

5524

93F/7E & 8W

REPORT ON
GEOPHYSICAL SURVEYS, #5524
C CLAIM GROUP
CHUTANLI LAKE AREA,
BRITISH COLUMBIA
JUNE 28, 1975.
93F/7E, 8W

L. H. Beckmann

CLAIMS

C-6 to C-12

OWNER: RIO TINTO

C 17, 19, 21 and C23

OPERATOR: RIO TINTO

C-41 to C-44

LOCATION

2 mile west of Chutanli Lake

N.T.S. 93-F-7

Omineca Mining Division

Fieldwork Dates

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5524 M.P.

May 22 to June 28, 1975

REPORT ON
GEOPHYSICAL SURVEYS
C CLAIM GROUP
CHUTANLI LAKE AREA, BRITISH COLUMBIA
JUNE 28, 1975

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REPORT ON
AN INDUCED POLARIZATION AND
MAGNETOMETER SURVEY
NTS 93-F-7
CHUTANLI LAKE AREA, BRITISH COLUMBIA

SUMMARY

An induced polarization and magnetometer survey carried out in 1969 and reported on in internal reports, had located sizable areas of anomalous chargeabilities with correlating low resistivities. An airborne magnetometer survey was also carried out and the data were used for general area selection within the Chutanli Lake area. It was only after realization that a minor aeromagnetic anomaly deviated from the general trend but correlated very well with an earlier indicated soil geochemical copper anomaly, that it was found that this area had not been tested with induced polarization.

The present 1975 induced polarization and magnetometer survey covering the area in question is presented as an extension.

The correlating detected anomaly is at best 400 feet wide and 2,000 feet long and is indicated by chargeabilities of 1.5 times background. Other higher chargeabilities were also detected elsewhere but are believed to represent much the same horizon as drill tested in 1969.

REPORT ON
AN INDUCED POLARIZATION AND
MAGNETOMETER SURVEY
NTS 93-F-7
CHUTANLI LAKE AREA, BRITISH COLUMBIA

INTRODUCTION

During the period from May 22 to June 8, 1975,, geophysical field parties under the direction of Mr. D. N. Sexsmith carried out an induced polarization and magnetometer survey over certain C claims in the Chutanli Lake area, British Columbia.

The personnel were on the staff of Rio Tinto Canadian Exploration Limited, in fact four members mobilized from Toronto prior to the indicated dates.

Data plotting was carried out in the Rio Tinto offices and is indicated as an extension to an earlier, 1969 survey. The writer directed the present survey from June 3 to June 8, 1975 on the property.

The surveyed area lies 1 mile west of the west end of Chutanli Lake in the Interior Plateau area of British Columbia. Access is by float aircraft to Chutanli Lake, thence by helicopter or foot to the claims. The topography of the survey area is hilly and treed. The claims covered in whole or part, by these surveys are listed on the title page of this report and are shown on DWG L-6010 B. These claims are held by Rio Tinto

Canadian Exploration Limited.

Scintrex Mk VI time-domain (pulse-type) induced polarization equipment was employed on this property. The transmitting unit had a rating of 2.5 kw. and equal on and off times of 2.0 seconds. The receiving unit was a remote, ground-pulse type triggered by the rising and falling primary-voltages set up in the ground by the transmitter. The integration of the transient polarization voltages takes place for 0.65 seconds after a 0.45 second delay time following the termination of the current -on pulse.

The purpose of an induced polarization survey is to map the subsurface distribution of metallicly conducting mineralization near the lines covered. In the present area, such mineralization could include chalcopyrite, bornite, pyrite and other sulphide minerals. As well, metallic conductors such as magnetite and graphite can give chargeability responses not always distinguishable from sulphide mineralization. These latter anomalous sources are not expected to occur on this property.

For the present survey, five grid lines were laid out or extended, orientated east-west. The interline spacing was 800 feet or 240 meters.

The three electrode array was employed for the survey. For this electrode array, one current electrode and two potential electrodes traverse the profiles with an interelectrode spacing called "a". The second or "infinite" current electrode is placed a distance greater than $5 \times "a"$ from the measuring point and the near potential electrode.

For the present survey, observations were taken for a=200 feet or 60 meters and a=400 feet or 120 meters. The distance between observations being 200 feet or 60 meters.

Total line miles or kilometers for the present survey were:

- a) "a" = 200 feet or 60 meters 4.47 miles or 7.15 km.
- b) "a" = 400 feet or 120 meters 3.67 miles or 5.88 km.

The previous magnetometer survey was extended totaling 2.16 miles or 3.45 km using a Scintrex MF 2 vertical force fluxgate magnetometer.

The presented data were corrected for diurnal drift and tied in and adjusted to the 1969 survey data.

GEOLOGY

The geology of the area including and surrounding the present property is discussed in G. S. C. Memoir 324, "Nechako River Map Area" by H. W. Tripper, 1963.

Interest in the property arose from a geochemical soil sampling programme, the results of which are given in a report by M. B. Mehrtens, Ph. D, dated August, 1970.

A copper anomaly has been located in the central part of the geophysical survey.

PRESENTATION OF RESULTS

The results of the induced polarization survey are shown on 5 accompanying drawings, all on the scale of 1 inch = 400 feet or 1: 4,800.

Drawing I.P. 700 9-A , and I.P. 7007-A are chargeability contour plans for the 200' and 400' electrode spacings respectively. The actual chargeability values have been shown contoured with a 5.0 millisecond contour interval.

Drawings I.P. 7010-A and I.P. 7008-A are resistivity contour plans for the 200' and 400' electrode spacings respectively. The apparent resistivity values are shown in ohm-meters.

Drawing I.P. 7011-A show the chargeability and resistivity results in profile form.

Drawing M-7013-A and M-7014-A are magnetometer contour and profile plans respectively.

The contour interval is 100 gammas from 0 to 1.000 gammas. The vertical scale for the profiles is 1" = 1,000 gammas.

DISCUSSION OF RESULTS

The chargeability results, in particular the western extensions of lines 16N, 8N and line 00, indicate, that the background chargeability values are generally less than 10.0 milliseconds and locally (Line 16N) around 5.0 milliseconds.

Since deposits of low concentrations of copper and molybdenum sulphides of sufficient dimensions may have economic significance, zones exhibiting chargeabilities in excess of 10.0 milliseconds and occurring within a low background area may be considered worthy of further investigation.

An area of 1 to 1 1/2 times background chargeability

was located by the present survey, it correlates well with an earlier detected copper geochemical soil anomaly, however apparent resistivities although considered very low, rise slightly over the anomalous area, suggesting perhaps a change in the underlying rock formation.

This anomaly can be traced from line 8N 12 + 00W - 6 + 00W to line 00 10 + 00W - 3 + 00W to line 8S1 + 00W - 3 + 00E and back to line 00 9 + 00E - 13 + 00E.

A minor rise in magnetic susceptibilities is in correlation with the anomalous zone.

Other areas, in particular the eastern extension of lines 16S and 16N gave rise to chargeabilities of much higher amplitude.

It appears to the writer that this zone seems to envelop the target area and is indicative of mineral concentration within rock units tested by diamond drilling during the 1969 programme.

CONCLUSIONS

The induced polarization survey has located a slightly anomalous area thought to contain from 1 to 1.5% sulphides by volume, directly correlating with an earlier located soil geochemical copper anomaly.

RECOMMENDATION

Although the moderate chargeability anomaly detected by the present survey is in correlation with a soil geochemistry

copper anomaly, the indicated sulphide content by volume, remains fairly low. Consideration should be given to test this anomaly by diamond drilling.



Toronto, Ont.
June 28, 1975.

H. Beckmann

LIST OF PERSONNEL

D. N. Sexsmith	TORONTO	May 19-June 8, 1975
J. Lindsay	TORONTO	May 19-June 8, 1975
R. Armstrong	TORONTO	May 20-June 8, 1975
J. Flanagan	TORONTO	May 20-June 8, 1975
H. Beckmann	TORONTO	June 3-June 8, 1975
R. MacGregor	VANCOUVER	May 20-June 3, 1975

QUALIFICATION OF GEOPHYSICAL STAFF MEMBER
RIO TINTO CANADIAN EXPLORATION LIMITED

H. Beckmann

Background is primarily electronics (Radio College of Canada)

Starting as Instrument Operator, I have worked with Rio Tinto Canadian Exploration Limited since late 1955, under the supervision of several geophysicists (H. Winkler, D.M. Wagg, J. B. Boniwell and at present with Dr. H. O. Seigel, as consultant).

