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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

West Coast Mines

EXPLORATION LICENCE 56/80 SANDY CAPE

Progress Report on Exploration Activity

May 1982 to April 1983

**OPEN FILE**

Geology Dept.

Report No. 168 M.D.

I.R. McDonald,

JUNE, 1983.

**MICROFILMED**

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1. INTRODUCTION

This report covers exploration activities on E.L. 56/80 between May, 1982 and April, 1983. In March, 1983 an agreement was signed by E.Z. Co. Ltd. (holders of the E.L.) and Tennaco Oil and Minerals Ltd. to explore the E.L. as a Joint Venture. This is the first report on the area under the auspices of this Joint Venture. Previous exploration on the E.L. has been documented in E.Z. Co. Reports Nos. 141 (1981) and 147 (1982).

2. WORK COMPLETED

2.1. Aeromagnetics

During 1982 the results of an aeromagnetic survey of the West Coast of Tasmania, flown by the Tasmanian Mines Department, became available. Leaman Geophysics were commissioned to interpret the results over the area of E.L. 56/80.

2.2. Electromagnetics

Geoterrax Pty. Ltd. were hired to carry out a Crone P.E.M. survey over the No. 1 Anomaly Grid which is situated at approximately 5413,000mN 316,000mE. (This is the anomaly No. 1 referred to in E.Z. Report No. 147, and corresponds to the Leaman Geophysics anomaly trend 'M'). Seven lines totalling 4.075 km were surveyed using a 100m transmitter-receiver separation, taking readings every 25m.

Two reconnaissance lines of P.E.M., totalling 2.0 km were surveyed over Anomaly Grid No. 2 using a transmitter-receiver separation of 100 m and a station interval of 40 m. Grid No. 2 is situated at approximately 5,410,000mN; 318,500mE. (This corresponds to Leaman Geophysics anomaly trend 'K').

2.3. Gridding

Anomaly No. 1 Grid was re-established following deterioration during the 1982 winter season. Much of the grid required cutting to upgrade it to allow operation of the P.E.M. equipment. Ten lines totalling 5.5 km were cut and pegged at 50 m intervals.

Two lines totalling 2.0km and a baseline of 860m were cut and pegged on Anomaly Grid No. 2. The lines were located by using a magnetometer to find the peak ground magnetic response in the area.

#### 2.4. Geochemistry

On Anomaly Grid No. 2, 160m of line were sampled using a hand-held power auger on 20m spacings. This was run as a trial of the technique following the disappointing results obtained by hand augering in the previous field season. The samples were sieved to -80 mesh and analysed for Cu, Pb, Zn, Fe, Mn, Ag, As by A.A.S. and for Sn and W by X.R.F. at Analabs Pty. Ltd.

#### 2.5. Petrology

Two rock samples were submitted for thin section examination by Central Mineralogical Services.

#### 2.6. Field Operations

Due to the lack of any road access into the Sandy Cape area, the field programme was conducted by helicopter access from Savage River. The programme was supervised by a contract geologist, Mr. D.C. Simpson.

### 3. RESULTS RECEIVED

#### 3.1. Aeromagnetics

The report by Leaman Geophysics on the aeromagnetic survey, as covering E.L. 56/80, is contained in Appendix 1..

#### 3.2. Field Operations

All details of the field work carried out in 1983 are contained in Appendix 2 which is a report by the contract geologist, D. Simpson, who supervised the work.

#### 3.3. Electromagnetics

The Crone P.E.M. field readings are contained in Appendix 3, and line profiles are contained in Appendix 4. Brief comments on the results by geophysicist A. Lynch of Geoterrex are contained in Appendix 5. Details of the field operation of the technique are given in Appendix 2.

The P.E.M. results on Anomaly Grid No. 1 are characterised by high-background, non-anomalous responses from channels 1 to 4. This type of response is generally interpreted as being due to conductive overburden. The area of the survey is an emergent coastal lowland subject to a cold temperate, high rainfall, climatic regime. Under these conditions the formation of a conductive overburden would seem to be limited to the possibility of a high salt content in the stabilised dune sand cover. The salt would be principally derived from wind-blown sea spray.

The profiles also show some strong late channel anomalous responses, mainly in channels 7 and 8 and to a lesser degree in channel 6. The channel 7 values have been plotted and contoured on Plan No. A2-516-0064. This shows that there are three zones of anomalous response. The eastern margin of the grid is marked by a sporadic low to moderate positive anomaly which trends northerly in the south of the grid and north-north-westerly in the remainder. The anomalous zone peaks on line 150S with a value of 200 at 200E. The south-western corner of the grid shows a low positive anomaly with a peak value of 70 at 200W on line 150S. This zone may link with low positive values on the western ends of lines 300N and 375N but lack of grid coverage prevents confirmation of this trend.

A strong north-north-west trending anomaly occurs in the north central portion of the grid. It is expressed as a very strong positive feature on lines 300N and 375N with values up to 900. This is flanked on the west by a deep negative response with values down to -217. On the eastern side, a lower amplitude negative response flanks the anomaly with values down to -89. The positive feature and western negative feature are open to the north, but the responses on the northern-most line, 450N, suggest that it may be closing off. The southern end of the trend is expressed as a low amplitude high of 30 on line 00 at 50W. The eastern negative response is more persistent and extends from line 375N to line 150 S, but this may be related to the eastern margin positive trend as much as to the central positive anomaly.

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Figure 1. shows two P.E.M. responses over the Woodlawn orebody in N.S.W. Line 'J' was normal to the strike of the ore and shows a strong positive anomaly over the top of the body with a deep negative response on the down-dip side. The P.E.M. profile on line 'G' implies a dip in the opposite direction to the overall dip of the sulphide body. This was explained by Crone as being due to line 'G' not being perpendicular to the strike of the sulphides. The section however shows the uppermost 50 feet of the orebody as dipping very steeply to the east. If, as with most geophysical techniques, the P.E.M. is responding to the first significant event, the responses on section 'G' may be a true reflection of an easterly dip in the top 50 feet of the body.

The Woodlawn results would imply that the Sandy Cape P.E.M. anomaly represents a strong conductor striking approximately  $325^{\circ}$  true and dipping to the west-south-west, with a strike of approximately 350m, with a possible southerly extension of a further 400m. Geotrex interpret the westerly dip as very steep and interpret the depth to the top of the body as being about 50m, based on the lack of anomalous responses in channels 1 to 4 and the transmitter-receiver separation being 100m. The interpretation of a very steep dip may be questionable. The late channel response over the Sandy Cape anomaly is very similar in form to that from line 'J' over the Woodlawn orebody (Fig. 1). That response came from a conductor dipping at only  $40-45^{\circ}$ .

Comparison of Plan A2-516-0064 with the ground magnetic contour plan, No. A1-516-0043, shows that there is very little correlation between the zones of E.M. anomaly and the zones of magnetic anomaly. Only the north-north-west strike direction is common to both sets of data. It must be noted, however, that the coverage of the two techniques was not identical. The peak of the most intense magnetic zone in the north-west of the grid was covered by the P.E.M. survey and shows no P.E.M. anomaly. The main P.E.M. anomaly zone was covered by magnetics only on line 300N, and there is no magnetic response corresponding to the E.M. anomaly. (see Fig. 2)

The P.E.M. anomaly zone on lines 375N and 450N was not covered by the ground mag survey.

There were no anomalous P.E.M. responses obtained from the reconnaissance lines on Anomaly Grid No. 2.

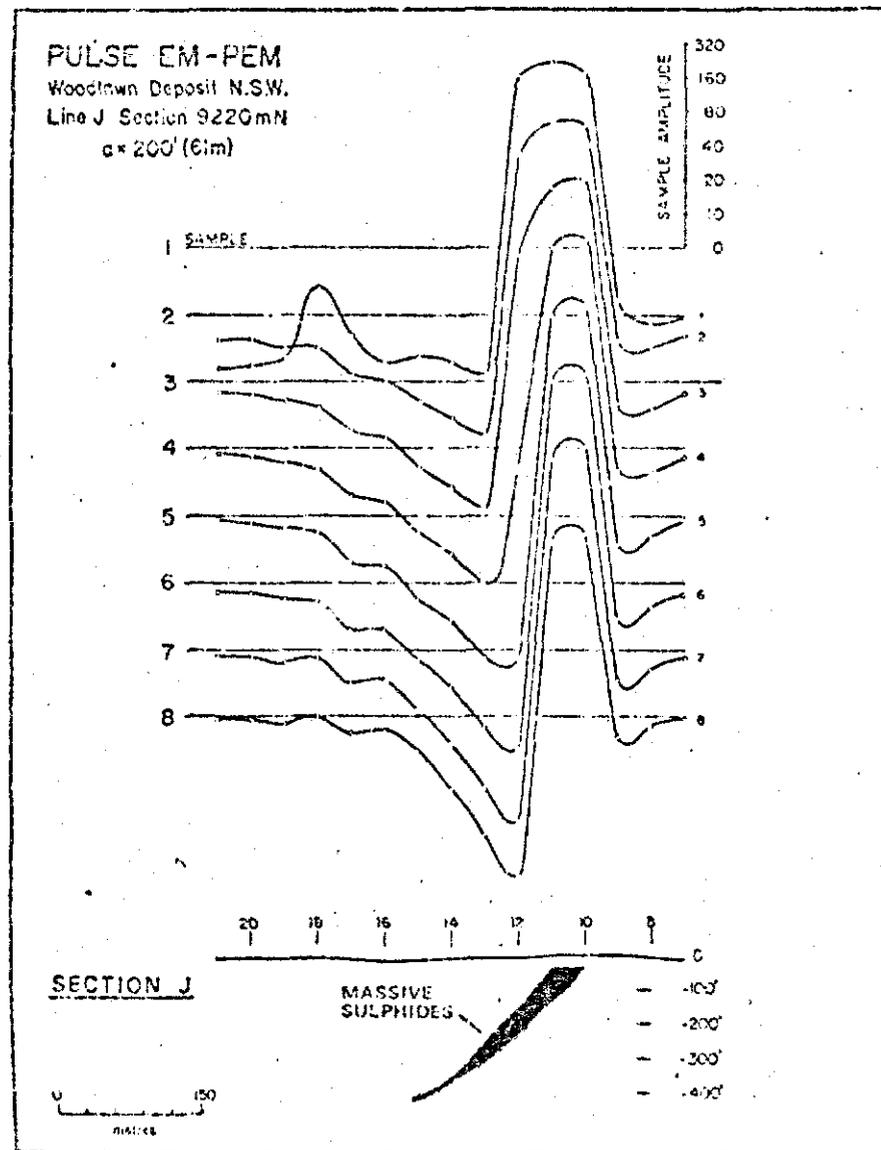
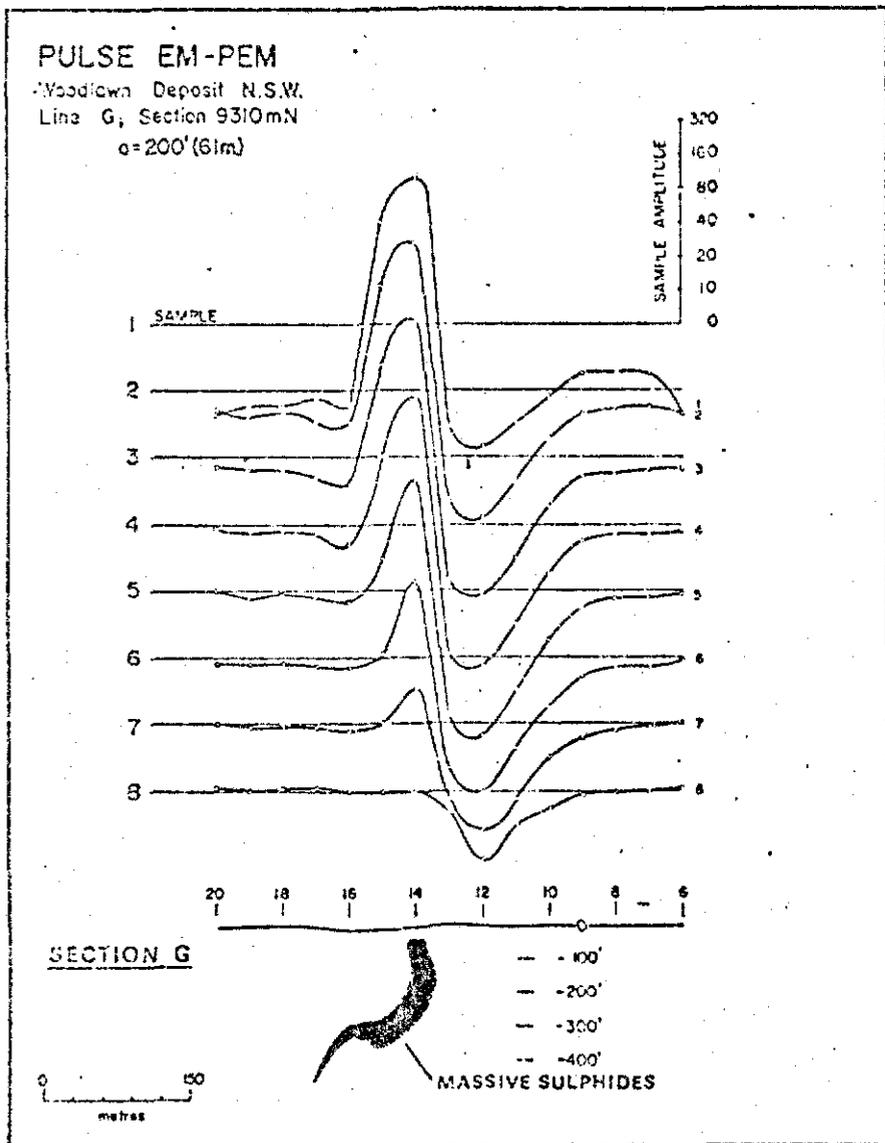


FIGURE 1 - P.E.M. Responses over the Woodlawn Massive Sulphide Deposit.

(From D. Crone in "Geophysical Case Study of the Woodlawn Orebody, N.S.W., Australia.)

5 cm

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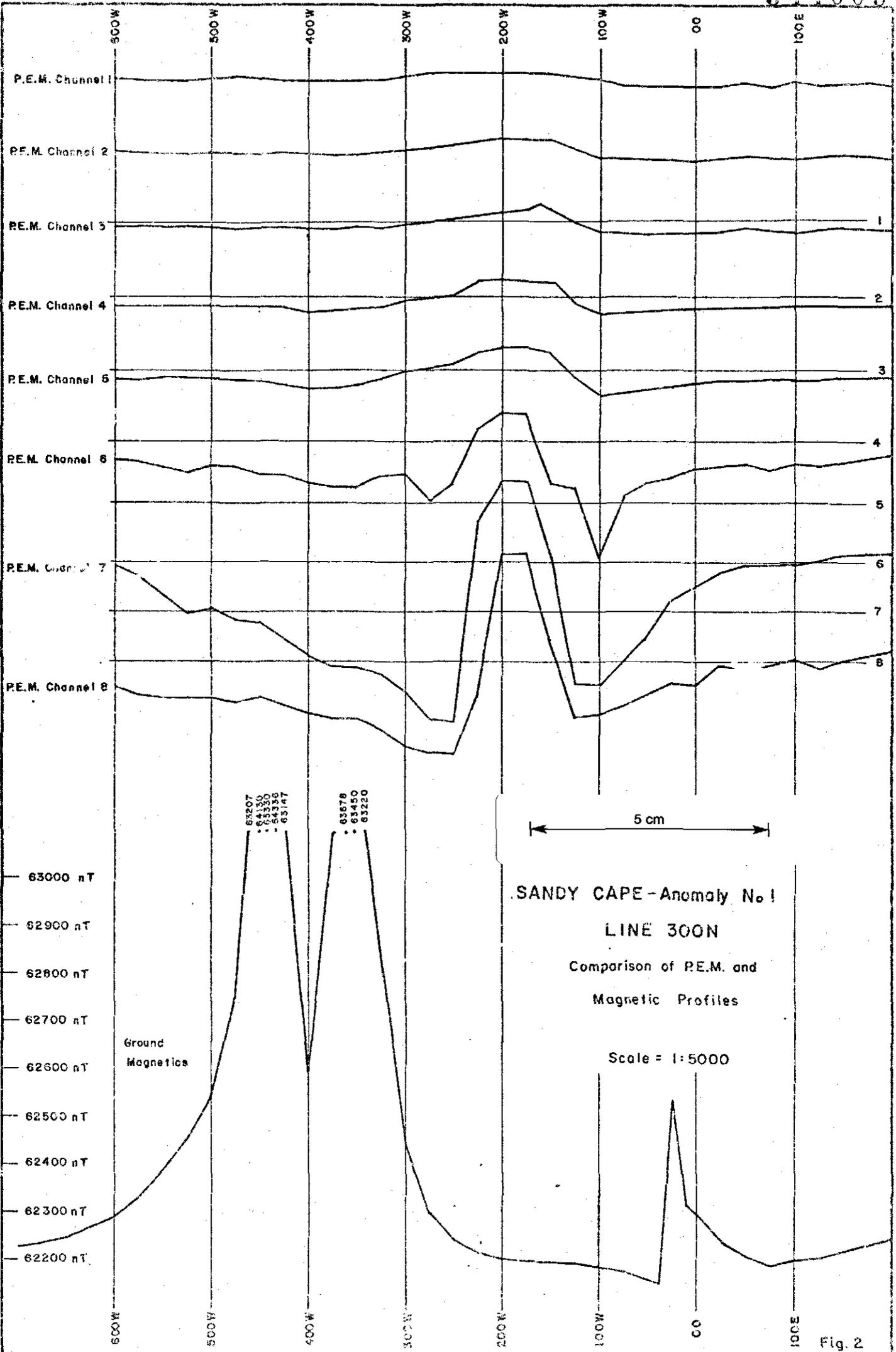


Fig. 2

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3.4. Petrology

The C.M.S. report describing the two rock samples collected for thin section is presented in Appendix 6. Sample No. 53401 was collected from Anomaly No. 1 at approximately 350N, 50W. Sample No. 53402 was collected from Anomaly No. 2 at approximately 4900N, 5700E.

