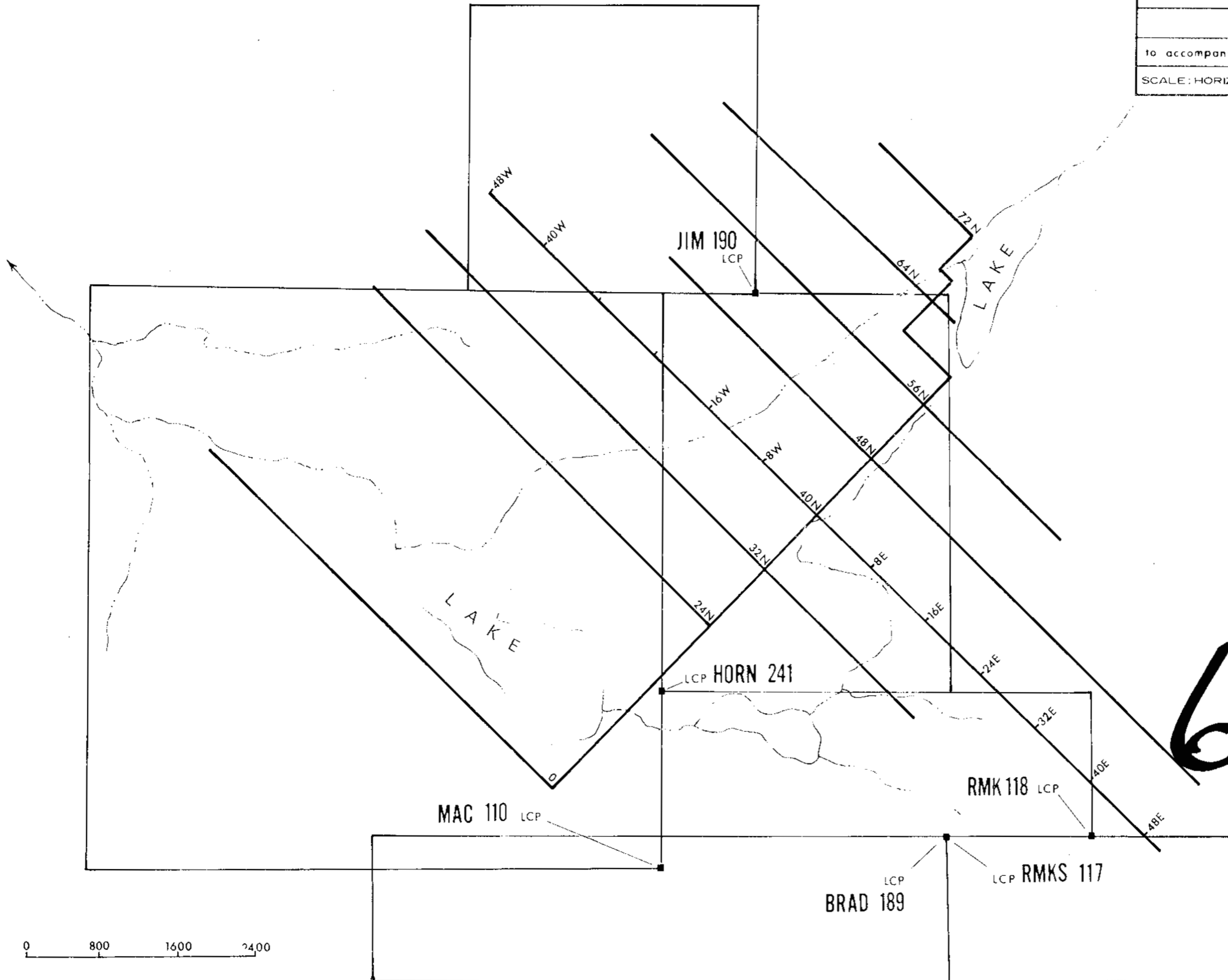
MAC GROUP

CLAIM LOCATION MAP

to accompany a report by T. Sadlier Brown and A. E. Nevin

SCALE: HORIZ. 1" to 1000' VERT. DWG. NO. 2

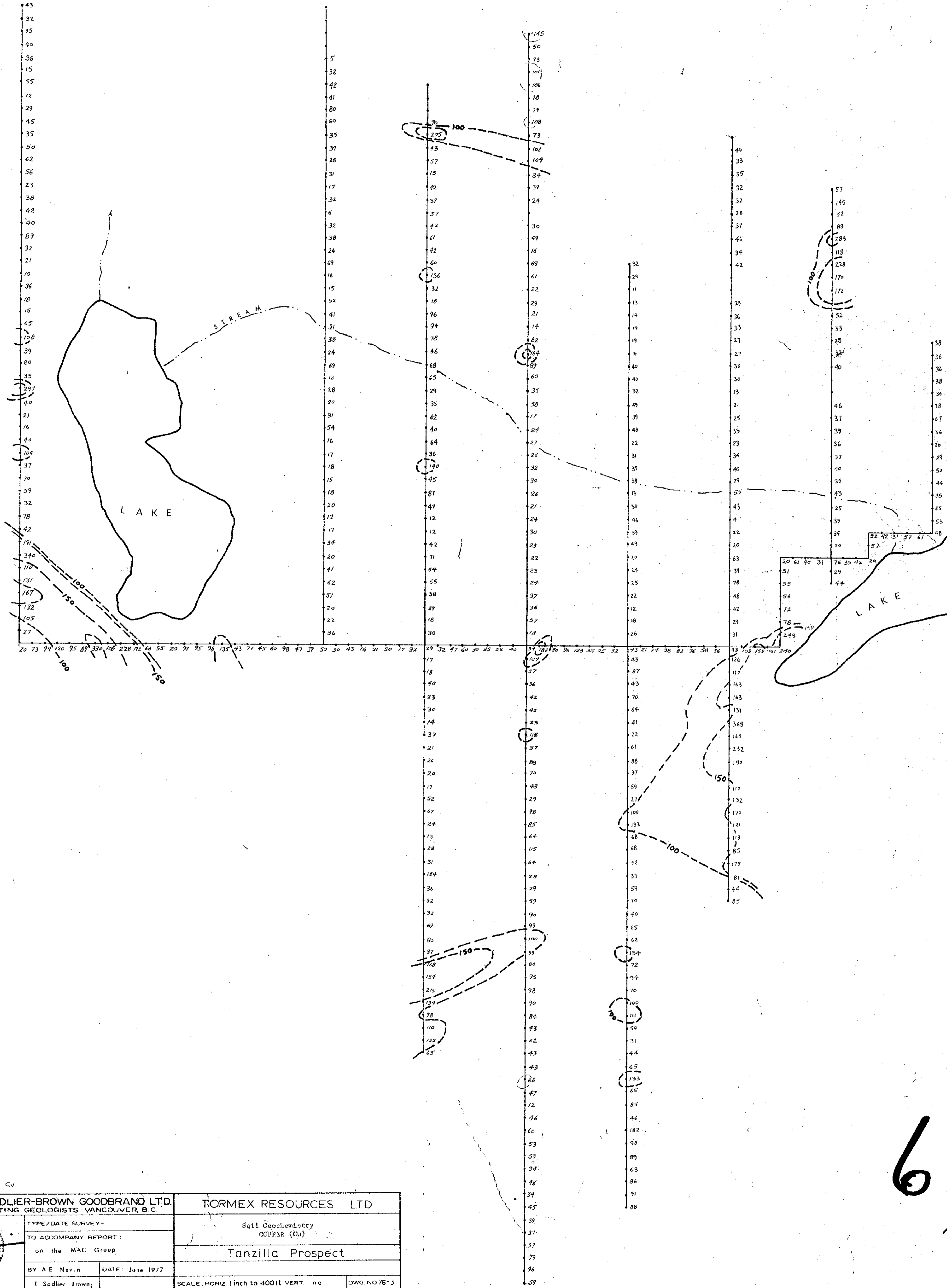
JUNE 17 1977



6323

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. \_\_\_\_\_

0 24 N 32 N 40 N 48 N 56 N 64 N 72 N



Values in PPM Cu

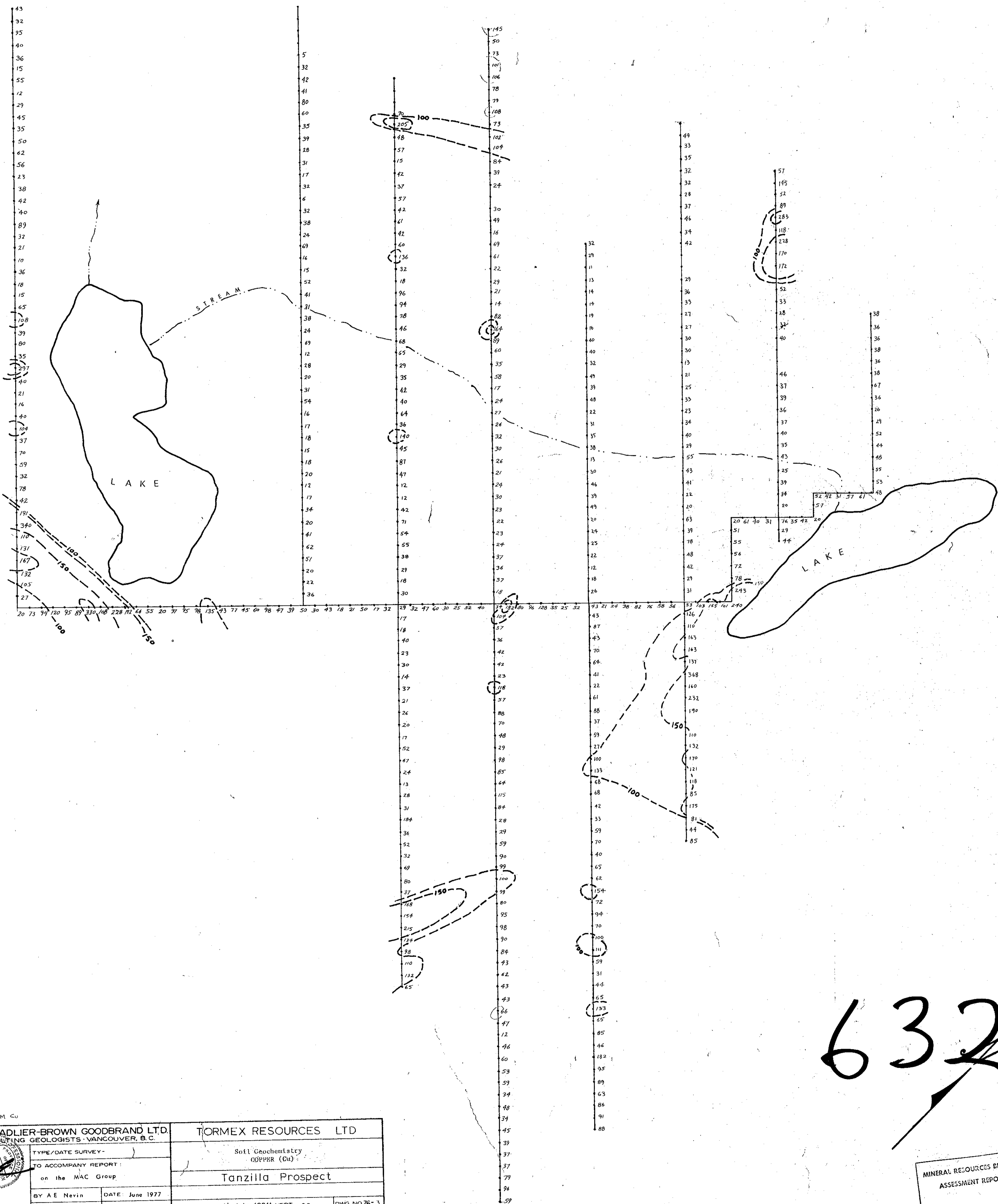
NEVIN SADLER-BROWN GOODBRAND LTD. CONSULTING GEOLOGISTS - VANCOUVER, B.C.		TORMEX RESOURCES LTD	
TYPE/DATE SURVEY -		Soil Geochemistry COPPER (Cu)	
TO ACCOMPANY REPORT:		Tanzilla Prospect	