I have operated and taken part in airborne surveys, including Phase EM, MultiFrequency EM, Input EM, Radio Phase EM, Turam and Magnetometer Surveys.

On ground follow-up or property surveys, I have conducted Horizontal - Vertical Loop EM, Turair EM, Time Domain and Frequency Domain IP, various Magnetometer, Gravity, Self Potential Resistivity and down-hole IP and EM surveys and interpreted and reported on all above mentioned surveys.

Since 1965, I have been in charge of all geophysical surveys for Rio Tinto Canadian Exploration Limited.

I am a member of the European Association of Exploration Geophysicists and an Associate of the American Society of Exploration Geophysicists.

H. Beckmann

August 22, 1972

H. Beckmann

CHUTANLI PROJECT
 INDUCED POLARIZATION & MAGNETOMETER SURVEY
 20 May - 28 June 1975

COSTS STATEMENT

(a) WAGES & SALARIES:

<u>Name</u>	<u>Dates</u>	<u>Days</u>	<u>Rate</u>	<u>Total</u>
D. Sexsmith	19 May - 8 Jun	21	45.00	945.00
J. Lindsay	19 May - 8 Jun	21	33.00	693.00
R. Armstrong	20 May - 8 Jun	20	28.00	560.00
J. Flanagan	20 May - 8 Jun	20	26.50	530.00
H. Beckmann	3 Jun - 8 Jun	6	63.00	378.00
R. MacGregor	20 May - 3 Jun	15	29.00	<u>435.00</u>
				3,541.00

(b) EMPLOYEE BENEFITS:

708.00

(c) DRAFTING & REPORT PREPARATION:

768.50

(d) FOOD & ACCOMMODATION:

666.00

(e) SUPPLIES:

523.00

(f) TRAVEL:

Fixed-wing (Beaver)	1,188.00	
Truck Rental (Tilden) 1 month	1,105.00	
Fixed-wing (Northern Thunderbird)	<u>396.00</u>	2,689.00

(g) FUEL:

165.00

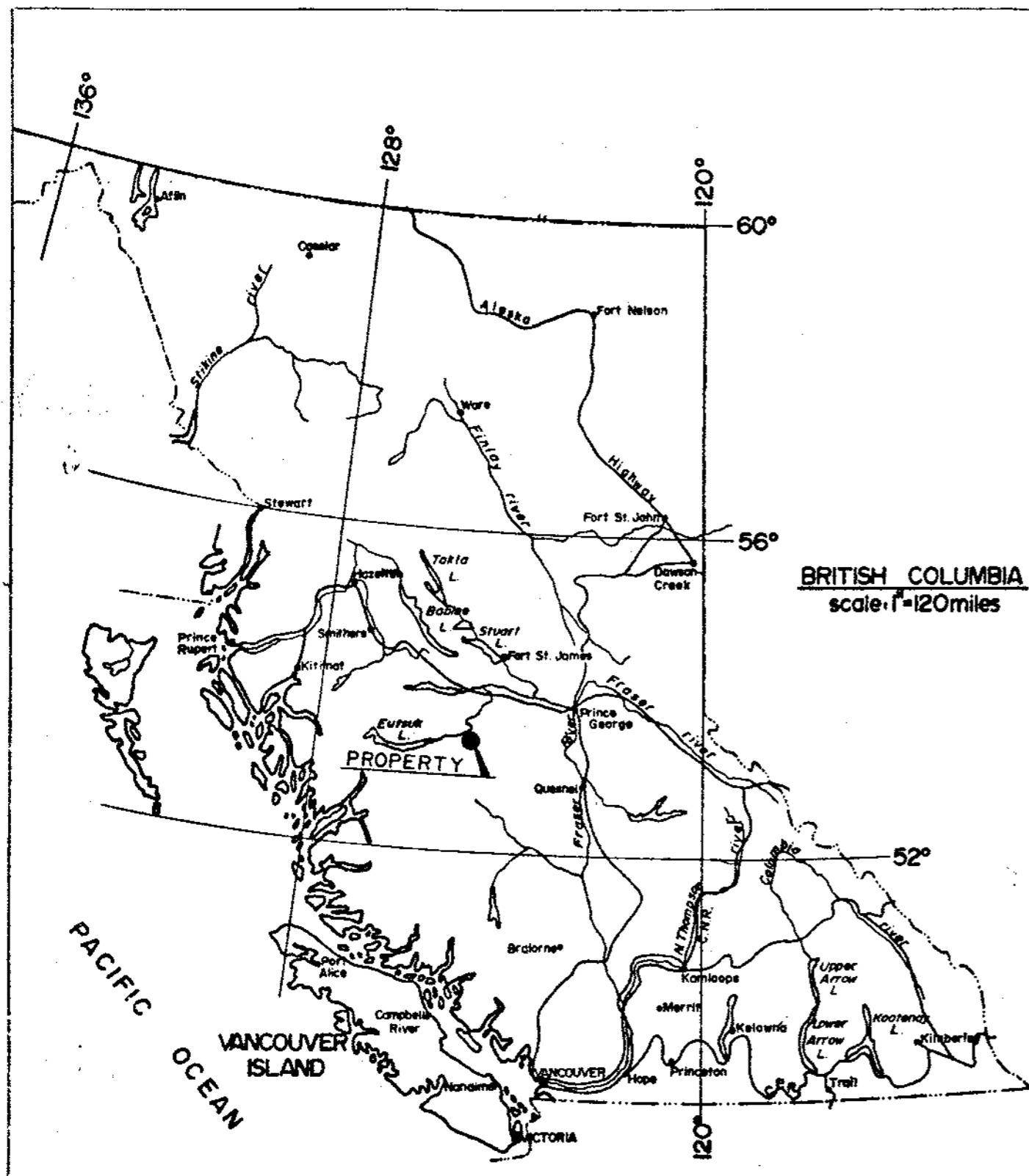
(h) EQUIPMENT RENTAL:

I.P. (20 Days)	500.00	
Wire (20 Days)	100.00	
Magnetometer (20 Days)	200.00	
Repairs & Maintenance	<u>399.00</u>	1,199.00

