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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

EXPLORATION LICENCE 56/80 (TASMANIA)

AN EXPLORATION PROGRESS REPORT

Geology Dept.
Report No. 147

R. MORLAND
1ST APRIL, 1982.

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1. INTRODUCTION

1.1. Location, Terrain and Access

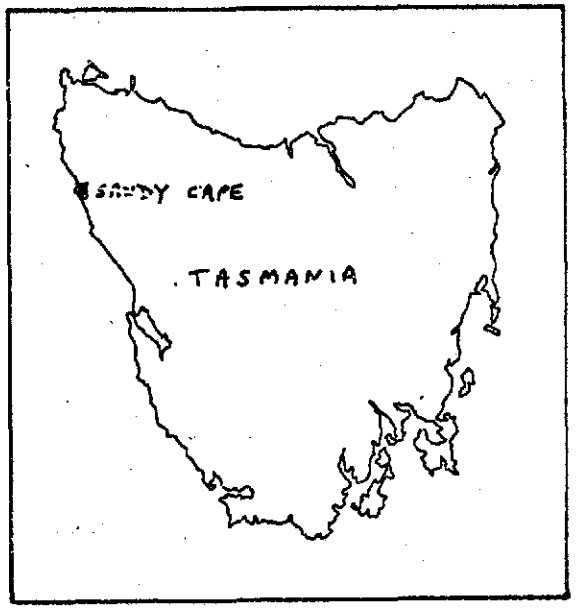
The area covered by Exploration Licence 56/80, granted on May 8th, 1981, hencewith referred to as the Sandy Cape E.L., is as shown in Figure 1, and the co-ordinates of the boundary of the licence area are given in Appendix 1.

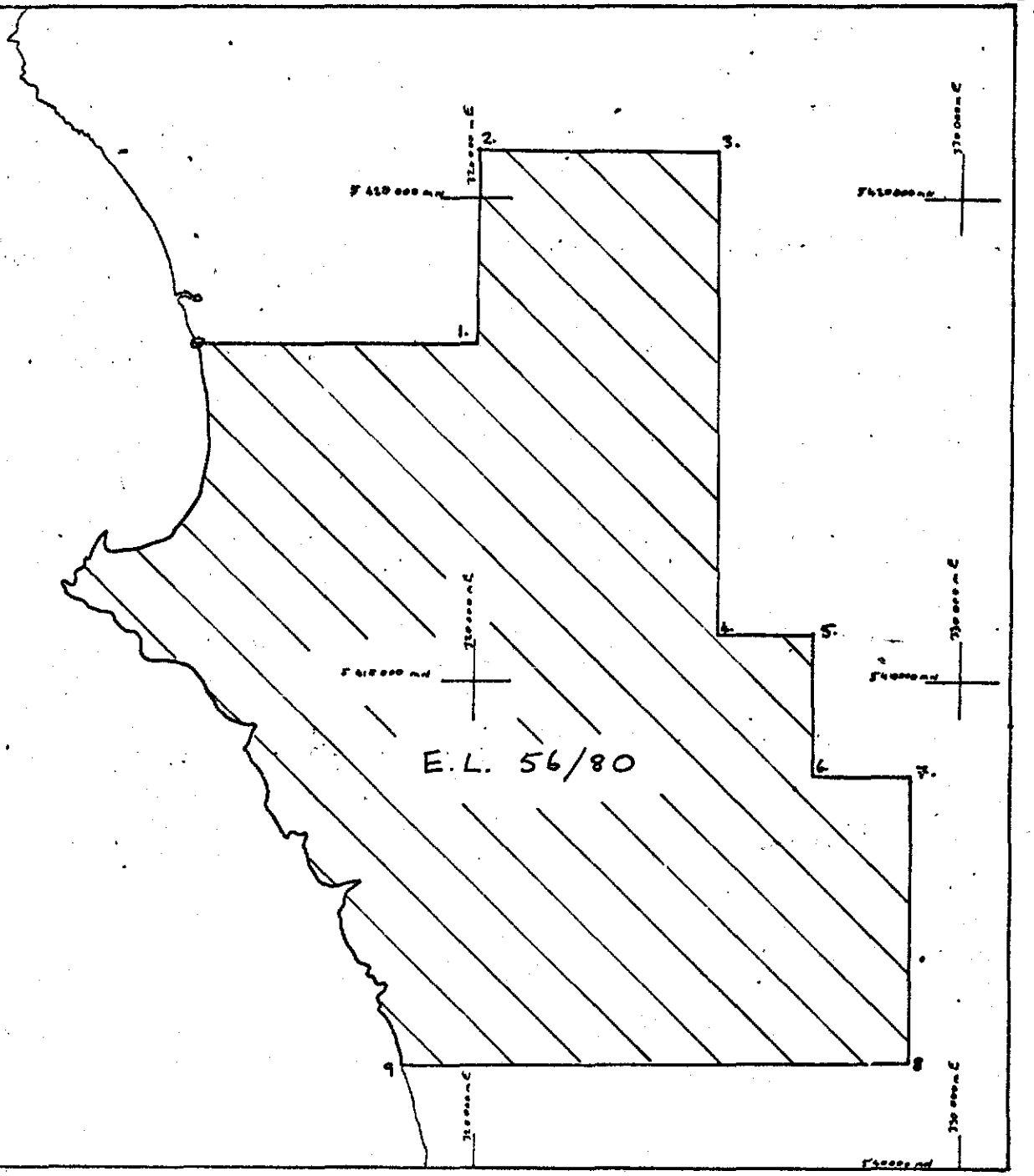
The region is relatively flat, representing an old wave-cut platform, and occupies 197.5 sq. kms. on the north-west coast of Tasmania. The coastline on the western boundary is one of sandy beaches with stabilisation of dune formations by vegetation further inland. Sandy Cape is the only major rock promontory of note. To the east of the E.L. area is the Norfolk Range with peaks in excess of 600m a.m.s.l. A small foothill, reaching 470m in elevation, appears in the south-east of the area. Apart from this the topography is characterised by a gentle gradient up from the coast to an elevation of around 260m in the east. Some larger breaks in slope of up to 60m are evident and these are believed to represent old fault scarps.

Notwithstanding the relatively low relief of the area, movement within it is difficult. This is due to the drainage pattern and the vegetation. The major rivers and creeks, most of which run all year round, drain the high ranges to the east and deep incision has taken place on the platform (refer to Figure 2 in back pocket). Drainage developed from within the area itself is small. Because of its location on the west coast of Tasmania the area is frequently swept by strong winds and this combined with the shallow soil cover, has precluded the growth of trees in all but the most sheltered spots. These are invariably the rivers and creeks and hence access to them is difficult. In the more exposed areas the typical vegetation cover varies between low open shrubland with ti-tree

button grass types, heath with eucalyptus, banksia, ti-tree and casuarina, and peaty bogs and marshes with reeds, mosses and grasses.

Access into the area is restricted to helicopter, light aeroplane (a landing strip exists to the north-east of Sandy Cape), or by 4 wheel drive vehicle down the difficult coastal stretch from Tamma in the north. Vehicles are restricted to the beach area because of the vegetation and watercourses. The use of trail bikes and tracked vehicles could be considered in some areas.





ELECTROLYTIC ZINC CO OF A'ASIA. LTD

PROJECT : SANDY CAPE, E.L.56/80, TAS.

Map showing Location of Licence Area
Scale 1: 150,000
Numbers at corners of E.L. refer to boundary coordinates listed in Appendix 1.

FIGURE 1

1.2. Exploration Philosophy

Base metal production and refining have traditionally been the mainstay of the E.Z. Group but a management decision has been made to attempt to diversify into other commodities, one of which is tin.

Tin mineralisation of several styles has been recorded in the Western Tasmanian Tin Province and a link to the Devonian granitoids has been made (refer to Taylor, 1979, for his compilation). At Sandy Cape Point there exists a Devonian granite which is believed to be connected at depth to the granite at Pieman Heads and Inteview River (Internal report by V. Webster relating to Tasmanian Mines Department gravity data modelling). Alluvial tin has been worked from these and also from the Balfour region less than 10kms to the north-east of the licence boundary. At Balfour there are base metal prospects which appear to be hydrothermal shear-controlled deposits (Ward, 1911). The presence of a non-outcropping granite source is postulated, and hence the area between Balfour and Sandy Cape Point is regarded as prospective.

Previous workers in the area had much larger pieces of ground to cover than that of E.L. 56/80, and greater attention was given to other parts of the licence area. Both geochemical and geophysical anomalies were identified but in many cases were not followed up or were poorly explained.

The principal drawbacks to the area are the high cost of exploration which is dictated by both access and support requirements, the inhospitable nature of the area even during the summer months, and most importantly the absence of any recorded workings or extensively mineralised outcrops within the area.

An exploration programme has been generated for the area which combines both geophysics and geochemistry with basic geological mapping. An aeromagnetic survey has been flown, primarily in an attempt to locate carbonate replacement style tin deposits (pyrrhotite-cassiterite) and magnetic skarn orebodies. The potential presence of non-magnetic tin deposits is not precluded and stream sediment sampling programmes are planned to be undertaken over the whole licence area.

2. PREVIOUS WORK UNDERTAKEN WITHIN THE AREA

2.1. Geological Survey of Tasmania

The earliest report of the geology of the area is to be found in Ward, 1911. With respect to economic geology the major section of the volume deals with the extensive Balfour base metal and tin-tungsten fields. Examination of the Sandy Cape granite identified veining containing tourmaline and arsenopyrite, and he commented upon the relationship between these and those bearing tin and tungsten but it is unclear whether any of the latter were observed at Sandy Cape.

No small worker operations are recorded within the area of E.L. 56/80.

In 1973 the Department of Mines published a 1:250,000 geological sheet covering the area, entitled 'Tasmanian Geological Atlas Series Sheet SK55-3 (Burnie)'.

2.2. The Consolidated Syndicate

This comprised of a Joint Venture between Renison, A.C.I., Mt. Lyell and Consolidated Goldfields with the former acting as the operator. E.L. 56/80 falls within the old licence areas 48/70 and 49/70.

The emphasis of this exploration programme was on the detection of tin and tungsten at and around the granites, as well as attempting to map and follow the Savage Dolomite unit with its potential for Renison style mineralisation. A 1:20,000 geological map and a 1:50,000 compilation were produced (Bell, 1972).

Within E.L. 56/80 the following units of the Proterozoic Rocky Cape Group were identified;

Top of stratigraphic sequence: Lagoon River Quartzite
Chimney Creek Hornfels
Pedder River Siltstone

These were later deformed and intruded by a Devonian granite.

The Pedder River Siltstone is described as a distinctive dark grey siltstone with prominent scour-and-fill and slump structures. It conformably overlies the Lagoon River Quartzite with a gradational contact in the north. Towards the south the Chimney Creek Hornfels separates the two. This is of dubious validity since the rock types are similar to the transition zone except for the Devonian contact metamorphism and the appearance of minor acid volcanics. The Lagoon River Quartzite is described as a distinctive white massive quartzite with minor shale units. Recrystallisation of the original matrix was observed to varying degrees.

No post-Rocky Cape Group rocks, such as the Smithton Dolomite, were identified within the area.

An aeromagnetic survey was undertaken on their behalf by C.G.G. at a line spacing of 0.4 miles and an altitude of 2700'. Only one anomaly within E.L. 56/80, the Chimney Creek Anomaly, was followed up by ground work. Detailed ground magnetics, geological mapping and rock chip sampling were undertaken. Cavities, possibly after weathered sulphides, were noted in quartzites as was magnetite in the siltstone units. No further work was recommended and the anomaly was described as possibly being caused by the differing magnetic susceptibilities of the quartzites and siltstones, or alternately by a lateritised Pre-Cambrian dyke.

Some minor rock chip sampling was undertaken at Sandy Cape but gave no encouraging values.

A stream sediment sampling programme was undertaken at a spacing of 1-400m in the region occupied by sedimentary rocks close to the granite. Isolated anomalies, many times the background value, were obtained using the -85 mesh fraction. No zones of anomalism were detected and no follow-up work undertaken. The possibility of obtaining anomalous values from the tin-bearing Tertiary quartz gravels was noted. Within E.L. 56/80 the tin values had a background of less than 10 ppm, as compared to 10-200 ppm for the Interview River area to the south.

The conclusion was reached that the area had no potential for possible economic mineralisation.

2.3. Pickands Mather

In 1967 this organisation completed a massive regional stream sediment sampling programme in the north-west of Tasmanian. None of the anomalies defined were followed up. Locations and values for the drainage sampled are available at a scale of 1" to 1 mile, these have been transposed onto a 1:50,000 plan and sample identification and values for copper, lead, zinc and arsenic are given in Figures 3-7 (Back pocket). Anomalous values were detected.

Tin was also analysed and this is presented on the compilation of Pickands Mather and the Consolidated Syndicate data (Figure 8 in back pocket). It should be noted that these two sets of values are not compatible since laboratory analyses were done by emission spectrography and by X.R.F. by the two groups. The general distribution is still evident with higher values being recorded at or near to the supposed granite contact. Further inland other anomalies were located.

2.4. Esso Australia Ltd.

E.L. 2/73 was granted to Esso Australia Ltd., who conducted a predominantly base metal search over the area. Geoterrex were contracted to fly reconaissance airmagnetic and Input traverses in an E-W direction. After the initial interpretation the line spacing of 1 mile (altitude 400') was reduced in selected areas. 174 line miles of follow-up at a spacing of 0.5 miles and 20 line miles at 0.25 mile spacing were flown. It was concluded that anomalous areas resulted from black shale or salt water. No geological mapping was undertaken and little ground follow-up was attempted within E.L. 56/80.

The geophysical data was examined by Bishop (1981 & 1982) and a compilation made (Appendix 4a and b).

2.5. C.R.A. Exploration Pty. Ltd.

The ground covered by E.L. 56/80 was part of a much larger area occupied by C.R.A., but has subsequently been relinquished. Since they still hold the rest of the ground, E.L. 1/77 , their reports are still confidential within the Mines Department.

3. E.Z's PROGRAMME OF WORK UNDERTAKEN

3.1. Introduction

Following a review of the previous exploration work in the area a full scale E.Z. programme was commenced. A detailed aeromagnetic survey was undertaken and analysed prior to field work being started, and a photogeological interpretation completed. From them it was decided that certain areas were more favourable for potential mineralisation and provided targets for ground follow-up, with special emphasis being placed on those near to the supposed granite contact. Anomalous areas were numerically defined in order of priority on the basis of geological, geochemical and geophysical data (see Figure 2). At the end of the current field season three had been checked out on the ground.

Due to the problems of movement and navigation on the ground each camp was located near to the anomaly. Grids were laid out in a north-south and east-west direction, (throughout the report all orientations relate to a True North bearing) and ground magnetometer traverses, geological mapping, and augering (where warranted) undertaken. The location of the origin for the gridding of each anomaly, usually a tree, was chosen with some care and was identified on the ground by means of a helicopter and using 1:15,000 scale aerial photographs. This was considered to be a critical operation as previous workers appear to have had problems with ground location and co-ordination of their geophysical programmes.

The team for the 1981-82 field season consisted of two geologists and four field assistants. All were engaged in the follow-up work apart from two field hands who started the stream sediment sampling programmes.

3.2. Photogeological Interpretation

A photogeological interpretation of the Sandy Cape E.L. was undertaken by Hunting Geology & Geophysics (Aust.) Pty. Ltd., using 1:40,000 aerial photographs and a report entitled "A Geophoto Study of the Sandy Cape Area, Tasmania" submitted. For a copy of the report refer to Appendix 2.

3.3. Aeromagnetic Survey

An aeromagnetic survey was flown by Geoex Ltd. in January, 1981, with a line spacing of 200 metres, a sensor altitude of 100 metres and a data sample interval of 40 metres. A total of 1,116 kilometres of data was collected, processed and line profiles and a contoured (5nT intervals) airmagnetic plan submitted at a scale of 1:10,000 (refer to Appendix 3 for Geoex Plans and Profiles).

Mitre Geophysics Pty. Ltd. (Bishop) were contracted to report on the data. (Refer to Appendix 4.) A 1:50,000 scale reduction of the contoured plans was produced. A large number of anomalies were identified and examined. Nineteen were identified as prospective, some of which were weakly magnetic but were associated with Input anomalies located by previous workers. A general feature of the area is the relatively low amplitude of the anomalies, the greatest being 240nT above background.

A typical low amplitude signature is given by the granite and a contact postulated by Bishop. A cursory field examination and the work of previous explorers has shown the actual granite outcrop to be more restricted than show on the Mines Department 1:250,000 Geology Sheet (Burnie SK-55-3). However it is believed that the granite is near surface over a large part of the south-west of the

lease. The previous stream sediment geochemistry would also indicate a two population system for tin with the higher value group at or near to the granite contact. A statistical analysis will be undertaken upon completion of the current E.Z. programme to verify this.

A revision of the priority of the anomalies has been undertaken in the light of geological and geochemical data and a group of nine anomalies defined for immediate ground follow-up (Figure 2).

3.4. Anomaly 1.

3.4.1. Introduction

Located 4.5km to the east of Sandy Cape (Figure 2), Anomaly 1 was defined as the one with the greatest amplitude by the latest Geoex survey, and with the highest priority for follow-up by Bishop. An isolated anomaly having two peaks of 240 and 180 nT amplitude it was estimated by Bishop to have a strike length of over 1 kilometre and a depth to source in the order of 200 metres. Previous explorers had identified an airmag anomaly and Esso had undertaken some airborne E.M. work over the area and had concluded that a very strong six channel anomaly was present with a highly conductive source which had a 90 nT magnetic anomaly (from the air) some 150m to the west. An estimated strike length of 5km was postulated. Upon field examination it was explained away as being caused by graphitic black shale. No ground geophysics was undertaken. Bishop, upon examining the data, concluded that the ground location was possibly not accurate and it was also possible that even if the shale did give the observed E.M. response then it may have been sufficient to obscure any response from the airmag anomaly.

Geologically Anomaly 1 is located in a favourable position for either skarn or carbonate-replacement type tin mineralisation, depending upon the location of the granite contact at depth. On surface the nearest granite is 4km away at Sandy Cape.

Topographically the area is relatively flat and is dominated by heath vegetation and low open shrubland. The Pedder River runs between the ground locations of the two peaks of the anomaly and this area is characterised by heavy woodland and dense fern forest.

Access within the southern area is excellent but to the north of the origin point difficulty is encountered in the heavy woods and dense heath.

3.4.2. Ground Magnetometer Traverses

The 1:10,000 Geoex contoured Total Magnetic Field plans were overlain on similar scale topographic plans and the position of the anomaly located. This was then transferred onto the 1:15,000 scale enlarged aerial black and white photographs and the ground follow-up planned. As stated previously the origin was defined by using these photographs and was chosen so that traverse lines could be put through the supposed centre of the anomaly and positioned such that time-consuming line cutting was kept to a minimum.

A grid consisting of a total of 6.93 line kilometres was laid out using a compass and Topofil (Figure 9). A north-south base line of 1.18km was laid out and east-west lines, at a spacing of 300m, offset from this. Further subdivision was dependent upon the results obtained from the ground survey. Because of the limited topography and early stage of exploration slope corrections were not applied.

Readings were taken every 10m over the grid using a Scintrex M.P. 2 Portable Proton Precession Magnetometer with a back mounted sensor. Data was corrected nightly using base station variations, profiles plotted and a contoured total magnetic field plan produced at a scale of 1:2,500 (refer to Figures 10 and 11 in the back pocket for plans of the posted and contoured total magnetic field values respectively, and Figures 12-19 for the individual line profiles).

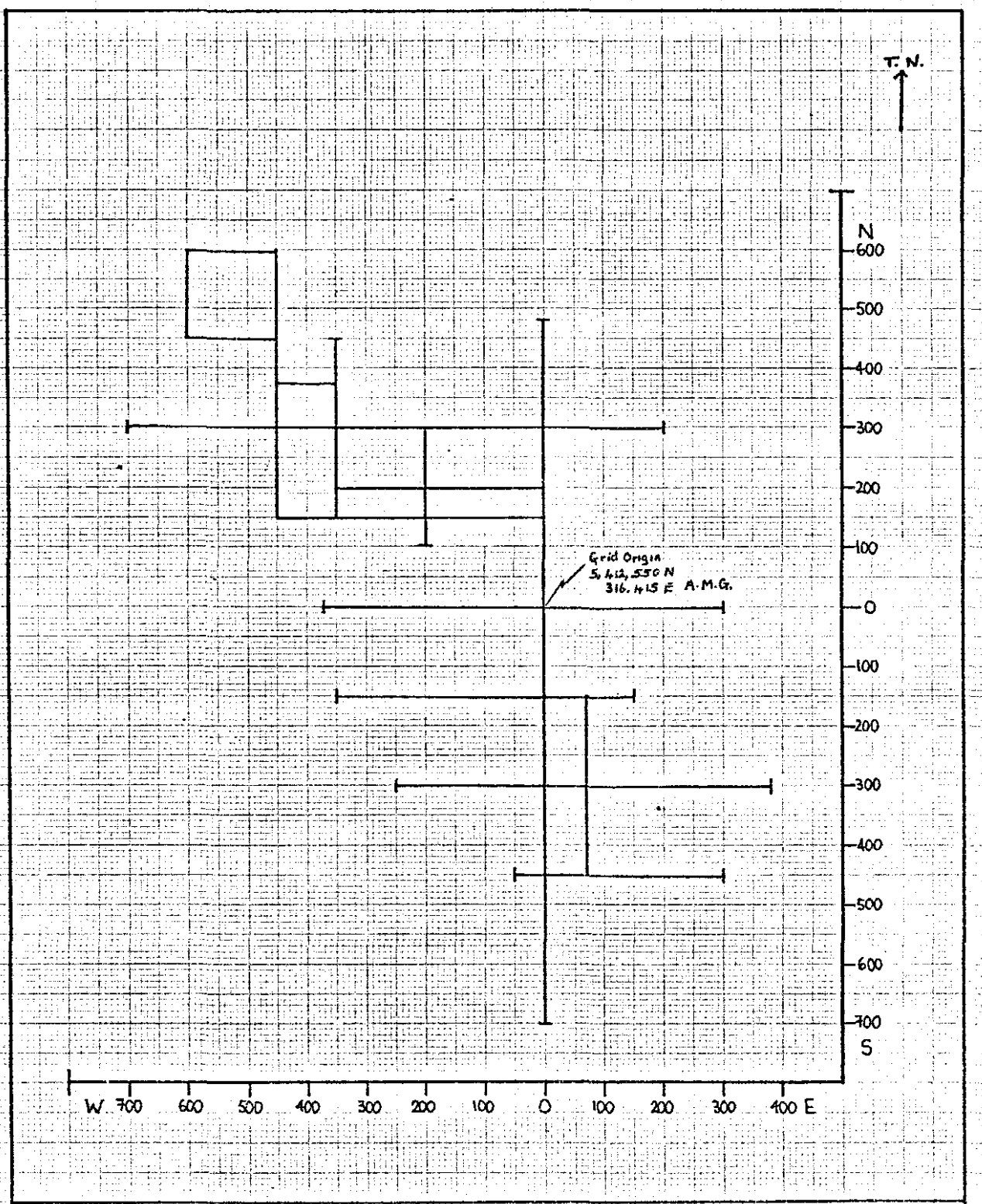
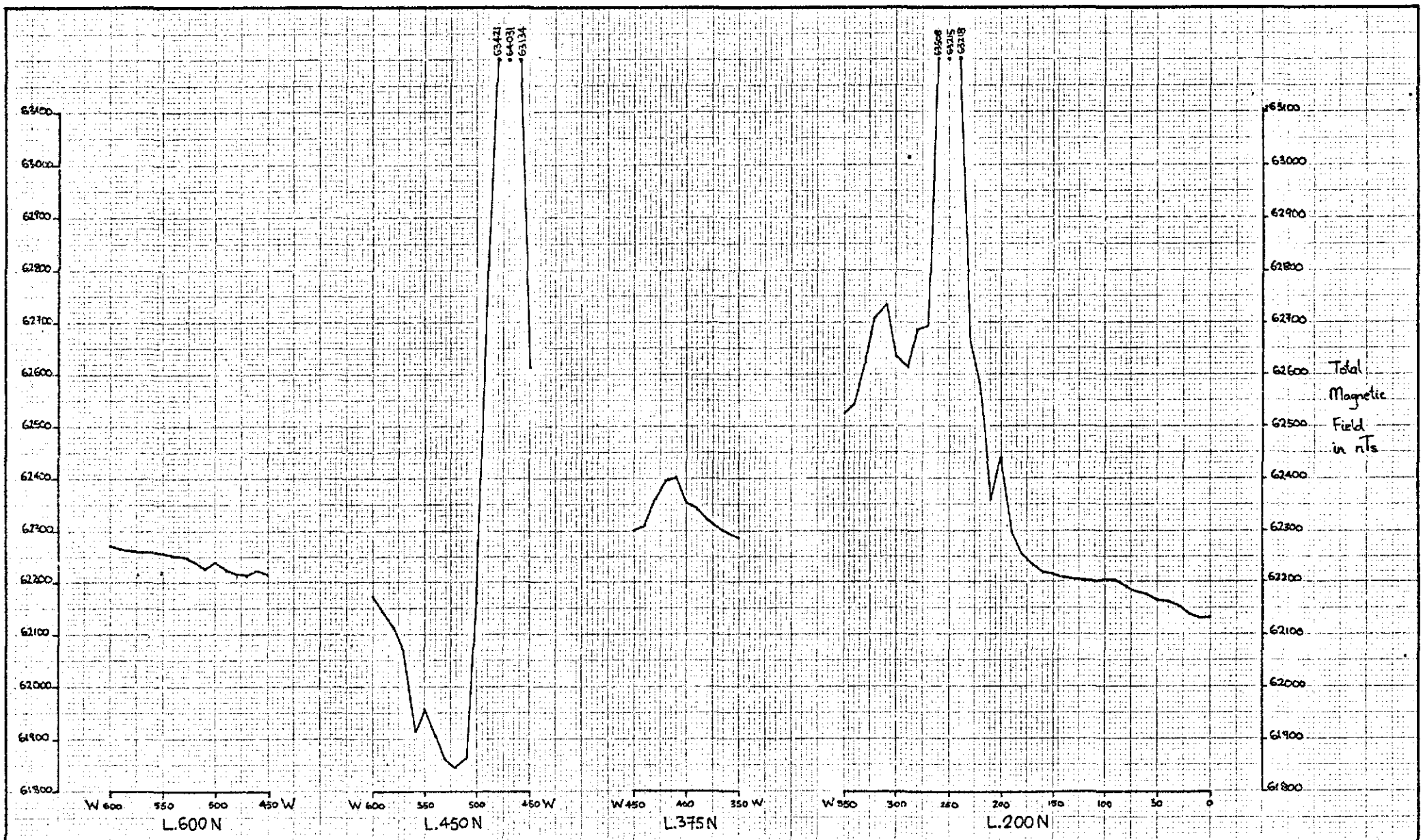


FIGURE 9

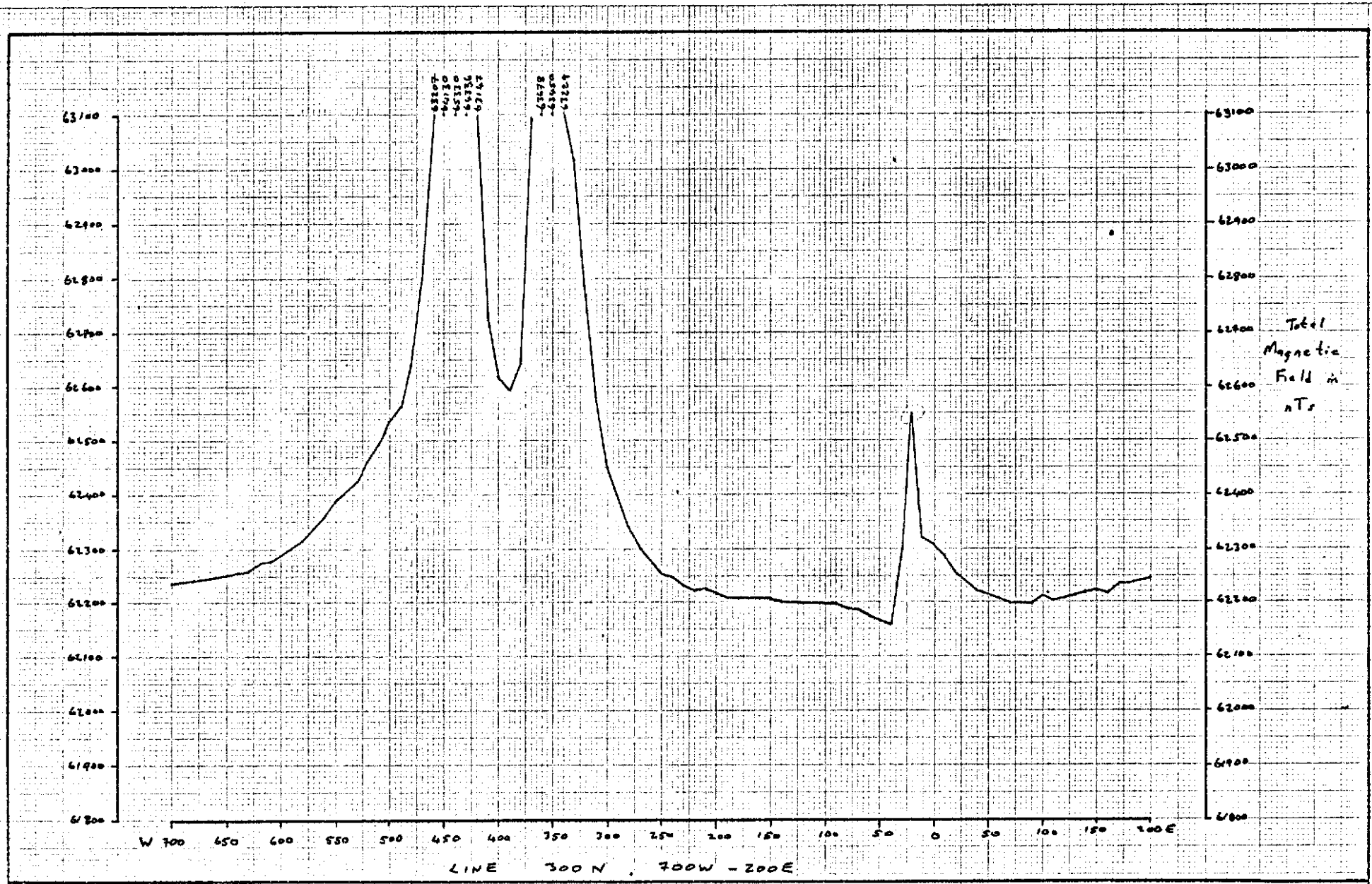
ELECTROLYTIC ZINC CO. OF A'SIA LTD.
PROJECT : SANDY CAPE, EL 56/80 (TASMANIA)
PLAN SHOWING ORIENTATION OF THE GRID AT ANOMALY 1
Scale 1:10,000