The samples were submitted for examination to try and determine whether any conductive or magnetic minerals were present which might explain the E.M. or magnetic anomalies. The presence of graphite interleaved with sericite laminae in thin bedding planes could be a source of E.M. response. The P.E.M. response however is strong and discrete, and is suggestive of a good "massive" conductor. Disseminated graphite flakes, as observed in thin section, seem unlikely to give such a strong conductor response.

As the report made no mention of any magnetic minerals C.M.S. were asked to comment further on this and telephoned the information that recrystallised detrital magnetite was present in both samples, but only as very fine traces amounting to much less than 1%. This clearly could not be the source of such a strong discrete magnetic anomaly as is seen on Anomaly Grid No. 1.

3.5. Geochemistry (refer to Appendix 7 for Data Sheet)

All nine soil samples collected over anomaly No. 2 returned very low values for all the elements analysed. This was consistent with D. Simpson's observation (Appendix 2) that no alteration or mineralisation was present in the weathered rock chips brought up by the auger.

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APPENDIX 1.

A Preliminary Interpretation of an Aeromagnetic  
Survey in Western Tasmania - The Sandy Cape Area.

by

Leaman. Geophysics.

July 1982

In the general Sandy Cape - Savage River region the available mapping is sketchy, but there is good correlation between certain members of the Precambrian mudstone sequence and magnetic response. The more pronounced anomalies appear to occur at the junction of the mudstone - sandstone sequences. Within the area of E.L. 56/80 some of the larger anomalies such as 'A'; 'B' - 'E' and 'F' (see Fig 1.), appear to be associated with pelitic members of the "unmetamorphosed" Precambrian rocks.

Topographic, or sensor clearance problems are unlikely for the area of E.L. 56/80. (These could be significant further east in the rugged Norfolk Range area.)

If the supposition that pelitic sedimentary rocks are more magnetic is valid, then several magnetic units, some trend changes, and some "anomalies" can be noted (See Fig. 1).

The magnetic trend 'A'-'B'-'C' is reasonably clear-cut, with a source dipping east and perhaps plunging northward. This trend is continued from 'D' to 'E'. Between 'C' and 'D' the feature is smaller and/or deeper, and offset to the west. The total trend direction change is about  $10^{\circ}$ - $15^{\circ}$ .

The trend 'G'-'H'-'I'-'J' exhibits identical characteristics with the 'A'-'B'-'C'-'D'-'E' trend, including a trend direction change occurring at 'H'.

Similar, but shorter trends occur at:-

- i) About 1 km east of 'H'
- ii) Near 'K'
- iii) Near 'M'
- iv) Near 'N'

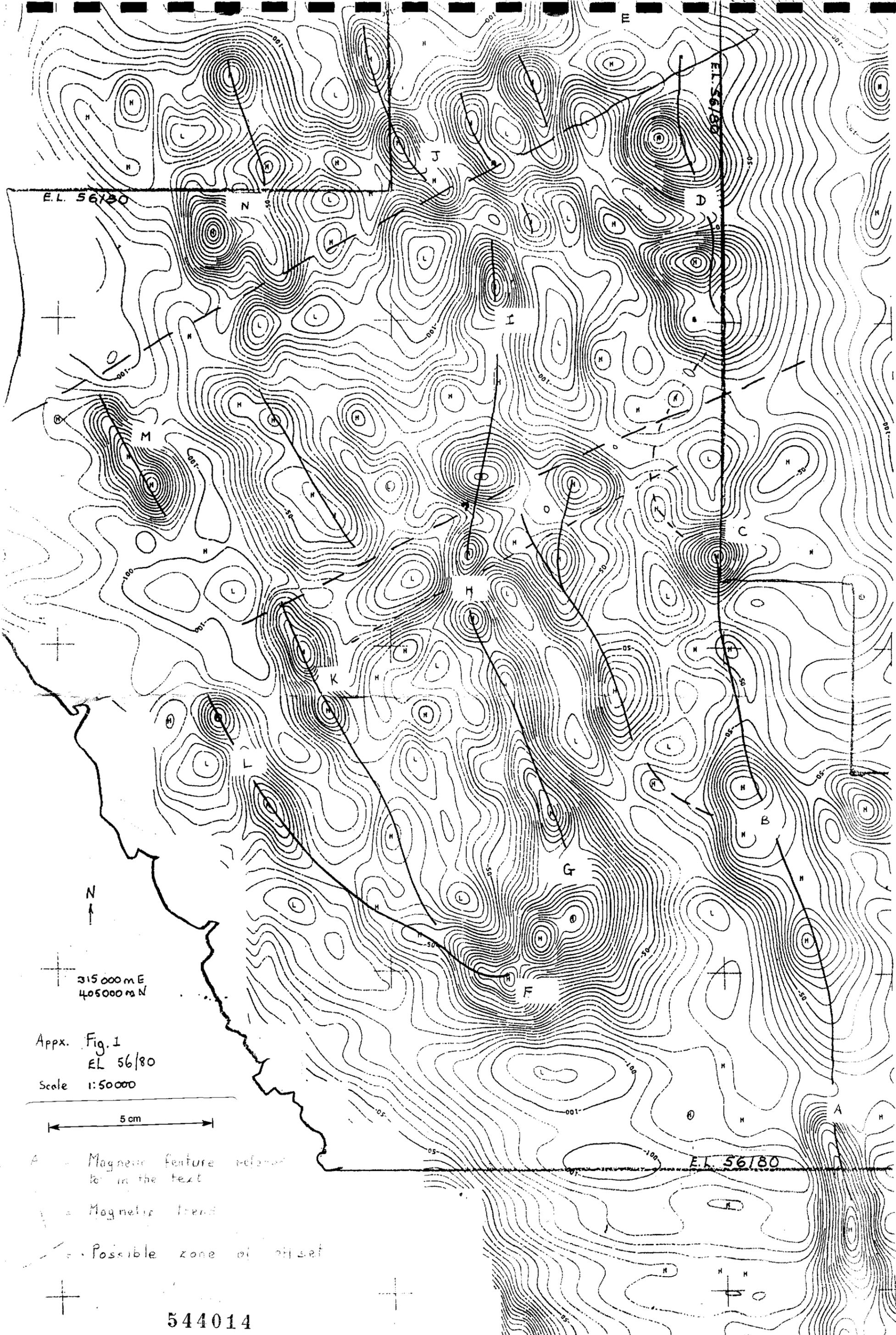
There are two possible zones of offset.

- i) From 413,000N ; 314,000E to 419,000N ; 325,000E
- ii) From 410,000N ; 317,000E to 414,000N ; 325,000E

The hinge axis is about 750 m south of the second offset zone but does not persist west of 320,000 E.

All of the above features are consistent with normal stratigraphic - structural character.

The trend 'F'-'L' however, while reproducing the same trend pattern, lies within the Sandy Cape Granite. The magnetic character of the Granite north of Chimney Creek is quite distinct from the more normal response to the south. There is no obvious reason for this. The anomaly curl 'F'-'L' may be a significant indicator and this zone should be examined. Other anomalies can be reviewed if mineralisation is known in the region.



Appx. Fig. 1  
 EL 56/80  
 Scale 1:50000

5 cm

- A - Magnetic feature referred to in the text
- Magnetic trend
- - - Possible zone of offset

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APPENDIX 2.

Report on Field Program

E.L. 56/80

"Sandy Cape"

for Electrolytic Zinc

Co. of Australasia Ltd.,

West Coast Mines

by David C. Simpson

Consulting Geologist

31 May 1983

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## 1. Introduction

Following discussions between E.Z. Co. and Tenneco Oil and Minerals of Australia a short field program, designed to test two prospective areas within EL 56/80, was initiated and field commenced on 6 April 1983. Program completion was date was 16 April 1983. The prospective areas were identified following a field program conducted in 1982 and reported upon by Moreland.

On 31 March 1983 John Mill, Chief Geologist at Rosebery requested the author to supervise the program in the field.

This report is a summary of the activities carried out together with observations on the techniques used. As final results of the P.E.M. survey are not yet available only preliminary comments on that survey are made.

## 2. Object of Program

The prime objective of the field program at Sandy Cape was to establish whether two promising magnetic anomalies identified during the 1982 field season were due to conductive sources. These are referred to herein as Anomaly #1 and Anomaly #2.

Ground work conducted in 1982 confirmed the presence of a magnetic anomaly at No.1 site. Soil augering was also planned for this anomaly during the program.

Anomaly #2 existed as an airborne magnetic anomaly only with the object being to locate it by ground magnetics with a follow-up survey to test for conductivity.

A subsidiary aim of the program was to determine the suitability or otherwise of a Stihl powered auger for taking soil and bedrock samples.

To enable the planned program to be undertaken it was necessary to establish a grid at Anomaly #2 and re-establish the existing grid at Anomaly #1.

### 3. Location and Access

E.L. 56/80 held by E.Z. Co. is located on the West Coast of Tasmania with the western boundary of the licence including Sandy Cape. Detailed description of the licence boundary is given by Moreland 1982 ( E.Z. Geology Report No. 147.)

Because of difficulties experienced with access in 1982 E.Z. personnel elected for this program to be solely helicopter supported and to operate on a daily basis from Savage River where crews were accommodated at the motel. Hookway Aviation provided a Bell 206 helicopter and pilot for the duration of the job.

Emergency camps were established at Anomalies #1 and #2 in the event that crews became stranded in the field by bad weather.

### 4. Weather

Poor weather played a significant part in rescheduling the program as originally envisaged, cutting the effective time spent on the ground. The diary following shows that the 5th, 7th and 11th April were completely lost due to low cloud and/or rain. Only five days out of a total of twelve available were spent as full days in the field with the remainder being variably affected by unsuitable flying conditions.

In effect the reduced time on the ground meant that proportionately more effort was expended on Anomaly #1 as this is regarded by E.Z. staff as the higher priority of the two.

A suggestion made by the pilot was that if a future program in the area is planned then consideration should be given to using Smithton as a base; where a coastal track could be used by a helicopter in the event of low cloud around the mountains.

5.

PERSONNEL

The following personnel, listed in alphabetical order, were involved in the April '83 program at Sandy Cape:

Gordon Beresford  
 Royce Clayden  
 Paul Doherty  
 Kevin Dodds  
 Bill Lusty  
 Bill Moyle  
 Warren Purton  
 David Simpson  
 Ray Weir

E. Z. Co.  
 E. Z. Co.  
 Geoterrex  
 Contract line cutter  
 Hookway Aviation  
 E.Z. Co.  
 Contract line cutter  
 Contract geologist  
 Geoterrex

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6. Summary of Activities

6.1. Line cutting and pegging

6.1.1. Anomaly #1

A substantial part of the 1982 grid over this anomaly needed to be cut and pegged to make it accessible for the P.E.M. crew.

On 8th and 9th April the following activities were carried out:

Baseline cut and pegged	300N to 450S	750m
Line 150N cut and pegged	0 to 450W	450m
" 375N " "	350W to 600W	250m
" 450N " "	350W to 600W	250m
" 300N " "	0 to 200E	200m
" 300N " "	0 to 700W	700m
" 600N " "	450W to 600W	150m
" 450W cut only	150N to 600N	450m
" 00N pegged	0 to 350E	350m
" 00N cut and pegged	0 to 450W	450m
" 150S pegged	0 to 150 E	150m
" 150S cut and pegged	0 to 350W	350m
" 450S pegged	0 to 300E	300m
" 450S pegged	0 to 50W	50m

Several walking tracks were cut for access between lines.

Note: On line 150N cut line detours approx 10m north of planned position because of river. This is between 200W and 230W.

On 14th and 15th the following was carried out:

Line 375N cut and pegged	0 to 350W	350m
" 450N " "	0 to 350W	350m

A total of 5500 metres was cut or cut and pegged with 450m being cut only.

6.1.2. Anomaly #2

Because of time constraints caused by poor weather the target gridding program remained incomplete at the finalisation of the field program. The following was carried out:

- Baseline cut and pegged 4600N to 5460N 860m
- Line 5000N cut & pegged 4500E to 5500E 1000m
- " 4800N cut & pegged 4500E to 5500E 1000m

An orientation grid was pegged in conjunction with a magnetic survey to pinpoint the peak of the magnetic anomaly. Approximately 1000m of traversing was carried out to identify this area.

6.2. Magnetics

Early in the program a series of ground traverses was conducted to locate accurately the airborne feature identified as Anomaly #2. The area was initially identified using aerial photographs from the helicopter. On the ground identification was checked before a line across the anomaly was measured and flagged using compass orientation.

Orientation of the grid was set out as in fig. 1. Baseline orientation was derived by joining the peaks of the compound anomaly shown on the aeromagnetic data sheets compiled by Geoex and applying the variation angle to obtain:

- 1) Baseline orientation 317° mag
- 2) Crossline orientation 47° mag

An orientation magnetic traverse across the interpreted peak of the anomaly was run first. This turned out to be on the eastern flank of the anomaly so was extended westward some 500m. The peak was obtained at 225mW and this position was then selected for the north-south orientation line. Results of these two traverses are shown in Figs. 4 and 5. Following location of the centre of the anomaly pegging of the grid commenced.

Due to weather constraints final magnetometer traverses were run only on Lines 4800N and 5000N ( as was the P.E.M. survey ) with a tie-line traverse along 5000E from

5000N to 4800N. The method used here is the one described by S. Breiner on p12 of "Application Manual for Portable Magnetometers" and published by Geometrics. Profiles of the cross and tie-lines are shown in Figs. 6, 7 and 8

6.3. P.E.M. Survey

6.3.1. General

The method selected by E.Z. Co. for coverage was the Pulse Electromagnetic system operated by Geoterrex using a ground coil transmitter of approximately 10 metres diameter drawing current from a battery-powered transmitter. ( See Plates 1 & 2 ). Receiver coil and receiver unit are shown in Plates 6, 7 & 8. The receiver coil is horizontally mounted and requires levelling. Note level bubble in photograph.

Eight channels are read in the sampling sequence following pulse shut-off in the transmitter. Timing between transmitter and receiver is by way of a link cable, in this case 100 metres in length.

Crew used on this project was three ( i.e. two Geoterrex personnel and one from E.Z. Co.) one on transmitter coil, one on transmitter and one on receiver. Contact between the groups was by voice.

A station spacing of 25 metres was employed for the Anomaly #1 area and 40 metres used for Anomaly #2. A table showing P.E.M. coverage is shown in Appendix 1.

6.3.2. Results

As mentioned elsewhere only preliminary comments are made on the P.E.M. program as final results were not available at the close of the field program.

Anomaly #1

On most lines on this anomaly the earlier channels ( i.e. up to No. 4 ) show a persistent and high PEM response over the whole line irrespective of the position of the magnetic anomaly. This was first noted on lines 00N and 150S where dune sand probably up to 7 metres thick occurs. It was concluded that the high conductivity might reflect a high salt content in the dunes. (N.B. This area would be approximately 3 Km from the sea.)

R. Weir of Geotrex reported that because of the high surface conductivities there was some attenuation of the received signal.

On lines 150N, 300N, 375N and to a lesser extent 450N a strong anomaly was obtained displaced approximately 150 metres east of the magnetic anomaly. A negative shoulder occurs on the flanks of the anomaly and there is little response on the earlier channels. This is encouraging and may in fact reflect a bedrock conductive source.

Unfortunately there is little outcrop in the area from which to derive an explanation of the P.E.M. anomalies. A strong outcrop at ca. 350N 50W of thinly bedded shales and quartzites gave no P.E.M. response on nearby line 375N.

If the source of the magnetic anomalies was also conductive this should have shown on the P.E.M. survey. Half-width rules for depth interpretation of magnetic anomalies suggest that the source should be about 20 metres deep for example on Line 150N. However, invalidation of PEM depth interpretation due to conductive overburden remains a strong possibility.

