

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2781 MAP

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2781

REPORT ON
INDUCED POLARIZATION SURVEYS
CAPOOSE PROJECT
CAPOOSE LAKE AREA, BRITISH COLUMBIA

Field Surveys by
Rio Tinto Canadian Exploration Limited

Reporting by
Jon G. Baird, B.Sc., P.Eng.
Seigel Associates Limited

CLAIMS:
(See Attached Sheet)

LOCATION:
About 140 miles west-southwest of Prince George
Omineca Mining Division
125° 53° SE

DATES OF FIELD SURVEYS:
August 14 to September 17, 1970

Mining Recorder's Office
RECORDED
DEC 10 1970
AT.....
SMITHERS, B.C.

CLAIMS

Crab Lake

T 27 and 28
T 89 to 96
457 to 464
479 to 486
1039 to 1042

Record Numbers

82289 and 82290
82445 - 82452
82813 - 82820
82835 - 82842
83395 - 83398

Guppy Lake

931 to 942
971 to 982
1068
1070

83287 - 83298
83327 - 83338
83424
83426

South of Capoose Lake

761 to 770
772

83117 - 83126
83128

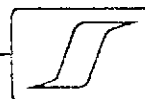
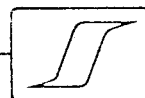


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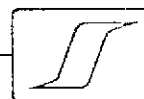
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SUMMARY

The present induced polarization surveys have revealed two areas, one in each of the Crab Lake and Guppy Lake grids, which may be underlain by significant volumes of rock containing about 1% by volume of metallicly conducting mineralization such as sulphides or graphite or non-metallic minerals such as chlorite or sericite which are known to contribute to induced polarization effects.

A correlation of the present results with all available geochemical and geological data should be made in order to determine whether the induced polarization anomalies may arise from base metal type sulphide mineralization. If this is a possibility, then diamond drill holes may be proposed based upon the geophysical, geochemical and geological data.



REPORT ON
INDUCED POLARIZATION SURVEYS
CAPOOSE PROJECT
CAPOOSE LAKE AREA, BRITISH COLUMBIA

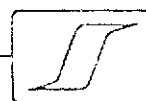
INTRODUCTION

During the period August 14 to September 17, 1970, a geophysical field party under the direction of Mr. D. Sexsmith executed induced polarization surveys on three grids in the Capoose Lake area, British Columbia. All personnel were on the staff of Rio Tinto Canadian Exploration Limited. Data plotting was carried out in the Rio Tinto offices and the resulting maps were submitted to Seigel Associates Limited for interpretation and reporting.

The Capoose Project Area lies centred around Capoose Lake which is about 140 air miles west-southwest of Prince George. Access is by float equipped aircraft. The topography of the area is hilly and the elevation is about 3500' above sea level.

The claims covered, in whole or part, by these surveys are listed on the title page of this report and are shown on the accompanying maps on the scale of 1" = 400'. These claims are held by Rio Tinto Canadian Exploration Limited.

Seigel Mk VI time-domain (pulse-type) induced polarization equipment has been employed on this property. The transmitting unit had a rating of 2.5 kilowatts 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.



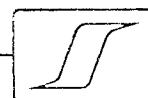
The purpose of an induced polarization survey is to map the subsurface distribution of metallicly conducting mineralization beneath the grids covered. In the present area such mineralization could include chalcopyrite, molybdenite, pyrite and other metallic sulphide minerals. Metallic minerals such as graphite and magnetite as well as non-metallic minerals such as chlorite and sericite can give responses not always distinguishable from sulphide mineralization.

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 5a from the measuring point which is defined as the midpoint between the moving current electrode and the near potential electrode. For the present surveys observations were taken for $a = 200'$. Station intervals were 200'. For additional detail part of one profile was covered with $a = 100'$ and $a = 400'$.

As shown on DWG. G-8103, three areas named "Crab Lake", "Guppy Lake" and "Area South of Capoose Lake" have been surveyed. All survey lines were oriented east-west and the interline spacings were 750' and 1500'. The lengths of profile surveyed were: Crab Lake, 6.6 line miles; Guppy Lake, 6.3 line miles and Area South of Capoose Lake, 3.4 line miles.

GEOLOGY

The geology of the area including and surrounding the Capoose Project Area is discussed in G.S.C. Memoir 324, "Nechako River Map-Area" by H. W. Tipper, 1963. Geological studies have been made by Rio Tinto



Canadian Exploration Limited and are the subject of their reports. DWG. G-8103 accompanying the present report is a geological map of the Project area on a scale of 1" = 1/2 mile.

The Project area covers an Upper Jurassic, or Cretaceous granodioritic intrusive body approximately 12 miles in length by 6 miles in width surrounded by Upper Triassic and Lower Jurassic volcanic rocks. The Crab Lake and Area South of Capoose Lake survey grids lie well within the intrusive while the Guppy Lake Area may be underlain by volcanic rocks.

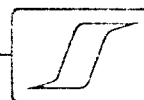
The Crab Lake survey was undertaken to test an area exhibiting anomalous molybdenum and copper geochemical soil values in an area underlain by granodiorite. The Guppy Lake survey was planned to test a molybdenum soil anomaly in an area with no outcrop while the Area South of Capoose Lake was selected because of anomalous molybdenum soil samples and because a very minor amount of molybdenite is seen in outcrop.

The target of the induced polarization surveys was a body of disseminated sulphide mineralization, the upper surface of which would approach to within 130' of the ground surface and which would correlate with the geochemical soil anomalies.

PRESENTATION OF RESULTS

The results of the geophysical surveys are shown on seven accompanying plates, all on the scale of 1" = 400'.

DWGS. IP-7089, IP-7086 and IP-7083 show the chargeability and resistivity results in profile form for the Crab Lake, Guppy Lake and Area South of Capoose Lake Areas respectively. The chargeability scales are 1" = 10.0 milliseconds for the Crab Lake results and 1" = 20.0



milliseconds for the other two grids. The resistivity scales are
1" = 1000 ohm-meters.

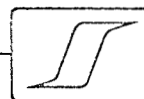
DWGS. IP-7087 and IP-7084 are chargeability contour plans for the Crab Lake and Guppy Lake Areas. The observed chargeability values are shown and have been contoured with a 2.0 millisecond contour interval.

