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THE SHELL COMPANY OF AUSTRALIA LIMITED

METALS DIVISION

E.L. 14/80 - HAYES PEAK

Progress Report on Exploration During the Period

2/7/82 to 1/9/83

Author : P.A. Ruxton

Report No : 08.2062

Date : 2/9/83

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*Accepted as final report  
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RB 21/2/84.*

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SUMMARY

Exploration on E.L. 14/80 Hayes Peak continued during the period 2/7/82 to 1/9/83.

Regional gravity, radiometric and stream sediment surveys were completed and evaluated.

Several anomalies were outlined for follow-up.

INPUT anomaly IR 6 was explained as basalt/Tertiary sediment - related.

The Upper Stowport anomaly was drilled but no economic mineralization was encountered.

1.0 INTRODUCTION

This report outlines exploration by the Shell Company of Australia, Metals Division in conjunction with the Commonwealth Aluminium Corporation Limited in E.L.

14/80 - located southwest of Burnie, Northwest Tasmania  
- during the period 2/7/82 to 1/9/83.

Exploration continued with completion of a stream sediment survey and regional gravity survey. Re-evaluation of radiometric data was completed. INPUT anomaly IR 6 was followed up and the combined INPUT/aeromagnetic anomaly at Upper Stowport (IR 4/4044/2) was drilled.

The main targets remained Sn/WO<sub>3</sub>-bearing skarns on the northern margin of the Housetop granite and Sn/WO<sub>3</sub>-bearing greisenization within the granite mass.

2.0 REGIONAL STUDIES

2.1 Regional Gravity

A total of 1186 gravity measurements were collected over the Husetop Granite and surrounding rocks in late 1981/early 1982. The survey centred on the northern and western margins of the granite to locate granite cupolas (gravity lows) adjacent to prospective stratigraphy in the search for replacement pyrrhotite/magnetite skarns. Survey details and results are recorded more fully in Oakes (1983). No gravity lows were located in the Hayes Peak licence other than those associated with known granite outcrop. However GL 9 was located close to the northeastern licence margin - in Riana (D/MQ 01/046). Follow-up of GL 9 defined a 1 to 3 mgal anomaly with three possible causes: 1) topography; 2) basalt cover; and 3) a granite cusp. GL 9 is located over sediments and intrusives of the Precambrian Burnie Formation which are not considered prospective stratigraphy for replacement skarn deposits.

Modelling of gravity data across the western margin of the Husetop Granite confirms early work by Sheehan (1969) on the eastern margin which suggested a laccolith granite shape. The western granite margin is considered to dip eastwards, the northern contact is steep and the eastern margin dips east also (see Oakes, 1983).

2.2 Regional Radiometrics

Radiometric data collected by Geometrics in 1980 was corrected and interpreted. Three areas of slightly enriched uranium were identified within the Husetop Granite on Hayes Peak (D/MQ 01/046). The areas are

broad and undefined but may represent late stage differentiated granites within the main granitoid mass. Zone C is coincident with the Crane's Tin Prospect area on the western boundary of the licence, Zone F - south of Natone - has a corresponding  $WO_3/Zn$  stream sediment anomaly and Zone B - due south of Upper Natone - has no stream geochemical response. Ground follow up of these anomalies should include rock chip sampling and geological mapping.

3.0 STREAM SEDIMENT SURVEY

Stream sediment sampling across the Housetop GRanite began in mid-1982 to locate greisen-style Sn- $WO_3$  mineralization. A total of 350 samples were collected from active stream sediment in creeks draining the licence area. Prior to analysis an orientation survey in the Crane's Tin Prospect area was conducted (Ruxton, 1982). On granite areas samples were sieved to -10# and assayed for Sn,  $WO_3$ , Mo, Cu, Pb, Zn, Fe, Mn and As and in marginal areas the -20# to +80# fraction analysed for Sn,  $WO_3$ , Mo and Bi with the -80# assayed for Cu, Pb, Zn, Fe, Mn, As and Ni. Stream sediment locations and results are presented on plans D/MQ 01/033 to 041 and D/MQ 01/047 to 049.

Background metal values differed from granite to basalt covered areas:

	<u>Sn</u>	<u><math>WO_3</math></u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>
Basalt	10	15	30-70	10-30	100-200
Granite	20	20	0-30	20-50	50-120

(Results in ppm)

Four anomalous areas are evident (summarized on Plan D/MQ 01/046).

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1) Upper Stowport (Sn,  $WO_3$ , Zn) - Values of upto 135 ppm Sn, 30 ppm  $WO_3$  and 105 ppm Zn occur in streams draining the combined INPUT/aeromagnetic anomaly at Upper Stowport on the northern granite margin (D/MQ 01/046). Rock chip samples with values upto 0.18% Pb, 830ppm Zn, 75 ppm  $WO_3$  and 14 ppm Sn are recorded in the gridded area. Elevated basemetal and Sn/ $WO_3$  values are associated with metasomatic alteration of Burnie Formation sediments and intrusive basic igneous rocks at the northern Housetop Granite contact.

2) Natone ( $WO_3$ , Zn minor Cu) - Slightly elevated values of  $WO_3$  (30 ppm max.), Zn (85 ppm max.) and Cu (110 ppm max.) are associated with a radiometric anomaly (Zone F) immediately southwest of Natone.

3) Redwater Granite (Sn,  $WO_3$ , Mo) - Anomalous Sn (0.24% max.),  $WO_3$  (40 ppm max.) and minor Mo (70 ppm max.) occur in a 6 km long, 2½ km zone on the boundary of the Riana and Hayes Peak licences NW of Loyetea (Weste, 1979 and this report). Initial followup located fine grained, porphyritic and equigranular granite phases cross cut by sericitic/quartz greisen veins and quartz/tourmaline veins. Followup continues.

4) Crane's Tin Prospect (Sn,  $WO_3$ ) - Values upto 0.43% Sn and 150 ppm  $WO_3$  were recorded in stream samples. Limited followup has been completed (Ruxton, 1982). Geological mapping of the Crane's Tin/Lake Kara area with rock chip sampling is in progress.

Slightly elevated Sn (with minor Zn and Mo) values are recorded across the granite spatially related to the Tertiary sediment/basalt cover. These values upto 680 ppm Sn, 60 ppm Zn and 55 ppm Mo are considered to be derived from Tertiary gravels.

Followup in the Crane's Tin and Redwater Granite areas is in progress. The Natone anomaly will be ground checked.

#### Hooper's Creek Prospect

An adit and various pits of the Hooper's Creek Prospect on the western margin of the Hayes Peak licence were rock chip sampled. A stream sediment Sn value of 120 ppm (42 ppm Mo) is recorded draining this prospect. Kaolinized (or weathered) medium to coarse grained biotite granite was sampled. No greisen alteration was observed. Rock chip sampling results are low with a maximum of 14 ppm Sn and 55 ppm  $WO_3$  (Appendix 1). The stream sediment anomaly is explained by reworking of nearby cassiterite-bearing Tertiary gravels. Old timers following up panned cassiterite in the streams are considered to have dug pits/adits into soft-altered granite to search for the tin source.

#### 4.0 INPUT/AEROMAGNETIC ANOMALY FOLLOW-UP

Upto date airborne anomaly lists are presented in Table 1  
- INPUT data and Table 2 - Aeromagnetic data.

##### 4.1 IR 6

The INPUT anomaly IR 6 is coincident with a basalt ridge. Followup included magnetics, two lines of VLF and geological reconnaissance (Plan D/MQ 01/137). Two strong surficial conductors were detected and are attributed to a conductive zone at the base of the basalt - with possible contributions from topography, culture and conductive zones within the basalt itself.

4.2 Upper Stowport (IR 4, 4044/2)

Four new grid lines were pegged in a northern extension of the grid to cover the INPUT feature (D/MQ 01/031). Geological mapping revealed intercalated sandstones and shales of the Burnie Formation with conformable intrusive basic igneous rocks. Disseminated sulphides (upto 5% of the rock) - pyrrhotite, pyrite and arsenopyrite were observed. Soil geochemistry on lines 2200N and 2100N indicated low order Sn (14 ppm max.) and  $WO_3$  (30 ppm max.) with slightly elevated Cu (510 ppm max.), Pb (330 ppm max.) and Zn (125 ppm max.) (Appendix 2).

Ground magnetics, max-min EM, gravity and one line of IP (2200N) were completed and presented in plans D/MQ 01/043, line 1800N, D/MQ 01/020, line 1900N D/MQ 01/027, line 2000N D/MQ 01/024, line 2100N D/MQ 01/028, line 2200N D/MQ 01/026, line 2300N D/MQ 01/029 and the baseline 1650E in D/MQ 01/025. Magnetic, conductive and gravity anomalies are summarized in Figure 1 (Plan D/MQ 01/032). Two anomalous zones are apparent however anomalies are rarely coincident and do not define a tight target. (Appendix 3).

A drillhole was collared at 2110N 1575E inclined at  $-50^\circ$  to  $240^\circ$  to test outcropping sulphide-bearing metasediments and metavolcanics/intrusives of the Burnie Formation at depth in the search for a replacement skarn body in volcanic units. A sequence of interbedded sediments and volcanics was intersected bearing minor sulphide. Drill results are summarized in Figure 2 (Plan D/MQ 01/042) and the drill log presented in Appendix 4. Assay results show low order Sn (8 ppm max.)

WO<sub>3</sub> (15 ppm max.) and Mo (10 ppm max.) with values of Cu (360 ppm max.), Pb (60 ppm max.) and Zn (240 ppm max.). Values of upto 580 ppm WO<sub>3</sub> were recorded in samples prepared by a grinding wheel. Split core gave values of 15 ppm WO<sub>3</sub> maximum.

No further work is recommended on this prospect.

5.0 CONCLUSIONS & RECOMMENDATIONS

Followup of aeromagnetic and INPUT anomalies on the Hayes Peak licence is now complete. These anomalies contain no economic potential.

Further exploration work will include the follow-up of stream sediment anomalies - Natone (WO<sub>3</sub>, Zn, minor Cu), Redwater (Sn, WO<sub>3</sub>, Mo) and Crane's Tin Prospect (Sn, WO<sub>3</sub>). The radiometric anomalies will be ground checked - Zone F (coincident with the Natone) and Zone C (coincident with the Crane's Tin Prospect) will be examined during stream followup. Minor stream sediment resampling, rock chip analysis and geological mapping is planned.

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## AIRBORNE ANOMALY LIST

PROSPECT . RAYES PEAK

TABLE 1

SURVEY : INPUT

Anomaly Number	Line and Fiducial	Name	Location (AMG)	Description	Follow-up to Date	Modelling and Interpretation	Geology	Future Work
4044/IR2	1081.57593 -1021.55980		407500E 5442500N	- Priority 2 INPUT - Excellent conductor	Max-min, mag, gravity	Carbonaceous unit in synformal structure	Carbonaceous Shales	None
4044/IR4	1021.55965 -1101.55631	Upper Stowport	406000E 5442000N	- Priority 1 INPUT and mag	Mag., max-min IP. gravity drill	PE shales	Basalt over PE carbonaceous shales.	
4044/IR6	1041.56578 -1021.56013		? 404500E? 5444500N?	- Priority 3 INPUT and mag - Related to Terrain	Ground Check	Paleoweathering Zone (PE Shales?)	Basalt over PE?	None

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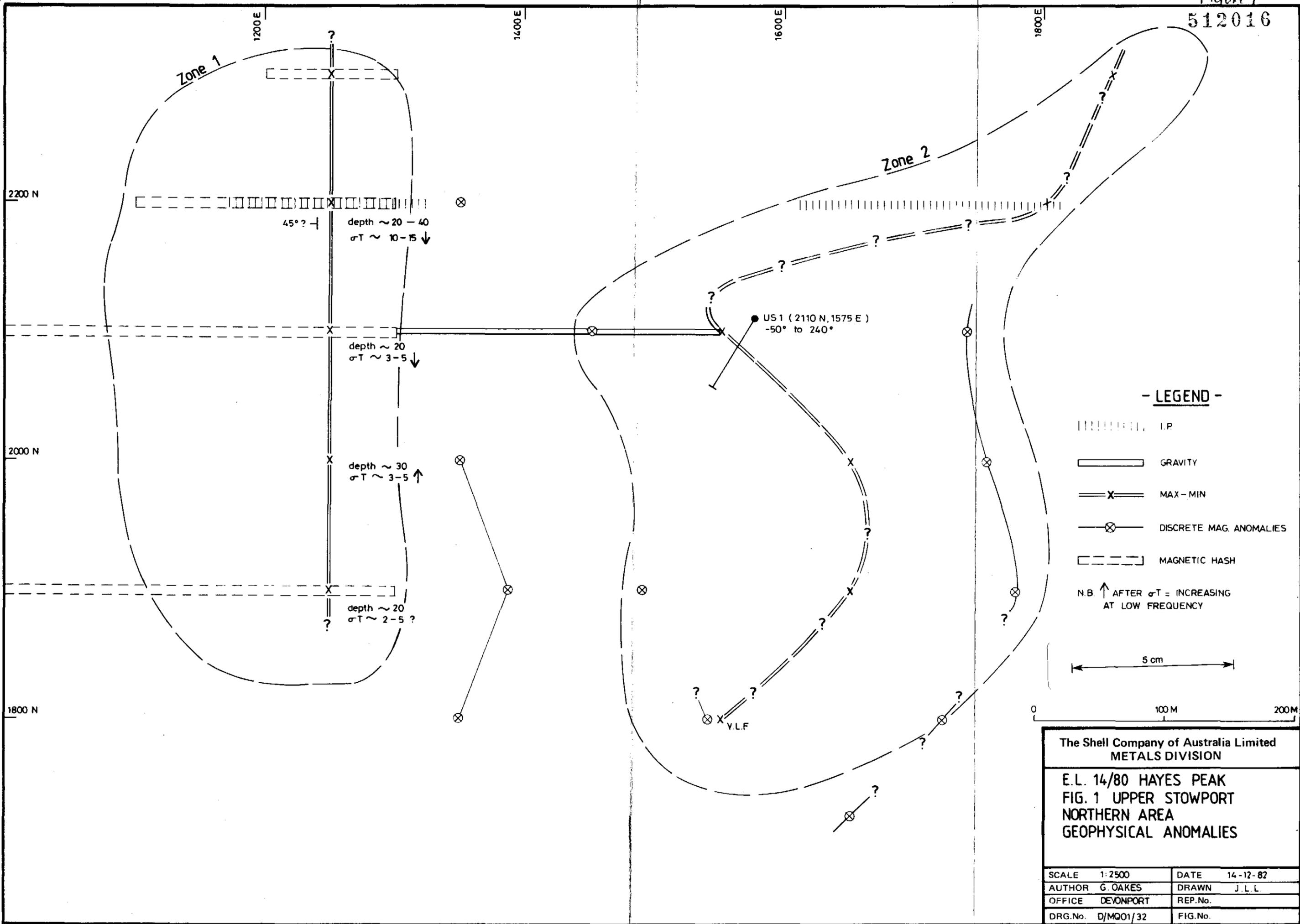
TABLE 2

AIRBORNE ANOMALY LISTPROSPECT : HAYE'S PEAKSURVEY : AEROMAG

Anomaly Number	Line and Fiducial	Name	Location (AMG)	Description	Follow-up to Date	Modelling and Interpretation	Geology	Future Work
4044/2	234.47912	Upper Stowport	405900E 5441900N	K' = 200, Priority 1 INPUT	Grid, mag, gravity, geochem, max-min, I.P. drill		Basalt over PE Carbonaceous Shale	None
4044/3		Dear Creek			Recce. Mag	Basalt or PE	Basalt over PE	None
4044/4	227.4323	Rawlings Hill	403400E 5443500N			Due to hill	Basalt over PE	None
4043/2		ELLIS CREEK SOUTH				Due to hill	Basalt over granite	None.

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- LEGEND -

- ||||||| I.P.
- ▭ GRAVITY
- ==X== MAX-MIN
- ⊗ DISCRETE MAG. ANOMALIES
- MAGNETIC HASH

N.B. ↑ AFTER  $\sigma_T$  = INCREASING AT LOW FREQUENCY

5 cm

0 100 M 200 M

The Shell Company of Australia Limited  
METALS DIVISION

E.L. 14/80 HAYES PEAK  
FIG. 1 UPPER STOWPORT  
NORTHERN AREA  
GEOPHYSICAL ANOMALIES

SCALE	1:2500	DATE	14-12-82
AUTHOR	G. OAKES	DRAWN	J. L. L.
OFFICE	DEVONPORT	REP.No.	
DRG.No.	D/MQ01/32	FIG.No.	

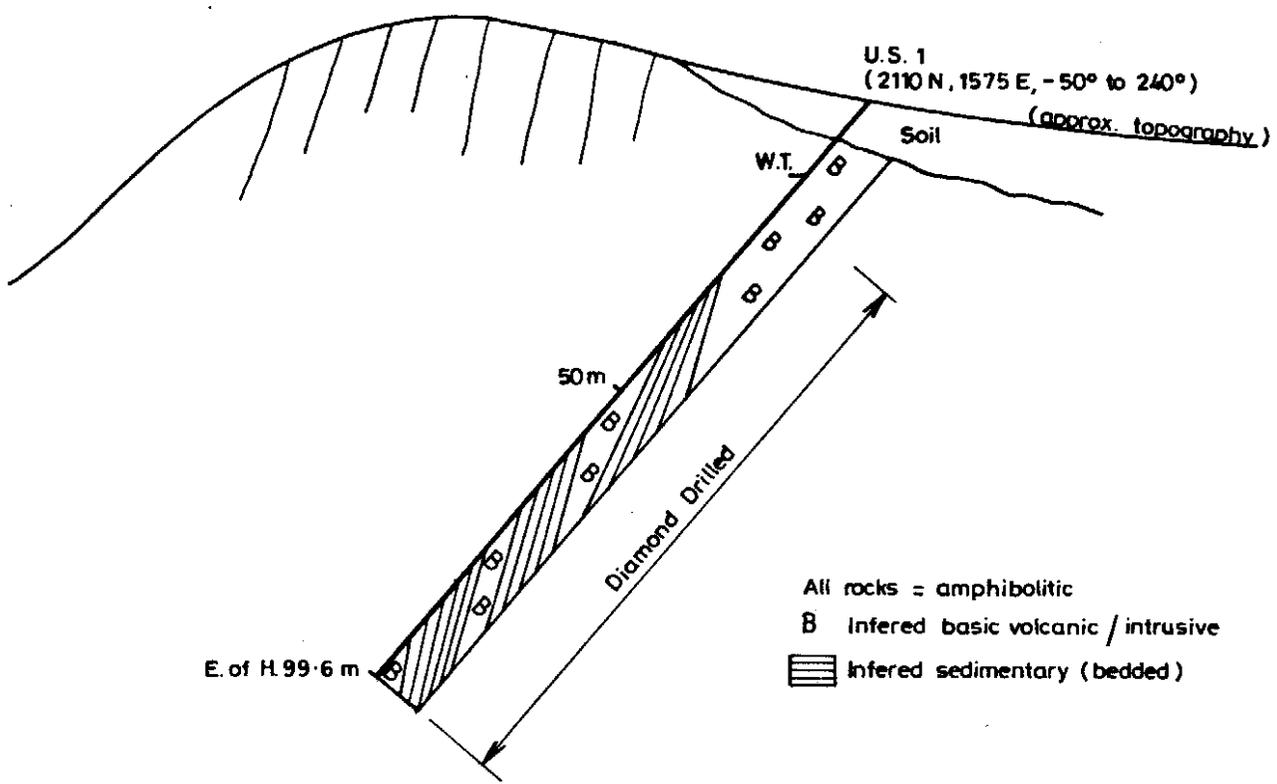
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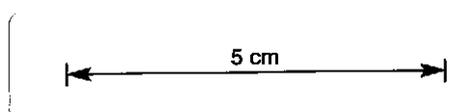
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Intercalated metasediments and metavolcanics  
of the Precambrian Bumie Formation  
(Dip 90° to 80° S), (Po., As.Py. + Py bearing)



All rocks = amphibolitic  
 B Inferred basic volcanic / intrusive  
 ▨ Inferred sedimentary (bedded)



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK UPPER STOWPORT U.S. 1 2110 N. 1575 E. - 50° to 240°	
SCALE 1:1000	DATE 26-1-83
AUTHOR P.R.	DRAWN J.L.L.
OFFICE D'PORT	REP.No.
DRG No C/MCO/42	FIG No

017

APPENDIX 1

Rock Sample Results - Hooper's Creek Prospect

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**LEGEND**



GRANITE



BASALT

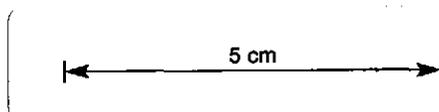
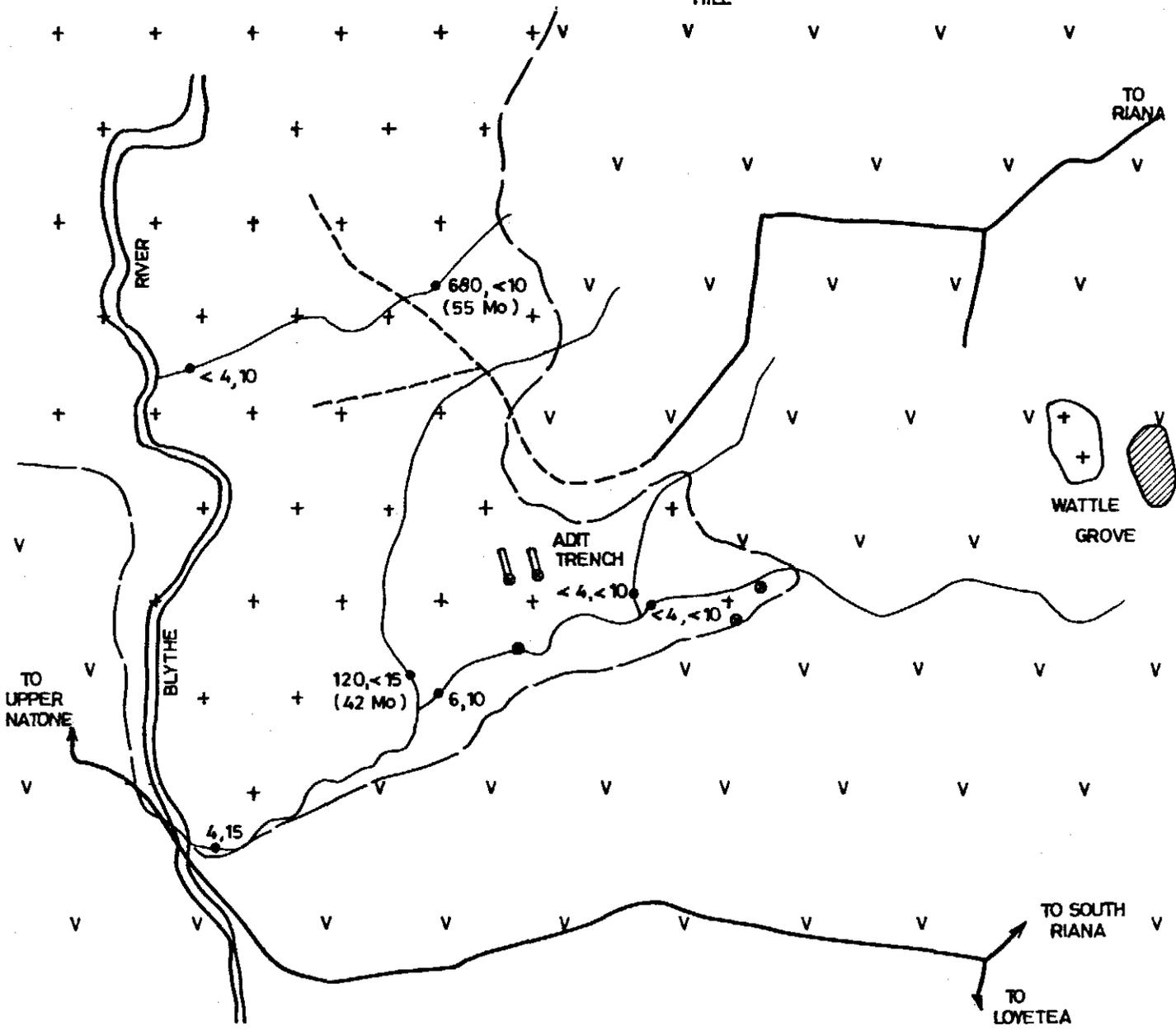


ROCK CHIP SAMPLE

120, < 15

Sn WO<sub>3</sub> STREAMS ppm

HOOPERS HILL



The Shell Company of Australia Limited  
METALS DIVISION

**E.L. 14/80 HAYES PEAK  
HOOPERS CREEK  
PROSPECT**

SCALE 1:20000	DATE 2-9-83
AUTHOR P.A.R.	DRAWN J.L.L.
OFFICE D'PORT	REP.No.
DRG No D/MQ01/50	FIG No

019



The Laboratory is registered by the National  
Association of Testing Authorities Australia. The  
results reported herein have been generated in  
accordance with the terms of registration. The  
equipment used has been calibrated against a  
standard and will be recalibrated against a  
standard.