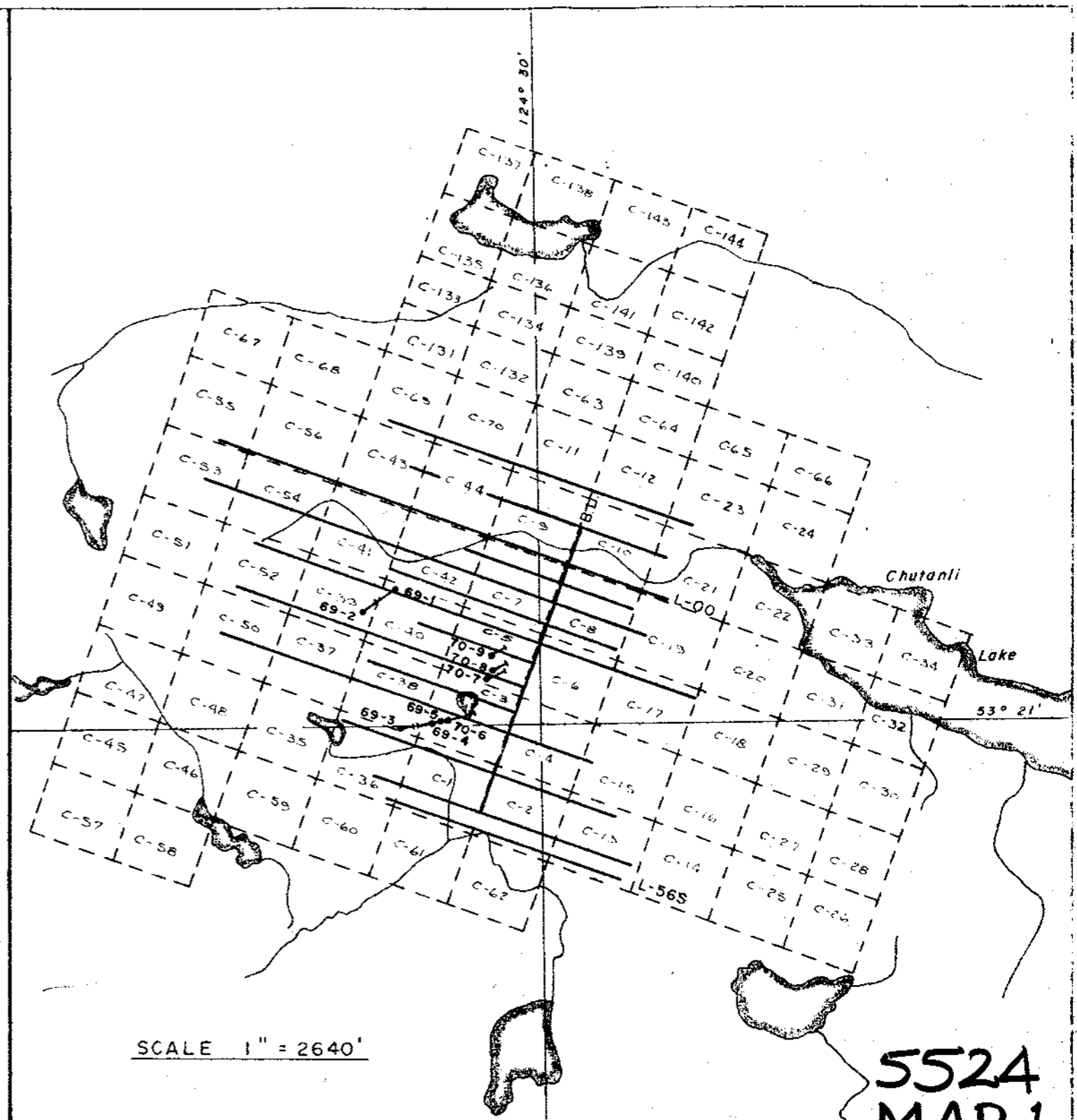
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SE:rl

Spurlin Edwards



BRITISH COLUMBIA
 scale: 1" = 120 miles

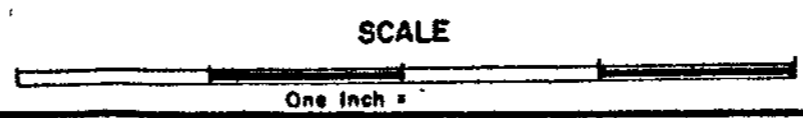


SCALE 1" = 2640'

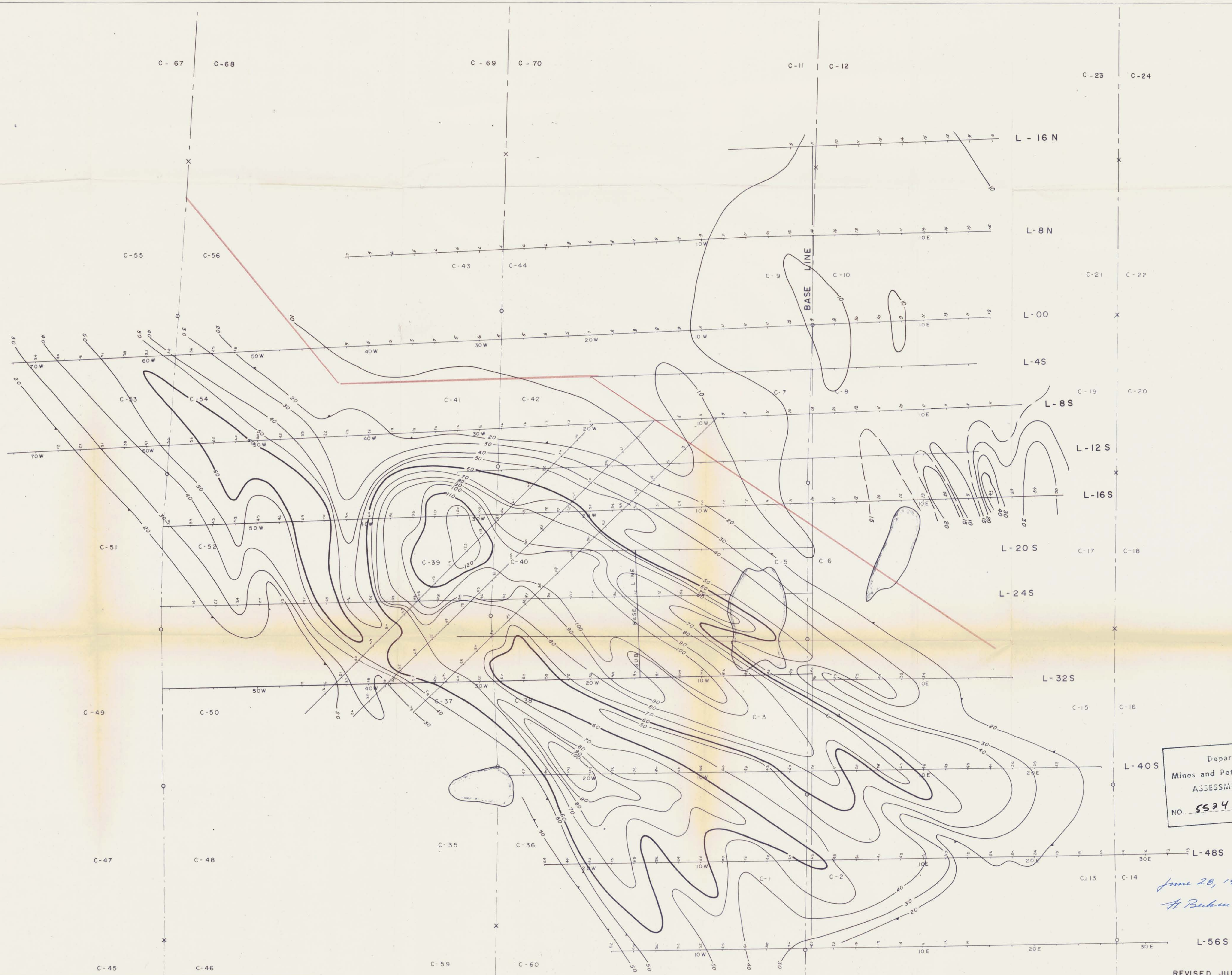
5524
MAP 1

Department of
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 NO. **5524** MAP **1**

↙ Diamond Drill Hole Location



RIO TINTO CANADIAN EXPLORATION LTD.
 CHUTANLI LAKE PROJECT B.C.
 MAP SHOWING LOCATION
 OF CLAIMS & D.D. HOLES
 Oct., 1969 / r.w.r. DWG L-6010b



Department of
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ASSESSMENT REPORT
NO. 5524 MAP 2.

June 28, 1975
H. Behrmann

L-56S 5524
MAP 2

REVISED JUNE - 1975

Legend

Value in Milliseconds

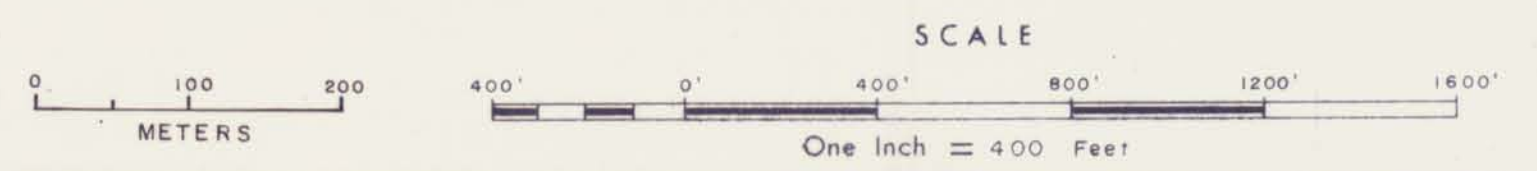
20	Millisecond contour interval
30	" " " "
40	" " " "
50	" " " "
60	" " " "
70	" " " "

