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THE SHELL COMPANY OF AUSTRALIA LIMITED
METALS DIVISION

EXPLORATION LICENCE 14/80 - HAYES PEAK

Progress Report on Exploration during the Period

1/8/80 - 31/7/81

OPEN FILE

Author: L.D. Banwell

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PORTIONS OF:

(ELS 8177, 14/80, 4177, 36179, 1176, 7174)

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LIST OF PLANS

<u>Fig. No.</u>	<u>Title</u>	<u>Plan No.</u>	<u>Scale</u>
1	E.L. 14/80 - Hayes Peak	D/MQ01/012	1:250 000
2	Upper Stowport Prospect - Magnetic Contours	D/MQ01/003	1:2 500
3	Upper Stowport Prospect - Stacked Magnetic Profiles	D/MQ01/005	1:2 500
4	Upper Stowport Prospect - Soil Geochemistry	D/MQ01/004	1:2 500
5	Upper Stowport Prospect - Soil Geochemistry W Contours	D/MQ01/006	1:2 500
6	Upper Stowport Prospect - Soil Geochemistry Sn Contours	D/MQ01/007	1:2 500
7	Upper Stowport Prospect - Soil Geochemistry Pb Contours	D/MQ01/008	1:2 500
8	Upper Stowport Prospect - Soil Geochemistry Cu Contours	D/MQ01/009	1:2 500
9	Upper Stowport Prospect - Soil Geochemistry Zn Contours	D/MQ01/010	1:2 500
10	Dear Creek Anomaly - Proton Precession Magnetometry - Preliminary Ground Check	D/MQ01/001	1:2 500
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SUMMARY

The Shell Company of Australia, in Joint Venture with the Commonwealth Aluminium Corporation Limited, has carried out mineral exploration on E.L. 14/80, Hayes Peak, since August, 1980.

The initial work undertaken by Shell on E.L. 14/80, took the form of an airborne magnetic and radiometric survey, which was designed to locate Bischoff- or Moina-type magnetic anomalies. The airborne geophysical data was evaluated, and four anomalies were chosen for follow-up, namely; 4044/2, Upper Stowport; 4044/3, Dear Creek; 4043/2, Ellis Creek South and 4043/3, Ellis Creek North (Refer Fig. 1).

Ground follow-up has begun on three of the four anomalies (4044/2, 4044/3 and 4043/3), and further ground work will continue, particularly at Upper Stowport.

Apart from ground follow-up of airborne geophysical features, the other main area of interest for the ongoing exploration programme on E.L. 14/80 will be the search for greisen sheet of stockwork vein style mineralization in the upper portion of the Husetop Granite.

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1.0 INTRODUCTION

In March of 1980, the Shell Company of Australia Limited applied to the Mines Department for an Exploration Licence covering 128 sq. km. centred on Upper Natone. In August, 1980 the Exploration Licence was granted to the Shell Company under the title of E.L. 14/80, Hayes Peak.

The licence area lies south and southeast of Burnie, and its extent may be seen on Figure 1. It lies between E.L.'s 8/77, Riana and 4/77, Highclere, and together with these and E.L. 1/76, Guildford, constitute the Housetop Joint Venture between the Shell Company of Australia Ltd. and the Commonwealth Aluminium Corporation Limited.

This report deals with the search for Sn, W and base metal mineralization on E.L. 14/80, Hayes Peak.

2.0 TOPOGRAPHY & ACCESS

Most of the licence consists of fairly rugged granite hills and deeply incised, north-flowing rivers. Where Tertiary basalt occurs, it forms flat plateau areas, with the main land use being grazing and cropping. The highest peak is Mount Housetop at 700 metres above sea level. Elsewhere, the basalt plateau stands at about 400 metres above sea level.

The area is serviced by many sealed roads, and access is easily gained from Burnie. Those portions covered by bush are traversed by many 4WD tracks.

3.0 REGIONAL GEOLOGY

The northern part of the licence is covered by the Burnie One Mile Geology sheet (Gee, 1967). The St. Valentines 1:50 000 sheet, which covers the southern part of the licence is currently in preparation. A quarter million scale sheet of Burnie (Williams and Turner, 1973),

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covers the whole area of the licence. The regional geology of the licence has been adequately covered by several authors, including Gee (1977) and Turner and Williams (1974).

The oldest rocks present in the district are the Proterozoic Burnie Formation, which is a north-northeast trending, folded, monotonous sequence of well-bedded, black, slaty mudstone with quartz-wackes thought to be turbidites (Gee, 1977). These rocks have been intruded by the Devonian Housatop Granite, which outcrops over large areas of the southern part of the licence. Two phases of this granite have been reported (Gee, 1977). It is generally a uniformly medium-grained adamellite, with the second phase being a porphyritic potassic granite occurring along the eastern contact. No mineralization is reported from the licence area.

Tertiary basalt cover is extensive, particularly in the northern part of the licence. Generally this basalt cover obscures the contact relations between the intruded country rocks (Precambrian Burnie Formation) and the granite, with the exception of some exposure along the Emu River, near Upper Stowport.

4.0 PREVIOUS INVESTIGATIONS

In the past, exploration work on the licence area has been rather limited, due to the fact that the main outcropping rocks are Tertiary basalt and Devonian granite, and that no known mineralization occurs in the area. Work has been concentrated on areas just outside of the licence, such as Kara, Natone, Cuprona and Highclere, where tungsten, iron and copper deposits are known to occur.

