

06_5280

Part 1 IP Survey, West Sedgwick, in West Tasmania.
Part 2 IP Survey, Lyell Comstock Area in West
Rio Tinto Southern Proprietary Limited*
McCarthy, E.; Pinney, R.

RIO TINTO SOUTHERN PTY. LIMITED
MELBOURNE, AUSTRALIA

PROJECT:— PRP/7/100B
PRP/7/100A

REPORT No.:— 1962/4

Part 1 I.P. SURVEY, WEST SEDGWICK, IN WEST TASMANIA

Part 2 I.P. SURVEY, LYELL COMSTOCK AREA IN WEST TASMANIA

by

E. McCARTHY

and

R. PINNEY

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FILE REFERENCE:— 8D/20Q
8D/20M

MAP REFERENCE:—

DATE:— 22/5/62

P A R T I

I. P. SURVEY, WEST SEDGWICK AREA IN WEST TASMANIA

by

E. McCarthy

and

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P L A N S

Scale

T. 384	Locality Plan	1 mile to 1"
T. 739	West Sedgwick Geophysical Grid	400' to 1"
T. 740	West Sedgwick I.P. Survey	-

P A R T 2

I.P. SURVEY, LYELL COMSTOCK AREA IN WEST TASMANIA

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P L A N S

Scale

T.338	Comstock area Electro-magnetic survey	200' to 1"
T.757	Lyell-Comstock Area I.P. survey Chargeability and Conductivity profiles	200' to 1"

I.P. SURVEY WEST SEDGWICK AREA IN WEST TASMANIA

Field surveys were undertaken in an area known as West Sedgwick early in the year 1958. Geological, geochemical and geophysical surveys were conducted. The geophysical survey was conducted using the electromagnetic method with complementary magnetic and gravity surveys over selected parts of the area.

An electrical indication, known as the West Sedgwick E.M. anomaly, was recorded. Further field work to establish the cause of the anomaly had not been undertaken since the initial survey.

At a programme meeting with E.Z. Co. at Rosebery in November 1961 it was considered necessary to confirm the anomaly by the I.P. method. To this end a portion of the old West Sedgwick grid was re-established. Six traverse lines were repegged, as shown on attached plan No. T739. The old traverse lines were over-grown and were not located. In all six lines were installed to cross the E.M. anomaly and were denoted 48W, 52W, 56W, 60W 64W and 68W. Each line was about 2,000 feet in length.

An I.P. survey was run over the pegged lines using a "3 electrode" array. Both the I.P. effect and apparent resistivity were recorded and are plotted in profile form on plan No. T740 attached. (The reciprocal of the resistivity - the conductivity, is plotted in profile form on plan No. T740).

From the profiles it will be seen that on lines 64W and 68W a zone of high conductivity, which corresponds (within the limits of positioning of the new traverse lines) with the old E.M. anomaly, was recorded; but there is no I.P. effect associated with the zone. This line of higher conductivity probably corresponds to the line of a fault.

The more easterly of the traverses show some I.P. effect along with higher conductivity. The effect is most pronounced and is widest in expression on the most easterly traverse 48W, and suggests a change of rock type somewhere between lines 60W and 56W, the rock giving the higher I.P. effect being present as a narrow band on line 60W and thickening out moving eastward. It is most likely the northern boundary of this rock formation (probably slates containing graphite and/or pyrite) which gave the E.M. anomaly.

Generally the results of the survey show no promise of the existence of an ore body. Higher than average I.P. responses were obtained in the easterly portion of the area. These are considered to be due to a rock formation wedging into the area from the east but having no potential economic interest.