Chargeability low

NOTES: Three electrode array
400' Electrode separation
Moving current electrode WEST

○, X Claim post located, projected

N.T.S.
93-F-7



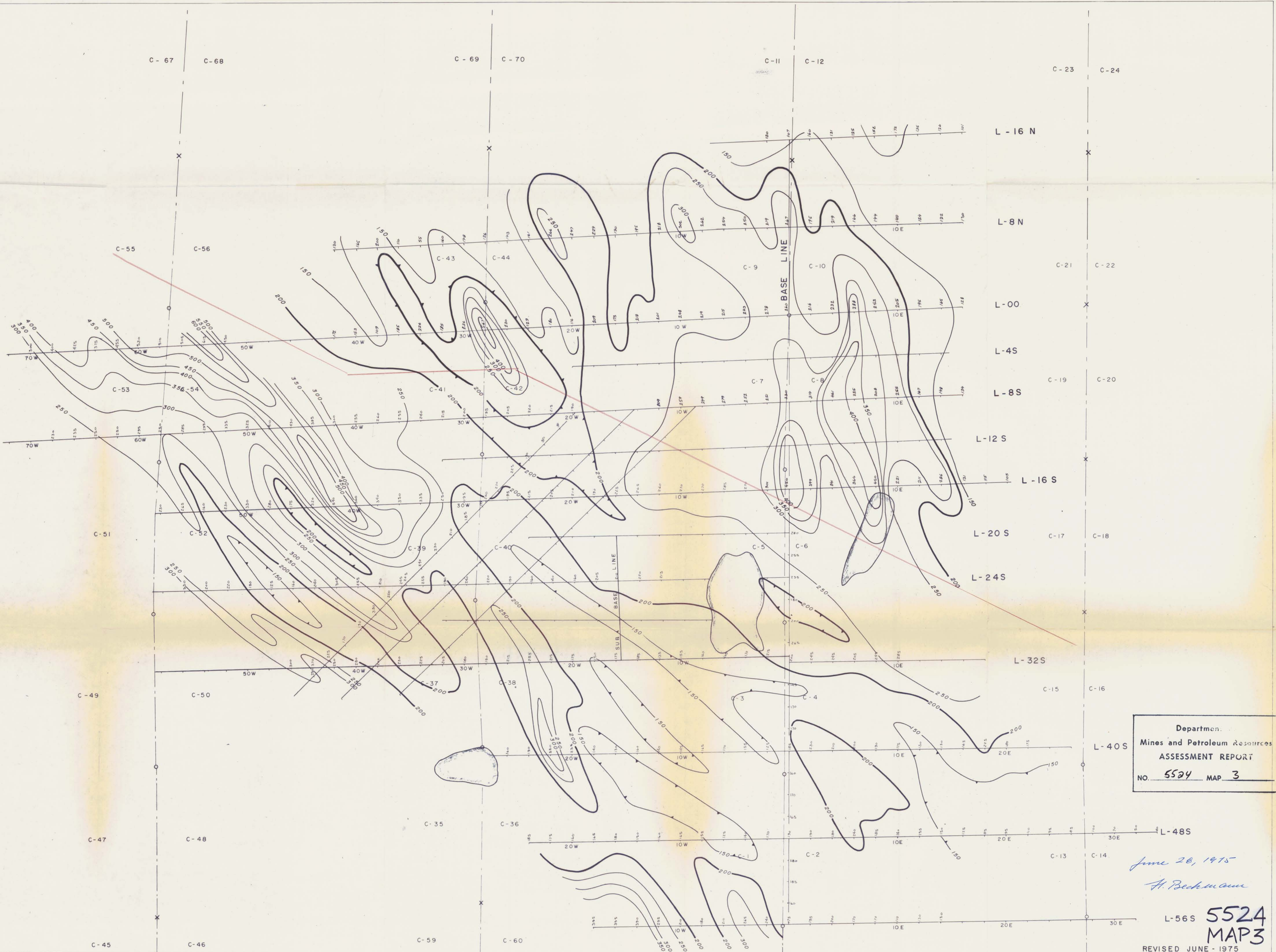
RIO TINTO CANADIAN EXPLORATION LIMITED

CHUTANLI LAKE PROJECT BC

CHARGEABILITY CONTOUR PLAN

400' SPACING

OCT, 69 H.B/rwr DWG. I.P.-7007-A



Department
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 5524 MAP 3

June 20, 1975
 H. Beckmann

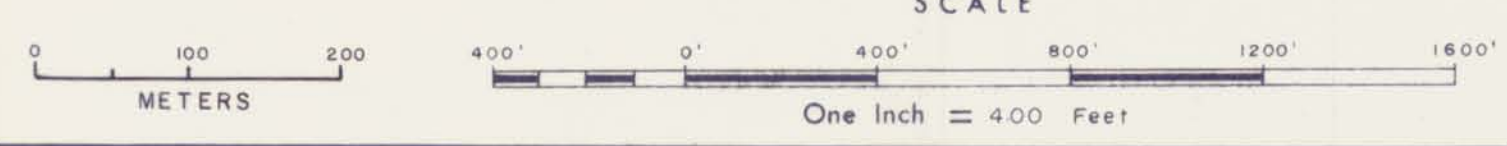
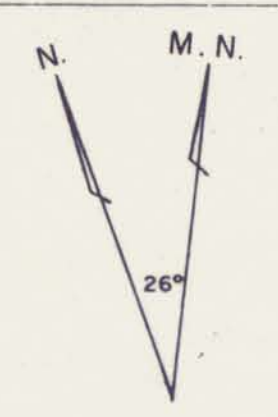
L-56S 5524
 MAP 3

REVISED JUNE - 1975

Legend:
 Value in Ohm-meters
 Contour interval 50 Ohm-meters
 150 Ohm-meter contour interval
 200 " " "
 250 " " "
 300 " " "
 350 " " "

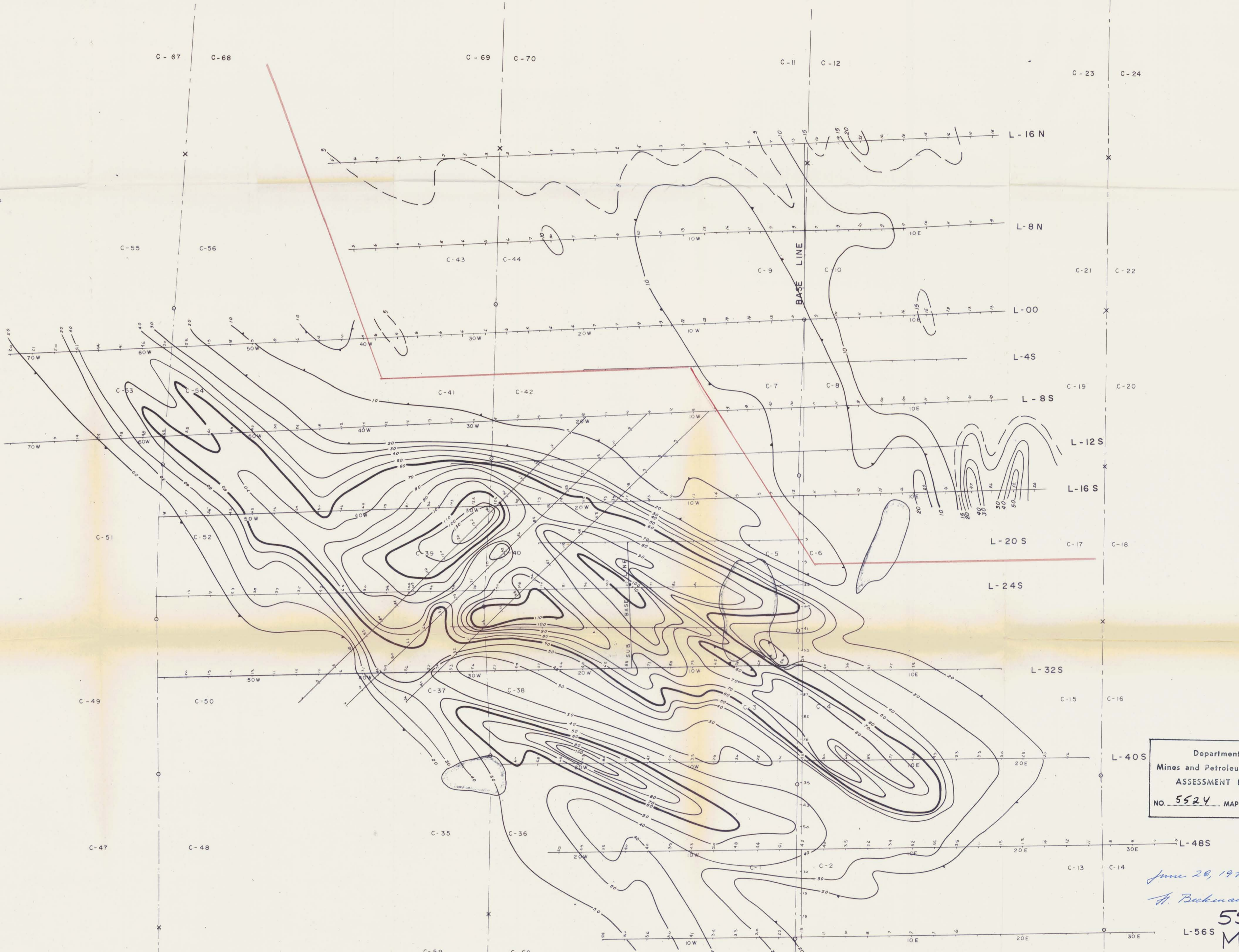
Resistivity low
 NOTE: Three electrode array
 40' Electrode separation
 Moving current electrode WEST