In 1896, Montgomery made mention of a greisen-style tin deposit occurring southwest of Upper Natone. This tin deposit, known as Cranes Tin Prospect was later investigated by Blake (1936, 1958) and Collins (1980). They describe the prospect as tin-bearing gravels which occur as a deep lead in a pre-existing valley in the

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Devonian granite. The tin-bearing gravels were derived mainly from quartz-tourmaline-cassiterite greisen veins, traversing porphyritic and aplitic variations of the normal granite.

As part of a B.Sc. Honours project, Sheehan (1969) carried out a gravity survey in northern Tasmania. This survey included the eastern part of the Husetop Granite and extended onto areas now covered by E.L. 14/80, Hayes Peak.

E.L. 1/69, held previously by Tasminex N.L. partly covered the Hayes Peak licence. From 1972 to 1974 Australia and New Zealand Exploration Co. (ANZECO) carried out exploration over E.L. 1/69 for Tasminex. The work done was chiefly examination of stream sediment panned concentrates for the presence of scheelite. No detailed follow-up to this work was done in the area now covered by E.L. 14/80 (Brandt, 1973, 1974).

In 1972, Conzinc Rio Tinto of Australia Exploration (CRAE) carried out ground scintillometer work over the Husetop Granite (under E.L. 4/72, Highclere), but did not detect any significant mineralization (Porter, 1972). CRAE carried out more detailed work to the southeast of the licence. (Porter, 1974, 1975, 1976).

5.0 AIRBORNE MAGNETIC & RADIOMETRIC SURVEY

Early in 1980, Shell commissioned Geometrics to fly an airborne magnetic and radiometric survey of approximately 6800 line kilometers over E.L. 14/80 and adjacent licences. The object of the survey was to locate Moina-or Bischoff-type magnetic anomalies in areas held under joint venture by Shell and Comalco.

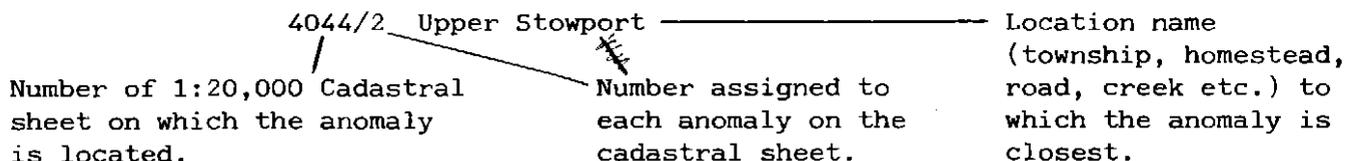
The data from the airborne survey were initially evaluated by geological staff at Devonport and anomalies that occurred over prospective lithologies and structural locations were given priority for ground follow-up. All airborne data were later checked, modelled and evaluated by Dr. Geoff. Dickson, a consulting geophysicist. His recommendations are to be found in his five reports. The sections of his reports detailing anomalies on E.L. 14/80, Hayes Peak may be found in Appendix 1.

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Only four magnetic anomalies on E.L. 14/80 were selected for ground follow-up by Dr. Dickson, namely 4044/2, Upper Stowport; 4044/3, Dear Creek; 4043/2, Ellis Creek South; and 4043/3, Ellis Creek North (which occurs partly on E.L. 8/77, Riana). All anomalies are at least partially basalt-covered. The Upper Stowport anomaly is basalt-covered but near the Emu River the Precambrian Burnie Formation and the Housetop Granite are outcropping. Ellis Creek North and South are also basalt covered, but occur close to outcropping Housetop Granite. The Dear Creek anomaly is completely covered with Tertiary basalt.

The exploration objective for E.L. 14/80, and other Tasmanian E.L.'s held by Shell/Comalco, has centred around the ground follow-up of favourable airborne anomalies located by the Geometrics survey. To date, some initial ground follow-up has been done on anomalies 4044/²~~3~~ Upper Stowport; 4044/3 Dear Creek and 4043/3 Ellis Creek North. The following summary on exploration activities will deal with ground follow-up completed so far on each anomaly.

In Appendix 1, a catalogue of anomalies may be found showing number, name, location, work done, work recommended and geology. The system of assigning number and name to anomalies is as follows:



6.0 UPPER STOWPORT - ANOMALY 4044/2

6.1 General

Airborne magnetic anomaly 4044/2, Upper Stowport is located approximately three kilometers west of Natone, on the edge of a plateau 120 metres above the deeply incised Emu River. Most of the anomaly area is covered with Tertiary basalt, however Proterozoic Burnie Formation sediments and Devonian granite outcrop along the Emu River. The Tertiary basalt partially masks the contact between the granite and the Burnie Formation in this area.

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6.2 Initial Magnetic Follow-up

A one kilometre long, northwest - southeast ground magnetic traverse was run across the airborne anomaly (bearing of line = 327° M), with a station spacing of 25 metres. The only outcrop along this line is a massive, dark, highly indurated, fine grained basalt, with magnetic susceptibilities of less than 200×10^{-6} cgs units. A noisy profile was obtained over the basalts to the east of the anomaly, and the main airborne target was ground located as a 200 metre wide 1200 nT ground magnetic feature.

While the initial ground follow-up seemed to indicate that the anomaly had a basalt source, its close proximity to the contact between the Burnie Formation and the Housetop Granite required further investigation. Therefore, a more extensive grid was established over the area. (Refer Figs. 2 - 9).