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ANALYTICAL REPORT

JOB COM820953

O/N : 4153/MC04/PAR/67

Results in ppm

SAMPLE	Sn	W	Mo	Bi	As	Cu	Zn
5973	4	20	<4	<4	<2	6	12
5974	10	55	<4	<4	3	4	10
5975	6	25	<4	<4	2	4	6
5976	4	10	<4	<4	2	2	10
5977	8	10	<4	<4	<2	2	10
5978	14	15	<4	<4	3	6	16
5979	4	10	<4	<4	3	6	6
5980	6	15	<4	<4	4	<2	16
5981	6	<10	<4	<4	12	<2	6
5982	6	10	<4	<4	12	<2	6
5983	<4	15	<4	<4	<2	<2	8

Method of Analysis : Sn W Mo Bi As : XRF1  
Cu Zn : AAS1

APPENDIX 2

Upper Stowport Prospect

Soil Geochemistry on Lines 2100N & 2200N



ANALYTICAL REPORT

JOB COM822181

O/N : 4164/HQ04/PAR/77

Results in ppm

SAMPLE	Cu	Pb	Zn	Sn	W	As
2100N 1500E	80	30	50	4	<10	12
2100N 1475E	185	38	90	<4	<10	30
2100N 1450E	510	330	125	10	10	6
2100N 1425E	80	34	80	<4	<10	14
2100N 1400E	40	28	50	6	<10	9
2100N 1375E	34	26	48	<4	<10	12
2100N 1350E	20	24	90	6	<10	5
2100N 1325E	46	32	100	8	10	10
2100N 1300E	65	34	70	<4	15	24
2100N 1275E	50	36	60	6	15	18
2100N 1250E	60	44	75	<4	<10	16
2100N 1225E	75	55	80	8	10	14
2100N 1200E	155	50	85	<4	20	12
2100N 1175E	300	34	70	6	<10	16
2100N 1150E	90	32	90	<4	<10	16
2100N 1125E	80	32	100	4	<10	18
2100N 1100E	70	34	90	14	<10	14
2200N 1500E	60	36	70	6	<10	12
2200N 1475E	50	34	70	8	<10	14
2200N 1450E	80	30	60	<4	<10	12
2200N 1425E	42	28	70	4	<10	8
2200N 1400E	65	30	60	<4	<10	14
2200N 1375E	38	22	70	<4	<10	6
2200N 1350E	85	24	90	<4	30	9
2200N 1325E	32	22	90	8	<10	4



ANALYTICAL REPORT

JOB COM822181

O/N : 4164/MQ04/PAR/77

Results in ppm

SAMPLE	Cu	Pb	Zn	Sn	W	As
2200N 1300E	75	28	75	4	15	12
2200N 1275E	70	28	80	8	<10	12
2200N 1250E	24	24	60	8	<10	10
2200N 1225E	60	26	90	4	<10	14
2200N 1200E	70	32	85	4	<10	12
2200N 1175E	90	50	190	6	<10	7
2200N 1150E	70	55	170	<4	<10	8
2200N 1125E	55	50	125	6	<10	12
2200N 1100E	80	32	110	<4	<10	14

APPENDIX 3

Upper Stowport

Geophysical Results - Northern Grid Extensions

by

G. Oakes

**Date** 18th November, 1982.

**From** G. Oakes (BXN)

**To** P. Ruxton (BXN)

**Re:** UPPER STOWPORT - GEOPHYSICAL RESULTS  
(1900N - 2300N)

The geophysics at Upper Stowport has delineated 2 zones of possible interest. (Fig. 1).

Zone 1 is a good conductor striking grid north at 1250E on lines 1900N to 2300N. It has not been closed off to the north or south. It is associated with a very strong magnetic hash (indicating a shallow magnetic source) and a large IP/resistivity anomaly (although IP has only been done on line 2200N). The high conductivity of the zone implies that it represents either massive sulphides or black shales - it is almost certainly not caused by disseminated sulphides alone. There is no gravity response over this zone (line 2100N only has been surveyed), indicating that the most likely cause is black shale, with disseminated magnetite or pyrrhotite causing the magnetic hash.

Zone 2 represents a series of good conductors in the eastern half of the area - I'm not sure whether they represent a single, rather contorted body or if there are several bodies. Zone 2 includes a strong IP/resistivity anomaly on 2200N and a possible gravity anomaly on line 2100N. The gravity could reflect a formational effect (i.e. less dense rock units to either side of the conductor) and is dependent on the regional used and large terrain corrections, but it obviously upgrades the anomaly considerably, as it makes a black shale source less likely. There is possibly a fairly weak, patchy magnetic association with zone 2.

Neither zone has any significant geochemical response, which downgrades the area as both zones probably have relatively shallow sources. However, I feel that we cannot be certain as to what is causing the excellent IP and max-min anomalies in this and other areas (e.g. INPUT anomaly IH 5) until we have tested one with a drillhole - a strong IP/max-min anomaly with a gravity association could well represent massive sulphides (with low permeability shales preventing geochem response, due to low mobility of fluids?). For this reason, a drillhole at 1575E, 2110N and angled 50° to 30°W of grid S is proposed. Provision should be made to log the hole with downhole PEM, if the conductor is missed.

Zone 1 Anomalies

- 2300N, 1250E (max-min) - has been severely affected by topography (therefore quantitative interpretation is not worthwhile). Probably reflects a very shallow conductor, dipping west.
- 2300N, 1200-1300E (magnetics) - noisy magnetics, probably representing the northern limit of the aeromag. anomaly.
- 2200N, 1250E (max-min) - a broad conductor dipping of the order of  $45^{\circ}$ W and at a depth of 20-40 metres. A good conductivity-thickness of 10-15 mhos is obtained from the phasor diagrams of Ketola and Puranen and Strangeway, but it looks like the conductivity-thickness may decrease at lower frequencies, which is not a good sign.
- 2200N, 1100-1300E (magnetics) - A strong magnetic hash, indicating very shallow (1-2 metres) magnetic sources, probably of limited depth extent.
- 2200N, 1200E (IP) - An extremely conductive body, probably of high chargeability (low signal strength due to the high conductivity meant that few chargeability readings could be obtained in the main zone). The IP would agree with the westerly dip interpreted from the max-min, but no detailed modelling has been done at this stage.
- 2100N, 1250E (max-min) - Lack of coverage to the west and interference from the anomaly at 1500E on this line, makes interpretation uncertain, but there appears to be a shallow conductor (of the order of 20 metres) with a conductivity thickness of 3-5 mhos, and decreasing at low frequency.
- 2100N, 1000-1300E (magnetics) - Strong magnetic hash.
- 2000N, 1250E (max-min) - Interference from 1600E and large terrain corrections make interpretation uncertain, but it looks like a shallow conductor (30 metres) dipping west (?) and with a conductivity-thickness of 3-5 mhos and increasing at low frequency.
- 1900N, 1250E (max-min) - A fairly weak anomaly, possibly indicating a dip of  $45-60^{\circ}$ W, although lack of coverage to the west is a problem, as is the topography. A depth of 20 metres(?) and conductivity-thickness of 2-5 mhos is indicated.
- 1900N, 1000-1300E (magnetics) - Magnetic hash.

Zone 2 Anomalies

2100N, 1550E (max-min) - Interpretation of dip is difficult due to interference from the anomaly at 1200E - I could make a case for a dip either east or west, but I tend to prefer a broad body dipping west. This interpretation would fit the gravity and geological dip (note also that the line is almost parallel to geological strike in the area, hence any interpretations should be taken with a grain of salt). The conductor appears to be at a depth of 30-50m and have a conductivity-thickness of 3-5, and increasing at low frequency.

2100N, 1300-1550E (gravity) - Possibly a broad, 0.6 mgal gravity anomaly, but depends a lot on the regional (see Fig. 2). Could well be a formational anomaly (eg black shale of Zone 1 causing low to the west, with a similar effect to the east), but it is roughly coincident with the max-min anomaly (given that the line almost parallels strike) and therefore worth thinking about.

Modelling results (figs. 3-5) give a shallow ( $10^{\circ}$ ) dip to the west, probably reflecting the strike of the body. A good density contrast (eg. of the order of  $1.5 \text{ g/cm}^3$ ) and relatively thin and shallow (10-20m) body was obtained.

2100N, 1450E (magnetics) - A fairly noisy, low order anomaly, but apparently a discrete feature rather than noise alone. It is in the general area of interest from the gravity and max-min, but is narrower and slightly offset, so it probably has a different source.

Quick modelling yields a body at 20m depth and dipping  $40^{\circ}$  east. This dip seems reasonably accurate, again suggesting different sources for the max-min and magnetics. The body has a relatively low susceptibility ( $7000 \times 10^{-6}$  cgs units) and is of limited extent.

2000N, 1650E (max-min) - Broad conductor (or 2 conductors), dip uncertain, shallow (20m) and conductivity-thickness of 2-5(?) and increasing at low frequency.

1900N, 1650E (max-min) - Good conductor (conductivity-thickness of 7-10 and increasing at low frequency), fairly deep (probably greater than 60m and possibly as much as 100m) and possibly dipping east (although dip is not very certain). The interpreted depth reflects the low amplitude of the anomaly, hence the anomaly could be spurious (eg. just due to random noise). If any interest remains in the area after examining 2100N, 1550E more closely, this anomaly represents a good target, if it is real, and should be followed up by a deep penetration system that is minimally affected by terrain (eg. PEM or possibly IP).

- 1900N ]  
 2000N ] - 1775E (magnetics) - Small but discrete anomaly striking  
 2100N ] slightly west of grid north. Quick modelling (figs. 6-8) yields a body dipping  $50^{\circ}$  east from a depth of 30m. The modelling susceptibility would be reasonable for basalt, as is the location of the anomaly on the western edge of the mapped basalt, so basalt is the most likely source. The relatively large dip and noise-free nature of the data go against this interpretation to some extent, however.
- 1800N, 1550E (VLF) - Cross-over and level anomaly, possibly an extension of the conductor at 1900N, 1650E (although VLF only has a depth of penetration of the order of 30m).
- 220N, 1800E (max-min) - Possibly a cultural anomaly (fence), but probably a conductor at of the order of 30-40m depth and with a conductivity-thickness of 5-10 mhos, increasing at low frequency (although these estimates are not very reliable, and no dip information is available).
- 2200N, 1700E (IP) - Conductive, chargeable body, possibly dipping west. To the east of the IP anomaly at 1700E and west of the anomaly at 1200E, there is a near-surface zone of low chargeability and higher conductivity. This zone probably represents basalt cover over the highly chargeable and conductive units of the Burnie Formation.

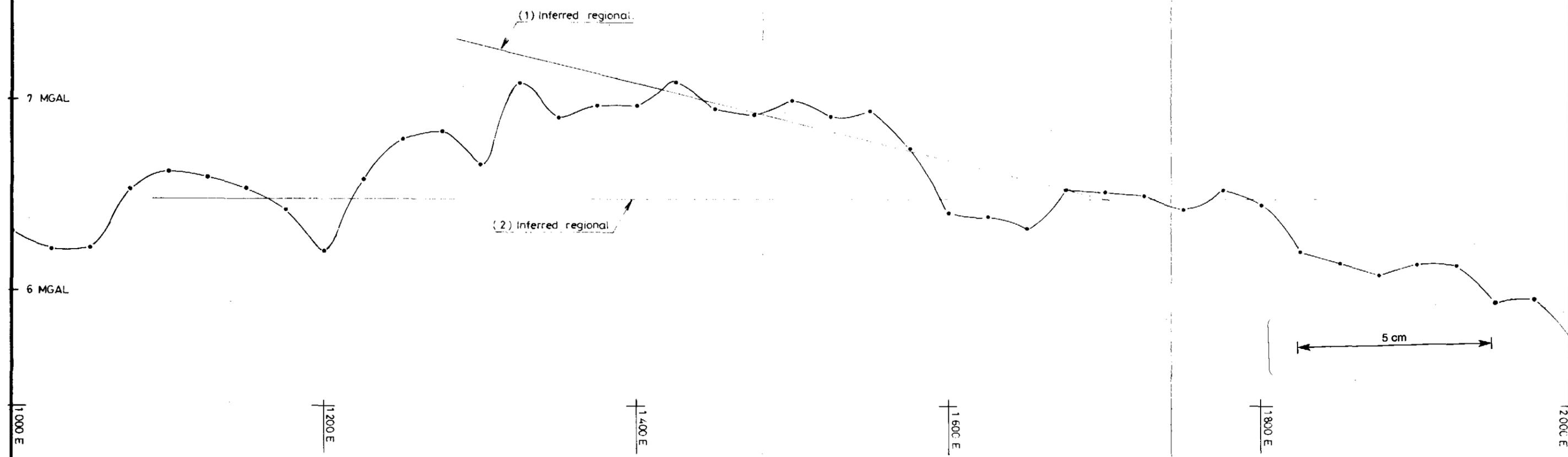
#### Future Work

1. A hole should be drilled at 1575E, 2110N and inclined at  $50^{\circ}$  to  $30^{\circ}$  W of grid south, to test the source of the IP/max-min/gravity results in this region. The hole should be logged for IP and resistivity; and surveyed with downhole PEM or SIROTEM if the conductor is missed.
2. If any interest remains in the area after this drilling, IP or PEM and gravity represent the best tools for future exploration and the siting of further holes. The terrain and possibly the depth of the target on 1900N, limits the usefulness of max-min in the area. PEM may be worthwhile instead of IP, if a crew is available, as it is not affected by terrain and is more useful for targetting drillholes - although the logistics of laying PEM loops may be more difficult than IP.

028

512029

- (1) Contact at ~1200 E with less dense material to W  
 ⇒ Zones 1 and 2 of no interest (no anomaly on Zone 2)
- (2) No anomaly on Zone 1  
 Local anomaly ~2100 N, 1450-1550 E (dip W?),  
 in which case Zone 2 is interesting.



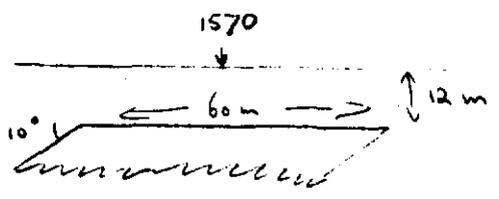
(terrain corrected)  $\rho = 2.7 \text{ g/cm}^3$

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK UPPER STOWPORT LINE 2100 N BOUGUER GRAVITY	
SCALE 1:2500	DATE 17-11-82
AUTHOR G. CAKES	DRAWN J. L. L.
OFFICE DEVONPORT	REP.No.
DRG No D/MQ 01/030	FIG.No. 2

GRAND WEDGE MODEL

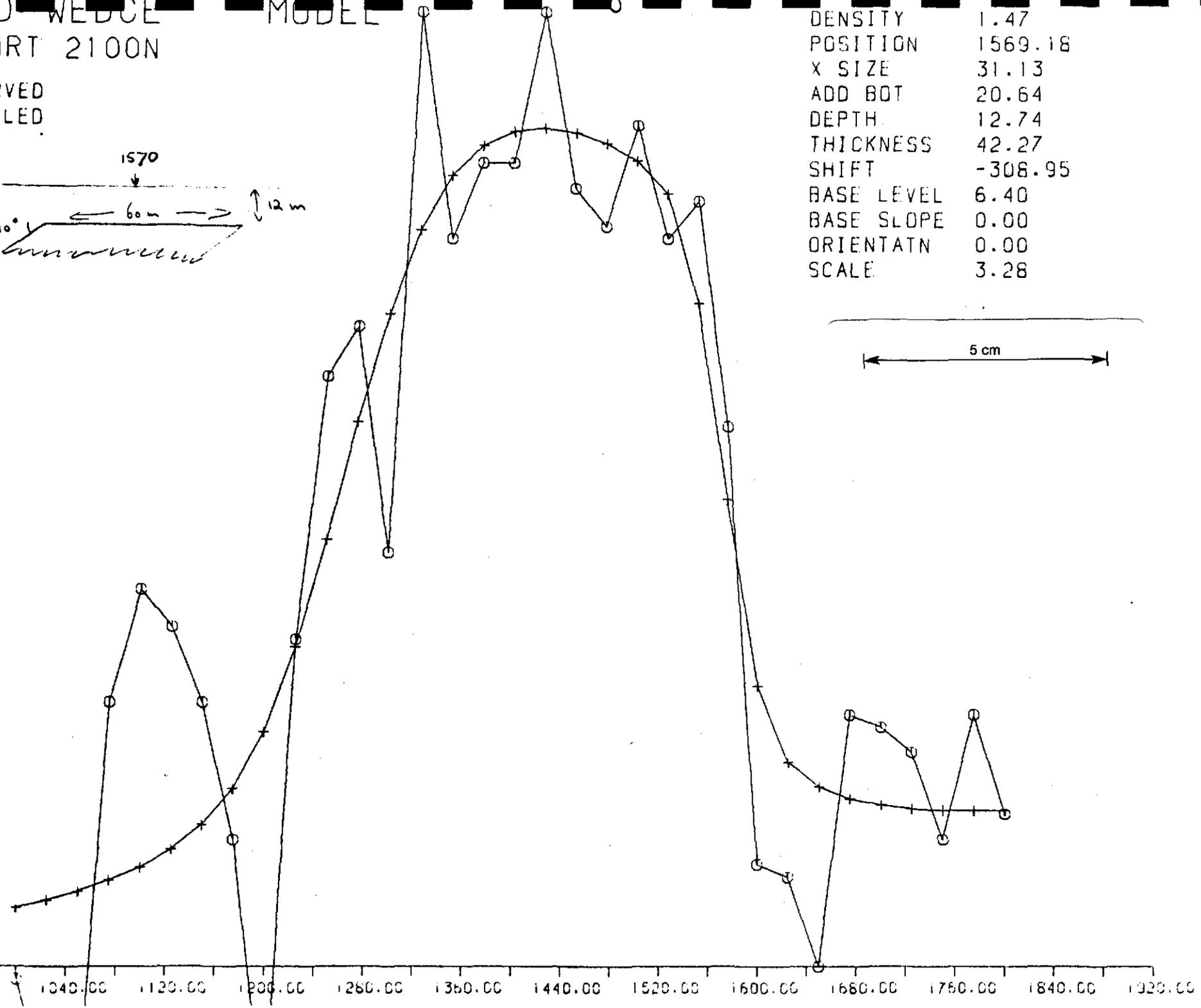
STOWPORT 2100N

○ OBSERVED  
+ MODELLED



DENSITY	1.47
POSITION	1569.18
X SIZE	31.13
ADD BOT	20.64
DEPTH	12.74
THICKNESS	42.27
SHIFT	-308.95
BASE LEVEL	6.40
BASE SLOPE	0.00
ORIENTATN	0.00
SCALE	3.28

5 cm



512030

029

GRAMOD WEDGE  
STOWPORT 2100N

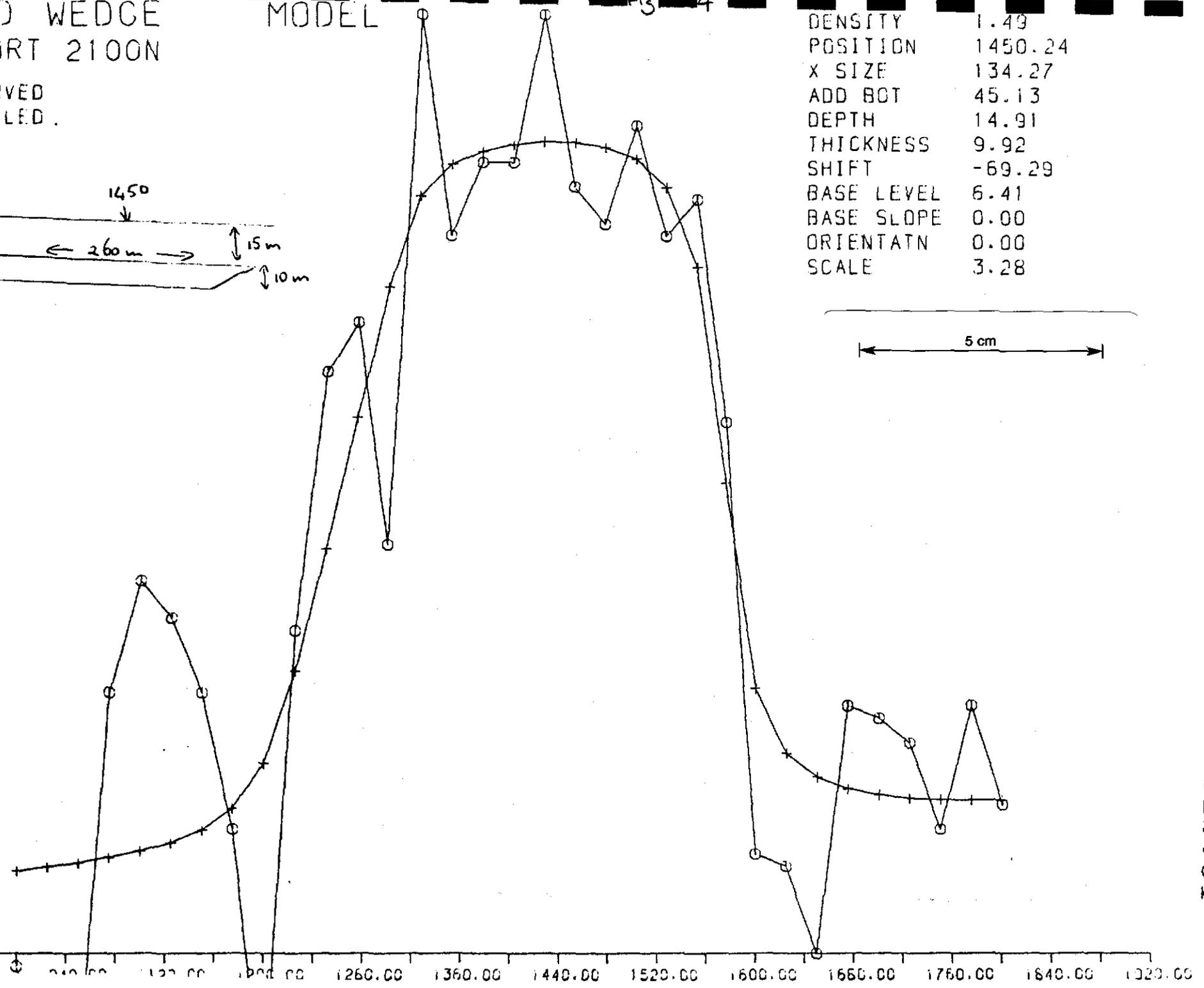
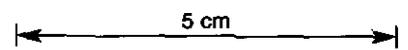
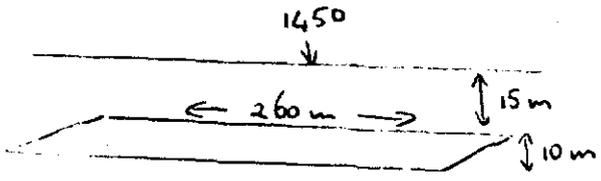
MODEL

