GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT ON THE SOO 'A'-'D' MINERAL CLAIMS VANCOUVER MINING DIVISION

'80-#869-#8576

N.T.S. 92J/2W

50° 13.6'N, 122° 57.7'W

Owned and Operated by
Rio Tinto Canadian Exploration Ltd.

Report by
M.H. Holtby
C.J. Campbell

December 9, 1980

TABLE OF CONTENTS

MAPS

ILLUSTRATIONS

SUMMARY

This report covers the 1980 geological mapping, soil geochemical and geophysical programme on the Soo claims, located 15km north of Whistler, British Columbia.

Initial interest in the area was sparked by the finding of interbedded rhyolites and andesites during a 1978 reconnaissance programme. Follow-up silt sampling highlighted one creek as being anomalous for copper and zinc.

A paucity of outcrop has limited the usefullness of geological mapping. Mapping has resulted in the rocks being divided into three general groups: a lower group of interbedded rhyolite and andesite, a middle group of andesites and dacites with minor rhyolites, and an upper group of andesites with fewer dacites and quartz-sericite schists. The geological trend is northwest-southeast with a steep northeast dip.

A copper in soil geochemical anomaly has been outlined, at the 213 ppm level, for a width of 300m and a length of 1000m. This copper anomaly strikes across the geological trend. A zinc anomaly is coincident with, and extends upslope from, the southwest half of the copper anomaly. A lead anomaly is coincident with the northeast half of the copper anomaly. The zinc anomaly is interpreted to be underlain by interbedded rhyolite and andesite. The lead anomaly is underlain by andesites with fewer dacites and quartz-sericite schists.

Traces of chalcopyrite found during mapping do not explain the geochemical anomaly.

Coincident to the zinc anomaly, and upslope from the copper anomaly, lies a weak horizontal-loop and VLF electromagnetic anomaly. A geophysical interpretation indicates the causative body to be very narrow and dipping shallowly to the northeast.

During 1981 a logging company plans to cut a road across the geochemical anomaly and log-off the claim block. This road construction will expose bedrock and, therefore, it is recommended that the Soo claims be re-examined at that time. After road construction, but before full-scale logging is initiated, it would be advantageous to conduct a short programme of detailed horizontal-loop EM to further evaluate the geophysical anomaly that is coincident to the zinc anomaly.

SOO CLAIMS
92J/2W

1. INTRODUCTION

This report covers the 1980 geological mapping, soil geochemical, and electromagnetic and magnetic geophysical programmes carried out by Rio Tinto Canadian Exploration Limited on the Soo claims located in the Vancouver Mining District.

A camp was set-up by a 2-man crew in April. During May a 4-man crew established a 20.8km 12-line grid and another 3-man crew completed a soil sampling survey on the grid. During May and June a 2-man crew geologically mapped the grid area. During August a contractor cut 17.3km of the grid in preparation for the geophysical survey. In September a 4-man crew carried out the MaxMin II electromagnetic, VLF electromagnetic and magnetic geophysical surveys.

1.1 Location and Access

The property is located in N.T.S. block 92J/2W, approximately 15km north of Whistler. The camp is located at U.T.M. coordinates: 502600 East, 5563650 North, Zone 10, on the north bank of the Soo River. The grid extends northward from the campsite.

Access to the property during the 1980 programme was via Pacific Helicopters from Green Lake, 7.5km south-southeast of the camp. At the present time a logging road is being extended along the Soo River valley and should be at the campsite in mid 1981.

A location map (map L-6680) can be found on page 3 of this report.

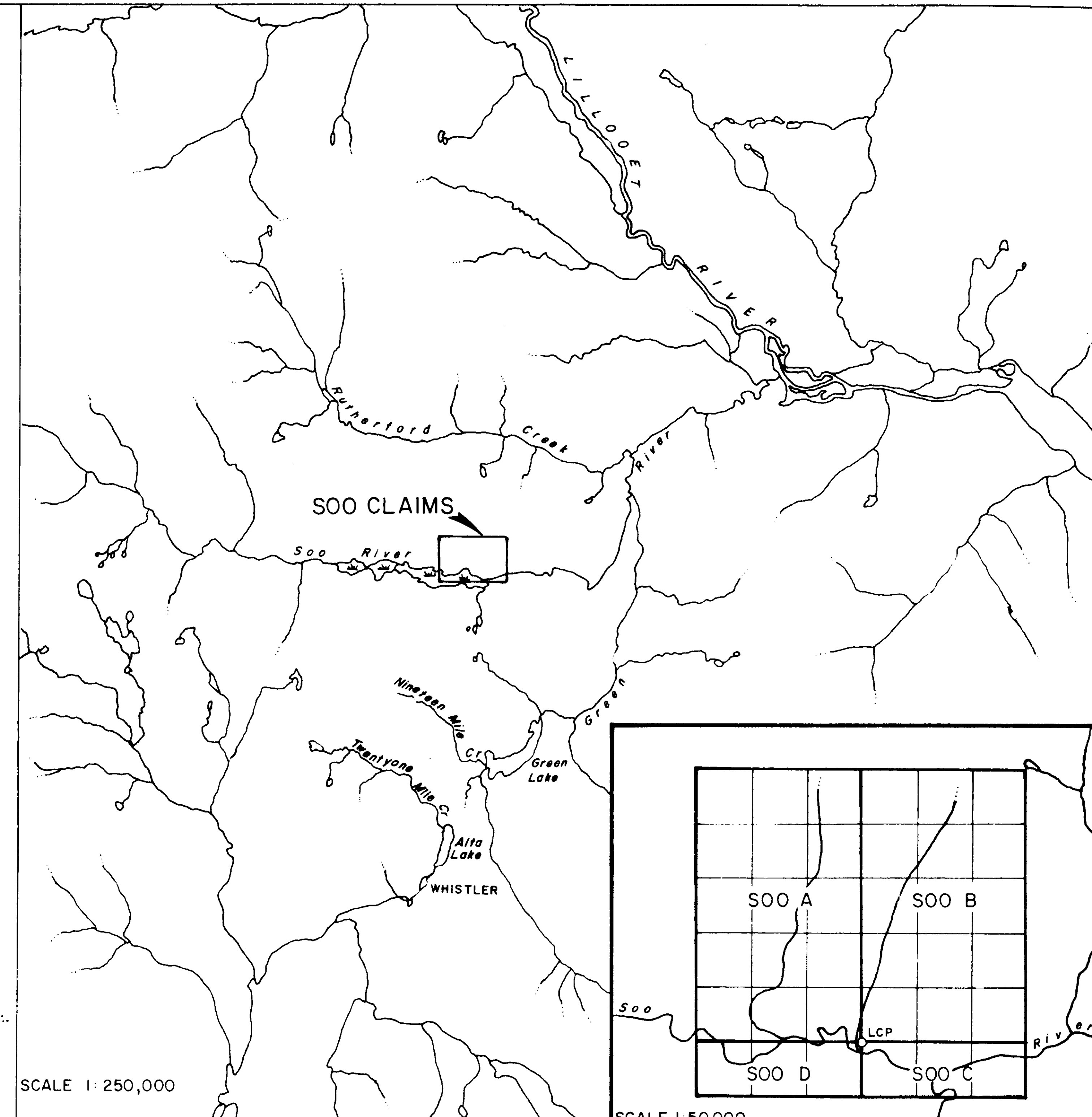
1.2 Claims

The Soo property consists of 36 units in 4 claims in the Vancouver Mining District. The claims are:

CLAIM NAME	NO. OF UNITS	ANNIVERSARY DATE	EXPIRY DATE	RECORD NO.
SOO 'A'	15	December 10	1983	603
SOO 'B'	15	December 10	1983	604
SOO 'C'	3	December 10	1983	605
SOO 'D'	3	December 10	1983	606

1.3 History

The area was first examined by Riocanex in 1978 as part of a regional programme examining the Lower Cretaceous Gambier Group. The finding of rhyolites and a large volume of dacites between the Soo and Rutherford Rivers prompted a stream-silt sampling follow-up of that area. Anomalous copper values were found in one creek on the north side of the Soo River.



RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

LOCATION MAP

DATE	DRAWN BY	DWG.
DEC. 1980	MHH/ sg	L-6680

In 1979, the creek with anomalous copper values was sampled in more detail. The anomalous values were found to be restricted to that portion of the creek underlain by volcanic rocks. As well, a few traces of chalcopyrite were found in quartz-sericite schists. Figure 1, page 9, shows the 1978 and 1979 silt sampling results.

The claims were subsequently staked in November 1979.

1.4 1980 Field Programme

Field work began in April with the camp being constructed by R. Cameron and E. Alionis from April 9 to April 15. From May 15 to May 24 R. Cameron, G. Lohman, J. Poile and C. Nagati secant-chained and flagged the grid. This grid consists of 12 lines spaced 100m apart, as shown on all soil sample maps. Soil samples were collected by S. Gokool, K. Cavanagh and D. Okamoto from May 22 to May 26. Soil samples were collected at 25m intervals on all grid lines including tie lines and base lines. A total of 787 soil samples were taken. Geologic mapping was carried out by M. Holtby from May 22 to May 26 and by M. Holtby and J. Donald from June 10 to June 22.

Martinson Linecutting and Staking Ltd. cut-out 17.3km of the grid from August 9 to August 11.

C. Campbell and S. Gokool carried out a magnetic, V.L.F. electromagnetic and MaxMin II electromagnetic survey on the 17.3km of cut grid from August 25 to August 31 and from September 4 to September 15.

2. REGIONAL GEOLOGY

Regional geology is shown on G.S.C. Open File 482 map, compiled by G.J. Woodsworth in 1977. The Soo claims are underlain by a pendant of Lower Cretaceous Gambier Group. Surrounding the pendant are quartz diorites of the Coast Plutonic Complex, a Cretaceous and Tertiary feature.

Gambier Group rocks extend from Vancouver to Whitesail Lake area north of Bella Coola. They host the Britannia Mine and the Nifty prospect, two volcanogenic sulphide deposits. Gambier Group rocks were extensive intermediate and acid marine volcanics and sediments. Today they remain as roof pendants along the west side of the Coast Range.

The following description of the pendant rocks is a summary description of the wide variety of rocks mapped during the 1978 regional programme.

Andesites dominate the volcanic portion of this pendant with fewer exposures of rhyolite and dacite. The andesites range in lithology from flows and flow breccias to tuffs, lapilli tuffs, and agglomerates. Dacites, principally tuffs but also flows, flow breccia, lapilli tuffs, agglomerates and crystal tuffs represent less than 10% of the volcanic portion of the pendant, although they are locally the dominant volcanic. Most of these dacites are pyritized to a minor degree with local concentrations up to 2-3% disseminated pyrite. Rhyolites are a minor portion of the volcanic section, being only locally important in one area north of the Soo River.

Sediments comprise a substantial proportion of the exposed rocks of this pendant. To the south, around Nineteen Mile and 21 Mile Creeks shales are prominant, while around Green Lake greywackes, quartzite and arkosic quartzites are the dominant lithologies. South of the Soo River, cherts and dirty cherts are the main sediments while north of the Soo River and in the Rutherford Creek area thick sequences of shale occur. At least trace amounts of pyrite are almost ubiquitous to the sediments of this pendant.

3. PROPERTY GEOLOGY

Geology is shown on map G-8822. The paucity of outcrop combined with the narrow and discontinuous nature of the volcanic units has prevented the construction of anymore than an outcrop map.

Volcanic rocks are mapped as rhyolite, dacite and andesite. They range from massive, flow-banded and spherulitic rhyolite to andesitic lapilli-tuffs. Intrusive rocks are granodiorite and diorite. The contact of the pendant and the surrounding Coast Range Intrusives lies outside the grid and was, therefore, not mapped. Sedimentary units found elsewhere in the pendant were not found in the grid area.

Exposures along creeks suggest a general rock package of three groups. The first group consists of interbedded rhyolite and andesite with minor dacite. The second group consists of andesites and dacites with minor rhyolites. The third group consists of andesites with fewer dacites and quartz-sericite schists.

The first group would be stratigraphically lowest. Contacts visible in this group indicate a strike of 135^{o} $\pm 10^{o}$ and dips of 75^{o} -80^{o}N.E. This group would strike across the area underlain by the zinc anomaly and the southwest half of the copper anomaly. The group may also be outlined on the VLF-EM contour map by a northwest-southeast trending zone.

Thin quartz-epidote stringers (less than 0.2mm wide) are common throughout the mapped area. Epidote is usually less than 2% but does occur up to 5%. A stringer at 3+80E, 4+60N contains a trace of chalcopyrite.

A trace of chalcopyrite was found in foliated and epidote-altered dacite at 1+95W, 6+60N.

Pyrite is common as trace disseminations. Higher concentrations of up to 5% occur in quartz-sericite schists. These schists probably mark fault or shear zones cutting andesites and dacites.

4. GEOCHEMISTRY

Soil samples were taken at 25m intervals on grid lines as shown on maps GC-8816 to GC-8820. Soil samples were collected from the 'B' horizon wherever possible. The only exceptions occurred where the 'Ah' (humus) horizon was the only accessible horizon. Samples were normally collected with a light mattock from 30 to 50cm deep. All samples were placed in Kraft paper envelopes and shipped to the Riocanex Laboratory in North Vancouver. Here the samples were oven dried at 60^{o}C. The dried sample was sieved through 80 mesh stainless steel screen and the over size material discarded. Analysis was carried out on the minus 80 mesh fraction after digestion with a 2:1 mixture of hot concentrated nitric and hydrochloric acid. Results in ppm for the elements Cu, Mo, Pb, Zn and Ag were obtained by the company analyst, Mr. E.F. Paski, Jr.

A total of 787 samples are plotted. An additional 25 samples were collected to check anomalous values. The anomalous values were found to be repeatable. Map GC-8816 shows sample numbers and locations. Maps GC-8817 and GC-8818 show, respectively, copper and zinc values in ppm. Maps GC-8819 and GC-8820 show Pb, Mo and Ag values in ppm with lead values being contoured on map GC-8820. Silver and molybdenum anomalous values were found to be randomly distributed and are not contoured.