6.3 Gridding

A grid was established over the magnetic anomaly at Upper Stowport covering approximately 0.6 sq. km. The base line (1350E) is 600 metres long and with a bearing of 267° M. Each of the four cross lines is one kilometre long and has a bearing of 327° M. Line spacing is 200 metres, while peg spacing along the line is 50 metres.

6.4 Geological Mapping

The predominant rock type over much of the Upper Stowport grid is a massive, fine-grained Tertiary basalt. This basalt forms a plateau, and it is only on the steep slopes to the west adjacent to the Emu River that other rock types outcrop.

Outcropping along the river and on the slope down to the river are sediments of the Proterozoic Burnie Formation. These sediments vary from well-banded slates and shales, to massive

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sandstones and quartzites. The magnetic susceptibilities of these sediments vary widely, from about 400 to $10\ 000 \times 10^{-6}$ cgs units.

Devonian Housetop Granite outcrops in the river on the southern part of the grid. As with most other outcrops of granite on the Hayes Peak E.L., the granite at Upper Stowport is a medium grained adamellite.

6.5 Soil Sampling

Soil sampling was done at Upper Stowport along all grid lines and the base line, at a 50 metre interval, with an average sample depth of one metre. The samples were dried, sieved, and the -80 mesh portion sent away for analysis. Elements analysed were Sn, W, Cu, Pb, Zn, Ni, Fe and Mn. For analytical results refer Fig. 4, for contoured results, refer to Figs. 5 - 9. In all cases, results are low with minor patchy higher values. There is also little consistency between elements probably reflecting the widespread basalt cover.

6.6 Ground Magnetism

Following the initial ground magnetic traverse, the establishment of a grid allowed for a more comprehensive magnetic survey to be done. A total field ground magnetic survey was carried out on each of the grid lines and the base line at a 25 metre station spacing. Base station readings were used to correct all data for diurnal drift. Ground magnetic values are plotted on Fig. 2 and stacked profiles may be found on Fig. 3. The data collected was very noisy and shows little continuity between grid lines. For this reason a 450 metre fill-in line was surveyed. This line is 1500N and it was designed to clearly define the location of the ground magnetic anomaly.

To date, no modelling of the magnetic data has been done, however it is thought that noisy response due to the basalt will be able to be stripped, leaving a residual feature. Work done so far by the company geophysicist has, however, indicated that the initial aeromagnetic feature has not been adequately covered by the grid, and that further work is needed to ensure complete ground location of the airborne feature.

6.7 Rock Chip Sampling

Five rock chip samples from the Burnie Formation sediments were collected and sent for analysis. Galena stringers are known to occur in the Burnie Formation to the north and west of Upper Stowport, and while no stringers were recognized in hand specimens from Upper Stowport, it was thought that the geochemistry of the rock may prove interesting. Results from the sampling may be found in Appendix 2. Of the five samples sent, only one revealed high results. A value of 350 ppm Pb and 105 ppm Zn was recorded, against average values for the other samples of 10 ppm Pb and 65 ppm Zn.

6.8 Conclusions & Recommendations

To date, geochemical results show little that upgrades this prospect. Geologically, the setting of the prospect is interesting in that it occurs over a partially basalt covered contact between the Proterozoic Burnie Formation sediments and the Devonian Husetop Granite. Ground magnetic work to date indicates that an anomaly is present, but that, so far, the airborne feature has not been adequately ground located.

It is recommended that further gridding and ground magnetic work be done on this prospect. In conjunction with this, detailed mapping of the prospect and its surrounding area will be necessary.

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7.0 DEAR CREEK - ANOMALY 4044/3

7.1 General

Anomaly 4044/3, Dear Creek occurs approximately one kilometre west of the Emu River and approximately three kilometres east of the township of Ridgley. Proterozoic Burnie Formation sediments outcrop along the Emu River to the east of the anomaly, which itself is basalt covered. Initial follow-up of this anomaly took the form of a single ground magnetic traverse. Data from this traverse was then used to decide whether further follow-up, for example, gridding, soil sampling etc., was necessary.

7.2 Initial Magnetic Follow-up

A single 600 m long southeast to northwest traverse was run across the magnetic strike of the anomaly (bearing of line = 327° M). Total field magnetic readings were taken every 25 metres with a Geometrics 4816 proton precession magnetometer. All readings were corrected for diurnal drift using base station readings. For location of airborne anomaly and ground magnetic profile, refer Fig. 10.

7.3 Interpretation & Recommendations

A broad 2000 nT magnetic anomaly occurred in association with a low ridge of olivine basalt. Magnetic susceptibility of the basalt ranges from 270 to 1200 x 10⁻⁶ cgs units. This broad, somewhat noisy magnetic profile has been interpreted as having a basalt source and, hence, no further work is deemed necessary.

8.0 ELLIS CREEK NORTH - ANOMALY 4043/3

8.1 General

Airborne magnetic anomaly 4043/3, Ellis Creek North occurs approximately three kilometres south of the township of Natone,

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on the boundary between E.L. 8/77, Riana and E.L. 14/80, Hayes Peak. The anomaly itself is basalt covered, but does occur near outcropping Devonian Housetop Granite. Initial ground follow-up took the form of a reconnaissance magnetic traverse.