5 cm

GAF A4 1mm

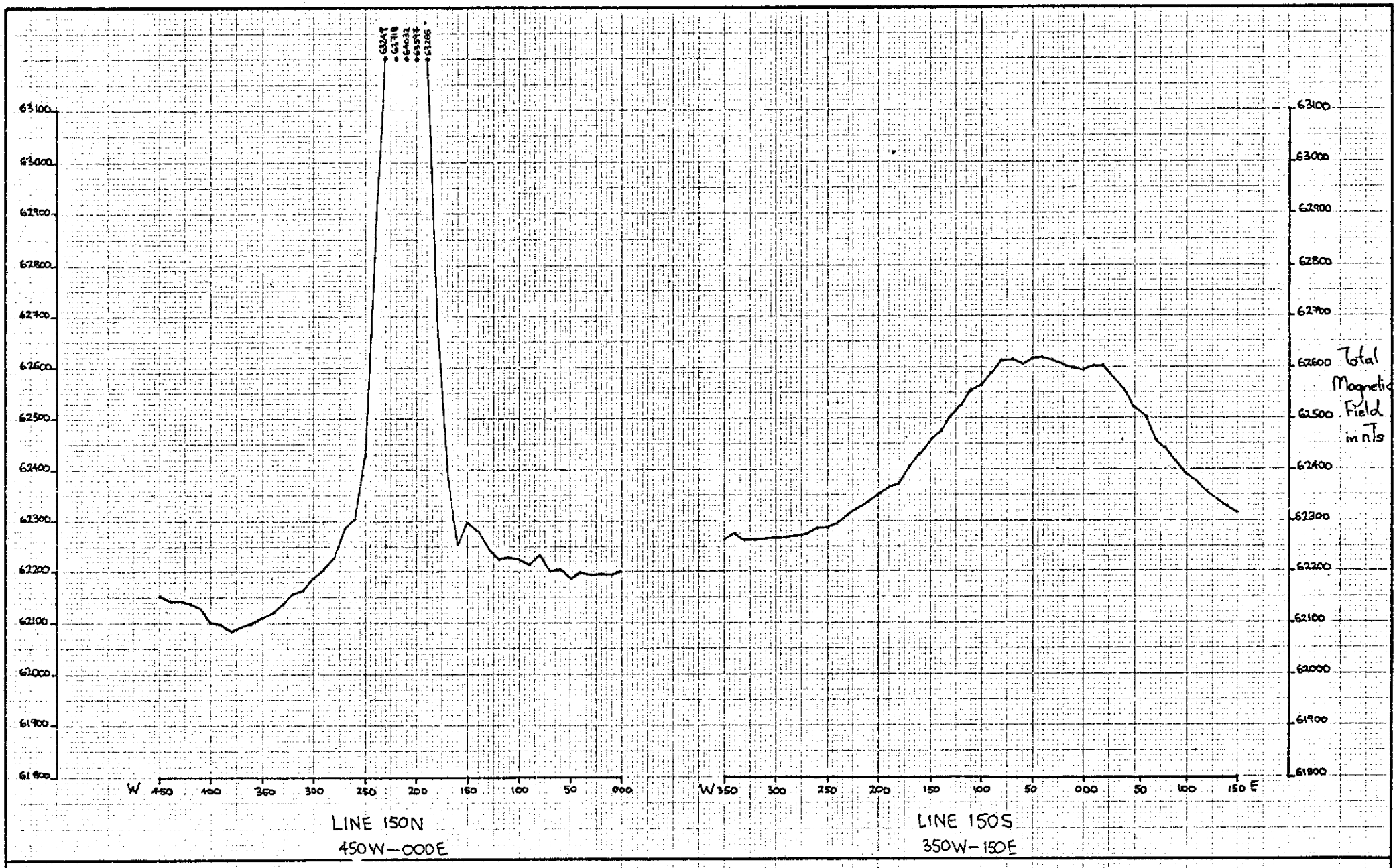


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : EL 56/80, SANDY CAPE, TASMANIA
ANOMALY 1: PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINES 600N, 450N, 375N & 200N. FIGURE 12



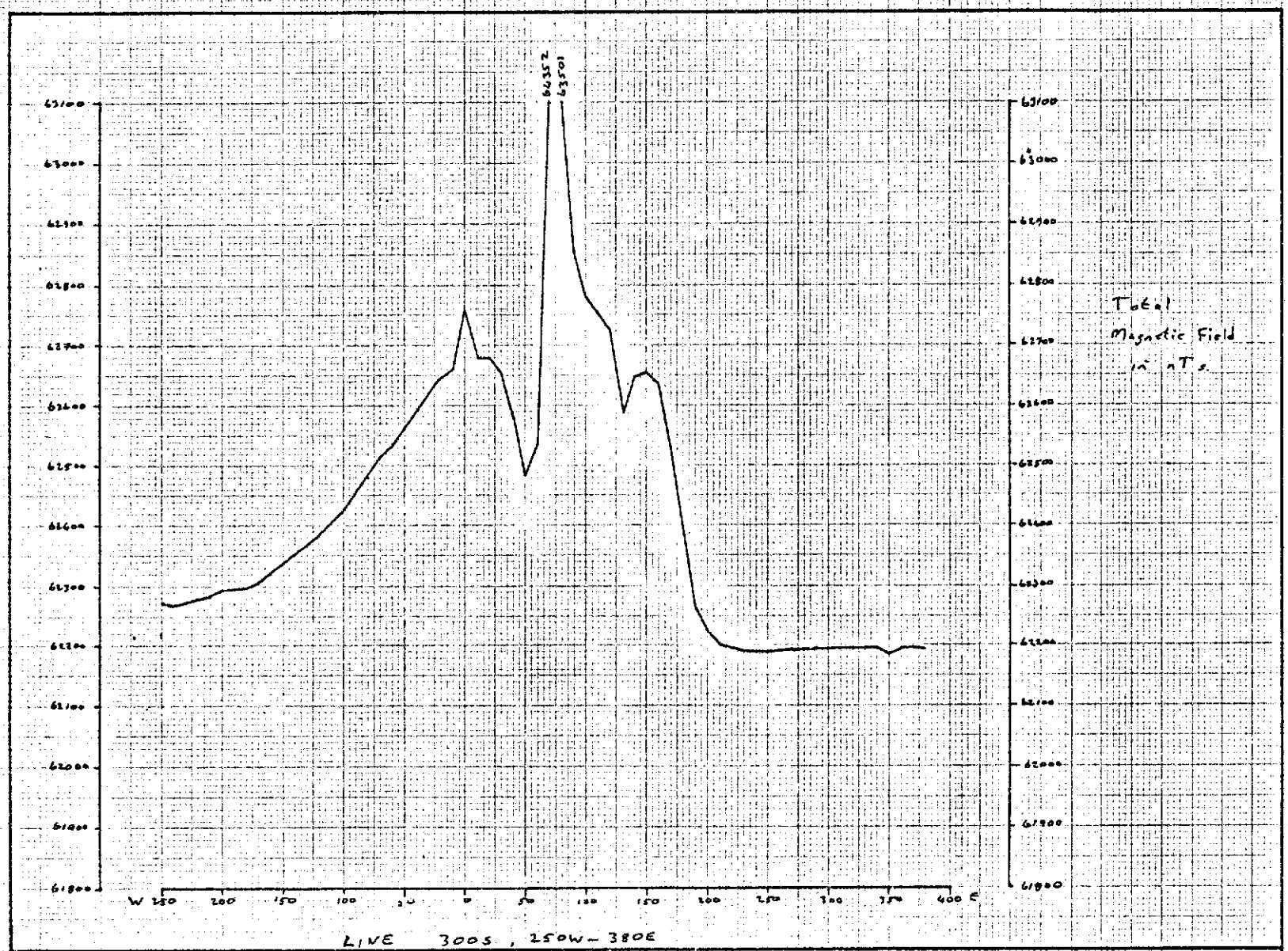
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA
ANOMALY 1: PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINE 300N

FIGURE 13

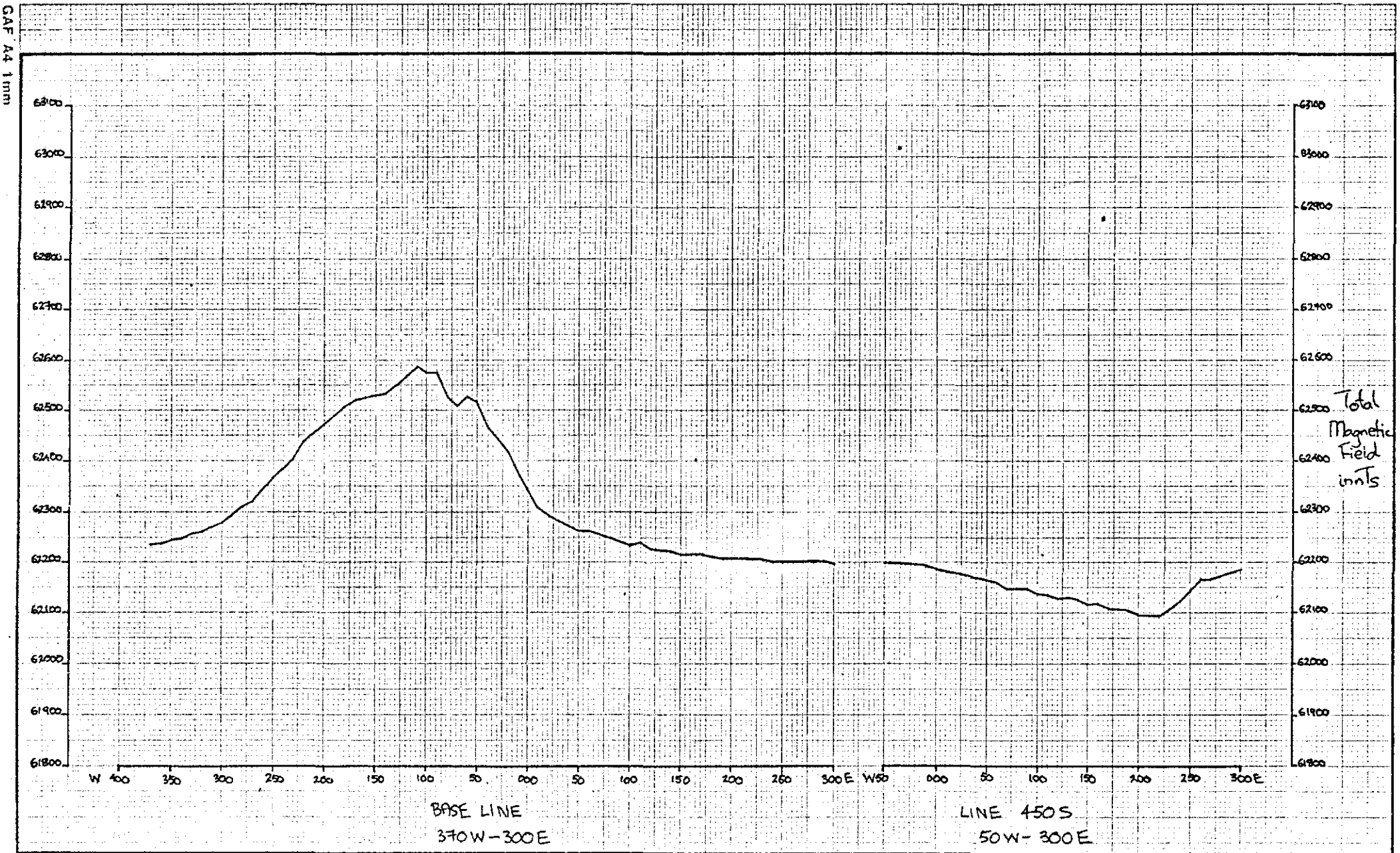


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : EL. 56/80, SANDY CAPE, TASMANIA
ANOMALY 1: PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINES 150N and 150S

FIGURE 14

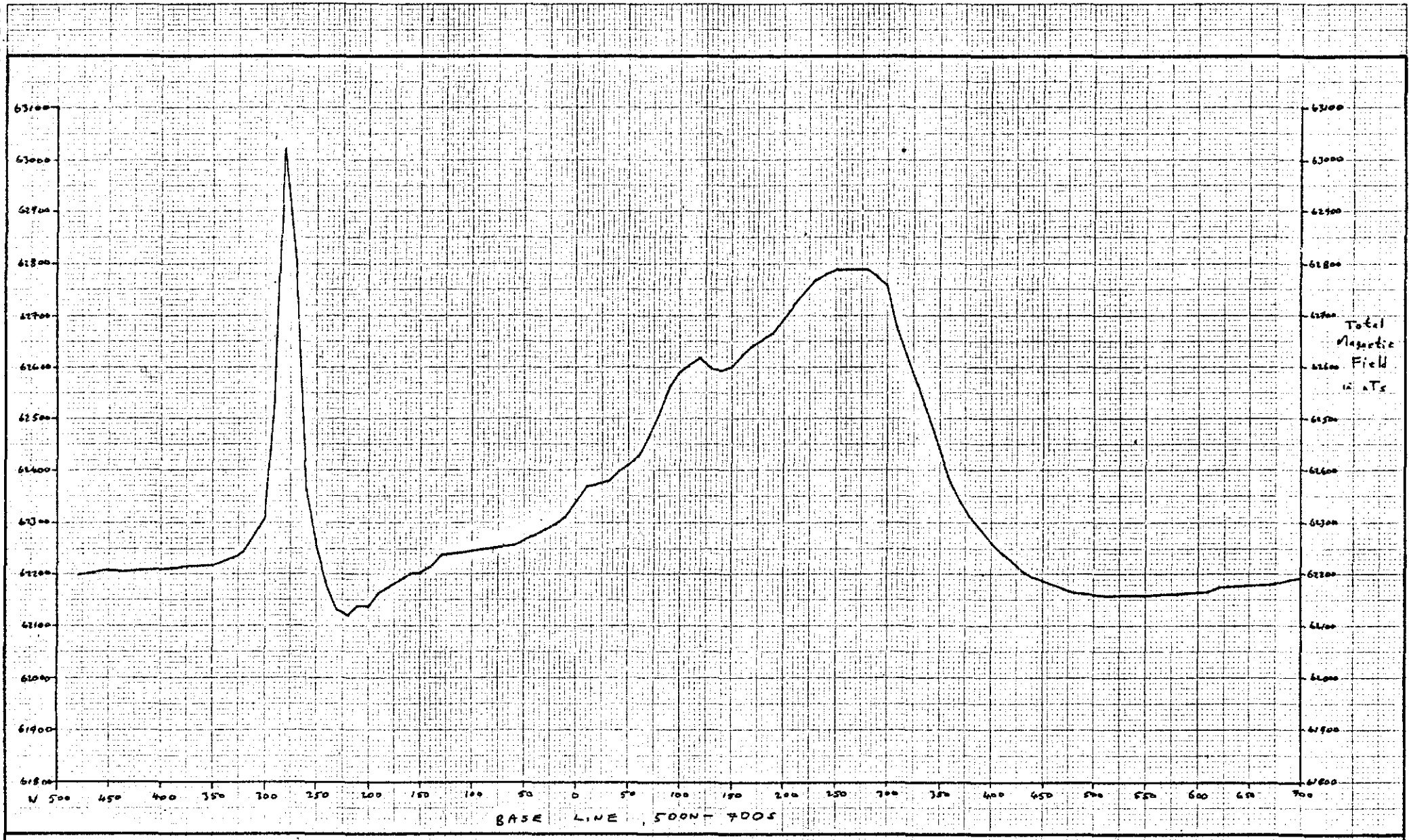


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L 56/80, SANDY CAPE, TASMANIA.
ANOMALY 1 : PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 300S FIGURE 15



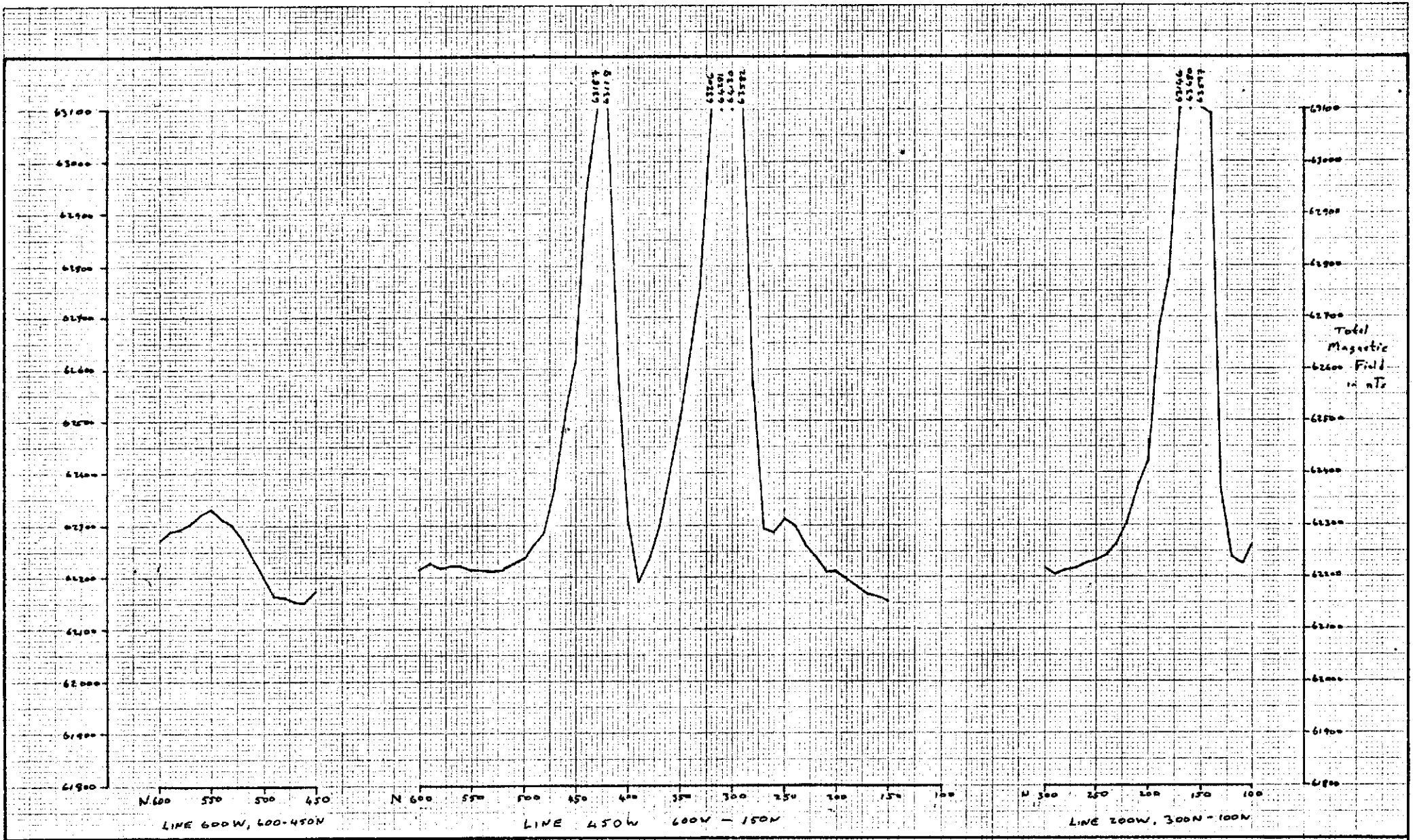
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED.
PROJECT: E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 1: PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINE 450S AND THE E-W. BASE LINE

FIGURE 16



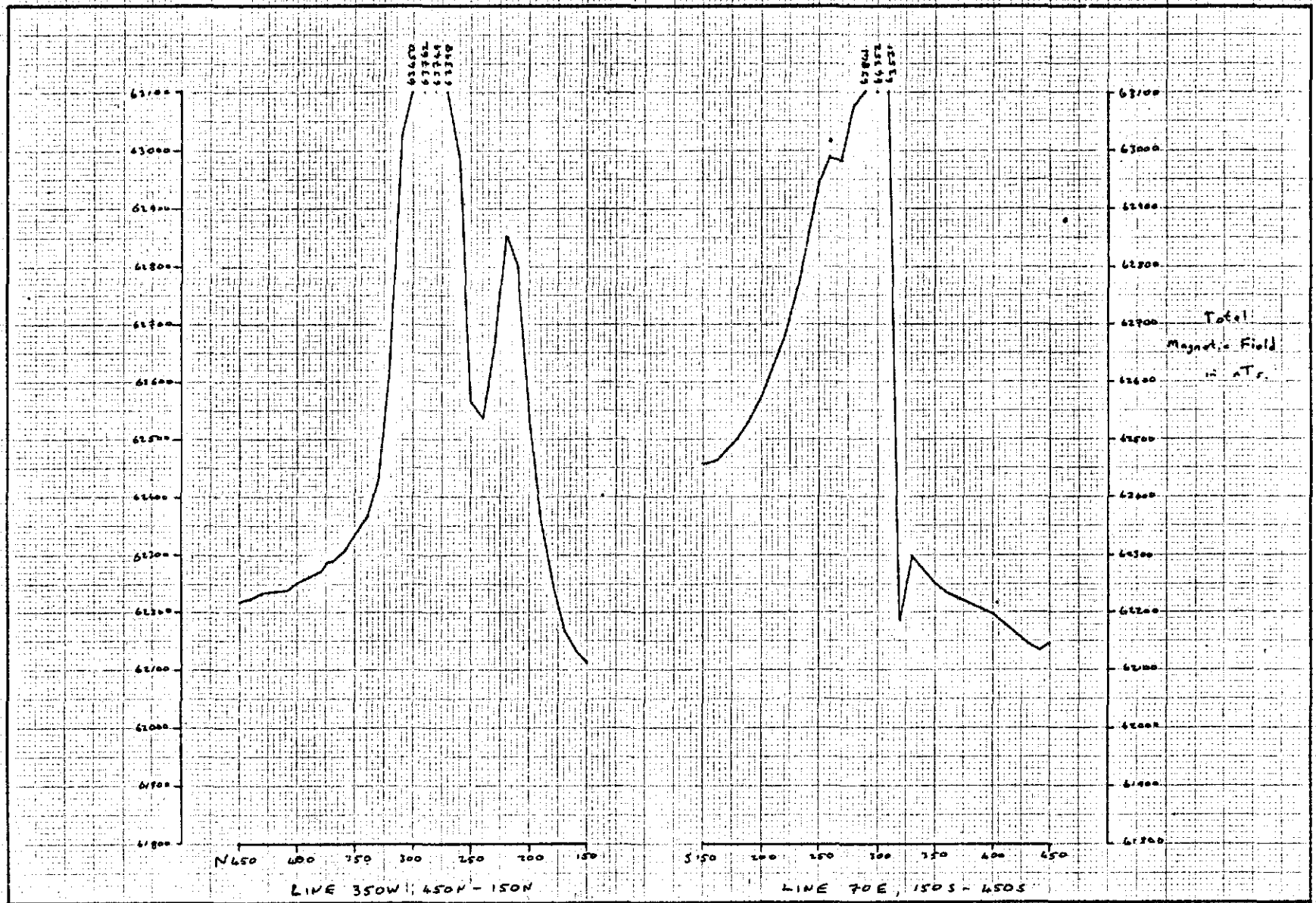
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 1 : PROFILE OF TOTAL MAGNETIC FIELD ALONG THE N-S BASE LINE

FIGURE 17



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 1 : PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINES 600W, 450W and 200W

FIGURE 18



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA. FIGURE 19
ANOMALY 1 : PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINES 350W and 70E

As can be observed both of the aeromagnetically defined peaks have been located on the ground. In the southern area a broad high zone, peaking at about 2,700nT above background, extends in a north-westerly direction for some 500 metres. The northern area, although linked to the southern one, has slightly different characteristics in that it is much tighter and possess a series of high anomalous values (with attendant lows) peaking at 3,100nT above background. The trend is also slightly to the west, ranging from 125-135°. This zone extends for some 400m along magnetic strike. A small isolated circular high was located on the baseline, peaking at 800nT above background at 280N.

3.4.3. Geology and Geochemistry

Over the whole of the gridded area of Anomaly 1 only two patches of outcrop were observed. In the southern area, some 50 metres south of grid point (200E, 300S) is a 30m long, 8m wide outcrop trending a direction of 108°. It consists of white recrystallised Lagoon River Quartzite with (?) K-feldspar alteration. In some places a brown coloration was observed but no sulphides were identified. The outcrop, although having several prominent partings, had no discernible bedding planes.

In the north on the baseline around 350N there are a series of small outcrops of what is assumed to be Pedder River Siltstone units. Consisting of thinly laminated (1-2mm) units of interbedded dark grey-blue to white siltstones and shales, they strike 020° and dip 28° to the east. Pyritic clots and pyrite rich bedding planes, now all weathered out, were observed. Some barren quartz veining was noted, varying in density from 0.5 per metre to 60 per metre. The high density veining has a strike of 147° and dips 85° to the north-east compared to the

minor which has an orientation of 142/82SW.

In an attempt to explain the ground magnetic anomalies, a series of auger holes were drilled (Figure 20). Samples were collected from the 7cms above bedrock if it was reached. The usefulness of the samples is to be questioned since, although bedrock was reached in the majority of holes, it is felt that a true soil profile had not developed. In most cases the drill penetrated a surface covering of dune sand (in the south only), a peat layer and then it went straight into solid rock. In the southern area the bedrock was of the order of 1m below the surface over the anomaly and appeared to be in Lagoon River Quartzite (Appendix 5). In the northern area a slightly different pattern emerged. A sandy organic layer rested on the bedrock and on the contact in several places rounded to subrounded pebbles of siltstone and quartzite were identified. At (300N 370W), a granitic pebble was found. It would appear that the samples taken were of alluvium and hence their usefulness in detecting any potential underlying mineralisation doubtful. Bell (1972) concluded that large parts of the area were on a wave cut platform and to the south, at Pieman River, observed remnant sands and gravels. Of exploration significance was the identification in that area of cassiterite bearing Tertiary gravels.

3.4.4. Conclusions

A magnetic anomaly has been defined which could be related to economic mineralisation. Geological observations, albeit scant, indicate the trend of the anomalism to parallel that of some observed quartz veining. This veining has a reasonable

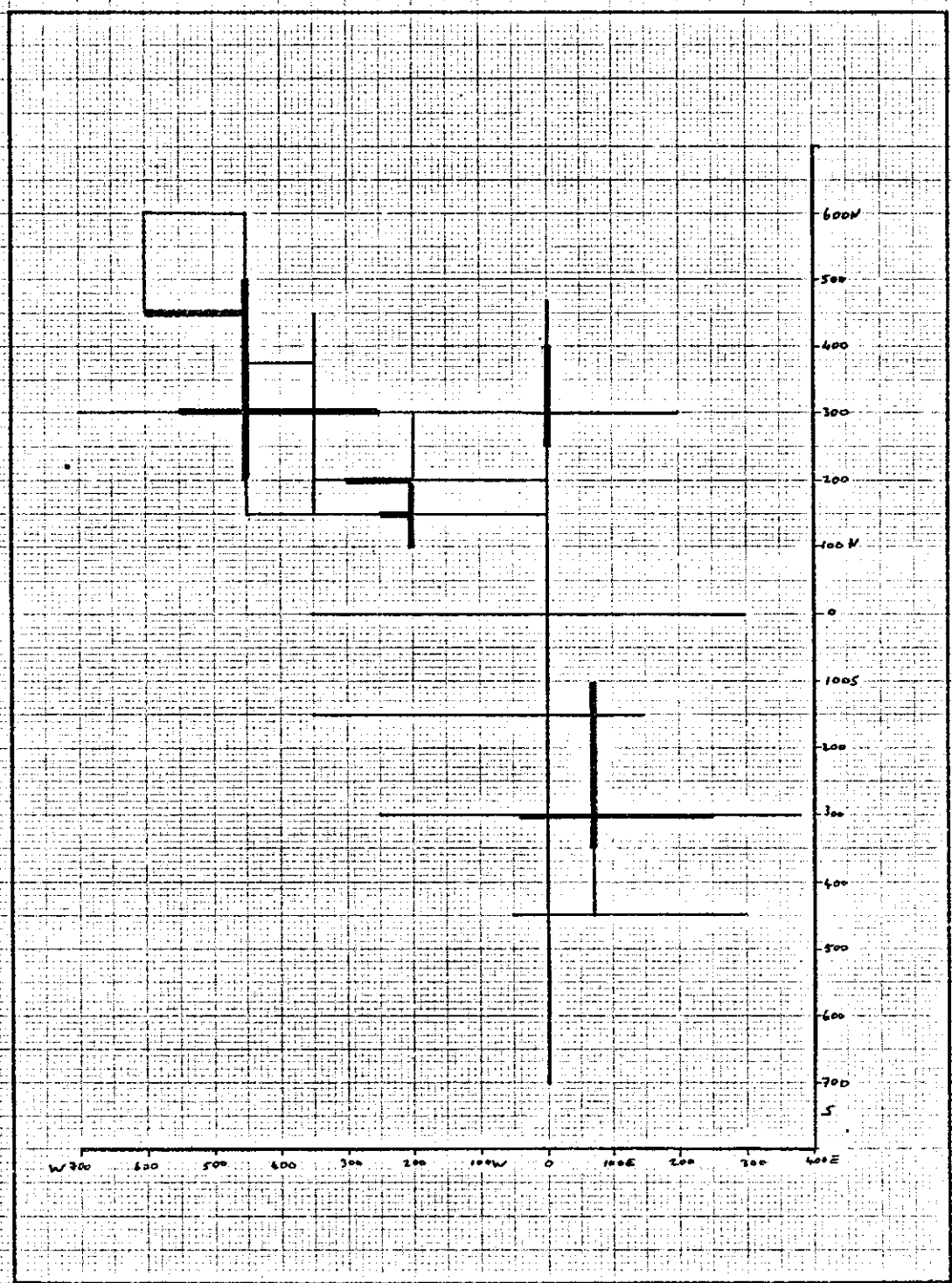


FIGURE 20

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.
PROJECT : SANDY CAPE . E.L. 56/80 (TASMANIA).
PLAN SHOWING POSITION OF AUGERED HOLES AT ANOMALY 1.
REFER TO APPENDIX 5 FOR INDIVIDUAL DESCRIPTIONS.
SCALE : 1:10,000

5 cm

GAF A4 1mm

density in places and although they lack mineralisation at the surface it cannot not be ruled out at depth. Sulphides have been observed in the sediments.

Augering and sampling the lowermost soil horizon is not to be recommended.

Geophysical modelling on the anomaly should be undertaken and, if warranted, a programme devised for the next field season to cover the anomalous areas with ground magnetometer traverses of 50m line spacing and other geophysical work such as I.P. or E.M. undertaken. It remains to be seen whether the large Esso E.M. anomaly was located correctly on the ground.

The high cost of exploration and drilling should be borne in mind and the latter should only be considered for the 1983-84 field season, upon evaluation of all data for the whole licence area.

3.5. Anomaly 4

3.5.1. Introduction

Anomaly 4 is located 5kms to the east of the coast and it lies between the Italian and Lagoon Rivers (Figure 2).