In an attempt to explain the strong overall early-channel PEM response two tests of resistivity were undertaken using aluminium foil electrodes of 20 metre spacing and an ohmmeter. Both tests were carried out within 50 metres of the origin. Results were:

- 1) Site ca. 50E 75N      50 ohms/m
- 2) "      "      00N 40E      100 ohms/m

#### 6.4. Geochemical Sampling

From observations made on Anomaly #1 it was concluded that trial sampling on this site with the power auger would not be productive in assessing bedrock. This is because of the extensive dune cover which was sampled extensively in the 1982 program.

A short sampling program of about one hour's duration was carried out on Anomaly #2 along Line 5000N. Weathered bedrock was reached in several samples and consisted of mid to dark grey clay showing relict bedding and fine mica. No alteration or trace of mineralisation was noted.

The power auger performed well but was no better in the circumstances drilling to 1.5m than a hand auger apart from being quicker. With extension rods the machine may have been very useful in assessing, perhaps, the source of the magnetic anomalies or PEM anomalies on No. 1 grid. An adaptor on the the chuck allowing the fitting of say, Gemco auger rods may work well.

#### 6.5. Geological Observations

The observations of Moreland (1982) were confirmed in the field and will not be repeated here except where there is additional information.

In the process of gridding on the northern side of the Pedder River (Anomaly #1) several small outcrops of interbedded shale and quartzite were noted. Bedding orientation is variable from flat lying to vertical with a NNW strike. Outcrops were tested for magnetic response (with a pen magnet) and acid-reactive carbonate. Both gave a nil response at all locations tested. Several samples, suspected of containing graphite, were crushed and mixed with water in an attempt to float the graphite. No graphite was observed, however samples were submitted for confirmation by thin section.

Because of the extensive sand cover on Anomaly #1 geological interpretation is extremely difficult. From observations made on this program the author doubts that bedrock was reached on a large proportion of the 1982 program. The sample surrounding the original sites can be seen to be dune

in most cases.

## 7. Discussion of Results.

The results of the program carried out on Anomaly #1 are best described as inconclusive.

With the primary aim of the program being to determine if the magnetic source was conductive the preliminary conclusion is that, while the magnetic source is not, a displaced conductor is present. This creates some difficulties. In interpreting the PEM results an assessment will have to be made as to whether the presence of a conductive overburden has contributed to displacement of the PEM anomaly from the magnetic anomaly. If this is considered unlikely, as is the author's opinion, then different sources would appear to be the logical conclusion.

Plan distance between the magnetic and PEM anomalies varies from 120 to 200 metres. Allowing for the uncertainty in location of the anomalies quoted by A. Lynch of Geoterrex there still appears to be a real source difference for the two responses.

The PEM anomalies detected on lines 300N, 375N & 450N are fairly consistent in amplitude and width of response, developing negative shoulders to the positive anomalies on Ch. 7 & 8. Channel 6 shows generally an attenuated version of the Ch. 7 & 8 anomalies.

Line 150N is a single channel anomaly only (Ch 6) of moderate amplitude.

The anomaly centred at 125E on 00N is a much weaker anomaly but still on the same strike as the anomalies on the lines to the north.

Strong responses were obtained on Ch. 7 & 8 on Line 150S at 210E with subdued responses on the earlier channels.

The results indicate a strong late channel anomaly revealing a source with a strike length in excess of 750 metres with a displacement to the north-east averaging 150 metres from the ground magnetic anomaly. A conductive overburden exists which is indicated by the general high

positive responses in the earlier channels. Geotrex interpreted a depth to top of body of about 50 metres.

#### Anomaly #2

Because of the reduced field time due to poor weather only one day was spent with the PEM survey on this grid.

Two lines surveyed, 4800N and 5000N, located approximately over the centre of the magnetic anomaly revealed no conductors.

### 8. Conclusions

- 8.1. A strong late channel PEM anomaly exists at Anomaly #1 approximately 150 m NE of and parallel to the ground magnetic anomaly.
- 8.2. Depth to top of the conductor is about 50 metres.
- 8.3. No geological explanation of the source was observed.
- 8.4. The airborne anomaly #2 was confirmed by ground magnetic traverses.
- 8.5. No PEM anomaly was obtained at Anomaly #2.

### 9. Recommendations

- 9.1. To determine the source of the anomalies it is recommended that two holes be drilled each of less than 100m to:
  - a) test the magnetic anomaly centred approximately at 160N 210W
  - b) test the PEM anomaly centred at 300N 180W.
- 9.2. Before drilling it is recommended that 3 or 4 lines be cut at right angles to strike and traversed with magnetics and PEM in order to determine dip.

*David S. Smith*

21 May '83

Appendix 1

SANDY CAPE P.E.M. Coverage

Anomaly 1

Line	From	To	Metres
450N	600W	00E	600
375N	600W	00E	600
300 N	600W	200E	800
150N	00W	450W	450
00	350W	300E	650
150S	200E	300W	500
300S	150W	300E	450

Total 4075m

Anomaly 2

5000N	4500E	5500E	1000
4800N	4500E	5500E	1000

Total 2000m

Station spacing

Anomaly 1 25m

Anomaly 2 40m

## Appendix 2

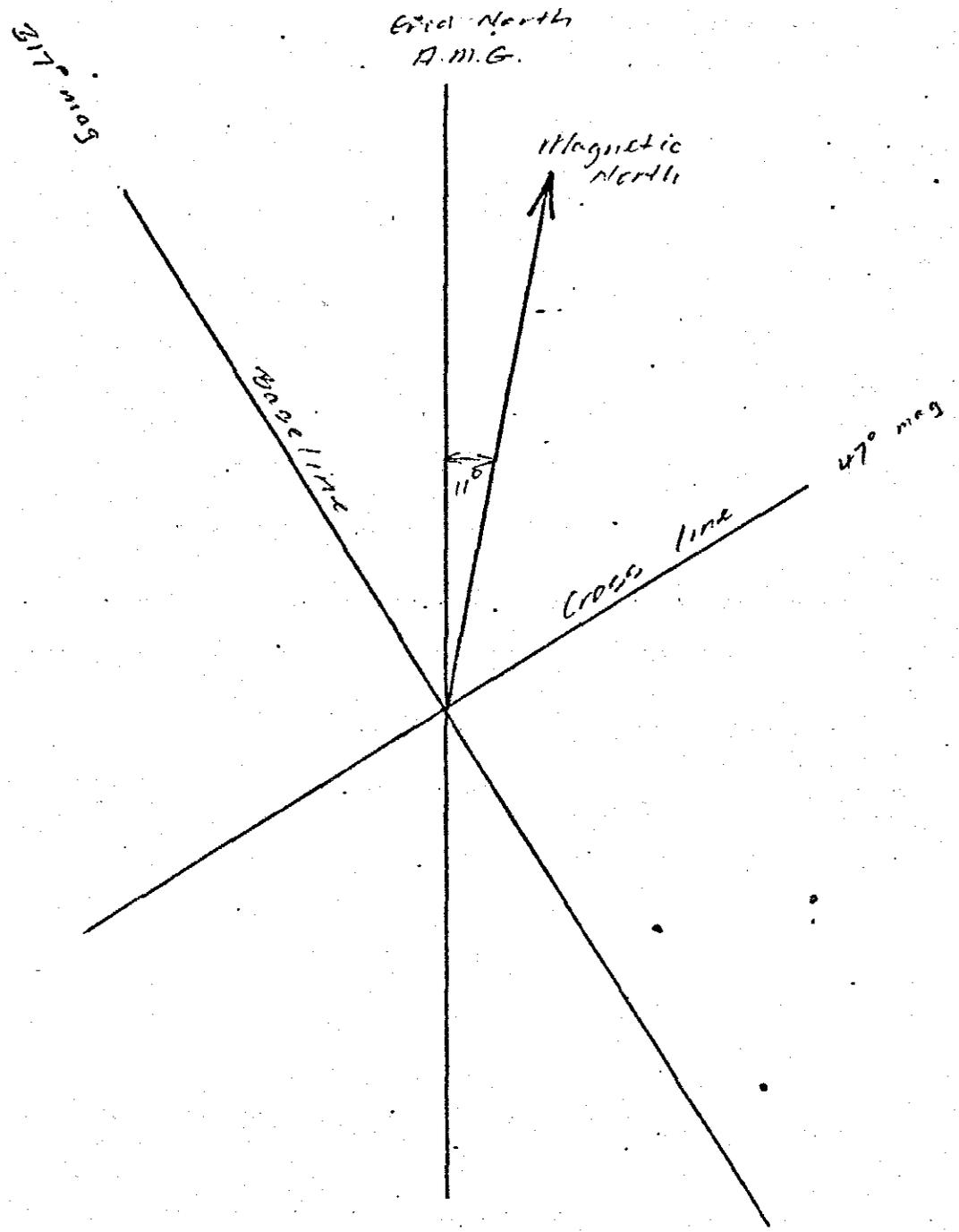
Helicopter Times  
Corrected from flight records

Date	Hours	Minutes	Comments
4.4.'83	1	39	Ferry
6.4.'83	1	10	
8.4.'83	2	21	
9.4.'83	3	22	
10.4.'83	1	59	
12.4.'83		48	
13.4.'83		47	
14.4.'83	1	43	
15.4.'83	1	29	
16.4.'83	1	58	

Total 17.27 hours

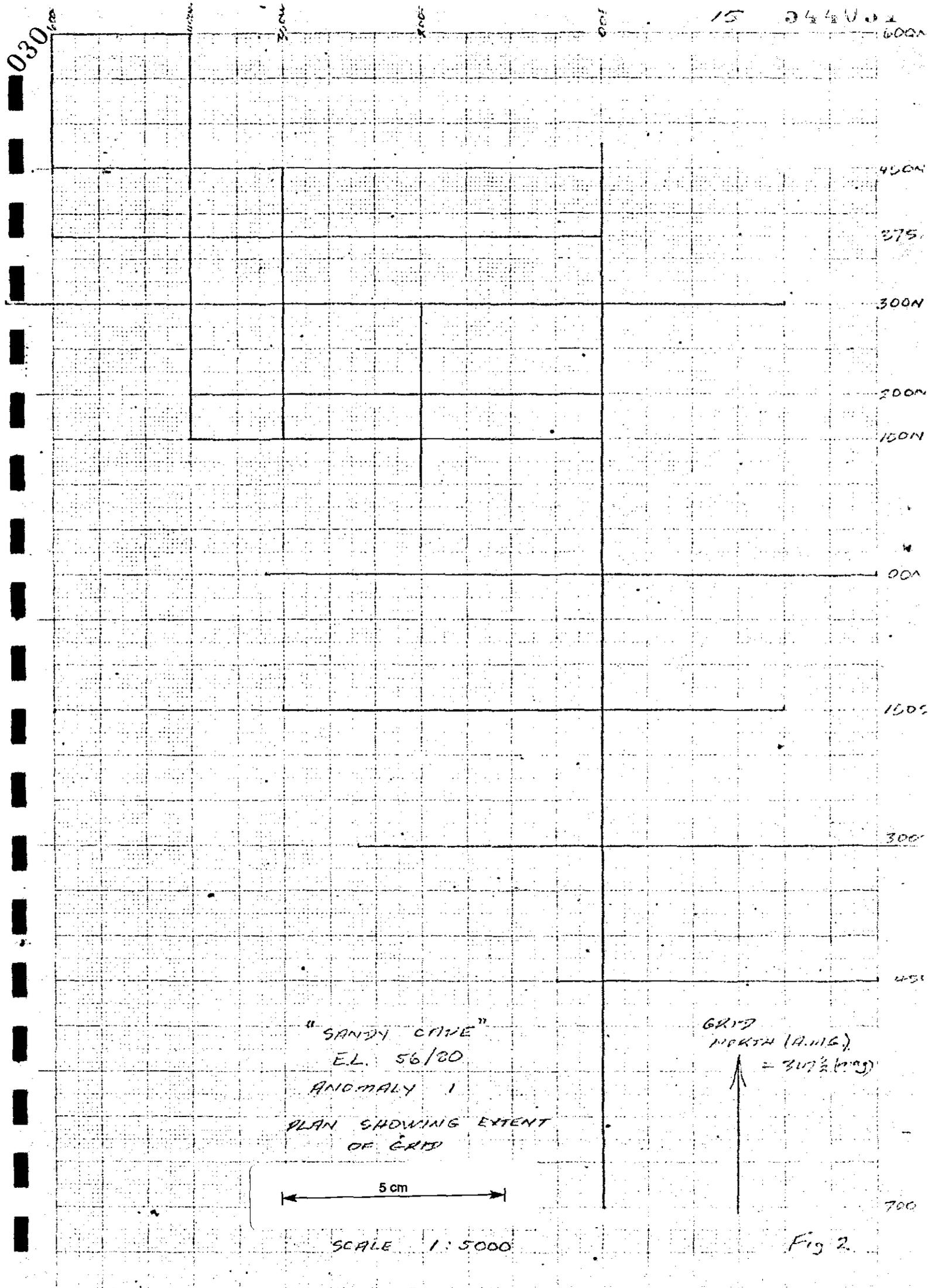
Diary of Field Work

Date	Dep. S.Riv.	Ret. S.Riv	% day in field
5.4.'83	-	-	0
6.4.'83	1350	1647	25
7.4.'83	-	-	0
8.4.'83	0748	1642	100
9.4.'83	0810	1722	100
10.4.'83	0753	1058	30
11.4.'83	-	-	0
12.4.'83	0838	1747	100
13.4.'83	1023	1732	75
14.4.'83	1238	1742	50
15.4.'83	0803	1802	100
16.4.'83	0808	1557	100



E.L. 56/80 "Sandy Cape"  
Anomaly 2 Baseline Orientation

FIG 1



"SANDY CREEK"  
 EL. 56/80  
 ANOMALY 1

PLAN SHOWING EXTENT  
 OF GRID

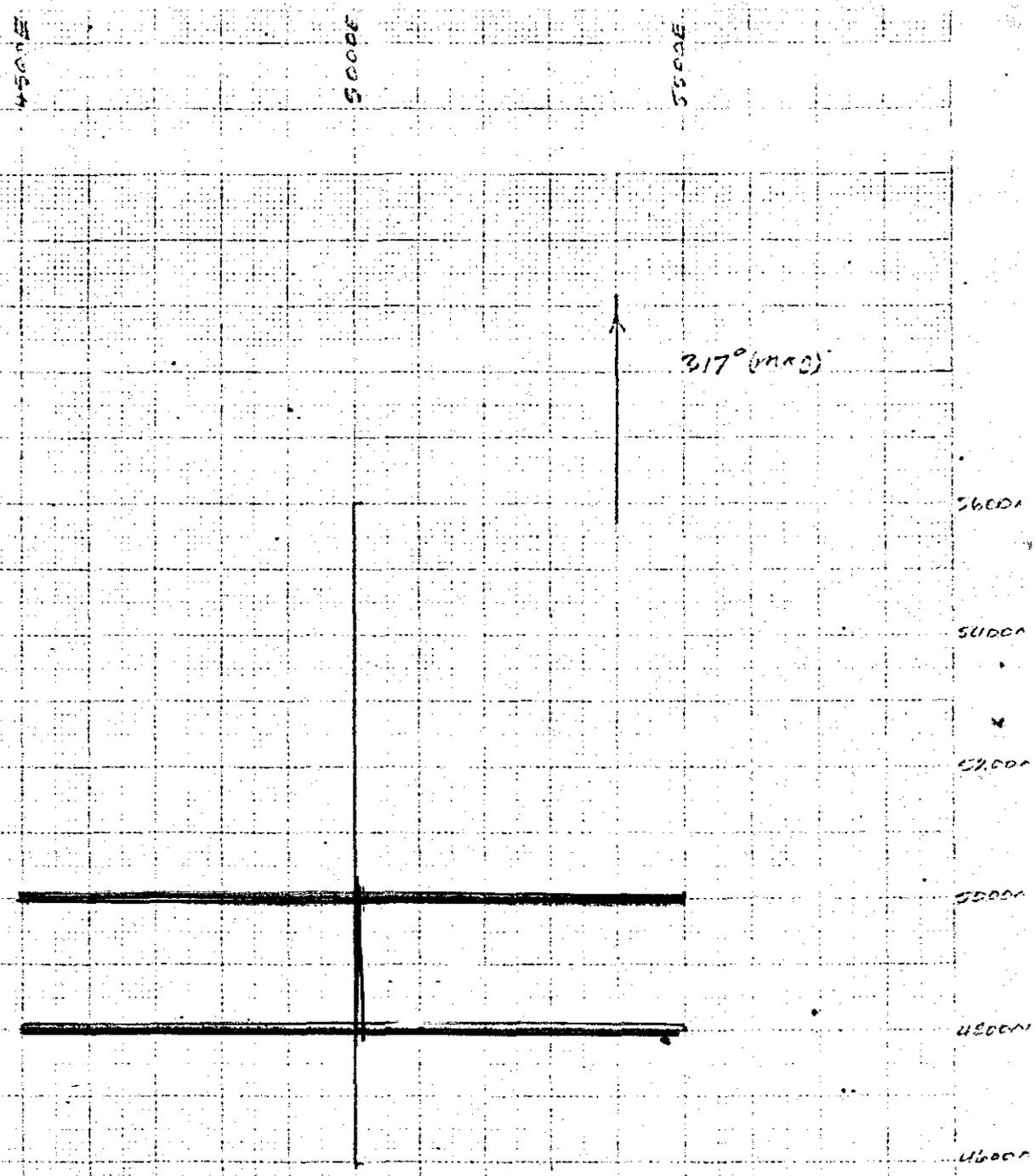
5 cm

SCALE 1:5000

GRID  
 NORTH (A.M.S.)  
 = 307 1/2 (true)

Fig 2.