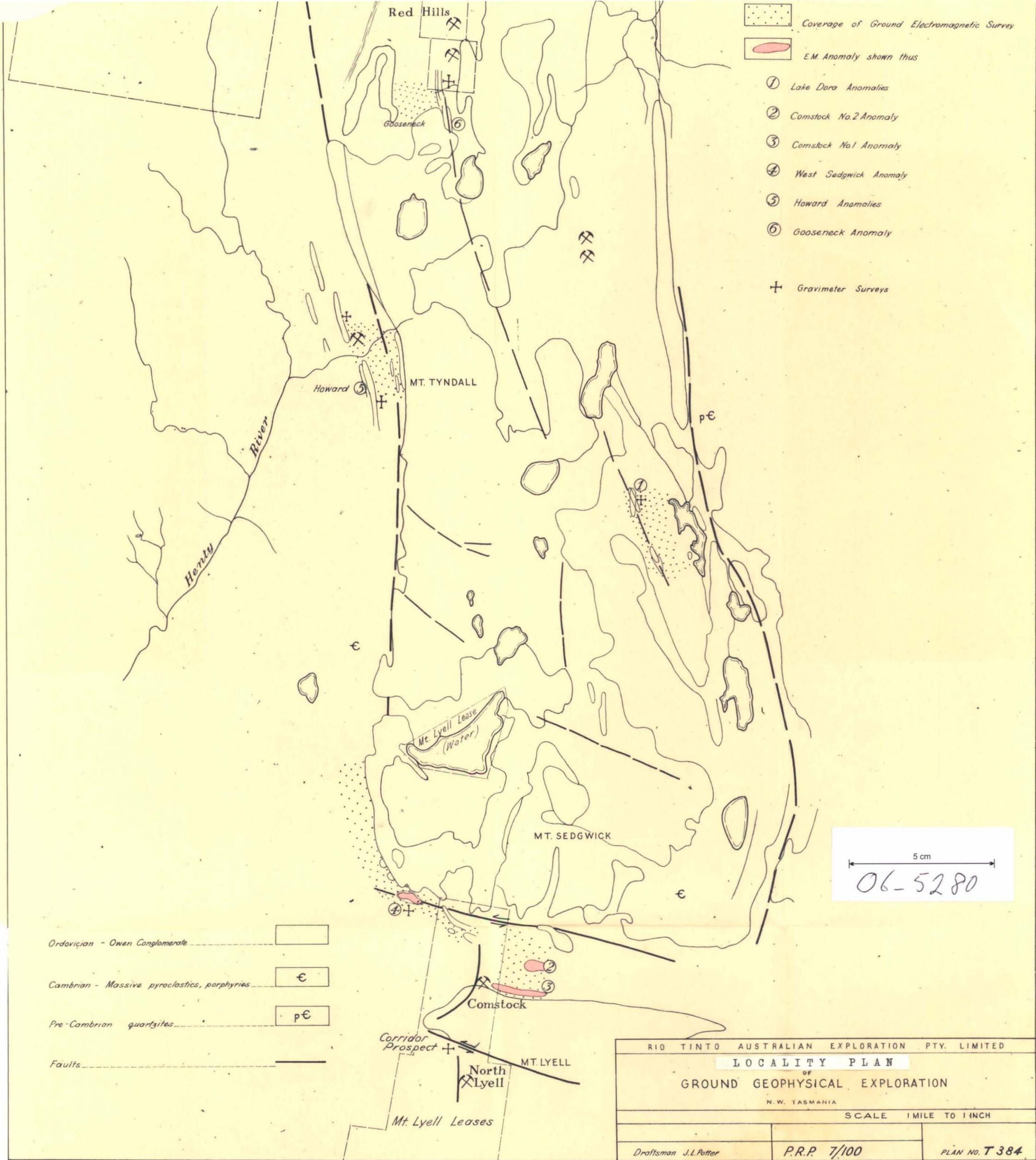
This area is of no further interest and it is recommended that it be abandoned.

E. McCarthy,

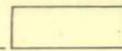
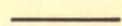
and

R. Pinney.

22nd May, 1962.