The copper, zinc and lead values were found to follow a lognormal distribution and each to be a single population. The mean and standard deviations were calculated as shown on Table 1. Anomalous metal vaules were contoured at the mean plus two and mean plus four standard deviations.

TABLE 1

Element	Mean	Standard Deviation	Mean+2 s.d.	Mean +4 s.d.
Cu	45	84	213	381
Zn	40	82	204	368
Pb	5.5	4.5	14.5	23.5

As previously described the geological trend is northwest-southeast. Geochemical trends are northeast-southwest. Anomalous copper values, above 213ppm, form a linear feature about 300m wide by 1000m long. As can be seen on map GC-8817 this feature tends to lie on the west side of the creek found to contain anomalous metal values in silt. A lead anomaly, above 14.5ppm, is generally coincident with the northeastern half of the copper anomaly. A zinc anomaly, above 204 ppm, is generally coincident with the southwest half of the copper anomaly. This zinc anomaly also extends due north (uphill) from the copper anomaly for up to 250m.

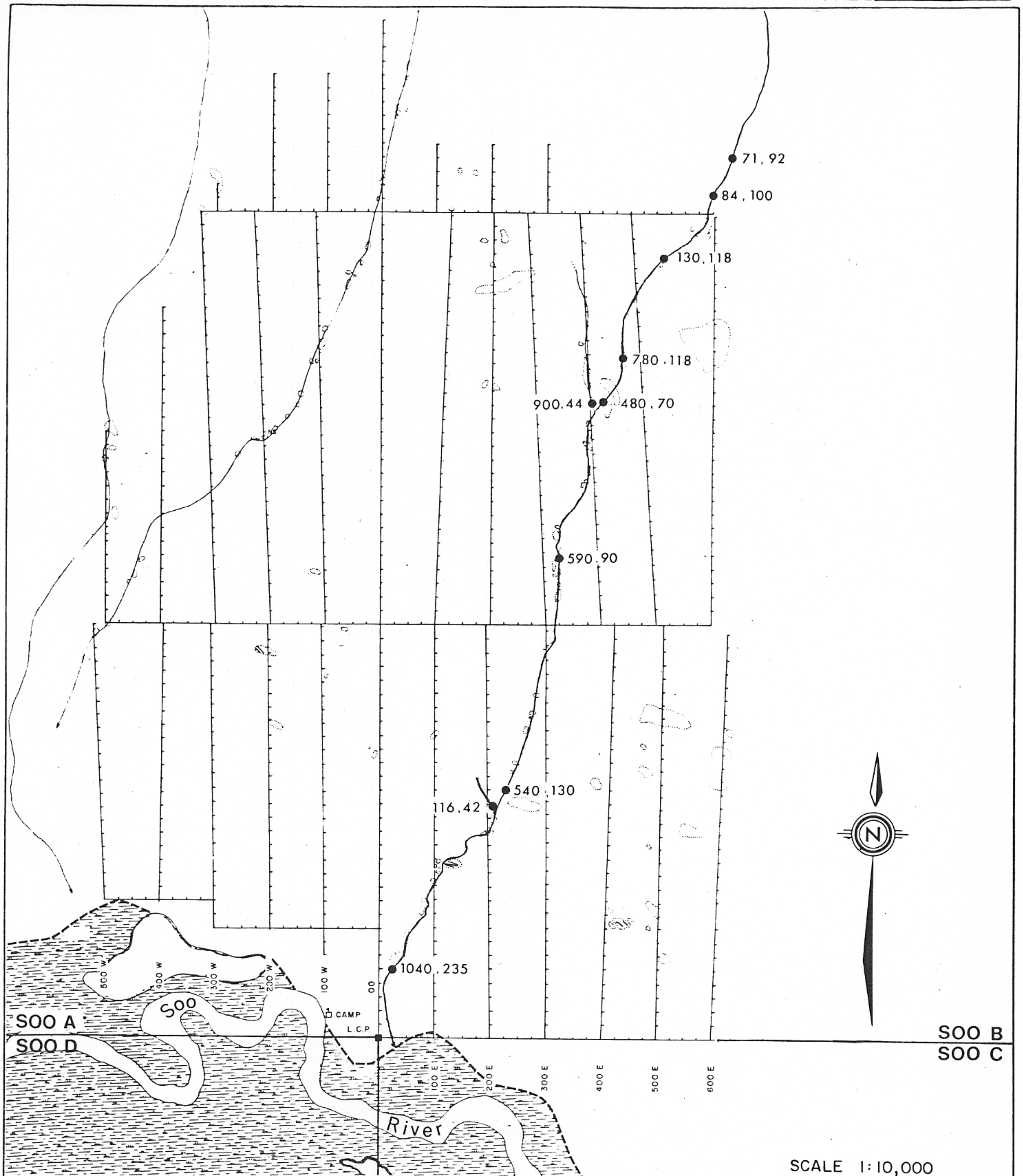


FIGURE I

1978 and 1979 Silt Sample Values ; Cu, Zn in ppm

On line 2+00W the zinc anomaly is coincident with a weak horizontal loop EM anomaly and a localized VLF-EM high on an otherwise weaker northwest trend. The VLF-EM trend is parallel to the geological trend but at right angles to the geochemical trend. The highest zinc values lie just downhill from the HLEM anomaly and VLF-EM high. The copper anomaly is not coincident but it does lie downhill from the coincident HLEM and VLF-EM feature.

Correlation of geochemistry to geology is impossible. The inability to trace units has prevented the making of a geology map. The extension of geochemical anomalies across the geological trend indicates a strong possibility that the geochemistry is related to a feature different from the volcanogenic massive sulphide target being sought. No cross-cutting features parallel to the geochemical anomalies were seen but with the paucity of outcrop little geology is well displayed. The only cross-cutting features of note are faults or broad shear zones displayed by the quartz-sericite schists. These features are parallel to sub-parallel to the rock trend.

Sulphides found do not explain the geochemical anomalies. Very rare traces of chalcopyrite occur in the quartz-sericite schists and in quartz veinlets cutting rhyolites.

5. GEOPHYSICS

An extensive program of ground geophysics was conducted over the Soo claims during August and September 1980. Purpose of this survey, which utilized horizontal-loop EM, magnetics and VLF-EM, was to locate and if possible delineate zones of massive sulphide mineralization. Complete procedures and results are described in the following section.

5.1 Geophysical Grid

The geophysical grid was based on the existing soil geochemistry grid. Due to the more exacting requirements of horizontal-loop EM, the original grid had to be cut out and then re-chained, clinometered and flagged. The base-line was run true east-west with traverse lines being run perpendicular (north) off it. Traverse interval was 100 metres while stations were marked every 25 metres along slope. Final positioning recovery was adjusted by means of two east-west tie-lines at the grid's centre and north end. Chainage and clinometer data were reduced using a programmable calculator to arrive at adjusted station locations. All geophysical data has been plotted with these slope corrections taken into consideration.