BY A E Nevin	DATE: June 1977		
T Sadler Brown		SCALE: HORIZ. 1 inch to 400ft VERT. na	DWG. NO 76-3

6323

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. \_\_\_\_\_



0 24N 32N 40N 48N 56N 64N 72N

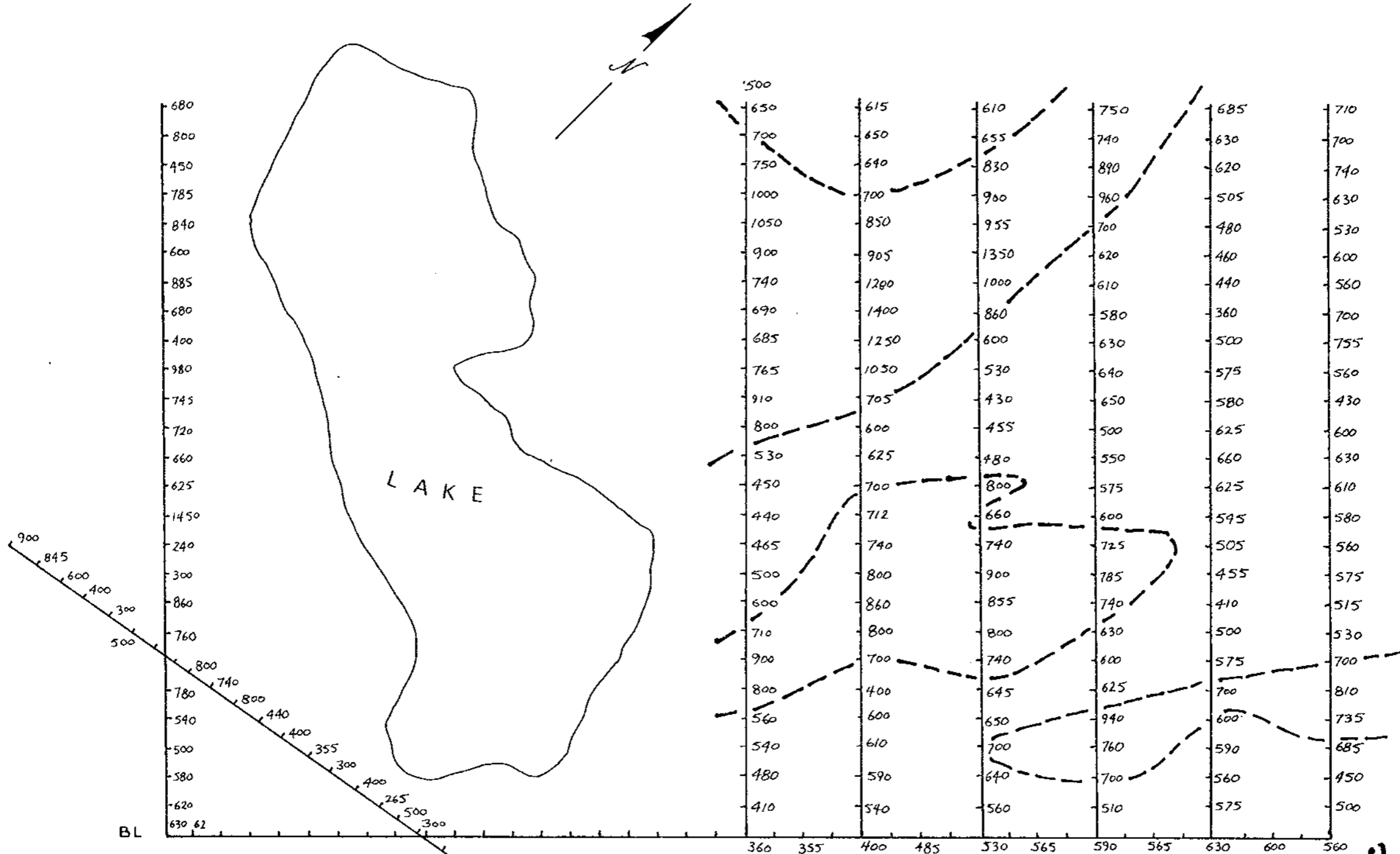


6323

Values in PPM Cu

NEVIN SADLER-BROWN GOODBRAND LTD. CONSULTING GEOLOGISTS - VANCOUVER, B.C.		TORMEX RESOURCES LTD	
TYPE/DATE SURVEY -		Soil Geochemistry COPPER (Cu)	
TO ACCOMPANY REPORT:		Tanzilla Prospect	
BY A E Nevin	DATE: June 1977		
T Sadler Brown		SCALE: HORIZ. 1 inch to 400ft VERT. n/a	DWG. NO 76-3

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO.