Fig 4

030

DENSITY	1.49
POSITION	1450.24
X SIZE	134.27
ADD BOT	45.13
DEPTH	14.91
THICKNESS	9.92
SHIFT	-69.29
BASE LEVEL	6.41
BASE SLOPE	0.00
ORIENTATN	0.00
SCALE	3.28

○ OBSERVED  
+ MODELLED



512031

GRAND WEDGE  
STOWPORT 2100N

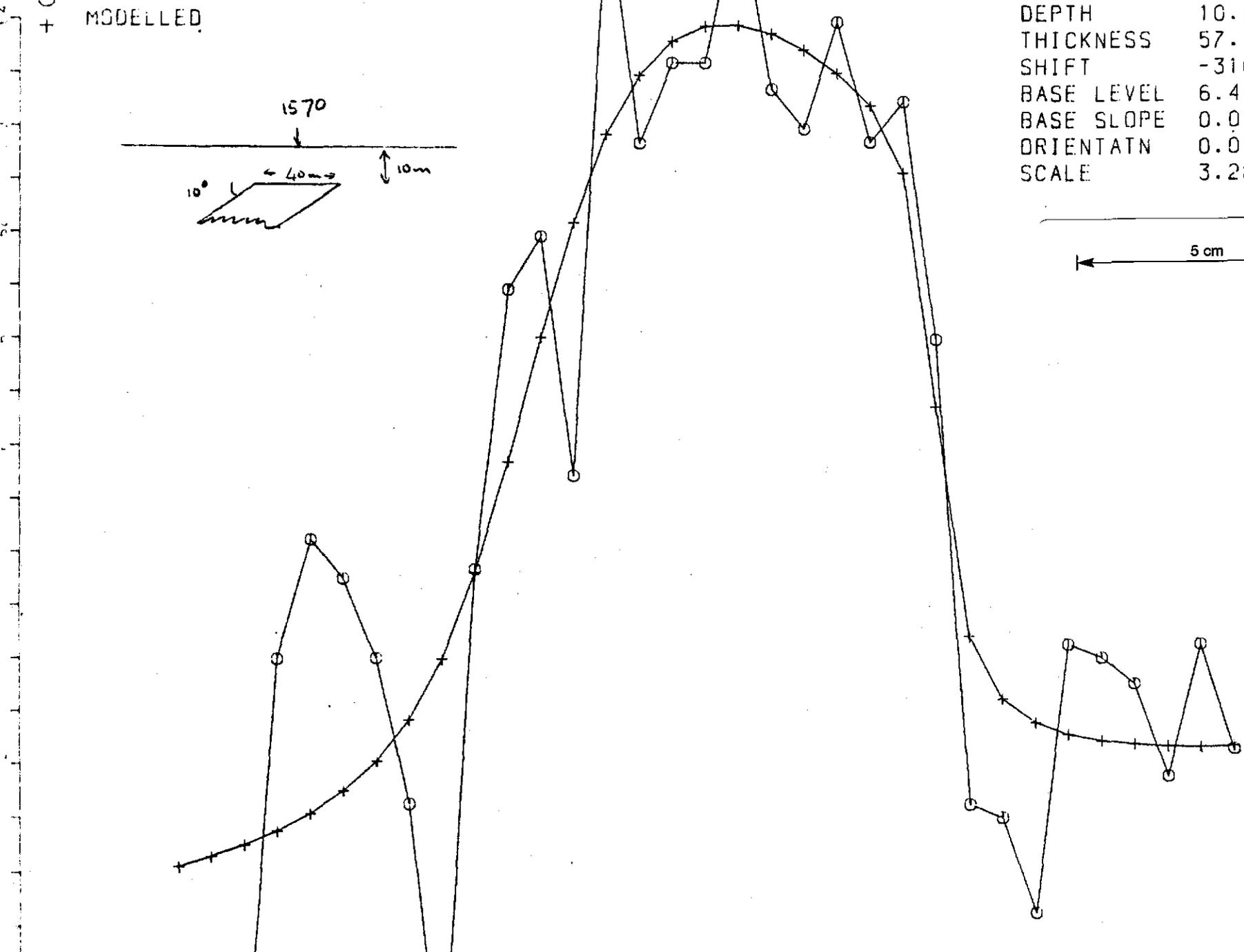
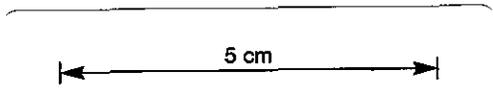
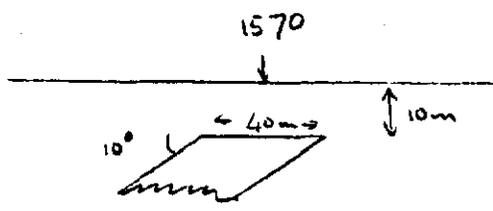
MODEL

Fig 5

031

DENSITY	1.49
POSITION	1572.21
X SIZE	19.82
ADD BGT	22.94
DEPTH	10.05
THICKNESS	57.31
SHIFT	-310.56
BASE LEVEL	6.40
BASE SLOPE	0.00
ORIENTATN	0.00
SCALE	3.28

⊙ OBSERVED  
+ MODELLED

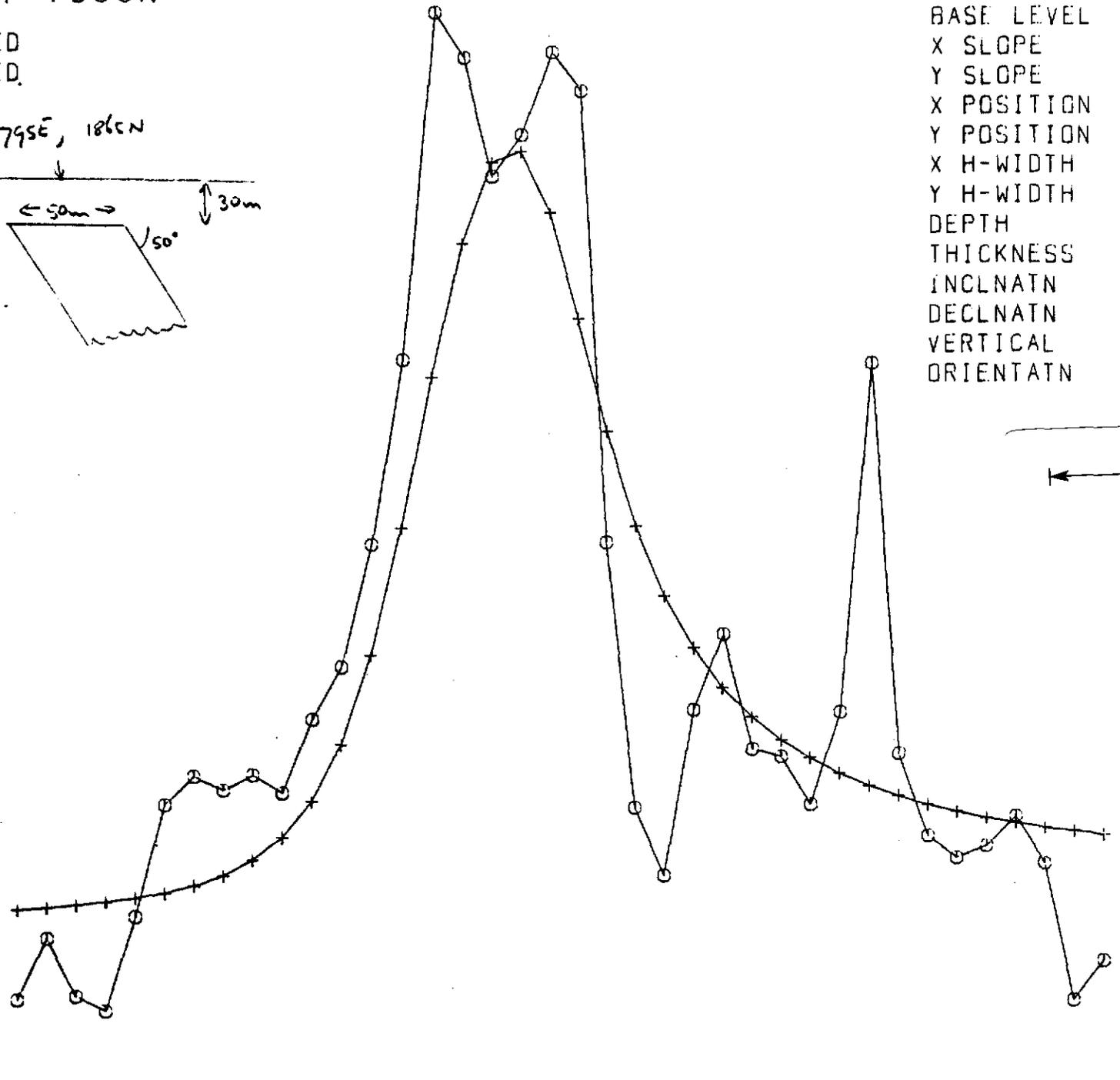
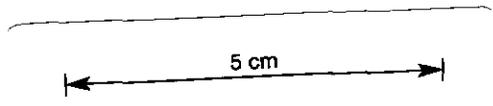
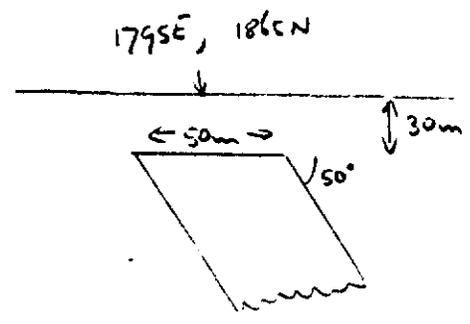


512032

STOWPORT 1900N

○ OBSERVED  
+ MODELLLED

MAGNET	262.00
DIP	51.40
BASE LEVEL	62302.00
X SLOPE	0.10
Y SLOPE	0.08
X POSITION	1795.00
Y POSITION	1865.00
X H-WIDTH	23.50
Y H-WIDTH	296.00
DEPTH	29.60
THICKNESS	292.00
INCLNATN	-70.00
DECLNATN	130.00
VERTICAL	0.00
ORIENTATN	10.00



512033

MAGMOD PRISM  
STOWPORT 2000N

MODEL

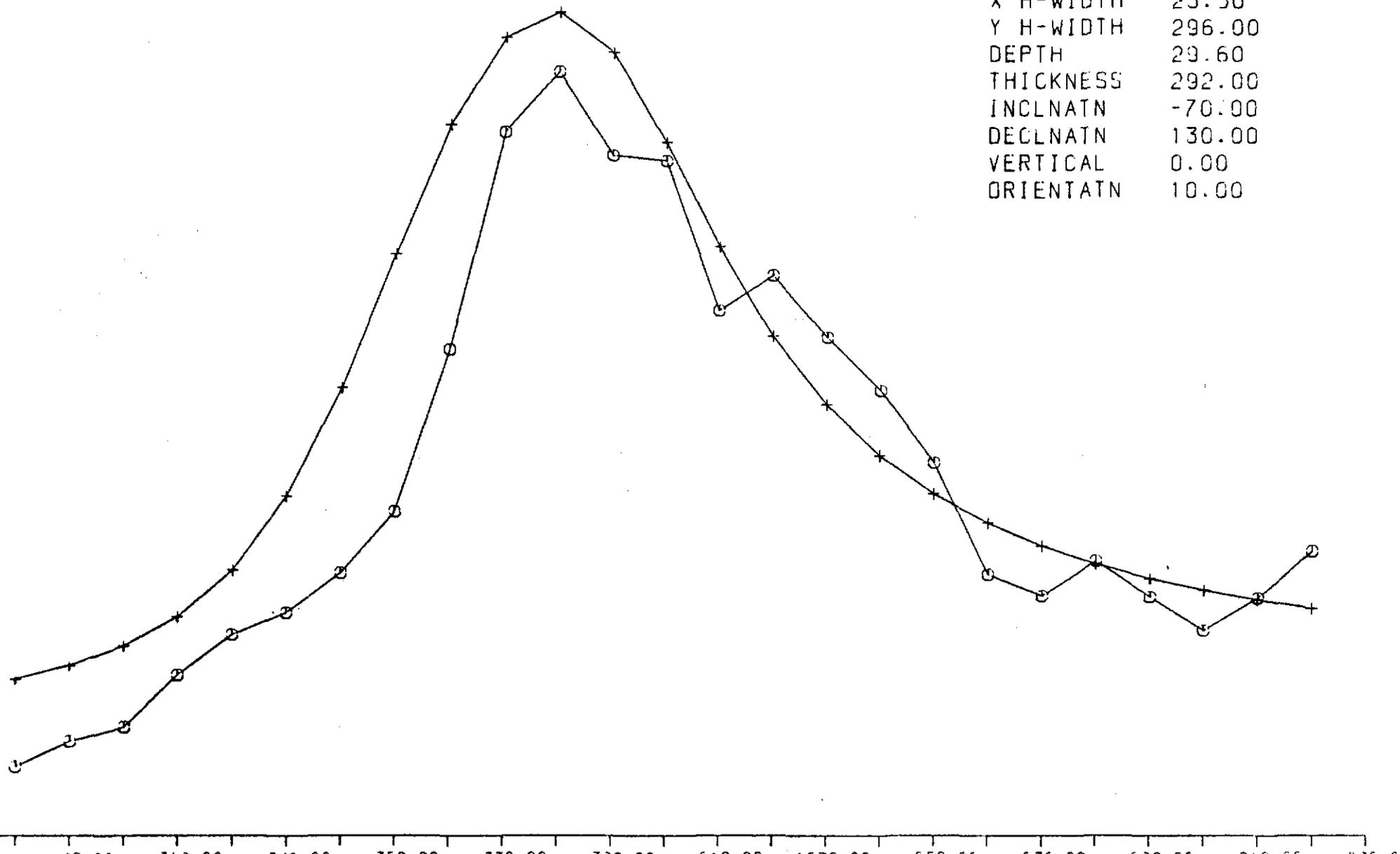
Fig 7

⊕ OBSERVED  
+ MODELLED

MAGNET 262.00  
DIP 51.40  
BASE LEVEL 62302.00  
X SLOPE 0.10  
Y SLOPE 0.08  
X POSITION 1795.00  
Y POSITION 1865.00  
X H-WIDTH 23.50  
Y H-WIDTH 296.00  
DEPTH 29.60  
THICKNESS 292.00  
INCLNATN -70.00  
DECLNATN 130.00  
VERTICAL 0.00  
ORIENTATN 10.00

512034

033



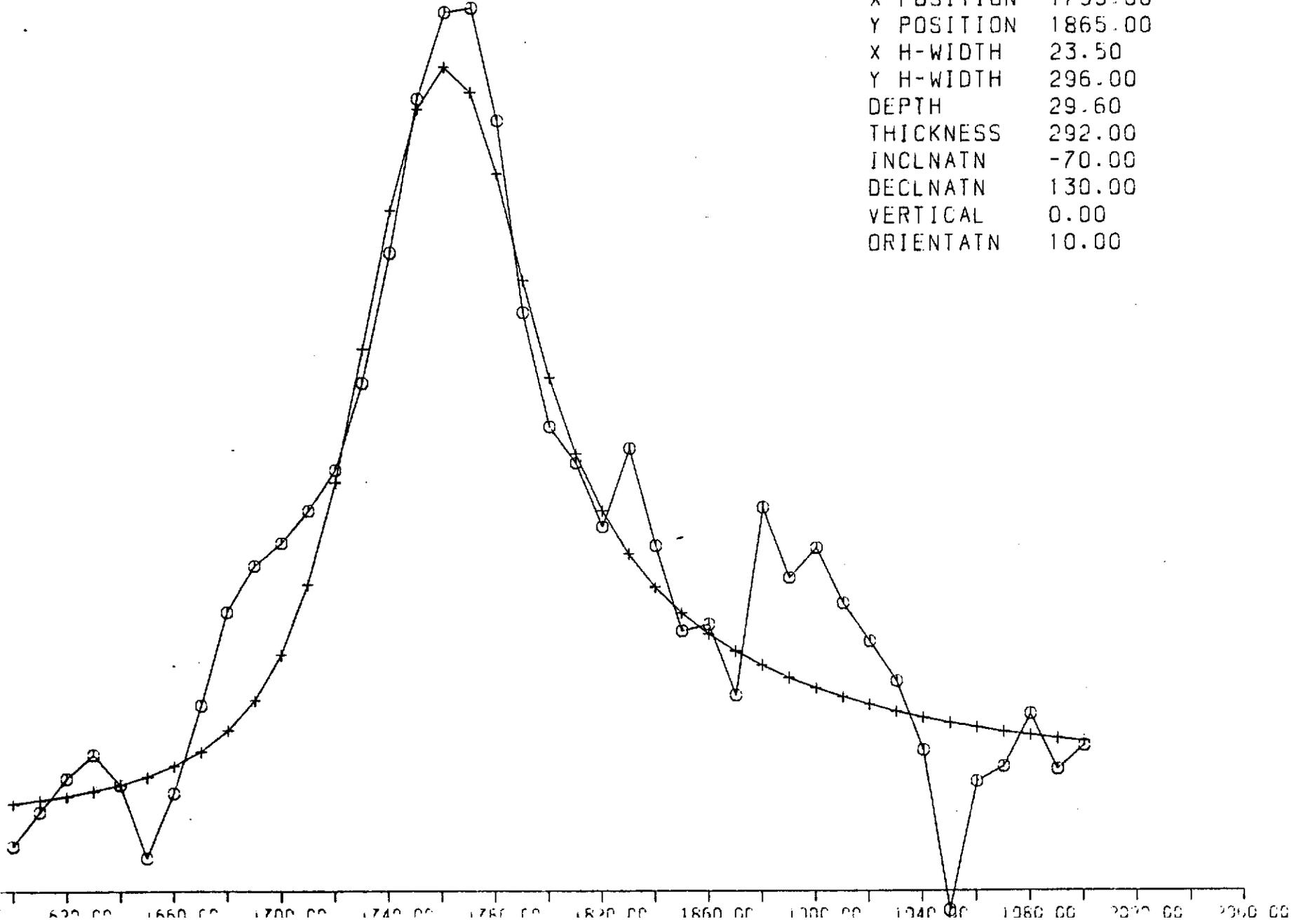
MAGMOD PRISM  
STOWPORT 2100N

MODEL

Fig 8

○ OBSERVED  
+ MODELLED

MAGNET 262.00  
DIP 51.40  
BASE LEVEL 62302.00  
X SLOPE 0.10  
Y SLOPE 0.08  
X POSITION 1795.00  
Y POSITION 1865.00  
X H-WIDTH 23.50  
Y H-WIDTH 296.00  
DEPTH 29.60  
THICKNESS 292.00  
INCLNATN -70.00  
DECLNATN 130.00  
VERTICAL 0.00  
ORIENTATN 10.00



512035

034

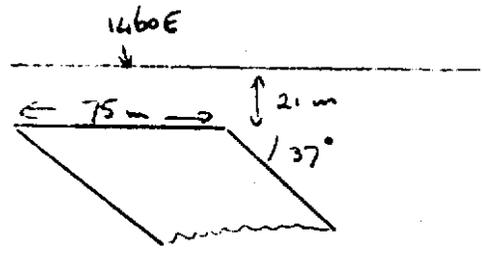
RIGHTED PRISM MODEL

STGWPORT 2100N

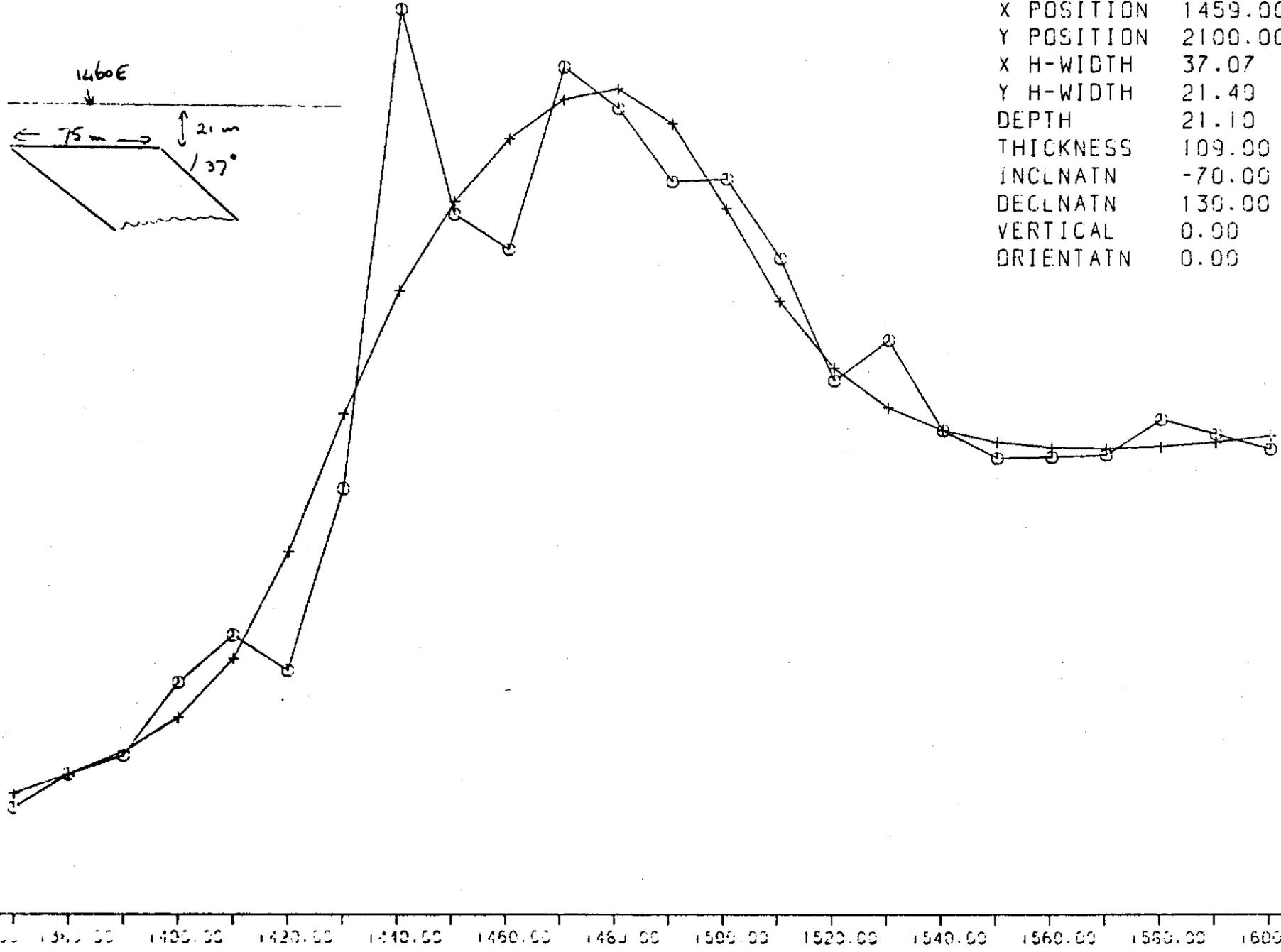
035

Fig. 9

o OBSERVED  
+ MODELLED



MAGNET	438.64
DIP	35.80
BASE LEVEL	61369.55
X SLOPE	2.15
Y SLOPE	0.00
X POSITION	1459.00
Y POSITION	2100.00
X H-WIDTH	37.07
Y H-WIDTH	21.49
DEPTH	21.10
THICKNESS	109.00
INCLNATN	-70.00
DECLNATN	130.00
VERTICAL	0.00
ORIENTATN	0.00



512036

APPENDIX 4

Upper Stowport Prospect

Drill Hole US 1 - Drill Log

512038

DRILL LOG SHEET

PROJECT : HAYES PEAK/UPPER STOWPORT

Hole No : US 1

COLLAR CO-ORDINATES : 2110N 1575E

LOCATION CODE : MQ 01

COLLAR R.L. : 240m O.D.