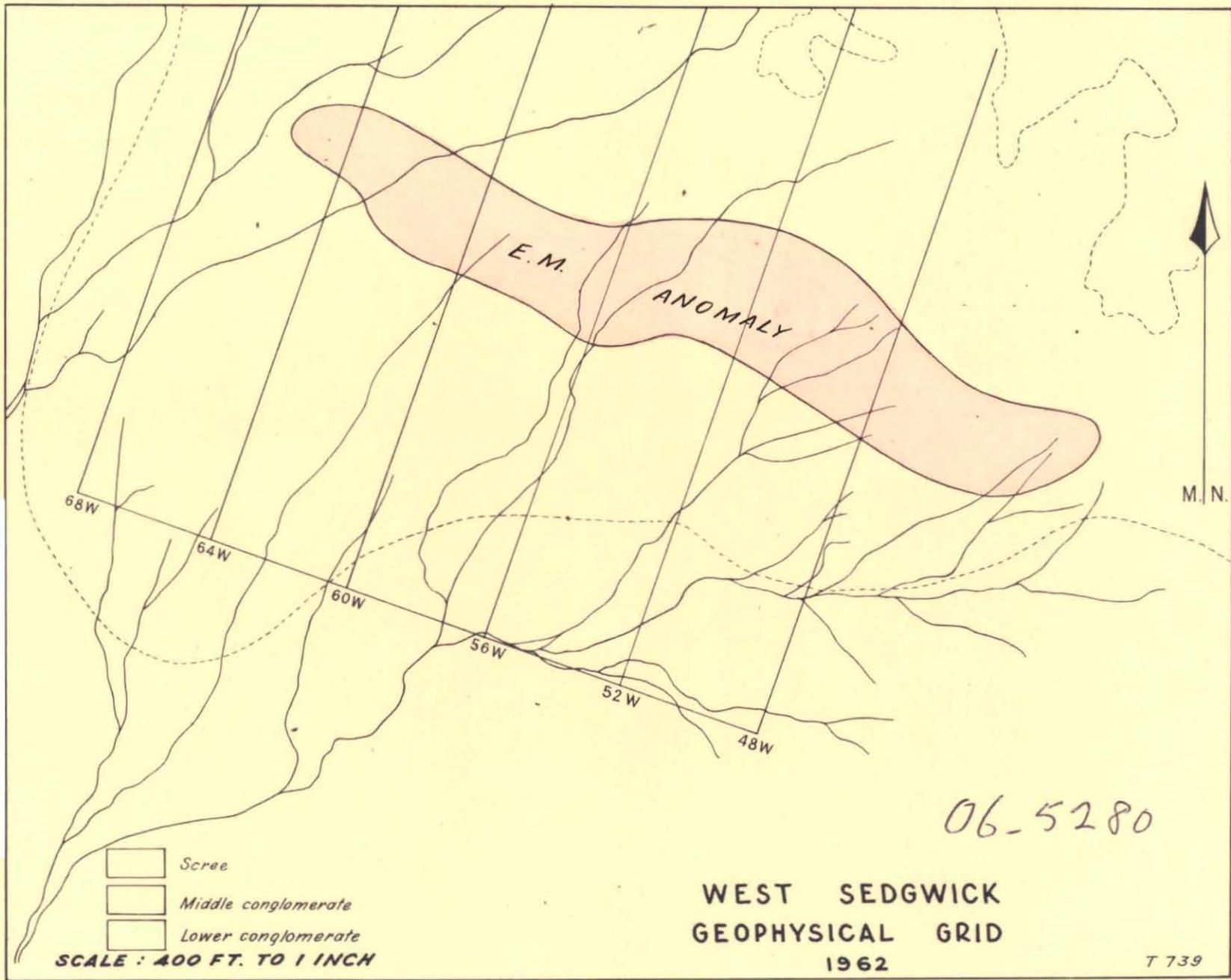
-  Coverage of Ground Electromagnetic Survey
-  E.M. Anomaly shown thus
- ① Lake Dora Anomalies
- ② Comstock No.2 Anomaly
- ③ Comstock No.1 Anomaly
- ④ West Sedgwick Anomaly
- ⑤ Howard Anomalies
- ⑥ Gooseneck Anomaly
- ⊕ Gravimeter Surveys

- Ordovician - Owen Conglomerate 
- Cambrian - Massive pyroclastics, porphyries 
- Pre-Cambrian quartzites 
- Faults 

5 cm
06-5280

RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED		
LOCALITY PLAN		
OF		
GROUND GEOPHYSICAL EXPLORATION		
N.W. TASMANIA		
SCALE 1 MILE TO 1 INCH		
Draftsman J.L.Potter	P.R.P. 7/100	PLAN NO. T 384