5.2 Magnetics

20.65km of magnetics was run utilizing two Scintrex MP-2 Proton Precession Magnetometers (obtained on a rental basis from Scintrex, Toronto). These digital readout magnetometers measure the earth's total magnetic field to an accuracy of ± 1 gamma and are essentially independent of instrument attitude and meteoralogical variables. Diurnal variations in the earth's magnetic field were accounted for by means of a base-station magnetometer and recorder. A Geometrics G-816 Proton Precession Magnetometer (owned by Riocanex) was mounted in a stationary position in a magnetically quiet area. Readings were obtained every 30 seconds throughout the operating day and permanently recorded on paper strip by a MR-10 digital base-station recorder (obtained on a rental basis from Canadian Mining Geophysics Ltd, Ottawa). In this fashion, an accurate track of the diurnal variation in the area is noted to specific times. The magnetometer operator, after synchronizing his watch to the MR-10's internal clock, ensures that field readings are obtained only at the exact time as a particular base-station reading. All traverses were run in a loop mode in order to verify quality of the MR-10 diurnal corrections; tie-in points were generally repeated with an accuracy of less than ± 5 gamma.

Magnetometer survey results are presented in contoured plan form at a scale of 1:2,000 on Dwg. M-8788. Values plotted are total magnetic field data minus a constant 56000 gamma datum.

No definitive trends are displayed by the magnetic map of the Soo claims. Magnetic values are somewhat erratic and generally range from 56700 to 56900 gamma over most of the area except to the north where background rises from 57000 to 57100 gamma. This increase may of course be due to a corresponding increase in the mafic minerals content of the underlying bedrock. Generally, however, the indecisiveness of the magnetic pattern of the whole area denotes relatively low magnetic susceptibility contrasts between varying geologic units (if indeed such variations in distinct units exist) or simply variations within one general rock type.

No clear relationship can be established between geology and the magnetometer survey results.

5.3 VLF-EM

16.20km of VLF-EM were run over the Soo grid. Instruments used were two Geonics EM-16's (obtained on a rental basis from Geonics, Toronto) utilizing transmission from Seattle NLK at 18.6 kHz.

The EM-16 uses military and time standard Very Low Frequency (radio) transmissions as primary fields which are generated as a concentric horizontal magnetic field. When these horizontal magnetic fields encounter conductive bodies in the ground, a secondary vertical magnetic field is in turn generated. The total field will then be tilted on either side of a local conductor. This local vertical field is not always in the same phase as the primary field on the ground surface. The EM-16 receiver measures the in-phase and quadrature components of the vertical field.

The VLF raw data has been filtered using the standard Fraser Filter operator:

$$F_{2,3} = (\theta_3 + \theta_4) - (\theta_1 + \theta_2)$$

VLF data is presented in profile form (vertical scale, 1cm: 10%; horizontal scale, 1:2000) on Dwg. GP-8823. and in contour form on Dwg. GP-8824.

The VLF Fraser Filtered Contour Map is dominated by three separate elongated northwest trends. These in turn are broken up by subsidiary southwest cross trends. VLF responses are all fairly minor denoting a situation of weak conductors, in most cases typical of structurally-associated causes.

An interpretation of this pattern indicates that the main south and central VLF trends could be caused by fault or shear zones. Relating VLF results to the geology, it appears that the southern trend may delineate a zone of rhyolite with andesties (including the southeast corner of the grid). The central area is thought to be underlain by andesites and dacites while the northern trend may mark the transition into an area underlain by andesites with minor quartz-sericite schists.

This interpretaion is limited to the extent that none of the VLF features are exhibiting particularly significant conductivity; indeed, conductive overburden appears as a major response. The subsidiary northeast-southwest trends as mentioned above may be due to cross-faulting within the area.

Of particular note is a single localized anomaly appearing on the main southern VLF trend at Line 200W, 500-525N. This response, although in itself not outstanding, does correspond exactly with a minor HLEM anomaly discussed the the following section.

5.4 Horizontal-Lopp EM

16.05km of 100 metre coil-spaced horizontal-loop EM were run over the Soo grid. Instrumentation employed was the company-owned Apex Parametrics Ltd. MaxMin II utilizing two frequencies, 444 & 1777 Hz.

The MaxMin II is a two-man EM system designed to measure both the vertical and horizontal in-phase and quadrature phase components of anomalous fields from electrically conductive zones. The plane of the transmitter is always kept parallel to the mean slope between transmittor (Tx) and receiver (Rx). When the MaxMin II is being operated as a horizontal-loop (maximum coupled) system, the plane of the receiver is kept parallel to the mean slope and measurements of anomalous components perpendicular to that mean slope are made. It is also used as a minimum-coupled system wherein the receiver measures anomalous components parallel to the mean slope between coils. Generally, the MaxMin II is run in the maximum-coupled, horizontal-loop mode with the minimum-coupling mode being used in the few instances where it can improve on the data of the former. It also has the ability to be operated utilizing the following variables:

(i) five system frequencies (222, 444, 888, 1777, & 3555 Hz) in order to deal effectively with a wide range of overburden and bedrock conductor conductivities.

(ii) six Tx-Rx separations (25, 50, 100, 150, 200, & 250 metres) in order to search from large deep conductive zones to the resolution of shallow, parallel conductive zones.

Mean slopes between Tx and Rx coils, as well as actual coil separations were computed using a programmable calculator. Since the two coils were always operated in a co-planar fashion, only a short or long coil separation correction (arising from rough topography) factor was applied to data. The same program that computed mean slope and actual coil separation also calculated the following:

(i) in-phase correction = $+\left[1-\left(\frac{\text{actual coil spacing}}{\text{nominal coil spacing}}\right)^3\right]100$

(ii) in-phase & quadrature phase correction =

$$X\left(\frac{\text{actual coil spacing}}{\text{nominal coil spacing}}\right)^3$$

The MaxMin II HLEM corrected-data is presented in profile form (vertical scale 1cm: 10%, horizontal scale 1:2000) on Dwg's GP-8825 and GP-8826. All plotted station locations have been corrected for topographic effects; i.e., they have been reduced to a horizontal plane.

Only minor HLEM anomalies are identified by this survey at the 100 metre coil-separation. The quadrature-phase component is essentially inactive although the in-phase component does exhibit some anomalous behaviour over a few locations.

In particular, on Lines 300E and 400E, 1200N-1400N, such activity is interpreted as being due to overburden effects (swampy ground). A second overburden-type anomaly is located on Line 100W, 800N - 1100N where positive in-phase responses occur.

A minor HLEM feature does exist however, at both frequencies and in both phases, on Line 200W, 525N. EM characteristics are so subtle as to make a reliable interpretaion difficult, but a very narrow body appears to dip shallowly to the northeast. This single-line feature correlates to a localized VLF anomaly mentioned previously. Although neither anomaly is indicative of a significant accumulation of sulphide mineralization, they do occur in the immediate vicinity of interesting soil geochemical results.

6. CONCLUSIONS

Soil sampling has outlined a copper geochemical anomaly 300m wide by 1000m long, above 213 ppm. A zinc anomaly, above 204 ppm, is coincident with, and extends upslope from, the southwest half of the copper anomaly. A lead anomaly, above 14.5 ppm, is coincident with the northeast half of the copper anomaly. The geochemical trend is at right angles to the geological trend.