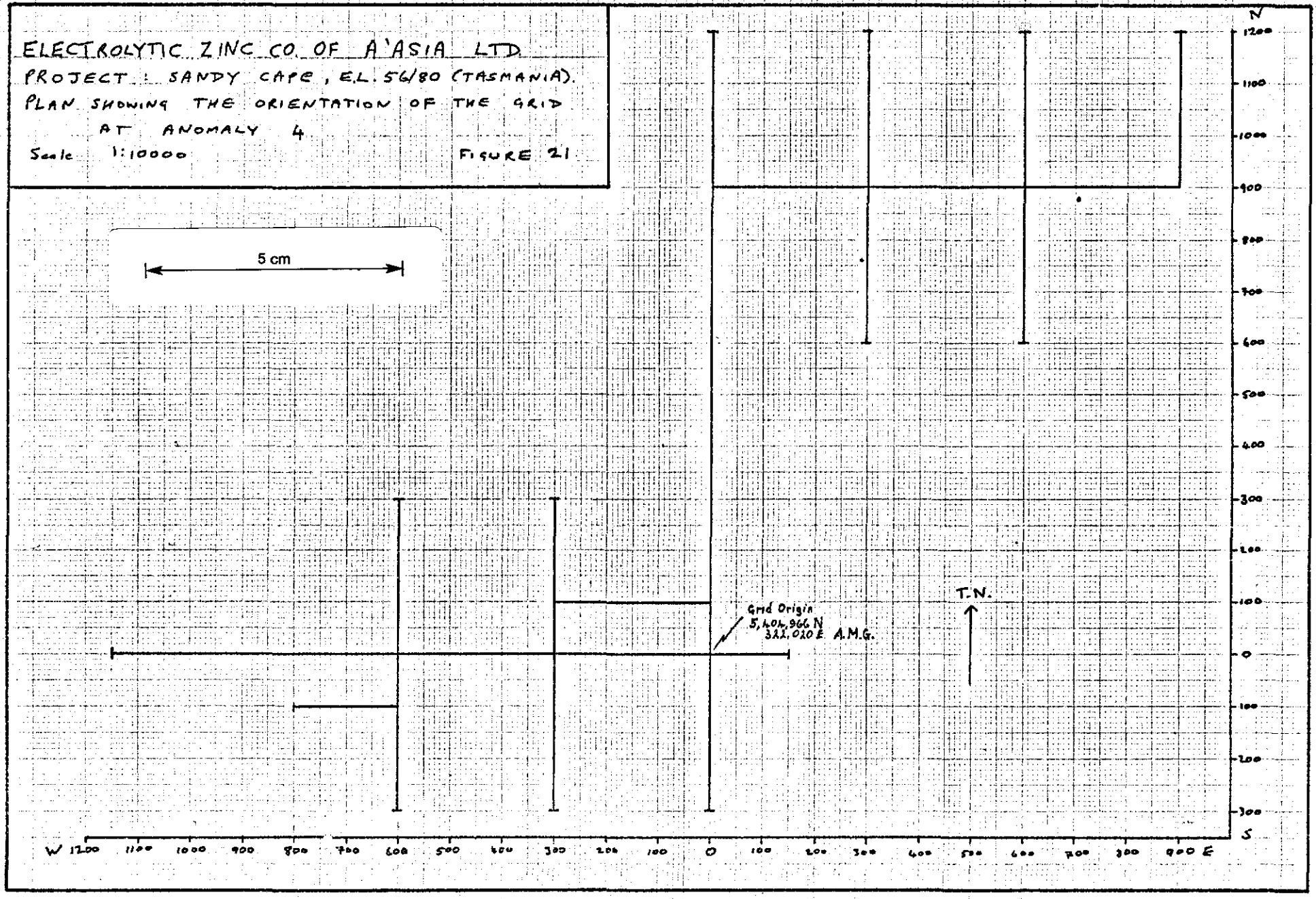
Low open shrubland dominates the flat terrain and although some marshland was encountered access problems due to bogs and line clearing were minimal.

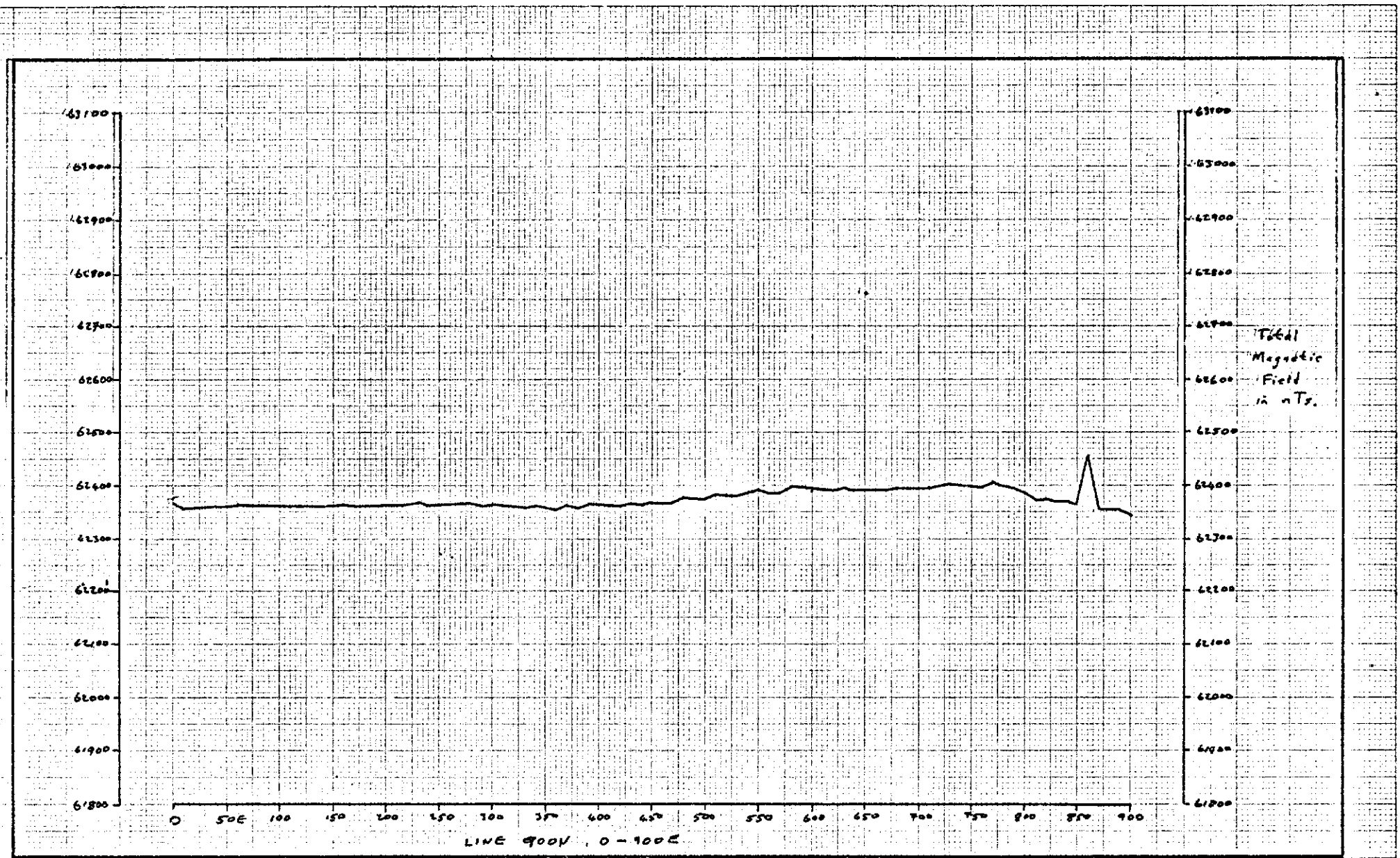
Anomaly 4 is identified by Bishop as two separate anomalies, SC25 and SC26, the latter being fourth on his priority list for follow-up. Anomaly SC26 has an amplitude of up to 130nT on the Geoex data, consisting of twin peaks and is located close to the supposed granite-sedimentary rock contact. Anomaly SC25 is not listed by Bishop for follow-up although he did note that it was anomalous in not following the regional magnetic strike. It consists of two peaks with the southern one reaching an amplitude of 140nT above background. It was considered worthy of follow-up investigation in the light of the possible position of the granite which from the airmag data (and possibly corroborated by the previous stream sediment geochemistry) would appear to possibly tongue to the east of SC25.

3.5.2. Ground Magnetometer Traverses

A grid totalling 6.90 line kms was laid out on the ground (Figure 21) and magnetometer traverses undertaken with readings at 10m intervals. Refer to Figure 22 for the posted and contoured Total Magnetic Field and to Figures 23-29 for the individual line profiles.

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
PROJECT : SANDY CAPE, E.L. 56/80 (TASMANIA).
PLAN SHOWING THE ORIENTATION OF THE GRID AT ANOMALY 4
Scale 1:10000 FIGURE 21

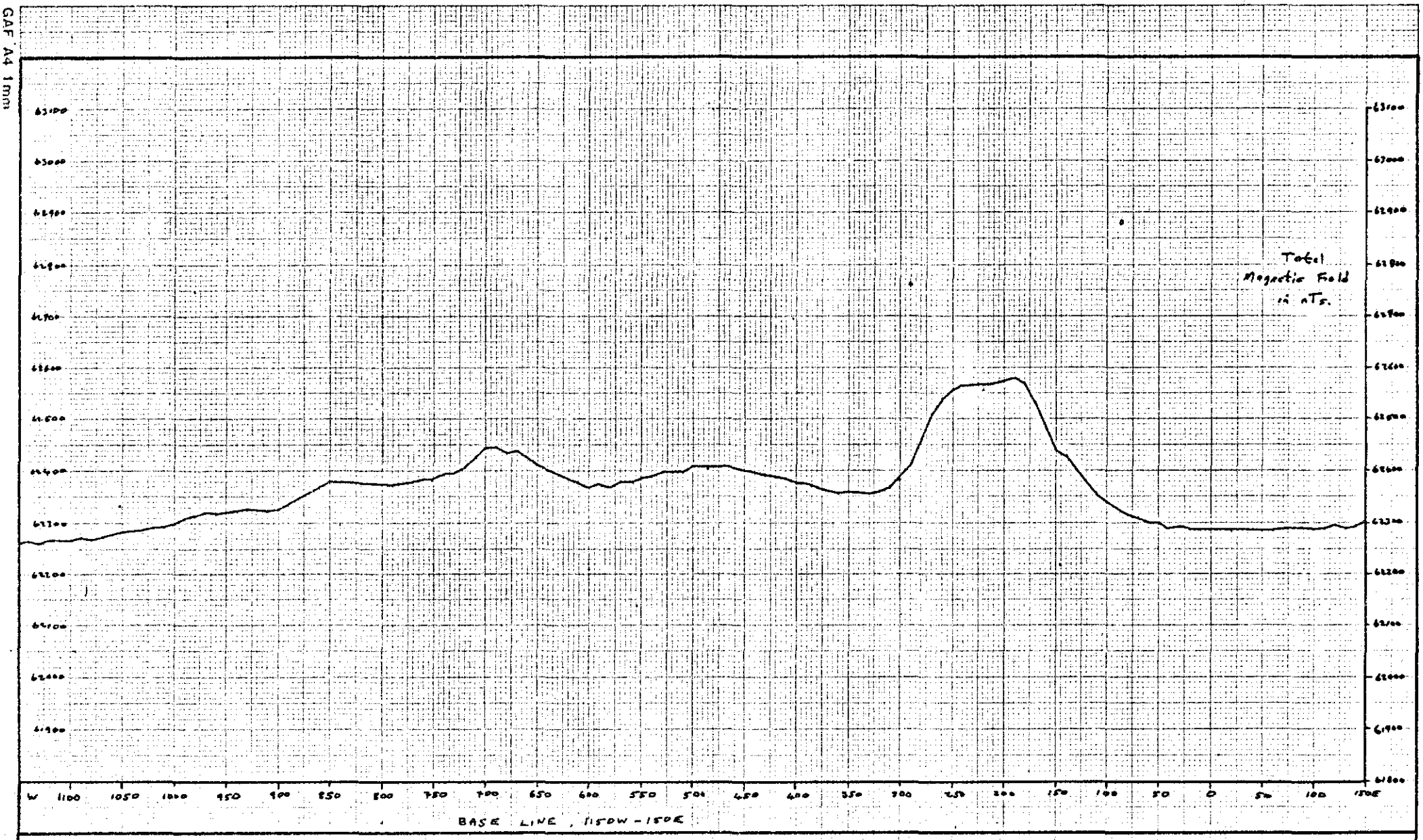




ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT: EL 56/80, SANDY CAPE, TASMANIA.
ANOMALY 4: PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 900N

FIGURE 23

GAF A4 1mm

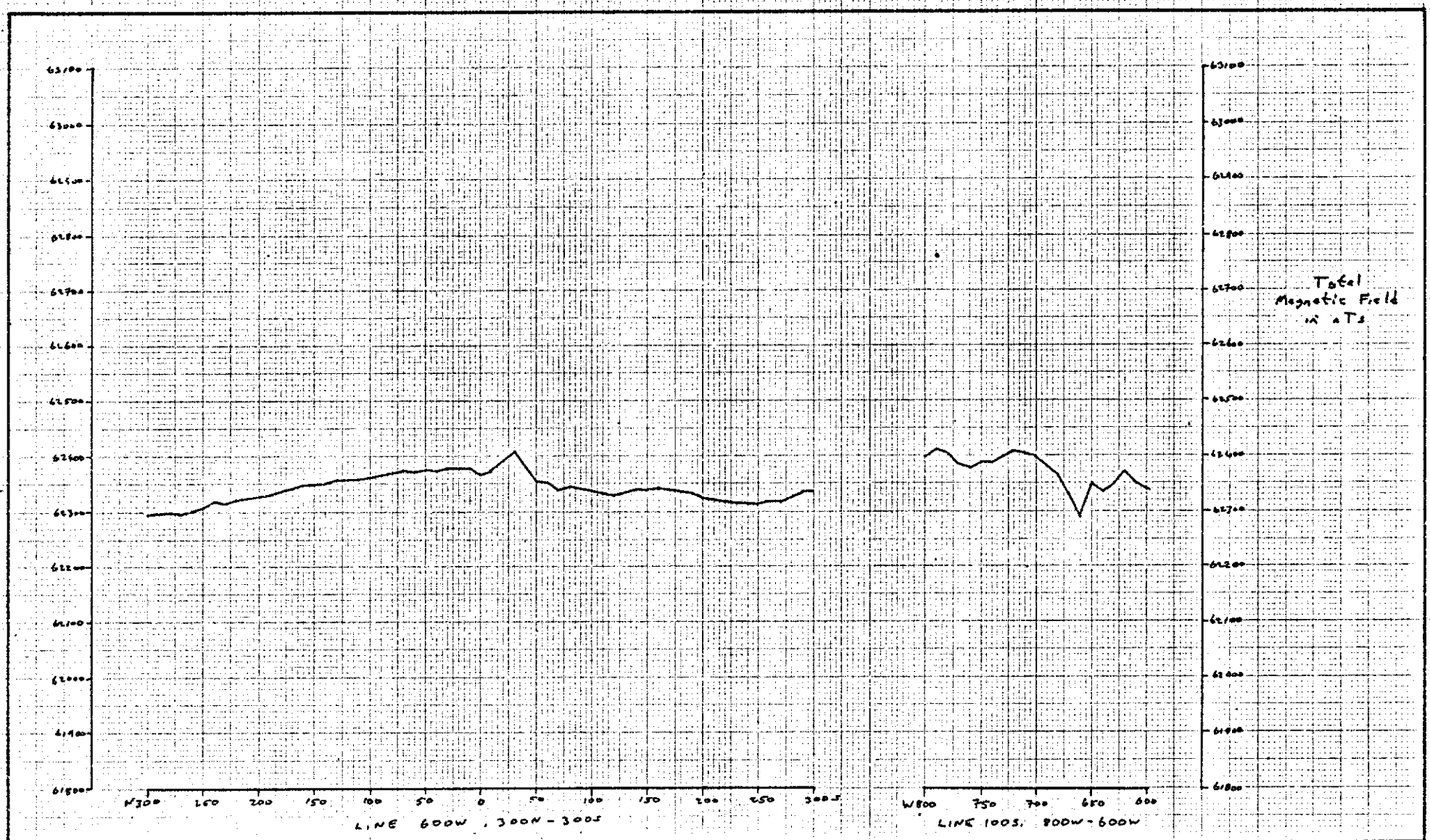


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.

PROJECT : EL 56/80, SANDY CAPE, TASMANIA

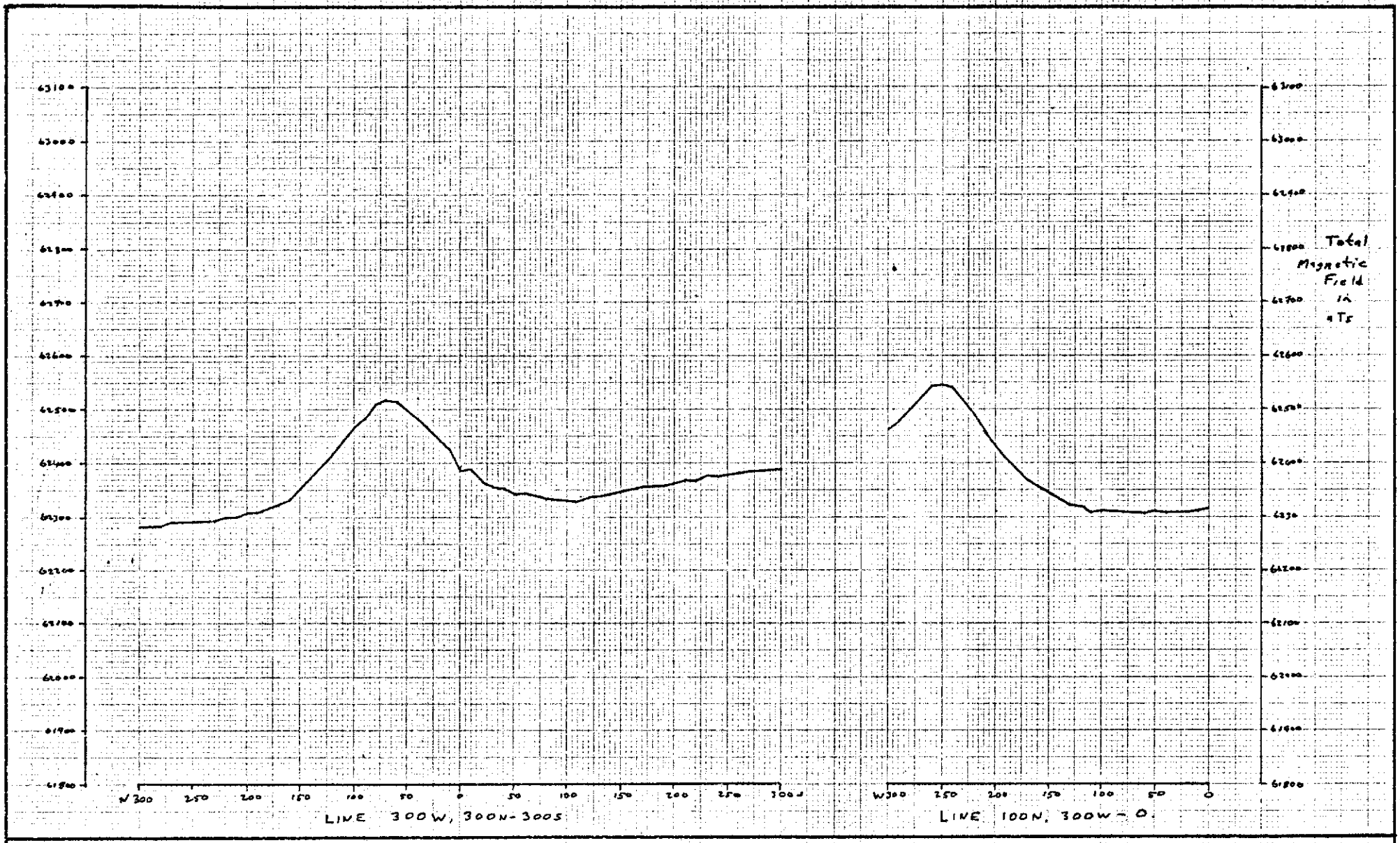
ANOMALY 4 : PROFILE OF TOTAL MAGNETIC FIELD ALONG THE E-W BASE LINE

FIGURE 24



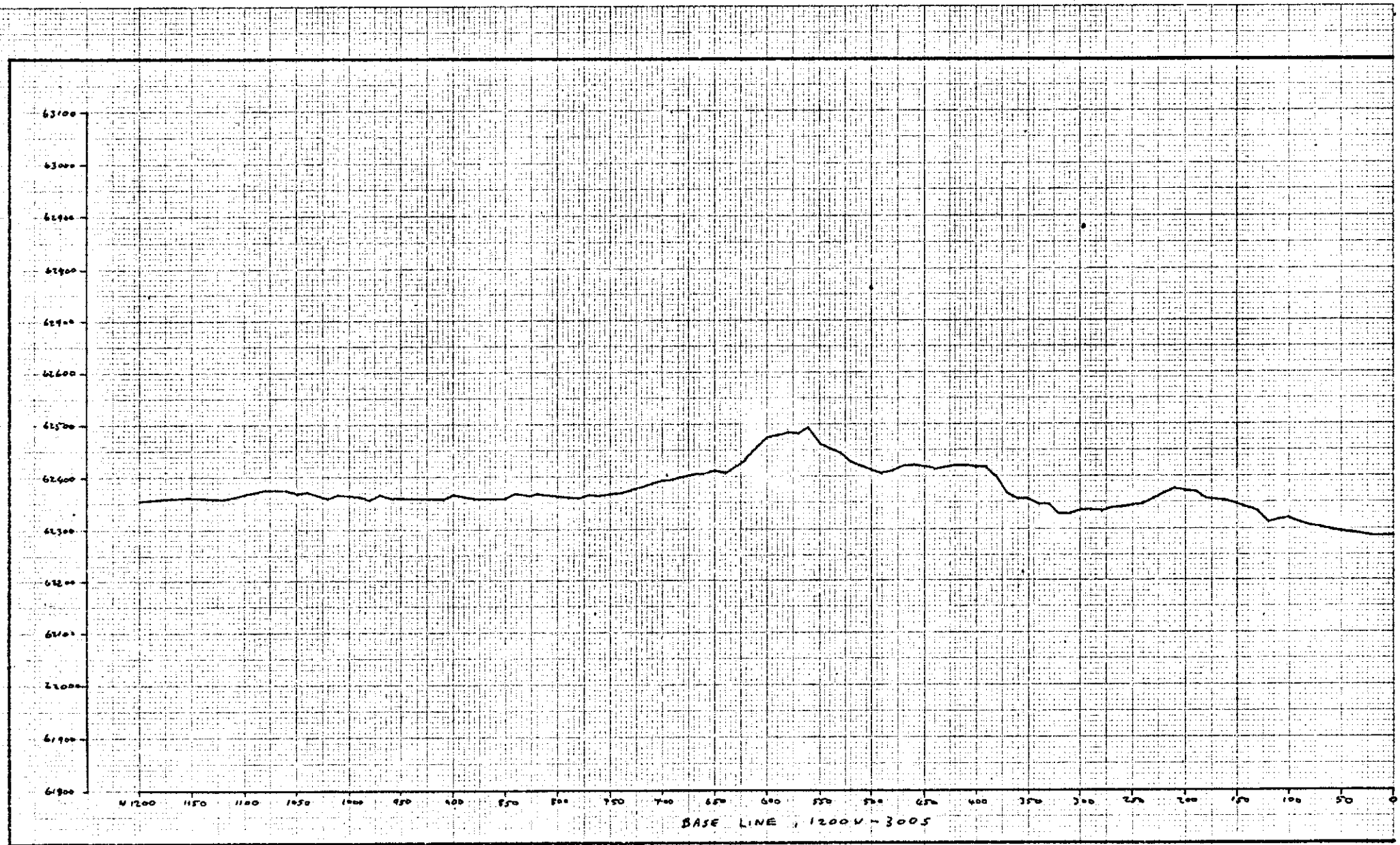
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 54/80, SANDY CAPE, TASMANIA
ANOMALY 4 : PROFILES OF TOTAL MAGNETIC FIELD ALONG LINES 600W and 100S

FIGURE 25



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/90, SANDY CAPE, TASMANIA.
ANOMALY 4 : PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINES 300W and 100N

FIGURE 26



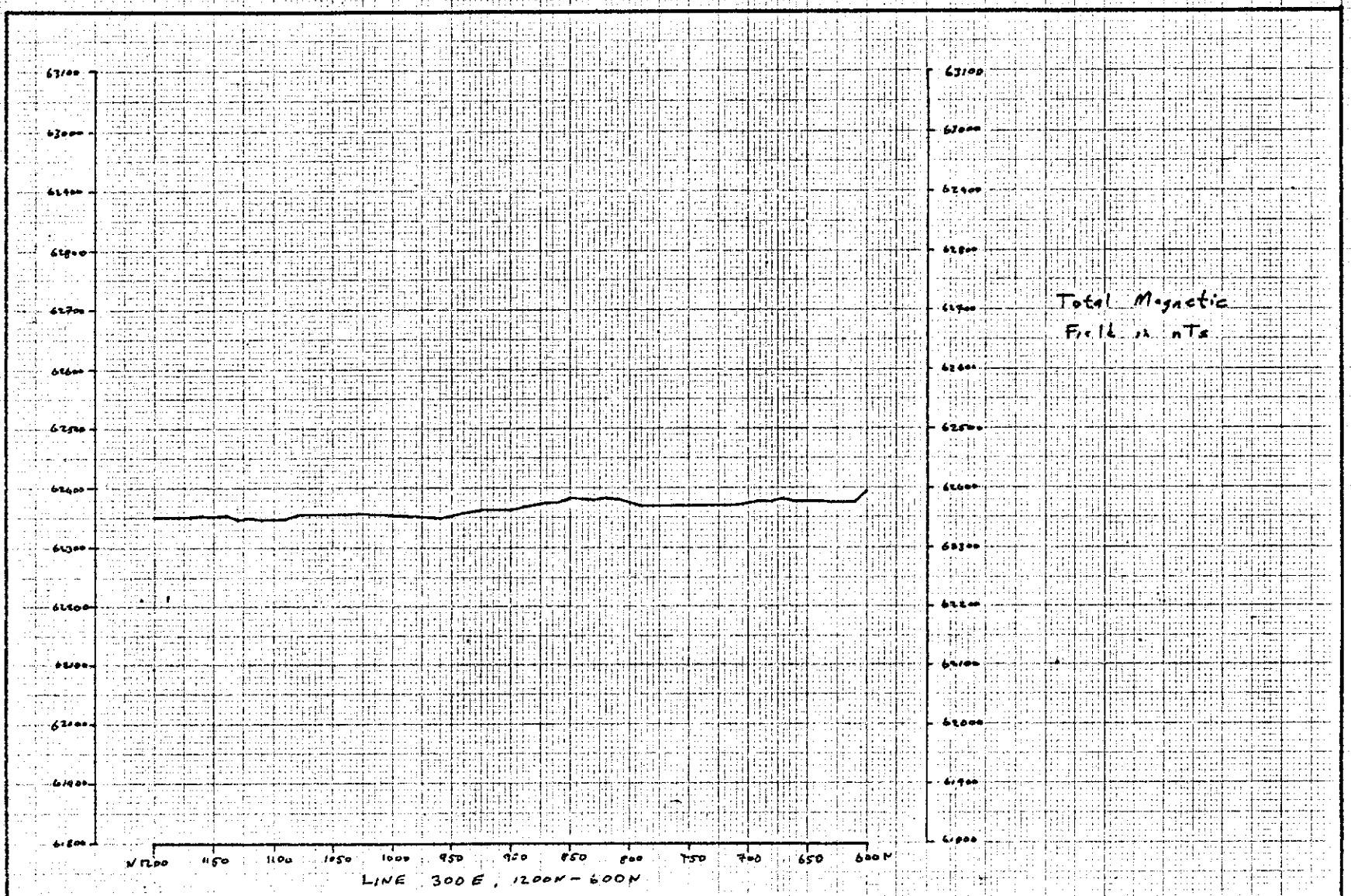
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA
ANOMALY 4: PROFILE OF TOTAL MAGNETIC FIELD ALONG THE N-S BASE LINE

GAF A4 1mm

FIGURE 27

Total Magnetic Field in nT

GAF A4 1 mm

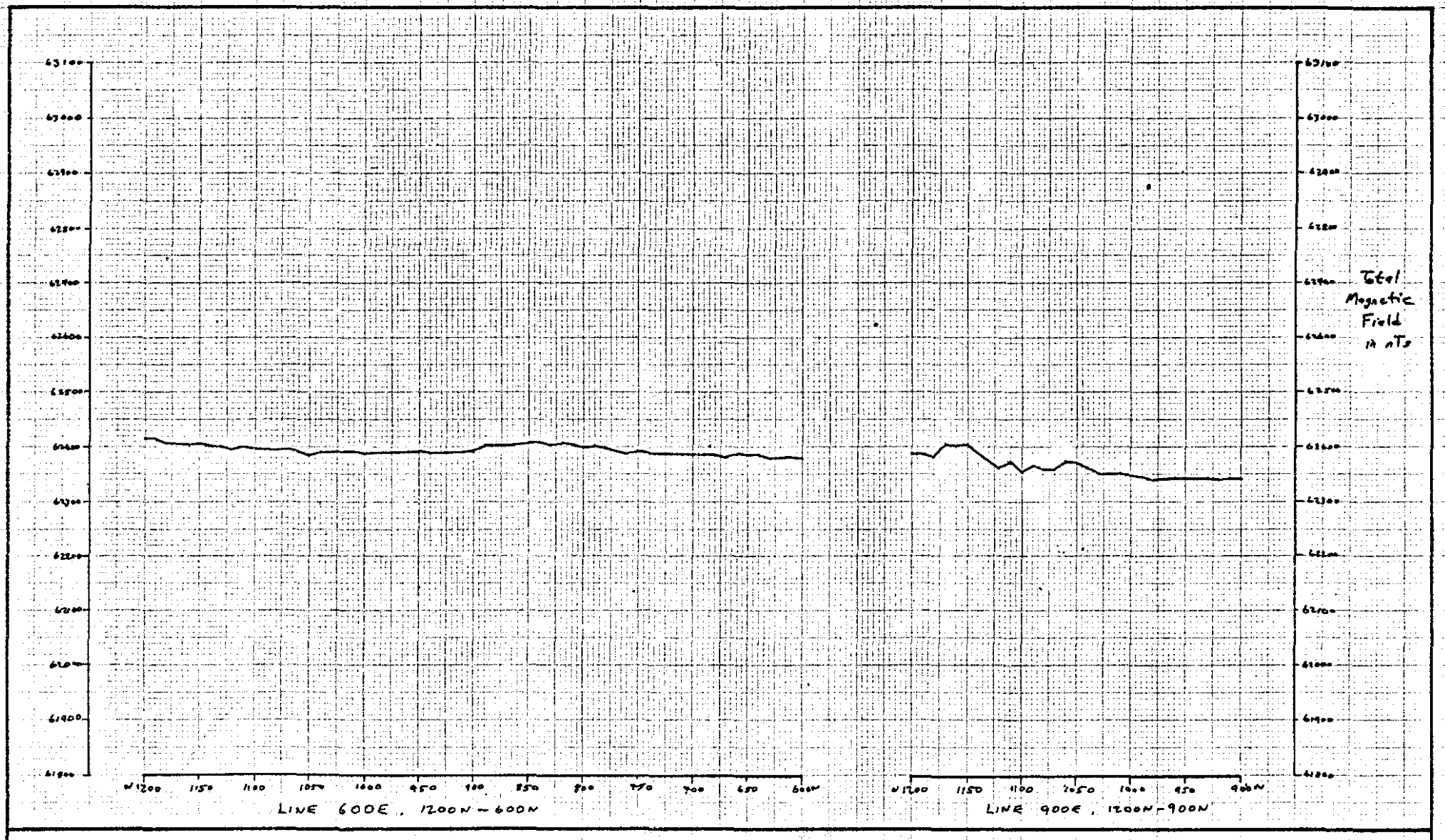


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.

PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.

ANOMALY 4 : PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 300E

FIGURE 28



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 4: PROFILES OF TOTAL MAGNETIC FIELD ALONG GRID LINES 600E & 900E

FIGURE 29.

The position of SC25 could not be located on the ground. All the northern area appeared to be magnetically quiet with only one value exceeding 62450nT (background for this area would be between 62350 and 62400nT). In the absence of any target to follow-up on in the field no further subdivisions of the grid than those lines planned was made.

In the southern part of Anomaly 4 two weakly contrasting anomalies were identified, the western one having a peak of 140nT above background, and the eastern 280nT. The general anomalous trend of the contoured airmag data was verified but the amplitude of the peaks was disappointing in terms of locating replacement and skarn mineralisation signatures.

3.5.3. Geology

The area around Anomaly 4 lies within a sequence of alternating quartzites and siltstones. The former are typical of Lagoon River Quartzite as described by Bell. A massive, white, featureless quartzite with the bedding not discernible from jointing, it is characterised in this area by its varying degree of recrystallisation. Quartz crystals are also developed in vugs in places. Quartz veining is minimal although it has been recognised. Sulphides are present in a few places but typically it occurs as disseminations (of upto 10%) only.

The siltstone is dark grey and finely laminated with occassional sandstone intercalations. Slumping was observed. At the north end of the 600mE line some pyrite was recorded. Due to its soft nature the siltstone is not as resistant as the quartzite which stands out as ridges.

A white quartzite conglomerate with limited distribution is also found in the area. This massive unit is composed entirely of what appears to be Lagoon River Quartzite pebbles which are relatively immature. They are angular to sub-rounded, poorly sorted and occur in a clean, well sorted sandy matrix. No veining or mineralisation was observed within this unit. Its stratigraphic position is open to debate. Nowhere was a contact with the surrounding rocks exposed and no structural information could be attributed from the limited outcrops. It is possibly a unit of the Local Proterzoic stratigraphy but equally it could be the Tertiary quartzose conglomerate referred to by Bell. No evidence for either case was obtained.

In the absence of any major ground magnetic anomaly and with the general lack of mineralisation on surface, no auger holes were drilled.

3.5.4. Conclusions

The relatively low amplitude anomalies detected appear to be related to the siltstone horizons which possibly contain fine grained magnetic minerals, and to the recrystallised quartzites. The latter in themselves would not produce magnetic anomalies and it can only be supposed that the response is due to some rock unit at depth. Because of the amplitudes obtained it is felt that no economic mineralisation will be located at Anomaly 4.

3.6. Anomaly 6

3.6.1. Introduction

Anomaly 6 is located 2.5kms to the east of the coast in the north-western part of the licence area. (Figure 2). It lies in low open shrubland for the main but the eastern sector of the grid is in a sheltered area and heavy woodland vegetation predominates.

Defined from the airborne magnetics as a roughly circular single peak anomaly with a peak of 110nT above background it was the fifth priority of Bishop who calculated a depth of 230 metres to the source. It does not conform with the regional trend.

It is 6km from the known granite at Sandy Cape but if one postulates the presence of a non-outcropping granite body in the Balfour region then the area around Anomaly 6 is prospective for replacement and skarn type mineralisation.

3.6.2. Ground Magnetometer Traverses

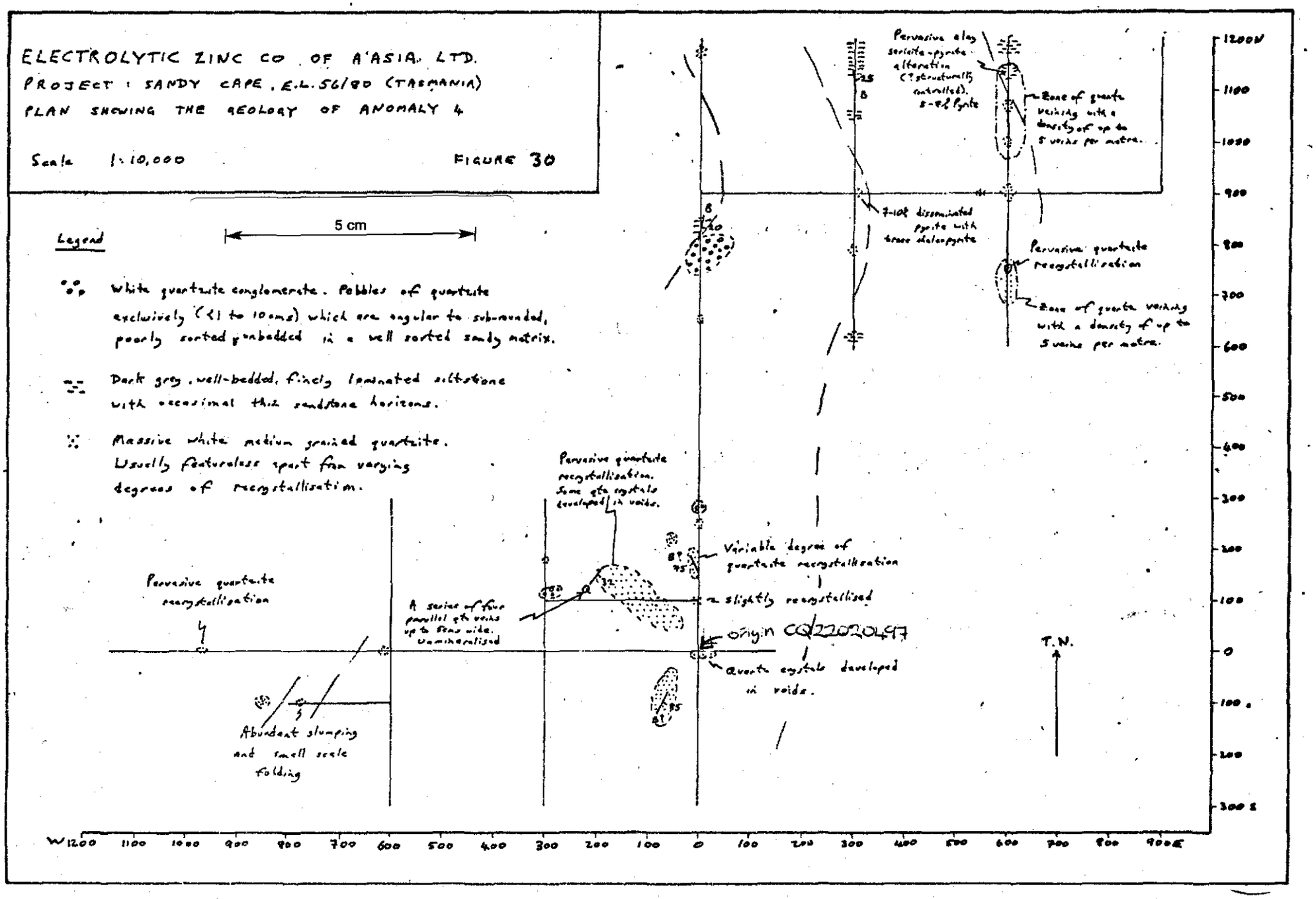
A grid of 4.5 line kms, comprising of 7 lines, was surveyed over the airmag anomaly (Figure 30) and readings were taken every 10m over the grid using a portable magnetometer. The values are presented on Figures 31-40. Anomalous values were obtained and their analysis is continuing.

3.6.3. Geology & Geochemistry

The same stratigraphic members encountered at Anomaly 4 are outcropping in the region of Anomaly 6. (Figure 41). Recrystallisation of the quartzites is much more intense and ridges can be followed for

ELECTROLYTIC ZINC CO OF A'ASIA. LTD.
PROJECT : SANDY CAPE, E.L. 56/80 (TASMANIA)
PLAN SHOWING THE GEOLOGY OF ANOMALY 4

Scale 1:10,000 FIGURE 30



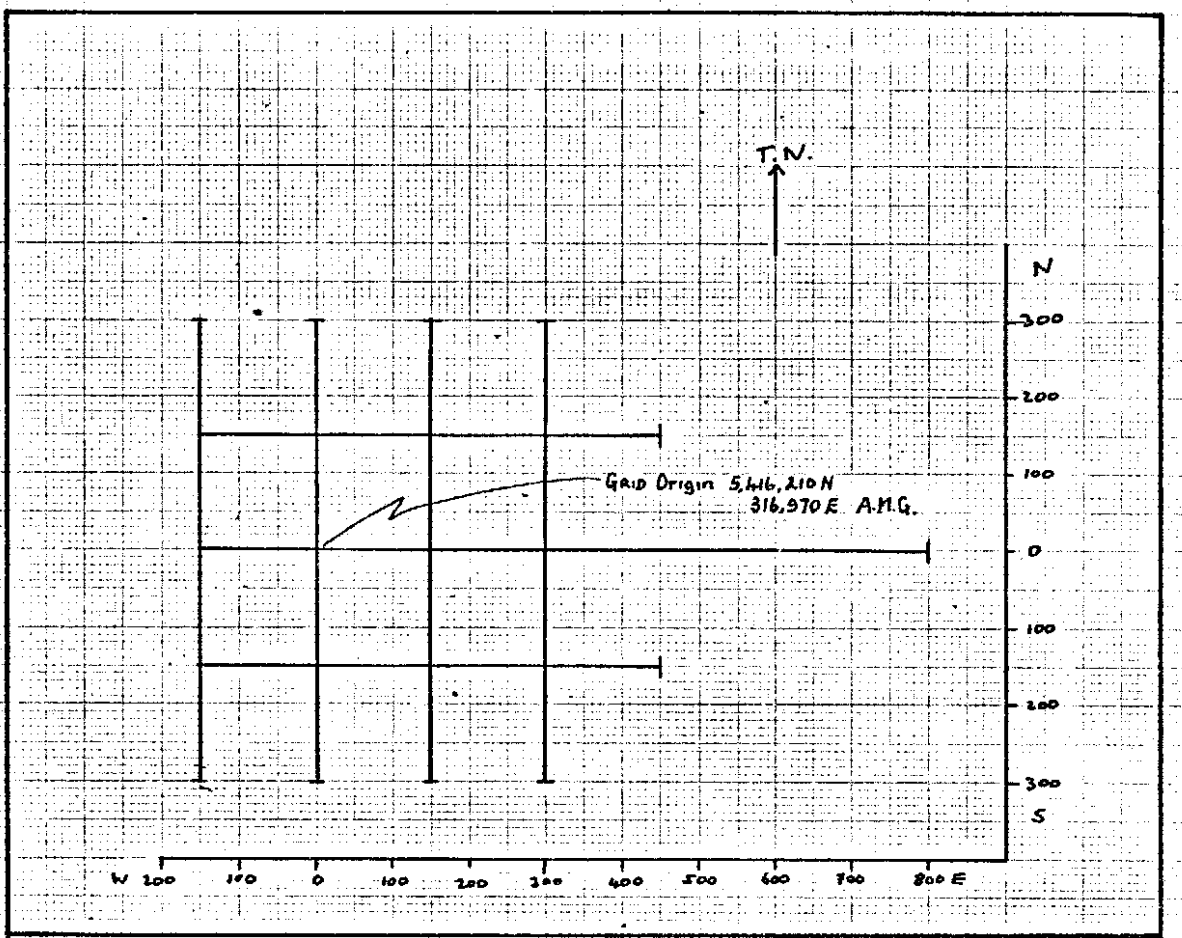


FIGURE 31.

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

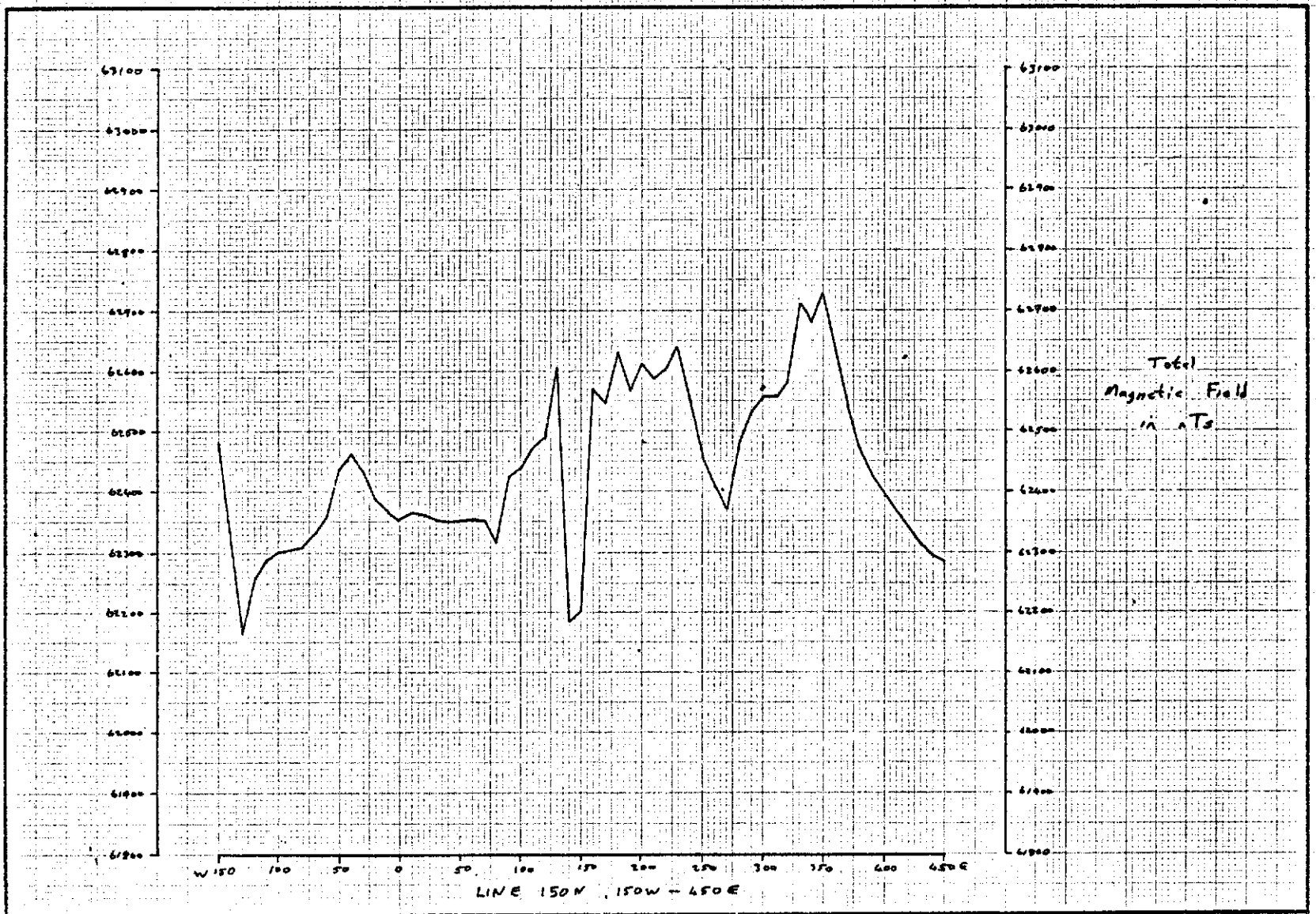
PROJECT: SANDY CAPE.. E.L.56/80 (TASMANIA).

PLAN SHOWING THE ORIENTATION OF THE GRID AT ANOMALY 6.

Scale 1:10,000

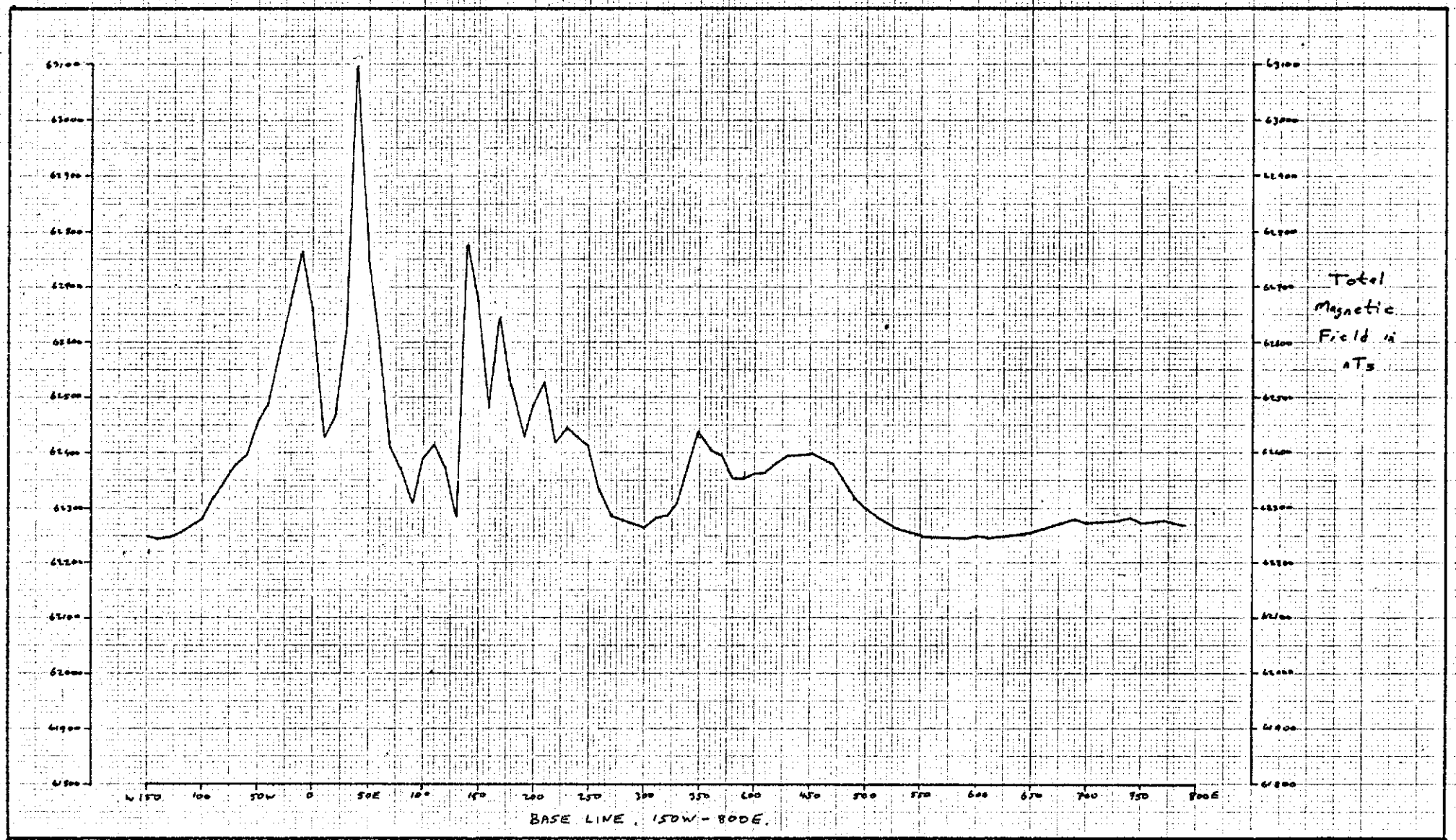
5 cm

GAF A4 1mm



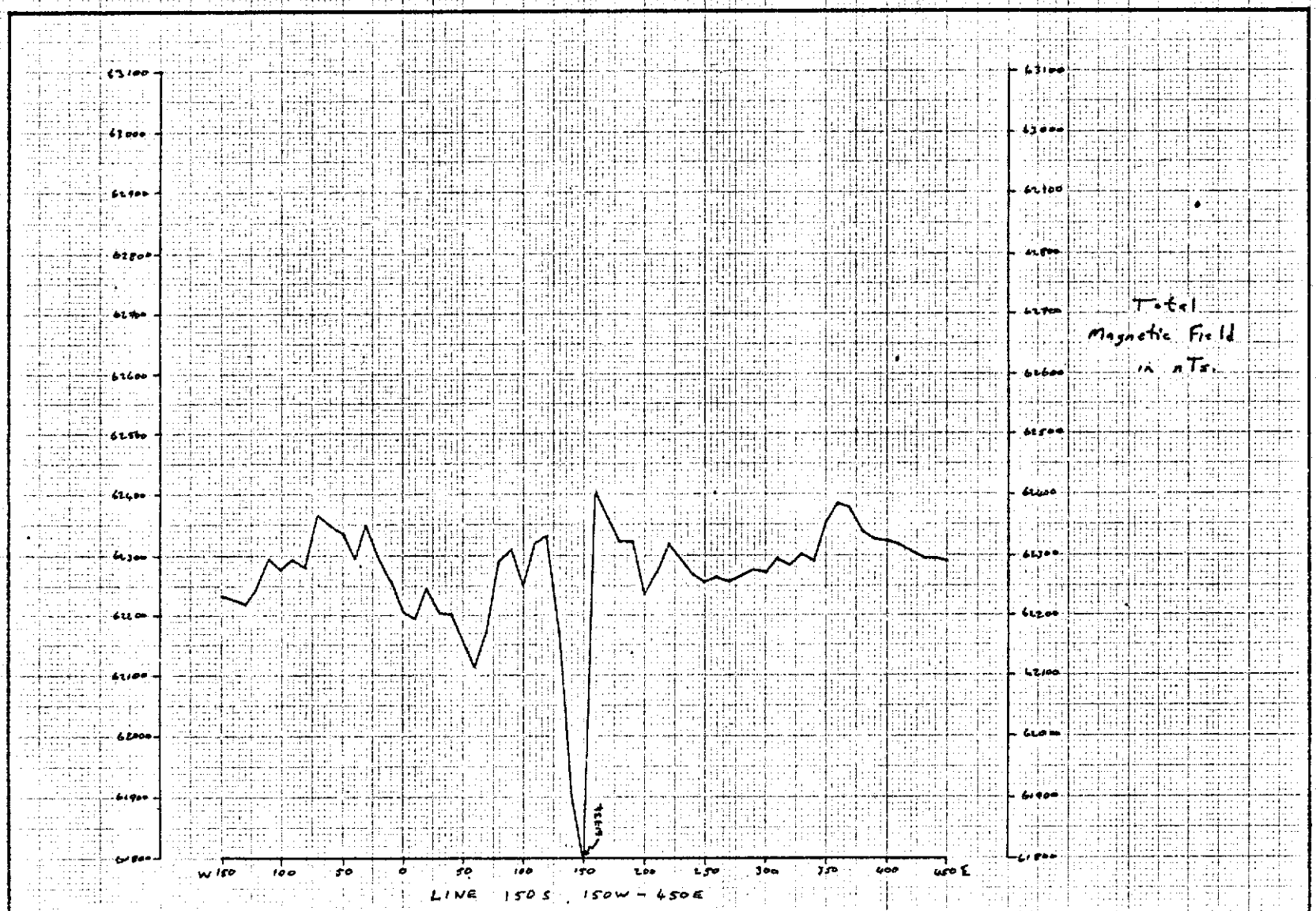
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA
ANOMALY 6: PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 150N

FIGURE 34

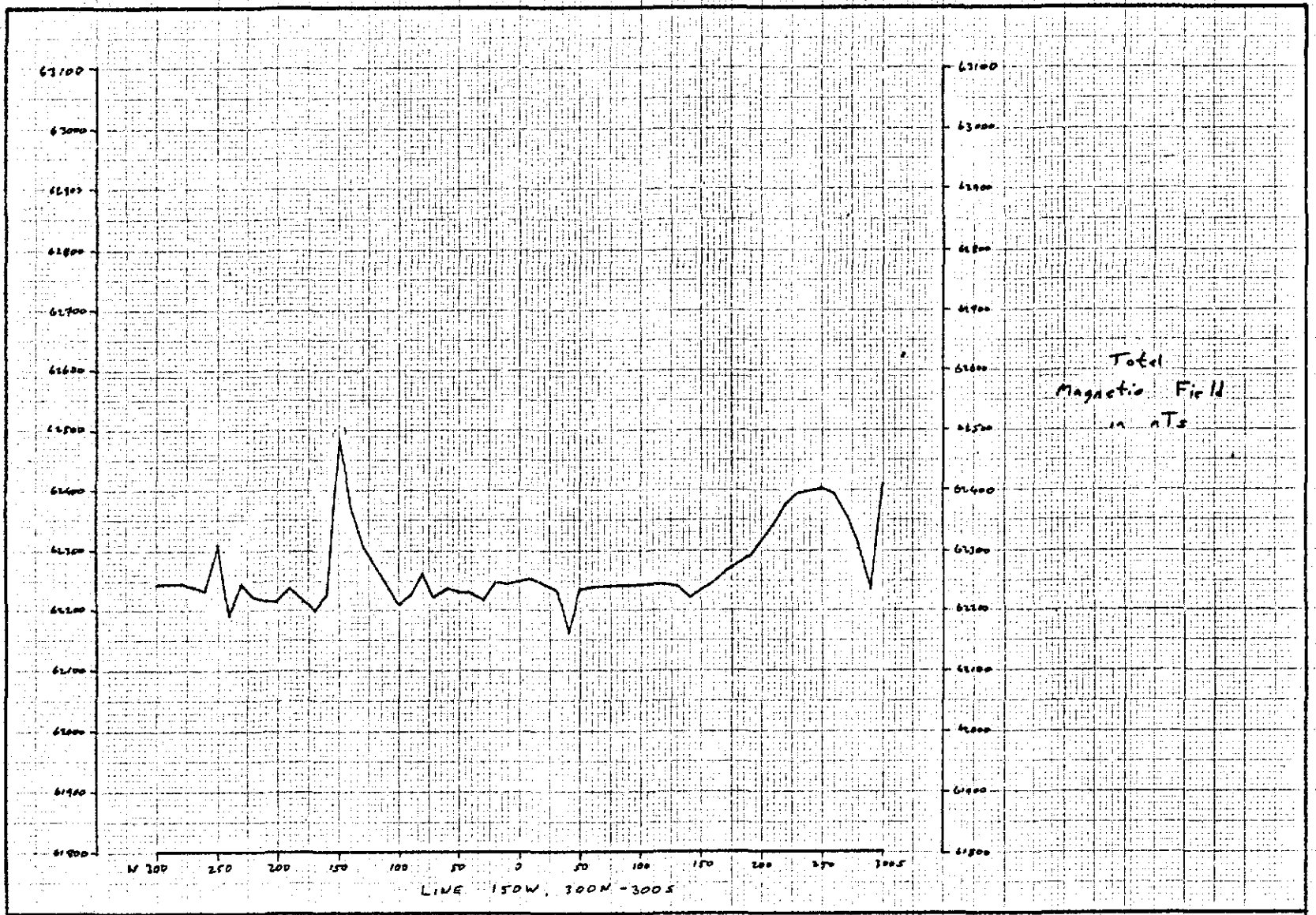


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 6 : PROFILE OF TOTAL MAGNETIC FIELD ALONG THE E-W BASE LINE

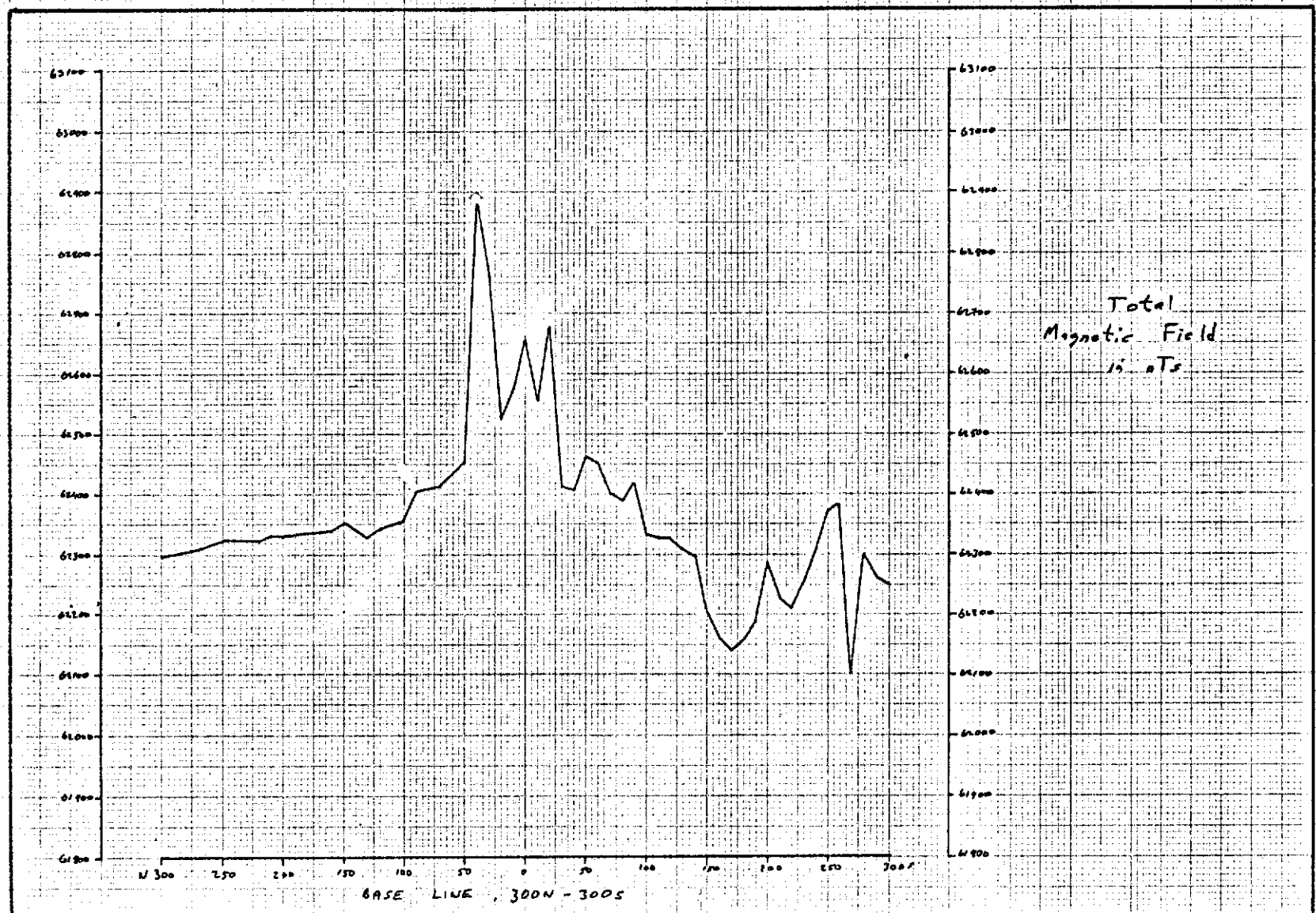
FIGURE 35



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 6: PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 150S FIGURE 36



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 6 : PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 150W FIGURE 37