O, X Claim post located, projected



N.T.S.
 93-F-7

RIO TINTO CANADIAN EXPLORATION LIMITED
 CHUTANLI LAKE PROJECT B.C.
RESISTIVITY CONTOUR PLAN
 400' SPACING
 OCT, 69 H.B/rwr DWG. IP-7008-A



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5524 MAP 4

June 20, 1975
H. Beckmann
5524
MAP 4
L-56S

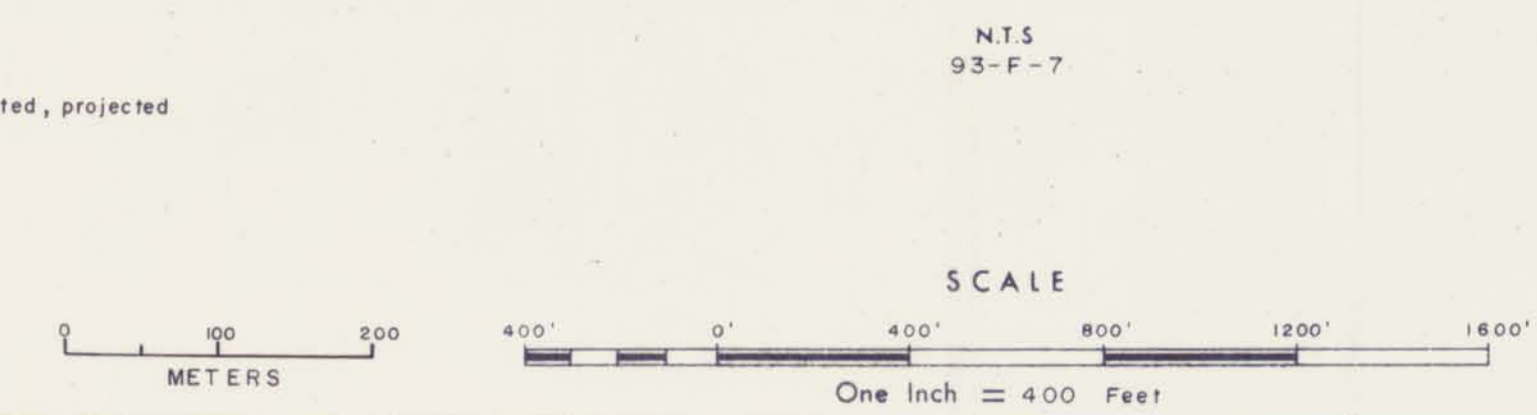
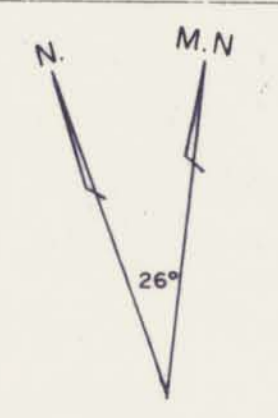
REVISED JUNE - 1975

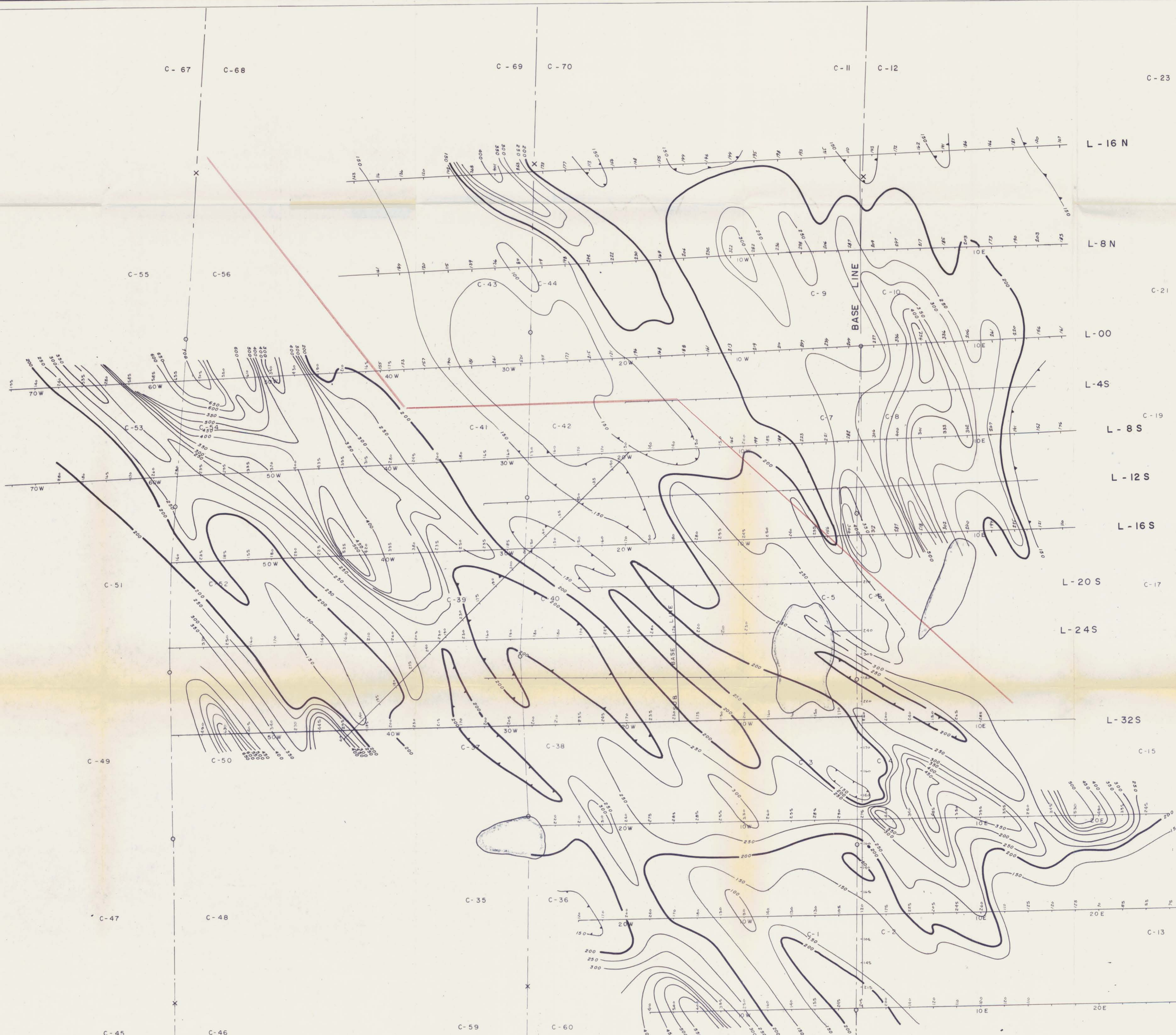
RIO TINTO CANADIAN EXPLORATION LIMITED
CHUTANLI LAKE PROJECT BC
CHARGEABILITY CONTOUR PLAN
200' SPACING
OCT, 69 H.B./rwr DWG. IP-7009-A