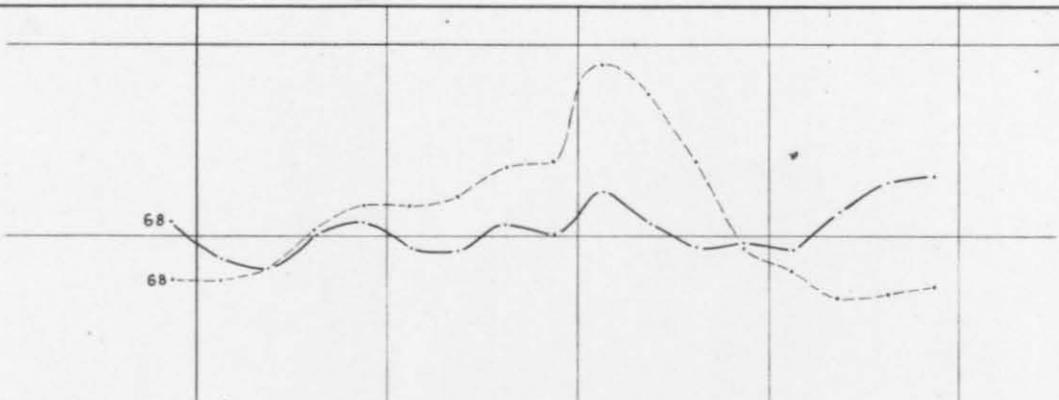
5 cm



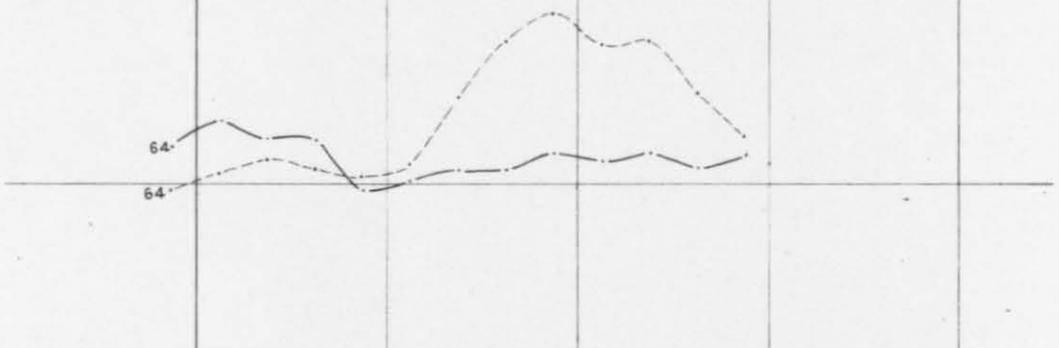
Scree
Middle conglomerate
Lower conglomerate
SCALE : 400 FT. TO 1 INCH