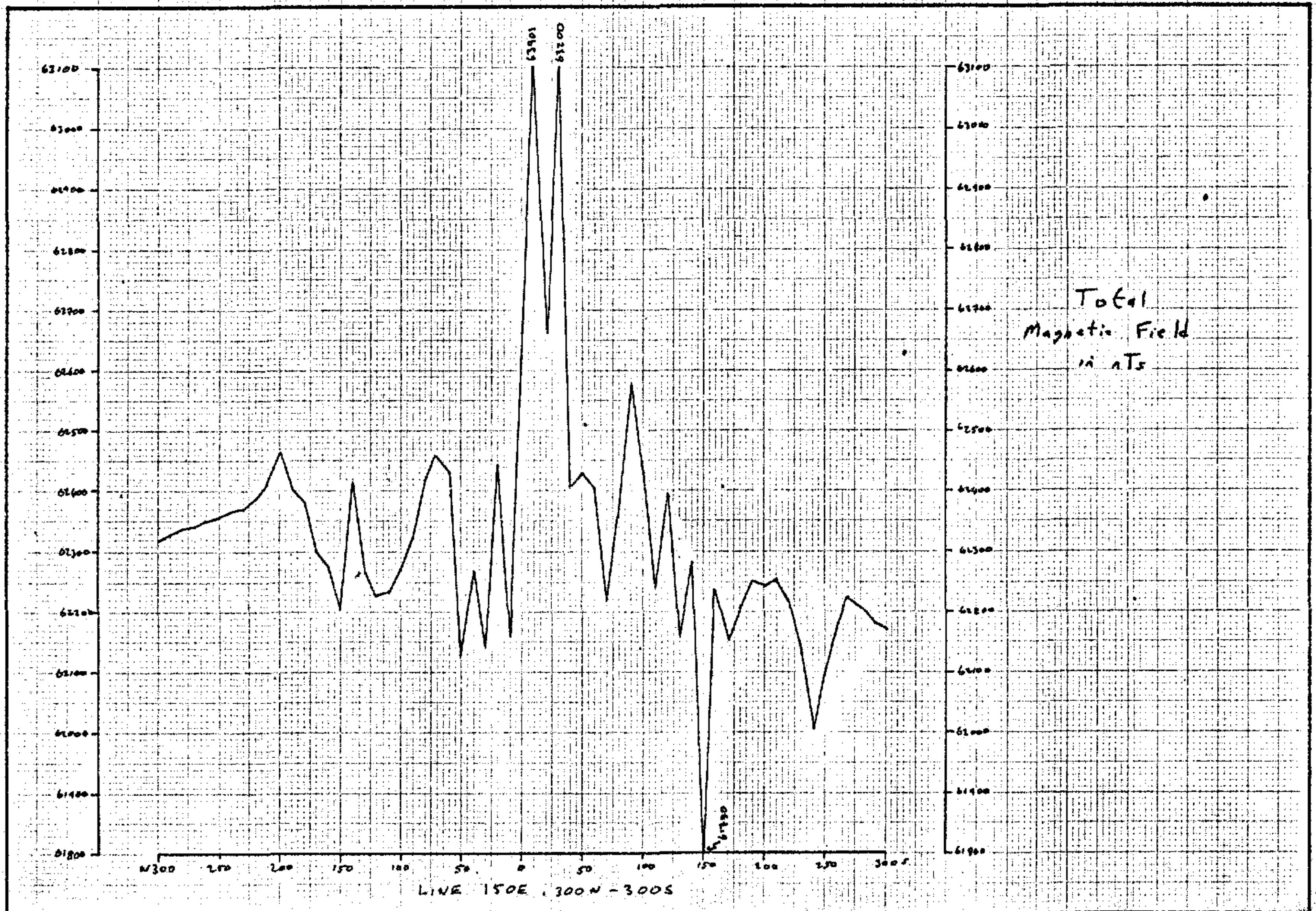


ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA
ANOMALY 6: PROFILE OF TOTAL MAGNETIC FIELD ALONG THE N-S BASE LINE

FIGURE 38

GAF A4 1mm

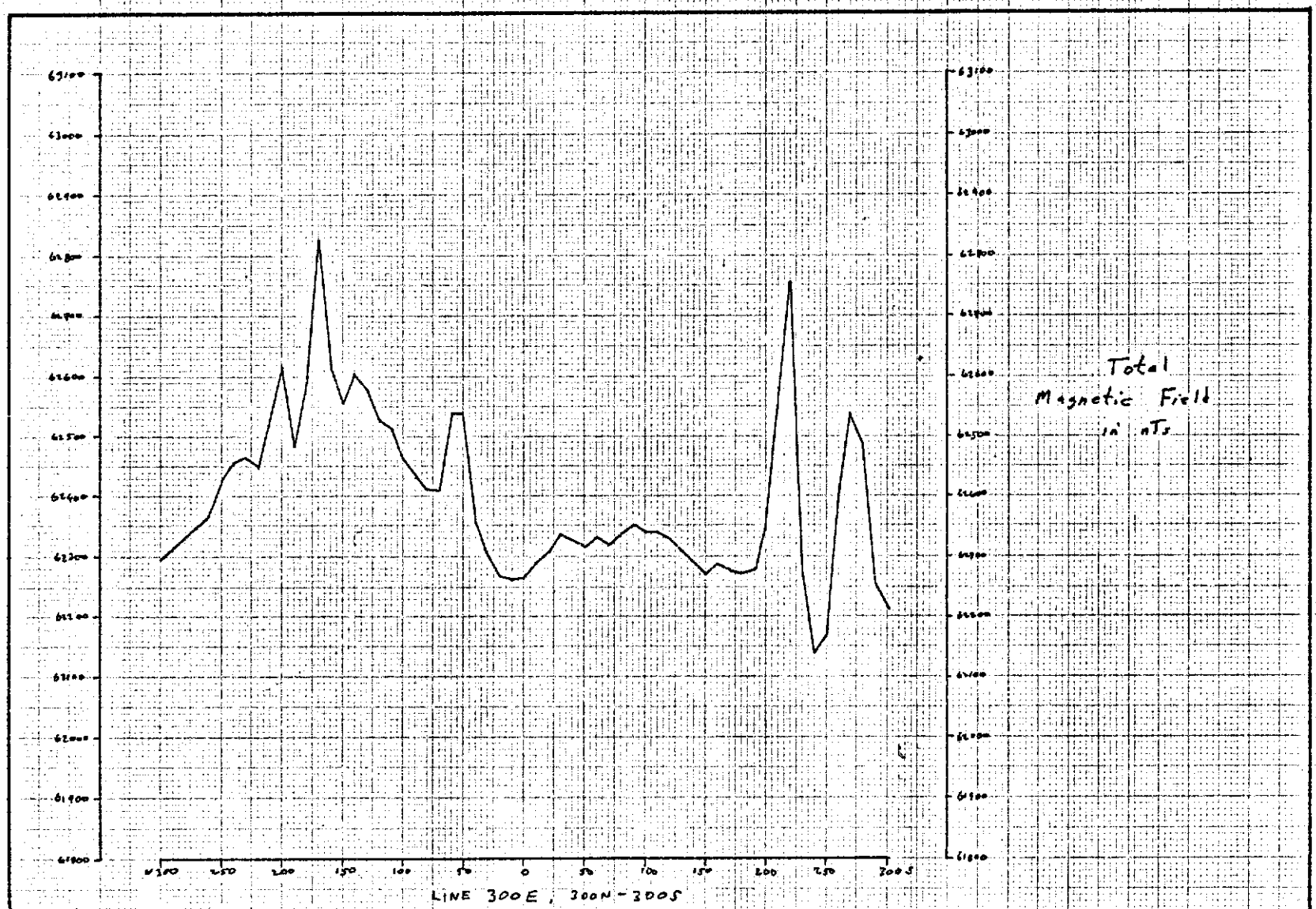
052



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD

Fig 39

698053 48.



ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD.
PROJECT : E.L. 56/80, SANDY CAPE, TASMANIA.
ANOMALY 6: PROFILE OF TOTAL MAGNETIC FIELD ALONG GRID LINE 300E

FIGURE 40

some distance. Whether these are stratigraphic units is unclear. From the structural data collected the presence of a roughly north-south plunging antiform and synform are postulated. No folding was observed in the field. Quartz veining was identified in several places, reaching a maximum density of 30-100 veins per metre at (0, 80W).

No mineralisation was observed in the area.

The recorded surface geology does not explain the ground magnetic anomalies. No outcrops were present in the position of the major highs.

An augering programme was undertaken over selected anomalies and C horizon samples collected (Refer to Figure 42 & Appendix 5). The analyses are outstanding.

3.6.4. Conclusions

No surface features were evident to explain the anomalies (unless the soil geochemistry proves useful). Variable concentrations of magnetic minerals within the thinly laminated siltstones would be expected to give the apparently haphazard profiles obtained. This does not appear to happen at surface.

In the light of the relatively small amplitude and extent of the ground magnetic anomalies and the lack of any indications of possible mineralisation, apart from quartz veining, it is felt that the area is unprospective for economic mineralisation.

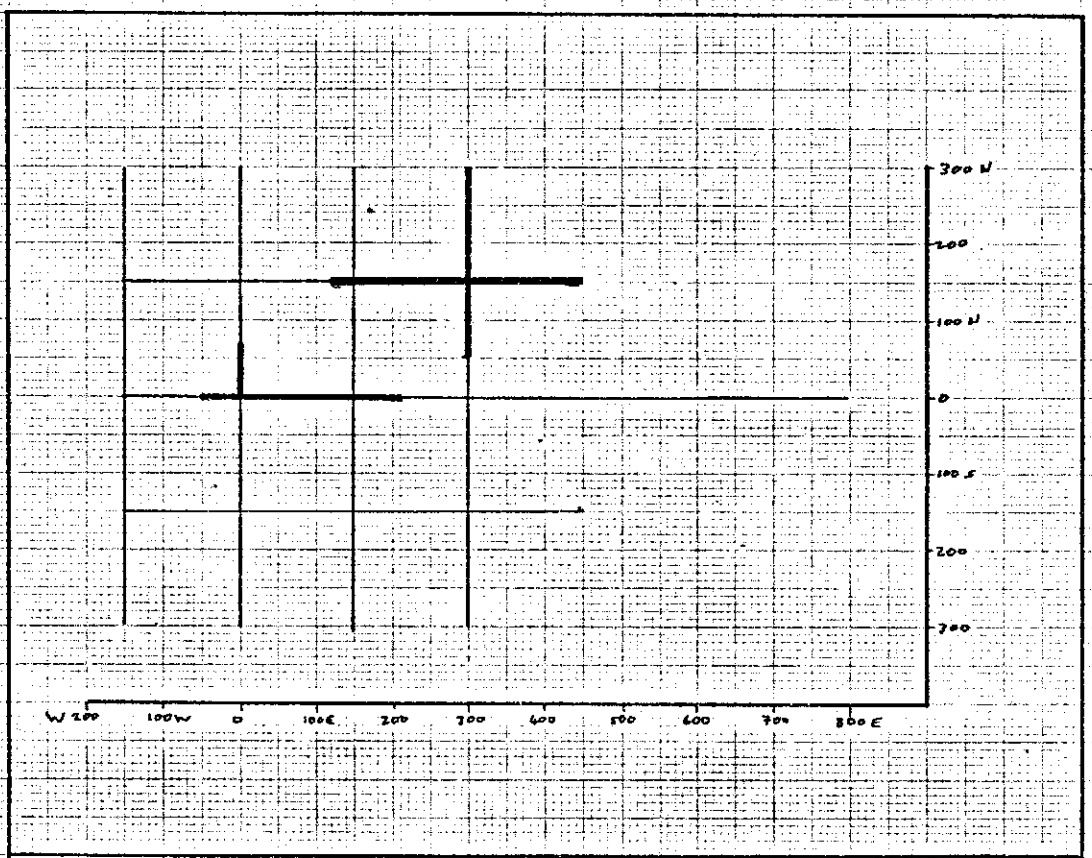


FIGURE 42

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT : SANDY CAVE, E.L. 56/80 (TASMANIA).

PLAN SHOWING THE POSITION OF AUGERED HOLES AT ANOMALY 6.
REFER TO APPENDIX 5 FOR INDIVIDUAL DESCRIPTIONS.
SCALE , 1:10,000

5 cm

3.7. Stream Sediment Sampling

During the current field season a total of 117 stream sediment samples were collected (Figure 43). Due to the dense vegetation and steep incision of the drainage sample points were measured from a known point using a Topofil and the locations adjusted when tributaries, recognisable on air photographs, were crossed. Samples, which were sieved in the field to exclude the coaser fractions, are awaiting analysis.

3.8. Geological Traverses

Apart from the detailed geology related to each of the airmagnetic anomalies limited geological traverses were undertaken. Problems with navigation on the flat plain and in the steep, heavily wooded creeks were encountered.

At Sandy Cape Point the granite was examined. To the north it comprises of a medium grained two-mica granite while at the Lighthouse it is a single mica granite, biotite being absent. Some variation in grain size was noted. Xenoliths are absent. Pods up to 3 metres by 2 metres, containing coarse quartz and felspar crystals (upto 15cm long) occur as do joint fillings of quartz and felspar. some quartz veining exists but it is random in orientation and unmineralised. Tourmalinisation was evident in the finer grained granite and in thin veinlets. No tin was identified.

In the Lagoon River the Interview Granite was intersected. Its intrusion has had a marked effect on the sedimentary rocks, metamorphosing them to psammites and spotted hornfels. Recrystallisation of the white quartzite units is extensive. In the sedimentary rocks near to the granite pyrite clots and minor fine grained disseminated

pyrrhotite were observed. The sedimentary rocks generally strike in a north-westerly direction and dip to the east although in places there are strike variations and minor folding.

In the lower reaches of the North Pedder River the predominant rock type is a fine grained, finely laminated siltstone, with a spotted hornfelsic texture being recorded at several localities. A white quartzite with variable degrees of recrystallisation is also present. Quartz-veining and mineralisation are rare. The dip and strike of the beds varies considerably, one fold axis plunging 30°S in a direction 034° being recorded.

It is felt that the area is structurally much more complicated than the previous workers and Huntings state.

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REFERENCES

ANON., 1973 Pieman River E.L. 2/73, Tasmania. Completion Report for Esso Australia Limited.

BELL, D.H., 1972 (a) E.L's 48/70, 49/70 1:50,000 Regional Geological Compilation.

(b) E.L's 49/70, 48/70 Project Pieman - 1:50,000 Regional Stream Sediment Geochemistry (Sn, W).

BISHOP, J.R., 1981 Memorandum to E.Z. entitled "Visit to Esso to collect geophysical data over the Sandy Cape Area, North-West Tasmania" dated 25th March, 1981. (A copy is included in Appendix 4A).

BISHOP, J.R., 1982 A summary report on the Sandy Cape Aeromagnetic survey E.L. 56/80. (A copy is included in Appendix 4B).

TAYLOR, R.G., 1979 Geology of tin deposits. Elsevier Scientific Publishing Company.

WARD, L.K., 1911 The Mount Balfour Mining Field. Department of Mines Tasmania, Geological Survey Bulletin No. 10.

NOTE: The first two references are on Open File at the Mines Department, Hobart.

APPENDIX 1 - CO-ORDINATES OF E.L. 56/80

Appendix 1.

Co-Ordinates of E.L. 56/80

Corner No.	Northing A.M.G.	Easting A.M.G.
Datum Peg 0	5,417,000	314,200
1	5,417,000	320,000
2	5,421,000	320,000
3	5,421,000	325,000
4	5,410,000	325,000
5	5,410,000	327,000
6	5,408,000	327,000
7	5,408,000	329,000
8	5,402,000	329,000
9	5,402,000	318,500

Corner No's refer those indicated on Figure 1.

APPENDIX 2 - 'A Geophoto study of the Sandy Cape Area, Tasmania' prepared for E.Z. by Huntings Geology & Geophysics (Australia) Pty. Ltd.

A GEOPHOTO STUDY OF THE SANDY CAPE AREA TASMANIA

Undertaken on behalf of

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

FEBRUARY 1982

Hunting Geology and Geophysics (Australia) Pty. Limited
P.O. Box 365
FYSHWICK A.C.T. 2609

GA.94/81

ABSTRACT

Geophotos (1:40,000) of the Sandy Cape area (EL 56/80) were studied and annotated. The objective of the study was to obtain as much litho, stratigraphic and structural detail as possible. Tin mineralisation associated with Devonian granites constitutes the conceptual target.

The Lagoon River Quartzite has good geophoto expression but low potential for replacement-type Sn mineralisation.

CONTENTS

1. INTRODUCTION

The study area (230 km^2) is located immediately inland from Sandy Cape on the west coast of Tasmania and incorporates EL 56/80 taken out by Electrolytic Zinc Company of Australasia Limited exploring for tin mineralisation associated with Devonian granites.

The photogeological study was based on thirteen 1:40,000 black and white aerial photographs. The geophoto map constitutes the main objective of the study, this report being of a supplementary nature.

The base map of the study on transparent film was prepared by photographically enlarging the relevant portions of the Sandy Cape and Arthur River 1:100,000 topographic maps and tracing off the drainage and coastline details. Annotation of the 1:40,000 aerial photographs was done in ink directly onto this base map.

Re-drafting of the photogeological detail on the map was undertaken and hand-coloured prints of this photogeological work-sheet map along with the original transparency are presented to the Electrolytic Zinc Company Limited.

The aims of the study were to:

(a) detail lithological and stratigraphic annotation of the 1:40,000 aerial photographs;

(b) outline as much structural detail in terms of folds, fractures and faults as possible; in particular, any doming or fracturing that may be associated with the emplacement of Devonian granites.

2. GEOLOGY

Most of the study area is underlain by the Proterozoic Lagoon River Quartzite which is a mature, fine-grained, well-bedded, partially re-crystallised sandstone unit which exhibits small-scale cross-bedding in places. The strike of these sediments in the study area is sub-parallel to the coast and they dip consistently to the east. Near the coast the Lagoon River Quartzite grades into banded dark and white fine-grained quartzites and siltstones. The dark bands possibly contain volcanic material from a distant source.

Leucocratic muscovite granite of Devonian age has intruded the Proterozoic sediments along the coast, resulting in some contact metamorphism of the adjacent sediments. However, because of their high silica content the effects are minor. Aplite dykes enriched in tourmaline, were observed within the granite.

Most of the study area consists of an extensive wave-cut platform of probably Tertiary age, and small remnants of coastal sediments (conglomerates) are scattered over this platform. Near to, and parallel with the coast are a number of faults along which post-Tertiary movement has taken place, resulting in the preservation of a strip of Tertiary coastal sediments. If the Devonian granite to the south of the study area is enriched in cassiterite then the Tertiary coastal sediments and the Quaternary beach deposits may be locally enriched in cassiterite and other heavy minerals.

Structurally, the study area is relatively simple. The Proterozoic sediments consistently dip to the east and are cut by a number of NW-trending faults, some of which have been active in the post-Tertiary period. The most prominent fracture direction in the study area intersects the fault trend at between 30^{o} and 40^{o}, indicating that strike faulting is sinistral with a minor vertical component. Linear traces of the faults also supports this conclusion.

A low level aeromagnetic survey of the EL area indicated two prominent magnetic highs near the coast (see photogeological map for location), which show a close spatial relationship to the faults along which there have been some post-Tertiary displacement. There does not appear to be any surface expression of these anomalies and it is presumed that they are covered by Tertiary and Quaternary sediments.

3. CONCLUSIONS

(a) Bedding trends and faults within the Lagoon River Quartzite have a good expression on the 1:40,000 aerial photographs and it was possible to interpret a lot of data from this sequence. In the area near the coast, photogeological interpretation was difficult due to patches of Tertiary coastal sediments and wind-blown sands from the beaches.

(b) The Lagoon River Quartzite, because of its high silica content is unlikely to host any replacement-type tin-bearing ore bodies and has a low rating as an exploration target. The more silty Proterozoic sediments at the base of the Lagoon River Quartzite Formation near the coast may be more chemically reactive and could have some potential for replacement-type ore bodies marginal to the Devonian granite.

(c) There may be some enrichment of cassiterite and other heavy minerals in the Tertiary and Quaternary coastal deposits which would influence geochemical sampling programmes aimed at locating hard-rock mineralisation. The potential for economic placer deposits in these sediments could be good.

APPENDIX 3 - Airmag Data, flown by Geoex.

Flight Line Profiles

See Plans Volume

APPENDIX 4A 'Visit to Esso to collect Geophysical data over the Sandy Cape Area, North-West Tasmania' a report to the Chief Geologist by Dr. J.R. Bishop.

4B 'A summary report on the Sandy Cape Aeromagnetics survey, E.L. 56/80' commissioned by E.Z. from Mitre Geophysics Pty. Ltd. (Dr. J.R. Bishop).

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Sandy Cape 34·2

698072

MEMORANDUM:

TO: Chief Geologist, W.C.M. DATE: 25th March, 1981

FROM: Dr. J.R. Bishop

SUBJECT: VISIT TO ESSO TO COLLECT GEOPHYSICAL DATA OVER THE SANDY CAPE AREA, NORTH WEST TASMANIA

I visited ESSO Minerals in Sydney on Wednesday, 11th March, to inspect the records of the Input Survey flown for ESSO over the N.W. of Tasmania. I was also to collect plans showing the E.M. anomaly positions and aeromagnetic contours, the Mines Department copies being photo-reductions and almost illegible.

E.Z's E.L. is covered by the ESSO sheets 5 and 6 (at a scale of 1:24,000 approximately). Although the exact boundaries of the lease need to be positioned on these maps, it is apparent that the E.M. anomalies picked by Geoterrex (and an examination of the records failed to detect any other anomalies) lie on sheet 6 (with the exception of a coastal anomaly). Unfortunately none of the anomalies were rated very highly by the Geoterrex geophysicists and the limited follow-up by ESSO showed some anomalies to be over black slates. (Other anomalies were recorded as 'no outcrop', and in several cases the follow-up merely consisted of hovering over the area in a helicopter.) Ideally one would like sharp E.M. anomalies with a well defined magnetic anomaly (the magnetometer channel on the records is increasing down and the scale is 5 gammas per division) but there are no such anomalies from this survey. However, the line spacing used was one mile (1.6km) (flight altitude 400ft (120m) to 600ft (180m)) and thus there is plenty of 'room' within the survey for ore-body sized mineralisation (should one look in corridors between the lines??).

I have some doubts about the accuracy of the line positioning; lines 88, 92 and 96 are plotted on sheets 5 and 6, however, there is no agreement between the two maps (the mosaics with the flight lines could not be located). The Appendix contains a list of the anomalies within or close to the boundaries of the Sandy Cape E.L., starting from the southern edge of the lease.

The main purpose of the brief comments in the Appendix has been to identify those anomalies caused by salt water intrusion, and presumably those anomalies identified by ESSO geologist's as occurring over black slates will also have a low priority.

From discussions with Mike Smith (ESSO's Chief Geophysicist) who was involved with the N.W. Tasmania project, I understand that a lack of acid volcanics found during the Input Survey follow-up, (this was the only 'mapping' by ESSO) was largely instrumental in their dropping the area. Several occurrences of basic volcanics were found during the follow-up, but an argument

..2/.

for Cyprus-type copper deposits was apparently not convincing to the management. Tin was apparently not a target, although the presence of Devonian Granites was of course known.

Enclosed are copies of the relevent pages of the Input report; copies of the Input records with the anomalies occurring in the E.L., reductions of sheets 5 and 6 of the E.M. plans and sepias of the E.M. and aeromagnetic plans for areas 5 and 6 (at a scale of 1:24,000 approximately).

DR. J.R. BISHOP

Attachments:

JRB/amd

APPENDIX

Flight Line - Fiducial	Geoterrex Designation	ESSO Designation	Associated Magnetic Response	EM Response (No. of Channels)	Channel 1/ Channel 4 Ratio
120/210.57	PR6-5	XI	-	4	4.5/0.4
Comment:	ESSO's report states that this anomaly is over fractured granodiorite and that the response is due to salt water in the fractures. However, anomalies obviously caused by salt water are more conductive than this anomaly and are not so far inland.				
112/249	-	-	?	6	37/10
Comment:	Coastal anomaly caused by the edge of a conductive horizontal sheet (the ocean).				
108/249.8	-	-	-	6	
Comment:	Coastal edge anomaly.				
108/251.07	-	-	-	3	3.0/0.0
Comment:	Apparently also near a beach or swamp(?).				
104/300.48	-	-	-	6	27/10
Comment:	Coastal edge anomaly.				
104/299.1	-	-	-	4	5/0.5
Comment:	Weak, poor anomaly, possibly on strike with similar anomaly on line 108.				
104/292.98	PR6-4	X3	-	5	5/0.6
Comment:	This anomaly is supported by a closely located anomaly on line 102. Geoterrex suggest that the anomalies are due to a small source, probably at quite shallow depth.				
102/173.74	PR6-4	X3	-	4	3/0.2
Comment:	This anomaly is near an anomaly at line 104/292.98 (see above).				
100/301(?)	-	-	-	6	
Comment:	Coastal edge anomaly.				
100/302.52	-	-	-	6	19/5.0
Comment:	Inland, but still probably due to salt water.				

..4/.

Flight Line - Fiducial	Geoterrex Designation	ESSO Designation	Associated Magnetic Response	EM Response (No. of Channels)	Channel 1/ Channel 4 Ratio
100/305.25	PR6-2	X-21	-	4	3.5/.2
Comment:	The ESSO progress report for Jan 31 - July 31, 1973 shows that this anomaly occurred over black slate.				
100/309.63	PR6-3	X-4	-	3	2/-
Comment:	A poor conductor and considered to be surficial.				
100/310.32	-	X-5	-	3	2/-
Comment:	A very similar anomaly to X-4, likely to have a similar cause.				
96/356.7	-	-	-	6	
Comment:	Considered to be due to salt water.				
96/355.1	-	-	-	6	1.2
Comment:	A good conductor, nearby anomalies on this line were found to be over black slates.				
96/354.55	PR6-1	X-23	90 Y (offset)	6	22/4.5
Comment:	An excellent conductor. Follow up by ESSO confirmed outcrops of black slate.				
96/354.07	-	-	-	4	7/0.5
Comments:	This moderately conductive anomaly lies between two excellent conductors which occur over black slate				
96/353.64	-	X-22	-	6	7.5/1.5
Comments:	A good conductor. Follow up by ESSO confirmed outcrops of black slate.				
92/359.93	-	-	-	6	30/10
Comments:	Coastal endge anomaly.				
92/361.1	-	-	-	6	31/8
Comments:	Excellent conductor, considered to be due to salt water.				

..5/.

Flight Line - Fiducial	Geoterrex Designation	ESSO Designation	Associated Magnetic Response	EM Response (No. of Channels)	Channel 1/ Channel 4 Ratio
88/305.86	-	-	-	6	
Comments:	Not plotted on the plan - coastal edge anomaly.				
88/305.02	-	-	-	6	8/1.0
Comments:	Most likely due to salt water invasion.				
88/304.45	-	-	-	4	3/0.2
Comments:	Poor conductor, probably surficial, salt water?				
88/300.55	-	X-24	-	3	2/-
Comments:	Poor conductor, no outcrop was found during ESSO's follow up of this anomaly.				

INTERPRETATION REPORT

AIRBORNE ELECTROMAGNETIC SURVEY
BARRINGER INPUT SYSTEM

1972-73 FIELD PROGRAMME
PART XXIV PIEMAN RIVER AREA

For

ESSO AUSTRALIA LTD.

By

GEOTERREX LTD.

(83-128)

OTTAWA, CANADA
SEPTEMBER, 1973

A.R. RATTEW
W.A. FINNEY
GEOPHYSICISTS

geoterrex LTD

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or a very [illegible] also be a bedrock conductor sampled at a shallow angle to its strike. The general region is non-magnetic, but there is a somewhat close 200 gamma feature with broad character. This magnetic high can be traced to line 060 and possibly contoured somewhat differently than is shown to indicate a more NW-SE strike. Without more definite knowledge of the geological strike, however, it is difficult to tell whether or not the shape of the anomaly would be much improved by sampling in a different direction.

Sheet 6

Zone PR6-1 (X-23)

Surficial - Fair

Line 096W Fid. 354.55

The location of this response on Line 096 between surficial type responses on adjacent lines suggests a possible salt conductor as the source. The broad, very conductive anomalies occurring just in from the coast are interpreted as salt horizons or salt water intrusions. They are observed between lines 80 and 112. However, on line 096 a group of four anomalies (including Zone PR6-1) were detected further in from the coast. These anomalies are relatively sharp and are more typical of bedrock sources than a salt conductor which is usually broad.

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698078

Zone PR6-1 is selected for ground examination because it is the strongest of the anomalies and also the most conductive. It is also chosen because of its proximity to a single line magnetic anomaly, but it is not directly coincident with the magnetic feature.

The total extent of the EM zone and the magnetic feature are not known since no fill-in was completed. If both are isolated, then the zone is more than likely a bedrock conductor and would warrant upgrading to a fair prospect.

Zone PR6-2 — Bedrock - Poor

(X21) Line 100E Fid. 305.25

This is a small, relatively sharp, low conductivity anomaly. It occupies a position similar to strong responses on line 096W, one of which (Zone PR6-1) was discussed as a potential bedrock conductor. Because of the proximity to the coast one must suspect a salt type source although such sources usually produce larger anomalies than this one.

There is no magnetic evidence to indicate any sort of change in bedrock lithology. The general strike of the rocks might indicate some possible correlation with the anomalies on line 096 just to the north, but the wide line spacing precludes making any definite inference of this type.

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Low amplitude and only moderate to low conductivity give this anomaly a poor rating at best.

Zone PR6-3 — Surficial - Poor

(X4) Line 100E Fid. 309.65

This response (and the one close by to the east) appear to be isolated conductors and hence might warrant some followup even if only for identification of the source. Surficial sources are suspected because of the overall breadth of the anomalies and the low conductivity indicated.

There is no local magnetic activity in support of a bedrock interpretation. A bedrock source at a shallow angle to the flight line could account for the anomaly shape, but still the low conductivity is discouraging.

Zone PR6-4 — Bedrock - Fair

(X-3) Line 102W Fid. 173.75

Line 104W Fid. 292.97

These two anomalies suggest a "short" isolated zone. No response was detected on line 104A about a half-mile to the north and similarly nothing was observed on line 108 although it is over a mile away to the south.

The anomalies occur in a cleared area and no visible cultural features can be seen on the film. The anomaly on line 104 has a cultural appearance because of the sharp, slightly negative leading edge but alternatively this could simply be indicating a very narrow, bedrock conductor.

Both anomalies show moderate to high conductivities and the amplitudes suggest a small source, probably at quite shallow depth. Neither has any magnetic support for a local lithologic change, or a direct pyrrhotite occurrence.

Zone PR6-5 (X-1) — Bedrock - Fair

Line 120W Fid. 201.57

This fair rating is based on isolation mainly. The anomaly indicates a narrow moderately conductive source which would be a fair target if proven to be bedrock.

One must be sceptical of any conductor such as this lying so close to the coastline. If the topography out to the coast is very flat, then one must suspect possible salt conductors. The mosaics indicate this could likely be the case here, so the anomaly does lose some of its appeal. Salt conductors usually exhibit higher conductivities than this anomaly, however, and the amplitudes are usually larger also.

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There is no magnetic support for a small bedrock conductor.