680  
800  
450  
785  
840  
600  
885  
680  
400  
980  
745  
720  
660  
625  
1450  
240  
300  
860  
760  
780  
540  
500  
580  
620  
630 62  
BL

500  
650  
700  
750  
1000  
1050  
900  
740  
690  
685  
765  
910  
800  
530  
450  
440  
465  
500  
600  
710  
900  
800  
560  
540  
480  
410  
360  
20N  
355  
24N  
400  
485  
28N  
530  
565  
32N  
590  
565  
36N  
630  
600  
560  
40N

615  
650  
640  
700  
850  
905  
1200  
1400  
1250  
1050  
705  
600  
625  
712  
740  
800  
860  
800  
700  
400  
600  
610  
590  
540  
610  
655  
830  
900  
955  
1350  
1000  
860  
600  
530  
430  
455  
480  
800  
740  
900  
855  
800  
740  
645  
650  
700  
640  
560  
750  
740  
890  
960  
700  
610  
580  
630  
640  
650  
500  
550  
575  
600  
600  
725  
785  
740  
630  
625  
940  
760  
700  
510  
685  
630  
620  
505  
480  
460  
440  
360  
500  
575  
580  
625  
660  
630  
610  
595  
505  
455  
410  
500  
575  
700  
810  
735  
685  
450  
500

Magnetic contour (700 γ) . . . . .

Scale: 1 inch to 400 feet

6323



TORMEX RESOURCES  
TANZILLA PROSPECT  
MAGNETOMETER SURVEY

*Handwritten signature*



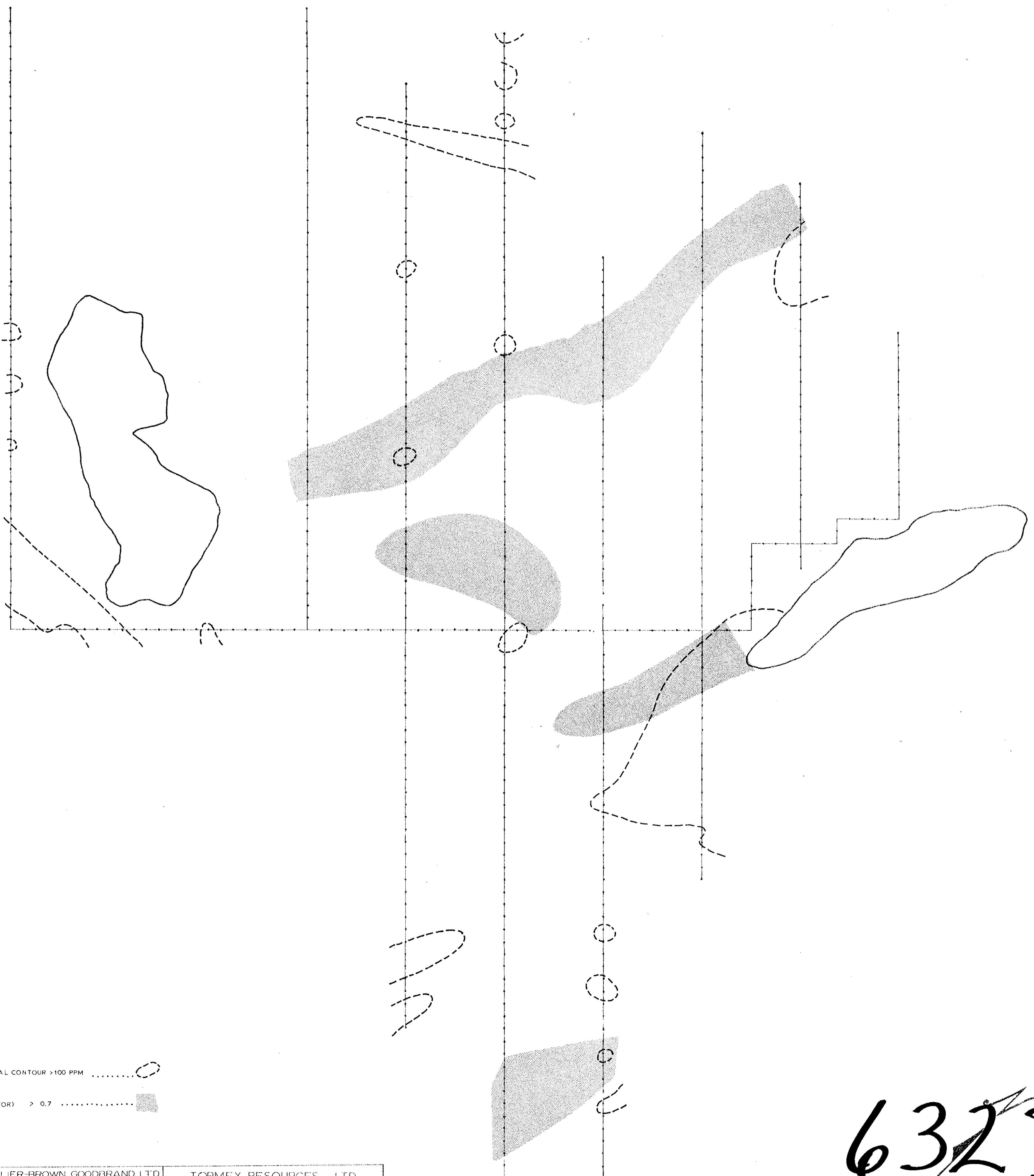
Values in parts per million Mo

NEVIN SADLER-BROWN GOODBRAND LTD. CONSULTING GEOLOGISTS VANCOUVER, B.C.		TORMEX RESOURCES LTD	
TYPE/DATE SURVEY: TO ACCOMPANY REPORT: on the MAC GROUP, Ltd. M.D.		MOLYBDENUM	
BY A.E. Nevin DATE June 1977		Tanzilla Prospect	
T. Sadler Brown		SOIL GEOCHEMICAL PLOT	
SCALE: HORIZ. 1 inch to 400ft VERT		DWG NO 76-4	