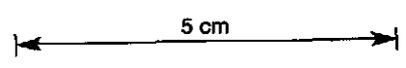
031



"SANDY CREEK"

EL 56100

ANOMALY 2



PLAN SHOWING

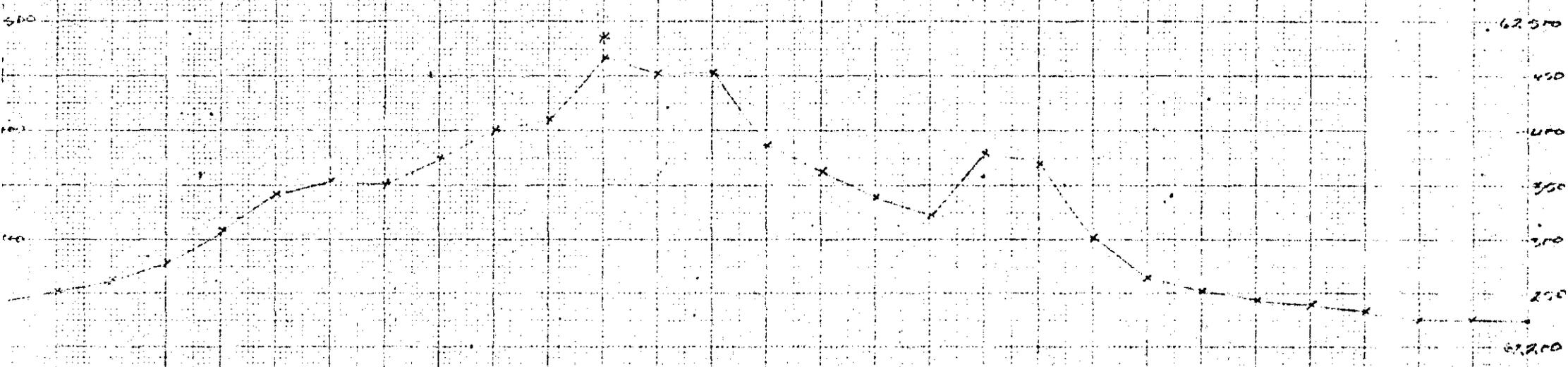
- 1. EXTENT OF ERID
- 2. GROUND MAGNETICS COVERAGE
- 3. D.E.M. COVERAGE

Fig 3.

SCALE 1:10,000

544033

ANOMALY 2



"GIMM CANYON"  
EL. 66/80

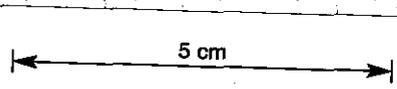
GROUND MAGNETIC SURVEY

E-W ORIENTATION LINE

HORIZ. SCALE 1:2500

VERT. SCALE 1cm = 50nT

\* Site selected for Baseline (544033)



17 City

17

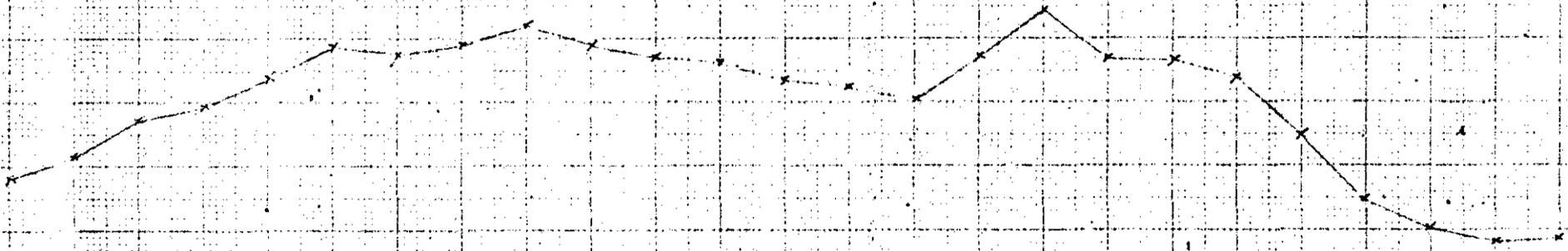
400W 300W 200W 100W 0 100E 200E

544034

ANOMALY 4.

4800N

5000S



"GRANDY CAPE"  
EL 56/80

GROUND MAGNETIC SURVEY  
N-S ORIENTATIONAL LINE  
MAGN. SCALE 1:2500  
VERT. SCALE 1cm = 50NT  
showing sites selected for  
crossings.

5 cm

4800S 3600S 2400S 1200S 0 25N 50N 100N 200N

Fig 5

18

544035

ANOMALY 2.

62050

62050

62100

62100



"SARBY CAPE"  
EL 56/80

GROUND MAGNETIC SURVEY

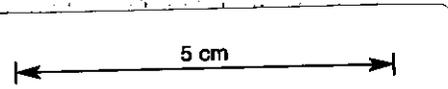
BASING TRAVESSE

5000E

HORIZONTAL SCALE 1:2000

VERTICAL SCALE 1cm = 25m

x Out  
o In



4800N

4900N

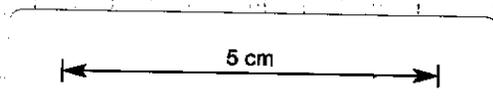
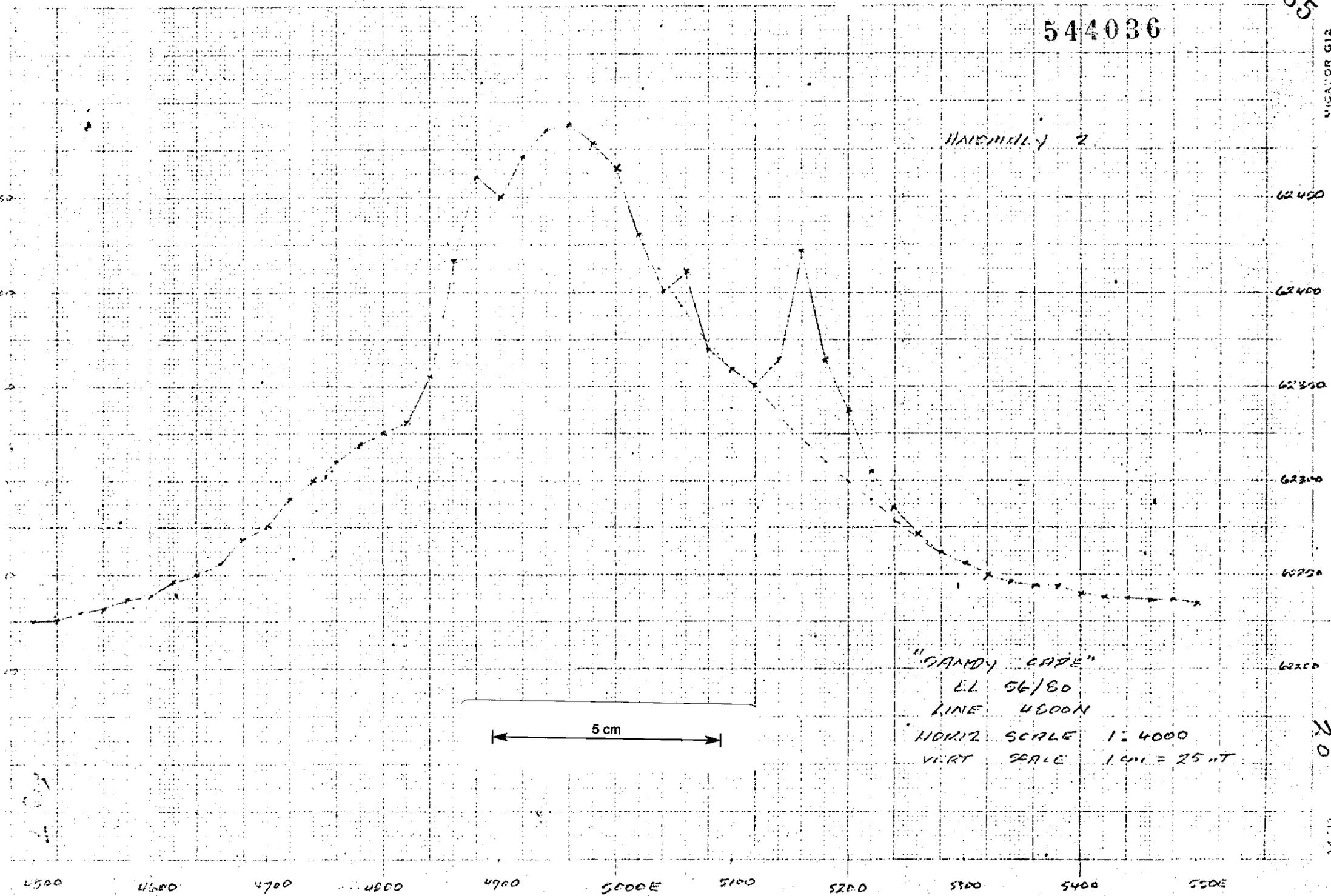
5000N

FIG 6

544036

WICATOR G12

STATION 2



"DANDY CAPE"  
 EL 56/80  
 LINE 4500N  
 HORIZ SCALE 1:4000  
 VERT SCALE 1 CM = 25 FT

2.500

NO

1470

544037

ANOMALY 2.

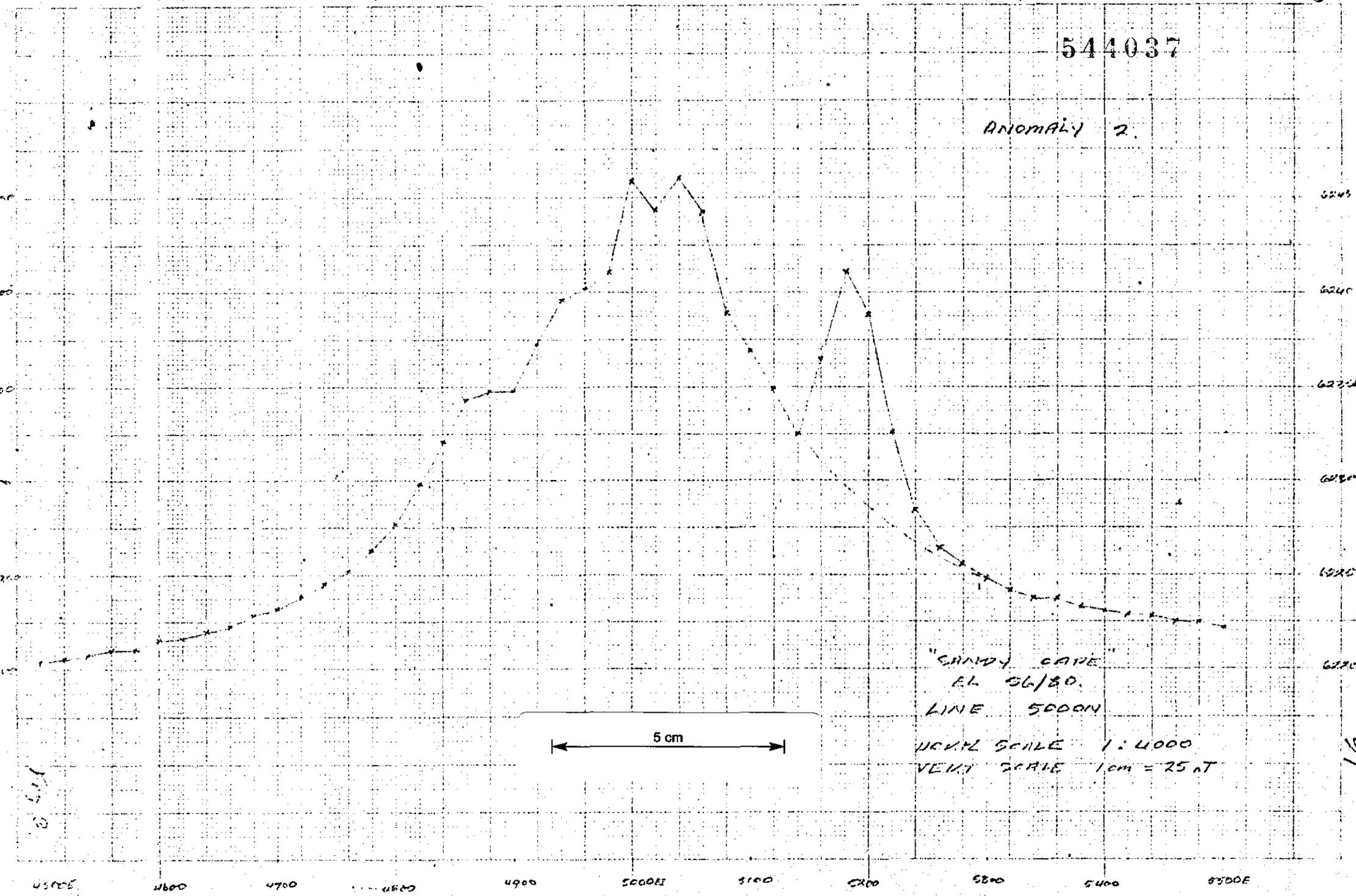




Plate 1. PEM Transmitter Loop with operating crew  
R. Weir (in yellow), R. Clayden (in red ) and heli-  
copter pilot W. Lusty



Plate 2. PEM Transmitter.



Plate 3. Bell Jetranger VH FUT on stabilised sand dune at about 175S, 150E Anomaly 1 with beach dune in background. Looking South-west.



Plate 4. Stabilised sand dune and PEM receiver near grid peg 150S, 150E. Looking west on Anomaly 1.



Plate 5. Looking east from Anomaly 1 at deeply incised valley cut by the Pedder River. Part of the Norfolk Range is visible in the left background.



Plate 6. PEM receiver and receiver coil with R. Weir operator.



Plate 7. PEM Receiver coil



Plate 8. PEM Receiver



Plate 9. Quartz outcrop Anomaly 1 near 200S 300E with stabilised dune in background.



Plate 10. Similar to Plate 9.



Plate 11. view from stabilised dune over coastal plain, typical vegetation being button grass, heath and ti-tree usually about 60 cms high.



Plate 12. view from dune 500m South of Anomaly 1 grid looking north. PEM crew just visible in centre-right of photo; helicopter on far left. Dune in centre background is that in Plate 4.



Plate 13. Views of heavier vegetation cover on sand dune south of Anomaly 1.



Plate 14. View of vegetation cover from dune south of Anomaly 1 - looking south-west.



Plate 15. Anomaly 2 Looking west along 5000N over button grass, heath and ti-tree



Plate 16. Anomaly 2 Looking south ; pegged line is 5000E.



Plate 17. Close - up of dune stabilisation.



Plate 18. Bridge over Pedder River Anomaly 1.  
Single lane only.