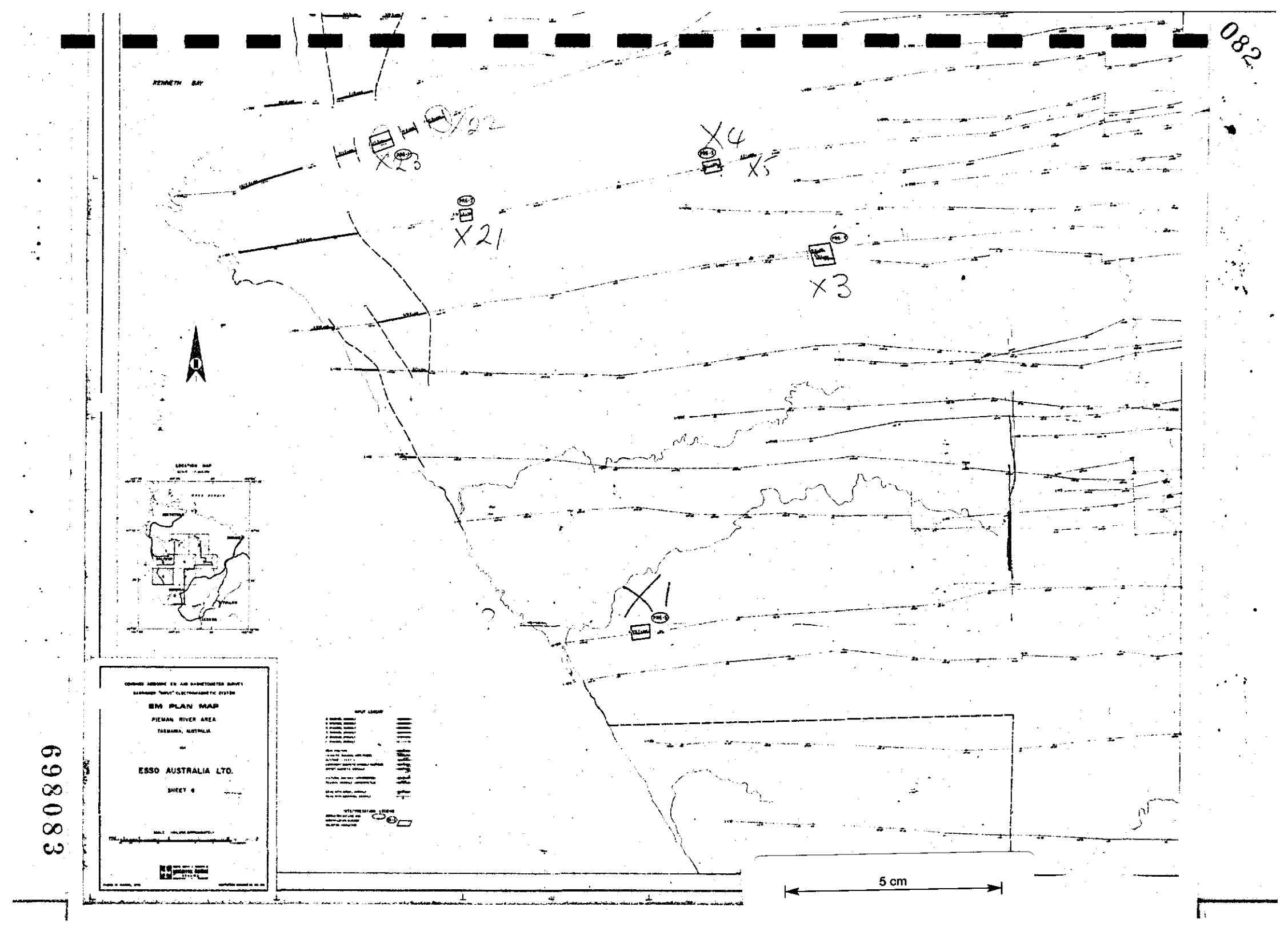
Sheet 7

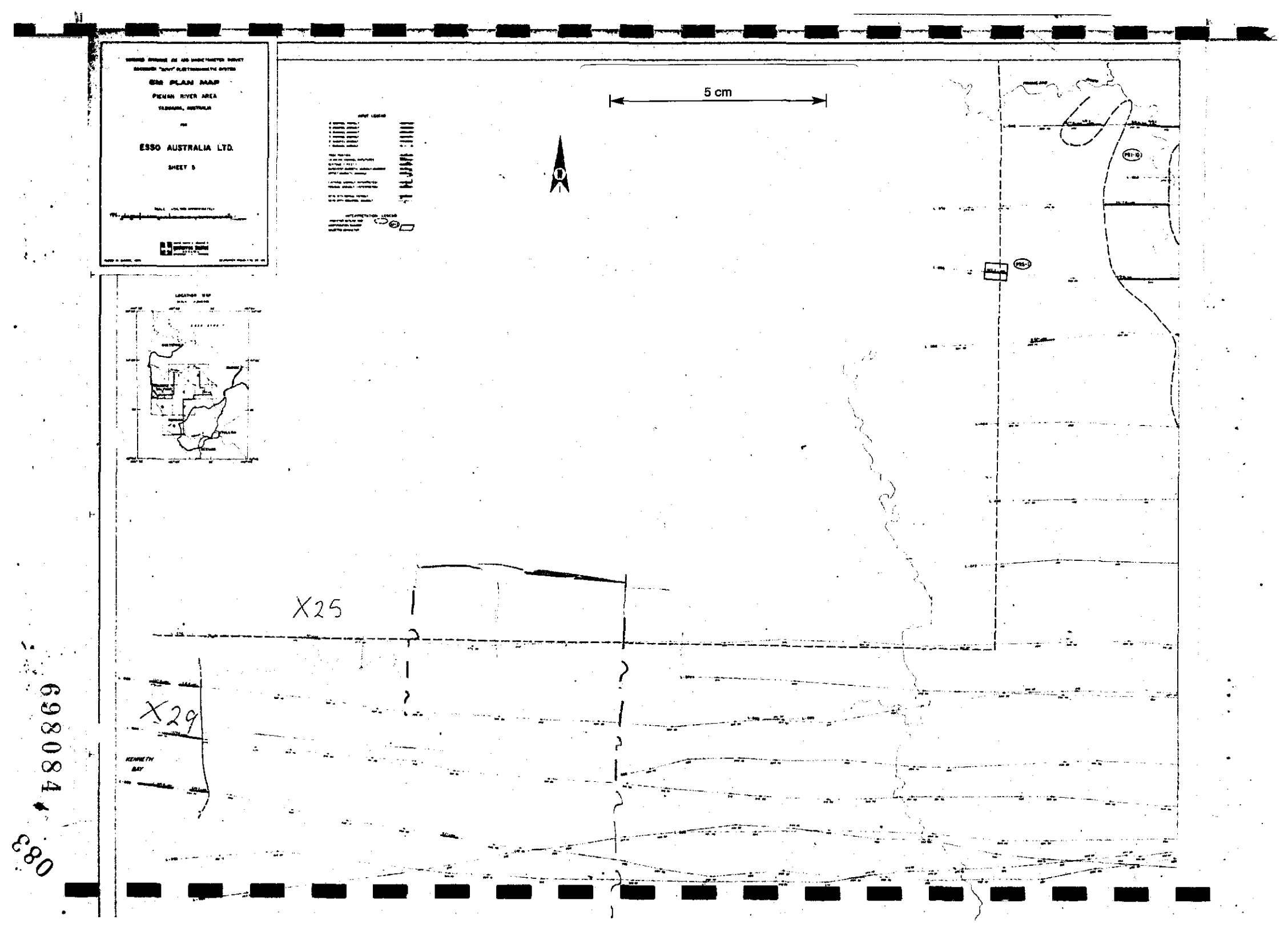
Zones PR7-1 to PR7-23 Bedrock - Poor

The eastern third of sheet 7

This group of zones occupies the eastern part of sheet 7, and, in fact, consists of all the selections on this sheet. The very wide line spacing used has resulted in an inability to correlate between lines with any great confidence, except in a few places where the number of anomalies and their character appears to relate with some relevance to adjacent lines. As a consequence of the poor correlation, we end up with a large number of zones which could well be reduced to a more reasonable number if better correlations were established.

Although exact correlations are lacking, the formational nature of these conductors seems quite evident. The lack of active magnetics (and no direct magnetic correlations) along with the extensive length of the conductors suggests graphitic sediments as the probable source. Graphite is suspected because of the continuity of the conductors and the high conductivities, and there is no evidence to suspect a pyrrhotite body within this group.


KENNETH BAY
X1
X2
X3
X4
X5
X21
EM PLAN MAP
PIEMAN RIVER AREA
TASMANIA, AUSTRALIA
ESSO AUSTRALIA LTD.
SHEET 6
5 cm


SHOT POINT AS AND DIRECTIONAL SURVEY
SEISMIC "SHOT" ELECTROMAGNETIC SYSTEM
SHOT PLAN MAP
PERMAN RIVER AREA
TASMANIA, AUSTRALIA
FOR
ESSO AUSTRALIA LTD.
SHEET 5
5 cm
X25
X29
KENNETH BAY
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083

A SUMMARY REPORT ON THE SANDY CAPE AEROMAGNETIC SURVEY, E.L. 56/80

for

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
West Coast Mines

by

MITRE GEOPHYSICS PTY. LTD.

EZ/MG82/01
JANUARY, 1982

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MITRE GEOPHYSICS PTY LTD
MINERAL EXPLORATION AND ENGINEERING CONSULTANTS
BUGGS LANE- ELLIOTT TASMANIA 7325 PHONE 004-363143

A SUMMARY REPORT ON THE SANDY CAPE AEROMAGNETIC SURVEY, E.L. 56/80

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DR. J.R. BISHOP

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TABLE & FIGURES

ABSTRACT

A detailed aeromagnetic survey (200m line spacing, 100m sensor altitude) was flown over E.L. 56/80 in 1981. Exploration on the lease is primarily for tin and it was hoped that the survey would locate carbonate replacement (pyrrhotite + cassiterite) bodies or magnetic skarn deposits. The Devonian (and mineralisped) Pieman Heads granitic batholith outcrops within the lease.

The survey has clearly defined a number of discrete, low amplitude (mostly less than 100 ɣ) anomalies: many define, or conform to a NW-SE trend and are interpreted as being due to magnetic rock units. One anomaly which is conformable but which is of limited strike length and is isolated from other anomalies (and thus is possibly due to a replacement of sediments by pyrrhotite) is SC10, a 240ɣ anomaly 3kms east of Sandy Cape. This is considered to be the most prospective anomaly. A similar, but incompletely defined, anomaly is SC27 on the lease's southern boundary.

An E.M. survey (Input) was flown over the area (as part of a much larger survey) in 1973; coverage was regional with line spacings, in places, greater than 2km. A strong anomaly was recorded about 150m east of SC10 over black shales; this may be close enough to mask any conductive response that SC10 may have. No other dominant aeromagnetic anomalies were associated with E.M. responses, although Input flight lines went over, or were near, several (e.g. anomalies 20, 22 and 27). Two near-coincident Input anomalies coincided with a relatively weak magnetic anomaly, SC15b which has an amplitude of 30ɣ.

Although SC10 and SC27 are apparently the most prospective responses, one interpretation of the magnetics puts the granite boundary alongside these anomalies: this may considerably reduce their potential. SC20 would be similarly affected while SC26 would remain at the contact. Massive sulphide replacement bodies are less likely on the contact, where the higher temperatures favour skarn mineralisation. But unfortunately magnetic anomalies due to hornfels are also common around the edge of many granites. Another possibility for these anomalies is that they are due to Tertiary dykes following faults conformable with the NW-SE strike direction.

Notwithstanding the above, SC10 and then SC27 are considered to be the most prospective of the twenty seven anomalies recognised and SC20 and 26 follow. However the interpretation of these anomalies is very dependent upon the true position of the granite contact being determined.

Other anomalies have been chosen for their (relatively) larger amplitudes (category 5 below); on other information (category 6); or for not fitting the regional NW-SE strike direction. These category 7 anomalies may define faults or fractures (possible sites for hydrothermal mineralisation). Lastly, a weak zone of anomalies that occurs within (the mapped boundaries of) the granite may indicate a favourable site for disseminated tin mineralisation. The anomalies are listed below in order of priority for further exploration. Anomalies not listed are considered to be solely due to magnetic rock units.

1.	10.
2.	27.
3.	20b.
4.	26.
5.	9, 22.
6.	15b.
7.	2, 7, 8, 19, 11, 12, 13, 14, 15a.

21 (a, b, c) - A zone within the granite.

AIM AND INTRODUCTION

A detailed aeromagnetic survey was flown over Sandy Cape, E.L. 56/80, by Geoex in January, 1981. The survey was flown in conjunction with a survey over E.L. 52/80 near Smithton. The exploration target in both E.L's is primarily for tin: a brief report of the (disappointing) results of the Smithton survey has been written by Bishop (1981). In that report it was noted that an aeromagnetic survey should detect any significant pyrrhotite-cassiterite (carbonate-replacement) deposits or magnetic skarns. Both types of mineralisation are regarded as being intimately associated with granitic rocks and such a rock type occurs within E.L. 56/80: this is the Pieman Heads granitic batholith which is known to be mineralised (with tin and tungsten, Green, 1975).

The most detailed geological map of the area is that of the Mines Dept., 1:250,000 series and this shows that most of the lease has not been mapped: the area is shown as undifferentiated PreCambrian "comparatively unmetamorphosed mudstone-sandstone sequences". The southernmost 1-2kms of the lease has been mapped and this is shown as "dominantly orthoquartzite". Black shales are also known to occur in the area (see below). The Pieman Heads batholith (dominantly adamellite-granite) outcrops at Sandy Cape, and as a belt up to 5km wide from the coast, south of Sandy Cape to the lease boundary (continuing to the Pieman River 15km to the south). Alluvium overlies much of the coastal edge of the lease (to a maximum width of about 3.5kms). Figure 1 shows the geology from the 1:250,000 series enlarged to 1:50,000: the PreCambrian sediments have not been differentiated.

A massive pyrrhotite (-cassiterite) orebody would be conductive and skarns may be so. An airborne E.M. survey (Input) was flown over the area in 1973. This was part of a much larger survey over E.L. 2/73, held by Esso Aust. Ltd.. The Input anomalies have been superimposed onto the geology map (Figure 1), where it can be seen that in places, the flight line spacing was over 2km. The positioning of the Input anomalies is probably poor; the original maps showed little geographical detail and no co-ordinates. (However Input anomaly PR6-1 had a magnetic high "some 500ft to the west" (Anon., 1973b), and this closely agrees with the easting position of aeromagnetic anomaly SC10.) The survey was apparently flown for a massive-sulphide volcanogenic target, since if any anomaly was found to occur over sediments, no further work was recommended (M.J. Smith, (Esso geophysicist) pers. commun. and Anon., 1973b). The lease was relinquished by

Esso soon after the survey was flown, however some limited follow up was carried out. This was by helicopter: in several instances black shales were found; in others, there was no outcrop; and at some anomalies the helicopter could not land.

The aim of this summary report is to identify the anomalies resulting from the aeromagnetic survey and to produce a list for follow-up. The Input results were considered when deciding the order of priority.

RESULTS

Geoex Pty. Ltd., flew an aeromagnetic (fixed wing) survey over E.L. 56/80 in January, 1981. The flight line spacing (east-west lines) was nominally 200m with a magnetometer altitude of 100m. 1,116kms of data were processed; this was presented as contour maps at 1:10,000 with a 5γ contour interval and as line profiles, also at 1:10,000. The contour maps have been reduced to 1:50,000 and redrafted onto one sheet (Figure 2). Four channel radiometric spectrometer data was also recorded, but this data was not processed: it can be examined on the analog records.

There is no pronounced regional gradient or dominating feature in the results and the survey defined a number of discrete anomalies which are easily identified. Twenty seven anomalies have been listed (Table 1.): this includes a number of zones, most of which define a NW-SE strike and are probably due to (magnetic) rock units. The maximum amplitude recorded was about 240γ. Most anomalies are between 50 and 100γ, and are similar in shape, character and interpreted depth to source (around) 200m. This suggests a similar cause for most anomalies and the conformity of many of the anomalies to zones suggest a series of NW-SE trending, rather weakly magnetic, lithological sequences. Some of the anomalies not conforming to this trend may define cross cutting faults. Alternatively some of the dislocations and apparent east-west trends may be due to positioning errors: this is particularly noticeable near the coastline, where there are some 'herringbone' contours.

Despite the general uniformity of the anomalies, there is one isolated anomaly which stands out; this is anomaly SC10. Another weaker anomaly is SC27

which is only partly defined, being right on the survey (and lease) boundary. SC10 has two peaks, 10a and 10b, with amplitudes of about 180γ and 240γ respectively; this latter anomaly was the largest recorded by the survey. SC10 and SC27 (the latter where outlined) are the only two well-defined, isolated anomalies. They are also conformable to the NW-SE strike defined by the several magnetic zones (see Figure 2). Assuming that these magnetic trends define geologic strike, the causes of SC10 and SC27 are not inconsistent with pyrrhotite replacement of part of a non-magnetic sedimentary sequence. The strike length of SC10 is over 1km (as defined by the half amplitude distance); SC27's is at least 0.7km. (Obviously too long a strike length would down-grade an anomaly's prospectiveness.) SC10 is no more than 3.6km from outcropping granite and is probably much closer (alluvium overlies the granite and the granite contact to the west of SC10): SC27 is less than 2.4km from the granite contact. These distances were taken from Figure 1 (the geological map). But from the magnetic contour map the granite boundary is readily positioned so that these anomalies are right on the contact; such anomalies would be typical of (unprospective) hornfels (see later).

There is an excellent Input anomaly, PR6-1, (registered on all six channels[1]) which is apparently associated with SC10, but it peaks some 150m to the east of the aeromagnetic anomaly; field examination showed it to be located over black shales (Anon., 1973b). Other E.M. anomalies were recorded to the north, and a nearly 5km long belt of black shales was interpreted by Esso. However the resolution of the Input system is relatively poor and it is quite possible that it would not be able to resolve two conductors 150m apart. Thus SC10 may have an E.M. response which has been obscured by the stronger response of black shales to the east. An Input flight line coincident with the southern boundary did not record any response over SC27.

Various simple rules for depth determination were tried on a profile over SC10b (bearing 60° AMG). These included Smellie's (1967) line of poles, line of dipoles etc; the half width rule, Peter's rule, etc (Riddell, 1966). Most values were close to 200m. The half width rule gave a depth of 250m[2] and this

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1 EZ holds copies of the Input records which cover E.L. 56/80.

2 Given the low flying height and probable significant width of the sources, the simple rules-of-thumb such as the half width rule (depth to the top of the source equals half of the width of the anomaly at half its height) which assume a single source, will give depth estimates which are consistantly greater than the actual depth.

was used to calculate depths for some of the other anomalies (see Table 1). For SC27 a similar depth to SC10 was estimated (i.e. about 200m).

SC20 is a prominent anomaly within a NW-SE zone about 3kms long: it is about 1.4kms away from the granite contact. Its amplitude is 120γ (to be compared with the 40 and 75γ amplitudes of the other two peaks defining the zone). An Input flight line crossed the southern quarter of 20b, but no anomaly was recorded (the Input survey's magnetometer recorded an anomaly approximately coincident with the subsequently defined SC20b). SC20b was primarily chosen as a possible prospective target by virtue of its relatively high amplitude; it is not however an (absolutely) high amplitude anomaly (compare for example, the 'type orebody' in Bishop (1981) which had an amplitude of nearly 2000γ, and the ground magnetic results over Renison which have recorded anomalies in excess of 5000γ (Davidson et al, 1957)). The half width rule gave a depth estimate of about 260m for SC20b.

SC26 is situated on the granite contact and has an amplitude of upto 130γ depending on what base level is used. An Input flight line crosses the peak of the anomaly, but no E.M. response was recorded. Because of interference from adjacent anomalies, no depth estimate was made.

The mapped outline of the granite is not readily discernible from the areomagnetic map, however there is a generally 'quiet' zone west of a line drawn between the anomalies discussed above: 10, 20, 26 and 27. This line which is shown on Figure 2 is interpreted as being the granite/sediment contact, rather than as indicated on the geologic map (Figure 1). The sediments on the coast in the south-west corner of the lease, and the increasing magnetic gradient to the west, indicate that the granite is probably a narrow tongue extending from the southern boundary lease to Sandy Cape.

The only anomaly within the granite (inside the boundaries of Figures 1 and 2) is SC21, a linear anomaly of about 50γ, conforming to the general NW-SE trend. The anomaly may represent, for example, a different igneous phase or a volume of sediment within the granite. The former possibility is obviously more prospective, suggesting as it does a dome or cupola within the granite and hence a potential for a disseminated tin deposit. Follow-up of SC21 should include a search for signs of alteration characteristic of disseminated tin

mineralisation (e.g. Scott, 1981).

If the granite boundary is as suggested in Figure 2 and not as is shown in Figure 1 then anomalies 10, 20, 26 and 27, right on the contact, may be due to hornfelsing of the sediments. sources would not be prospective, however skarn mineralisation may give similar responses. A third possibility is a series of short tertiary basalt dykes following faults which conform to the general strike direction. Such faults have been interpreted in the general area by M. Ions (pers. comm.) and basalt boulders have been found near the coast at Sandy Cape (M. Ions and R. Morland, pers. comm.).

Other prominent anomalies include SC's 9 and 22. The former is a roughly circular anomaly in the north west corner of the lease, with a number of much smaller anomalies to the north and east. Its amplitude is 110% and estimated depth is about 225m: it lies between two Input flight lines. Although not an isolated anomaly, it does not conform to the general NW-SE strike. An east-west dislocation across the lease may occur just to the north of SC9 but alternatively, and perhaps more likely, this may be a location or processing error by the contractor. SC9 is less than 6kms from the granite. The latter anomaly, SC22, is a double peaked anomaly which, with anomalies 18a and 18b, forms part of a linear zone conformable with the NW-SE strike direction. Its amplitude is 110% and the estimated depth was 310-380m (depending on the base level chosen). Like SC9, its 'prospectiveness' is based largely on its amplitude. An Input flight line crossed the northern half of the anomaly, but no response was recorded. SC22 is about 2.5km from the granite contact.

Other anomalies which may be of interest are those which do not conform to the NW-SE trend (by either defining a different strike direction, or by lack of any definite direction). The following anomalies are in this category (listed from the north): SC7 with an east-west strike direction; SC8 an isolated north-south anomaly; SC's 12 and 13 (an east-west dislocation on their northern side?); SC11(?); SC19 with a NE-SW strike which lines up with 15a.

The Input survey produced several anomalies within the lease; apart from the response close to SC10 (PR6-1), two near-coincident anomalies occur over the low amplitude (30%) anomaly SC15b. The anomalies, five and four channel responses, designated PR6-4 by the contractor and X3 by Esso, are not mentioned by

Anon. (1973b). In the progress report (Anon. 1973a), the anomaly was recommended for follow-up but this may not have been carried out. The E.M. anomalies suggest a bedrock conductor.

The three channel anomaly PR6-3 occurs to the south of SC13; this poor E.M. anomaly was considered to have a surficial origin, and "the geology is inferred to be sediments as no outcrop occurs at the anomaly location". Hence no further work was recommended (Anon. 1973b). Similarly for the very similar E.M. anomaly to the south of SC14. Other anomalies are not located near to any magnetic responses and are not considered (for the type of target sought) prospective: X24 to the east of SC8 was considered to have a surficial source and no outcrop was found in a follow-up examination; PR6-2 to the southeast of SC10 was a low amplitude, four channel anomaly which was found to occur over black shales; a series of anomalies along the coastal edge were interpreted as being due to invasion of seawater along fractures etc., this includes anomaly PR6-5 which is 1.8km from the coast and over fractured granodiorite (Anon. 1973b).

CONCLUSIONS AND RECOMMENDATIONS

This relatively detailed aeromagnetic survey has defined a number of discrete anomalies, of these SC10, an isolated anomaly with the largest amplitude (240γ) is considered to be the most prospective. A possibly similar, but incompletely defined anomaly is SC27 on the southern lease boundary. An Input survey showed no E.M. anomaly over SC27, but there is a possibility that any response from SC10 has been obscured by a strong anomaly (PR6-1) over black shales 150m to the east.

An alternative position of the granite boundary can be interpreted from the character of the magnetics: this puts anomalies 10 and 27 together with 20 and 26 right on the contact. Although a carbonate replacement body is presumably still a possibility, higher-temperature skarn mineralisation is more likely. Perhaps even more probable, and more disappointing, is that the anomalies are due to hornfels. Thus these targets' prospectiveness are perhaps largely dependent on the true position of the granite boundary.

Other targets have been picked mainly on the basis of their larger amplitudes; anomalies 9, 20b and 22 all have amplitudes over 100%. No E.M. responses were recorded by the Input survey on lines over the latter two anomalies (no flight line was close enough to SC9 to test it).

SC15b is a weak magnetic response (30%) but it has two Input anomalies associated with it; these were apparently not investigated by Esso, although this was recommended (Anon. 1973a).

Most anomalies (including those mentioned above) define or conform to a NW-SE striking series of (weakly magnetic) zones. Anomalies which do not conform to this pattern may be due to faults, fractures, etc, and these may be regarded as potential sites (particularly for skarn mineralisation). Such anomalies include (in a geographical list from the north) 2(?), 7, 8, 9, 11(?), 12, 13, 14, 15a(?), 19, 25. The zone of SC20 anomalies conform to the strike direction but occur within the granite.

In Table 1 are listed all the anomalies labelled in Figure 2: the amplitudes and locations are also given. For some anomalies (not necessarily the most prospective) a depth estimate is given, calculated from the half width rule: it is emphasised that the point-pole assumption of this rule is not likely to apply here and the actual depths are probably less.

Below the 'prospective' anomalies are listed in order of priority.

1. 10.
2. 27.
3. 20b.
4. 26.
5. 9, 22.
6. 15b.
7. 2, 7, 8, 19, 11, 12, 13, 14, 15a.

21(a, b, c): A zone within the granite, possibly a site for a disseminated tin deposit.

Presumably regional stream sediment samples will be assayed for tin and thus the order of follow-up of the above anomalies will depend on these results.

Most importantly, the locatic[illegible]tern granite boundary must be determined.

ACKNOWLEDGEMENTS

A Meeting was held at [illegible] discuss the Smithton and Sandy Cape aeromagnetic results. Apart [illegible], I.R. McDonald, J.H.A. Mill, R. Morland and N.F. Rutherfo[illegible]nt: their contributions considerably assisted the writing of this [illegible].

[illegible]. BISHOP

[illegible]UARY, 1982

JRB/amd

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TABLE 1 - LIST OF ANOMALIES (in roughly geographical order from the north)

Anomaly	Approx. Amplitude[1]	Location[2] (AMG)	Depth[3]	Comments
SC1	40/80	322,200mE 5,418,500mN		
SC2	85/140	324,000mE 5,417,800mN	300m	A large circular anomaly, has a low priority.
SC3a	25/50	321,100mE 5,418,350mN		
SC3b	30/55	321,300mE 5,417,600mN		
SC4a	60	319,650mE 5,418,900mN		
SC4b	55	320,100mE 5,417,800mN	200m	Part of a NW-SE zone - a magnetic rock unit?
SC4c	45/80	320,600mE 5,416,950mN		
SC5	50	319,650mE 5,416,750mN		
SC6a	55	323,100mE 5,416,750mN		
SC6b	45	323,500mE 5,416,350mN	230m	A 'ridge high', NW-SE trend, a magnetic rock unit?
SC7	75	324,500mE 5,415,900mN	230m	A slight E-W trend; has a low priority.
SC8	85	321,400mE 5,415,600mN	260m	Isolated N-S anomaly has a low priority.
SC9	110	317,200mE 5,416,250mN	230m	Higher amplitude than average, with no obvious trend, has medium priority.

1 Two values are given where different base levels have been taken.

2 May not refer to peak value if anomaly is elongate or double peaked.

3 Below flight height: approximate estimate only, using half-width rule.

TABLE 1 (Cont.)

SC10a	180	316,000mE 5,412,800mN	200m	Isolated anomaly has highest priority.
SC10b	240	316,350mE 5,412,300mN	200m	Isolated anomaly, has highest priority.
SC11	30	318,500mE 5,412,300mN		
SC12	60/100	321,200mE 5,412,650mN		
SC13	60/100	322,350mE 5,412,750mN		
SC14	40	323,600mE 5,412,400mN	240m	Low priority.
SC15a	75/90	324,400mE 5,411,400mN	250m	Low priority.
SC15b	35	325,000mE 5,410,000mN		Coincident EM anomalies, medium priority.
SC16a	40/75	322,300mE 5,411,000mN		
SC16b	55/80	323,250mE 5,409,450mN		
SC17	75	320,950mE 5,411,350mN		
SC18a	50/70	321,100mE 5,410,450mN		
SC18b	55	321,600mE 5,409,550mN		
SC19	40	319,900mE 5,409,800mN		
SC20a	75	318,300mE 5,410,500mN		
SC20b	120	318,700mE 5,409,750mN	260m	High priority.
SC20c	40/60	319,000mE 5,409,000mN		
SC21a	40/60	317,300mE 5,408,750mN		

TABLE 1 (Cont.)

SC21b	45	317,800mE 5,408,200mN	310m	Occurs over granite.
SC21c	50	317,900mE 5,407,550mN		
SC22	110	322,400mE 5,407,600mN	350m	Medium priority.
SC23a	80	324,400mE 5,408,200mN		
SC23b	75	325,200mE 5,405,450mN	>500m	
SC24	75/95	327,000mE 5,407,700mN		
SC25	140	322,700mE 5,406,000mN	>500m	
SC26	70/130	321,500mE 5,405,000mN		Medium priority.
SC27	120	326,400mE 5,402,950mN	225m	High priority.

APPENDIX 5 - AUGERING DATA

Appendix 5

Augering Data.

Anomaly	Co-Ordinates Northing	Easting	Depth to Bedrock in metres	Sample Number	Comments
1	300S	50E	0.67	45501	Top 0.20m: peat with abundant roots. Then black soil with some roots. Abundant fine grained white quartz. Bedrock probably white quartzite.
	300S	60E	0.74	45502	As above.
	300S	70E	0.47	45503	"
	300S	80E	0.45	45504	"
	300S	90E	0.53	45505	"
	300S	100E	0.72	45506	"
	300S	110E	0.93	45507	"
	300S	120E	0.57	45508	"
	300S	130E	0.49	45509	"
	300S	140E	0.93	45510	"
	300S	150E	0.85	45511	"
	300S	170E	0.42	45512	"
	300S	190E	0.68	45513	"
	300S	210E	0.84	45514	"
	300S	230E	>1.50	-	Bedrock not reached.
	300S	250E	>1.50	-	" "
	300S	40E	0.43	45515	As for 300S 50E
	300S	30E	0.73	45516	" "
	300S	20E	0.55	45517	" "
	300S	10E	0.78	45518	" "
	300S	0	0.78	45519	" "
	300S	20W	1.11	45520	" "
	300S	40W	1.12	45521	" "
	350S	70E	0.83	45522	" "
	330S	70E	0.61	45523	" "
	310S	70E	0.78	45524	" "
	290S	70E	0.86	45525	" "
	280S	70E	0.56	45526	" "
	270S	70E	0.64	45527	" "
	260S	70E	0.65	45528	" "

Appendix 5 - Augering Data (Cont.)