6373

MINERAL RESOURCES ACT  
ASSESSMENT REPORT  
NO. \_\_\_\_\_

0 24 N 32 N 40 N 48 N 56 N 64 N 72 N

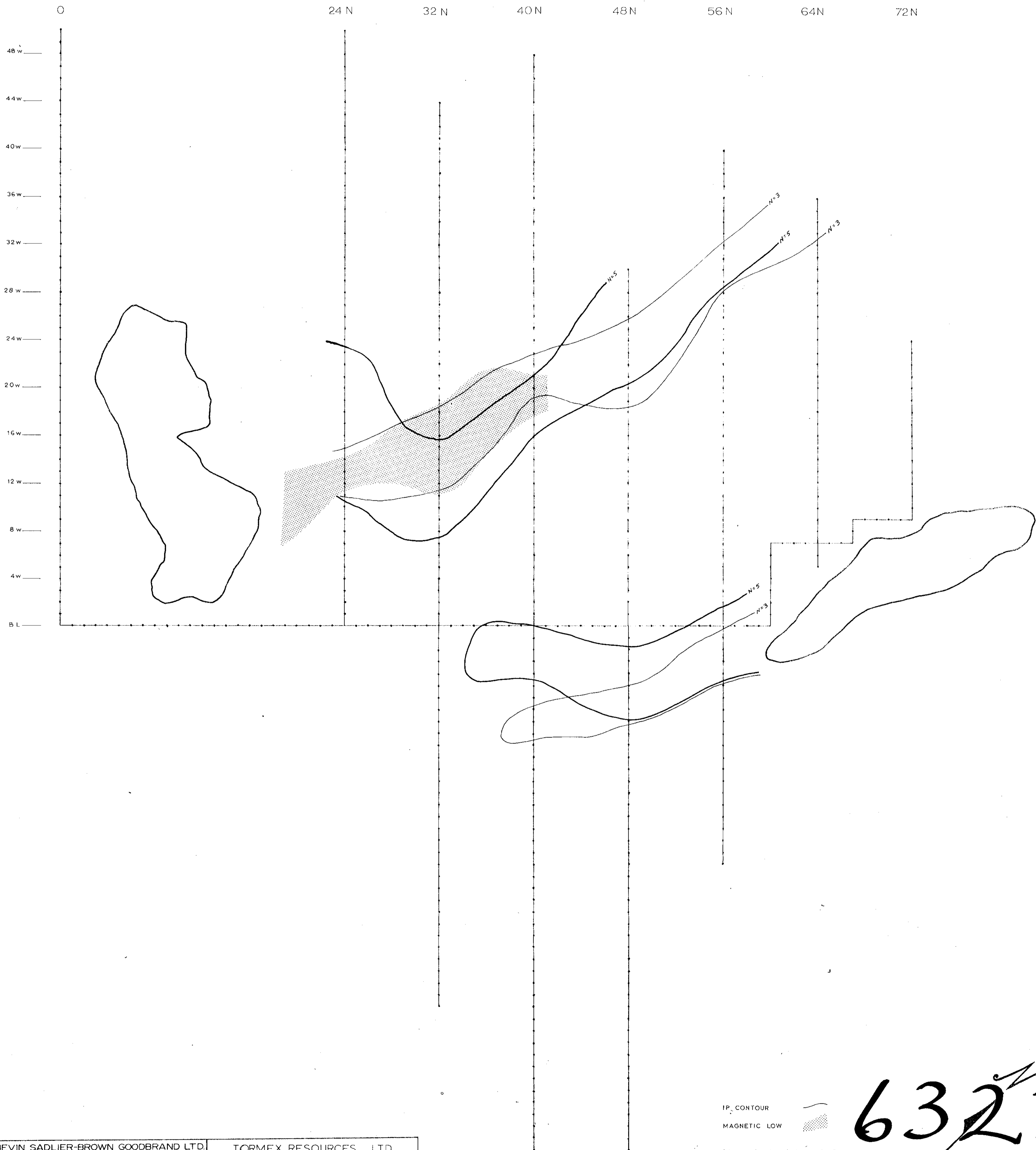


Cu GEOCHEMICAL CONTOUR > 100 PPM .....  
 IP (METAL FACTOR) > 0.7 .....

NEVIN SADLER-BROWN GOODBRAND LTD CONSULTING GEOLOGISTS, VANCOUVER, B.C.		TORMEX RESOURCES LTD	
TYPE, DATE, NUMBER		GEOCHEMICAL-GEOPHYSICAL COMPILATION	
TO ACCOMPANY REPORT		Tanzilla Prospect	
A Report on the Mac Group			
Lizard M.D., B.C.			
BY	DATE	SCALE	APP. NO.
N. Sadler-Brown	June 1977	1:100,000 (1 inch to 40011 feet)	76-7
A.L. Nevin			

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
 NO. \_\_\_\_\_

6323



6323

NEVIN SADLER-BROWN GOODBRAND LTD. CONSULTING GEOLOGISTS - VANCOUVER, B.C.		TORMEX RESOURCES LTD	
TYPE/DATE SURVEY -		GEOPHYSICAL COMPILATION IP & Magnetics	
TO ACCOMPANY REPORT: A Report on the Tanzilla and N=3 & 5		Tanzilla Prospect	
BY T. Sadler-Brown A.E. Nevin	DATE: June 1977	SCALE: HORIZ. 1 inch to 400ft VERT	DWG NO 76-6

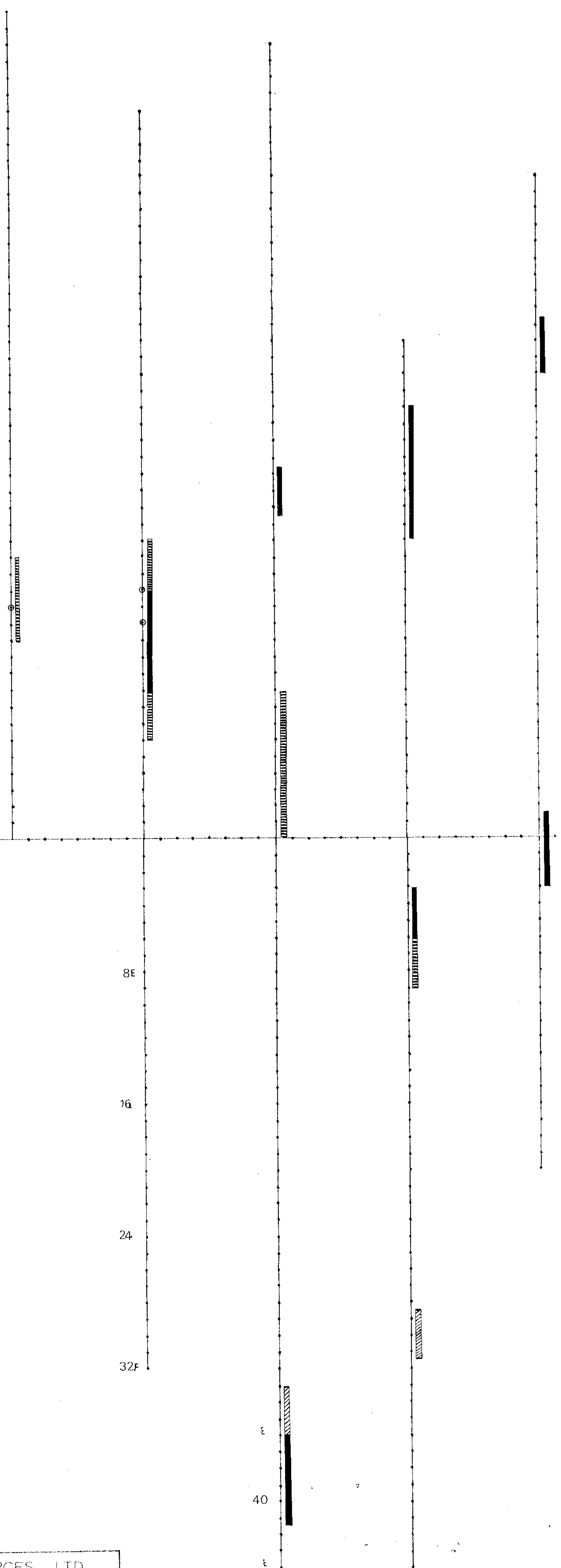
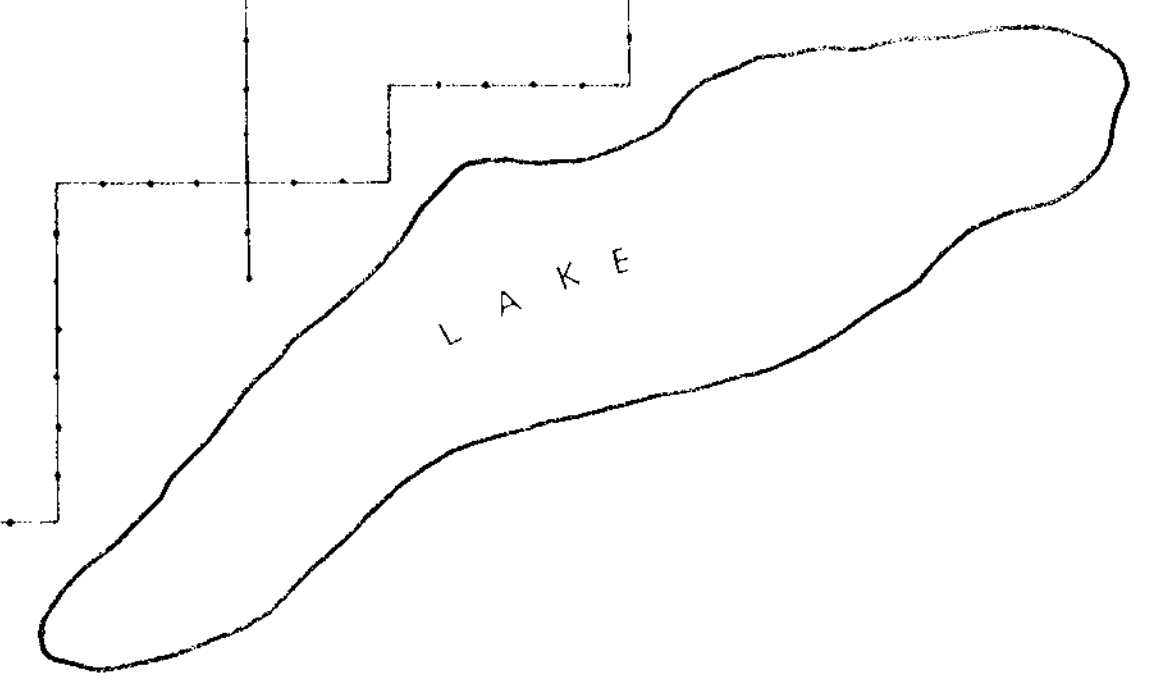
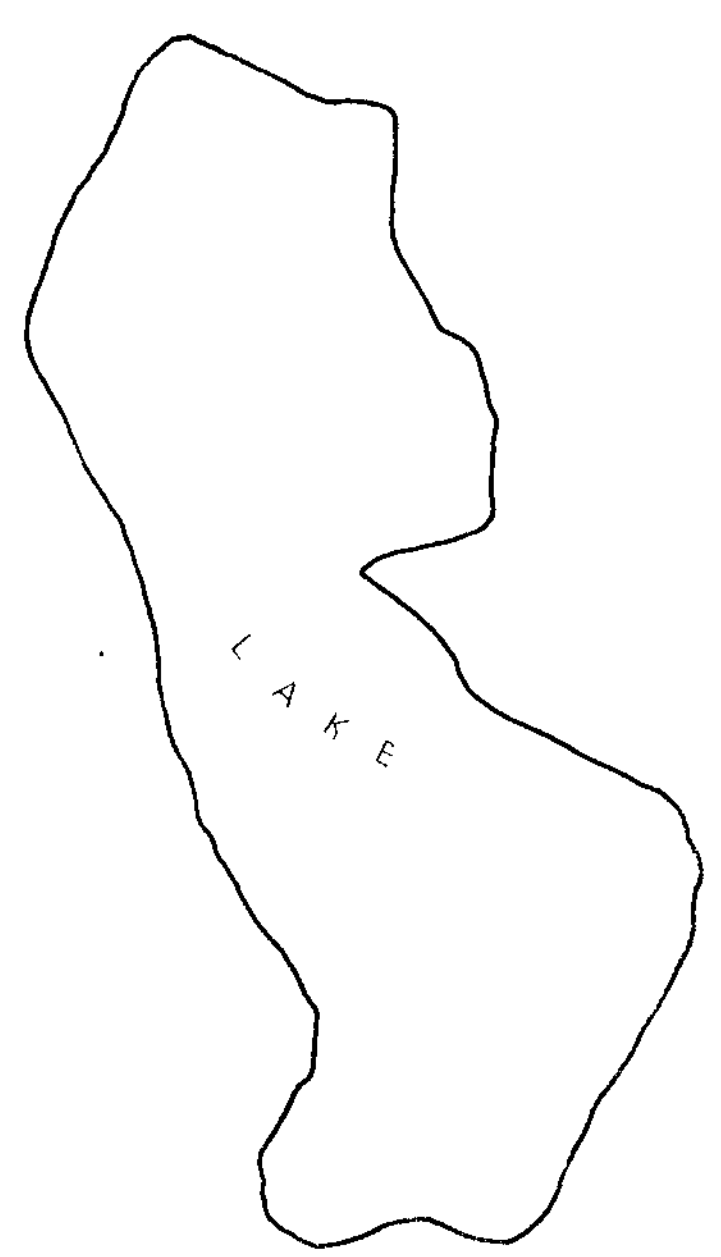
IP CONTOUR  
MAGNETIC LOW