DWGS. IP-7088 and IP-7085 are resistivity contour plans for the Crab Lake and Guppy Lake Areas. The observed resistivity values are shown. The contour interval for the Crab Lake Area is 200 ohm-meters up to the 1000 ohm-meter level, thence 500 ohm-meters. For the Guppy Lake Area a 100 ohm-meter contour interval has been used.

DISCUSSION OF RESULTS

The chargeability results for all three survey areas indicate that background values range from about 1.0 to 8.0 milliseconds. With this background a uniform subsurface distribution of 1% by volume of metallicly conducting mineralization would be expected to raise chargeabilities to about the 15.0 millisecond level. Since deposits of low concentrations of copper and molybdenum sulphides of sufficient dimensions may have economic significance, chargeability responses in excess of 8.0 milliseconds and interpreted to arise from large volumes of rock may warrant further investigation.

The resistivity values for the three survey areas are generally in the hundreds of ohm-meters with occasional increases above 1000 ohm-meters. Disseminated sulphide bodies may or may not exhibit resistivity contrasts with the surrounding rocks. Generally, low percentages of sulphide mineralization are not sufficiently interconnected to lower resistivities significantly although a decrease in the resistivity of



a sulphide body may be caused by fracturing or alteration. It is also possible that due to silicification or a change in rock type, sulphide bodies may exhibit higher resistivities than surrounding rocks.

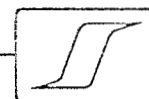
Crab Lake Area

The chargeability contour plan (DWG. IP-7087) reveals a northeasterly trending zone approximately 4000' in length by 400' to 1000' in width which exhibits chargeabilities in excess of 8.0 milliseconds and ranging up to 15.4 milliseconds for the 200' electrode spacings. Three different electrode spacing profiles on L 27100 S are interpreted to indicate the presence of a body lying between 520 W and 530 W and containing up to 1% by volume of metallicly conducting material. The anomalous material appears to approach to within 15' of the ground surface near 528 W. The increased chargeability zone, particularly on L 27100 S, coincides with a zone of increased resistivities.

Guppy Lake Area

Within this survey area one zone, approximately circular with a diameter of 2000', is seen to exhibit chargeabilities ranging up to 13.8 milliseconds. No precise quantitative interpretations are possible since only one electrode spacing has been used however it is possible that the observed chargeability responses may arise from a large volume of rock containing up to 1% by volume of metallicly conducting material. A second zone exhibiting chargeabilities in excess of 8.0 milliseconds over a 1200' length of L 51800 S may indicate a second area of increased metallicly conducting content trending off the grid to the south.

The resistivities over the grid are nearly everywhere less than 200 ohm-meters and there is no resistivity characteristic associated with the chargeability increases.



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Area South of Capoose Lake

The chargeability results for this area are all low and uniform so that no areas of increased metallicly conducting material have been revealed. The resistivities vary somewhat however since the chargeability results indicate that the underlying bedrocks are rather uniform, the resistivity changes may only be indicative of overburden changes.

CONCLUSIONS AND RECOMMENDATIONS

The present induced polarization surveys have revealed two areas, one in each of the Crab Lake and Guppy Lake grids, which may be underlain by significant volumes of rock containing about 1% by volume of metallicly conducting mineralization such as sulphides or graphite or non-metallic minerals such as chlorite or sericite which are known to contribute to induced polarization effects.

A correlation of the present results with all available geochemical and geological data should be made in order to determine whether the induced polarization anomalies may arise from base metal type sulphide mineralization. If this is a possibility, then diamond drill holes may be proposed based upon the geophysical, geochemical and geological data.

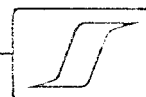
Respectfully submitted,

SEIGEL ASSOCIATES LIMITED



Jon G. Baird, B.Sc., P.Eng.
Geophysicist

Vancouver, B. C.
December 1, 1970.

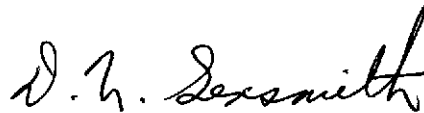


QUALIFICATIONS OF GEOPHYSICAL STAFF MEMBERS
OF RIO TINTO CANADIAN EXPLORATION LIMITED

D.N. SEXSMITH:

Mr. D.N. Sexsmith has worked for Rio Tinto Canadian Exploration Limited for the past five (5) years under the supervision of H. Beckmann.

With an electronics background (Radio College of Canada) he has operated instrumentation on I.P., E.M., Turam, Gravity and Mag surveys. He is familiar with interpretation of results obtained, for on the spot decisions in the field. He has been a party chief on geophysical surveys for the past three years.



September 29, 1970.

D.N. Sexsmith.



Legend:

Value in milliseconds

Contour interval 2 milliseconds

4 Millisecond Contour Interval

6 " " " "

8 " " " "

10 " " " "

12 " " " "

Chargeability low

NOTE: Three electrode array
Electrode spacing a = 200'
Current electrode WEST

NOTE - Station numbers are in thousands
(eg. 560W should read 56000 W)