8.2 Initial Magnetic Follow-up

A single 700 metre magnetic traverse was done along a dirt track that runs roughly northwest - southeast through the anomaly. Total field magnetic readings were taken at a station spacing of ten metres along the road. For location of anomaly and results, refer Fig. 11. The profile locates a broad, low amplitude (1000 nT) anomaly. Outcropping rock type along the road and in the fields adjacent to the road is Tertiary basalt with a magnetic susceptibility of 100 - 300 x 10⁻⁶ cgs units.

8.3 Interpretation & Recommendations

As yet, modelling and interpretation of the data collected is still awaited, however it is thought that the Tertiary basalt in the area is the source of the anomaly. It is recommended that a second east-west magnetic traverse be done over the peak of the anomaly to ensure adequate ground location of the feature and that accurate modelling can be done. At present it is not recommended that soil sampling along this cross traverse be done due to the extensive basalt cover throughout the area. If modelling of the magnetic data shows the need for further follow-up work, selective soil sampling along a grid may be done with a view to sampling bedrock below the basalt.

9.0 CONCLUSIONS & RECOMMENDATIONS

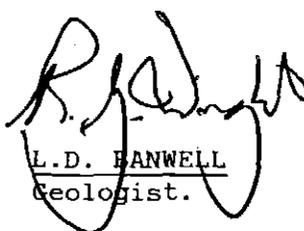
Evaluation of all airborne geophysical data collected has now been completed and follow-up of anomalies is proceeding. To date, single line traverses have been done at Dear Creek (Anomaly 4044/3) and Ellis

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Creek North (Anomaly 4043/3). No further work is proposed at Dear Creek North and interpretation and modelling of the Ellis Creek North data is awaited. At Upper Stowport (Anomaly 4044/2) more extensive ground follow-up has been undertaken - gridding, soil sampling, mapping, ground magnetics, etc. However, coverage of this area has proved to be inadequate and further work is planned.

Crane's Tin Prospect (on E.L. 4/77, Highclere) shows that greisen sheet and stockwork vein type mineralization exists within the Husetop Granite. With this in mind, the outcropping Husetop Granite on E.L. 14/80 will be examined for its potential as host to this type of mineralization.

The ongoing exploration programme on E.L. 14/80, Hayes Peak will involve continuing ground follow-up of Anomaly 4044/2, Upper Stowport and Anomaly 4043/2 Ellis Creek South. The programme should also involve the mapping and sampling of the Husetop Granite in an effort to determine its potential as a host to greisen sheet or stockwork vein style mineralization.


per L.D. HANWELL
Geologist.

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APPENDIX 1GEOMETRICS AIRBORNE MAGNETIC & RADIOMETRIC SURVEY

- A. Sections of Dr. G. Dickson's Reports on aeromagnetic anomalies located on E.L. 14/80.
- B. Shell catalogue of anomalies, indicating numbering system and location.

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December 3, 1980.

TASMANIAN AEROMAGNETICS -RADIOMAGNETIC SURVEYSPROGRESS REPORT1.0 Comments on Programme to date.

1.1 We have, at this date, a copy of all twenty-six sheets of the aeromagnetic data contoured at a scale of 1:20,000. However, of these only nine are of an acceptable quality, and of these, two need to be re-contoured in final form. The major error in the data is one of navigation or transposition of photographic "picks" to base plan. The result is, the contour plans are "torn" in many places. A less important, but uncorrectible source of error lies in variation of altitude over magnetic basalt. This results in a "noisy" map.

At this stage, following talks with Rod Gardener of Geometrics, we believe the problems are in hand and we should receive a good deal of the data in final form before Christmas.

The outstanding sheets are:

<u>Sheet</u>	<u>Priority for Completion</u>
4340	7
4242	-
4241	5
4240	4
4239	6
4143	-
4142	2

December 3, 1980

<u>Sheet</u>	<u>Priority for Completion</u>
4141	2
4140	-
4139	-
4044	9
4042	1
4041	3
3943	8
3940	-
3840	-
4339	-

1.2 Splicing in of earlier data, and the production of a smaller scale map cannot proceed until the final maps are available. At this stage, I believe mid-January is the earliest date for this.

1.3 The regional work cannot proceed until 1.2 is completed.

1.4 We have examined the airborne data relating to the twenty anomalies selected by the Devonport staff. A discussion of the results of our examination follows in another section

2.0 Ground Follow-up.

Ground follow up should consist of:

- a) A surface examination, and it is vital that susceptibility measurements be taken whenever possible. Our rating of the anomalies is heavily dependent on knowing the susceptibility of the surface rocks.

December 3, 1980.

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- b) Magnetometer survey to:
 - i) verify ground location;
 - ii) further evaluate the target.*

- c) Ground EM examination of target. To this end, we have contacted Wolf Tschaikowsky of Geoterrex to arrange field tests using the lightweight Max-min EM System. Tests can be planned for mid-December and suitable test sites over known mineralisation should be considered. Cost for the Max-min System will be about \$200/day for one man and equipment. A two-man crew is normally required, three may be required in rough terrain. The system should be capable of seeing reasonably good conductors to a depth of 70-80 metres; perhaps more in reasonable terrain. Careful line preparation is required, as this is a frequency system, and the pegs need to be chained.