Legend
Value in Milliseconds
Contour interval 10 Milliseconds
20 Millisecond contour interval
30 " " "
40 " " "
50 " " "
60 " " "
70 " " "

Chargeability low
NOTE: Three electrode array
200' electrode separation
Moving current electrode WEST

O, X Claim post located, projected





Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
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June 28, 1975
H. Beckmann

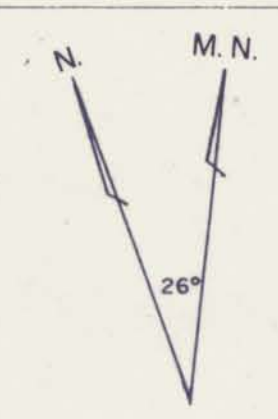
L-56S 5524
MAP 5

REVISED JUNE - 1975

RIO TINTO CANADIAN EXPLORATION LIMITED
CHUTANLI LAKE PROJECT BC

RESISTIVITY CONTOUR PLAN
200' SPACING

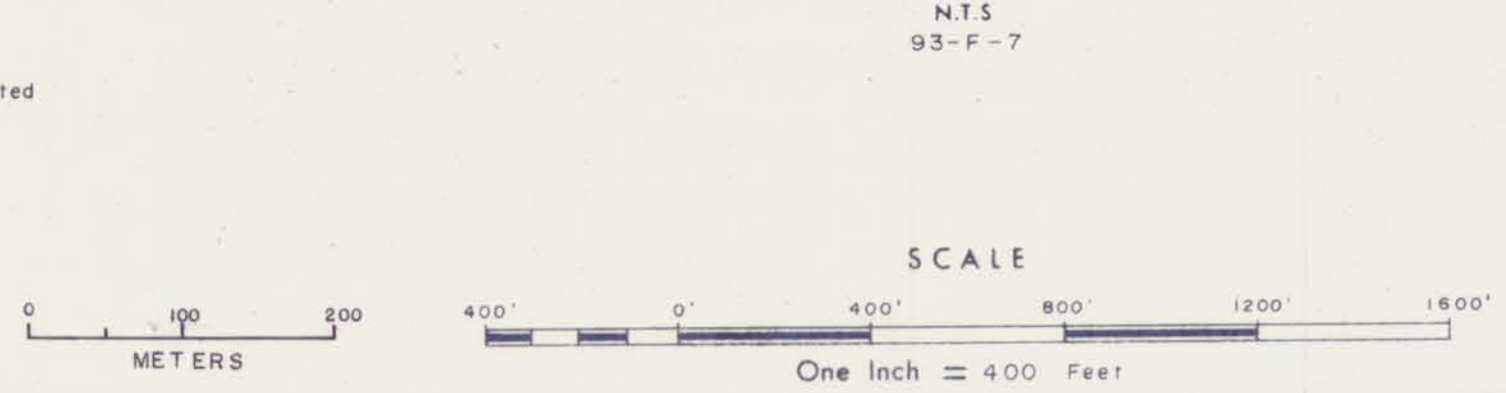
OCT, 69 H.B./rwr DWG. IP-7010-A

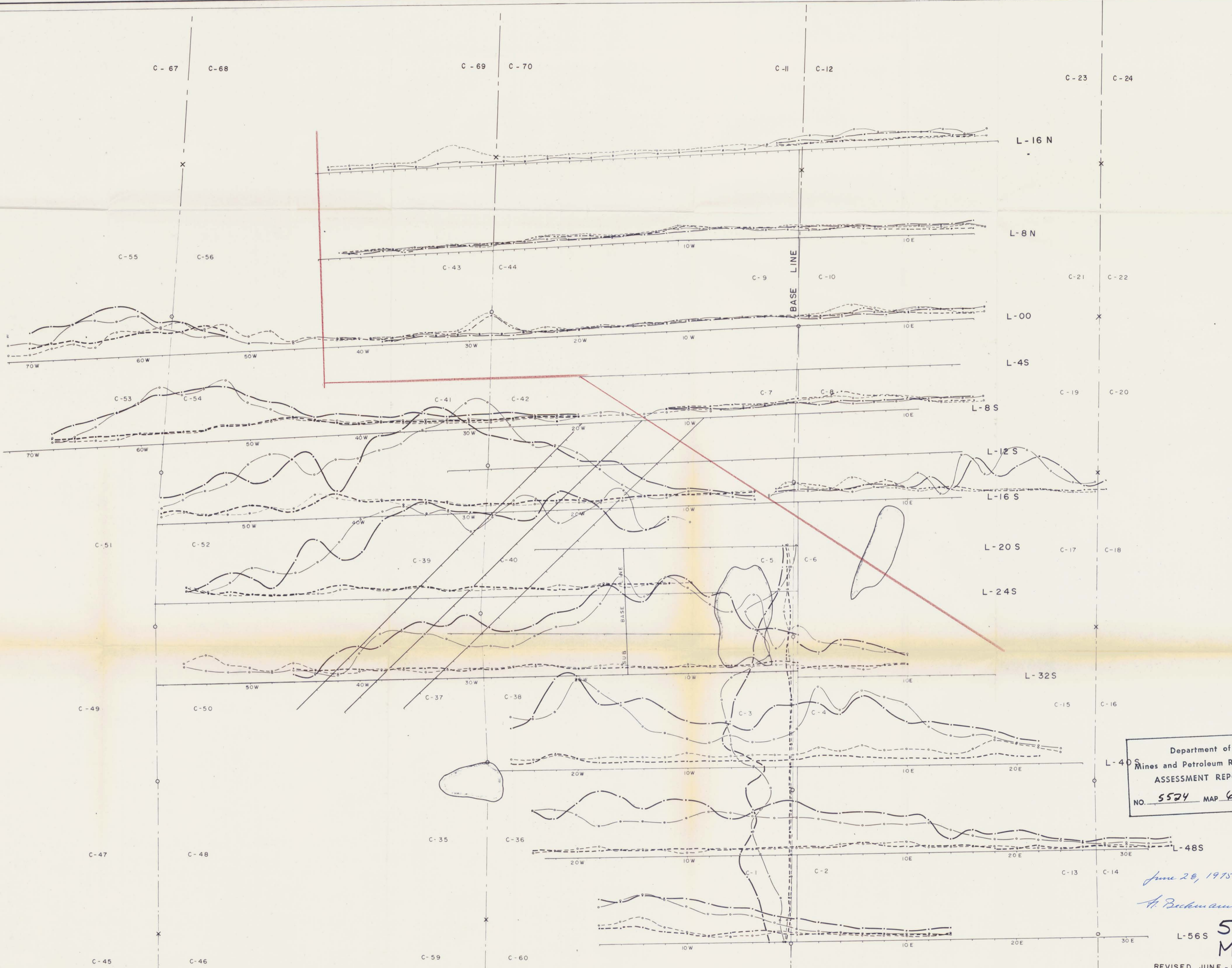


Legend
Value in Ohm-meters
Contour interval 50 Ohm-meters
150 Ohm-meter contour interval
200 " " "
250 " " "
300 " " "
350 " " "

Resistivity low
NOTE: Three electrode array
200' Electrode separation
Moving current electrode WEST