06-5280
WEST SEDGWICK
GEOPHYSICAL GRID
1962

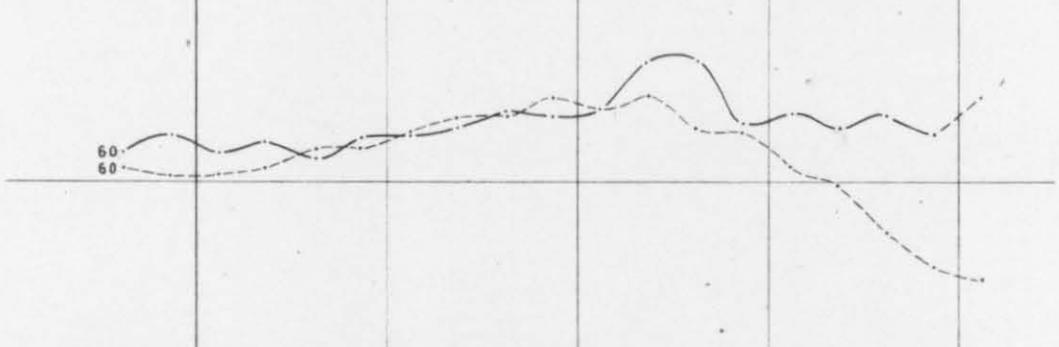
T 739



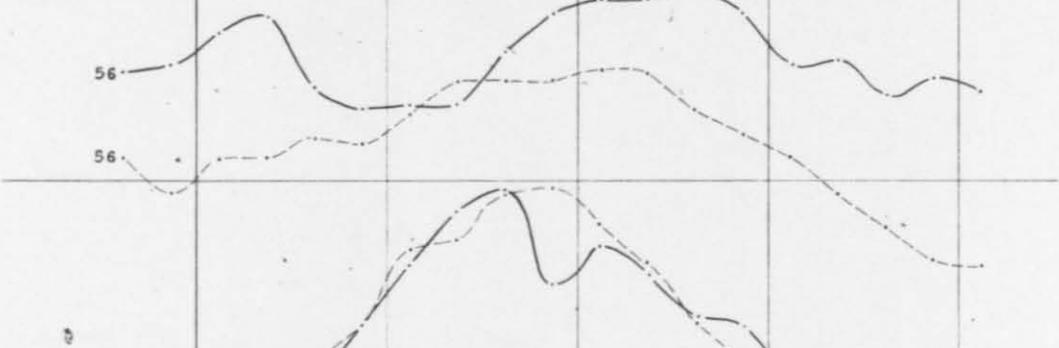
DATUM 68



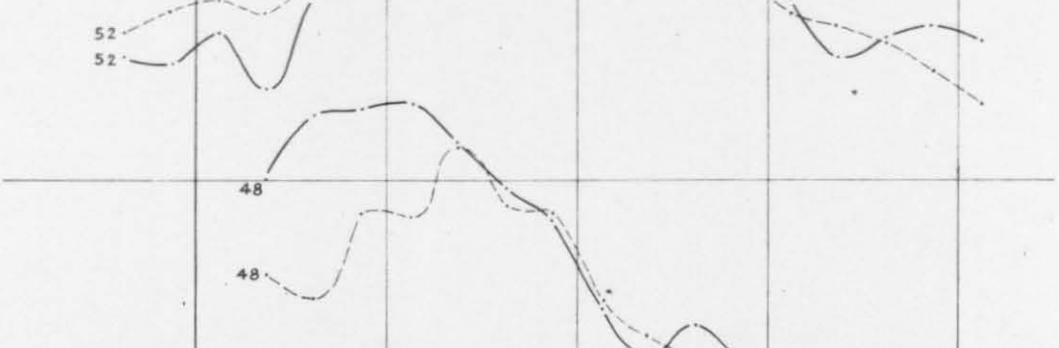
DATUM 64



DATUM 60



DATUM 56



DATUM 52



DATUM 48

5 cm

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I.P. effect
Scale: 4 milliseconds to 1 inch

Conductivity
Scale: arbitrary
Hor. Scale: 400ft = 1 inch

TASMANIA
WEST SEDGWICK
I.P. SURVEY

T 740

I. P. SURVEY, LYELL COMSTOCK AREA, WESTERN TASMANIA

Early in 1958 an electromagnetic survey was conducted covering an area in the Comstock Valley easterly from Mt. Lyell ground. Some years earlier the Bureau of Mineral Resources had conducted an E-M survey around the workings at Comstock and had recorded an electromagnetic anomaly extending easterly from near the known lead-zinc body at the Tasman shaft in Mt. Lyell ground to the boundary of Mt. Lyell's holding, but decreasing in intensity towards the boundary. It was to confirm and extend this anomaly across the boundary of Mt. Lyell holding that Rio Tinto conducted the electromagnetic (Turam) survey in 1958.

The electromagnetic survey showed a weakly conducting zone in Rio Tinto ground extending out from the Tasman shaft and another electrically conducting zone north of the base line and further east from the Mt. Lyell boundary. These conducting zones are shown on attached plan No. T 338. The conductor on the south side of the base line was only a fair electrical indication. The country on the north side of the base line showed generally higher conductivity such as could be expected from a flat lying body as conducting clay or other conducting rock type.

The geophysical section was requested to conduct a Induced Polarisation survey during the 1961-62 field season over the conducting zones to check the electromagnetic indications.

Enough of the original survey pegs had survived the bush fires of the intervening years to enable the old traverse lines to be re-established. Lines C, D, E, and F, on the southern side and lines G, H, J and K, on the northern side of the base line were re-pegged. More than 50 percent of the old pegs were found and identified.

The I.P. survey then was conducted along the re-pegged lines. The results of the I.P. survey are shown on profile form on Plan No. T 757. The full line on the profiles is the I.P. effect, chargeability, plotted in units of milliseconds. The dotted profiles show conductivity, the reciprocal of the resistivity, which is measured contemporaneously with the I.P. effect.

The background I.P. effect is high and variable. It drops to a figure of approximately 5 - 6 over the conglomerates at the southern end of lines C and D. Likewise the conductivity drops to a very low figure over the conglomerates. A zone higher conductivity corresponds approximately to the previously recorded Turam anomaly. There is some I.P. effect recorded over the conducting zone but the correlation is poor. The I.P. effect is not that which would be expected from a discrete rock formation such as a steeply dipping ore body.

North towards the Base line there is also an increase in conductivity as shown on the profiles for line F, and the increased conductivity persists on the north side of the base lines as shown on the profiles for lines G, H, J and K. The higher conductivity on the north side of the base line confirms the electromagnetic Turam results.

The I.P. effect on the north side of the base line is irregular and in places higher than average readings were recorded. It is consistent with results expected from a near surface body such as a rock formation containing some graphite or sulphides, or it may be due to a clay bed.