N.T.S.
93 - F - 6

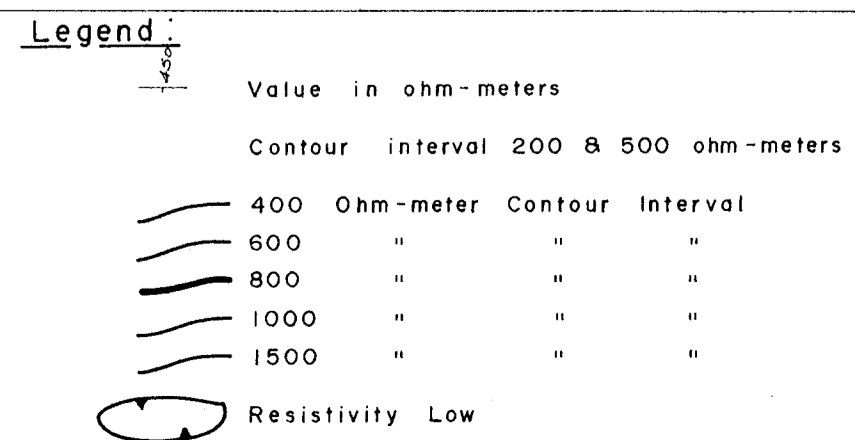
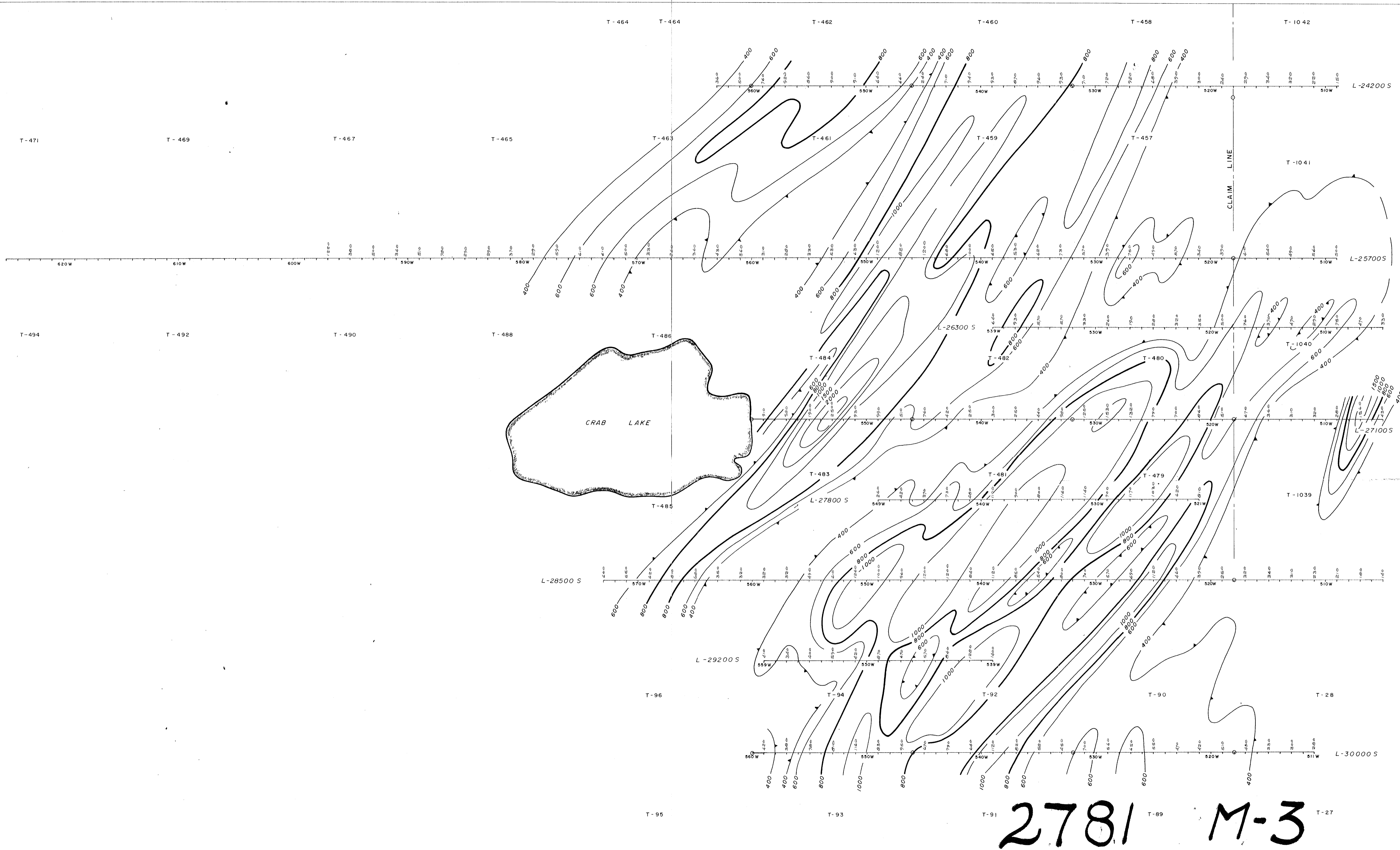
St Baird

SCALE

400' 0' 400' 800' 1200' 1600'

One Inch = 400 Feet

RIO TINTO CANADIAN EXPLORATION LIMITED		
CAPOOSE PROJECT, CRAB LAKE AREA B.C.		
CHARGEABILITY CONTOUR PLAN		
OCT., 70	DS/rwr	DWG. IP-7087

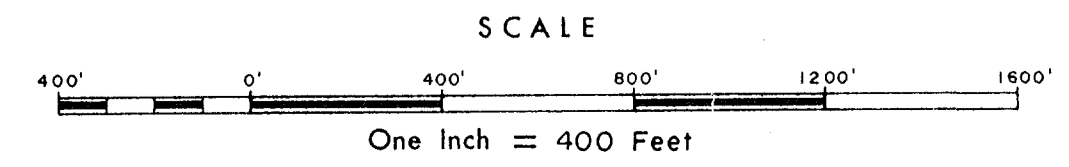


NOTE: Three electrode array
 Electrode spacing a=200'
 Current electrode WEST

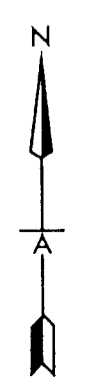
NOTE - Station numbers are in thousands
 (eg. 560 W should read 56000 W)