LOCATION : UPPER STOWPORT MAP/PHOTO REFERENCE : 54 402 210N 406 160 E	DATE STARTED	29-11-82	HOLE SIZE		FROM	TO	TOTAL	CORE STORAGE	DEVONPORT				
	DATE FINISHED	4-12-82	NON CORE	TRICONED	0	6	6m	NO OF TRAYS	10				
	TOTAL DEPTH	99-60M						SAMPLE STORAGE	DEVONPORT				
HOLE SURVEY DATA			LOGGED BY	P. A. RUXTON	CORE	NQ	18-00	54-20	36-2m	ASSAY LAB.	COMLABS		
INSTRUMENT :			CONTRACTOR	OVERLAND DRILLING CO.		BQ	54-20	99-60	45-4m	ASSAY REPORTS	DEVONPORT		
DEPTH	INSTRUMENT		ACID ETCH		REMARKS	RIG	WARMAN 250						
COLLAR	INCL.	AZ.	INCL.	AZ.	CLINO / COMPASS	DRILL CREW	W. EVERS DEN B. LOVELL	CASING	6" PVC	0	6	6m	MIN. & PET. LAB.
	-50°	240°						4" PVC	0	18	18m		MIN. & PET. REPORTS
								CASING LEFT					

GRAPHIC / LETTER SYMBOL LOGGING KEY

	Medium grained schist Meta volcanic		Pyrrhotite		Pyrite
	Fine to coarse grained schist Meta sediment (bedded)		Arsenopyrite		
			Hematite	STRUCTURE / ALTERATION CODE	
			Limonite	B BEDDING	O OXIDATION
			Chalcopyrite	J JOINTING	V VEIN
				C CLEAVAGE	
				F FOLIATION	
				sh SHEARING	
				q QUARTZ VEINS	

DRILLING SUMMARY : This hole was drilled to test a combined max-min E.M. conductor and a broad gravity anomaly. Dip constraints from geophysical modelling tentatively suggested a westerly dipping source. Precambrian basic volcanics and shales of the Burnie Formation outcrop 20m south of the drill site. A steep dip of 80° west to vertical is recorded from these rocks. Vein related pyrite, pyrrhotite and arsenopyrite occurs. The hole was designed to test for a Sn-W-bearing replacement sulphide body within Precambrian basic igneous rocks. A sequence of metasomatized basic igneous and sedimentary rocks was intersected with minor sulphide (<2%).

038

From	To	Inter'l (m)	Core Rec'd	% Rec'd	Sample NO	Grap'c Log	Assays								Magnetic Susceptibility			% Estimates			Core Angles			Alt.	T.B. P.B.	Description	
							Sn	W	Cu	Pb	Zn	Ni	As	Mo	Po			B	V	F							
0	2	2			9162		<4	<10	170	12	30	120	22	4	450									0	SOIL - Large chips of weathered aphyric basalt Hm/Lim staining common, red soil, Po along fractures		
2	4	2			9163		10	15	150	<4	75	175	12	<4	38									0	SOIL - Weathered basalt chips, Hm/Lim coatings Po in fractures (<1%) Precambrian volcanics (i.e. metasomatically altered by Housatop granite intrusion)		
4	6	2			9164		<4	10	200	<4	170	210	4	<4	50									0	SOIL - Aphyric basalt - minor Hm/Lim coatings. Mottled weathered basalt.		
6	8	2			9165		<4	20	85	<4	55	125	2	<4	120											BASALT - Aphyric basalt chips, Tr po in fractures few weathered chips	
8	10	2			9166		<4	10	100	<4	55	130	<2	<4	220											BASALT - Aphyric basalt - large chips, Tr po + Hm/Lim on fractures. Drilling problems - ground very broken, rod-binding.	
10	12	2			9167		<4	<10	65	<4	80	130	10	<4	62											BASALT/DOLERITE - Black homogenous dolerite/basalt.	
12	14	2	WT		9168		4	15	65	<4	90	135	9	<4	54											BASALT/DOLERITE - Medium grained basic volcanic/intrusive - dolerite v hard WATER TABLE 12m	
14	16	2			9169		<4	<10	70	<4	50	115	7	<4	80											BASALT/DOLERITE - Greenish/black Amphibole and Po in fractures and veins Tr quartzite fragments	
16	18	2			9170		<4	<10	65	<4	46	105	10	<4												BASALT/DOLERITE - Partly silicified - (as above)	
18.00	20.5	2.5	2.4	95	19171		CORE DRILLING 18m																				18m - NQ coring.
							<4	20	34	<4	70	120	14	<4	50												18.1-29.3 Dolerite(?) Grey/brown schist composed of amphibole in random aggregates with interstitial plagioclase - Probably a highly metasomatized basic volcanic rock. Actinolite veins and fracture fills common associated Po (Py) Brecciation also common. Schist contains disseminated Po <2% + Tr tourmaline(?)
20.5	22.7	2.2	2.2	100	19172		<4	15	18	<4	60	100	20	<4	40											20.6 Carbonate vein/fracture fill 25° to CA	
															40												
22.7	23.0	0.3	0.3	100	19173		<4	20	120	<4	90	195	16	<4	45												
23.0	25.5	2.5	2.5	100	19174		<4	15	48	<4	80	110	4	<4	40												23.2 Good example of characteristic blue colouration surrounding actinolite fracture fills and veins.
															55												

512039

HOLE NO : US 1







**The Shell Company of Australia Limited**

Incorporated in Victoria, Registered User of Shell and other Trade Marks



**METALS DIVISION**

Tasmanian Office,  
30 Mersey Main Road,  
Spreyton,  
Tasmania 7310

Your ref

Our ref

Date 14th December, 1983.

The Director of Mines,  
Department of Mines,  
P.O. Box 56,  
ROSNY PARK. Tas. 7018.

P.O. Box 860,  
Devonport,  
Tasmania 7310  
Telephones:  
(004) 27 2296  
(004) 27 2008  
Telex: AA 59069

OFFICE OF MINES  
REF NO 11,874/33  
10/12/83  
VT  
PLK

Dear Sir,

Re: Exploration Licence 14/80 - Hayes Peak,  
N.W. Tasmania.

Thank you for your letter dated the 1st December, 1983 confirming the cancellation of the above licence.

No further work has been carried out since the investigations reported in Dr. P. Ruxton's report of 2nd September, 1983.

Please accept this report as our final report for the examination of the area.

Yours faithfully,

**R.G. WRIGHT**  
Supervising Geologist

83-2042

c.c. BXHE/AHO

U of M. A.D.	C.G.	E.O.	D.S. / E
<i>ML</i>			Registrar
Received Answered	6 OCT 1983		E & IL
DEPT. OF MINES			
REF. NO. 9161/83			

LIST OF PLANS

<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
D/MQ 01/046	Geology of Riana/Hayes Peak - Anomaly Map - Hayes Peak	1:50,000
D/MQ 01/033	Hayes Peak - Stream Sediment Survey - Area A - Sample Location	1:20,000
D/MQ 01/034	Hayes Peak - Stream Sediment Survey - Area B - Sample Locations	1:20,000
D/MQ 01/035	Hayes Peak - Stream Sediment Survey - Area C - Sample Locations	1:20,000
D/MQ 01/036	Hayes Peak - Stream SEDiment Survey - Area A - Tin & Tungsten	1:20,000
D/MQ 01/039	Hayes Peak - Stream Sediment Survey - Area B - Tin & Tungsten	1:20,000
D/MQ 01/047	Hayes Peak - Stream Sediment Survey - Area C - Tin & Tungsten	1:20,000
D/MQ 01/037	Hayes Peak - Stream Sediment Survey - Area A - Molybdenum & Copper	1:20,000
D/MQ 01/040	Hayes Peak - Stream Sediment Survey - Area B - Molybdenum & Copper	1:20,000
D/MQ 01/048	Hayes Peak - Stream Sediment Survey - Area C - Molybdenum & Copper	1:20,000
D/MQ 01/038	Hayes Peak - Stream Sediment Survey - Area A - Lead & Zinc	1:20,000
D/MQ 01/041	Hayes Peak - Stream Sediment Survey - Area B - Lead & Zinc	1:20,000
D/MQ 01/049	Hayes Peak - Stream Sediment Survey - Area C - Lead & Zinc	1:20,000
D/MQ 01/137	INPUT Anomaly 4044/IR 6 - Initial Ground Check	1:2,500
D/MQ 01/031	Upper Stowport Anomaly 4044/2 - Revised Geology & Cultural Map	1:2,500
D/MQ 01/043	Upper Stowport Anomaly - Ground Magnetics - Stacked Profiles	1:2,500
D/MQ 01/020	Upper Stowport - Line 1800N - Geophysics	1:2,500
D/MQ 01/027	Upper Stowport - Line 1900N - Geophysics	1:2,500
D/MQ 01/024	Upper Stowport - Line 2000N - Geophysics	1:2,500
D/MQ 01/028	Upper Stowport - Line 2100N - Geophysics	1:2,500
D/MQ 01/026	Upper Stowport - Line 2200N - Geophysics	1:2,500
D/MQ 01/029	Upper Stowport - Line 2300N - Geophysics	1:2,500
D/MQ 01/025	Upper Stowport - Line 1650E - Geophysics	1:2,500

42715	1	42774	5226	42833	5291	42892	5750	42951	6602	43010	6731
42716	2	42775	5227	42834	5292	42893	5751	42952	6603	43011	6732 ✓
42717	3	42776	5228	42835	5293	42894	5752	42953	6604	43012	7001
42718	4	42777	5229	42836	5294	42895	5753	42954	6605	43013	7002
42719	5	42778	5230	42837	5295	42896	5754	42955	6606	43014	7003
42720	6	42779	5231 ✓	42838	5296	42897	5755	42956	6607	43015	7004
42721	7	42780	5232 ✓	42839	5297	42898	5756	42957	6608	43016	7005
42722	8	42781	5235 ✓	42840	5298	42899	5757	42958	6609	43017	7006
42723	9	42782	5236	42841	5299	42900	5758	42959	6610	43018	7007
42724	10	42783	5237	42842	5300 ✓	42901	5759	42960	6611	43019	7008
42725	11	42784	5238	42843	5701	42902	5760	42961	6612	43020	7009
42726	12	42785	5239	42844	5702	42903	5761	42962	6613	43021	7010
42727	13	42786	5240	42845	5703	42904	5762	42963	6614 ✓	43022	7011
42728	14	42787	5241	42846	5704	42905	5763	42964	6615 ✓	43023	7012
42729	15	42788	5242	42847	5705	42906	5764	42965	6618 ✓	43024	7013
42730	16	42789	5243	42848	5706	42907	5765	42966	6619	43025	7015
42731	17	42790	5244	42849	5707	42908	5766	42967	6620	43026	7035
42732	18	42791	5245	42850	5708	42909	5767	42968	6621	43027	7036
42733	19	42792	5246	42851	5709	42910	5768	42969	6622	43028	7037
42734	20	42793	5247	42852	5710	42911	5769	42970	6623	43029	7038
42735	21	42794	5248 ✓	42853	5711	42912	5770	42971	6624		
42736	22	42795	5249 ✓	42854	5712	42913	5771	42972	6625		
42737	23	42796	5251 ✓	42855	5713	42914	5772	42973	6626		
42738	24	42797	5253 ✓	42856	5714	42915	5773	42974	6627		
42739	25	42798	5255 ✓	42857	5715	42916	5774	42975	6628		
42740	26	42799	5256	42858	5716	42917	5775	42976	6629 ✓		
42741	27	42800	5257	42859	5717	42918	5776	42977	6630 ✓		
42742	28	42801	5258	42860	5718	42919	5777	42978	6633		
42743	30	42802	5259	42861	5719	42920	5778	42979	6634 ✓		
42744	31	42803	5260	42862	5720	42921	5779	42980	6635 ✓		
42745	33	42804	5261	42863	5721	42922	5780	42981	6701		
42746	34	42805	5262	42864	5722	42923	5781	42982	6702		
42747	35	42806	5263	42865	5723	42924	5782	42983	6703		
42748	36	42807	5264	42866	5724	42925	5783	42984	6704		
42749	37	42808	5265	42867	5725	42926	5784	42985	6705		
42750	38	42809	5266	42868	5726	42927	5785	42986	6706		
42751	39	42810	5267	42869	5727	42928	5786	42987	6707		
42752	40	42811	5268	42870	5728	42929	5787	42988	6708 ✓		
42753	41	42812	5269	42871	5729	42930	5788	42989	6710		
42754	42	42813	5270 ✓	42872	5730	42931	5789	42990	6711		
42755	43	42814	5272	42873	5731	42932	5790	42991	6712		
42756	44	42815	5273	42874	5732	42933	5791	42992	6713		
42757	45	42816	5274	42875	5733	42934	5792	42993	6714		
42758	46	42817	5275	42876	5734	42935	5793	42994	6715		
42759	47	42818	5276	42877	5735	42936	5794	42995	6716		
42760	50	42819	5277	42878	5736	42937	5795	42996	6717		
42761	51	42820	5278	42879	5737	42938	5796	42997	6718		
42762	52	42821	5279	42880	5738	42939	5797	42998	6719		
42763	53	42822	5280	42881	5739	42940	5798	42999	6720		
42764	54	42823	5281	42882	5740	42941	5799 ✓	43000	6721		
42765	55	42824	5282	42883	5741	42942	5800 ✓	43001	6722		
42766	56	42825	5283	42884	5742	42943	5901	43002	6723		
42767	57	42826	5284	42885	5743	42944	5902	43003	6724		
42768	5217	42827	5285	42886	5744	42945	5903	43004	6725		
42769	5219	42828	5286	42887	5745	42946	5904	43005	6726		
42770	5220	42829	5287	42888	5746	42947	5905	43006	6727		
42771	5221 ✓	42830	5288	42889	5747	42948	5906	43007	6728		
42772	5222 ✓	42831	5289	42890	5748	42949	5907 ✓	43008	6729		
42773	5225	42832	5290	42891	5749	42950	6601	43009	6730		

512045

43012  
7000  
36012

43026  
7035  
35991

42769  
5219  
37550

42742  
5800  
37142

37042  
5901  
42943

42750  
6601  
36349

42788  
6708  
36280

313

600  
3000  
15

CIS Conversion



51206

The Shell Company of Australia Limited  
METALS DIVISION

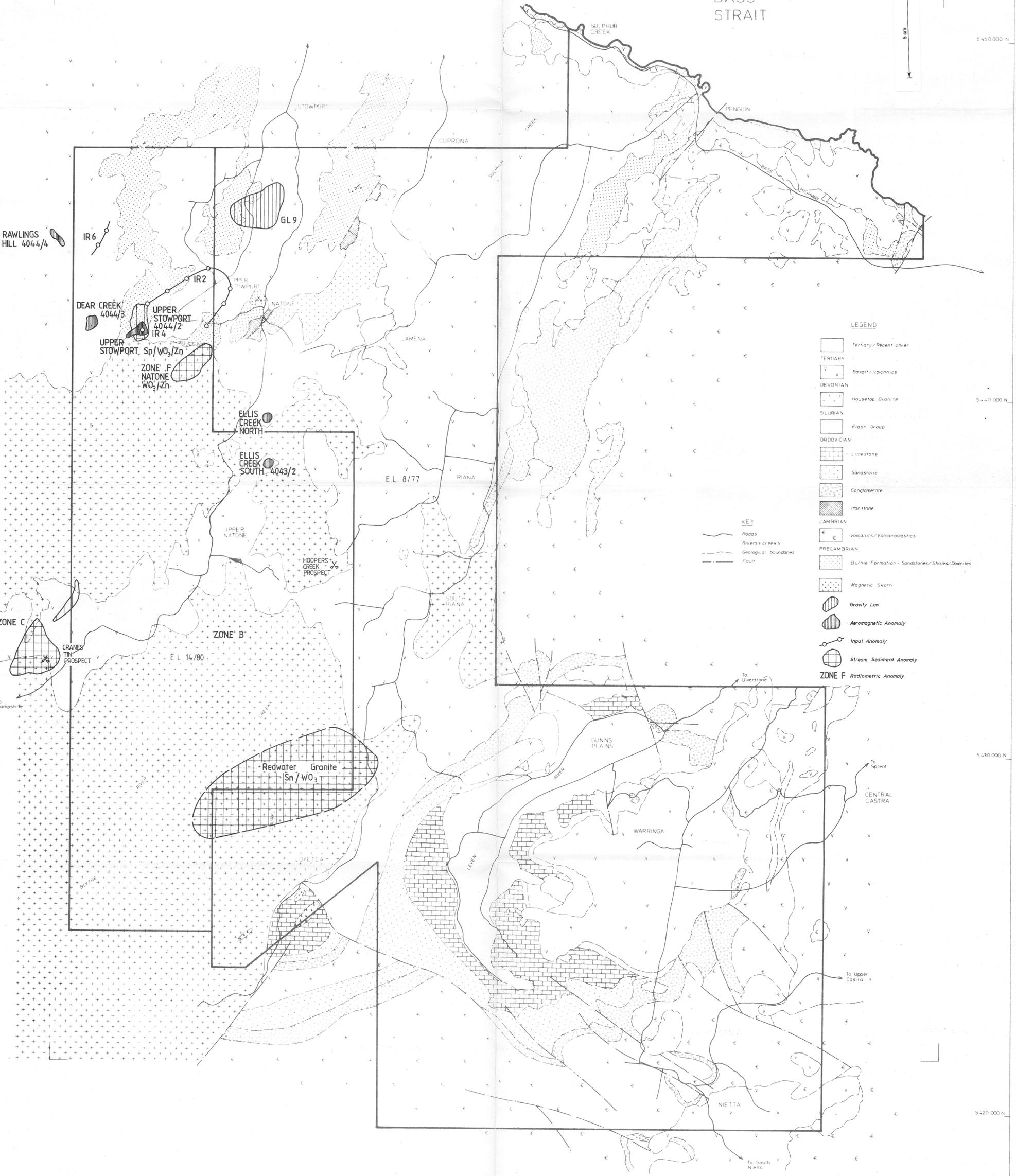
GEOLOGY OF:  
E.L. 8/77 RIANA  
E.L. 14/80 HAYES PEAK  
ANOMALY MAP: HAYES PEAK

SCALE	1:50000	DATE	1-9-83	PROJECT NO.	001
AUTHOR	P. RUSTON	DRAWN	J.L.L.	REP. NO.	
OFFICE	DEVONPORT	DATE		DATE	
FILE NO.					

83-201A



BASS STRAIT



LEGEND

- Tertiary/Recent cover
- TERTIARY**
- Basalt/Volcanics
- DEVONIAN**
- House-top Granite
- SILURIAN**
- Eldon Group
- ORDOVICIAN**
- Limestone
- Sandstone
- Conglomerate
- Ironstone
- CAMBRIAN**
- volcanics/volcanoclastics
- PRECAMBRIAN**
- Burnie Formation - Sandstones/Shales/Dolerites
- Magnetic Swarn
- Gravity Low
- Aeromagnetic Anomaly
- Input Anomaly
- Stream Sediment Anomaly
- Radiometric Anomaly

KEY

- Roads
- Rivers & creeks
- Geological boundaries
- Fault

RAWLINGS HILL 4044/4

IR 6

GL 9

DEAR CREEK 4044/3

UPPER STOWPORT 4044/2

UPPER STOWPORT Sn/WO<sub>3</sub>/Zn

ZONE F NATONE WO<sub>3</sub>/Zn

ELLIS CREEK NORTH

ELLIS CREEK SOUTH 4043/2

E.L. 8/77

RIANA

UPPER NATONE

HOOPERS CREEK PROSPECT

SOUTH RIANA

ZONE C

CRANES TRIP PROSPECT

ZONE B

E.L. 14/80

Redwater Granite Sn/WO<sub>3</sub>

GUNNS PLAINS

WARRINGA

CENTRAL CASTRA

LEVEN

NIETTA

To South Nietta

To Upper Castra

To Sprent

To Ulverstone

To Hampshire

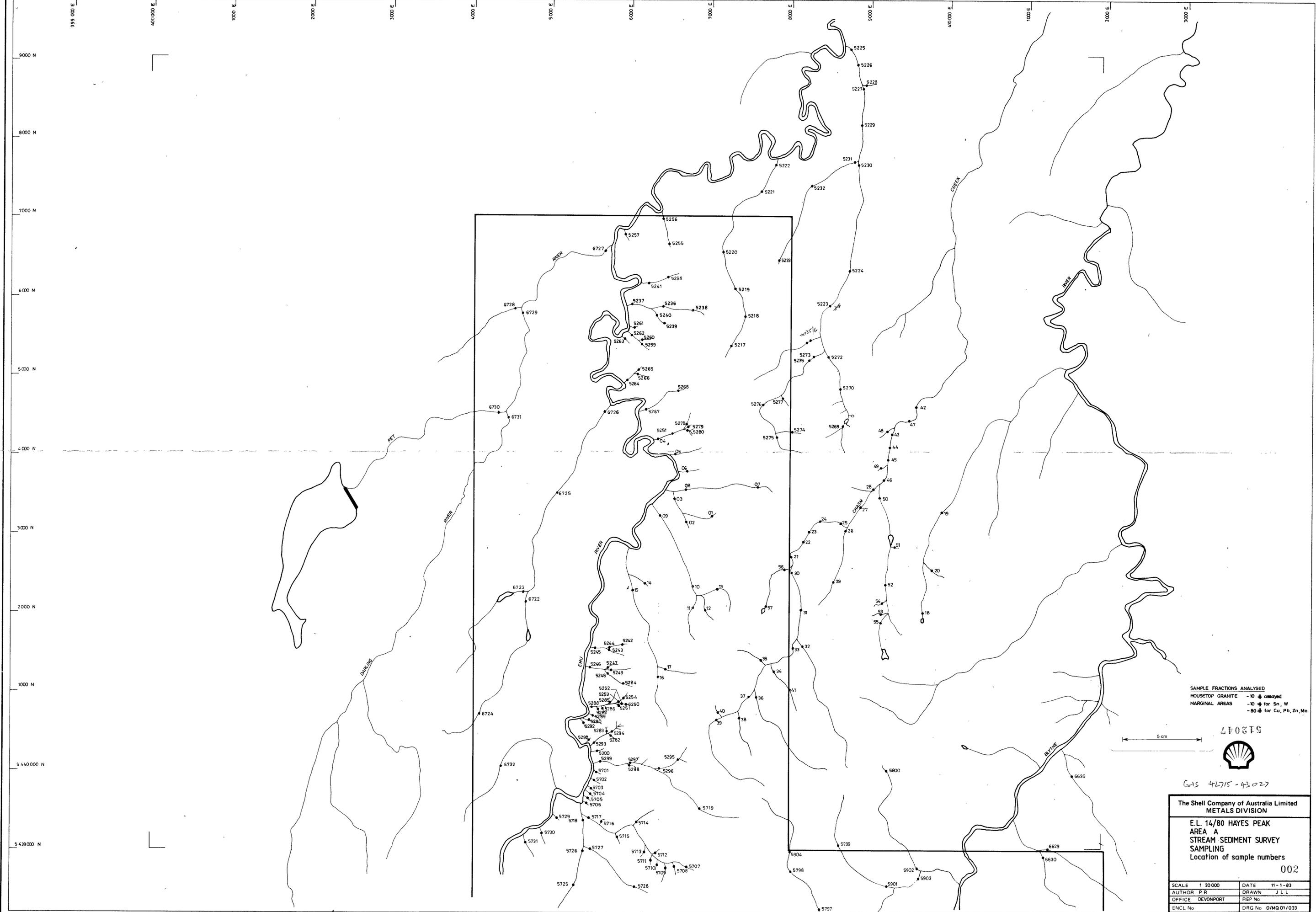
5450 000 N

5440 000 N

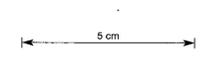
5430 000 N

5420 000 N

420 000 E



SAMPLE FRACTIONS ANALYSED  
 HOUSETOP GRANITE - 10 # assayed  
 MARGINAL AREAS - 10 # for Sn, W  
 - 80 # for Cu, Pb, Zn, Mo