Anomaly	Co-Ordinates Northing	Easting	Depth to Bedrock in metres	Sample Number	Comments
1 (Cont)	250S	70E	0.71	45529	As for 300S 50E
	240S	70E	0.87	45530	" "
	230S	70E	0.75	45531	" "
	220S	70E	1.50		Bedrock not reached. Dune sand below peat.
	210S	70E	>1.50		" "
	200S	70E	>1.50		" "
	190S	70E	>1.5		" "
	180S	70E	>1.50		" "
	170S	70E	>1.50		" "
	160S	70E	>1.50		" "
	150S	70E	>1.50		" "
	140S	70E	>1.50		" "
	130S	70E	>1.50		" "
	120S	70E	>1.50		" "
	110S	70E	>1.50		" "
	400N	0	>1.50	45533	Black, organic-rich sandy soil. Several rounded qtzite & siltstone frags ?Alluvial.
	350N	0	0.50	45534	As above.
	300N	0	1.00	45535	Brown black peat with less sand than above. Common rounded qtzite pebbles.
	280N	0	0.40	45536	Very sandy, minor organics. Trace clay. No pebbles. Bottom contact - boulder(?).
	260N	0	>1.50	45537	Sandy peat sample - 0.5m-1.5m is white sand. Some rounded qtzite pebble in peat. ?Alluvial.
	250N	0	>1.50	45538	White sandy soil with abundant small (to 1cm) rounded qtzite pebbles. No siltstone. (?)Alluvial

Appendix 5 - Augering Data (Cont.)

Anomaly	Co-Ordinates Northing	Easting	Depth to Bedrock in metres	Sample Number	Comments
1 (Cont)	200N	0	>1.50		Sand with rounded gravel alluvium.
	300N	250W	>1.50	45539	Red-brown sandy soil with no clasts. ?Sandy alluvium.
	300N	300E	>1.50	45540	Brown-black peaty soil. No clasts. ?Alluvium.
	300N	330W	>1.50	45541	Wet black sandy peat. No clasts. Sandy Alluvium
	300N	350W	>1.50	45542	As above.
	300N	370W	>1.50	45543	Wet brown peat rich in organics. Rounded pebbles of white quartzite & f.g. granite. ?Alluvium.
	300N	390W	>1.50	45544	Soft wet white sand. No clasts. 1.00-1.30m - red brown limonitic sand.
	300N	410W	>1.50	45545	Wet brown-black peat, with some sand. No clasts ?Sandy alluvium.
	300N	430W	>1.50	45546	Brown-black sandy peat with minor organics. No pebbles. Sandy alluvium.
	300N	450W	>1.50	45547	Wet black sandy peat rich in organics. Sandy alluvium.
	300N	470W	1.00	45548	Wet, sandy, organic peat with abundant white qtzite pebbles.
	300N	500W	1.55	45549	Wet, sandy, weakly organic peat with no clasts.
	300N	550W	>1.50		Clean white sand.
	280N	450W	>1.50	45550	Black strongly organic peat with no clasts. Sand to 1.5m.
	250N	450W	>1.50	45551	Black-brown peat with moderate organics. No clasts.
	200N	450W	>1.50	45552	As above
	320N	450W	>1.50	45553	Black-brown sandy peat. No clasts.
	340N	450W	>1.50	45554	As above.

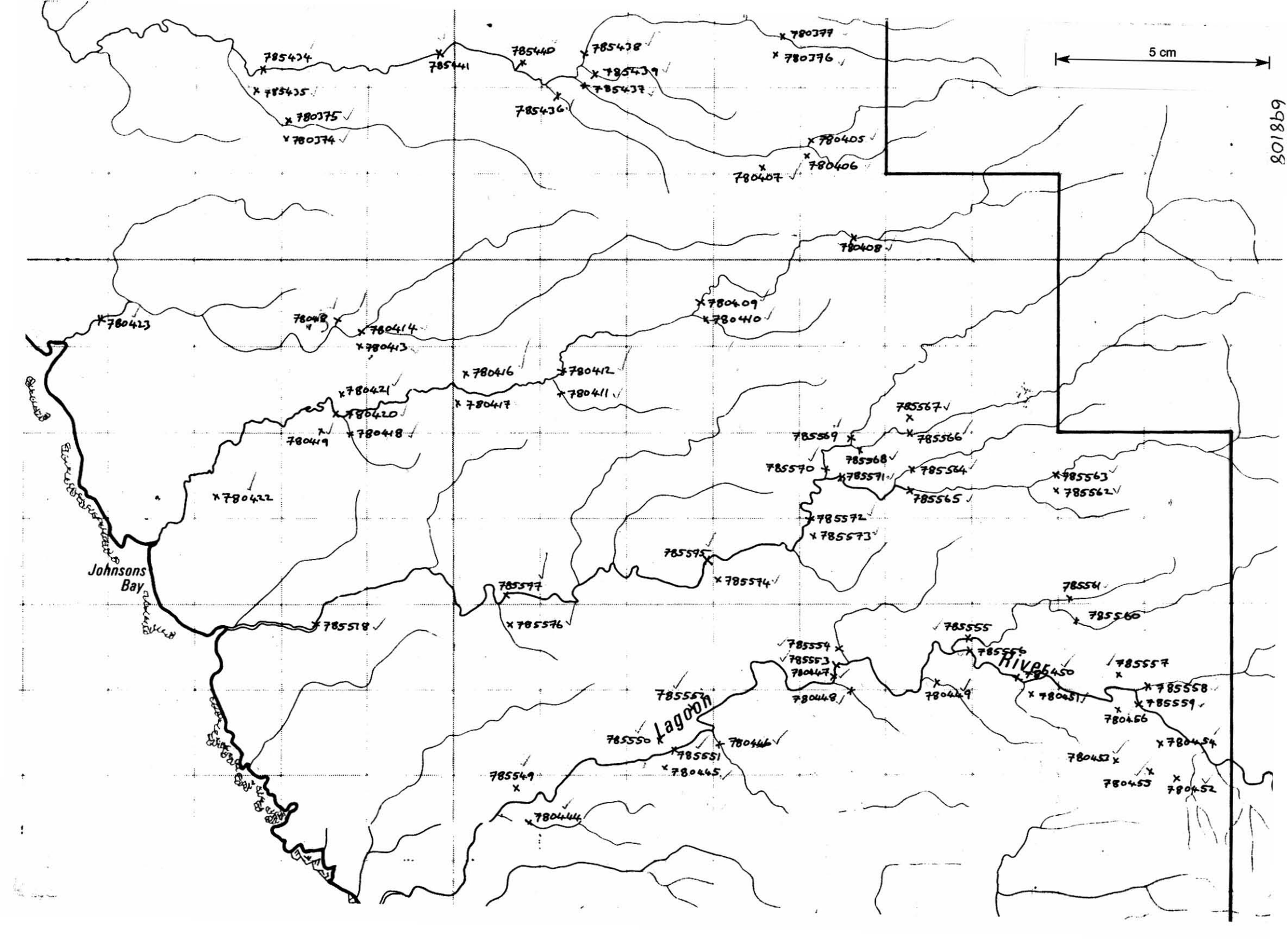
Appendix 5 - Augering Data (Cont.)

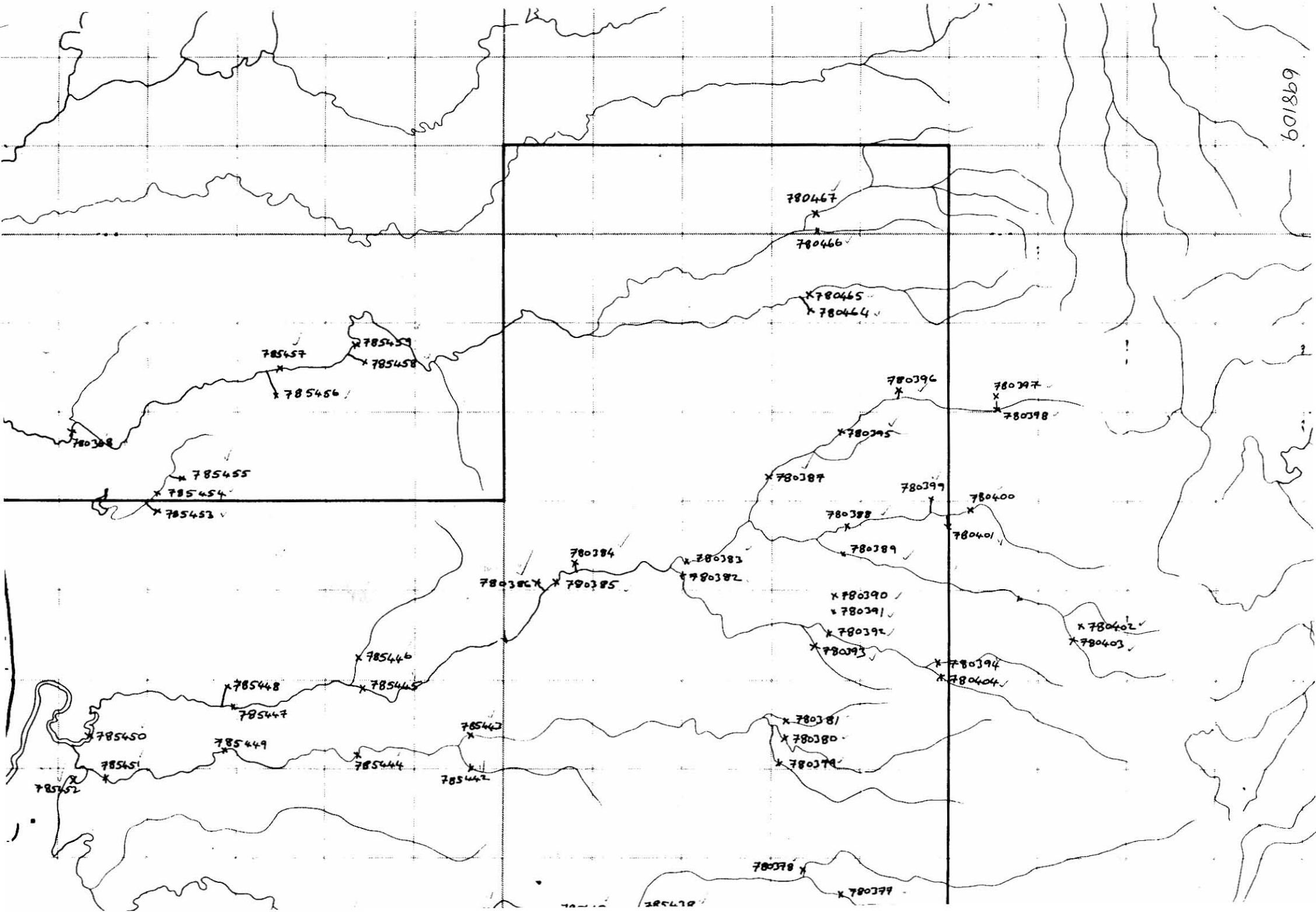
Anomaly	Co-Ordinates Northing	Easting	Depth to Bedrock in metres	Sample Number	Comments
1 (Cont)	360N	450W	>1.50	45555	As above, but with rare rounded qtzite pebbles Alluvial.
	400N	450W	>1.50	45556	As 320N 450W
	420N	450W	>1.50	45557	As above. At 1.4m: a hard black ?Magnetite rich horizon - Sampled.
	150N	370E	0.30	45576	Dark grey strongly organic soil with a few qtzite pebbles.
	150N	450E	0.45	45577	As above.
	440N	450W	>1.50		To 0.97m: Dark brown sand Then transitional from red to dark brown clay.
	500N	450W	>1.08	45579	To 0.81m: Dark brown to red sand. Then red-brown clay to 1.03m then with grey finely laminated siltstone fragments.
	450N	470W	0.94	45580	Dark brown wet sand.
	450N	500W	1.13	45581	Dark brown sand with minor clay. Some subrounded pebbles.
	450N	500W	>1.50		Light grey sand grading in to brown clay.
	200N	300W	>1.50		To 1.15m: grey brown sand then dark brown sand.
	200N	260W	1.10	45584	Dark brown wet clay
	200N	200W	>1.50		To 0.53m: light grey-brown sand, then transition to a pale yellow cream fine sand and at 1.24m a caramel coloured sand.
	160N	200W	>1.50		Light brown sand.
	150N	250W	>1.50		To 1.45W: Dark brown-black clay. Then becomes slightly sandy.
	100N	200W	0.63	45588	Dark brown to light grey sand with subrounded to angular pebbles below 0.63m.
	200N	210W	>1.50		To 0.73m: light brown sand Then to 1.30m: dark brown clay with sand. Below 1.30m: no sand.

Appendix 5 - Augering Data (Cont.)

Anomaly	Co-ordinates Northing	Co-ordinates Easting	Depth to Bedrock in metres	Sample Number	Comments
6	0	0	0.92	45558	First 10cm: peat with sand and organics. Rest is light grey clay with patches of black organics.
	0	50W	0.60	45559	Brown peat with organics which decrease at depth. No clay.
	0	100W			White quartzite at surface.
	0	50E	0.40	45560	Brown black peat with organics - Angular white qtzite fragments at base.
	0	100E	0.30	45561	Black peat with organics.
	0	150E	0.60	45562	Black peat with organics which decrease down. Some white angular quartzite fragments. No pebbles
	0	215E	0.33	45563	Black peat with organics at top, grading down to dark grey/black soil with quartzite fragments.
	70N	0	0.86	45564	Grey black peat with angular chips of white quartzite. Strong organics.
	70S	0	0.10	45565	Grey peat rich in organics. Quartzite chips.
	150N	120E	0.50	45566	Dark grey to black soil with moderate organics. Some quartzite chips.

NOTE: All samples taken are from the bottom 7cms of the hole.


5 cm
Johnsons Bay
Lagoon
River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780377

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L.56/80 TAS.

PLAN SHOWING POSITION OF AIRMAG ANOMALIES TO BE FOLLOWED UP IN RELATION TO DRAINAGE AND TOPOGRAPHY.

894

CONTOUR INTERVAL : 25nT.

NUMBERS 1-9 REFER TO GROUND FOLLOW UP AREAS DESCRIBED IN TEXT

FIGURE 2.
82-1847 (Vol 2/2)

SCALE 1:50000	Survey: LANDS	Revised
Reference	Date 18-3-1981	REF NO
Drawn LANDS	Checked	AI-516-0008

5 cm

698110

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L.56/80 TAS.

PLAN SHOWING POSITION OF AIRMAG ANOMALIES TO BE FOLLOWED UP IN RELATION TO DRAINAGE AND TOPOGRAPHY.

894

CONTOUR INTERVAL : 25m.T.

NUMBERS 1-9 REFER TO GROUND FOLLOW UP AREAS DESCRIBED IN TEXT

FIGURE 2.
82-1847 (VOL 2/2)

SCALE 1:50000	Survey: LANDS	Revised
Reference	Date 18-3-1981	REF NO
Drawn LANDS	Checked	AI-516-0008

698110

5 cm

698109

5 cm

698108

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L. 56/80 | TAS.

698111

PICANDS MATHER STREAM SEDIMENT LOCATIONS

•795573 PICKANDS MATHER (1967) STREAM SEDIMENT GEOCHEMICAL SAMPLE. VALUES TRANSPOSED FROM 1" = 1 MILE PLAN. NUMBER REFER TO PICKANDS MATHER SAMPLE IDENTITY

5 cm

895

FIGURE 3

82-1847 (Vol 2/2)

SCALE 1:50 000	Survey	Revised
Reference	Date 12 5 1981	REF NO
Drawn GAP.	Checked	AI-516-0010

698112

5 cm

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE, EL 56/80 (TASMANIA)

COPPER VALUES FOUND DURING STREAM SEDIMENT SAMPLING (VALUES IN P.P.M.), 1967

SCALE 1:50,000

896

DRAWN: G. PAJAK 4-2-82

FIGURE 4

82-1847 (VOL 2/2)

•3 Pickands Mather (1967) copper values. Values transposed from one inch to one mile plan. Stream sediment geochemical sample location.

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT : SANDY CAPE, EL 56/80 (TASMANIA)

LEAD VALUES FOUND DURING STREAM SEDIMENT SAMPLING (VALUES IN P.P.M), 1967

SCALE 1:50,000

698113 897

DRAWN : G. PAJAK . 4-2-82

5 cm

FIGURE 5

82-1847 (VOL 2/2)

• 10 Pickands Mather (1967) lead values. Values transposed from one inch to one mile plan. Stream sediment geochemical sample location.

698114

5 cm

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT : SANDY CAPE, EL 56/80 (TASMANIA)

ZINC VALUES FOUND DURING STREAM SEDIMENT SAMPLING (VALUES IN P.P.M.), 1967

SCALE 1:50,000

898

FIGURE 6

DRAWN : G. PAJAK 4-2-82

82-184 (VOL 2/2)

• 15 Pickands Mather (1967) zinc values. Values transposed from one inch to one mile plan. Stream sediment geochemical sample location.

698115

5 cm

ELECTROLYTIC ZINC CO. OF AUSTRALASIA LTD.

PROJECT : SANDY CAPE, EL 56/80 (TASMANIA)

ARSENIC VALUES FOUND DURING STREAM SEDIMENT SAMPLING (VALUES IN P.P.M.). 1967

SCALE 1:50,000

899

FIGURE 7

DRAWN : G. PAJAK 4-2-82

82-1647 (V01 2/2)

• 5 Pickands Mather (1967) arsenic values. Values transposed from one inch to one mile plan. Stream sediment geochemical sample location.

5 cm

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT : SANDY CAPE, EL 56/80 (TASMANIA)

TIN VALUES FOUND DURING STREAM SEDIMENT SAMPLING (VALUES IN P.P.M.), 1967 and 1972

SCALE 1:50.000

900

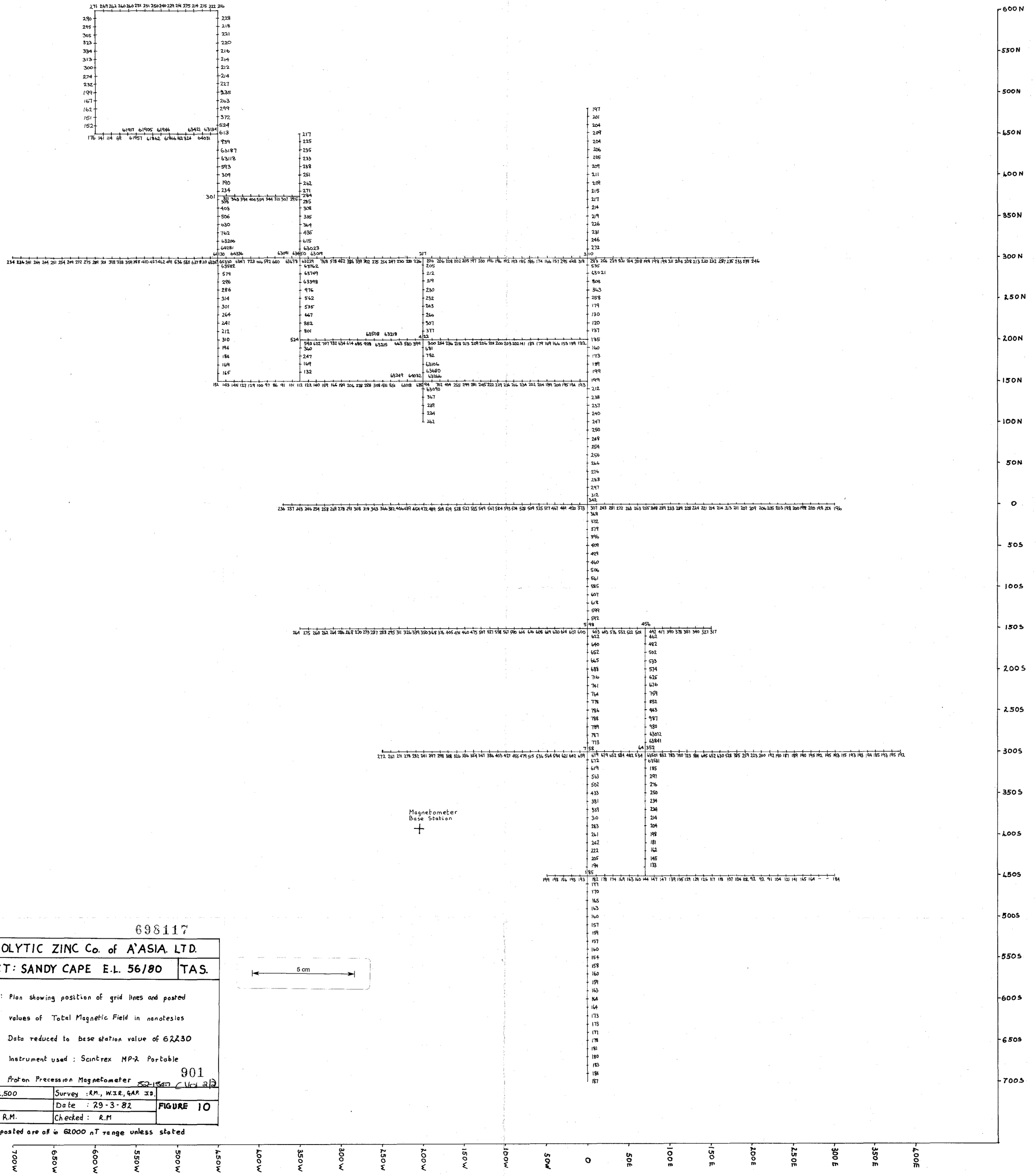
Drawn : G. Pojak 4.2.82

FIGURE 8

82-1847 CVol 2/2

- •1 Pickands Mather (1967) tin values. Values transposed from one inch to one mile plan. Stream sediment geochemical sample location.
- ✗80 Renison Bell (1972) tin values. (-85 mesh fraction). Stream sediment geochemical sample location.

Locations without values are unlisted in Renison data.

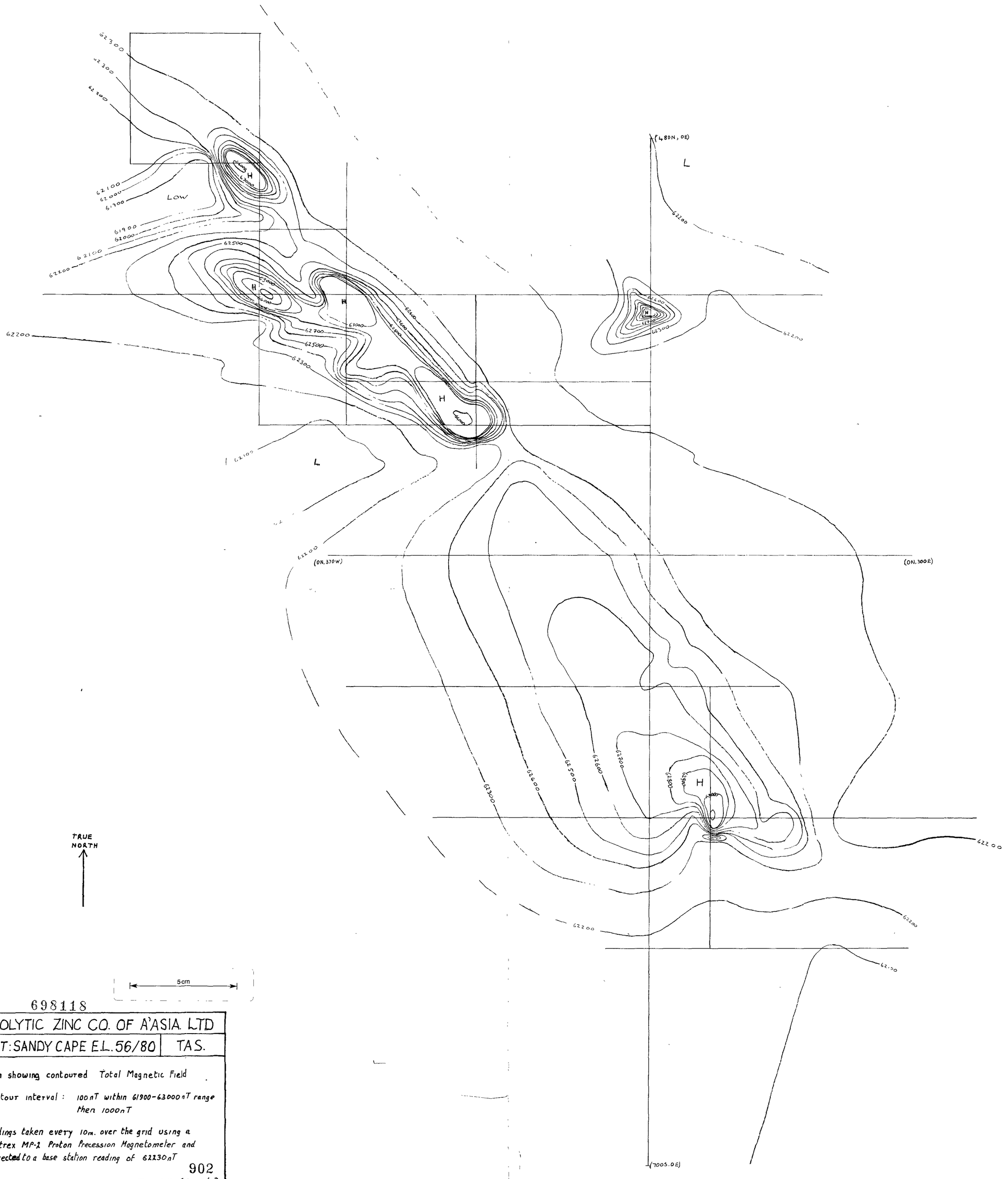


698117

ELECTROLYTIC ZINC Co. of A'ASIA. LTD.		
PROJECT: SANDY CAPE E.L. 56/80		TAS.
Anomaly 1 : Plan showing position of grid lines and posted values of Total Magnetic Field in nanoteslas Data reduced to base station value of 62230 Instrument used : Scintrex MP-2 Portable Proton Precession Magnetometer 901		
Scale 1:2,500	Survey : R.M., W.I.R., G.A.P. J.D.	
	Date : 29-3-82	FIGURE 10
Drawn by R.M.	Checked : R.M	

Note : Values posted are all in 62000 nT range unless stated

5 cm



698118

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

ANOMALY I. : Plan showing contoured Total Magnetic Field

Contour interval : 100nT within 61900-63000nT range then 1000nT

Readings taken every 10m. over the grid using a Scintrex MP-2 Proton Precession Magnetometer and corrected to a base station reading of 62230nT

902

82-1547 (Vol. 2/2)

SCALE 1:2,500	SURVEY R.M, W.T.R.GAMJD.	
	DATE 16·3·1982	FIGURE 11
DRAWN : R.M.	CHECKED : R.M.	

698119

ELECTROLYTIC ZINC Co. of A'ASIA. LTD.

PROJECT : SANDY CAPE E.L. 56/80 | TAS.

Anomaly 4 : Plan showing position of grid lines and contoured readings of Total Magnetic Field in nanoteslas

Data reduced to Base Station Value of 62470 nT.

Contour interval : 50 nT.

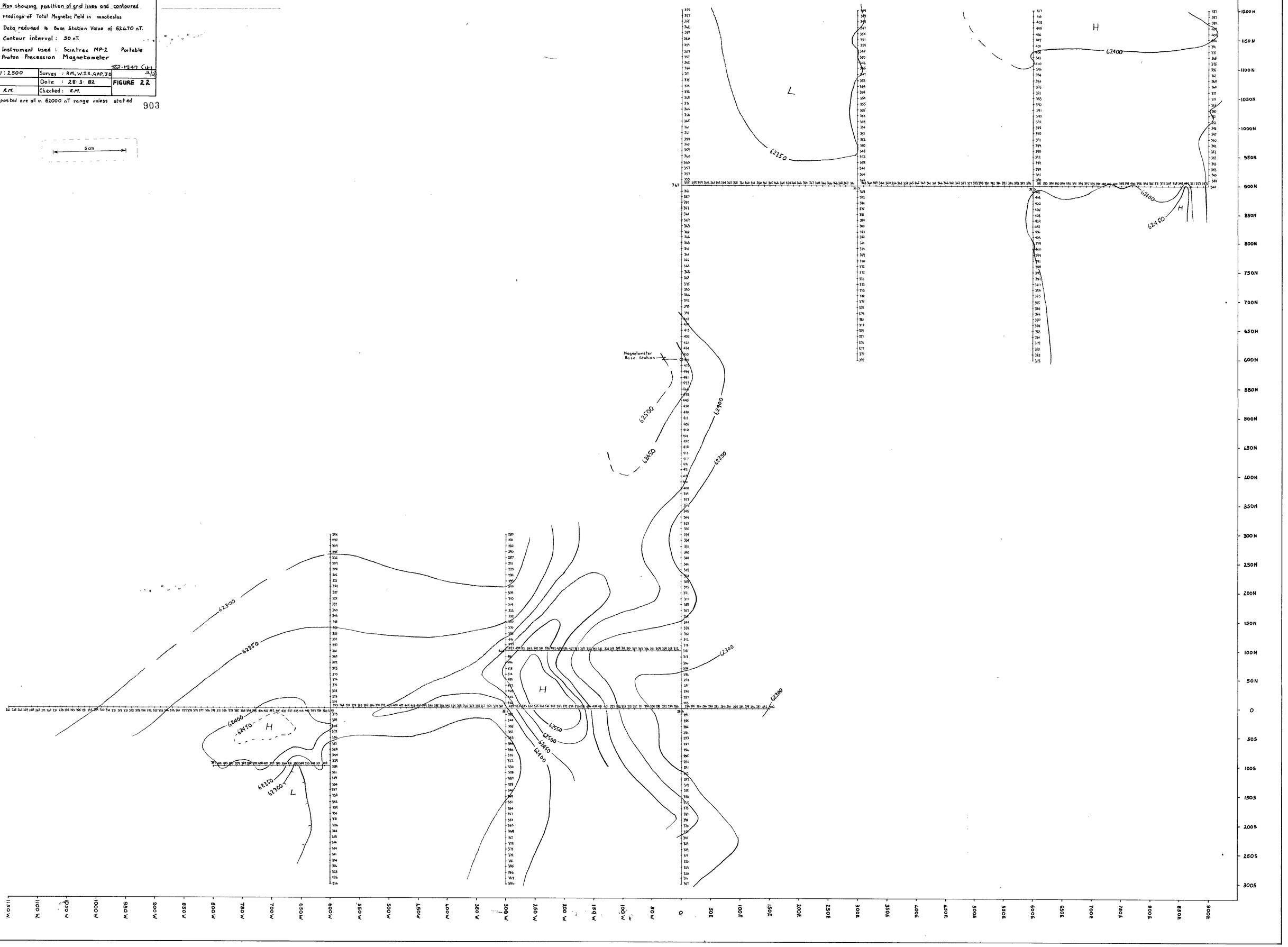
Instrument used : Scintrex MP-2 Portable Proton Precession Magnetometer

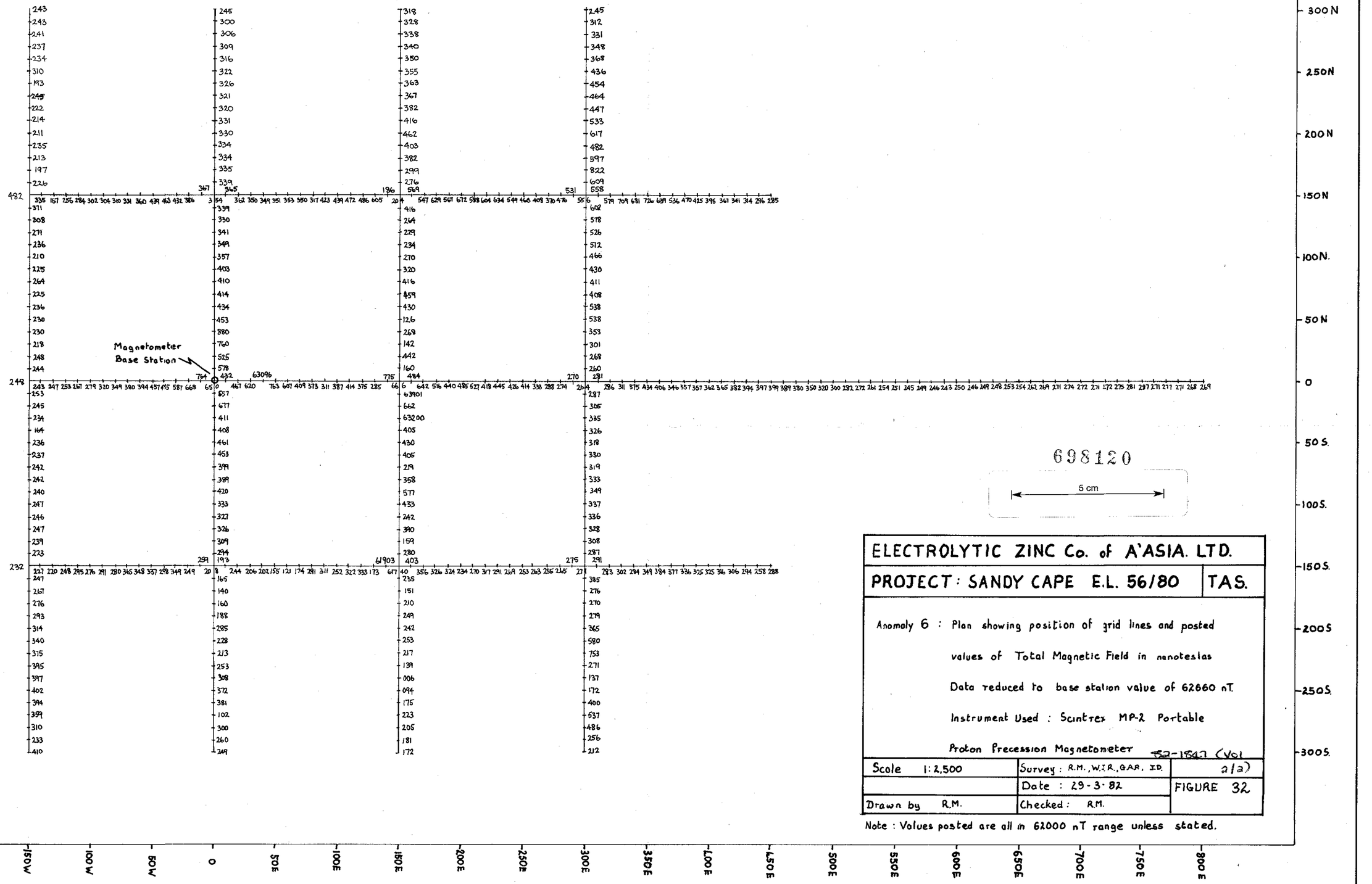
Scale . 1 : 2,500	Survey : A.M., W.J.R., G.A.P., J.D.	82-1547 (4) 3/3
	Date : 28·3·82	FIGURE 22.
Drawn by : R.M.	Checked : R.M.	