APPENDIX 3

P.E.M. FIELD READINGS



048

P. E-M

544049

CLIENT: E Z	PROFILE: GRID I LINE 150 S (E → W)	T ↔ R: 100 m.	DATE: 10.12.4.83
AREA: SANDY CAPE	OPERATOR: R. WEIR	Tx LOOP SIZE: 10 m.	JOB No.: 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
300 E	580	630	620	520	330	140	7	6	
275 E	680	670	670	550	330	110	-12	-3	
250 E	730	850	890	760	480	150	-20	-14	
225 E	760	930	1300	1300	800	420	90	5	
200 E	800	950	1300	1300	890	540	200	47	
175 E	680	775	820	780	635	380	145	5.6	
150 E	645	700	690	590	390	156	7.0	-8.5	
125 E	612	675	675	525	312	40	-57	-45	
100 E	612	660	660	550	325	53	-60	-54	
75 E	640	690	700	590	360	76	-48	-47	
50 E	612	675	675	560	360	85	-25	-36	
25 E	585	666	666	565	365	91	-16	-23	
0	700	700	700	590	375	137	-7	-17	
25 W	600	650	650	515	300	58	-25	-14	
50 W	600	660	650	512	300	56	-3	-1.7	
75 W	635	725	725	625	375	88	-22	-17	
100 W	680	780	790	710	470	175	-12	-19	
125 W	780	900	980	900	650	275	22	-13	
150 W	810	930	1000	920	650	300	46	-7	
175 W	800	950	1020	960	700	330	64	2	
200 W	800	930	1020	935	680	330	70	3	
215 W	720	800	815	750	540	190	40	-2.5	
250 W	700	800	820	750	500	230	36	2	

049

P. E-M

544050

CLIENT: E Z	PROFILE: GRID I LINE "00" (W→E)	T ↔ R: 100 m.	DATE 9, 10, 12, 4-83
AREA: SANDY CAPE	OPERATOR: R. WEIR	Tx LOOP SIZE: 10 m.	JOB No.: 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
350 W	600	660	650	540	340	90	-5.5	-12	
325 W	560	625	610	500	290	60	-20	-10	
300 W	600	670	660	550	340	95	-8.5	-11	
275 W	830	650	640	550	340	92	-12.7	-18	
250 W	570	620	600	500	310	75	-15	-18	
225 W	580	610	610	490	310	56	-22	-18	
200 W	780	740	680	580	380	100	-14	-21.5	
175 W	600	640	620	490	280	54	-26	-18	
150 W	670	730	720	610	380	120	-7.5	-15	
125 W	620	680	670	540	325	87	-18	-20	
100 W	590	660	640	500	300	70	-20	-20	
75 W	640	680	740	610	380	115	-10	-15	
50 W	760	830	830	770	530	230	30	-2.3	
25 W	740	800	820	740	520	220	21.5	-6.5	
0	720	780	780	680	420	150	-18	-11	
25 E	680	750	730	570	300	25	-58	-30	
50 E	720	780	750	580	290	30	-40	-30	
75 E	750	870	900	750	460	150	-14	-50	
100 E	1040	1100	1200	1400	1000	250	12	0	
125 E	880	1350	1400	1280	1000	300	40	24	
150 E	800	940	960	820	530	165	6	0	
175 E	800	920	950	800	520	200	15	0	





052

P. E - M

544053

CLIENT: E Z	PROFILE: GRID I LINE 300N (W → E)	T ↔ R: 100 m.	DATE: 13, 14 4-83
AREA: SANDY CAPE	OPERATOR: R. WEIR	Tx LOOP SIZE: 10 m.	JOB No: 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
600 W	650	740	750	675	460	200	22	-10	
575 W	630	710	740	640	430	180	17	-13	
550 W	630	700	710	630	420	170	7.5	-15	
525 W	630	670	710	600	480	130	0	-16	
500 W	660	720	670	630	420	170	2.7	-15	
475 W	710	700	710	630	410	160	-2.5	-18	
450 W	620	690	690	590	390	130	-3.7	-14	
425 W	630	700	700	600	390	120	-10	-23	
400 W	620	680	680	550	330	86	-21	-27	
375 W	630	690	690	550	330	75	-31	-33	
350 W	650	690	690	550	330	72	-30	-34	
325 W	690	760	760	640	410	110	-38	-53	
300 W	770	870	920	820	540	120	-91	-91	
275 W	810	950	1040	970	600	43	-27	-157	
250 W	870	1040	1200	1170	780	80	-266	-188	
225 W	900	1125	1400	1612	1350	750	137	-15	
200 W	900	1300	1500	1700	1650	1400	570	220	
175 W	900	1500	1600	1700	1700	1400	580	220	
150 W	870	1400	1500	1600	1500	82	29	5.6	
125 W	760	850	840	700	441	73	-58	-38	
100 W	700	680	640	480	240	1.7	-61	-30	
75 W	560	640	630	490	280	56	-26	-21	



054

P. E - M

544055

CLIENT: E Z	PROFILE: GRID I LINE 375 N (W → E)	T ↔ R: 100 m.	DATE: 15-4-83
AREA: SANDY CAPE	OPERATOR: R. WEIR	TR. LOOP SIZE: 10 m.	JOB No.: 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
600 W	650	725	740	670	460	200	22	-9	
575 W	625	700	725	650	450	190	15	-14	
550 W	630	700	700	625	425	175	5	-17	
525 W	580	630	630	560	370	100	-9	-16	
500 W	530	660	660	580	380	125	-3	-16	
475 W	600	675	675	600	520	160	-7	-24	
450 W	690	700	700	625	415	140	-17	-30	
425 W	640	710	710	615	450	100	-32	-40	
400 W	700	775	775	650	400	88	-49	-52	
375 W	740	820	820	685	420	78	-75	-73	
350 W	800	920	970	830	520	75	-157	-125	
325 W	830	985	1035	920	550	-1	-217	-167	
300 W	900	1150	1400	1475	1550	725	131	-188	
275 W	915	1400	1600	1800	1800	1600	770	330	
250 W	900	1350	1500	1800	1900	1700	900	380	
225 W	880	1400	1500	1700	1700	1400	700	300	
200 W	785	900	950	835	500	92	-64	-38	
175 W	660	700	670	470	210	-38	-89	-45	
150 W	665	715	700	540	300	26	-56	-34	
125 W	620	670	655	530	305	72	-29	-26	
100 W	585	620	620	520	320	87	-12	-17	
75 W	590	640	640	560	365	150	7.1	-8.1	



056

P. E - M

544057

CLIENT: E Z	PROFILE: RR10 I LINE 450 N (E → W)	T ↔ R: 100 m	DATE: 14, 15. 4. 83
AREA: SANDY CAPE	OPERATOR: R. WEIR	Tx LOOP SIZE: 10 m.	JOB No: 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
50 W	610	660	680	610	430	160	28	0.8	
75 W	610	680	690	610	430	150	25	-3.3	
100 W	580	660	670	600	415	150	25	0	
125 W	580	640	630	575	380	120	6.5	-10	
150 W	530	600	600	530	370	110	-0.5	-12	
175 W	580	630	630	530	370	100	-0.5	-12	
200 W	575	610	600	500	320	80	-12.0	-17	
225 W	590	625	625	500	300	65	-25	-25	
250 W	650	690	690	530	315	50	-40	-35	
275 W	575	625	625	525	330	660	-30	-27	
300 W	860	1200	1400	1500	1400	820	400	180	
325 W	770	900	970	950	900	260	62	40	
350 W	730	830	860	730	370	-97	-180	-110	
375 W	730	840	850	700	370	-39	-150	-100	
400 W	740	740	550	240	-82	-190	-125	-58	
425 W	680	760	780	650	400	58	-75	-53	
450 W	620	670	670	570	350	63	-52	-45	
475 W	650	700	700	560	360	70	-30	-28	
500 W	537	500	370	180	15	-41	-35	-16	
525 W	650	712	710	600	400	120	-5.0	-1.8	
550 W	620	680	680	600	400	122	3.7	-1.7	
575 W	620	680	680	620	420	170	10	-12	
600 W	630	700	650	620	430	170	3.0	-10	

057

P. E - M

544058

CLIENT: E Z	PROFILE: GRID II LINE 4800N (E → W)	T ↔ R: 80 m.	DATE: 16.4.83
AREA: SANDY CAPE	OPERATOR: R. WEIR	TR. LOOP SIZE: 10 m.	JOB No.: 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
5600 E	667	750	783	700	500	233	45	5.5	
5560 E	650	733	767	667	483	233	40	2	
5520 E	633	700	733	650	450	217	37	6.2	
5480 E	667	750	783	717	500	233	42	4.7	
5440 E	683	750	783	700	500	233	47	8.3	
5400 E	650	750	767	700	500	233	42	6.7	
5360 E	650	717	733	617	425	150	27	1.0	
5320 E									DENSE BUSH
5280 E									DENSE BUSH
5260 E	650	733	750	667	467	217	40	7.3	
5240 E	650	733	750	667	467	233	45	9.2	
5200 E	658	733	750	675	500	233	42	0.4	
5160 E	650	733	750	683	500	233	42	4.2	
5120 E	667	750	767	667	483	233	40	7.5	
5080 E	667	750	767	700	500	233	42	2.5	
5040 E	650	733	750	683	500	233	42	2.2	
5000 E	650	733	750	667	483	217	42	7.0	
4960 E	640	700	720	620	440	154	32	2.4	
4920 E	650	733	750	667	483	233	42	1.7	
4880 E	667	733	750	683	483	217	42	3.3	
4840 E	650	733	750	683	483	217	40	2.8	
4800 E	650	733	758	692	500	250	45	4.2	
4760 E	650	750	767	717	517	250	47	6.2	



059

P. E-M

544060

CLIENT: E Z	PROFILE: GRID I LINE 5000 N (W → E)	T ↔ R: 80 m.	DATE: 16-4-83
AREA: SANDY CAPE	OPERATOR: R. WEIR	TR LOOP SIZE: 10 m.	JOB No. 85-1471

STATION	CHANNELS								REMARKS
	1	2	3	4	5	6	7	8	
4540 E	670	750	795	720	520	250	50	7.1	
4580 E	665	740	770	695	500	238	48	6.3	
4620 E	640	725	750	695	490	225	44	6.3	
4660 E	675	750	775	700	500	225	44	2	
4700 E	650	735	770	685	485	235	42	6.3	
4740 E	650	750	785	685	500	235	45	7	
4780 E	635	735	750	685	470	235	37	3.3	
4820 E	650	735	750	685	470	235	40	4	
4860 E	635	735	750	685	500	250	45	6.2	
4900 E	650	735	750	685	500	235	43	6.2	
4940 E	635	735	750	670	485	235	40	0.6	
4980 E	670	750	770	685	500	250	43	5.8	
5020 E	670	750	770	690	500	235	43	8.3	
5060 E	650	735	770	685	485	217	40	0.8	
5100 E	635	720	750	685	485	235	42	2.8	
5140 E	650	750	770	700	500	235	42	2.2	
5180 E	670	750	785	700	500	235	43	2.8	
5220 E	670	750	785	720	500	250	45	4.7	
5260 E	635	720	750	685	485	235	42	4.5	
5300 E	670	750	785	700	485	235	40	1.0	
5340 E	670	750	785	700	500	235	43	4.0	
5380 E	650	735	770	685	500	235	43	4.5	
5420 E	650	735	770	685	485	235	42	5.7	

000

544061

APPENDIX 4

P.E.M. LINE PROFILES

061

544062

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 450 N (GRID 1)

SURVEY SPECIFICATIONS

Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 100 metres  
 Station spacing 25 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1:2500  
 Surveyed by R. WEIR

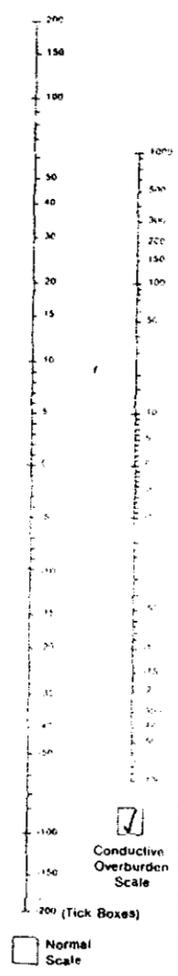
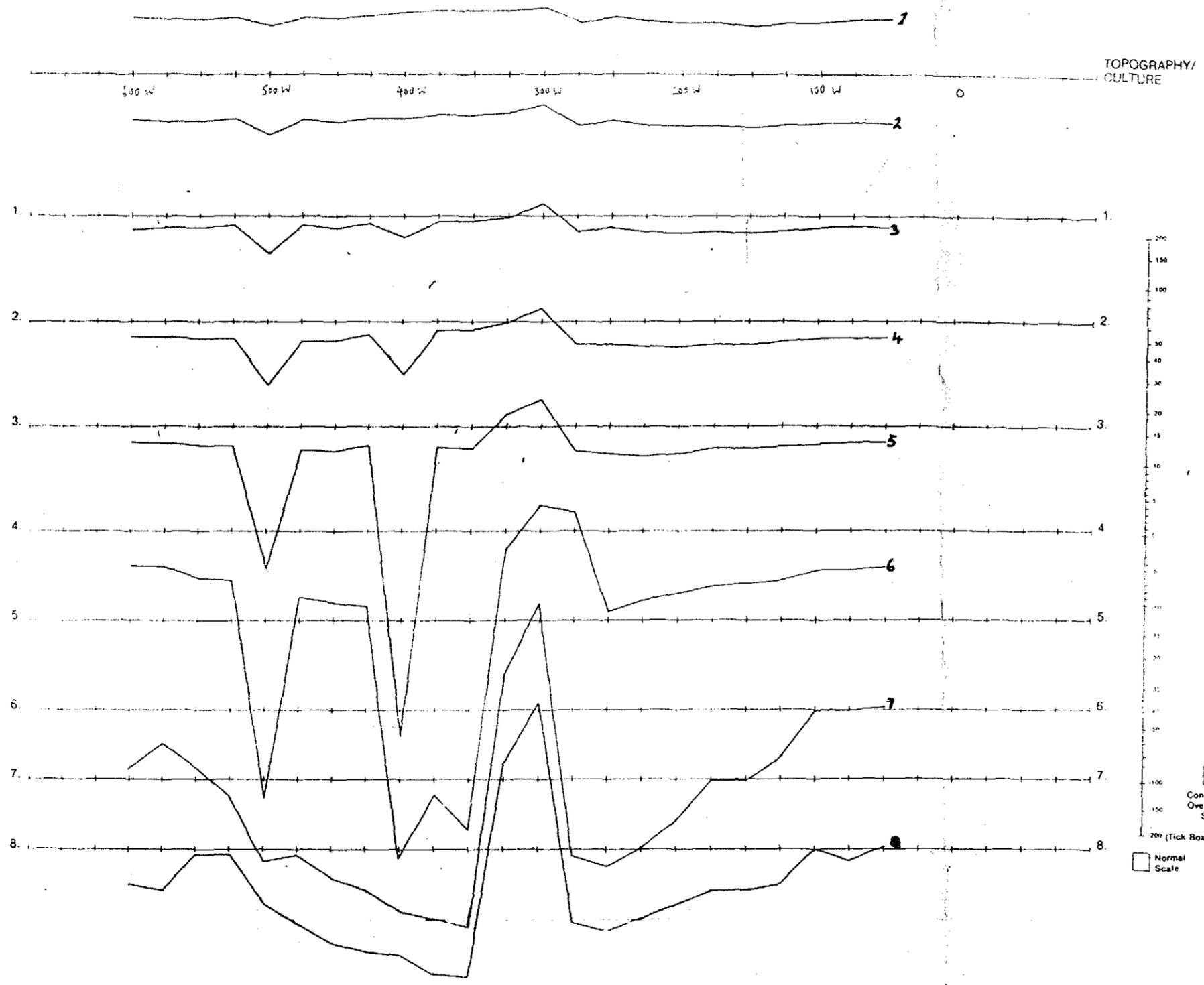
DELAY TIMES m sec

TIME BASE	CHANNELS							
	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO



5 cm

544063

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 375 N (GRID I)

SURVEY SPECIFICATIONS

Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 100 metres  
 Station spacing 25 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1:2500  
 Surveyed by R. WEIR

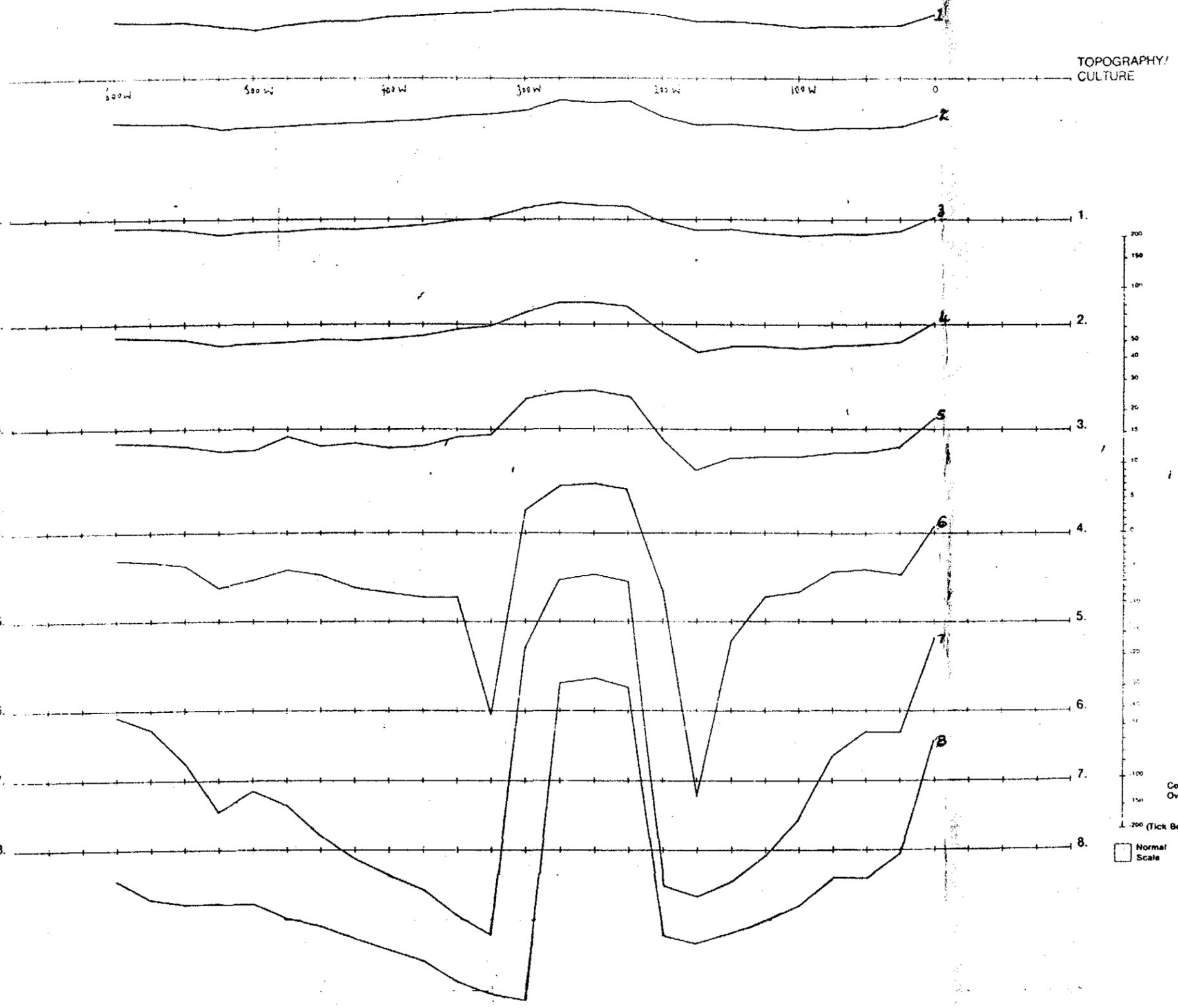
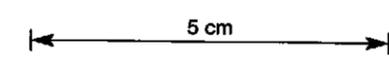
DELAY TIMES m sec

TIME	BASE	CHANNELS							
		1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/>	10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/>	21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO.