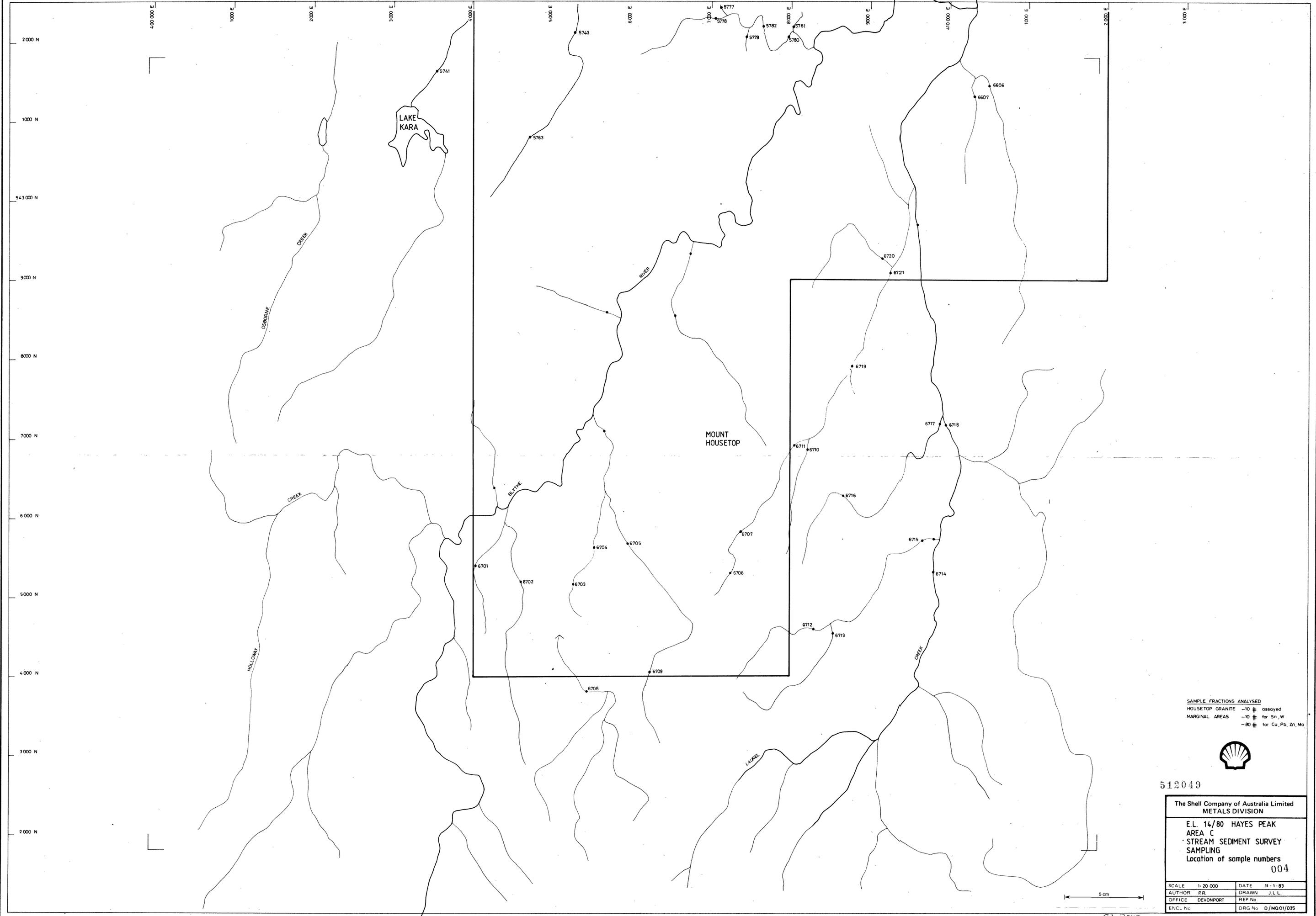
512042



CAS 42715-43027

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK AREA A STREAM SEDIMENT SURVEY SAMPLING Location of sample numbers	
002	
SCALE 1 20000	DATE 11-1-83
AUTHOR P.R	DRAWN J.L.L
OFFICE DEVONPORT	REP No
ENCL No	DRG No D/MG 01/033





SAMPLE FRACTIONS ANALYSED  
 HOUSETOP GRANITE -10 # assayed  
 MARGINAL AREAS -10 # for Sn, W  
 -80 # for Cu, Pb, Zn, Mo



512049

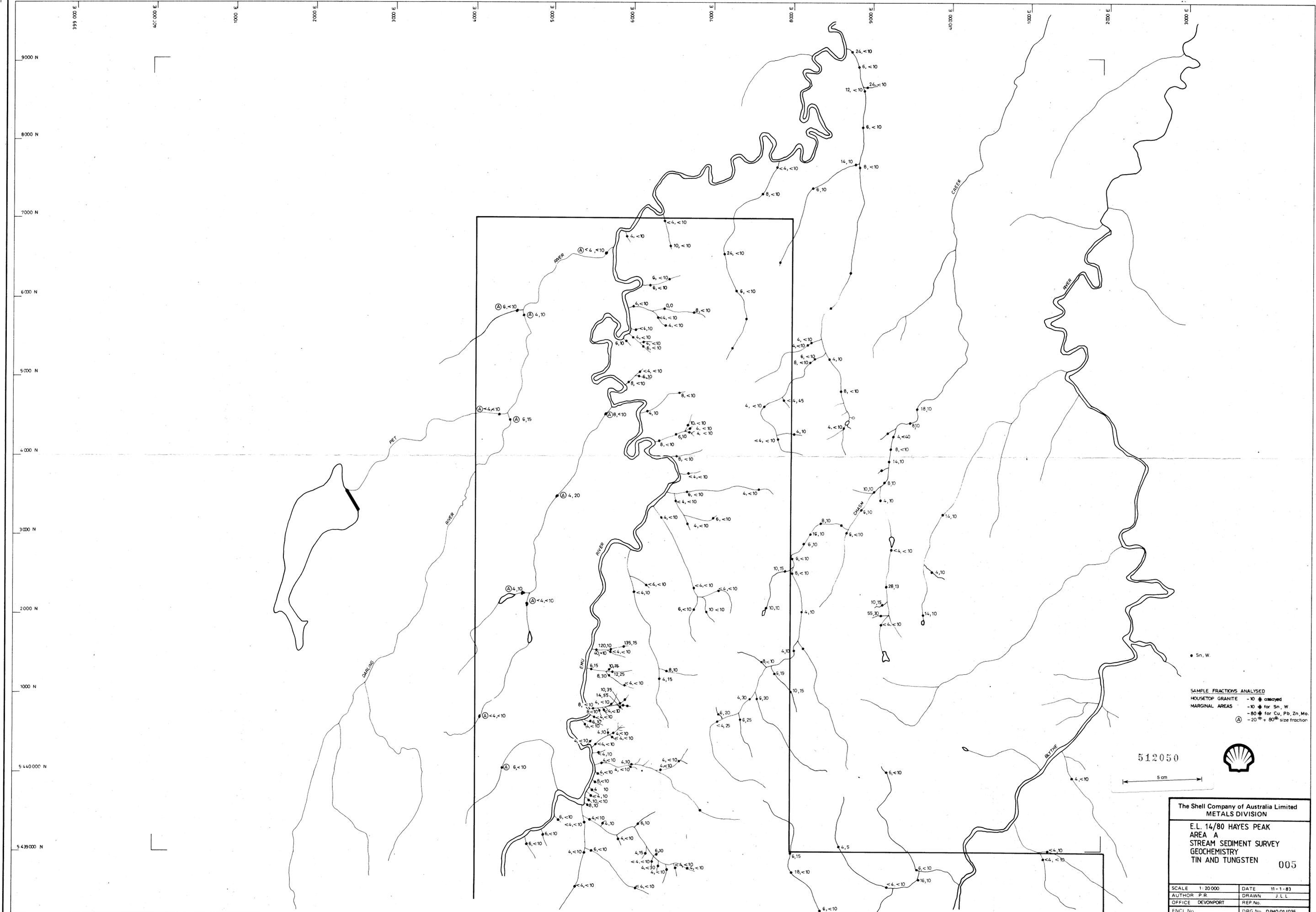
The Shell Company of Australia Limited  
 METALS DIVISION

E.L. 14/80 HAYES PEAK  
 AREA C  
 STREAM SEDIMENT SURVEY  
 SAMPLING  
 Location of sample numbers  
 004

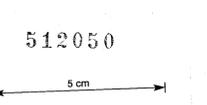
SCALE	1:20 000	DATE	11-1-83
AUTHOR	P.R.	DRAWN	J.L.L.
OFFICE	DEVONPORT	REP No	
ENCL No		DRG No	D/MG01/035

5 cm

33-2043



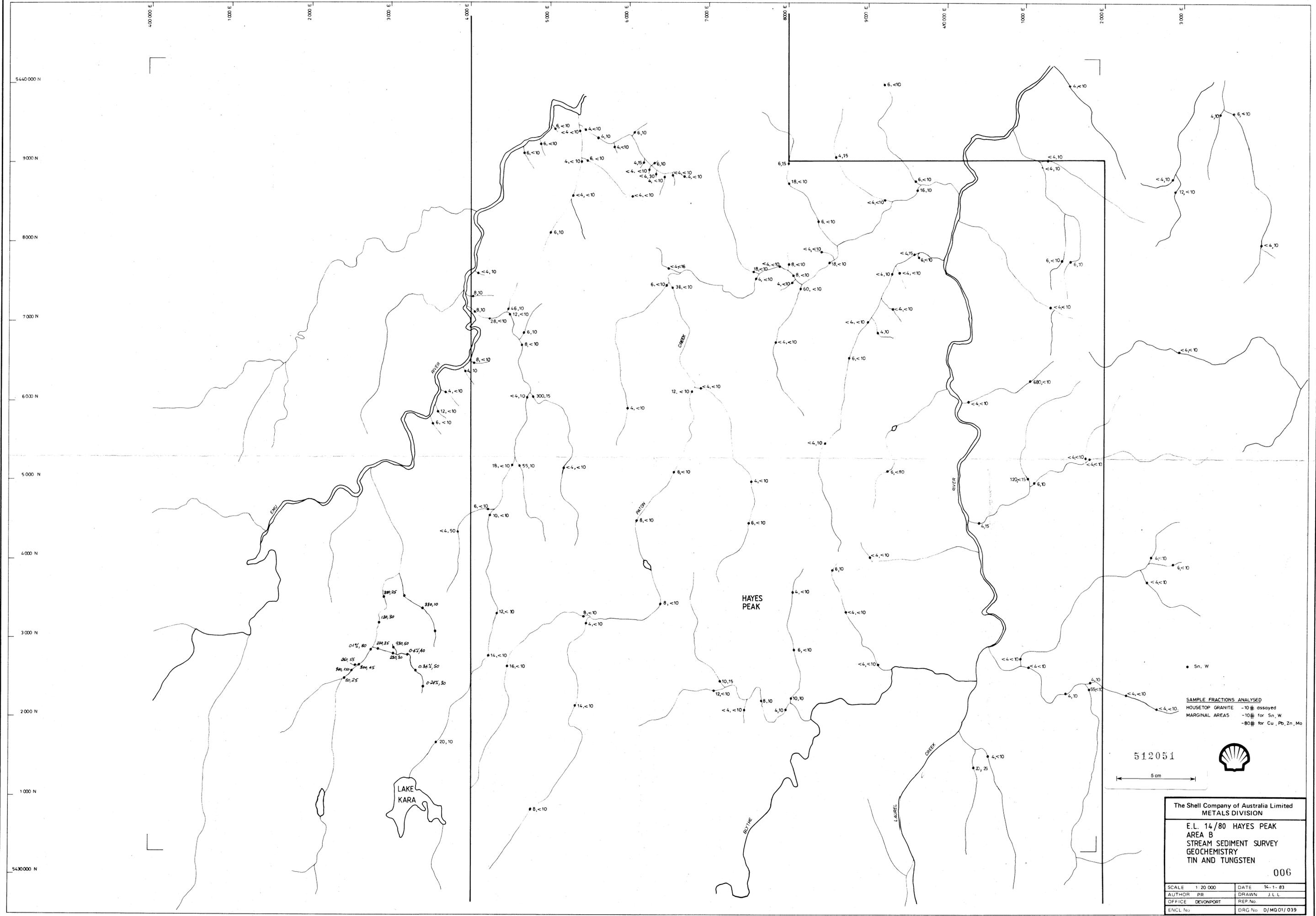
SAMPLE FRACTIONS ANALYSED  
 HOUSETOP GRANITE - 10 # assayed  
 MARGINAL AREAS - 10 # for Sn, W  
 - 80 # for Cu, Pb, Zn, Mo.  
 (A) - 20 # + 80 # size fraction



512050

The Shell Company of Australia Limited  
 METALS DIVISION  
 E.L. 14/80 HAYES PEAK  
 AREA A  
 STREAM SEDIMENT SURVEY  
 GEOCHEMISTRY  
 TIN AND TUNGSTEN 005

SCALE 1:20000	DATE 11-1-83
AUTHOR P.R.	DRAWN J.L.L.
OFFICE DEVONPORT	REP No.
ENCL No	DRG No D/MG 01/036



512051

5 cm

SAMPLE FRACTIONS ANALYSED  
 HOUSE TOP GRANITE -10# assayed  
 MARGINAL AREAS -10# for Sn, W  
 -80# for Cu, Pb, Zn, Mo

The Shell Company of Australia Limited  
 METALS DIVISION

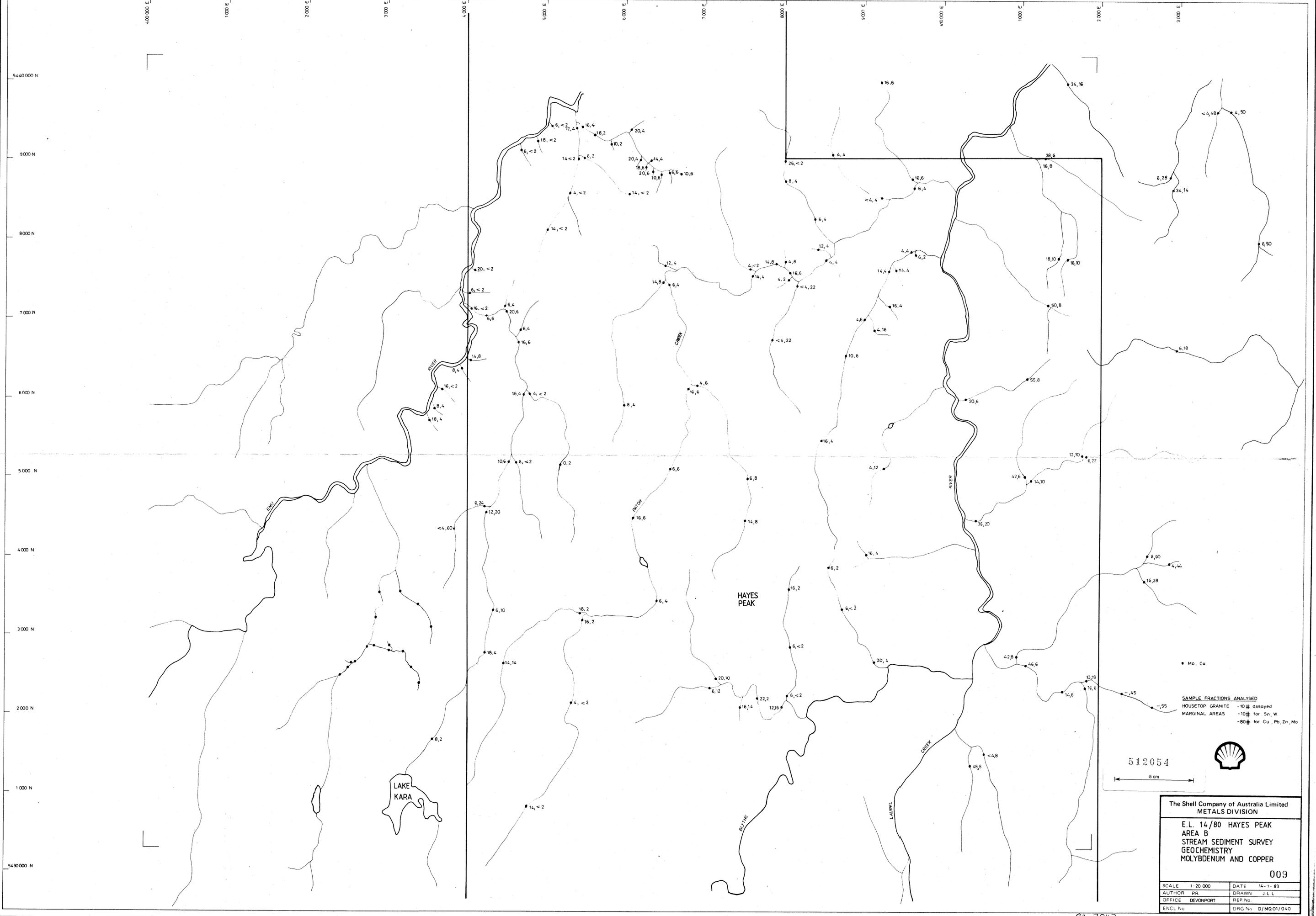
E.L. 14/80 HAYES PEAK  
 AREA B  
 STREAM SEDIMENT SURVEY  
 GEOCHEMISTRY  
 TIN AND TUNGSTEN

006

SCALE	1:20 000	DATE	14.1.83
AUTHOR	PR	DRAWN	J.L.L.
OFFICE	DEVONPORT	REP No.	
ENCL No.		DRG No.	D/MQ/01/039







Mo, Cu

SAMPLE FRACTIONS ANALYSED  
 HOUSE TOP GRANITE - 10# assayed  
 MARGINAL AREAS - 10# for Sn, W  
 - 80# for Cu, Pb, Zn, Mo

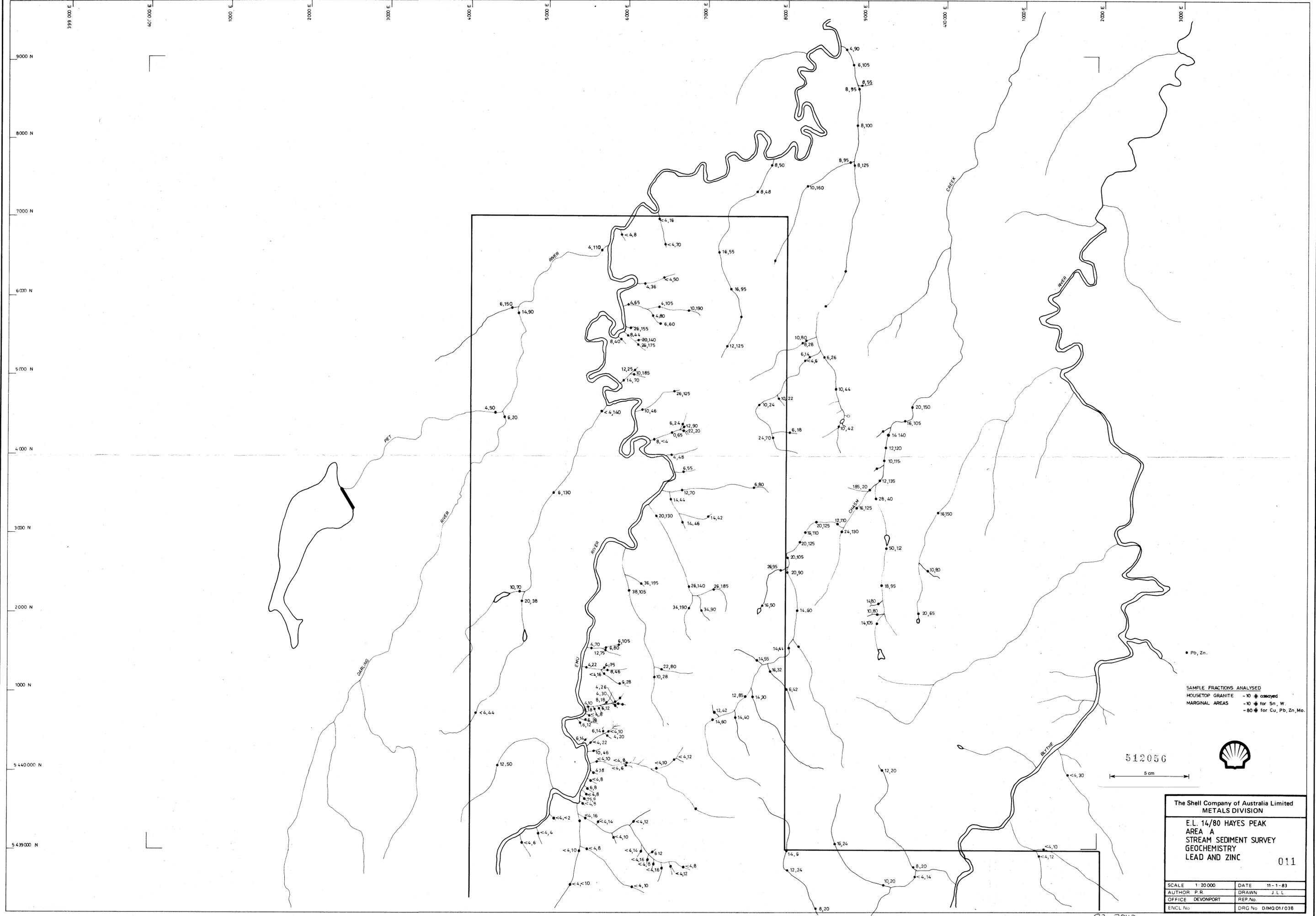
512054



5 cm

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK AREA B STREAM SEDIMENT SURVEY GEOCHEMISTRY MOLYBDENUM AND COPPER	
009	
SCALE 1:20 000	DATE 14-1-83
AUTHOR PR	DRAWN J.L.L.
OFFICE DEVONPORT	REP No.
ENCL No.	DRG No. D/MG01/040





SAMPLE FRACTIONS ANALYSED  
 HOUSE TOP GRANITE - 10 # assayed  
 MARGINAL AREAS - 10 # for Sn, W  
 - 80 # for Cu, Pb, Zn, Mo