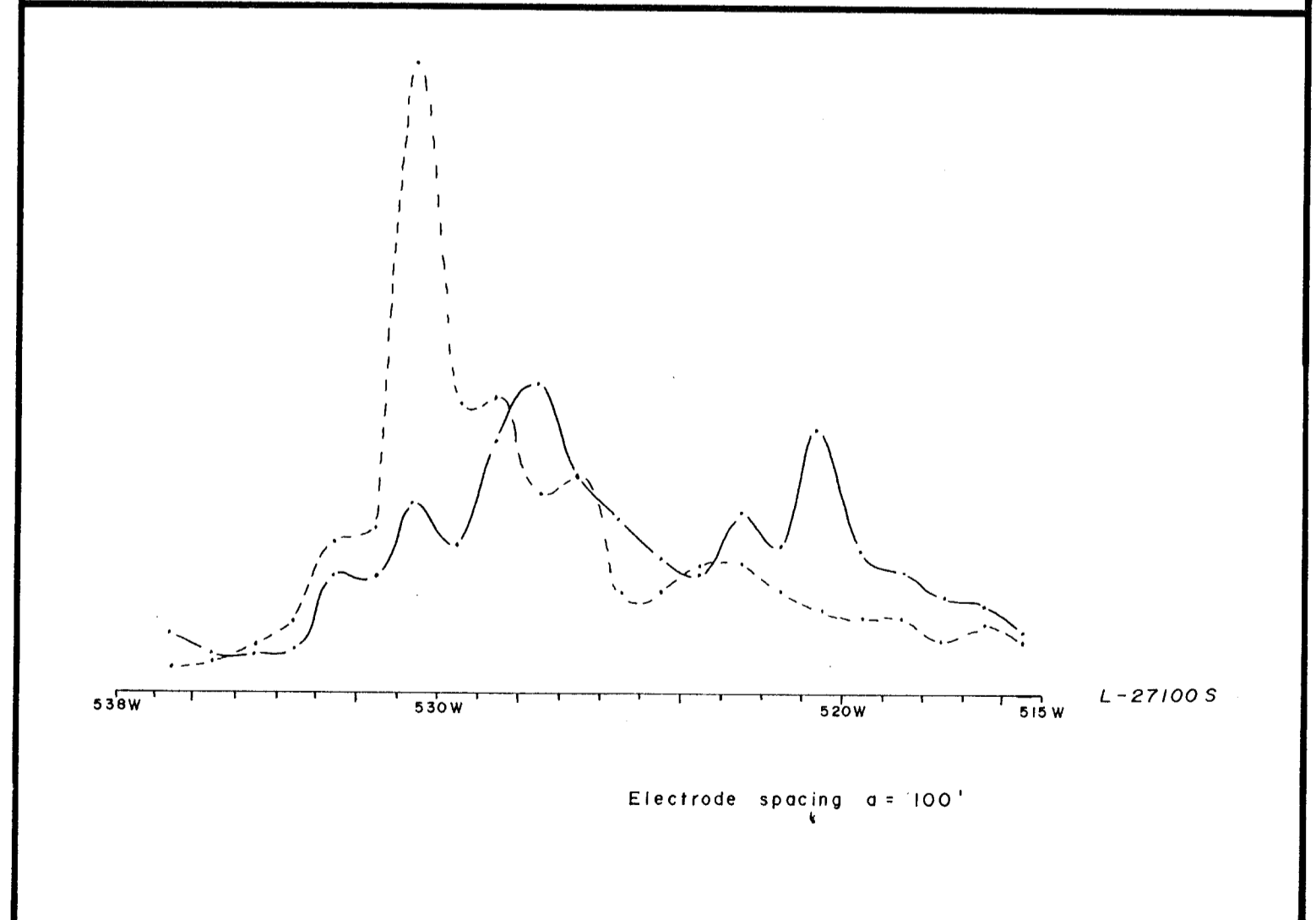
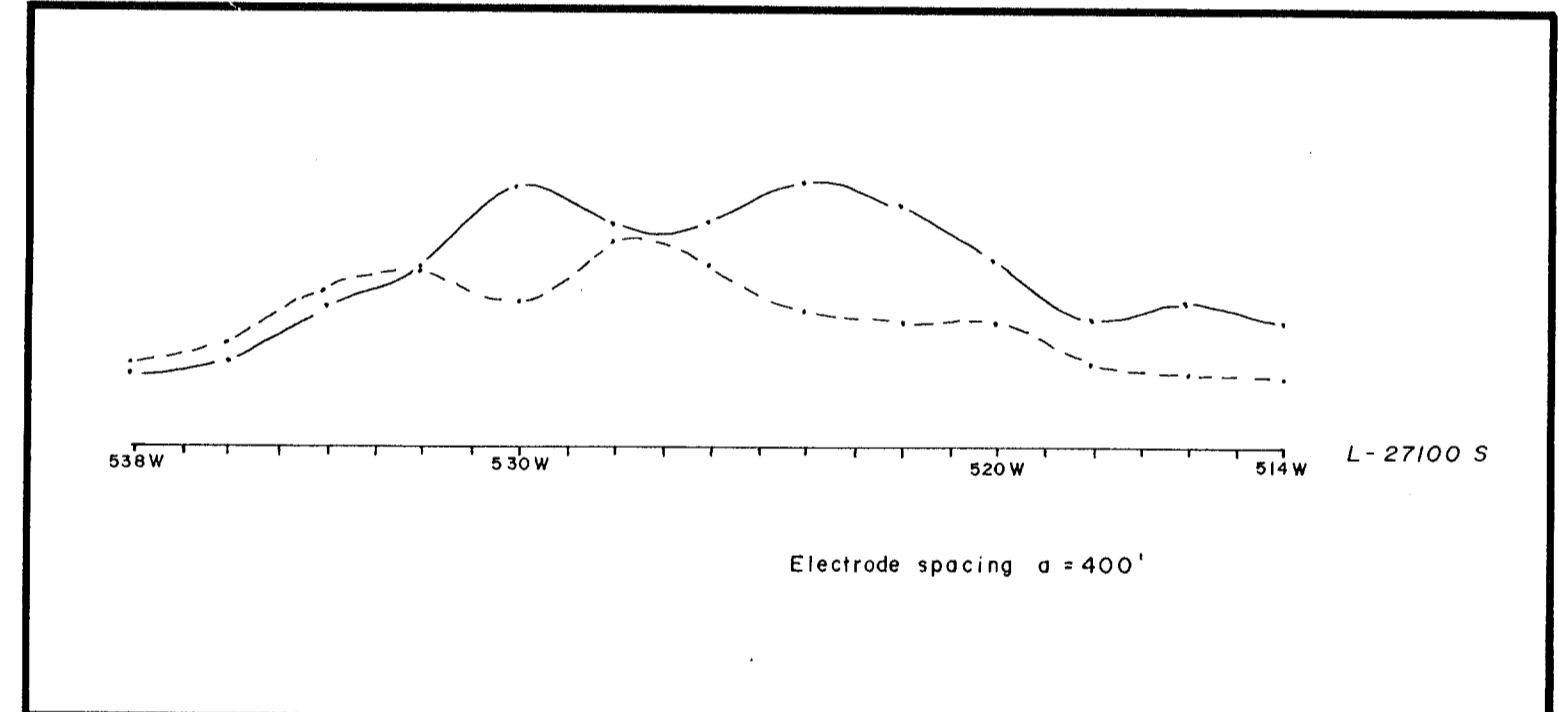