3.0 Method of Rating the Aeromagnetic Anomalies.

We have given anomalies a higher rating where the interpreted parameters begin to approach those observed over Moina and Mt. Bischoff. In evaluating the effect of the basaltic topography, we have used a value of 1500 x 10**⁻⁶ cgs. units. If this is in error at any particular location, our rating will be seriously effected. In particular, anomaly site 4, Cuprona, is probably related to topography,

* Generally, the width of a magnetic body cannot be resolved when it is buried to a depth greater than its width. We tend, therefore, to overstate the widths of airborne anomalies. Thin targets, whether they be horizontal or vertical, are more likely to represent mineralisation than wide targets.

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December 3, 1980.

but this cannot be a basaltic source. Susceptibility measurements are highly desirable here.

At Moina an anomaly of 1300 gammas is observed, accompanied by a small but noticeable K channel high. Instead of interpreting for the susceptibility, K, we use a parameter K', which is proportional to susceptibility, and we note a value of 900. At Mt. Bischoff, the amplitude is 700 gammas and K' is approximately 600. We therefore consider any anomaly, which is not obviously formational, with a K' value of, say, 400-500, to be significant, and more particularly so if the potassium channel is elevated.

Our two-dimensional models of reasonable basaltic topography (again we stress using 1500 cgs. units) cannot yield a K' value of 500. 50-100 would be a more likely value.

A copy of the results over Moina and Mt. Bischoff, along with some of the models are included.

December 3, 1980.

NOTES ON SELECTED ANOMALIES.

<u>Anomaly Number</u>	<u>Name</u>	<u>Comments</u>
1	Upper Stowport	East side of Emu River. K' is not high @ 200. Anomaly looks formational and the trend cuts the Emu River. Source is close to surface - may represent a buried channel. No immediate K channel response.
2	Natone	If associated with a sharn then not a strongly magnetic one. K' 400-500. No topo effects. Faulted to the south and probably to the north. Slight increase in K channel probably sediments.
3	Camena	Source is strongly magnetic with K' - 600-900. Depth of burial 600-800 m. Suggests an ultramafic source. Uncertain exploration potential.
4	Cuprona	Although an obvious topographic association, it cannot be basalt with susceptibility of 1500 cgs. The anomaly requires about 15,000 to be topographic. It does fit ultramafic range. Solutions suggest near-surface source. K channel slightly elevated - perhaps due to sediments. <u>Could source be the same as Camena.</u>

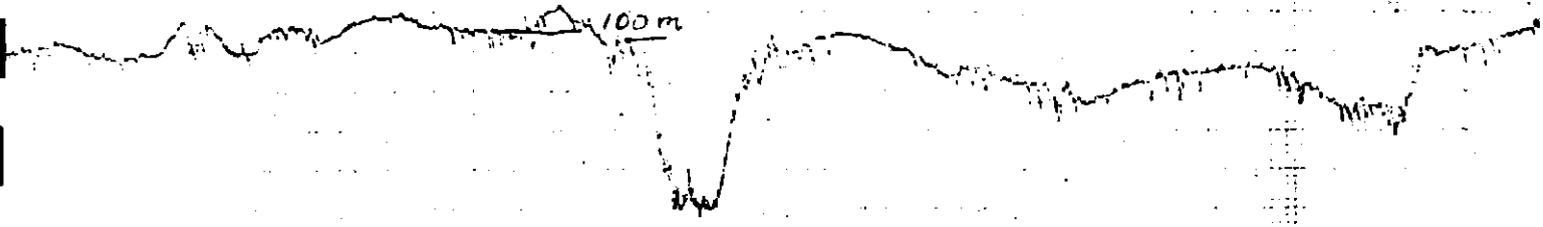
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#1 Upper. Stowport

A = 360
M = 100
W = 175
K' = 200

A =
V =
W =
K =

Line 238E / 9090
FLA 10.
Line Altimeter:



← E

4700

EMU HANSEN

4693

9100

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022

Tasmanian Surveys - Progress Report V

June 22, 1981.

3.6 Sheet No. 4043.

<u>Anomaly No.</u>	<u>Comments</u>
3, 248.5336 ELVIS CREEK SOUTH	The anomaly has an amplitude of about 900 gammas and the source could be narrow. Clearly the target has a <u>high susceptibility but correlates very closely with the topography.</u> I assume it is caused by basalt with a high susceptibility.
4, 243,5119 ELVIS CREEK NORTH	Multiple source anomaly. About 400 gammas, looks to be broad and formational. Could be related to anomaly 1 above. Some correlation with topography.
A and B Contour Plan	Anomalies A and B on the accompanying contour plan are magnetite skarns.