The zinc anomaly lies in an area interpreted to be underlain by interbedded rhyolite and andesite. The lead anomaly lies in an area underlain by andesites and dacites.

The traces of chalcopyrite found during mapping do not explain the geochemical anomalies.

There is no evidence, based on geophysical results, of a significant accumulation of massive sulfide mineralization. One minor EM anomaly has, however, been identified. This VLF and HLEM feature coincides with the zinc geochemical anomaly and lies just upslope from the copper anomaly.

7. RECOMMENDATIONS

To resolve the source of the geochemical anomaly trenching would normally be recommended. However, a logging company plans to construct a road across the south end of the claim block and across the geochemically anomalous area, and then log-off the area. This activity will result in exposure of more bedrock than trenching would expose. Therefore, a recommendation is made to re-examine the Soo claims after construction of the logging road.

Inorder to further evaluate the geophysical anomaly on Line 200W, 525N, an additional recommendation is made for detailed horizontal-loop EM with shorter and longer coil-separations as well as multi-frequencies. It would be advantageous to conduct this short program in the spring of 1981 after road construction but before full-scale logging is initiated.

MH/mp

8. STATEMENT OF QUALIFICATIONS

Max. H. Holtby

1. I am a geologist residing at M1402-1600 Beach Avenue, Vancouver, British Columbia.

2. I graduated from the University of British Columbia in 1972 with a B.Sc. Honours degree in Geology and have practised my profession with the following companies:

   Giant Explorations Limited, Vancouver,
   May 1969 - September 1969

   Kennco Explorations (Western) Limited, Vancouver
   May 1970 - September 1970

   Rio Tinto Canadian Exploration Limited, Vancouver
   May 1971 - March 1973

   Rio Tinto Canadian Exploration Limited, Vancouver
   February 1974 to Present

3. I supervised the 1980 geological programme that forms the basis of this report.

4. I am a Fellow in the Geological Association of Canada.

Max Holtby

Max H. Holtby

STATEMENT OF QUALIFICATIONS

Christopher J. Campbell

1. I am a geophysicist residing at 4505 Cove Cliff Road, North Vancouver, British Columbia and am currently employed by Rio Tinto Canadian Exploration Limited of 520-800 West Pender Street, Vancouver, British Columbia as their Regional Geophysicist, Western Canada.

2. I graduated from the University of British Columbia in 1972 with a B.Sc. degree in Geophysics and have practised my profession continuously since that time.

3. I supervised and directed the 1980 geophysical field work carried out on the Nifty 5 mineral claims.

4. I am an active member in good standing of the Society of Exploration Geophysicists, the Canadian Society of Exploration Geopysicists as well as the British Columbia Geophysical Society.

RIO TINTO CANADIAN EXPLORATION LIMITED

C. Campbell

Christopher J. Campbell

9. COST STATEMENT

GENERAL COSTS

Camp Construction		
2 men, Apr. 8 to Apr. 16, 18 man-days @ $49 and 20% benefits		1,058.40
Rental Equipment		
Traeger radio, Apr. 8 to Sep. 15, 48 days @$6	288.00	
Castle Truck rental, 8 days @$26	208.00	
Redhawk truck rental, 26 days @ $25	650.00	1,146.00
Helicopter		
Pacific Helicopters, 12 May- 11 Aug., 6.2 hrs. @ $399	2,473.80	
Pemberton Helicopters, 25 Jul.-15 Sep., 3.5hrs @ $382	1,337.00	
Okanagan Helicopters, 9 Apr.-16 Apr., 4.2 hrs @ $406	1,705.20	5,516.00
Supplies		2,500.00
Fuel		448.00
Grid Construction		
4 men, May 13-May 25, 52 man-days @ $49 and 20% benefits		3,057.60
Food and Accommodation		
70 man-days @ $20		1,400.00
TOTAL GENERAL COSTS		$15,126.00

GEOPHYSICS COSTS

Line Cutting		
Martinson, Aug. 8-Aug. 11, 17.3km @ $160		2,768.00
Salaries & Benefits (20%)		
4 men, Aug. 31-Sep. 15, total 53 man-days @$49, +20%		3,116.40
Rental Equipment		
Scintrex, 2MP-2's (Proton Magnetometer), 21 days @ $25	525.00	
Geonics, 2EM-16's, 21 days @ $7	147.00	
Canadian Mining Geophysics, MR-10, (Base Station Magnetic recorder), 21 days @ $12	252.00	924.00

Report Preparation	600.00
General Costs	
$15,126.00 X 53/109	7,354.84
Food & Accommodation	
53 man-days @ $20	1,060.00
TOTAL GEOPHYSICS COST	$15,823.24

GEOCHEMISTRY COSTS

Salaries and Benefits (20%)		
3 men, May21-May 27, total 21 man days @$49 + 20%		1,234.80
Geochemical Analysis Riocanex Lab		
141 soils for Mo @ $1.50	211.50	
141 soils for Ag, Cu, Pb, Zn @$4	564.00	
644 soils for Ag, Cu, Mo, Pb, Zn, @ $4.65	2,994.60	3,770.10
Report Preparation		700.00
General Costs		
$15,126.00 X 21/109		2,914.18
Food & Accommodation		
21 man days @ $20		420.00
TOTAL GEOCHEMISTRY COSTS		$9,039.08

GEOLOGY COSTS

Salaries & Benefits (20%)	
2 men, May21-Jun 22, Total 35 man-days, @ $49, +20%	2,058.00
Report Preparation	600.00
General Costs	
$15,126.00 X 35/109	4,856.97
Food & Accommodation	
35 man days @ $20	700.00
TOTAL GEOLOGY COSTS	$8,214.97

TOTAL PROJECT COSTS

Geophysics	15,823.24
Geochemistry	9,039.08
Geology	8,214.97
TOTAL	$33,077.29

COSTS APPORTIONED TO CLAIMS

40% to SOO 'A'	13,230.92
60% to SOO 'B'	19,846.37
TOTAL	$33,077.29

N.T.S. 92J/2W

LEGEND

- ■ L.C.P. Legal Corner Post
- Claim Boundaries
- 525 Soil Sample Numbers (Preceeded by 8034)
- NS No Sample
- Swamp

SCALE 1:5000

100 50 0 100 200 300 400 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

SOIL SAMPLE LOCATIONS

SAMPLE NUMBERS PRECEEDED BY 8034

DATE	DRAWN BY	DWG.
DEC. 1980	MHH/sg	GC-8816

LEGEND

■ L.C.P. Legal Corner Post

Claim Boundaries

135 Cu ppm

NS No Sample

Swamp

CONTOUR INTERVALS

Mean + 2 Standard Deviations = 213 ppm

Mean + 4 Standard Deviations = 381 ppm

N.T.S. 92J/2W

SCALE 1:5000

100 50 0 100 200 300 400 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

SOIL SAMPLE LOCATIONS

Cu ppm

DATE	DRAWN BY	DWG.
DEC 1980	MHH / sg	GC-8817


SOO 'A'
SOO 'B'
SOO 'C'
SOO 'D'
TL 1500 N
TL 750 N
SOO RIVER
CAMP
L.C.P.
100 W
200 W
300 W
400 W
500 W
600 W
00
100 E
200 E
300 E
400 E
500 E
600 E
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
8576
LEGEND
■ L.C.P. Legal Corner Post
Claim Boundaries
120 Zn ppm
NS No Sample
Swamp
CONTOUR INTERVAL
Mean + 2 Standard Deviations = 204 ppm
Mean + 4 Standard Deviations = 368 ppm
N.T.S. 92J/2W
SCALE 1:5000
Metres
RIO TINTO CANADIAN EXPLORATION LTD.
SOO CLAIMS
SOIL SAMPLE LOCATIONS
Zn ppm
DATE DEC. 1980
DRAWN BY MHH / dag
DWG. GC-8818