Note : Values posted are all in 62000 nT range unless stated

903

5 cm



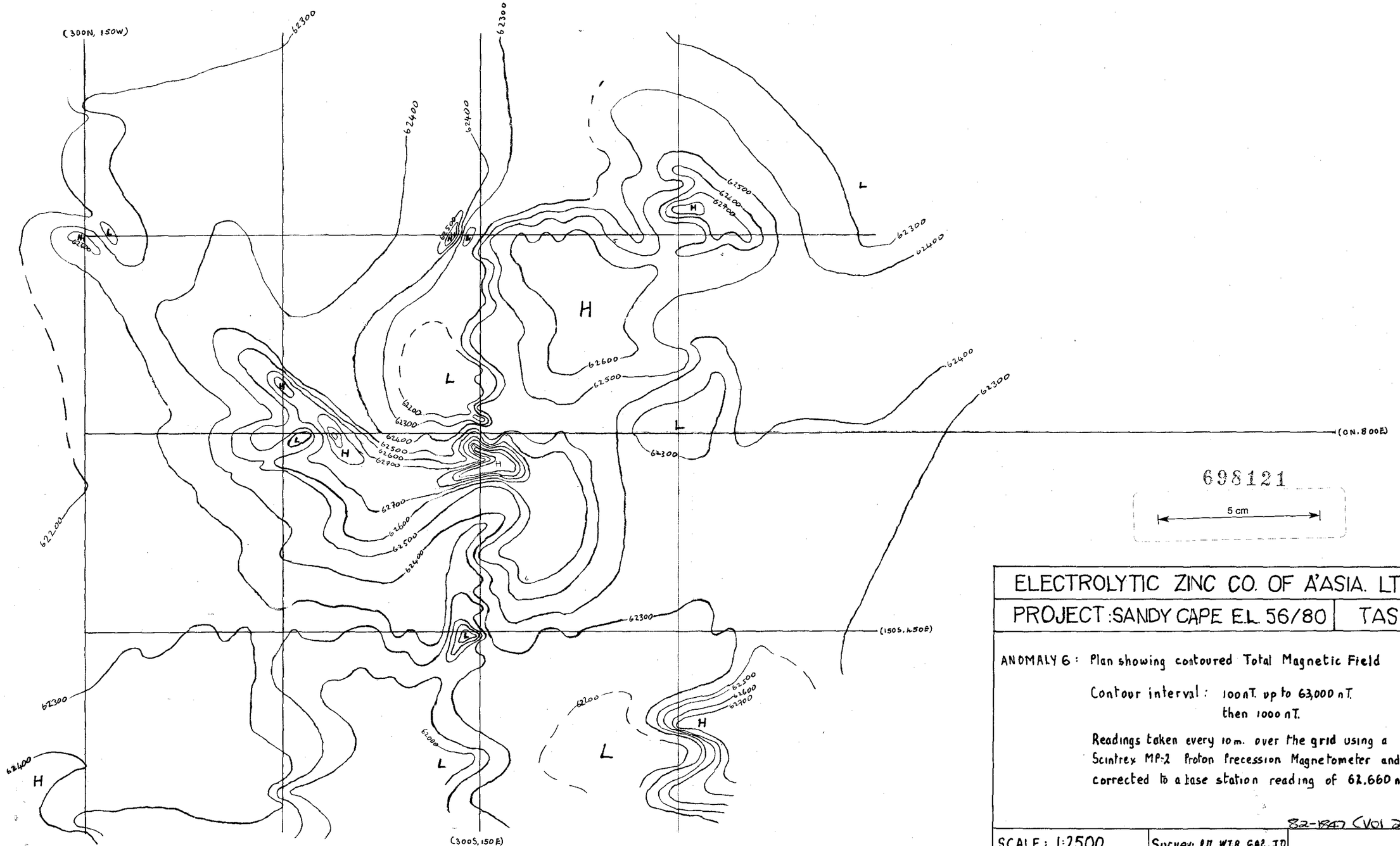


698120

5 cm

ELECTROLYTIC ZINC Co. of A'ASIA. LTD.		
PROJECT: SANDY CAPE E.L. 56/80		TAS.
Anomaly 6 : Plan showing position of grid lines and posted values of Total Magnetic Field in nanoteslas Data reduced to base station value of 62660 nT Instrument Used : Scintrex MP-2 Portable Proton Precession Magnetometer		
Scale 1:2,500	Survey : R.M., W.I.R., G.A.R., I.D.	21a)
	Date : 29-3-82	FIGURE 32
Drawn by R.M.	Checked : R.M.	

Note : Values posted are all in 62000 nT range unless stated.



698121

5 cm

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L. 56/80 | TAS.

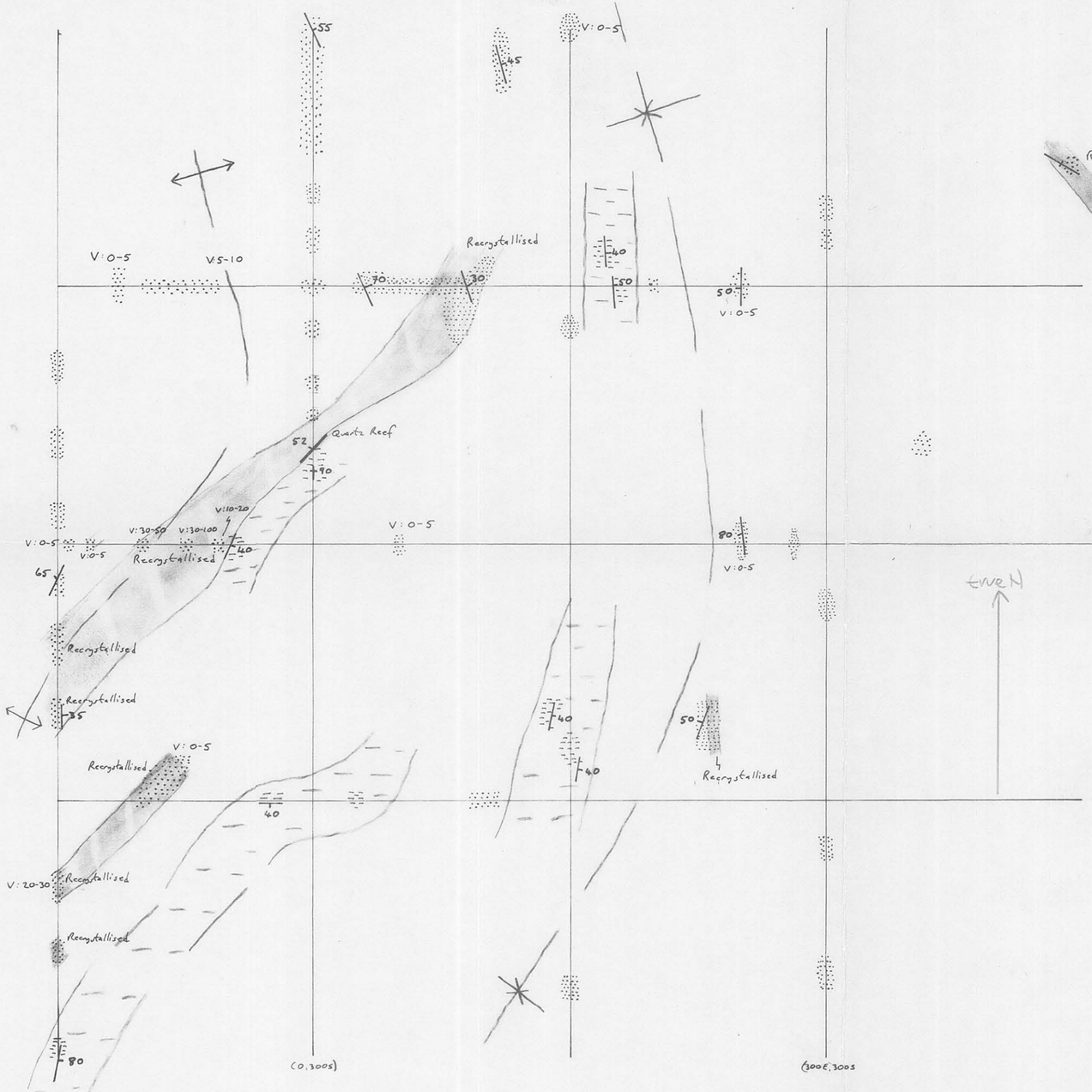
ANOMALY 6: Plan showing contoured Total Magnetic Field

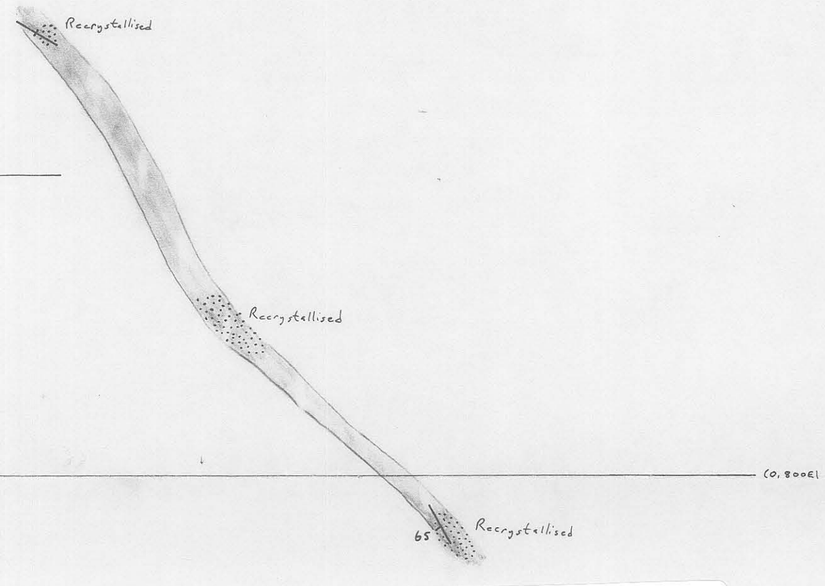
Contour interval: 100nT. up to 63,000 nT.
then 1000 nT.

Readings taken every 10m. over the grid using a Scintrex MP-2 Proton Precession Magnetometer and corrected to a base station reading of 62.660 nT.

82-184 (Vol 2)(2)

SCALE: 1:2500	Survey: R.M., W.J.R., G.R.P., I.D.	
	Date: 29·3·1982	FIGURE 33
Drawn: R.M.	Checked R.M.	





TRUE N

5 cm

698122

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L 56/80 | TAS.

PLAN SHOWING THE GEOLOGY OF ANOMALY 6

Massive, locally bedded, medium to fine grained, white to pale grey Quartzite

Well bedded, finely laminated, dark grey Siltstone with some thin Sandstone horizons

V:20-30 Refers to quartz vein density per metre. All veins were barren. Vein thickness varies from 41 - 10mm. width.

83-1547 CW01 2/2

SCALE: 1:2500	Survey R.M. W.J.R., G.A.P	Geology W.J.R.
	Date: 29·3·1982	FIGURE 41
Drawn: R.M.		

1km

906

APPENDIX 2 - 'A Geophoto study of the Sandy Cape Area, Tasmania' prepared for E.Z. by Huntings Geology & Geophysics (Australia) Pty. Ltd.

Plan

310 000 E
320 000 E
330 000 E
5 430 000 N
5 420 000 N
5 410 000 N
5 400 000 N
30
20
10
00
Hazard Bay
Ingram Bay
Ordnance Pt
Mine workings
Lindsay River
KENNETH
BAY
Cape Beach
Venables Corner
SANDY CAPE
Johnsons Bay
Lagoon
Lagoon River
Lagoon River
BASS STRAIT
SOUTHERN OCEAN
STANLEY
SMITHTON
MARRAWAH
Smithton
Sandy Cape
WARATAH
ROSEBERY
ZEEHAN
Misery Flat
QUEENSTOWN
STRAHAN

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L. 56/80 | TAS.

PLAN SHOWING LOCATIONS OF E.Z. Co. (1982) STREAM SEDIMENT SAMPLES

Numbers refer to E.Z. Stream Sediment Samples.
Original plotting on 1:40,000 aerial photographs.

82-1847 (Vol 2/2)

SCALE: 1:50 000	Survey:	Revised
Reference:	Date: 12·5·1981	REF NO
Drawn:	Checked:	FIGURE 43

698123

5 cm

APPENDIX 3 - Airmag Data, flown by Geoex.

PHOTOGEOLOGICAL WORK - SHEET MAP OF THE SANDY CAPE AREA, TASMANIA

144°50'

145°00'

41°20'

41°30'

Scale 1 : 40 000 (Photoscale)

1 0 1 2 3 4 5 km

5 cm

LEGEND

QUATERNARY	Qa	Alluvium
	Qbs	Active coastal beaches and dunes
	Qs	Stabilized coastal dunes and sands
TERTIARY	Ts	Sandstones and conglomerates, silicified in places close to fault zones
DEVONIAN	Dg	Muscovite granite with tourmaline-rich aplite dykes
PROTEROZOIC – Lagoon River Quartzite	Eql	Mature fine grained, cross-bedded quartzites with a possible tuffaceous component in the lower parts of the sequence exposed in the area.

- Unconformity
- Trace of bedding
- Geological contact
- Inferred geological contact
- Boundary of surficial deposits
- Dip of strata, moderate and steep
- Fracture
- Fault
- Inferred fault
- Dolerite dyke
- R9 / 11 Photocentre

LOCATION DIAGRAM

698124

Undertaken on behalf of ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

by HUNTING GEOLOGY AND GEOPHYSICS (AUSTRALIA) PTY LIMITED FEBRUARY 1982 GA 94 / 81

82-1847 C(01 2/3)

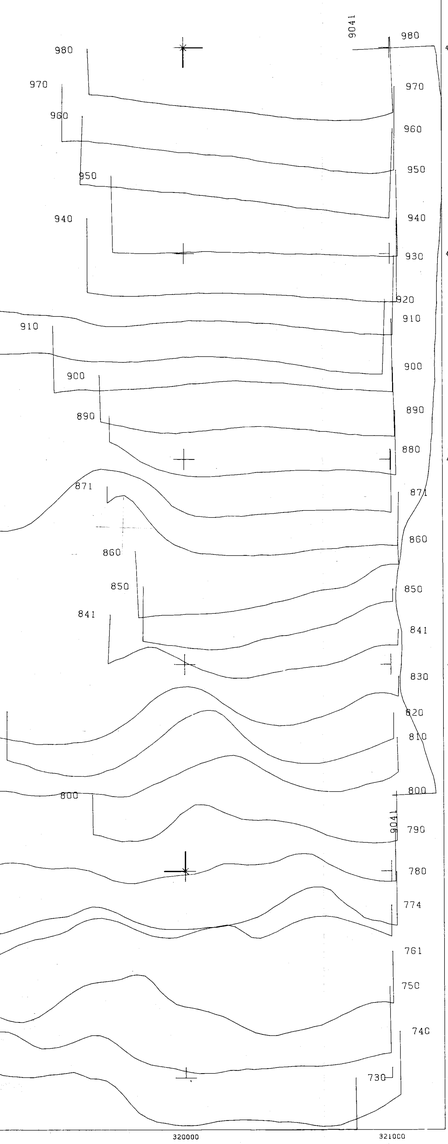
908

910

909

311000 312000 313000 314000 315000 316000 317000 318000 319000 320000 321000

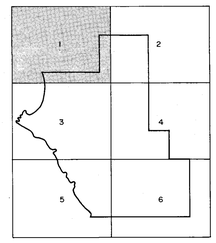
424000 423000 422000 421000 420000 419000 418000 417000 416000



SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



698125

5 cm

GEOEX PTY. LTD.

909

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA – TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1: 10000

AO 516-0014

82-1867 C(VOL 2/2)

SURVEYED FEB '81	APPROVED J.E.HAIGH
PROJECT NO: 81518	SHEET NO: 1

321000 322000 323000 324000 325000 326000 327000 328000 329000 330000 331000

424000
423000
422000
421000
420000
419000
418000
417000
416000

9052

980 970 960 950 940 930 920 910 900 890 880 871 860 850 841 830 820 810 800 790 780 774 761 750 740 730

1406

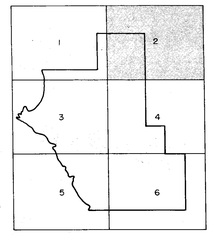
30

9052

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



698126

5cm

GEOEX PTY. LTD.

910

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA — TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

AO 516-0012

Dwg 15967 Sht 2 of 2

SURVEYED FEB '81 APPROVED J.E.HAIGH

PROJECT Nº 81518 SHEET Nº 2

911

311000 312000 313000 314000 315000 316000 317000 318000 319000 320000 321000

416000 415000 414000 413000 412000 411000 410000 409000 408000

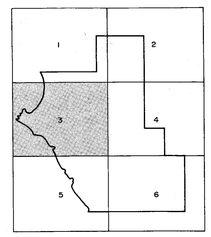
9020 9030 1106 9010 1106

730 720 710 700 690 681 670 660 650 640 630 620 610 600 590 580 570 560 555 540 530 520 510 500 491 480 470 461 451 442 430 420 410 400 390 380 370 360 350 340 330

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



698127

5cm

GEOEX PTY. LTD.

911

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA - TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

82-1647 (Vol 2/3) AO 516-0016

SURVEYED FEB. '81	APPROVED J.E. HAIGH
PROJECT No 81518	SHEET No 3

912

912

321000 322000 323000 324000 325000 326000 327000 328000 329000 330000 331000

416000 415000 414000 413000 412000 411000 410000 409000 408000

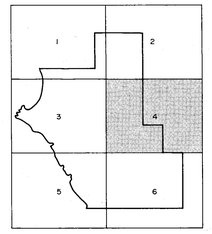
9052 9060 9072

730 720 710 700 690 681 670 660 650 640 630 620 610 600 590 580 570 560 555 540 530 520 510 500 491 480 470 461 451 442 430 420 410 400 390 380 370 360 350 340 330

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



5 cm

698128

GEOEX PTY. LTD.

912

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA – TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

AO 516-0013

SURVEYED: FEB '81 APPROVED: J.E. HAIGH

PROJECT No: 81518 SHEET No. 4

82-1987 Vol 3(3)

912

311000 312000 313000 314000 315000 316000 317000 318000 319000 320000 321000

408000 407000 406000 405000 404000 403000 402000 401000 400000

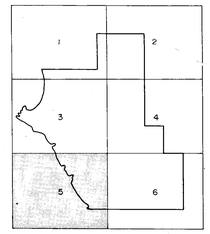
9020 9030 9041 9036 9033

340 330 320 310 300 290 280 270 260 250 240 230 220 210 201 190 180 170 160 150 141 130 120 110 100 90 81 71 61 50 40 30 21 10

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



698129

5 cm

GEOEX PTY LTD.

912

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA – TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

82-1067 (Vol 2a) AO 516-0011

SURVEYED FEB '81	APPROVED J E HAIGH
PROJECT Nº 81516	SHEET Nº 5

1

912

311000 312000 313000 314000 315000 316000 317000 318000 319000 320000 321000

408000 407000 406000 405000 404000 403000 402000 401000 400000

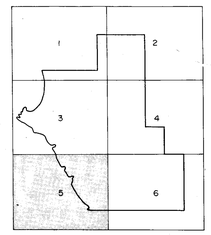
9020 9030 9040 9041 9050 9230

340 330 320 310 300 290 280 270 260 250 240 230 220 210 201 190 180 170 160 150 141 130 120 110 100 90 81 71 61 50 40 30 21 10

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



698129

5 cm

GEOEX PTY LTD.

912

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA – TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

82-1567 (Vol 2a) AO 516-0011

SURVEYED: FEB '81 APPROVED: J.E.HAIGH

PROJECT Nº: 81-518 SHEET Nº: 5

1

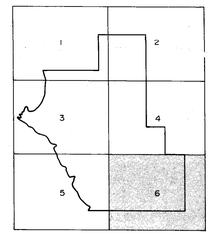
913

9041 9052 9080 9072

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM.

SHEET INDEX



698130

5 cm

GEOEX PTY LTD.

913

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA — TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

80-1567 (Vol 2/2)

AO 516-0015

SURVEYED FEB '81

APPROVED J.E.HAIGH

913

321000 322000 323000 324000 325000 326000 327000 328000 329000 330000 331000

408000 407000 406000 405000 404000 403000 402000 401000 400000

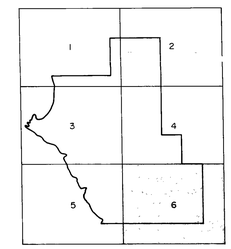
9041 9052 9060 9072

320 310 300 290 280 270 260 250 240 230 220 210 201 190 180 170 160 150 141 130 120 110 100 90 81 71 61 50 40 30 21 10

SURVEY BOUNDARY

BASELINE VALUE -200nT VERTICAL SCALE 25nT per CM

SHEET INDEX



698130

5 cm

GEOEX PTY LTD

913

ELECTROLYTIC ZINC CO. OF AASIA LTD.

SANDY CAPE AREA — TAS.

AEROMAGNETIC TOTAL INTENSITY PROFILES

SCALE 1:10000

82-1547 (Vol 2)(2)

A0 516-0015

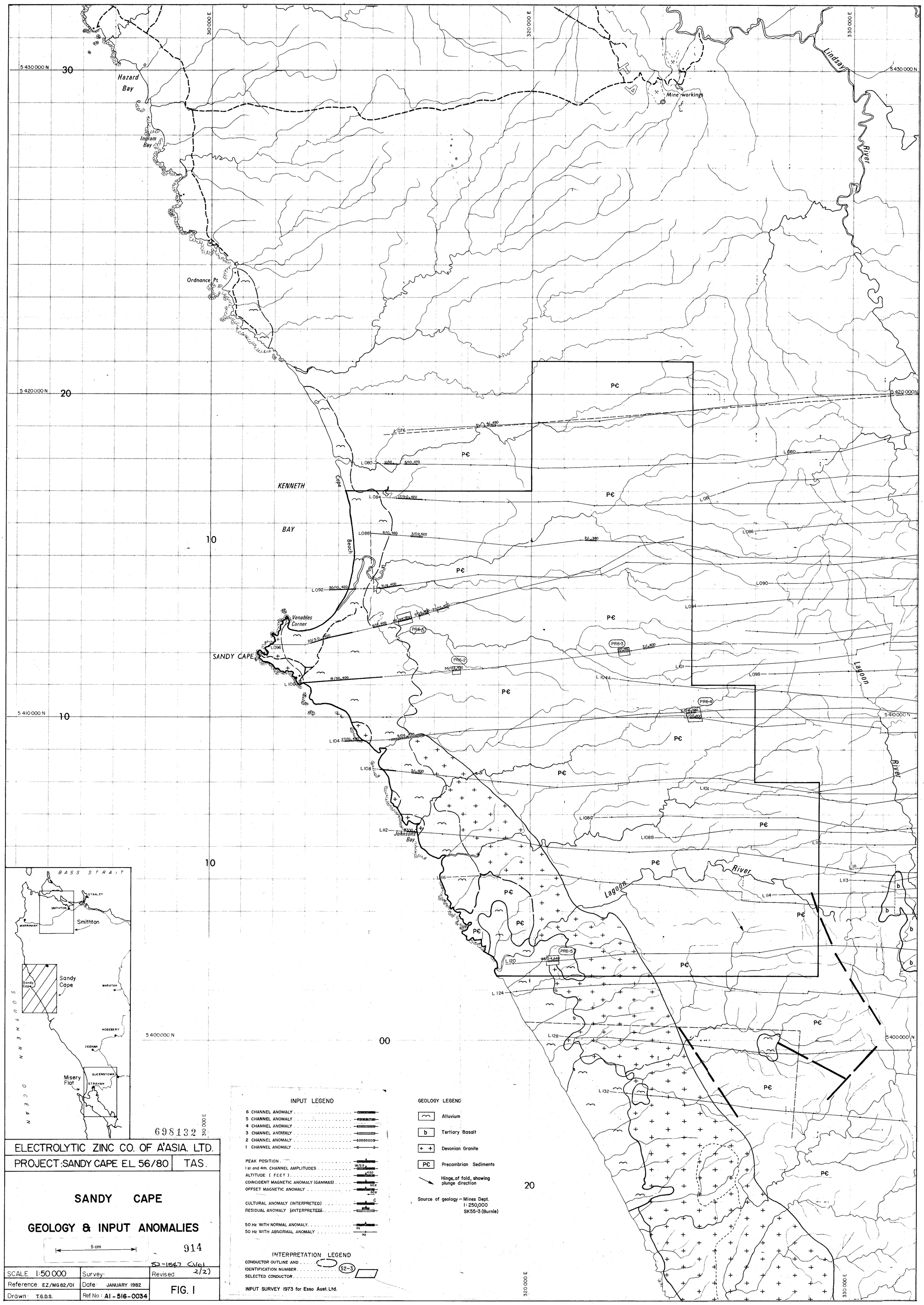
SURVEYED FEB '81 | APPROVED J.E HAIGH

PROJECT Nº 81518 | SHEET Nº 6

APPENDIX

4B 'A summary report on the Sandy Cape Aeromagnetics survey, E.L. 56/80' commissioned by E.Z. from Mitre Geophysics Pty. Ltd. (Dr. J.R. Bishop).

Plans



ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L. 56/80 | TAS.

SANDY CAPE

GEOLOGY & INPUT ANOMALIES

5 cm

914

82-1847 C/01 2/27

SCALE 1:50 000	Survey:	Revised
Reference EZ/MG82/01	Date: JANUARY 1982	FIG. 1
Drawn: T.G.D.S.	Ref. No: AI-516-0034	

310 000 E

320 000 E

330 000 E

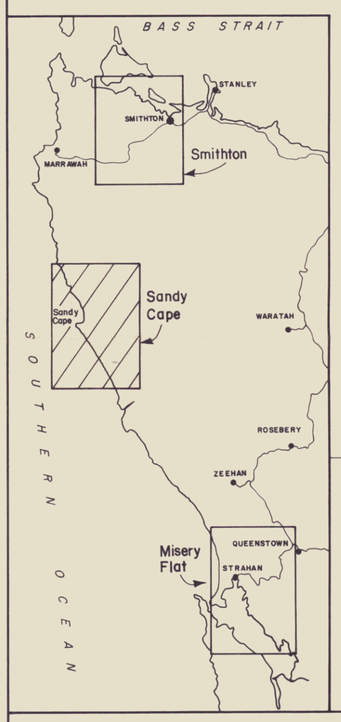
5 430 000 N

5 420 000 N

5 410 000 N

5 400 000 N

4a 4b 4c 5 9 3a 3b 1 2 6a 6b 7 8 10a 10b 11 12 13 14 17 16a 15a 18a 15b 19 18b 16b 20a 20b 20c 21a 21b 21c 22 23a 24 25 23b 26 27



LEGEND:

- − 50 to 0 Gammas
- − 100 to −50
- − 125 to −100
- − 150 to −125
- − 175 to −150
- − 200 to −175
- − 225 to −200
- − 250 to −225
- − 300 to −250
- to −300 Gammas
- Interpreted granite contact (Compare with boundary shown in Figure 1)

698133

5 cm

SURVEY SPECIFICATIONS

Flown by	:	Geoex
Date	:	Jan. 1981
Flight line direction	:	East - West
Flight line spacing	:	200 m
Sensor height	:	100 m

This map has been compiled from reductions of the original 1:10000 sheets

ELECTROLYTIC ZINC CO. OF A'ASIA. LTD.

PROJECT: SANDY CAPE E.L.56/80 | TAS.

SANDY CAPE
AEROMAGNETIC SURVEY

Contour Interval 5 gammas

915

82-1347 (Vol 2)

Scale : 1:50 000	Survey : Geoex	Revised :
Reference : EZ/MG 82/01	Date : Feb. 1981	FIG. 2
Drawn : T.G.D.S.	Ref. No. : AI-516-0035	