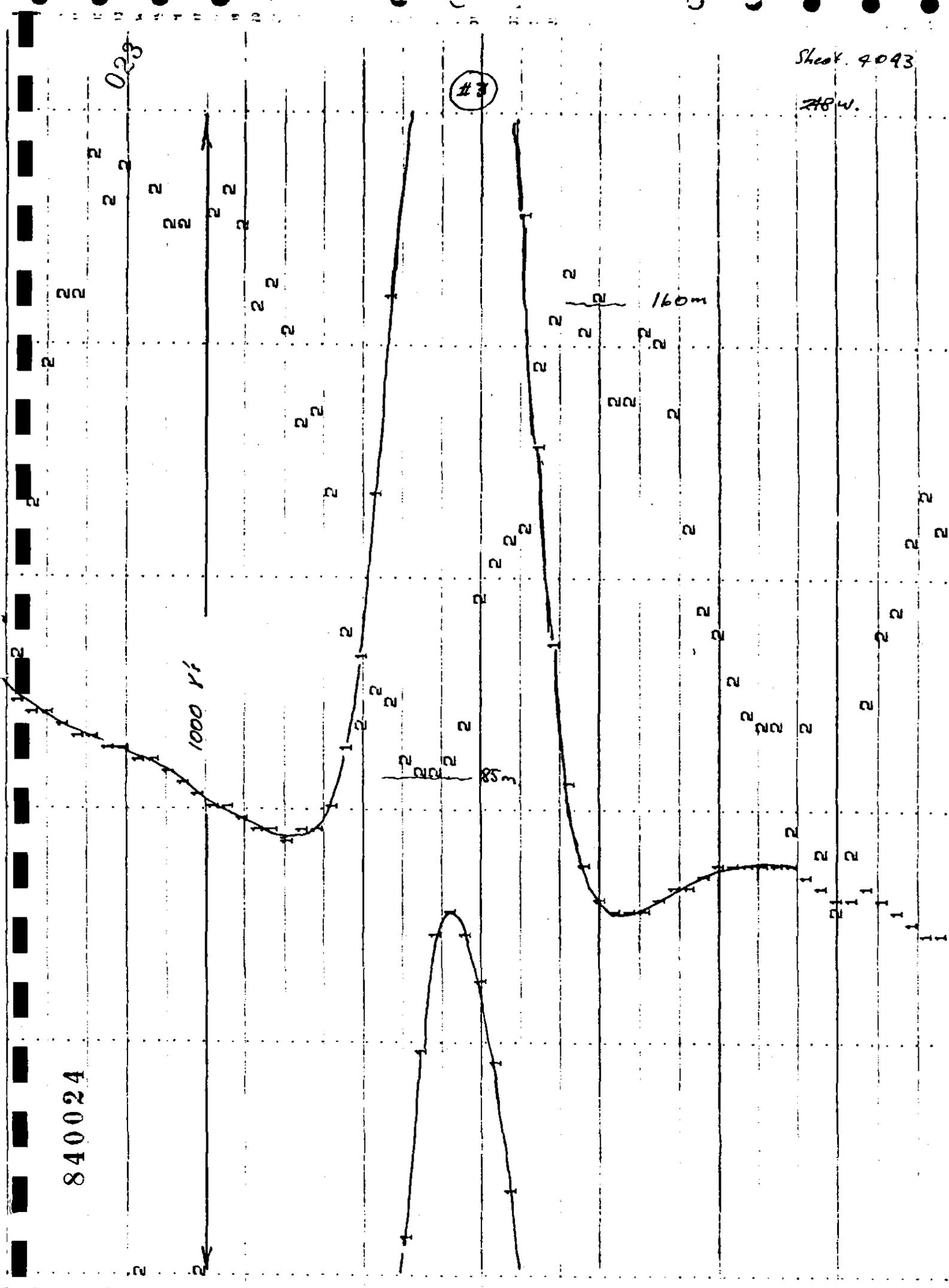
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1000 ft