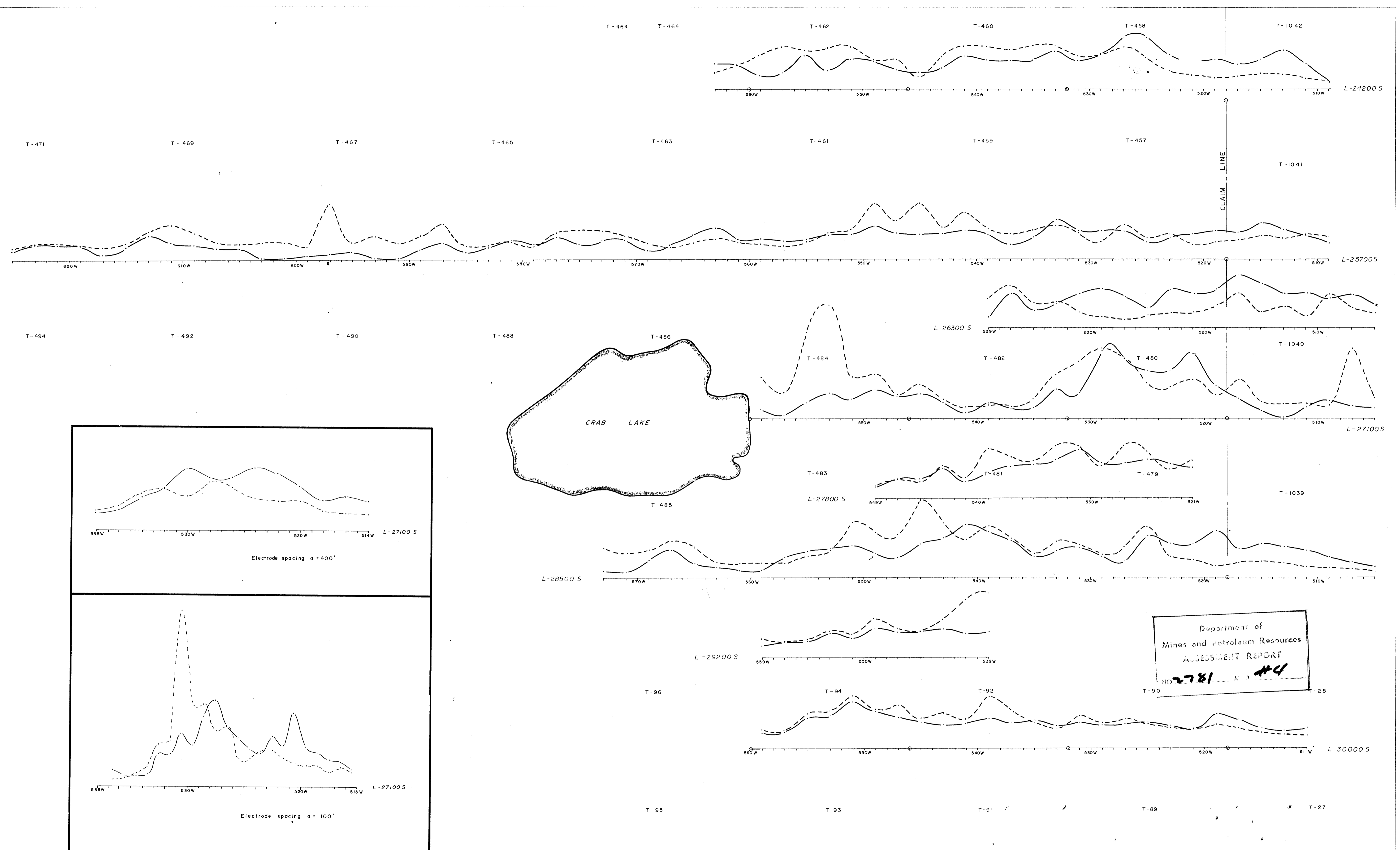
N.T.S
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MBaird