IP anomaly: Total Factor N=2  
Magnetic anomaly: 400 x

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. \_\_\_\_\_

0 24 N 32 N 40 N 48 N 56 N 64 N 72 N

48W  
40W  
32W  
24W  
16W  
8W  
BL



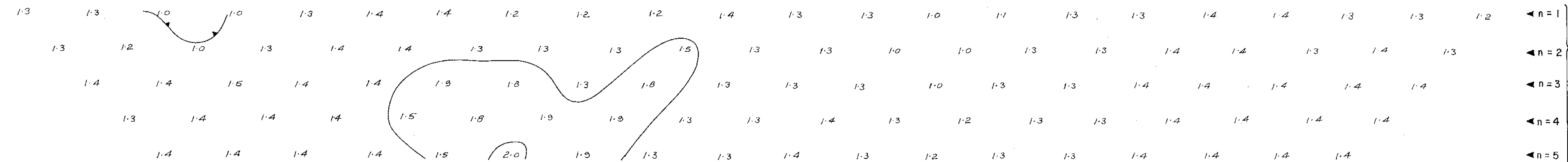
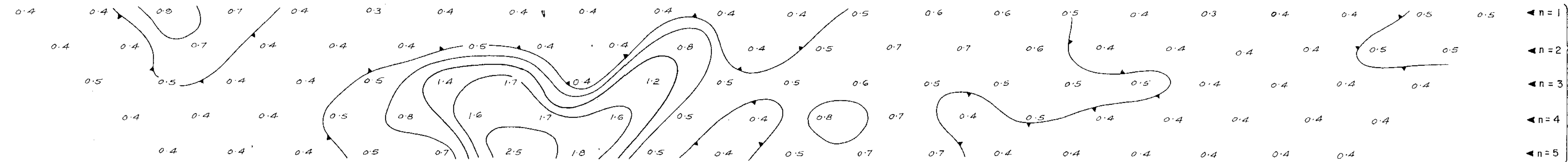
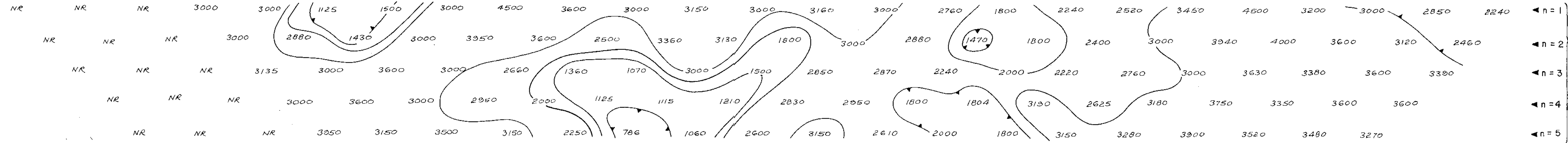
- LEGEND
-  IP Anomaly DEFINITE
  -  IP Anomaly PROBABLE
  -  IP Anomaly POSSIBLE
  -  Proposed Drill Hole

NEVIN SADLER-BROWN GOODBRAND LTD CONSULTING GEOLOGISTS VANCOUVER, B.C.		TORMEX RESOURCES LTD	
TYPE DATE SURVEY		INDUCED POLARIZATION SURVEY	
BY COMPANY FOR CLIENT		ANOMALY LOCATIONS	
on the MAC Group		Tanzilla Prospect	
By A.E. Nevin	DATE June 1977	SCALE 1 inch to 400ft. (1:5000)	
T. Sadler-Brown		FORM 76-B	

6323

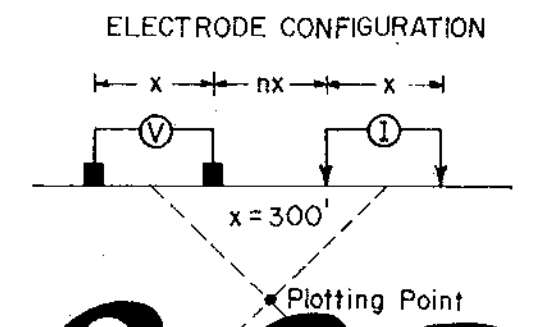
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. \_\_\_\_\_

42W 36W 27W 18W 9W 00 9E 18E 27E



INDUCED POLARIZATION AND RESISTIVITY SURVEY for TORMEX RESOURCES LTD. TANZILLA PROPERTY

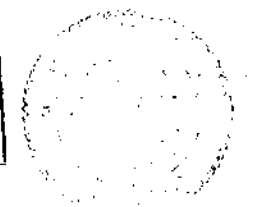
LINE NO 32+00N



6323

accompanies a report on the Mac Group, by T. Sadlier-Brown & A.E. Nevels, June 1977