062

063

544064

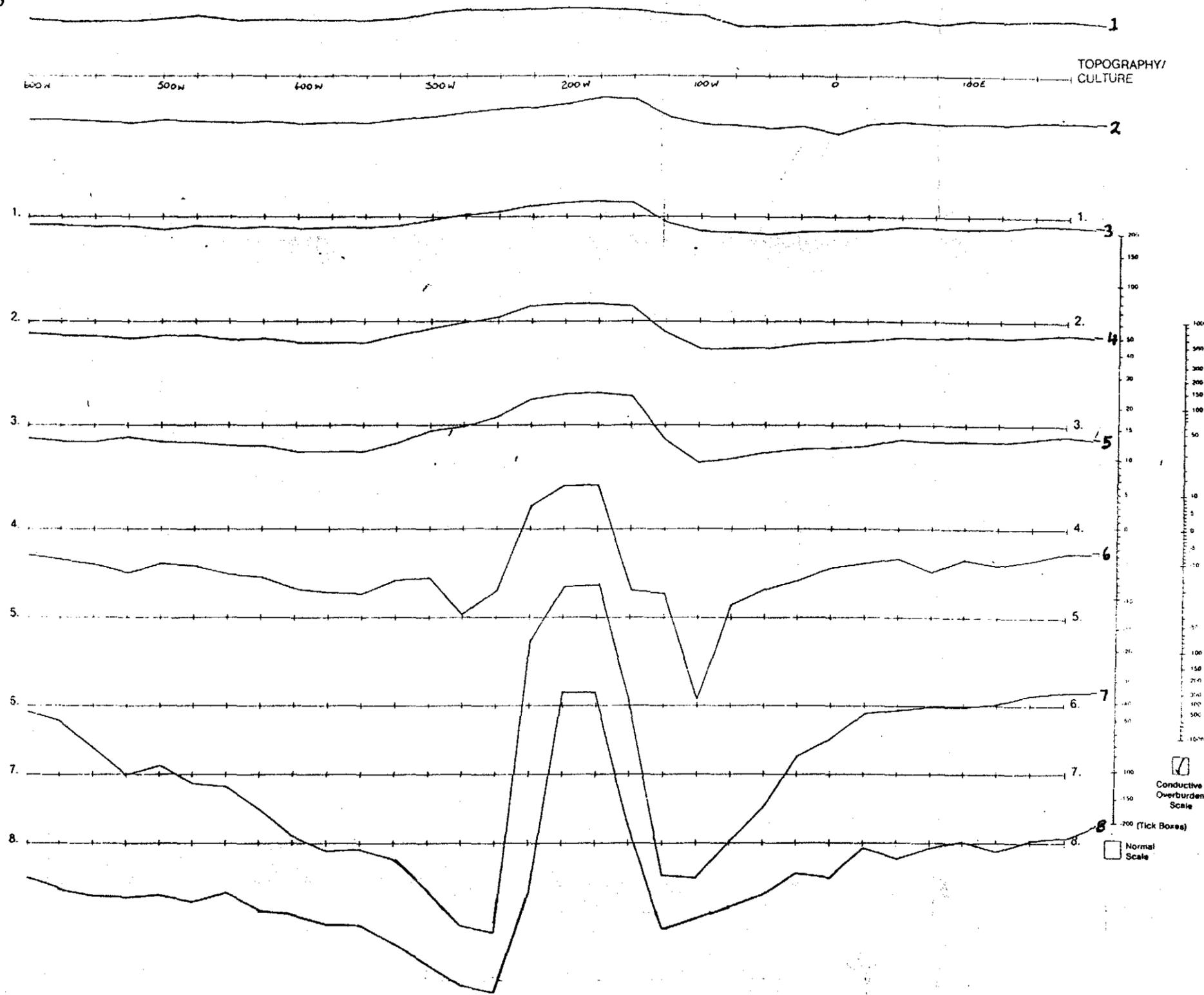
# PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 300 N (GRID I)



Conductive Overburden Scale  
 Normal Scale

### SURVEY SPECIFICATIONS

Mode of operation: SEPARATED LOOPS  
 Transmitter receiver separation: 100 metres  
 Station spacing: 25 metres  
 Component plotted: VERTICAL  
 Receiver coil orientation: HORIZONTAL  
 Transmitter orientation: HORIZONTAL  
 Horizontal scale: 1:2500  
 Surveyed by: R. WEIR

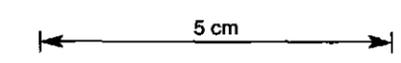
### DELAY TIMES (m sec)

TIME BASE	CHANNELS							
	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO. 85-1471



064

544065

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 150 N (GRID I)

SURVEY SPECIFICATIONS

Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 100 metres  
 Station spacing 25 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1:2500  
 Surveyed by R. WEIR

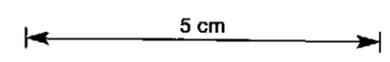
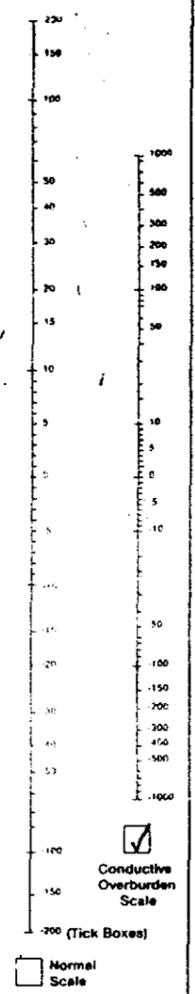
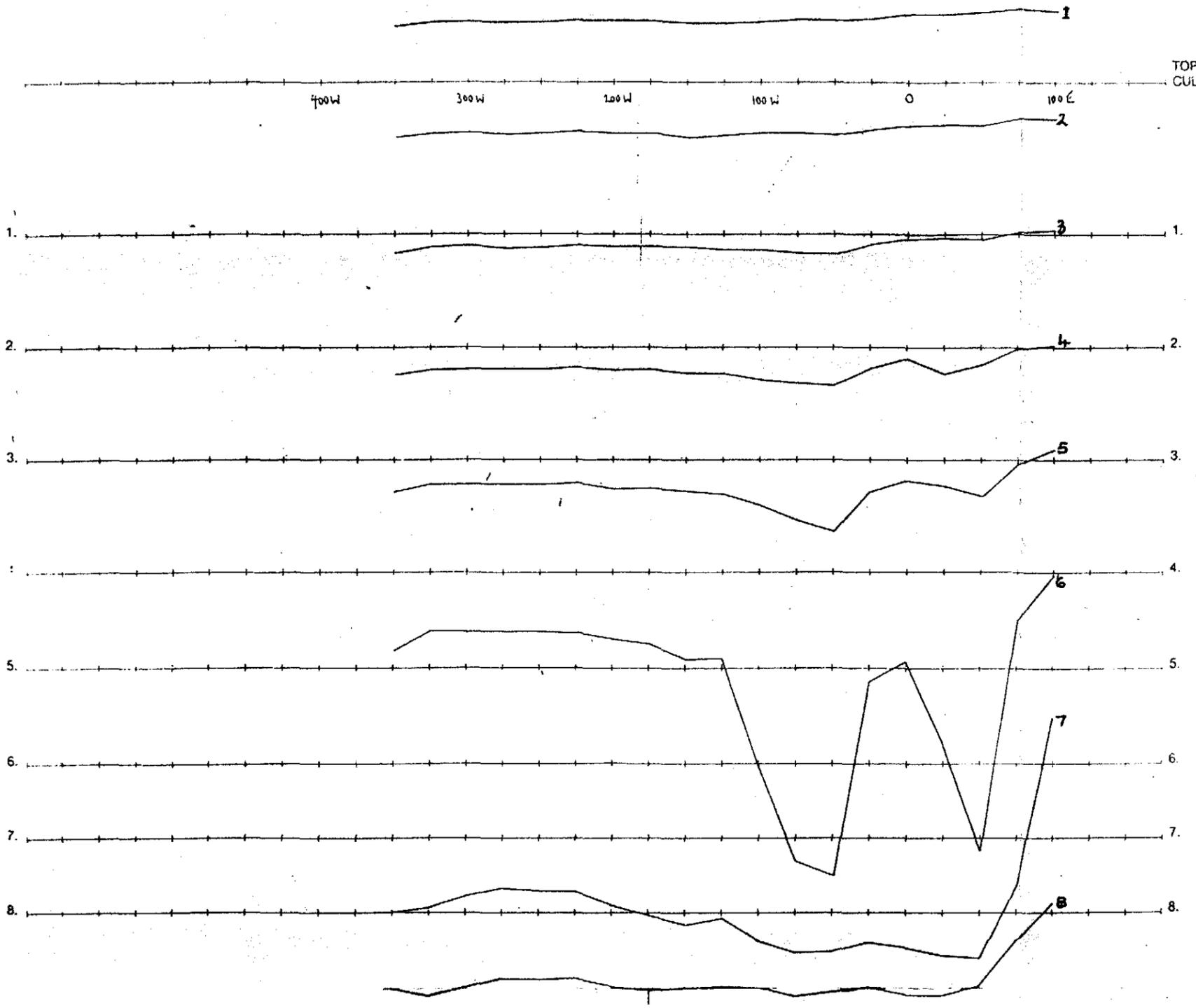
DELAY TIMES m sec.

TIME BASE	CHANNELS							
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<input type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO. 85-1471



065

544066

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 00 (GRID I)

SURVEY SPECIFICATIONS

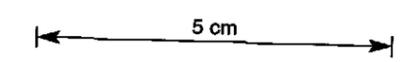
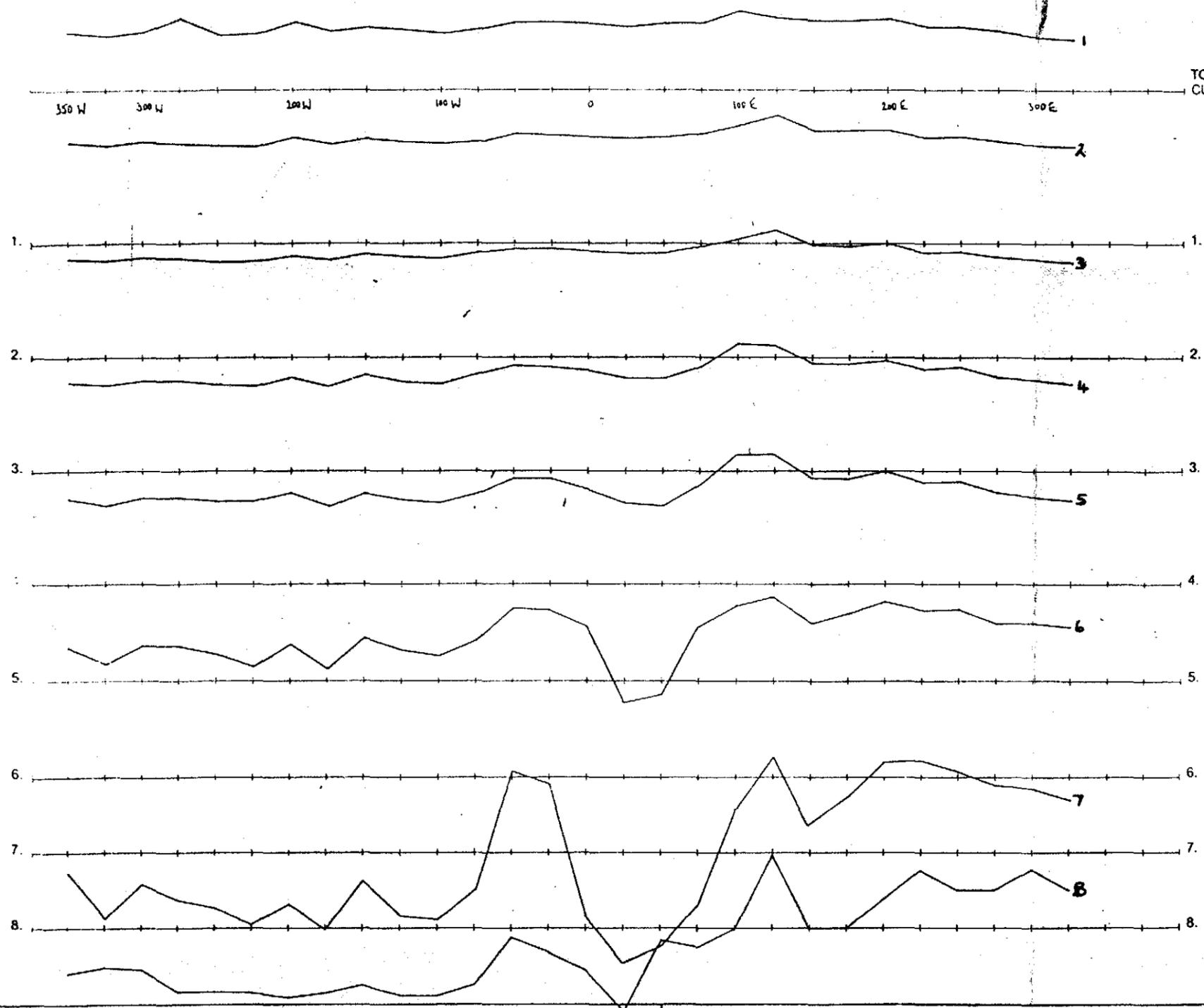
Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 100 metres  
 Station spacing 15 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1:2500  
 Surveyed by R. WEIR

TIME	BASE	DELAY TIMES m sec							
		1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/>	10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/>	21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO. 85-1471



066

544067

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 150 S (grid 1)

SURVEY SPECIFICATIONS

Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 100 metres  
 Station spacing 25 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1:2500  
 Surveyed by R. WEIR