RIO TINTO CANADIAN EXPLORATION LIMITED		
CAPOOSE PROJECT, CRAB LAKE AREA B.C.		
RESISTIVITY CONTOUR PLAN		
OCT., 70	DS/rwr	DWG. IP-7088





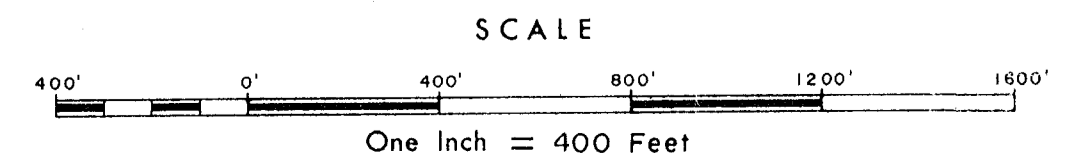
Legend:

Chargeability profile scale 0 — 10 Milliseconds
 Electrode spacing a = 200'

Resistivity profile scale 0 — 1000 Ohm-meters
 Electrode spacing a = 200'

NOTE: Three electrode array
 Current stake WEST

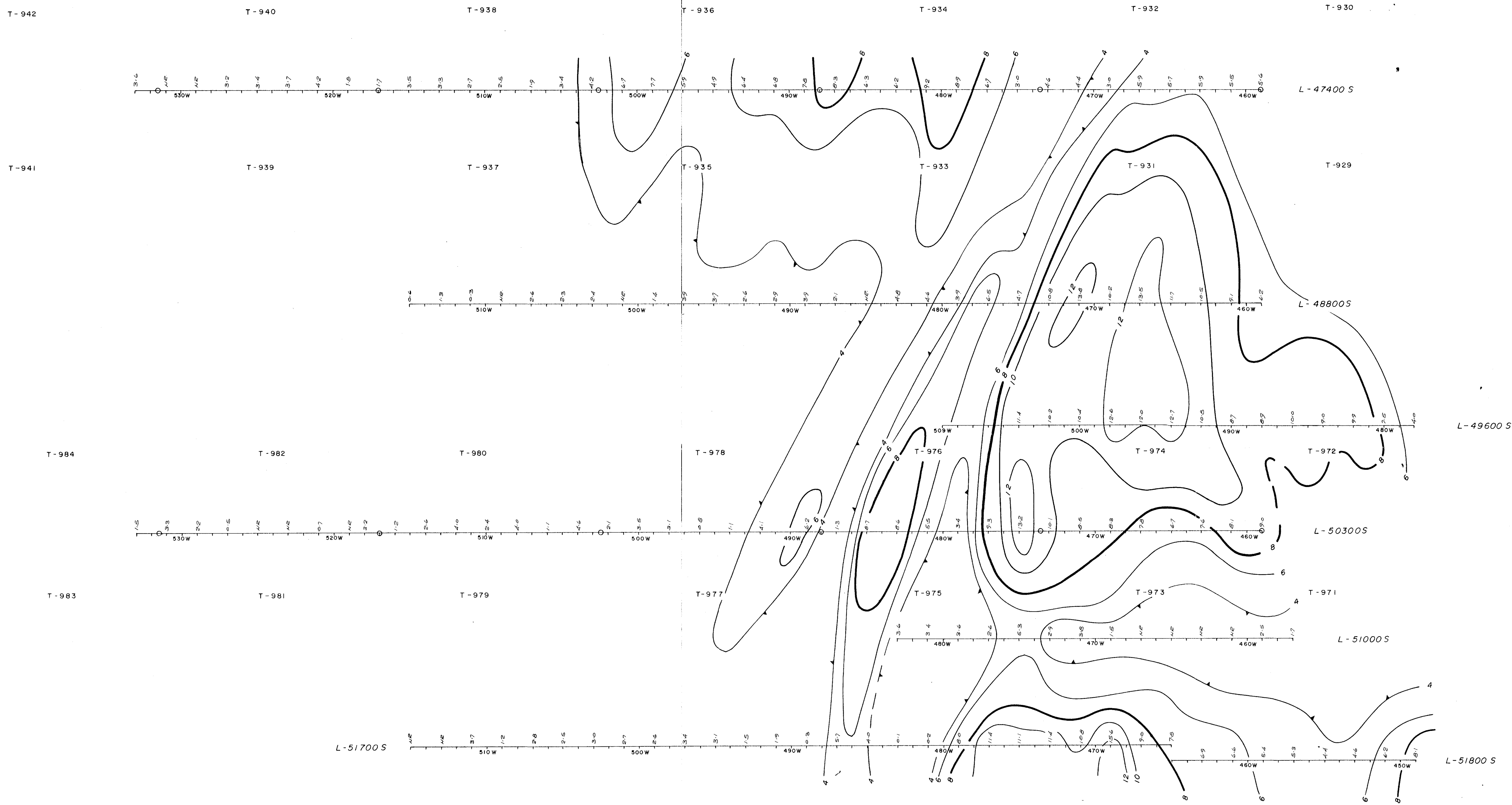
NOTE - Station numbers are in thousands
 (eg. 560W should read 56000W)



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RIO TINTO CANADIAN EXPLORATION LIMITED		
CAPOOSE PROJECT, CRAB LAKE AREA B.C.		
CHARGEABILITY & RESISTIVITY PROFILE PLAN		
OCT., 70	DS/rwr	DWG. 1P-7089

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ASSESSMENT REPORT
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Legend

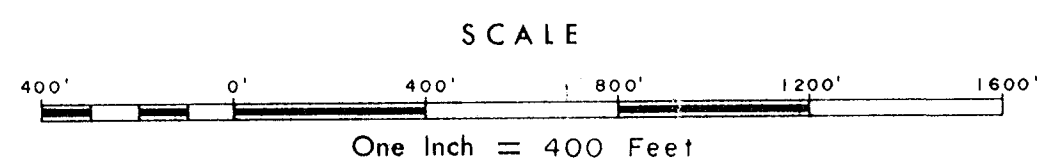
	Value in milliseconds
	Contour interval 2 milliseconds
	4 Millisecond Contour Interval
	6 " " " "
	8 " " " "
	10 " " " "
	12 " " " "
	Chargeability low

NOTE: Three electrode array
Electrode spacing a = 200'
Current stake WEST

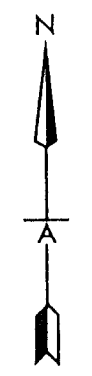
NOTE: Station numbers are in thousands
(eg. 480W should read 48000W)

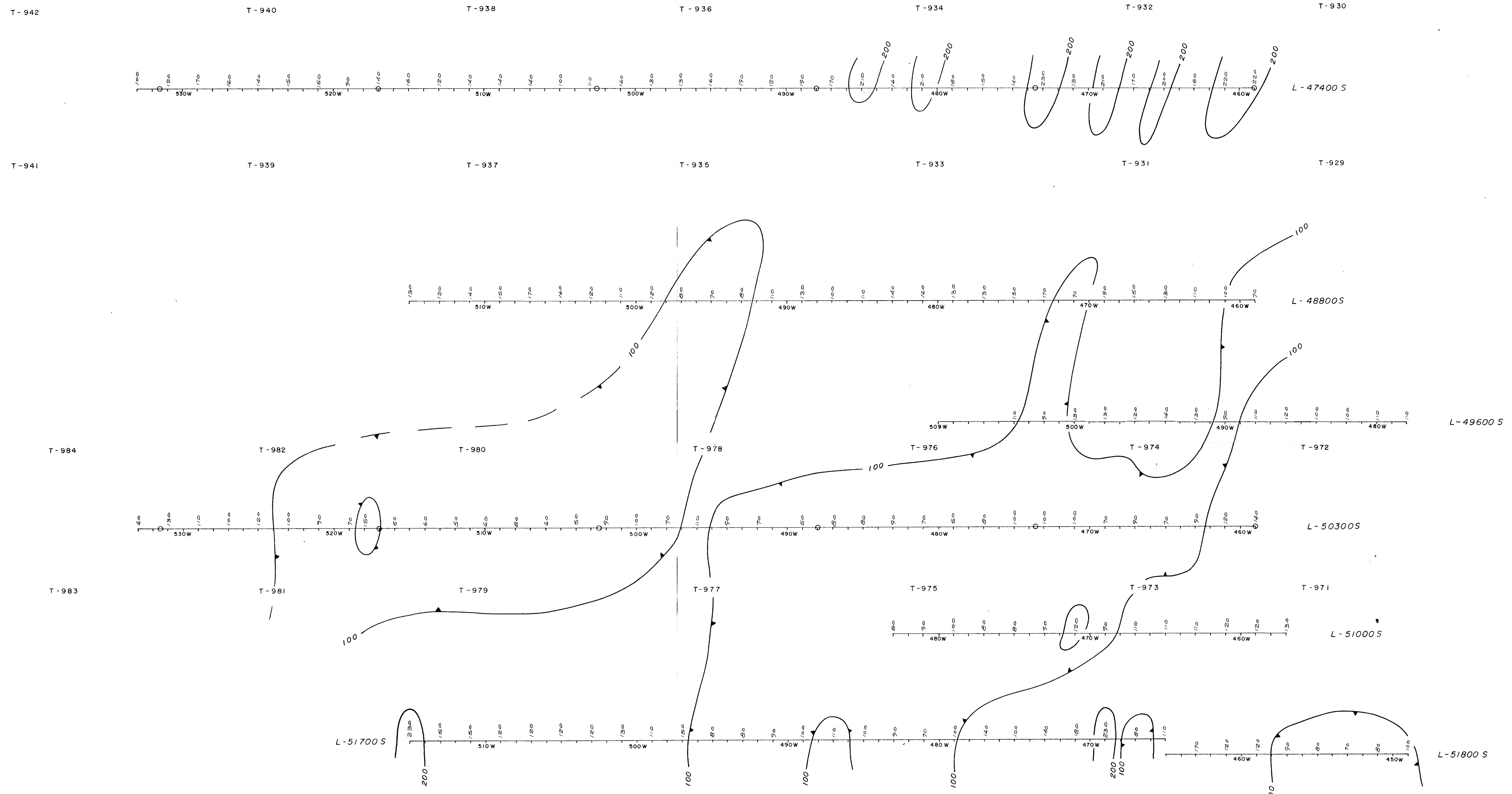
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CAPOOSE PROJECT, GUPPY LAKE AREA B.C.		
CHARGEABILITY CONTOUR PLAN		
OCT, 70	DS/rwr	DWG. IP-7084