MINERAL RESOURCES BRANCH ASSESSMENT REPORT NO. \_\_\_\_\_



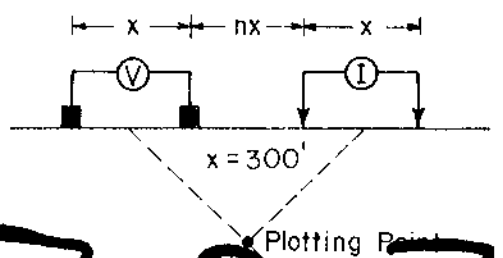
SCALE 1" = 300 feet, DATE September 1976  
Contours at logarithmic multiples of 10, 15, 20, 30, 50, 75 & 100

LINE NO 32+00N

INDUCED POLARIZATION AND RESISTIVITY SURVEY for TORMEX RESOURCES LTD. TANZILLA PROPERTY

LINE NO. 24+00N

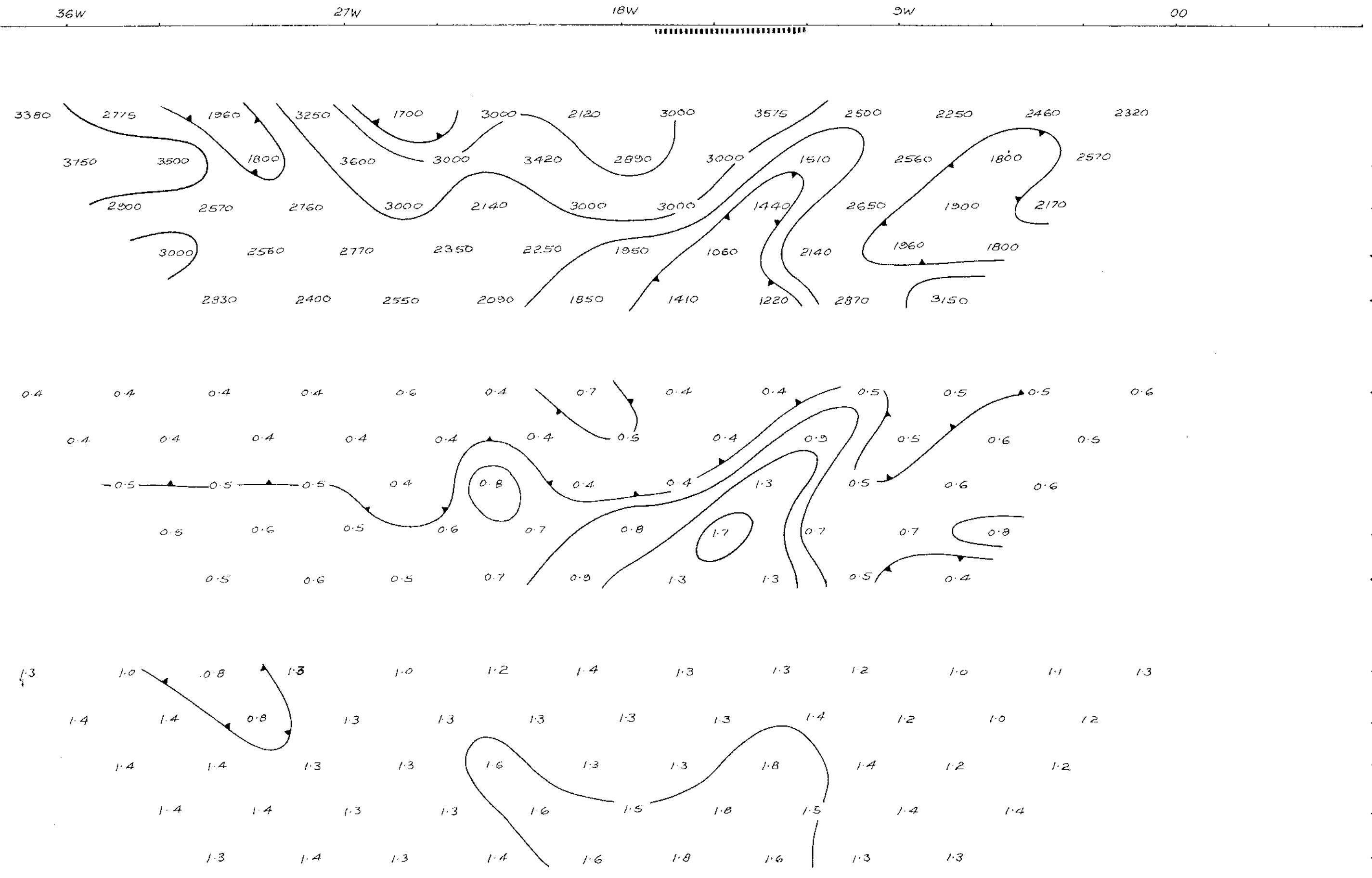
ELECTRODE CONFIGURATION



6323

accompanies a report on the fac Group by T. Sadler-Brown & A.E. Nevin, June 1977

SCALE 1" = 300 feet, DATE September 1976  
Contours at logarithmic multiples of 10, 15, 20, 30, 50, 75 & 100