○, X Claim post located, projected



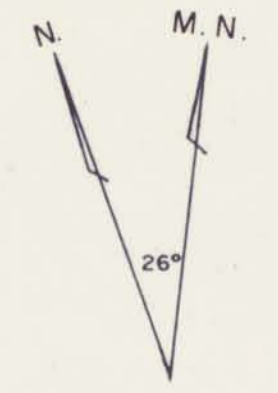


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5524 MAP 6

June 28, 1975
H. Beckman

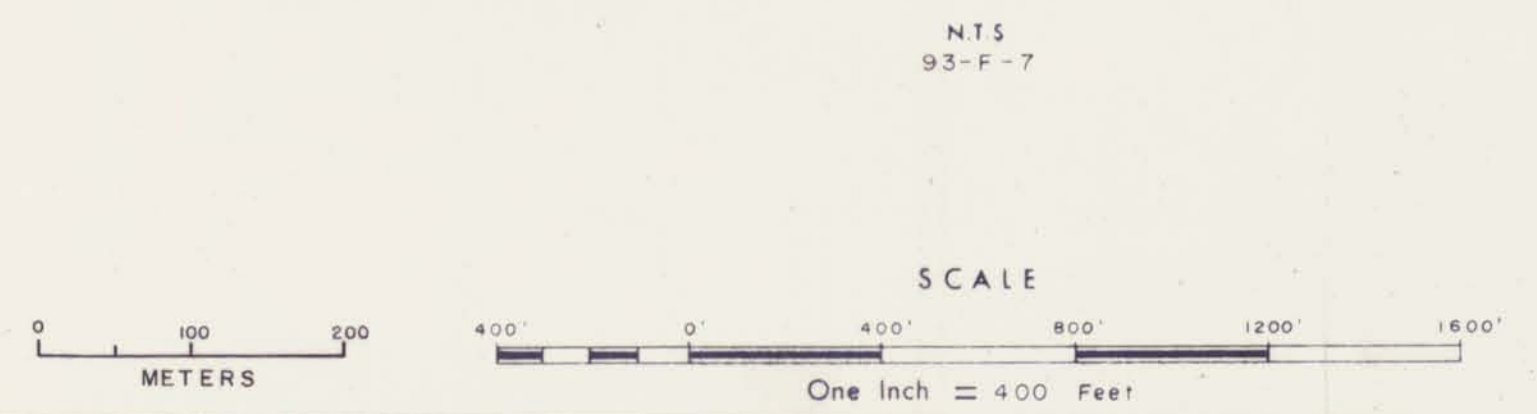
L-56 S
5524
MAP 6

REVISED JUNE - 1975

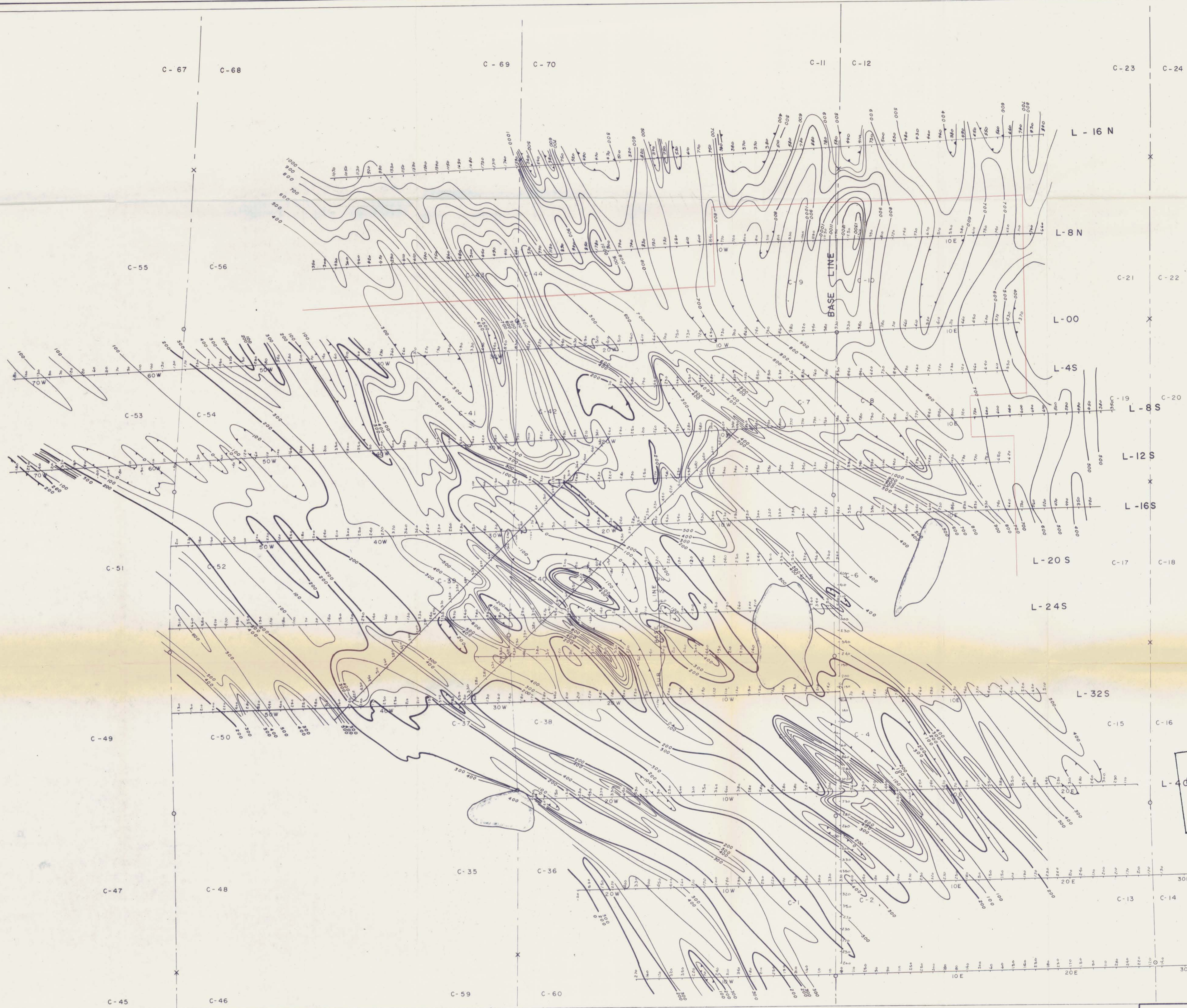


Legend:
 Chargeability Profile Scale 1" = 50 milliseconds
 Electrode Spacing a = 400' ————
 a = 200' - - - - -
 Resistivity Profile Scale 1" = 1000 ohm-meters
 Electrode Spacing a = 400' ————
 a = 200' - - - - -
 NOTE: Three Electrode Array
 Moving current electrode WEST

O, X Claim post located, projected



RIO TINTO CANADIAN EXPLORATION LIMITED
 CHUTANLI LAKE PROJECT BC
 CHARGEABILITY & RESISTIVITY
 PROFILE PLAN
 OCT, 69 H.B./rwr DWG. IP. - 7011-A



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 5524 MAP 7

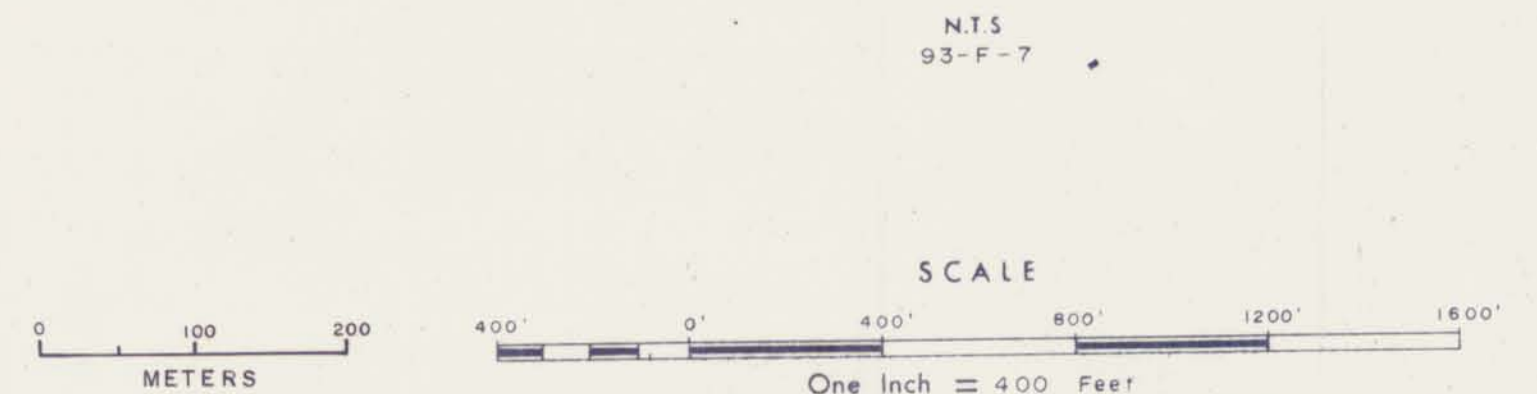
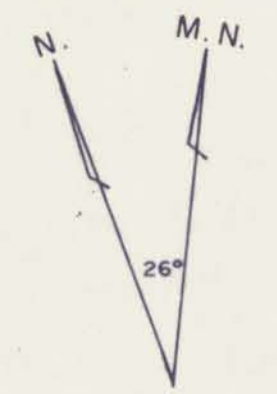
June 20, 1975
H. Buchanan