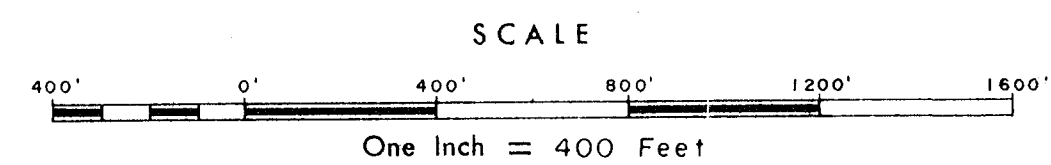


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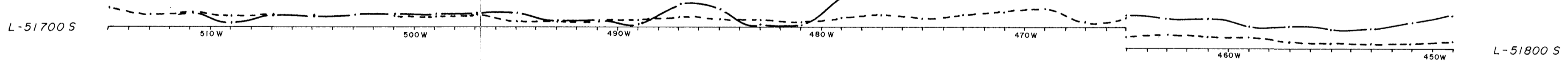
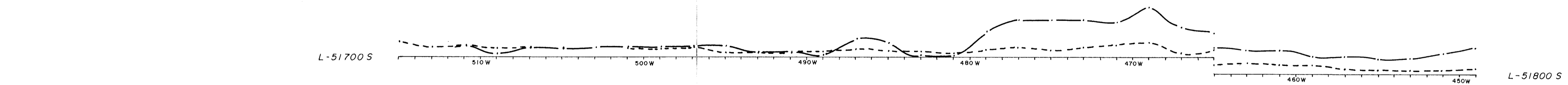
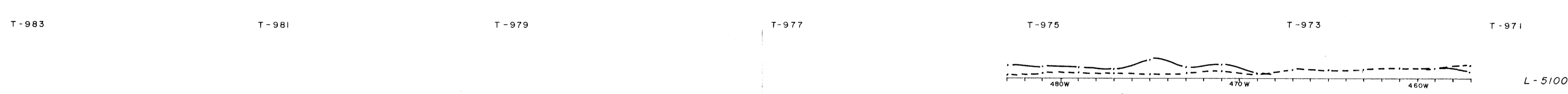
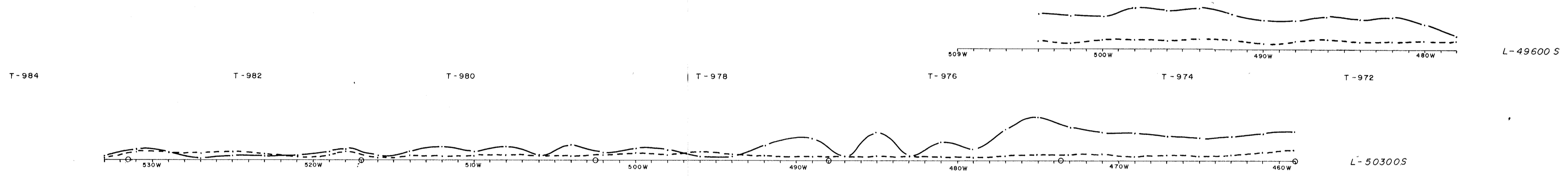
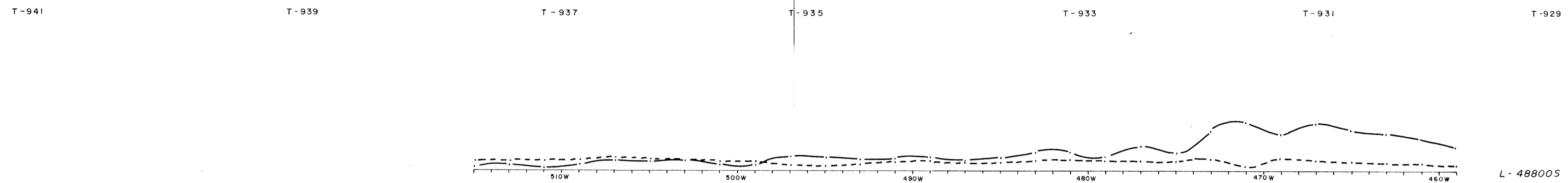
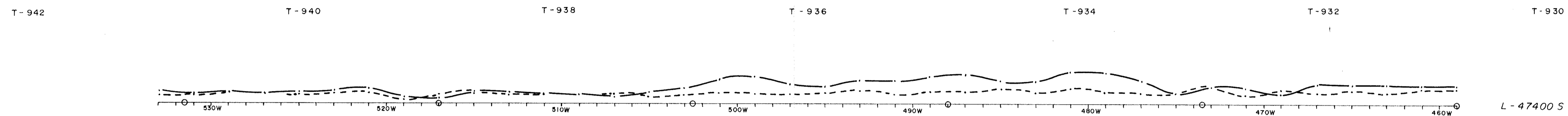
Legend:
 Value in Ohm-meters
 Contour interval 100 Ohm-meters
 100 Ohm-meter Contour Interval
 200 Ohm-meter Contour Interval
 Resistivity low
 NOTE: Three electrode array
 Electrode spacing a=200'
 Current stake WEST