Plan No. T 757 shows results of the normal I.P. tests conducted in the area. These were conducted with standard 3 electrode layout. Other electrode configurations were tried and they confirmed the results as shown.

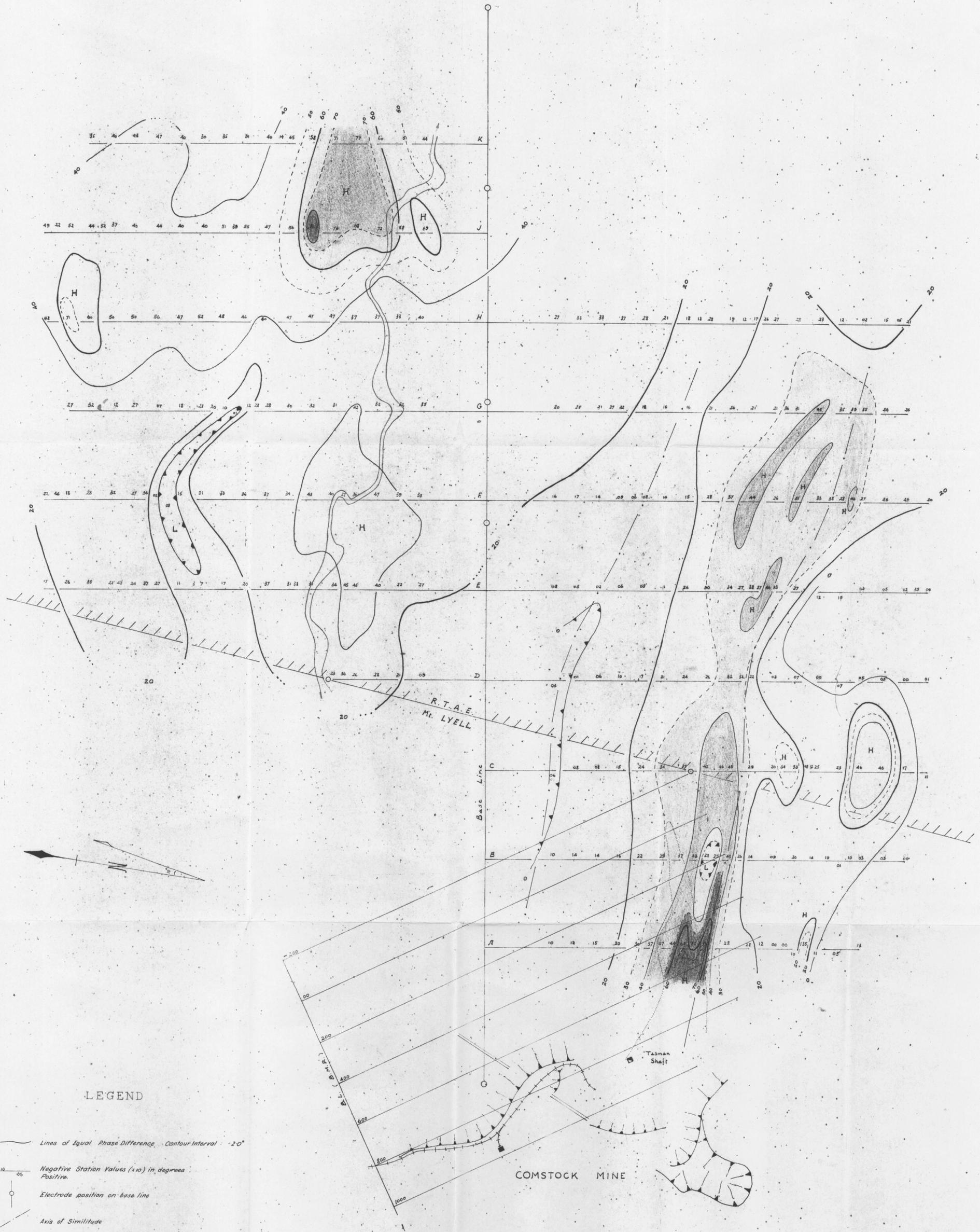
From the results of the I.P. survey in this area, no recommendations can be made for further testing for a concealed ore body in this area. There is a vague correlation of the I.P. effect with the Turam (electromagnetic) anomaly on the south side of the base line, and the I.P. survey generally confirmed the results of the electromagnetic survey on the north side of the base line. No further geophysical testing in this area is warranted.

E. McCARTHY

and

R. FINNEY

22nd May, 1962.