LINE NO. 24+00N



42W

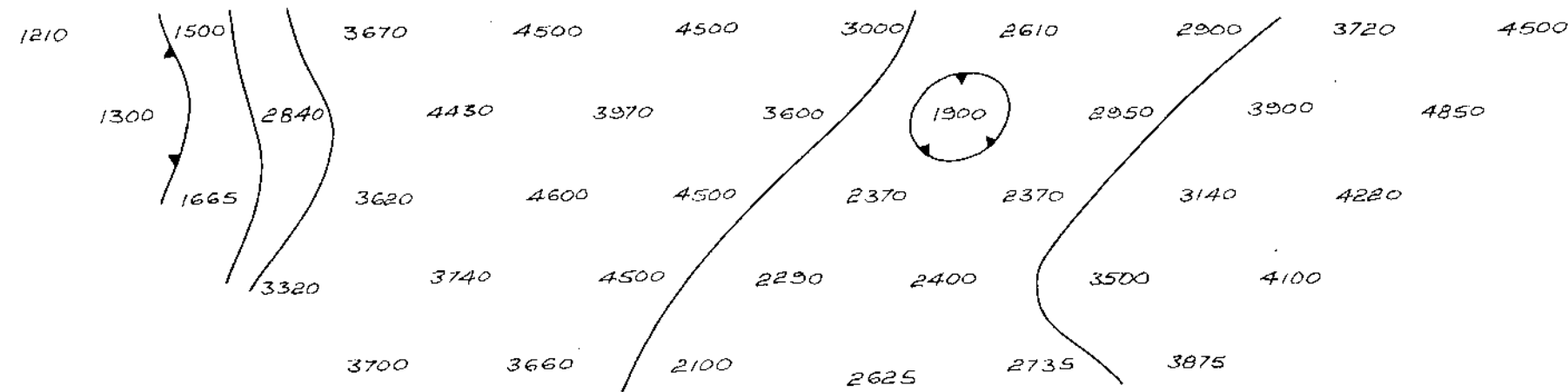
33W

24W

15W

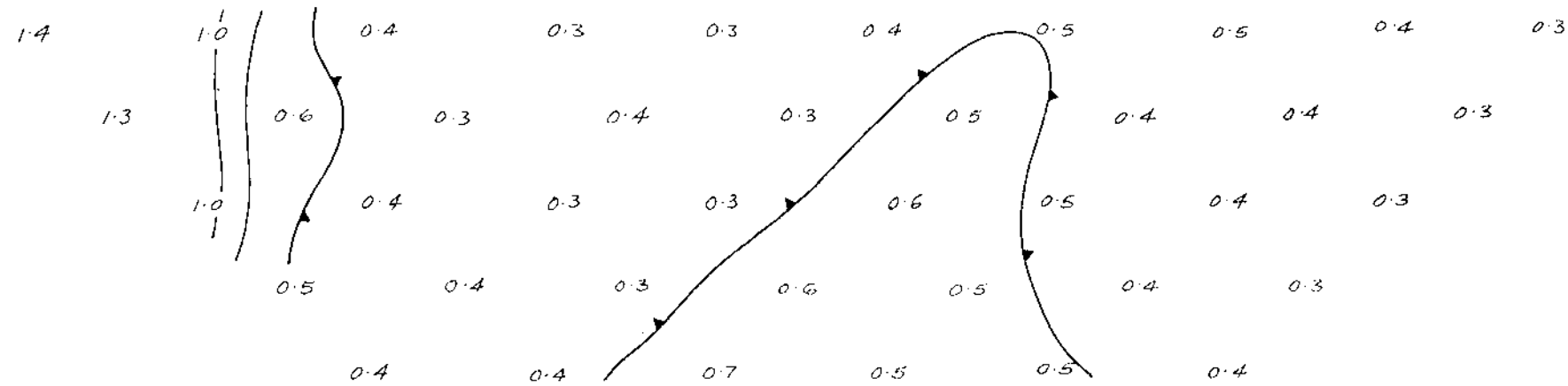
Creek

6W Lake



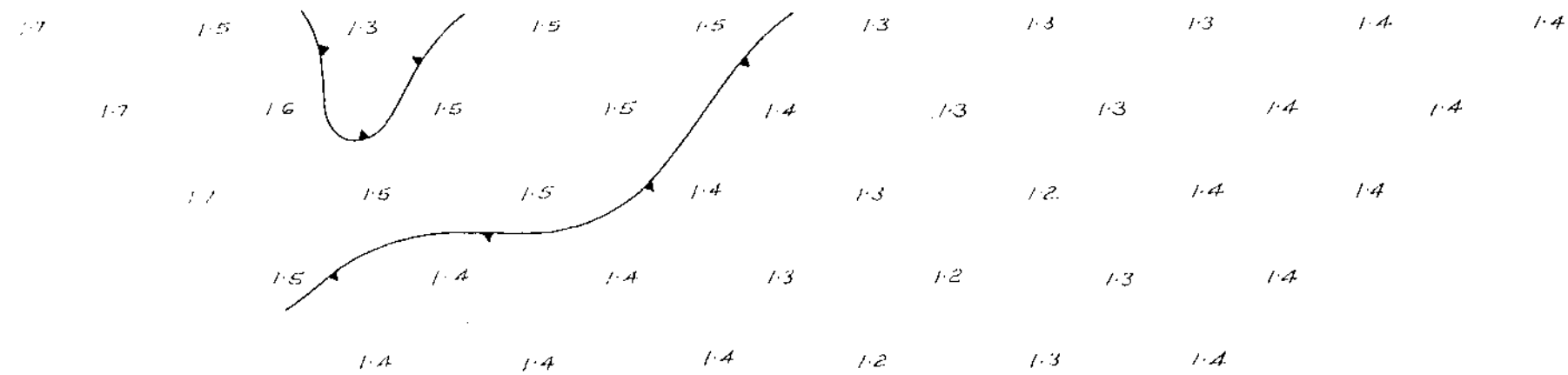
▲ n = 1  
 ▲ n = 2  
 ▲ n = 3  
 ▲ n = 4  
 ▲ n = 5

Apparent Resistivity  
(ohm feet)



▲ n = 1  
 ▲ n = 2  
 ▲ n = 3  
 ▲ n = 4  
 ▲ n = 5

Metal Factor



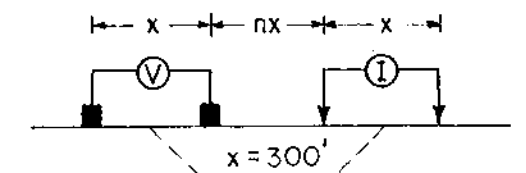
▲ n = 1  
 ▲ n = 2  
 ▲ n = 3  
 ▲ n = 4  
 ▲ n = 5

Frequency Effect  
(%)

INDUCED POLARIZATION  
 AND  
 RESISTIVITY SURVEY  
 for  
**TORMEX RESOURCES LTD.**  
 TANZILLA PROPERTY

LINE NO. 64+00N

ELECTRODE CONFIGURATION



# 6323

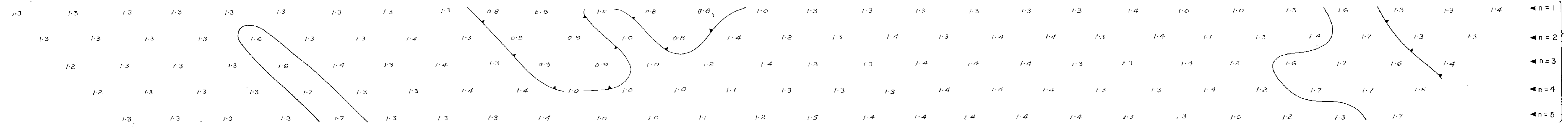
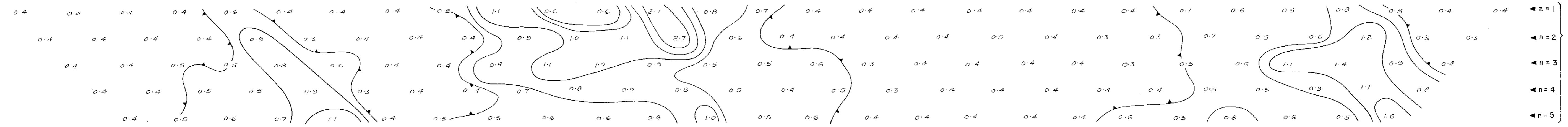
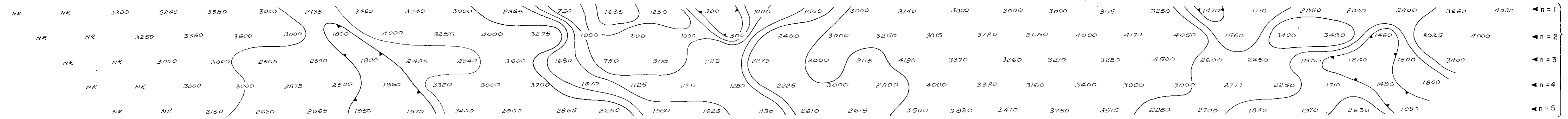
accompanies a report on the Lac Group  
 by T. Sallie - B.Sc. & A.E. Devin, June 1977

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
 NO. \_\_\_\_\_

SCALE 1" = 300 feet, DATE September 1976  
 Contours at logarithmic multiples of  
 10, 15, 20, 30, 50, 75 & 100