LEGEND

■ L.C.P. Legal Corner Post

Claim Boundaries

7,18,0.5

NS No Sample

Swamp

ND Not Detectable

NOTE: Ag Not Detectable Unless Otherwise Shown

NTS 92J/2W

SCALE 1:5000

100 50 0 100 200 300 400 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

SOIL SAMPLE LOCATIONS
Pb, Mo, Ag ppm

DATE	DRAWN BY	DWG.
DEC 1980	MHH / sg	GC-8819

LEGEND

■ L.C.P. Legal Corner Post

Claim Boundaries

7,18,0.5

NS No Sample

Swamp

ND Not Detectable

NOTE: Ag Not Detectable Unless Otherwise Shown

Pb VALUES CONTOURED

Mean + 2 Standard Deviations = 14.5 ppm

Mean + 4 Standard Deviations = 23.5 ppm

N.T.S. 92J/2W

SCALE 1:5000

100 50 0 100 200 300 400 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

Pb, Mo, Ag ppm
Pb VALUES CONTOURED

DATE	DRAWN BY	DWG.
DEC 1980	MHH / dag	GC-8820

ROCK ANALYSIS

Sample No.	Cu ppm	Zn ppm
8034754	38.0	0.0
8034756	16.0	9.0
8034762	136.0	118.0
8034771	289.0	39.0
8034775	7.0	15.0
8034786	4.0	0.0
8034787	5.0	0.0
8034798	23.0	47.0
8034808	39.0	57.0
8034820	39.0	29.0

LEGEND

CRETACEOUS
Coast Range Intrusives
5 Diorite and Granodiorite

LOWER CRETACEOUS
Gambier Group
4 Quartz - Sericite Schist
3 Andesite
2 Dacite
1 Rhyolite

cp . . . Chalcopyrite
epdt . . . Epidote
diss . . . Disseminated
Lpli . . . Lapilli tuff
py . . . Pyrite
qtz . . . Quartz
ands . . . Andesite
. . . Foliation
. . . Bedding

■ L.C.P. Legal Corner Post
Claim Boundaries
NS No Sample
Swamp

GROUP 3 : Andesite with lesser dacite and quartz - sericite schist

GROUP 2 : Andesite and dacite with minor rhyolite

GROUP 1 : Interbedded rhyolite and andesite with minor dacite

N.T.S. 92J/2W

SCALE 1:5000

100 50 0 100 200 300 400 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

GEOLOGY

DATE	DRAWN BY	DWG.
DEC 1980	MHH / sg	G - 8822

LEGEND

Ground Magnetometer Survey Conducted by Proton Precession Magnetometer :

Magnetic Values Represent Total Magnetic Field

Magnetic Datum : 56000 gamma

Contour Interval : 100 gamma

N.T.S. 92J/2W

SCALE 1:2000

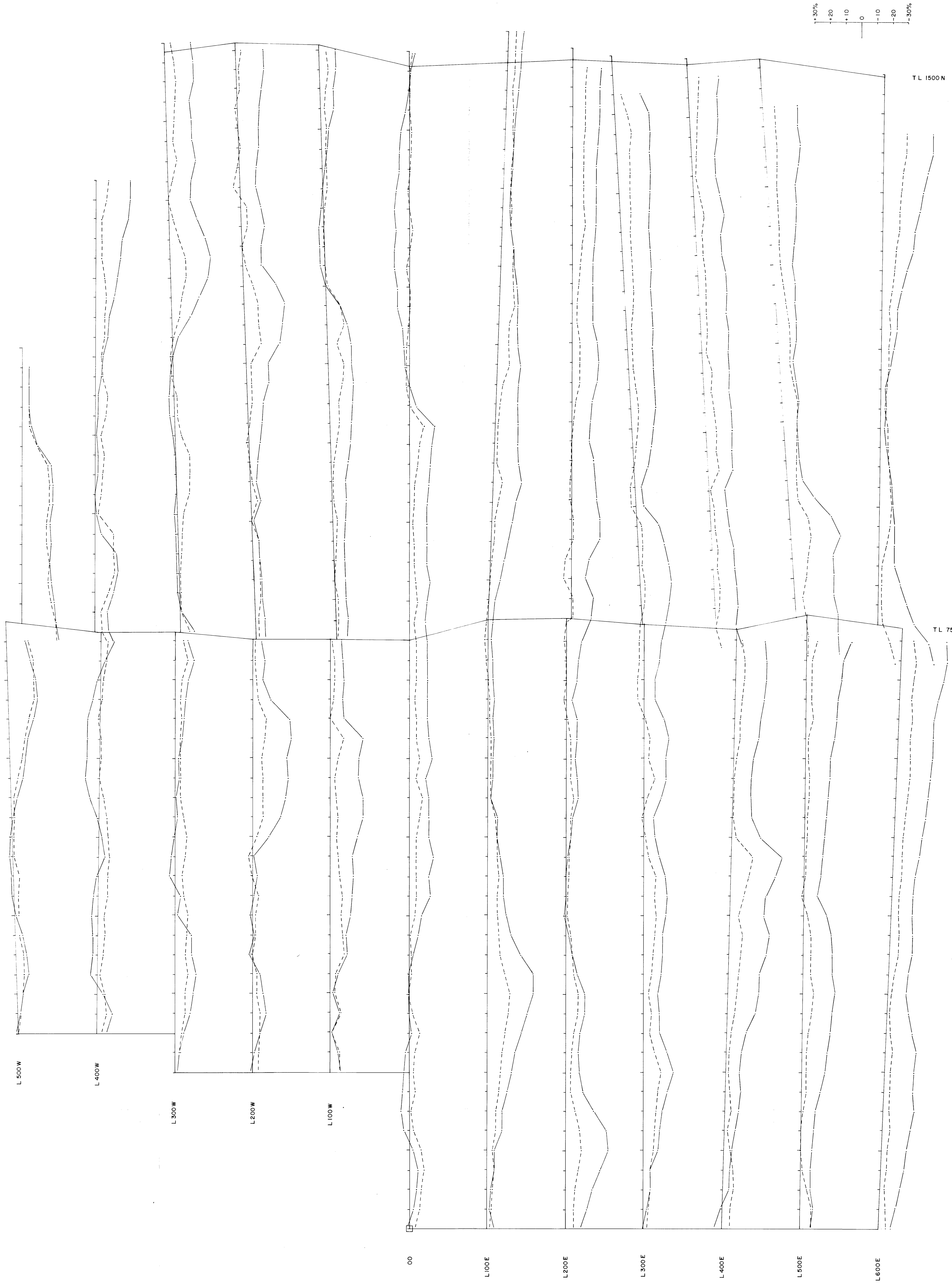
50 0 50 100 150 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD

DATE	DRAWN BY	DWG.
OCT. 1980	CJC / sg	GP - 8788



N
NLK

LEGEND

VLF-EM Survey Conducted Via Transmission from Seattle NLK, 18.6 KHz

Station Interval . . . 25 m

SCALE : 1:2000 Horizontal
1 cm : 10% Vertical

NTS 92J/2 W

SCALE 1:2000

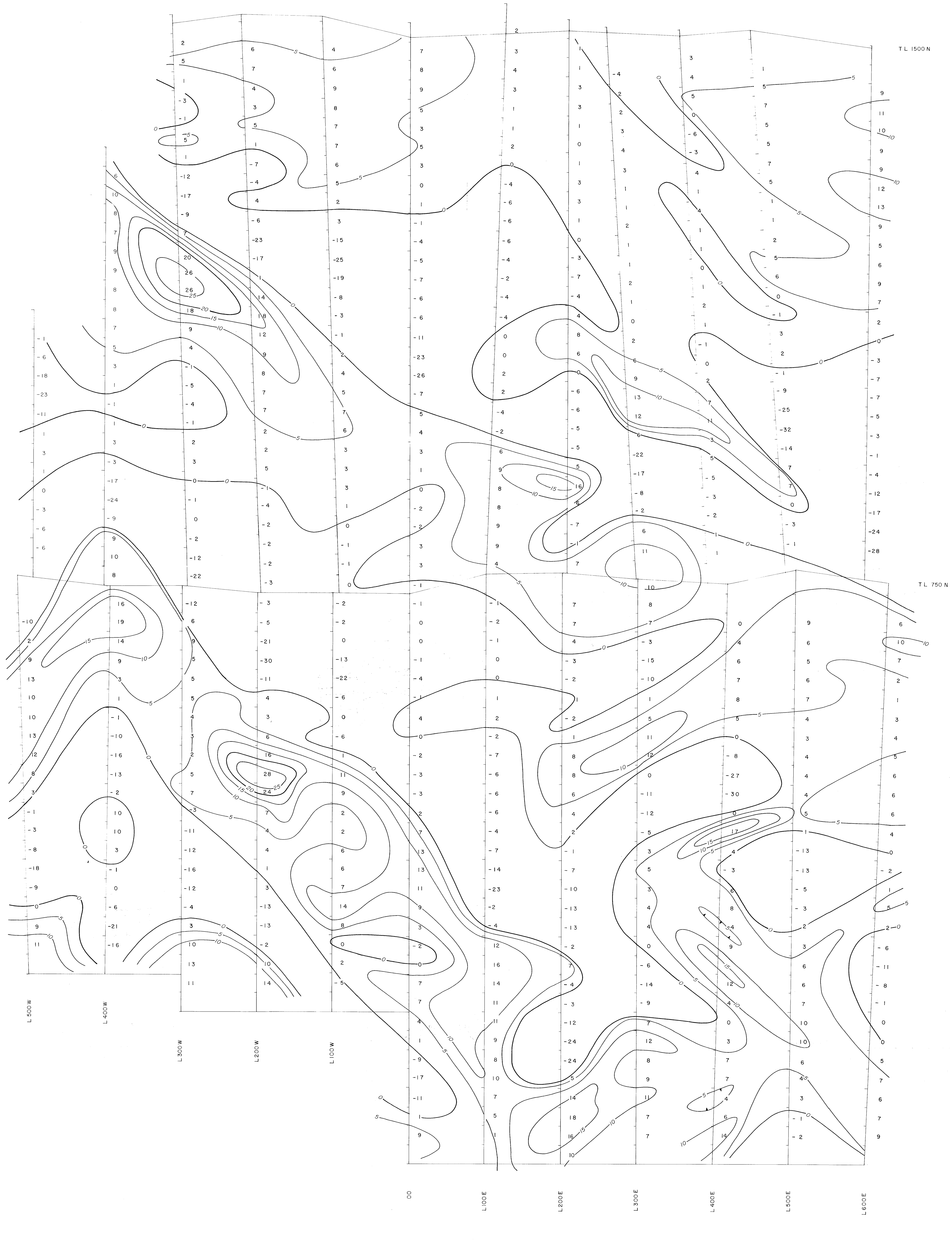
50 0 50 100 150 Metres

RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

VLF - EM PROFILES

DATE	DRAWN BY	DWG.
DEC. 1980	MHH / sg	GP-8823



N
NLK

LEGEND

VLF-EM Survey Conducted Via Transmission from Seattle NLK, 18.6 KHz

Data Filtered Using Standard Fraser Filter: $F_{2,3} = (\theta_3 + \theta_4) - (\theta_1 + \theta_2)$