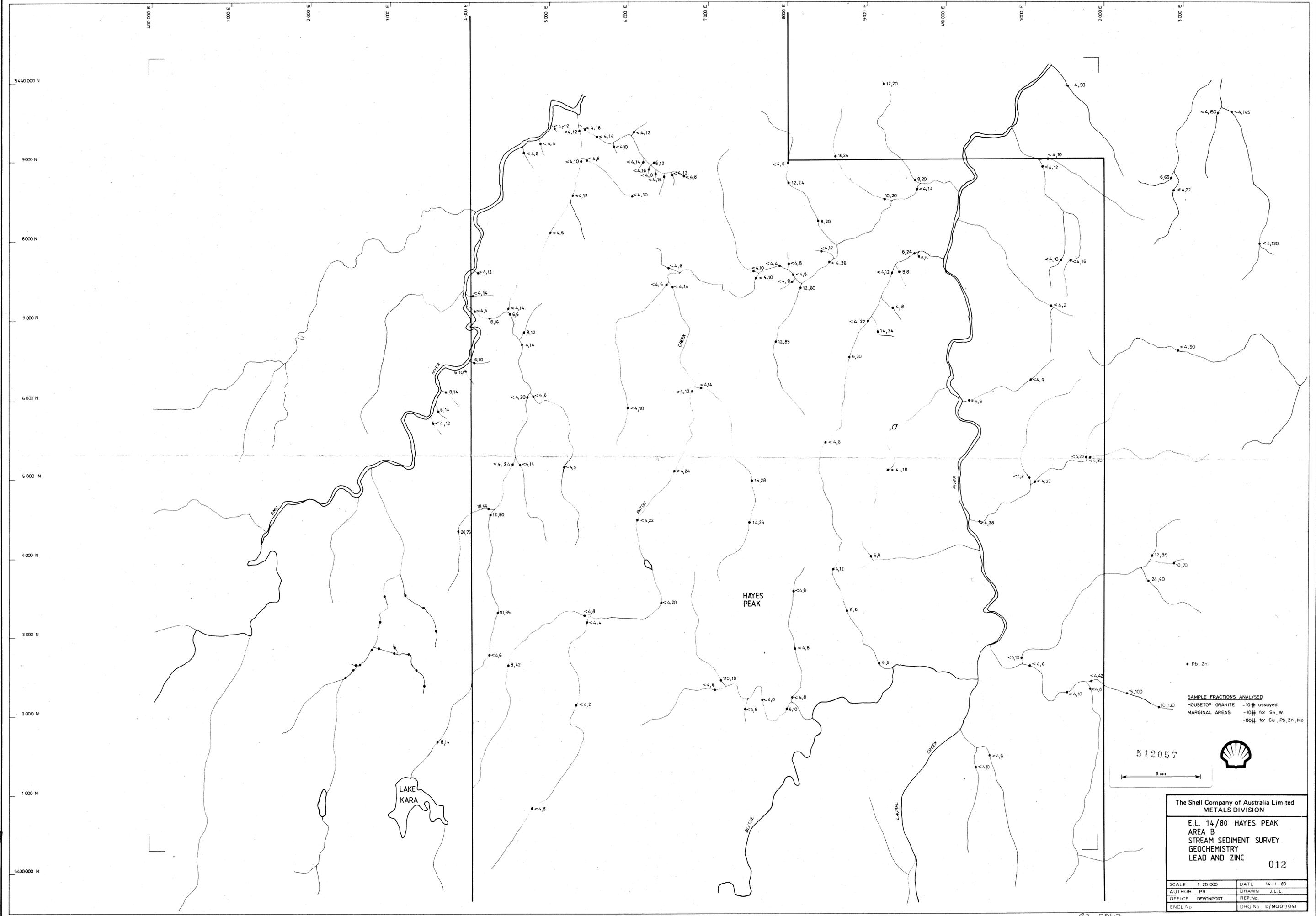
512056  
 5 cm



The Shell Company of Australia Limited  
 METALS DIVISION  
 E.L. 14/80 HAYES PEAK  
 AREA A  
 STREAM SEDIMENT SURVEY  
 GEOCHEMISTRY  
 LEAD AND ZINC 011

SCALE 1:20,000	DATE 11-1-83
AUTHOR P.R.	DRAWN J.L.L.
OFFICE DEVONPORT	REP No.
ENCL No.	DRG No. DMG 01/038

83-2042



• Pb, Zn.

SAMPLE FRACTIONS ANALYSED  
 HOUSETOP GRANITE -10# assayed  
 MARGINAL AREAS -10# for Sn, W  
 -80# for Cu, Pb, Zn, Mo

512057

5 cm



The Shell Company of Australia Limited  
 METALS DIVISION

E.L. 14/80 HAYES PEAK  
 AREA B  
 STREAM SEDIMENT SURVEY  
 GEOCHEMISTRY  
 LEAD AND ZINC

012

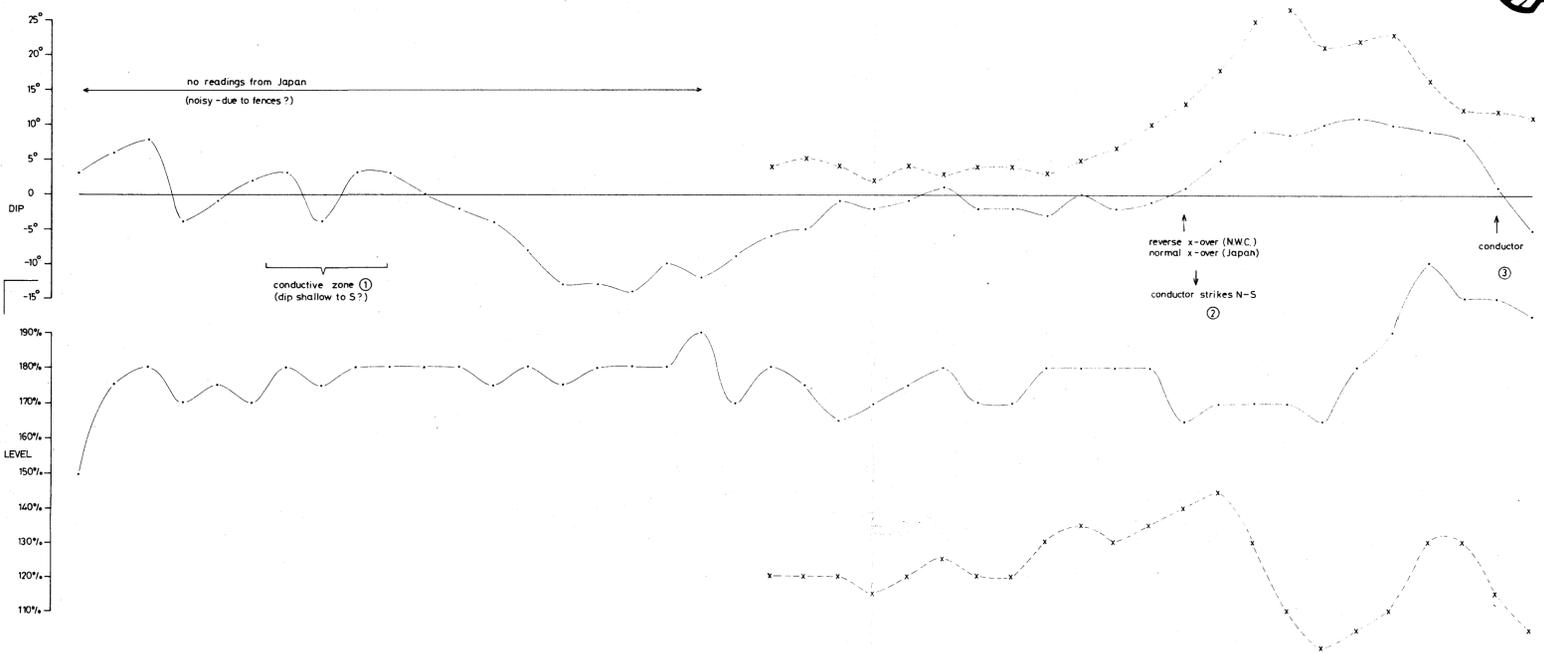
SCALE 1:20 000	DATE 14-1-83
AUTHOR PR	DRAWN J.L.L.
OFFICE DEVONPORT	REP No.
ENCL No.	DRG No. D/MG01/041



0 N 200 N 400 N 600 N 800 N 1000 N 200M

**VLF-EM**

— NW Cape  
(+ve dips to N)  
x—x Japan  
(+ve dips to E)



The Shell Company of Australia Limited  
METALS DIVISION

E.L. 8/77 RIANA  
INPUT ANOMALY 4044/IR6  
INITIAL GROUND CHECK

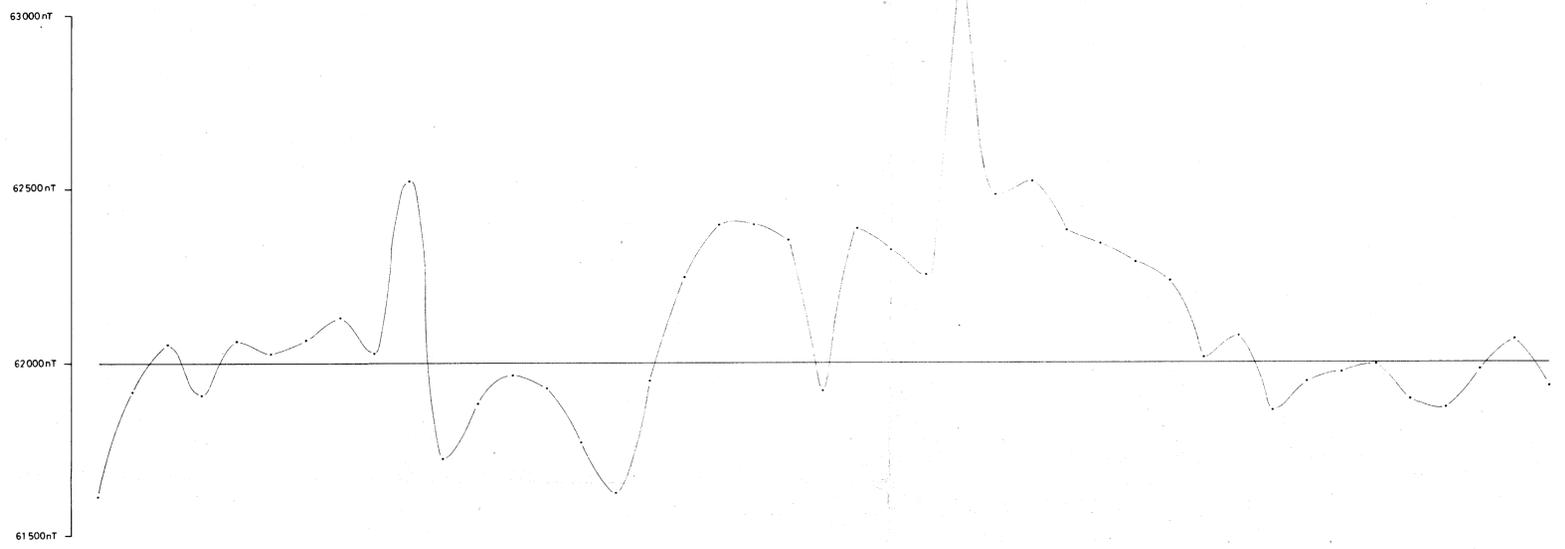
SCALE 1:2500 DATE 12-9-87  
AUTHOR G. OAKES DRAWN H.L.S.  
OFFICE DEWONPORT REP. No.  
ENCL. No. 014  
DPCS No. D/MG02/137



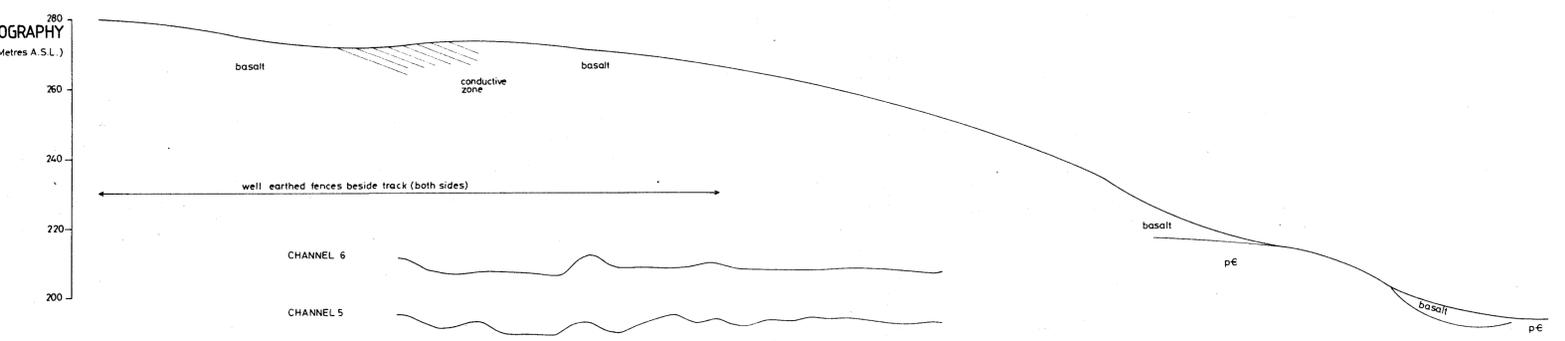
512059

5 cm

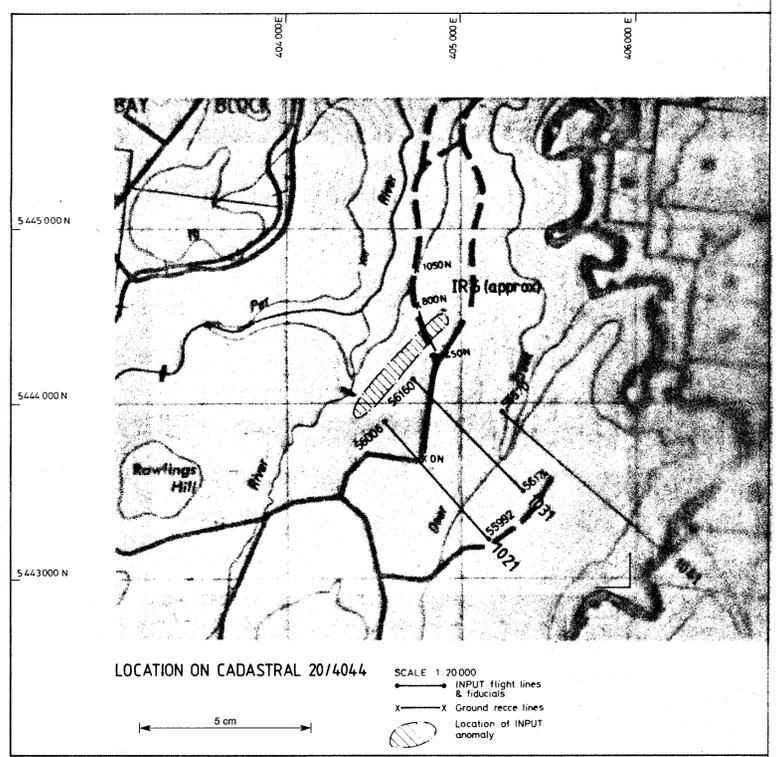
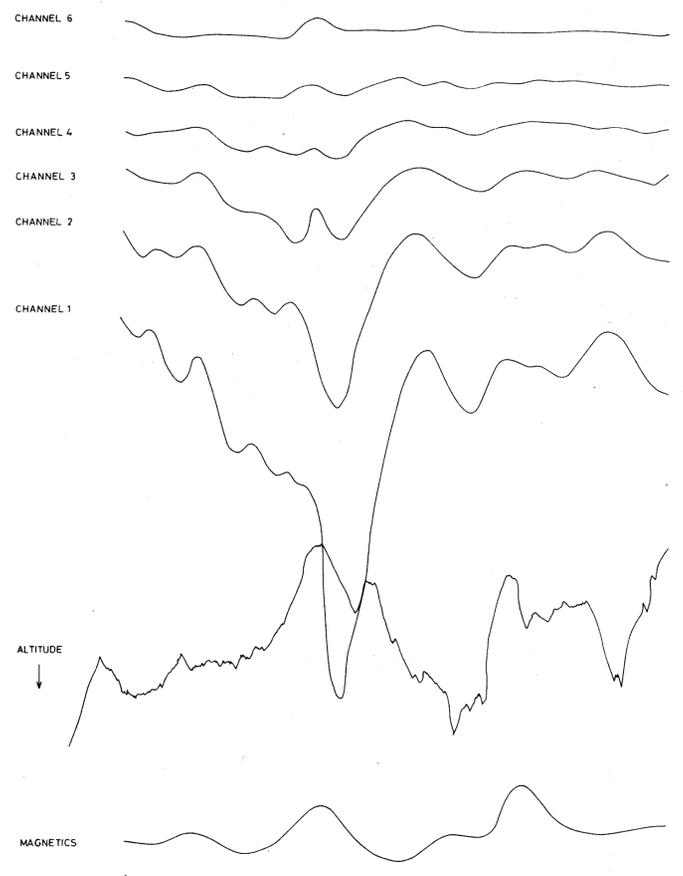
**MAGNETICS**



**APPROX. TOPOGRAPHY & CULTURE**  
(Metres A.S.L.)

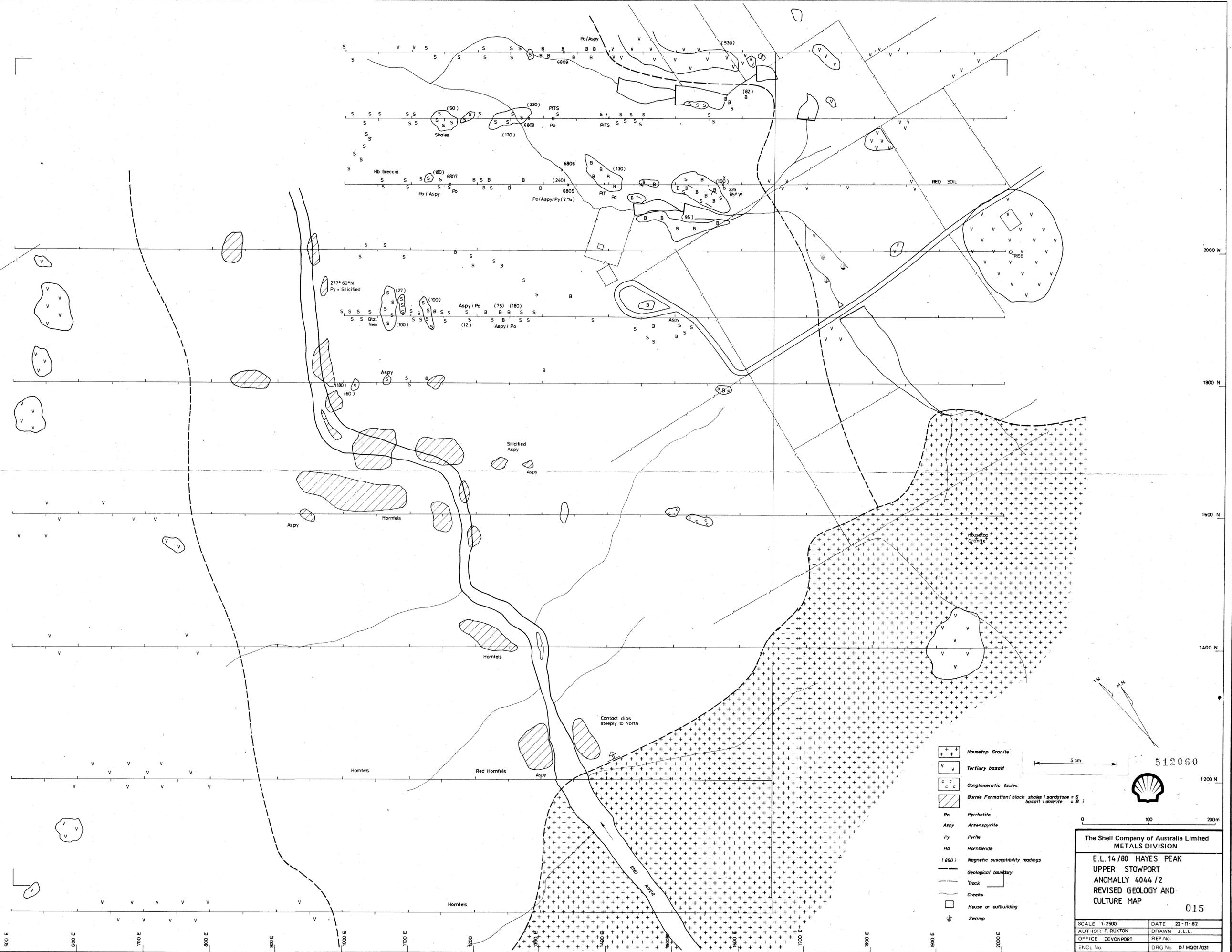


**INPUT LINE 1031**

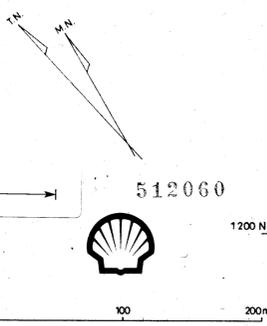


N.W. 56120 56150 IR6 S.E.