DELAY TIMES m sec

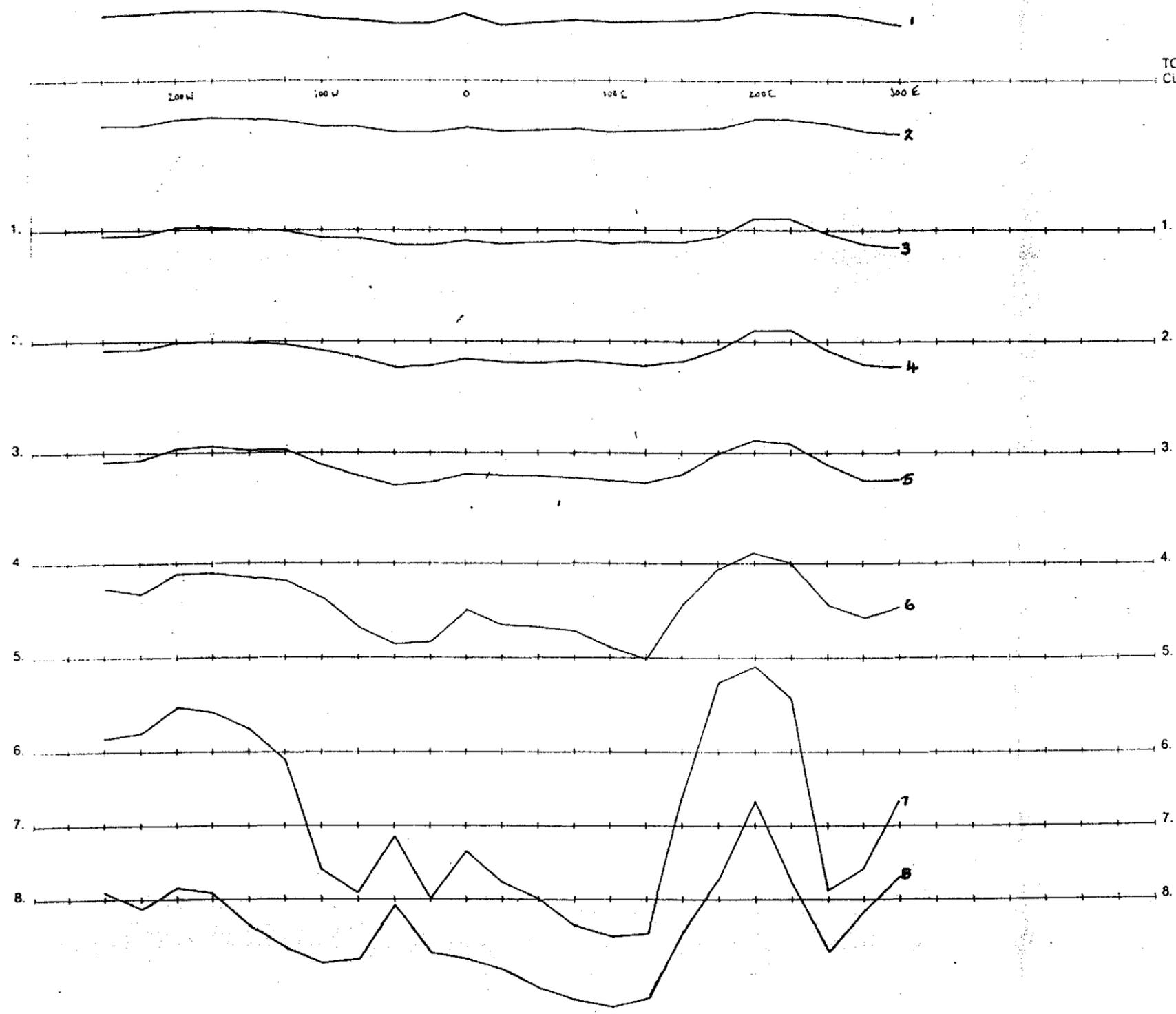
TIME BASE	CHANNELS							
	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO. AC-14-71

5 cm



567

544068

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 3005 (GRID I)

SURVEY SPECIFICATIONS

Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 100 metres  
 Station spacing 25 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1 : 2500  
 Surveyed by R. WEIR

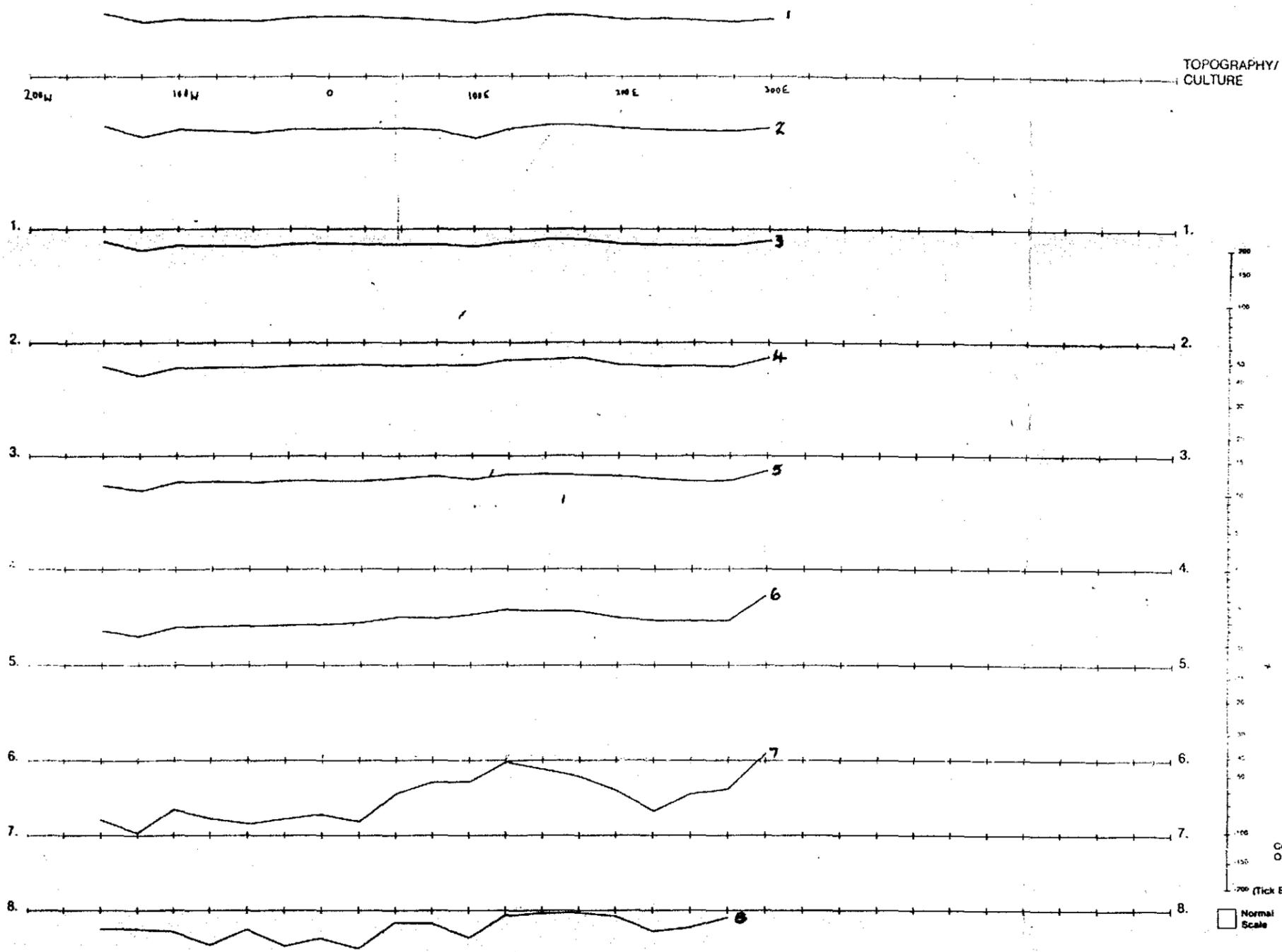
DELAY TIMES m sec

TIME BASE	CHANNELS							
	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

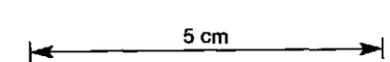
SURVEYED IN APRIL 1985

SURVEYED & COMPILED BY geotrex ltd SYDNEY

JOB NO. 85-1471



Conductive Overburden Scale  
 Normal Scale  
 (Tick Boxes)



544069

PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 4800 N (GRID I)

SURVEY SPECIFICATIONS

Mode of operation SEPARATED LOOPS  
 Transmitter receiver separation 80 metres  
 Station spacing 40 metres  
 Component plotted VERTICAL  
 Receiver coil orientation HORIZONTAL  
 Transmitter orientation HORIZONTAL  
 Horizontal scale 1:4000  
 Surveyed by R. WEIR

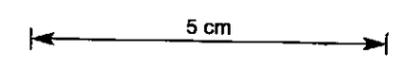
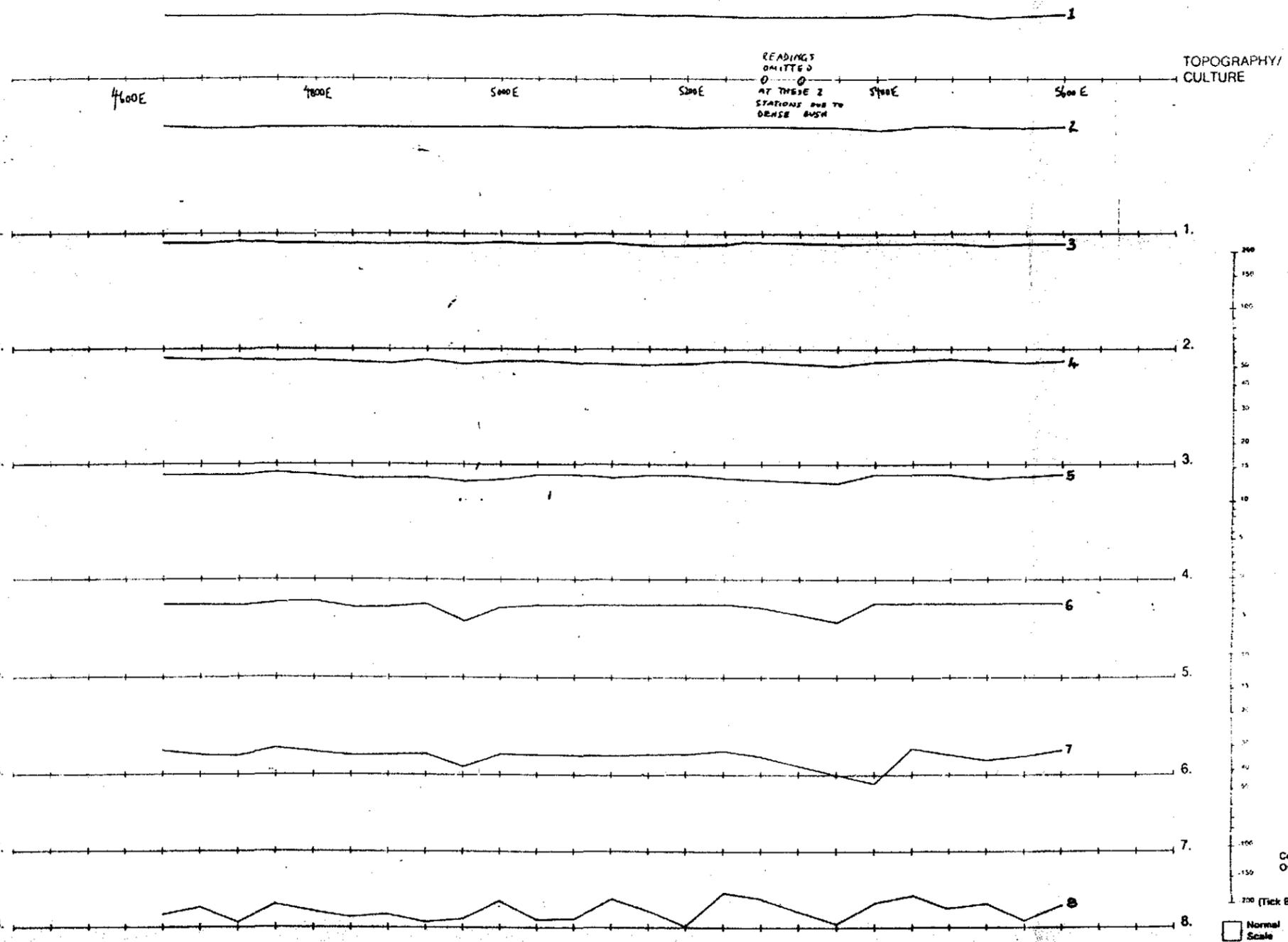
DELAY TIMES m sec

TIME BASE	CHANNELS							
	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

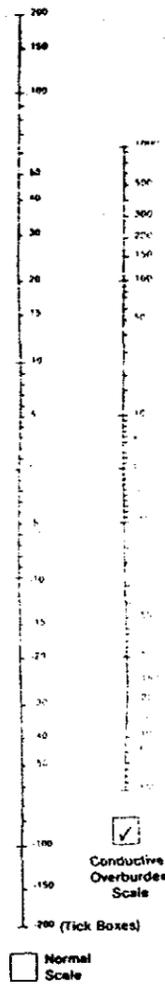
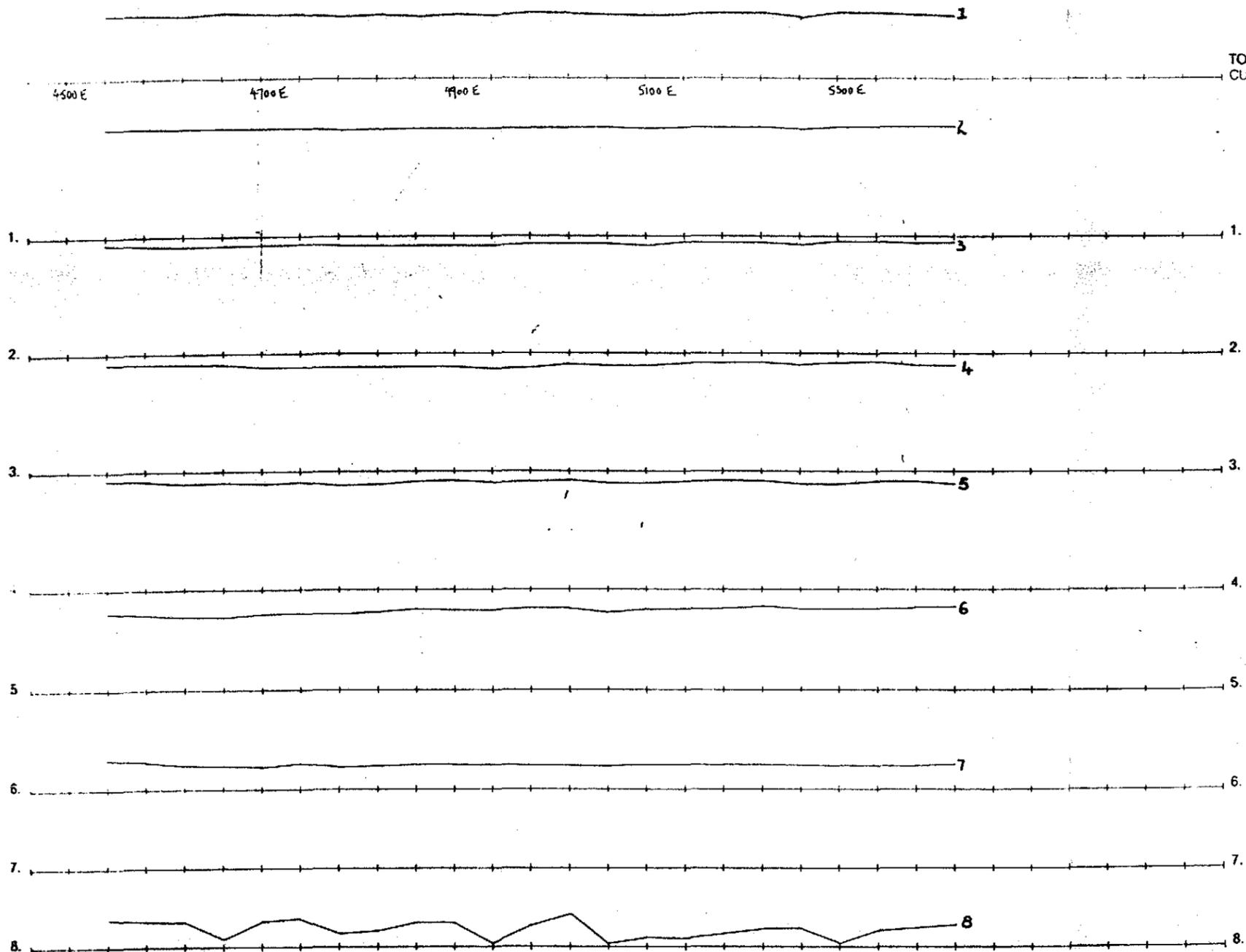
SURVEYED IN APRIL 1983



JOB NO. 85-1471



069



# 544070

## PULSE ELECTROMAGNETIC SURVEY

SANDY CAPE, TASMANIA

FOR

ELECTROLYTIC ZINC

Line No. 5000 N (GRID I)

**SURVEY SPECIFICATIONS**

Mode of operation SEPARATED LOOPS

Transmitter receiver separation 80 metres

Station spacing 40 metres

Component plotted VERTICAL

Receiver coil orientation HORIZONTAL

Transmitter orientation HORIZONTAL

Horizontal scale 1:4000

Surveyed by R. WEIR

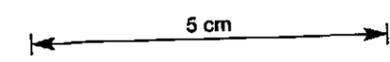
**DELAY TIMES** m sec

TIME BASE	CHANNELS							
	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/> 10.8 m sec	.15	.30	.55	.90	1.45	2.40	4.00	7.20
<input type="checkbox"/> 21.6 m sec	.30	.60	1.10	1.80	2.90	4.80	8.00	14.4

SURVEYED IN APRIL 1983



JOB NO. 85-1471



APPENDIX 5

COMMENTS ON THE P.E.M. RESULTS

by

A. LYNCH

GEOTERREX

071

544072

COMMENTS ON SANDY CAPE PEM DATA

Anomaly No. 1

- LINE 450 N: There is a near vertical conductor, possibly steeply dipping to the west, located at around 300 W. Depth of burial is in the order of 50 metres.
- 375 N: Conductor located about 250 W.
- 300 N: Conductor located about 180 W
- 150 N: Conductor located about 00 E
- 00 N: Conductor located about 125 E.  
There is a second anomaly at about 35 W.
- 150 S: Conductor located about 210 E.  
There appears to be a marked lithological change at about 125 W.
- 300 S: No conductors; from the strike direction one may expect the principal anomaly to intersect this line at about 375 - 400 E.