160m

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4043
243. E

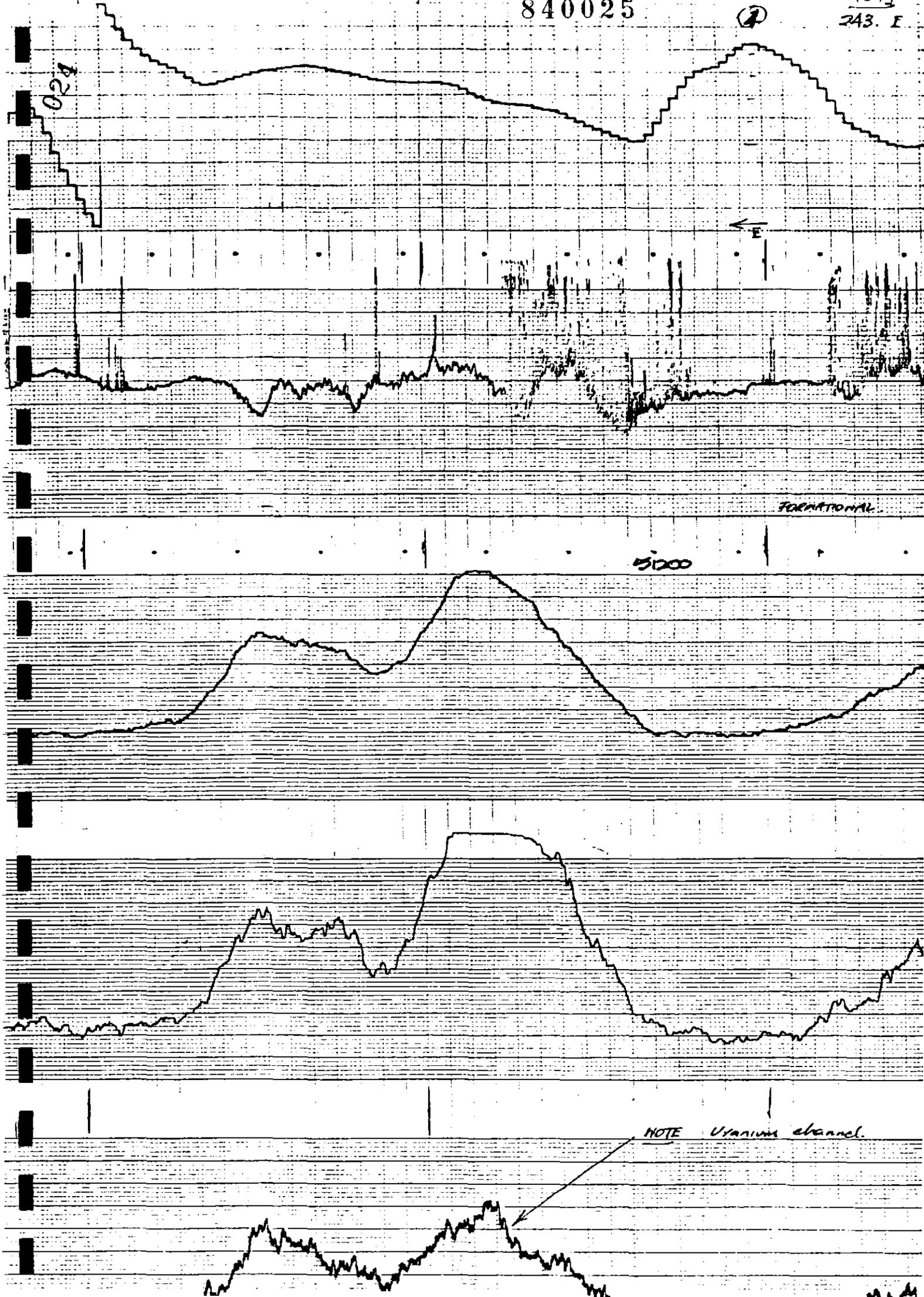
024

←
E

FORMATIONAL

51000

NOTE Uranium channel.



025

MOINA HOusetop SURVEY

ANOMALY/PROSPECTS

Sheet 4043

ANOMALY NO.	NAME	ORIG. NO.	LOCATION		WORK PROGRAM		GEOLOGY	PLANS
			Line/Fiduc	AMG	Completed	Recomm.		
4043/2	Ellis Creek South	GD V 3,248.5336	248/5336	409500mE/ 5439300mN	-	recce. line	basalt	
4043/3	Ellis Creek North	GD V 4,243.5119	243/5119	409500mE/ 5438200mN	recce. line	sec. mag trav.	basalt	D/MQ01/011
							Sheet 4044	
4044/2	Upper Stowport	GD I, 1	234/47910	406000mE/ 5442000mN	grid mag, geochem.	map, more mag E.M.	basalt, PC, granite	D/MQ01/002, 003, 005
4044/3	Dear Creek	N.H. data check	233/46960	404600mE/ 5442000mN	recce. line	-	basalt	D/MQ01/001

APPENDIX 2

UPPER STOWPORT ROCK CHIP SAMPLE RESULTS

**COMLABS Pty. Ltd.**

COMPUTERISED ANALYTICAL LABORATORIES



NATA REGISTERED No. 1526

OUR REF.: COM 811771

YOUR REF.: 4258/MQ01/LDB/25

Head Office and
Central Laboratory
305 SOUTH ROAD,
MILE END SOUTH
STH. AUST. 5031
TEL: (08) 43 5722
TELEX: AA89323

Queensland
Preparation Laboratory
172 LAVARACK AVE.,
EAGLE FARM,
QUEENSLAND. 4007
TEL: (07) 268 4748

Ms. L. Banwell,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

5.11.81

Dear Lyn,

RE: JOB COM 811771

Enclosed are the assays for the samples delivered to our laboratory on the
22nd October, 1981.

Yours sincerely,

Harry Fishman
Managing Director



COMLABS Pty Ltd

ANALYTICAL REPORT

COMPUTERISED ANALYTICAL LABORATORIES

JOB COM811771

O/N : 4258/MQ01/LDB/25

Results in ppm

Grid references.

SAMPLE	As	Sb	Sn	W		
85912	8	10	<4	<10	1800 N	1350E
85913	8	4	8	<10	1800 N	1350E
85914	7	12	<4	<10	1850 N	1350E
85915	6	16	<4	<10	1850 N	1350E
85916	10	20	4	15	1850 N	1350E

Method of Analysis : As Sb Sn W : XRF1



COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM811771

O/N : 4258/MQ01/LDB/25

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	ZFe	Mn
85912	4	8	55	48	8.00	630
85913	4	6	70	46	8.10	440
85914	<2	12	65	50	8.00	960
85915	20	350	105	16	2.60	970
85916	<2	10	80	38	7.40	1150

Method of Analysis : Cu Pb Zn Ni : AAS1
Fe Mn : AAS2



COMLABS Pty Ltd

ANALYTICAL REPORT

COMPUTERISED ANALYTICAL LABORATORIES

JOB COM811771

O/N : 4258/MQ01/LDB/25

Results in ppm

SAMPLE	Bi	Ag	Mo	Au	Hg
85912	<4	1	<4	<0.05	<0.05
85913	<4	1	<4	<0.05	<0.05
85914	<4	<1	<4	<0.05	<0.05
85915	<4	1	<4	<0.05	<0.05
85916	<4	<1	<4	<0.05	<0.05

Method of Analysis : Bi : AAS1
Ag Mo : AAS3
Au : AAS5A
Hg : AAS7

031

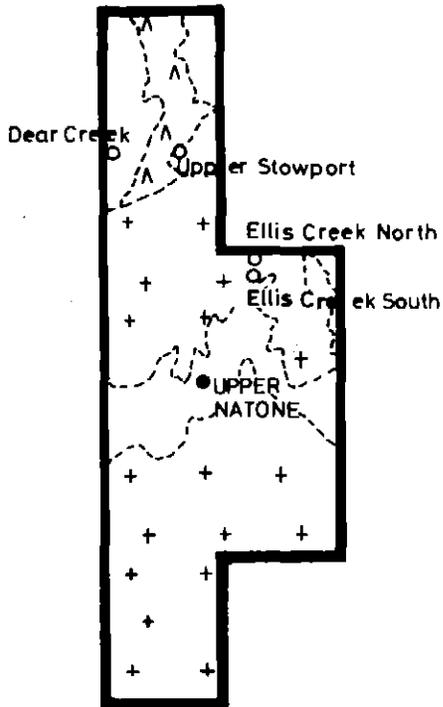
840032

FIGURE 1.