93-2043



- House Top Granite
- Tertiary basalt
- Conglomeratic facies
- Burrie Formation / black shales / sandstone = S / basalt / dolerite = B
- Pyrrhotite
- Arsenopyrite
- Pyrite
- Hornblende
- Magnetic susceptibility readings
- Geological boundary
- Track
- Creeks
- House or outbuilding
- Swamp



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK UPPER STOWPORT ANOMALLY 4044/2 REVISED GEOLOGY AND CULTURE MAP	
015	
SCALE 1:2500	DATE 22-11-82
AUTHOR P. RUXTON	DRAWN J.L.L.
OFFICE DEVONPORT	REP. No.
ENCL No.	DRG No. D/MQ01/031

PROGRAM GEOCOR  
 STACKED PROFILE PLOT

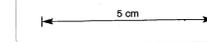
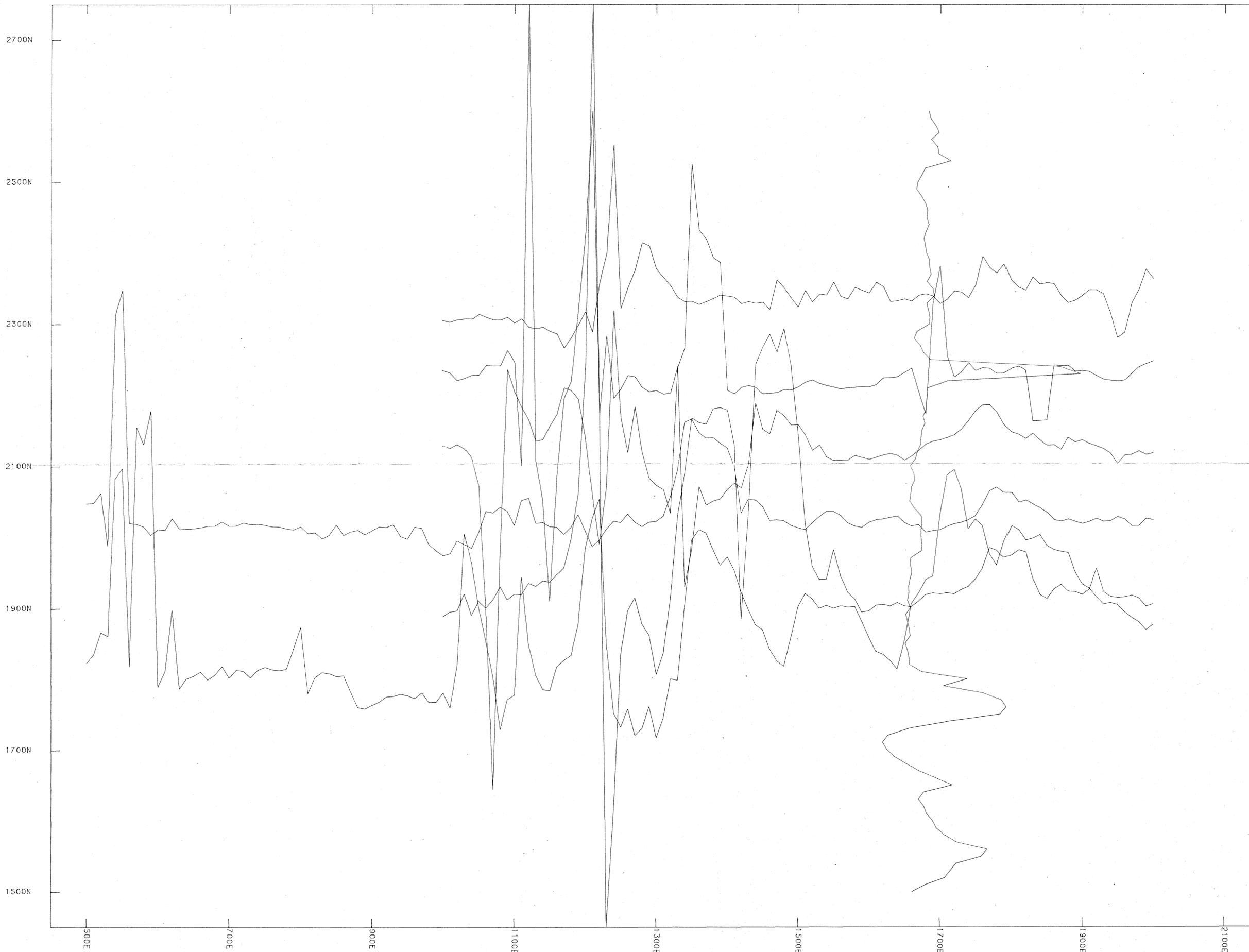
UPPER STOWPORT (NORTHERN SECTI

PROCESSED ON: WED. NOV 03 1982

BEGINNING AT: 19:59:30

READING SCALE: 200.00 NT/CM

DATUM OF 62200.0 NT SUBTRACTED



512061

SHELL COMPANY OF AUSTRALIA  
 METALS DIVISION

UPPER STOWPORT  
 GROUND MAGNETICS

016

SCALE 1 : 2500.00

FIG. NO:	REPT. NO:
ENCL. NO:	DRG. NO: D/MQ01/043
DATE:	AUTHOR:
DRAWN:	OFFICE:

500 E 600 E 700 E 800 E 900 E 1000 E 1100 E 1200 E 1300 E 1400 E 1500 E 1600 E 1700 E 1800 E 1900 E 2000 E

N.W.

S.E.

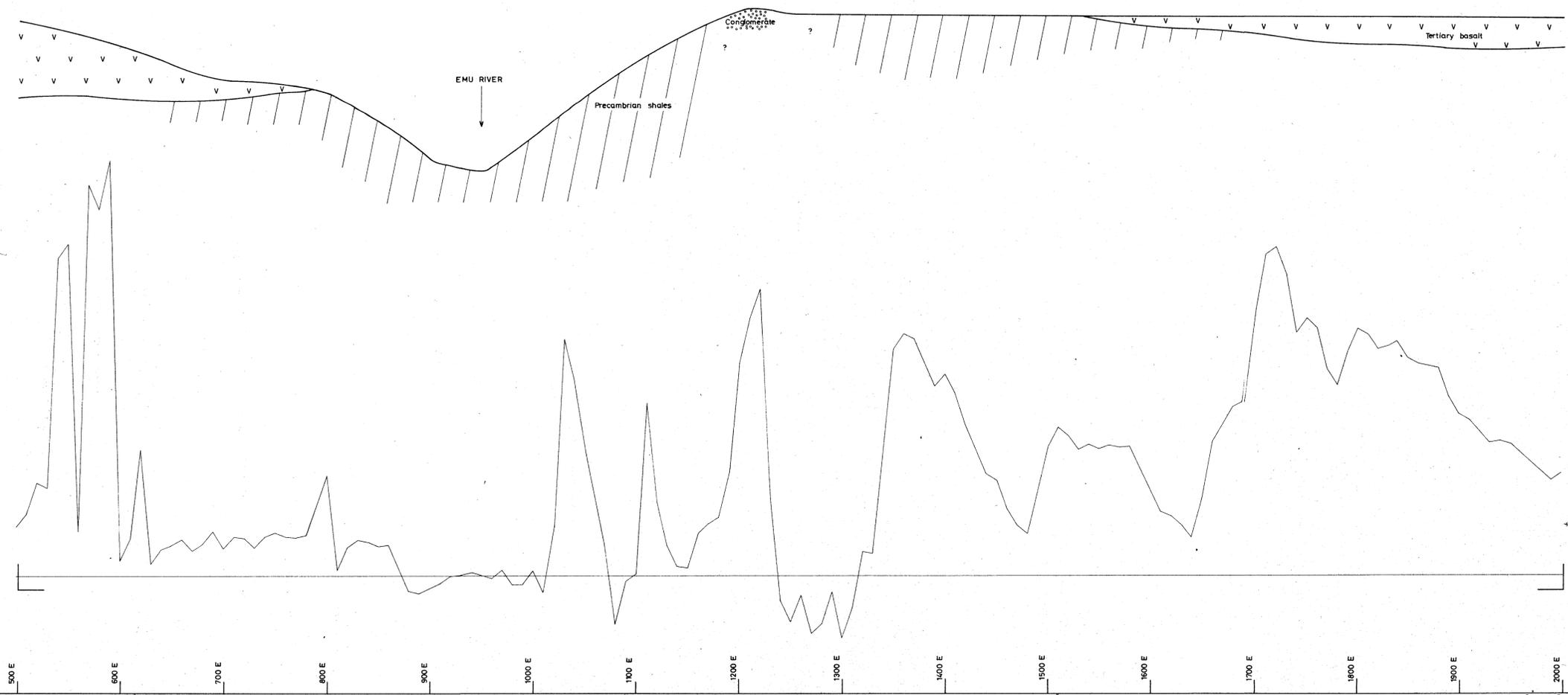
DIP  
+30°  
+20°  
+30°  
0  
-10°  
-20°  
-30°

V.L.F.  
N.W. Cape transmitter  
Dip convention +ve for Northern  
-ve Southern dip.  
(Friday 22nd Jan)

175 %  
150 %  
100 %  
50 %

TOPOGRAPHY

MAGNETICS



5 cm

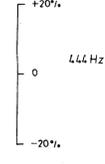
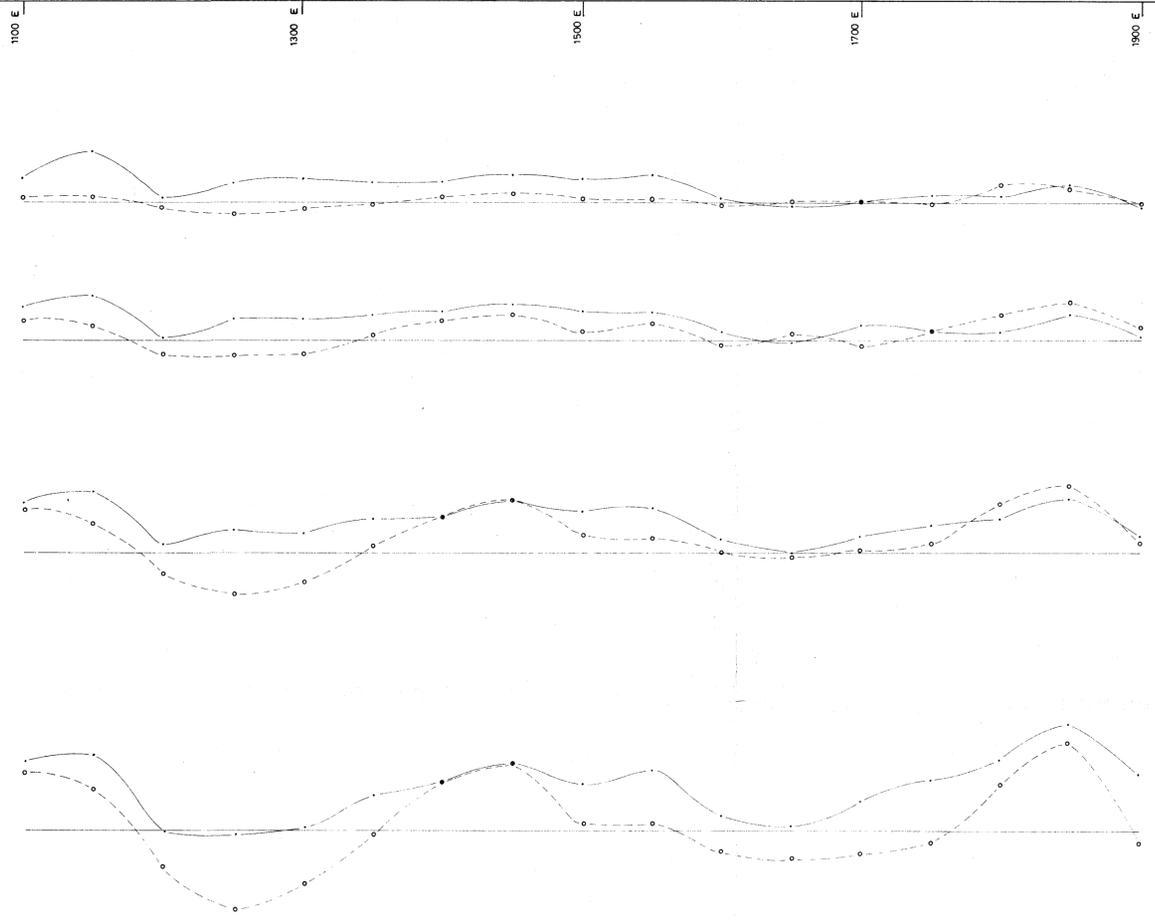
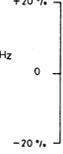


512062  
0 100 200M

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK UPPER STOWPORT LINE 1800 N V.L.F. - TOPOGRAPHY - MAGNETICS	
017	
SCALE 1:2500	DATE 28-6-82
AUTHOR DHM/PRUXTON	DRAWN H.L.H.
OFFICE DEVONPORT	REP. No.
ENCL. No.	DRG No. D/MQ01/020

MAX-MIN

COIL SEPARATION = 200M  
IN PHASE .  
OUT PHASE o



512063

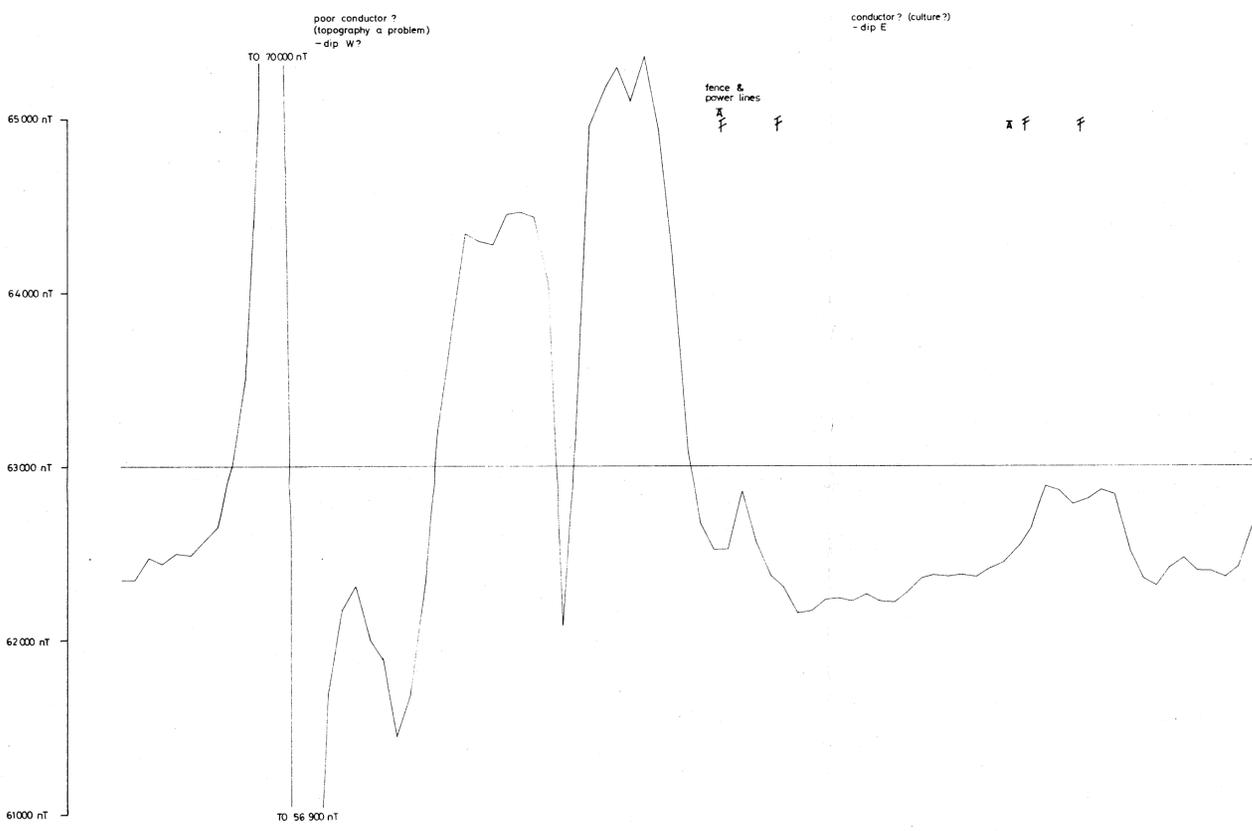


The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK UPPER STOWPORT LINE 1900N	
— MAX-MIN — GROUND MAGNETICS	
SCALE 1:7500	DATE 72-10-82
AUTHOR G. OAKES	DRAWN P.L.S.
OFFICE DEWONPORT	REP. NO.
ENCL. No.	DRG. No. D/M001/027

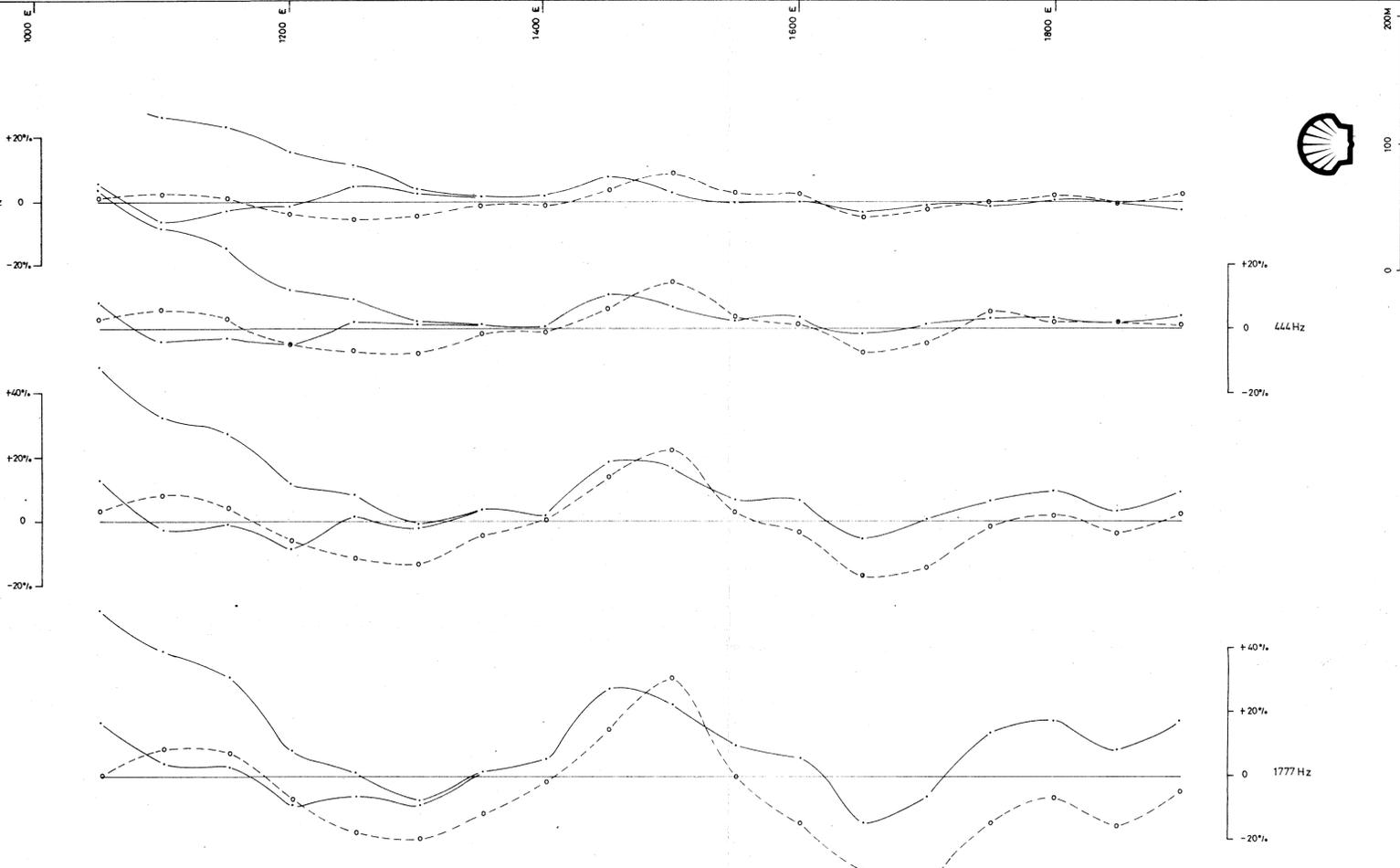
018

93-25HZ

GROUND MAGNETICS  
READING SCALE = 200 nT/cm



**MAX-MIN**  
 COIL SEPARATION = 200M  
 IN PHASE ———  
 OUT PHASE - - - - 222 Hz



large terrain corrections in IP (up to 35%)  
 - probably large errors

conductor - dip W?

conductor  
 (due to grounded fence)?

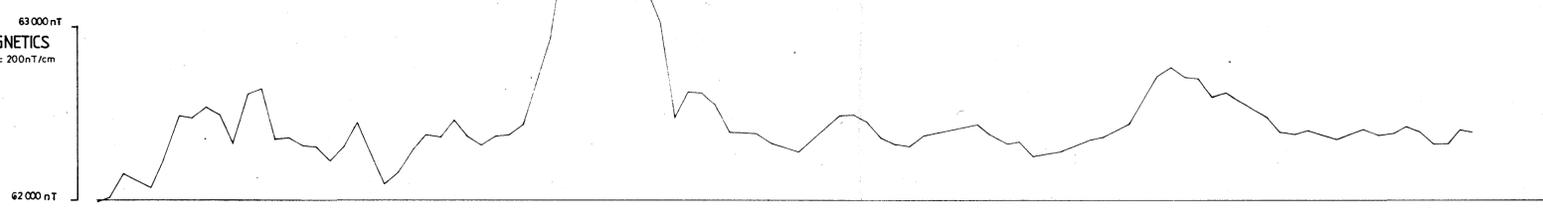
electric fences

fences

grounded fence

powerline & fences

**GROUND MAGNETICS**  
 READING SCALE = 200nT/cm



The Shell Company of Australia Limited		DATE	28-9-82
METALS DIVISION		AUTHOR	CRALIN W.L.S.
E.L. 14/80 HAYES PEAK		OFFICE	DEWPORT
UPPER STOPPORT - LINE 2000 N		REF. NO.	
- MAX-MIN		DRG. NO.	D/MG01/024
- GROUND MAGNETICS		ENCL. NO.	
			019

512064

5 cm

83-2042

MAX-MIN  
COIL SEPARATION = 200M  
IN PHASE ———  
OUT PHASE - - - -

222 Hz

+20%  
0  
-20%

+40%  
+20%  
0  
-20%  
-40%

888 Hz

+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
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-20%  
-40%

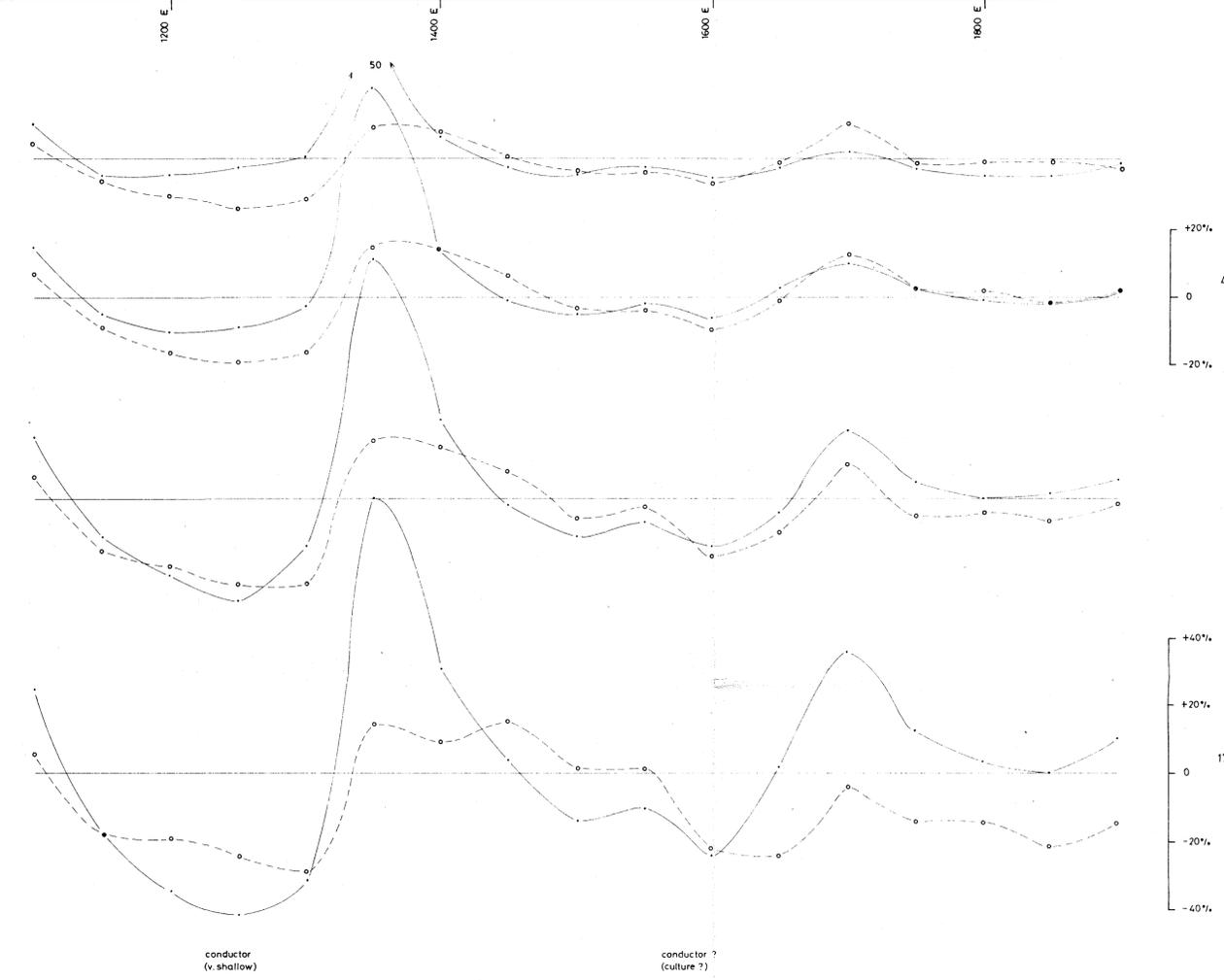
+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
0  
-20%  
-40%