L-56S 5524
 MAP 7

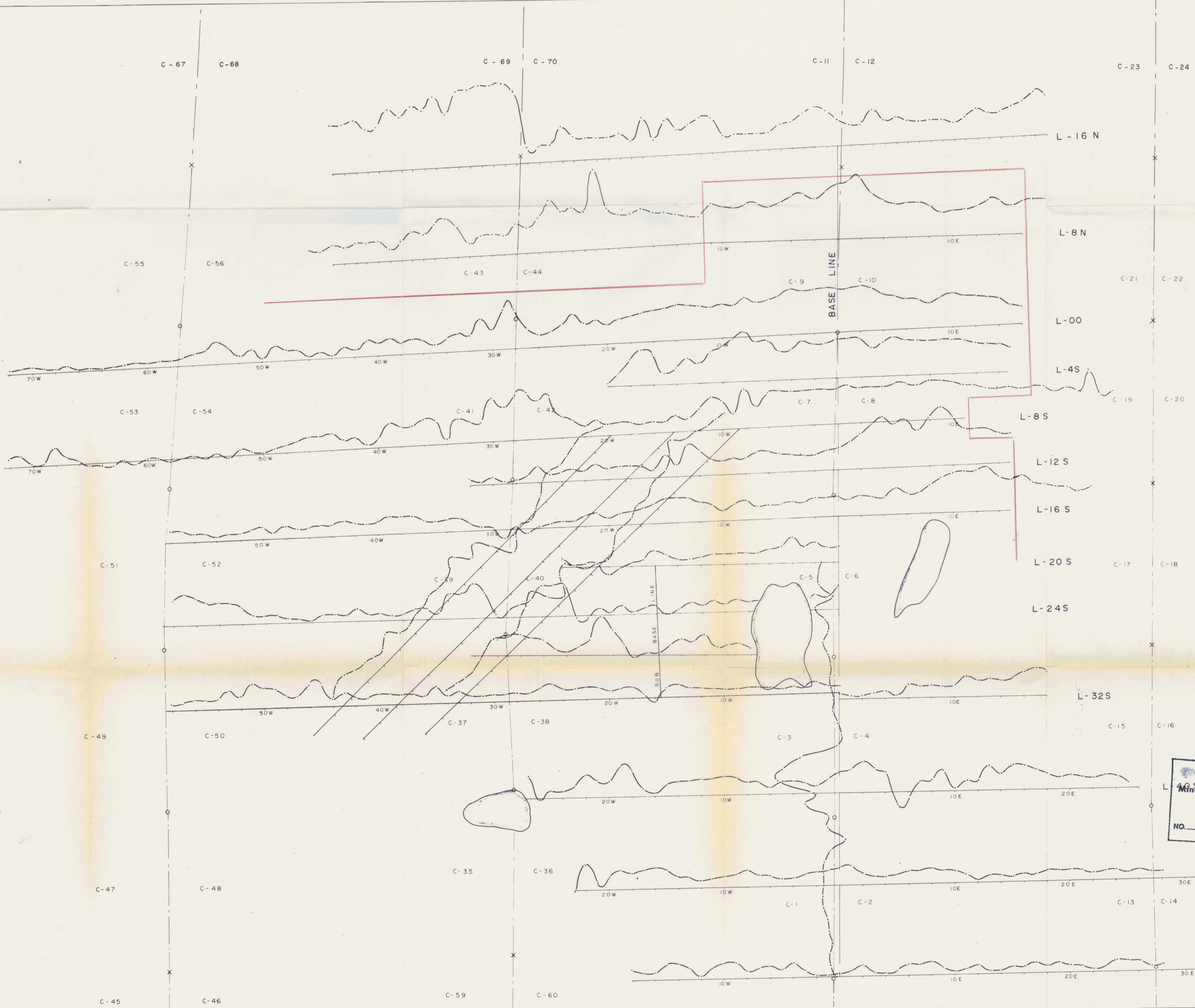
REVISED JUNE - 1975

Legend
 100 Value in gammas
 Contour interval 100 gammas
 0 Gamma contour interval
 100 " " " "
 200 " " " "
 300 " " " "
 400 " " " "
 500 " " " "

Magnetometer low
 NOTE: Instrument used SHARPE MF-1 Magnetometer
 O, X Claim post located, projected



RIO TINTO CANADIAN EXPLORATION LIMITED		
CHUTANLI LAKE PROJECT B.C.		
MAGNETOMETER CONTOUR PLAN		
OCT, 69	H B/rwr.	DWG. M-7013-A

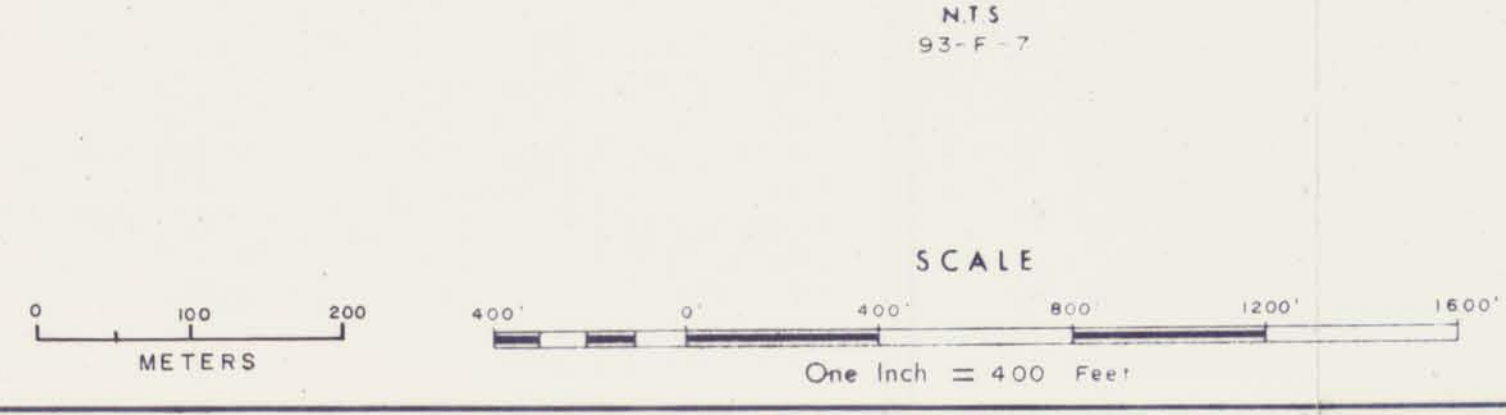
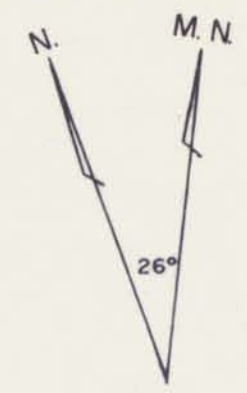


Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 5524 MAP 8

June 28, 1975
 A. Beckman

L-56S 5524
 MAP 8
 REVISED JUNE - 1975

Legend:
 --- Magnetometer Profile Scale 1" = 1000 gammas
 NOTE: Instrument used SHARPE MF-1 MAGNETOMETER
 O, X Claim post located, projected



RIO TINTO CANADIAN EXPLORATION LIMITED		
CHUTANLI LAKE PROJECT BC		
MAGNETOMETER PROFILE PLAN		
OCT, 69	H B/rwr	DWG. M-7014-A