Contour Interval . . . 5%

Station Interval . . . 25 m

NTS 92J/2W

SCALE 1:2000

50 0 50 100 150 Metres

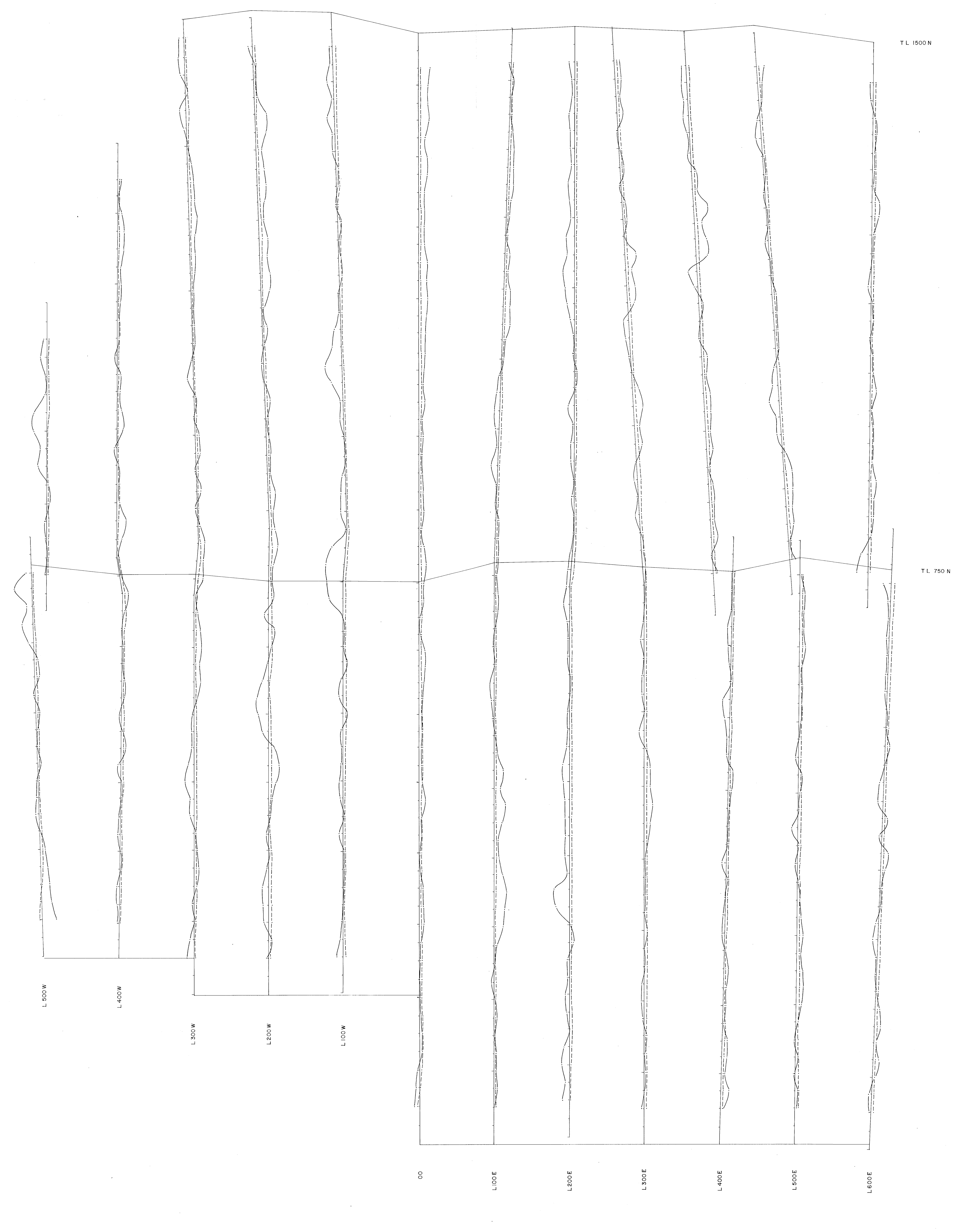
RIO TINTO CANADIAN EXPLORATION LTD.

SOO CLAIMS

VLF - EM

FRASER FILTER CONTOUR MAP

DATE	DRAWN BY	DWG.
DEC. 1980	MHH/sg	GP-8824



LEGEND

HLEM Survey : MaxMin II

Coil Separation . . . 100 metres

Vertical Scale . . . 1cm = 10 %

444 Hz ——— In-Phase

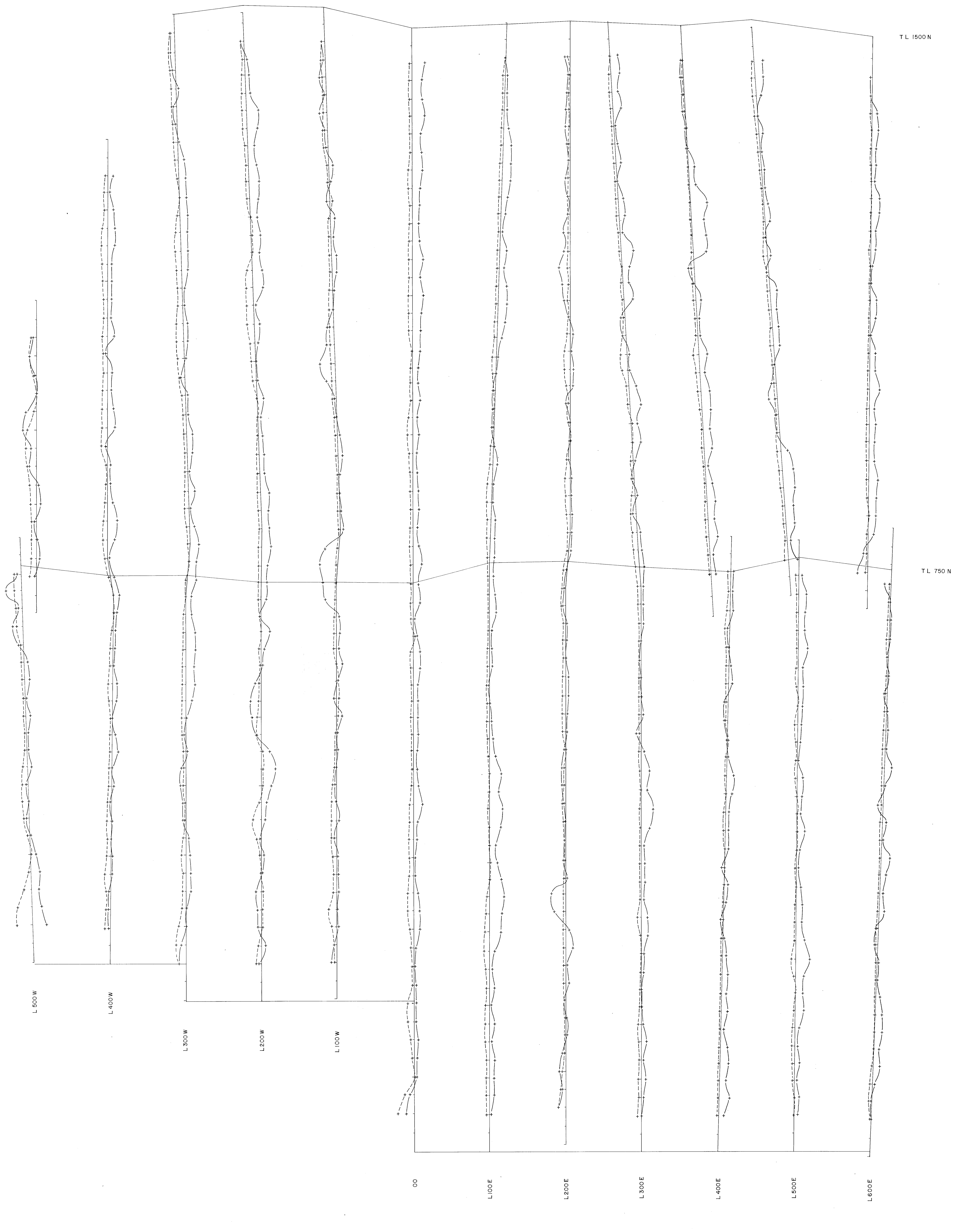
444 Hz — — — Quadrature

N.T.S. 92 J / 2

SCALE 1:2000

50 0 50 100 150 Metres

RIO TINTO CANADIAN EXPLORATION LTD.		
SOO CLAIMS		
HORIZONTAL - LOOP EM PROFILES FREQUENCY 444 Hz		
DATE DEC. 1980	DRAWN BY CJC / sg	DWG. GP - 8825



LEGEND

HLEM Survey: MaxMin II

Coil Separation . . . 100 metres

Vertical Scale . . . 1cm = 10 %

1777 Hz +———+ In-Phase
+– – –+ Quadrature

N.T.S. 92 J / 2

SCALE 1:2000

50 0 50 100 150 Metres

RIO TINTO CANADIAN EXPLORATION LTD.		
SOO CLAIMS		
HORIZONTAL - LOOP EM PROFILES FREQUENCY 1777 Hz		
DATE DEC. 1980	DRAWN BY CJC / sg	DWG. GP - 8826