+40%  
+20%  
0  
-20%  
-40%



conductor  
(v. shallow)

conductor?  
(culture?)

fences  
f f f

(1) inferred regional

(2) inferred regional

(1) Contact at ~1200 E with less dense material to W  
sp. Zones 1 and 2 of no interest (no anomaly on Zone 2)

(2) No anomaly on Zone 1  
Local anomaly ~2100 N, 1450-1550 E (dip W?)  
in which case Zone 2 is interesting

BOUGUER GRAVITY  
DENSITY = 2.70  
READING SCALE = MAGL  
TERRAIN CORRECTED

7.00

6.00

GROUND MAGNETICS  
READING SCALE = 200 nT/cm

64000 nT

63000 nT

62000 nT

61000 nT

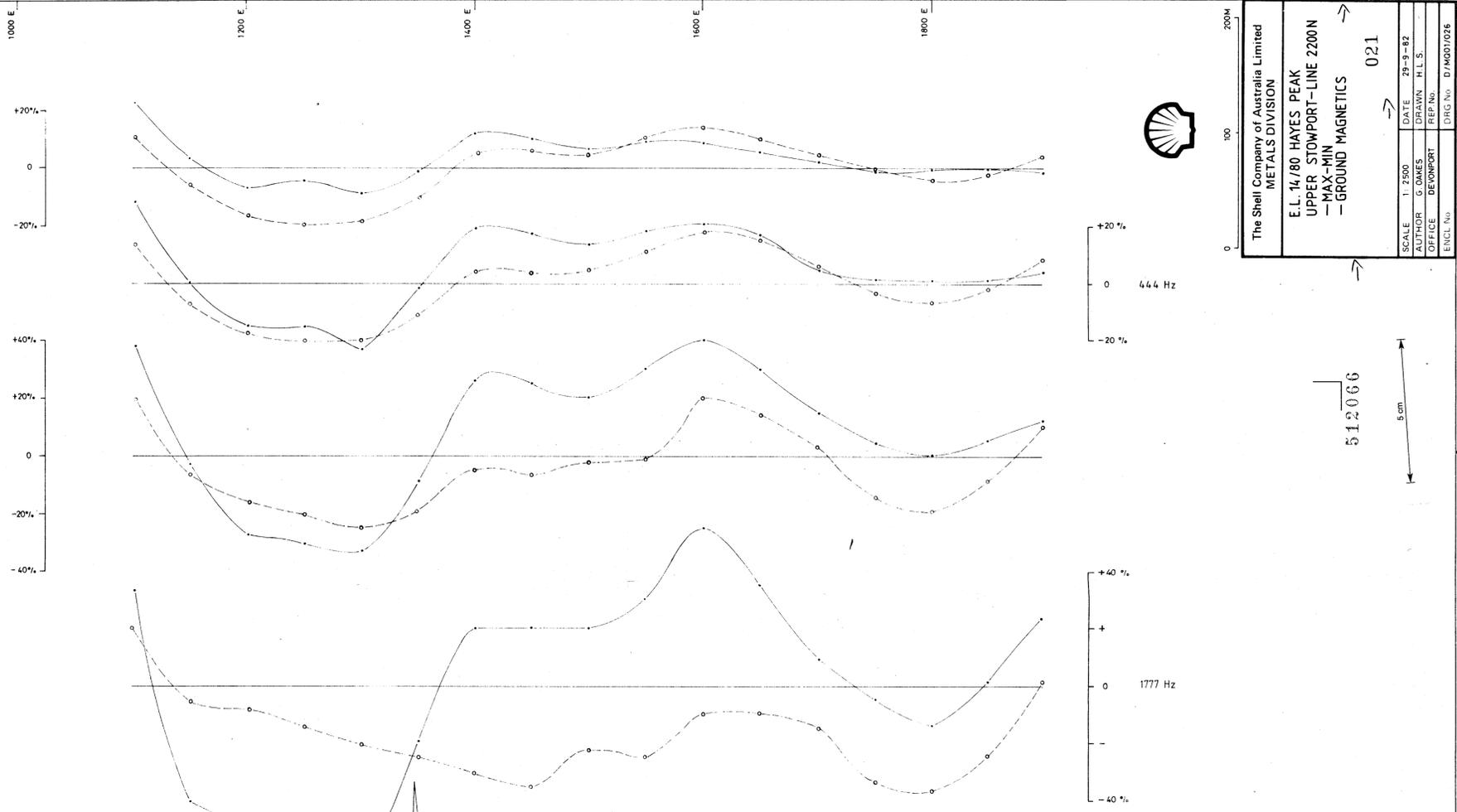
512065



The Shell Company of Australia Limited METALS DIVISION		DATE	22-10-82
E.L. 14/80 HAYES PEAK UPPER STOWPORT LINE 2100N		DRAWN	H.L.S.
- MAX-MIN		REF. NO.	
- GROUND MAGNETICS		ENCL. NO.	020
SCALE	1:2500		
AUTHOR	G. DAVES		
OFFICE	DEVONPORT		
ENCL. NO.			

5 cm

93-2042

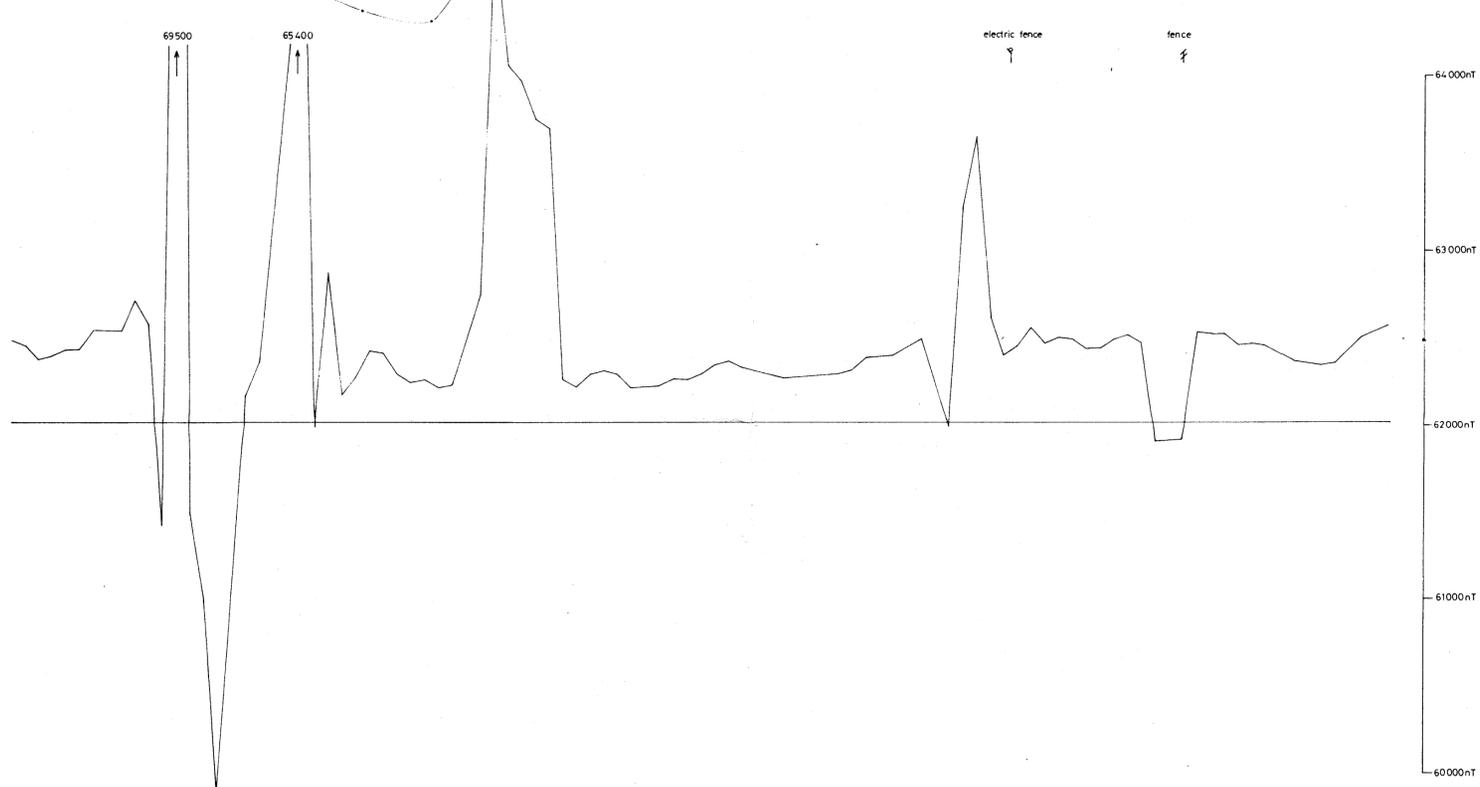


The Shell Company of Australia Limited  
 METALS DIVISION  
 E.L. 14/80 HAYES PEAK  
 UPPER STOWPORT-LINE 2200N  
 — MAX-MIN  
 — GROUND MAGNETICS

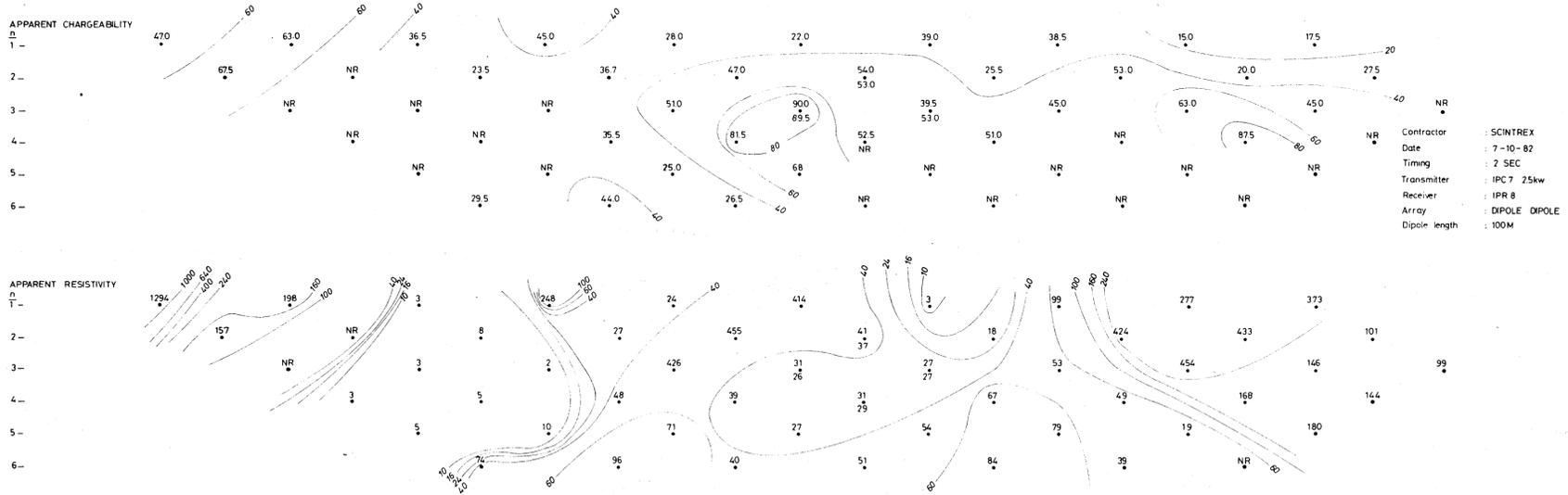
SCALE	1:2500	DATE	29-9-82
AUTHOR	G. OAKES	DRAWN	H.L.S.
OFFICE	DEVONPORT	REF. No.	
ENCL. No.		DRG. No.	D.MG01/026

512066  
 021  
 5 cm

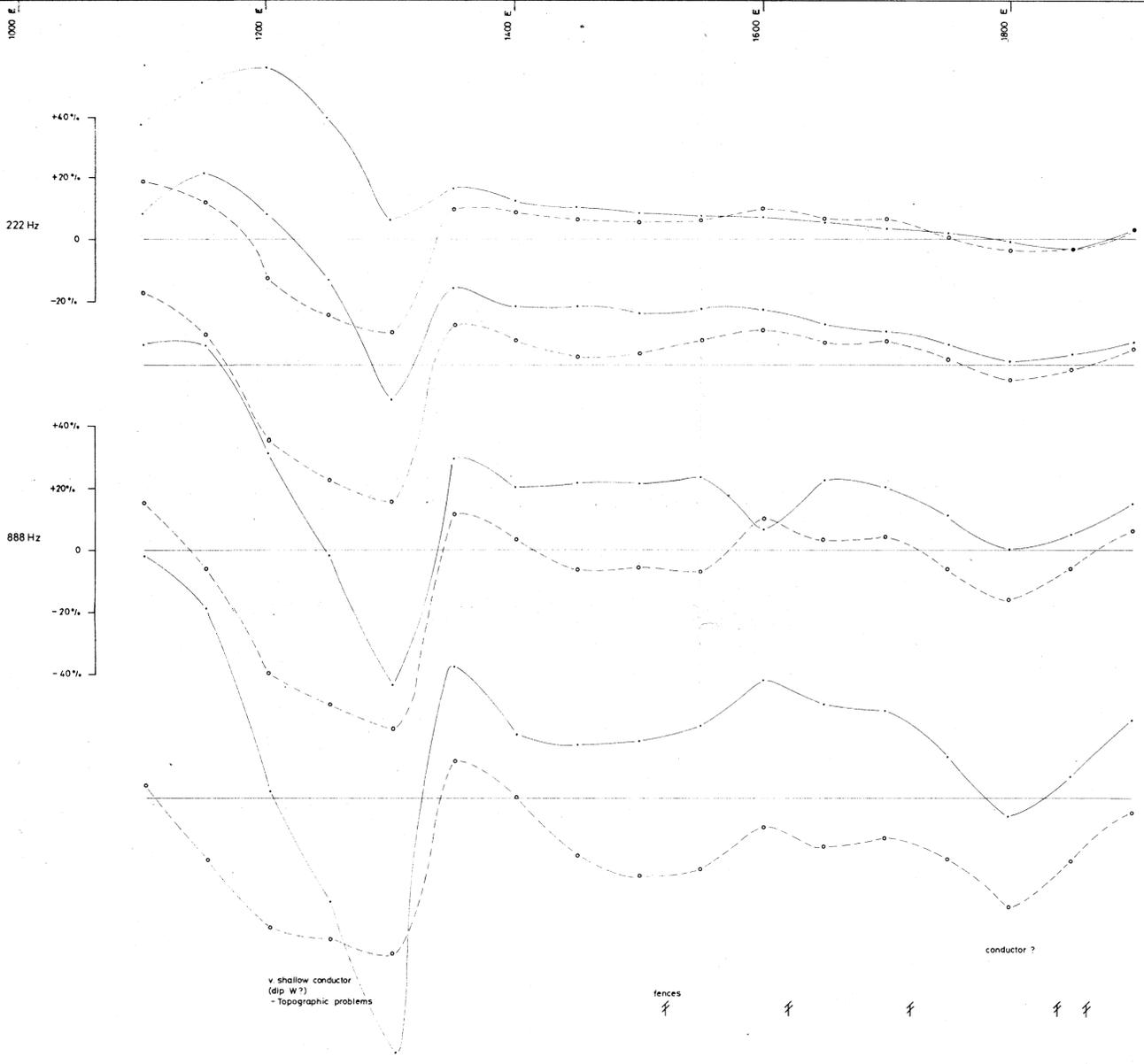
**GROUND MAGNETICS**  
 READING SCALE = 200nT/cm



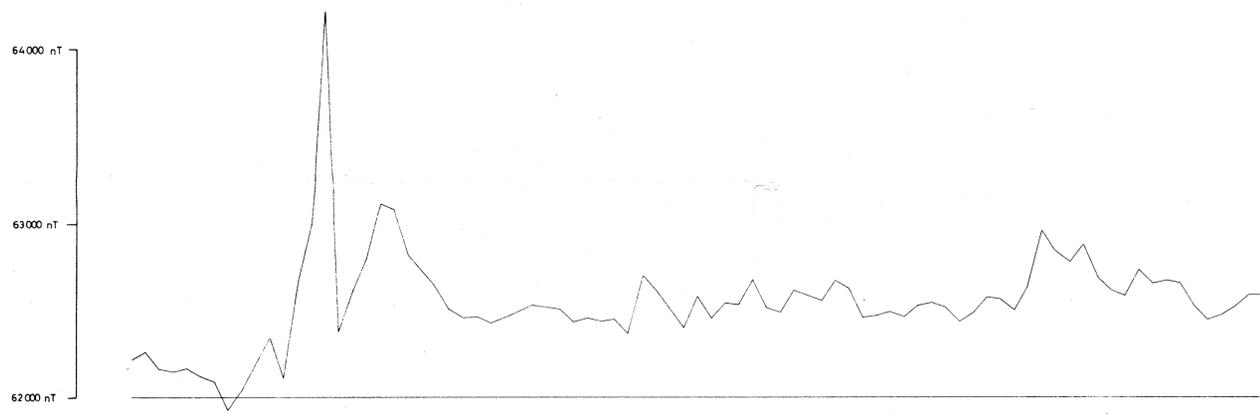
**IP / RESISTIVITY**



**MAX-MIN**  
 COIL SEPARATION = 200 M  
 IN PHASE ———  
 OUT PHASE ○—○



**GROUND MAGNETICS**  
 READING SCALE = 200 nT/cm



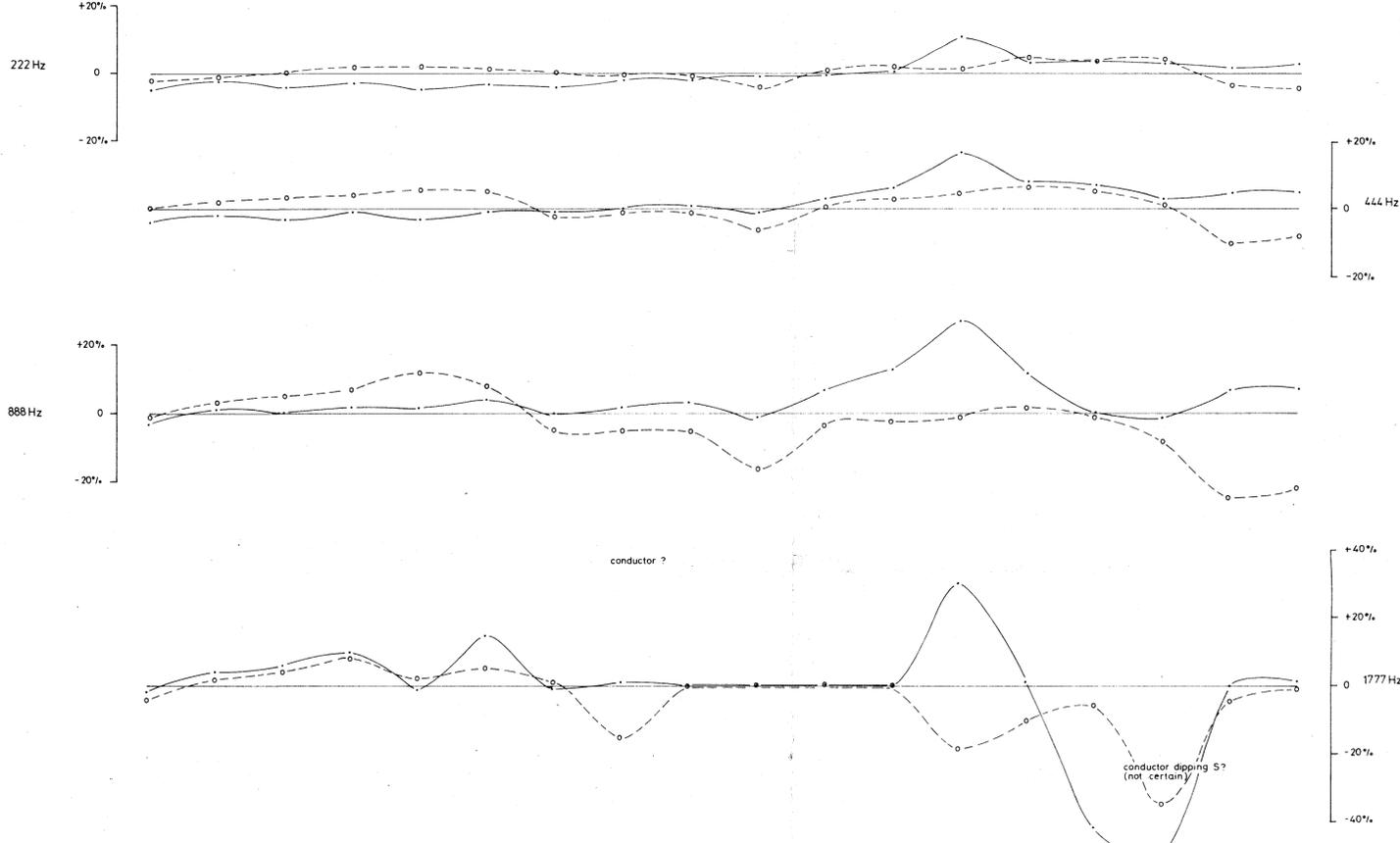
The Shell Company of Australia Limited		METALS DIVISION	
E.L. 14/80 HAYES PEAK			
UPPER STOWPORT			
LINE 2300 N			
— MAX-MIN			
— GROUND MAGNETICS			
022			
SCALE	1:2500	DATE	25-10-82
AUTHOR	G. GAMES	DRAWN	H. L. S.
OFFICE	STOWPORT	REF. No.	
ENCL. No.		DRG. No.	D/MD01/028

512067

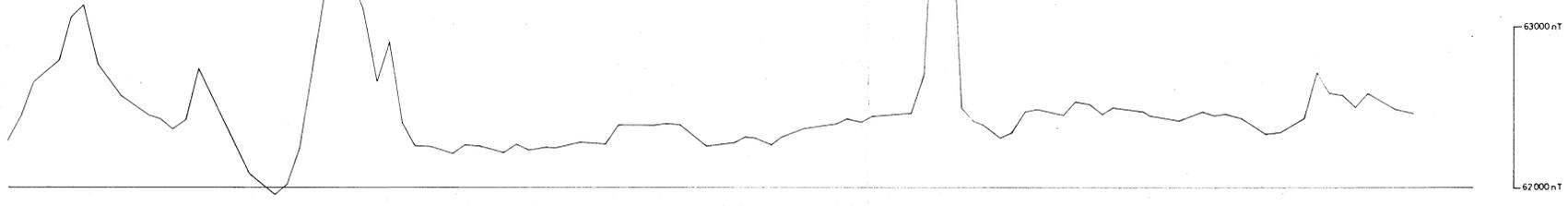
5 cm

33-70HZ

**MAX-MIN**  
 COIL SEPARATION = 200 M  
 IN PHASE ———  
 OUT PHASE - - - -



**GROUND MAGNETICS**  
 READING SCALE = 200 nT/cm



51206S

The Shell Company of Australia Limited		DATE	28-9-82
METALS DIVISION		DRAWN	H.L.S.
E.L. 14/80 HAYES PEAK		OFFICE	DEVONPORT
UPPER STOWPORT - LINE 1650E		REP. No.	
- MAX-MIN		ENCL. No.	
- GROUND MAGNETICS			023

5 cm

83-204Z