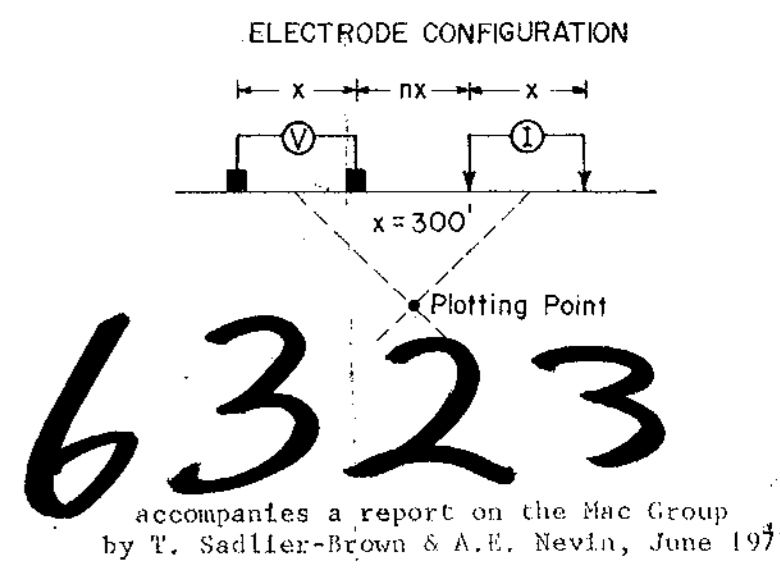
LINE NO. 64+00N

45W 36W 27W 18W Ck. Ck. 9W Swamp 00 9E 18E 27E 36E 45E



INDUCED POLARIZATION AND RESISTIVITY SURVEY for TORMEX RESOURCES LTD. TANZILLA PROPERTY

LINE NO 40+00N

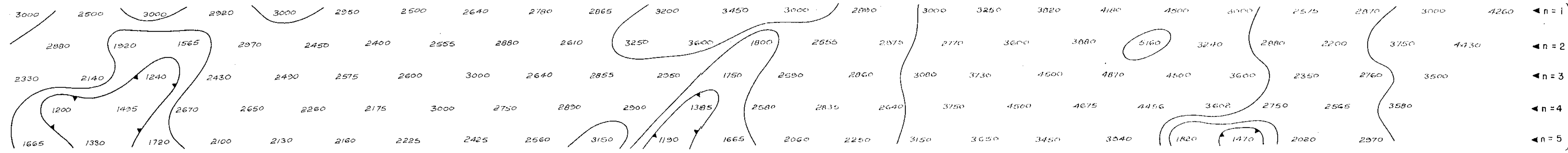


MINERAL RESOURCES BRANCH ASSESSMENT REPORT NO. \_\_\_\_\_

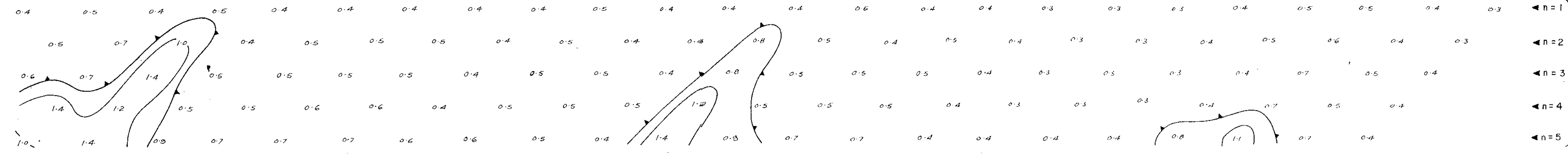
SCALE 1" = 300 feet, DATE September 1976  
Contours at logarithmic multiples of 10, 15, 20, 30, 50, 75 & 100

LINE NO 40+00N

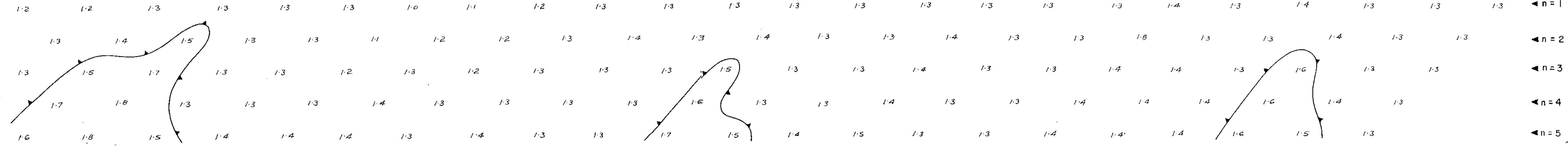
27W 18W 9W 00 9E 18E 27E 36E 45E



Apparent Resistivity (ohm feet)  
 ◀ n = 1  
 ◀ n = 2  
 ◀ n = 3  
 ◀ n = 4  
 ◀ n = 5



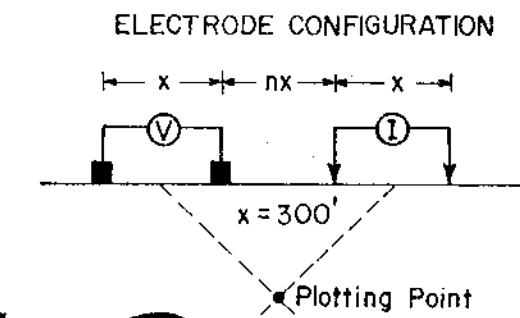
Metal Factor  
 ◀ n = 1  
 ◀ n = 2  
 ◀ n = 3  
 ◀ n = 4  
 ◀ n = 5



Frequency Effect (%)  
 ◀ n = 1  
 ◀ n = 2  
 ◀ n = 3  
 ◀ n = 4  
 ◀ n = 5

INDUCED POLARIZATION AND RESISTIVITY SURVEY for TORMEX RESOURCES LTD. TANZILLA PROPERTY

LINE NO. 48+00N



6323

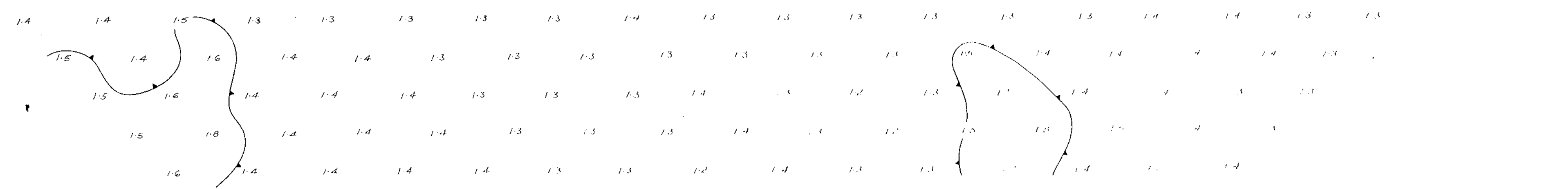
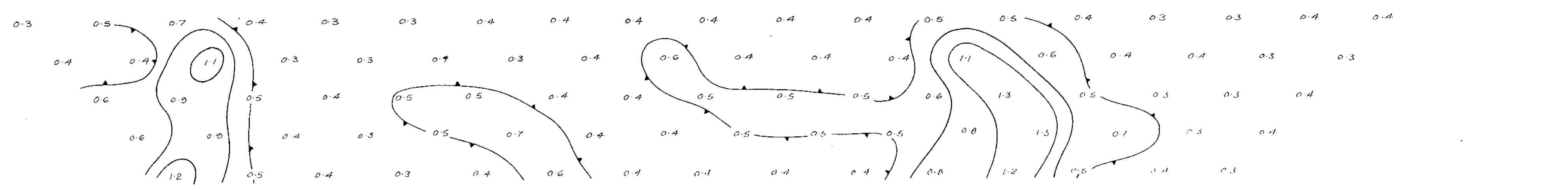
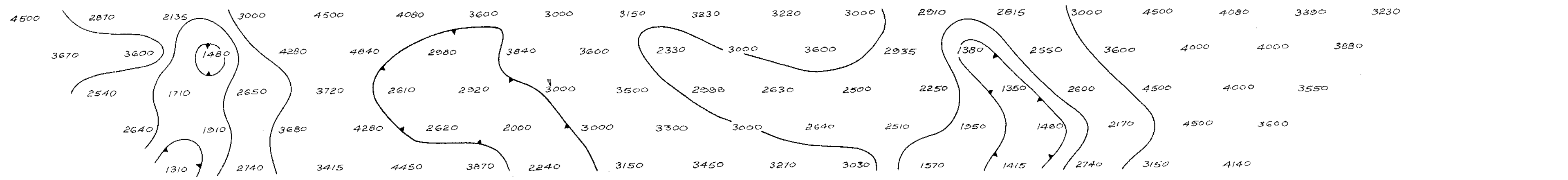
accompanying a report on the Mac Group by T. Sadlier-Brown & A.E. Nevin, June 1977

MINERAL RESOURCES BRANCH ASSESSMENT REPORT NO. 7

SCALE 1" = 300 feet, DATE September 1976  
 Contours at logarithmic multiples of 10, 15, 20, 30, 50, 75 & 100

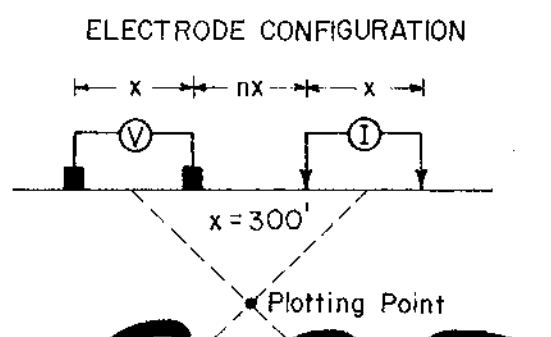
LINE NO. 48+00N

36W 27W 18W Creek 9W 00 9E 18E



INDUCED POLARIZATION  
AND  
RESISTIVITY SURVEY  
for  
**TORMEX RESOURCES LTD.**  
TANZILLA PROPERTY

LINE NO. 56+00N



**6323**

accompanies a report on the Mac Group,  
by T. Sadler-Brown & A.E. Nevin, June 1977

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. \_\_\_\_\_

SCALE 1" = 300 feet, DATE September 1976  
Contours at logarithmic multiples of  
10, 15, 20, 30, 50, 75 & 100

LINE NO. 56+00N