Anomaly No. 2

- 5000N: No conductors
- 4800N: No conductors

Note: The interpreted position of the conductors is estimated to within  $\pm 25$  m.

The strongest anomaly response occurs on lines 375 N and 300 N. The fact that there is very low anomaly response in the early channels compared to the later channels indicates the body is not near surface, and it is estimated that the depth to the top of the body is approximately half the Tx - Rx separation.

APPENDIX 6

PETROLOGICAL REPORTS

073

544074

# Central Mineralogical Services



The Manager  
 Attn. Chief Geologist  
 Electrolytic Zinc Co. of  
 Australasia Ltd.  
 West Coast Mines  
 P.O. Box 21  
ROSEBERY / TAS. 7470

MGR		MGR		MINE DEPT.		M NE	
ACCTS							
	20 APR 1985						
MEY		CPG		COL	1		

39 Beulah Road  
 Norwood, S.A. 5067  
 Telephone 42 5659

27th April, 1983

## REPORT CMS 83/4/16

YOUR REFERENCE:      Order No. 900425  
 DATE RECEIVED:        21st April, 1983  
 SAMPLE NOS.:          53401, 53402  
 SUBMITTED BY:         I. McDonald  
 WORK REQUESTED:      Petrology

*H. W. Fander*

H.W. Fander, M. Sc.

544075

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 27th April, 1983

## SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 83/4/16 Date Received: 21.4.1983

Reference Order No. 900425

Sample No. 53401, 53402

Nature of Sample: Hand Specimens

## IDENTIFICATION

53401, 53402

Biotite Hornfels  
(Metasiltstone)

DESCRIPTION SECTION No. 45690, 45691

## a. Hand Specimen:

Fine-grained, laminated carbonaceous sediments or metasediments.

## b. Microscopic:

The two rocks are closely similar and may be described together. They are classified as biotite hornfels, i.e. mildly contact-metamorphosed sediments; thus, they are assigned to the biotite zone or albite-epidote hornfels facies.

Because of the mild thermal metamorphism, sedimentary features are well preserved, including grading, small-scale slumping, attenuation and disruption of laminae, and other features. Only the clay minerals are recrystallized, and small poikiloblastic, randomly orientated biotite crystals have formed haphazardly throughout. The rocks consist of thicker bands (beds) of subangular, silt-sized quartz, feldspar and muscovite grains, with interstitial sericite, alternating with thinner, finely crenulated laminae of fine sericite and interleaved graphite. These carbonaceous laminae are sharply defined and closely spaced in 53401, and more diffuse in 53402, but the lithologies of the two rocks are quite similar.

No sulphides were detected; there are leach-cavities in 53401, apparently restricted to some silty bands, but they seem to represent carbonates rather than sulphides.

H.W. Fander, M. Sc.

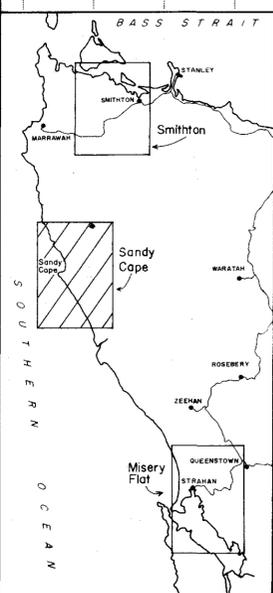
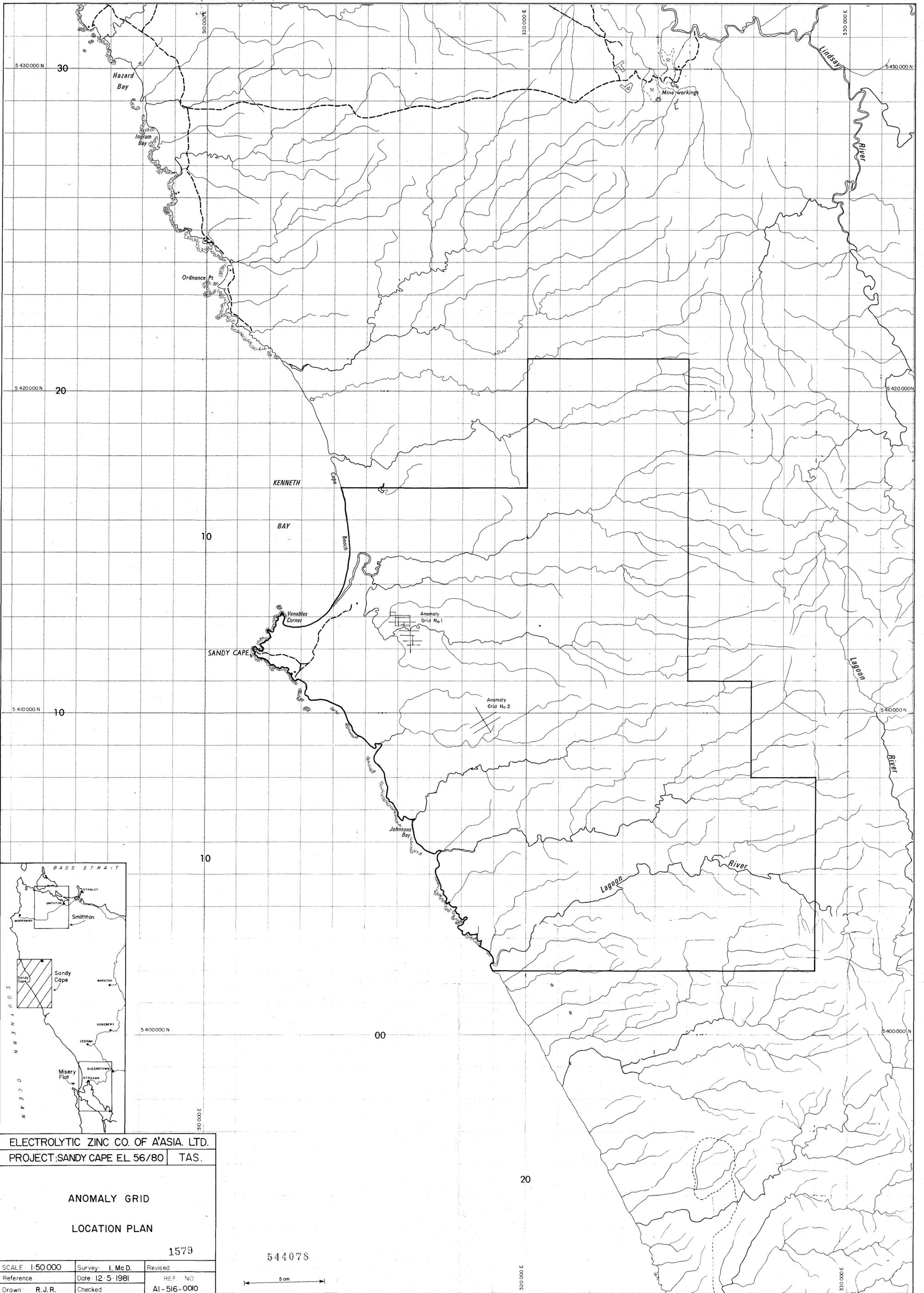
Telephone Report

Very fine traces (much less than 1%) of recrystallised detrital magnetite.

APPENDIX 7

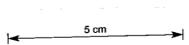
GEOCHEMICAL DATA SHEETS - SOIL SAMPLES



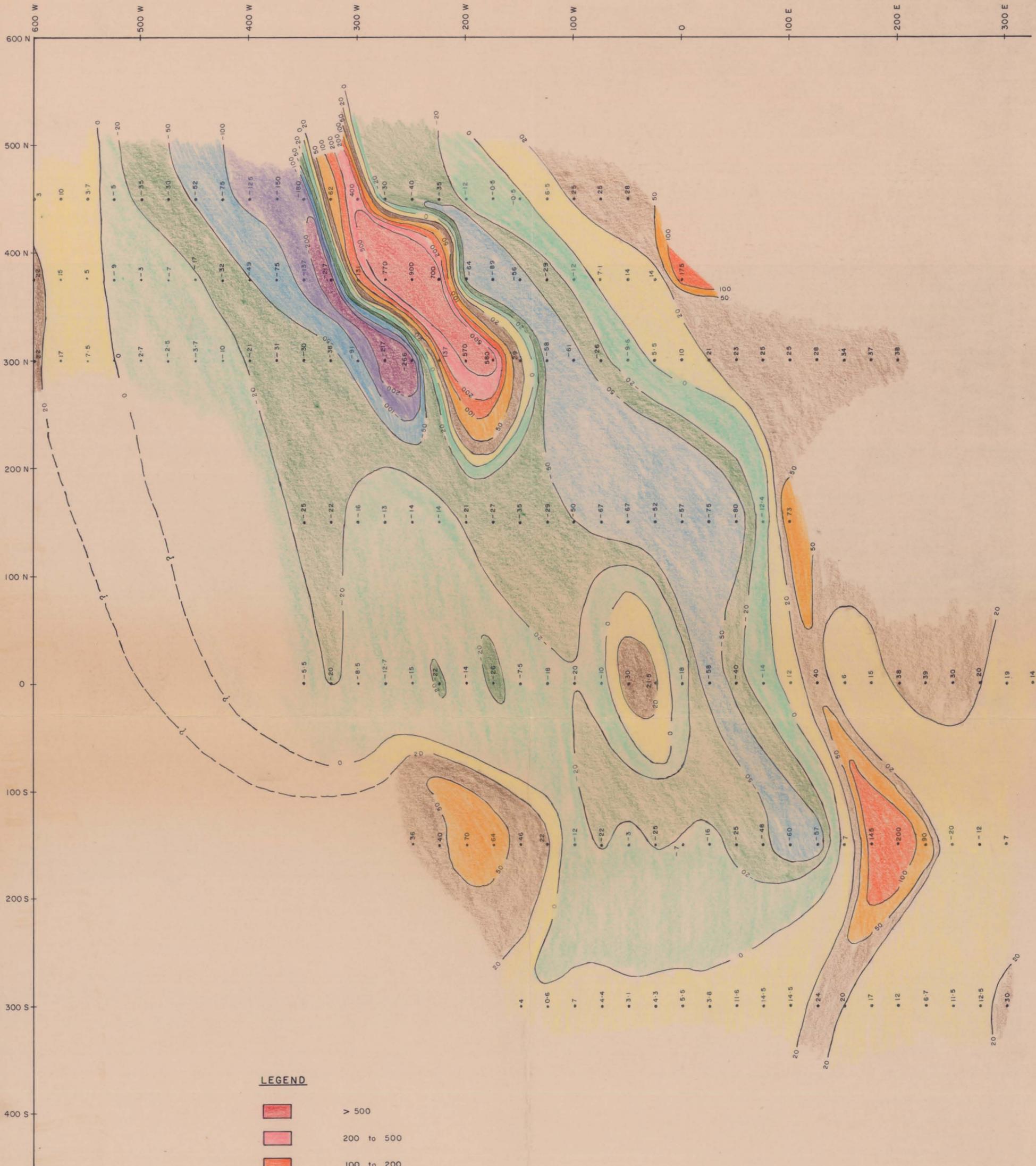


ELECTROLYTIC ZINC CO. OF ASIA, LTD.		
PROJECT: SANDY CAPE EL 56/80		TAS.
ANOMALY GRID LOCATION PLAN		
1579		
SCALE: 1:50 000	Survey: I. Mc.D.	Revised
Reference	Date: 12.5.1981	REF. NO.
Drawn: R.J.R.	Checked	AI-516-0010

544078

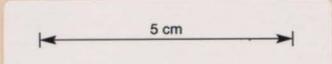


84-2007



**LEGEND**

- > 500
- 200 to 500
- 100 to 200
- 50 to 100
- 20 to 50
- 0 to 20
- 20 to 0
- 50 to -20
- 100 to -50
- 200 to -100
- < -200



544079

**ELECTROLYTIC ZINC CO. of A'ASIA LTD.**

Project: SANDY CAPE E.L. 56/80 TASMANIA

ANOMALY N° 1

CRONE P.E.M.

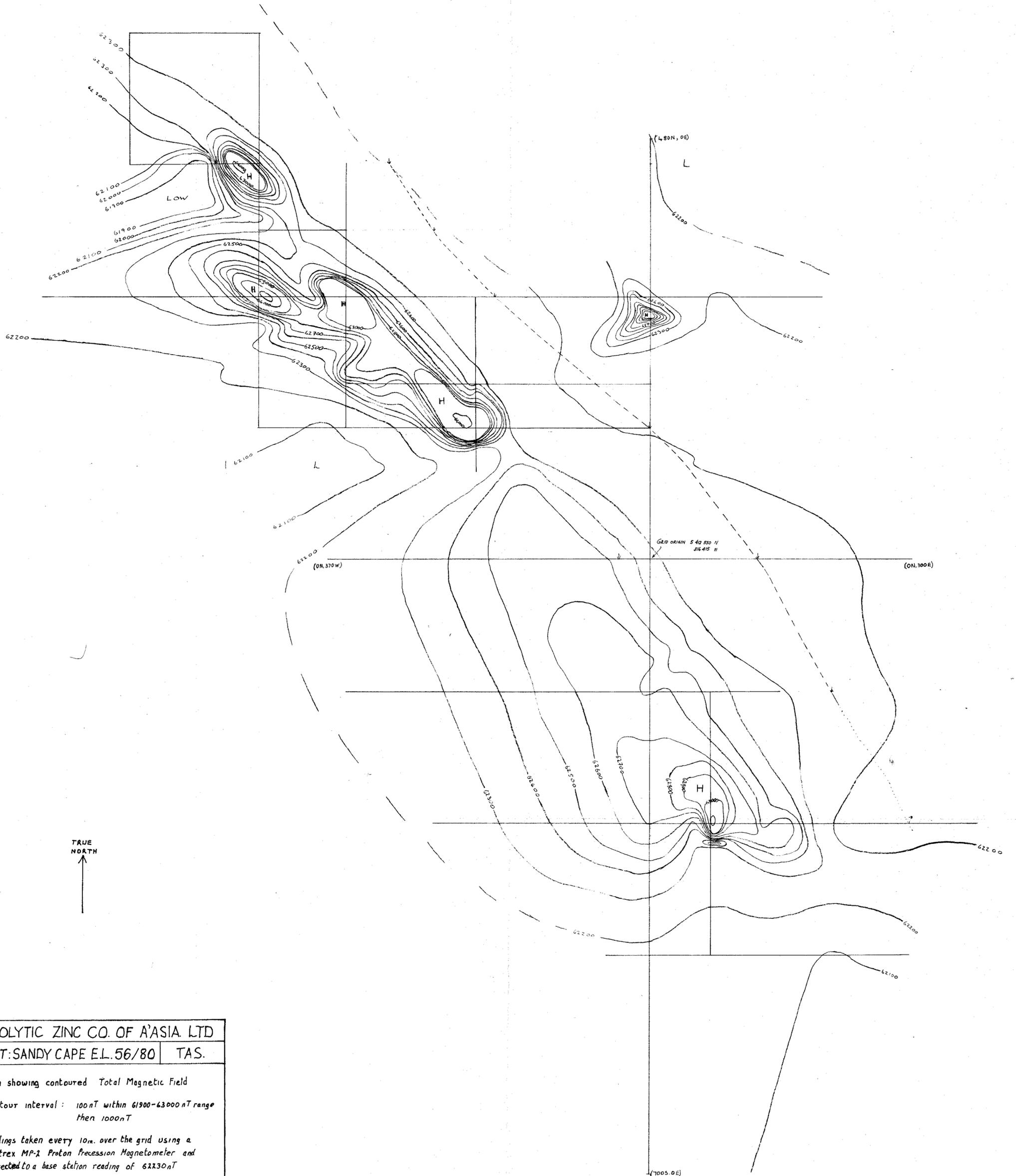
CHANNEL 7

CONTOURS

1580

SCALE : 1 : 2,500	SURVEY : I. McD	REVISED:
REFERENCE:	DATE : 30.6.83	A2 - 516 - 0064
DRAWN : R.J.R.	CHECKED :	

84-2007



ELECTROLYTIC ZINC CO. OF A'ASIA LTD  
 PROJECT: SANDY CAPE E.L. 56/80 | TAS.

ANOMALY: Plan showing contoured Total Magnetic Field  
 Contour interval: 100nT within 61900-63000nT range  
 then 100nT  
 Readings taken every 10m. over the grid using a  
 Scintrex MP-2 Proton Precession Magnetometer and  
 corrected to a base station reading of 62230nT

SCALE 1:2.500	SURVEY R.P. WTR. G.A.L.J.D.	1581
	DATE 16.3.1982	
DRAWN: A.T.	CHECKED: A.T.	

544080  
 5 cm