NOTE: Station numbers are in thousands
 (eg. 480 W should read 48000 W)

N.T.S
 93-F-6



RIO TINTO CANADIAN EXPLORATION LIMITED		
CAPOOSE PROJECT, GUPPY LAKE AREA B.C.		
RESISTIVITY CONTOUR PLAN		
OCT., 70	DS/rwr	DWG. IP-7085



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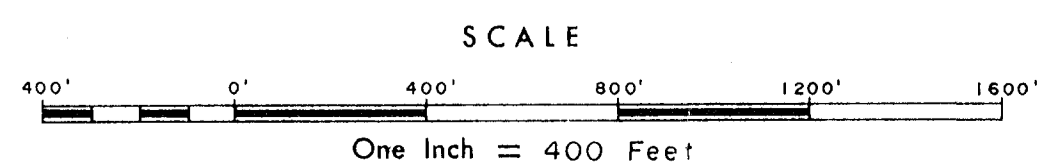
Legend:
 Chargeability profile scale 0 — 20 Milliseconds
 Electrode spacing a = 200'
 Resistivity profile scale 0 — 1000 Ohm-meters
 Electrode spacing a = 200'

NOTE: Three electrode array
Current stake WEST

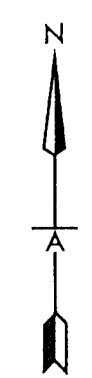
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(eg. 480 W should read 48000 W)

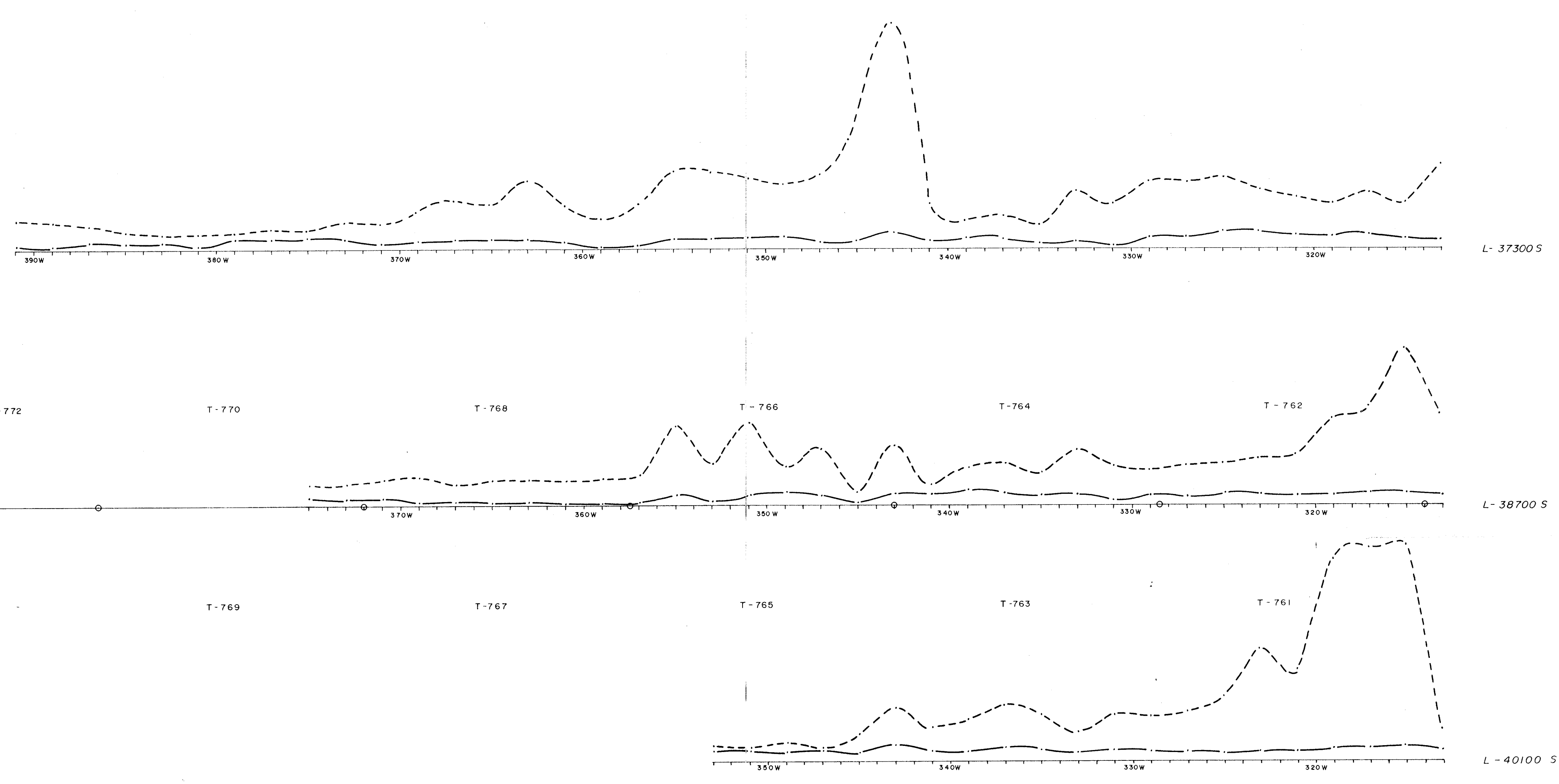
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CAPOOSE PROJECT, GUPPY LAKE AREA B.C.		
CHARGEABILITY & RESISTIVITY PROFILE PLAN		
OCT., 70	DS/rwr	DWG. IP-7086





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Legend:
 Chargeability profile scale 0 20 Milliseconds
 Electrode spacing a = 200'
 Resistivity profile scale 0 1000 Ohm-meters
 Electrode spacing a = 200'
 NOTE: Three electrode array
 Current stake WEST

NOTE: Station numbers in thousands
 (eg. 320W should read 32000W)

N.T.S.
 93 - F - 6
 SCALE
 400' 0' 400' 800' 1200' 1600'
 One Inch = 400 Feet

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RIO TINTO CANADIAN EXPLORATION LIMITED
 CAPOOSE PROJECT B.C.
 AREA SOUTH OF CAPOOSE LAKE
 CHARGEABILITY & RESISTIVITY
 PROFILE PLAN
 OCT., 70 DS/rwr DWG. IP-7083