LEGEND

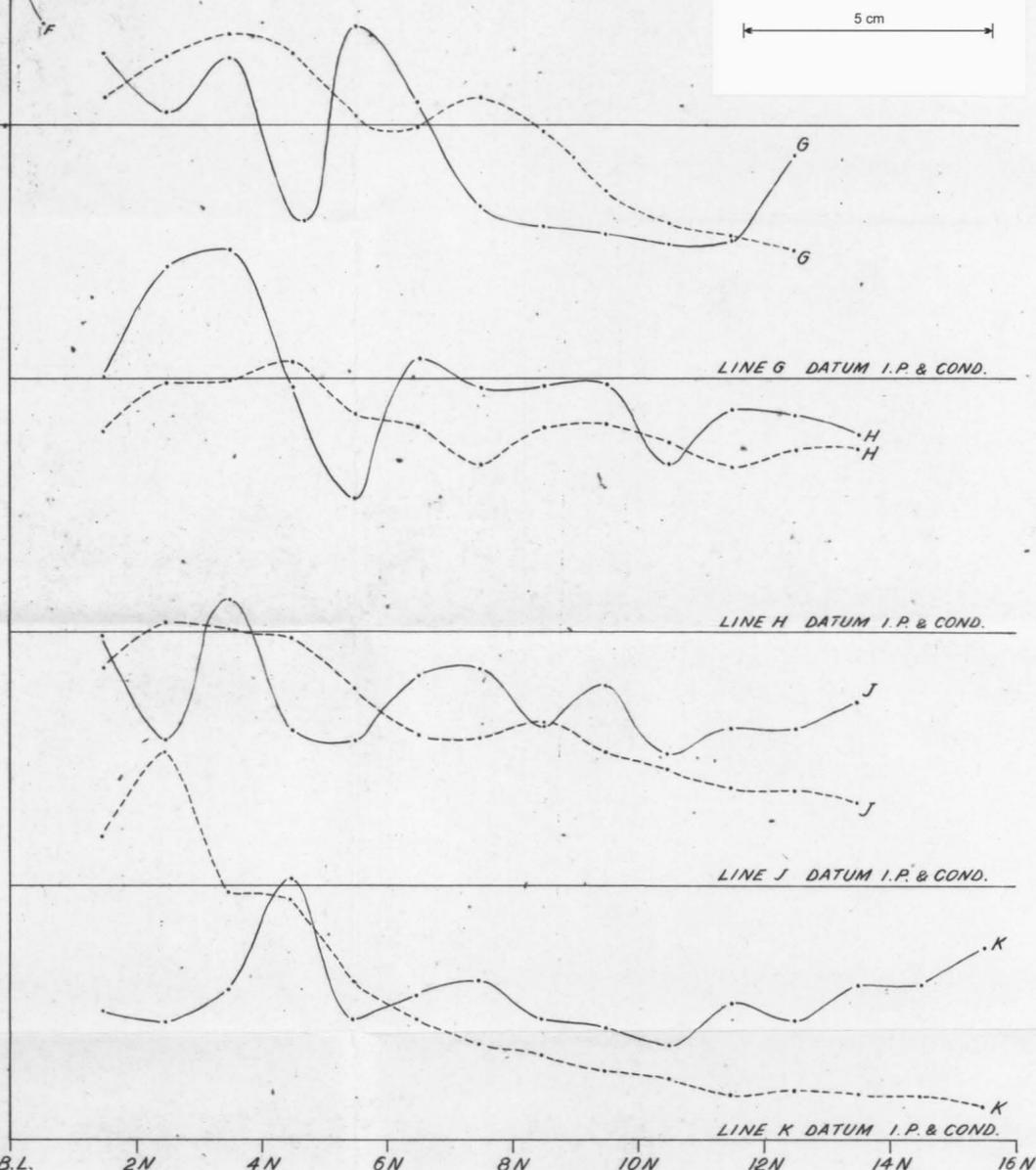
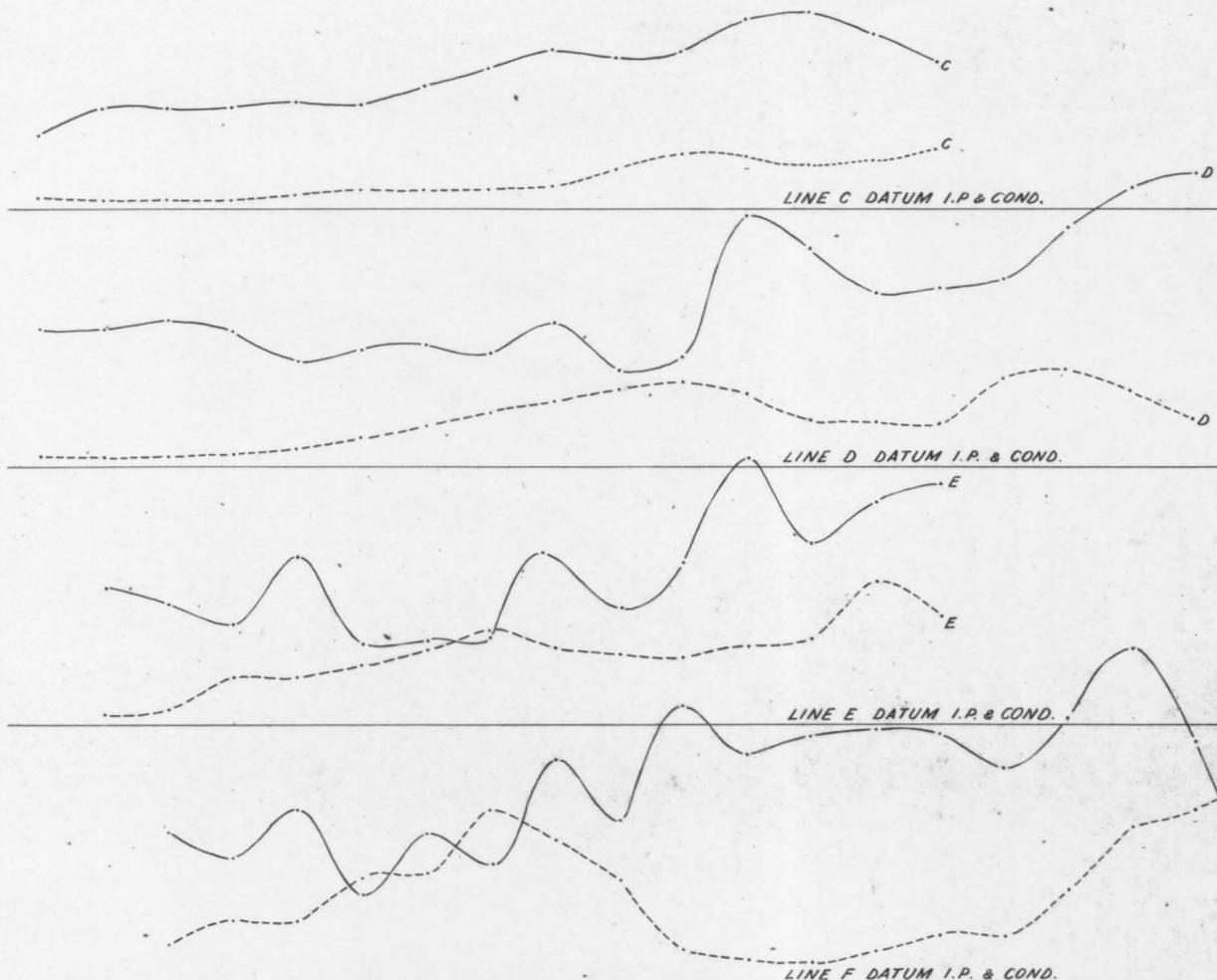
- Lines of Equal Phase Difference. Contour Interval: 20°
- Negative Station Values (x10) in degrees
Positive.
- Electrode position on base line
- Axis of Similitude
- Phase Anomaly plotted by B.M.R.
- Survey pegs on Lease Boundary

Note: Station values in each case ascribed to furthest reference point from primary cable

5 cm
06-5280

RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED		
ELECTROMAGNETIC SURVEY COMSTOCK AREA LINES OF EQUAL PHASE DIFFERENCE		
SCALE 1" = 200'		
Geophysicist	J. Boniwell	
Draftsman	J.L.R.	P.R.P. 7/100- Plan No. T 338

18.5 16.5 14.5 12.5 10.5 8.5 6.5 4.5 2.5 B.L.



— CHARGEABILITY : 6 millisees = 1 inch
- - - CONDUCTIVITY : 6 m. mho/meter = 1 inch

TASMANIA - WEST COAST
LYELL - COMSTOCK AREA
I.P. SURVEY
CHARGEABILITY & CONDUCTIVITY PROFILES
Scale : 200 ft - 1 in.

06-5280

PLAN No T 757