BASS STRAIT

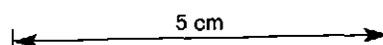
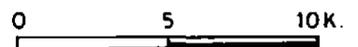
Burnie

Ulverstone



LEGEND

- △ △ Pre Cambrian
- + + Housetop Granite
- Aeromagnetic Anomalies



The Shell Company of Australia Limited
METALS DIVISION

E.L. 14 / 80
HAYES PEAK

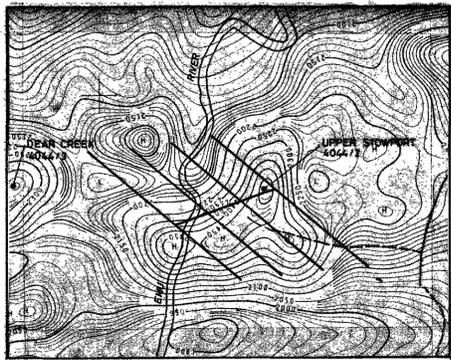
SCALE 1:250000 | DATE 5-10-81

AUTHOR L.D.B. | DRAWN H.L.H.

OFFICE DEVONPORT

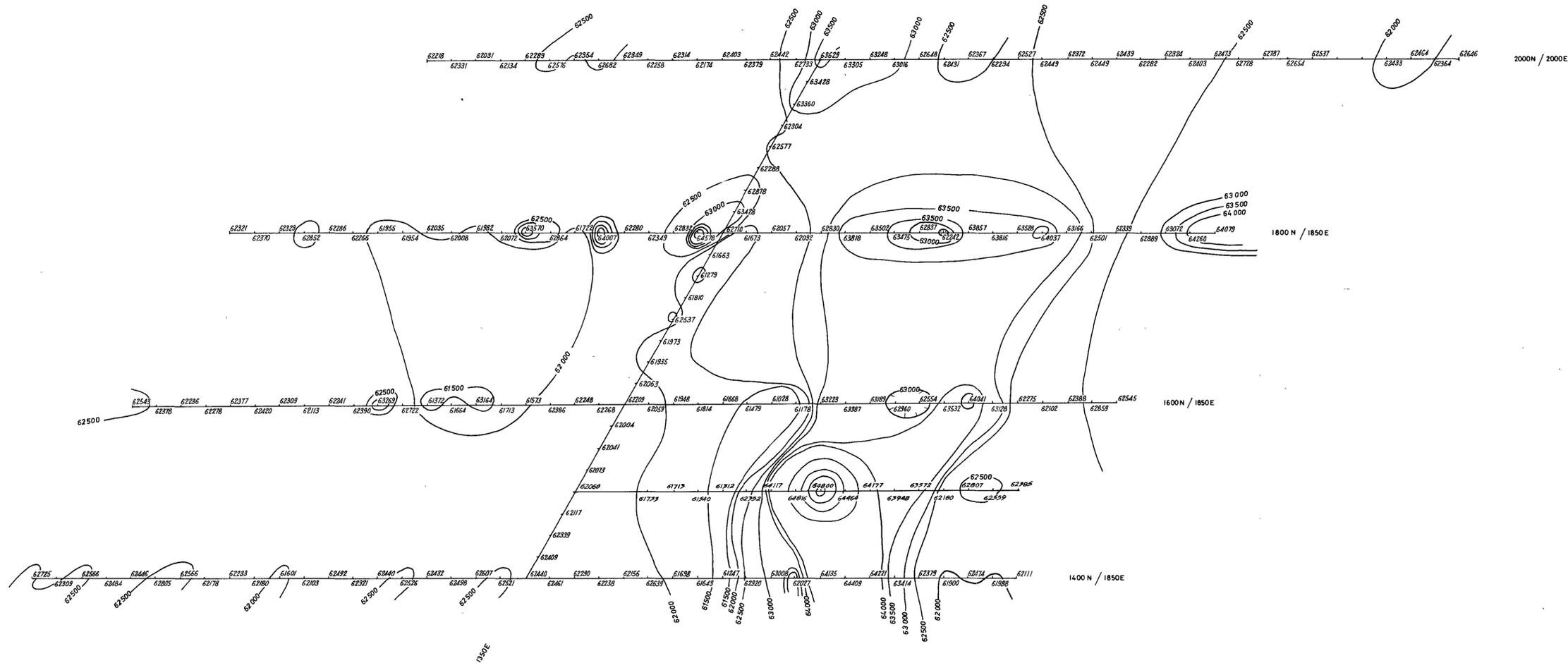
DRG No D/MQ01/012

82-1689

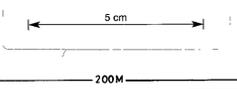


Position of the Upper Stowport grid.

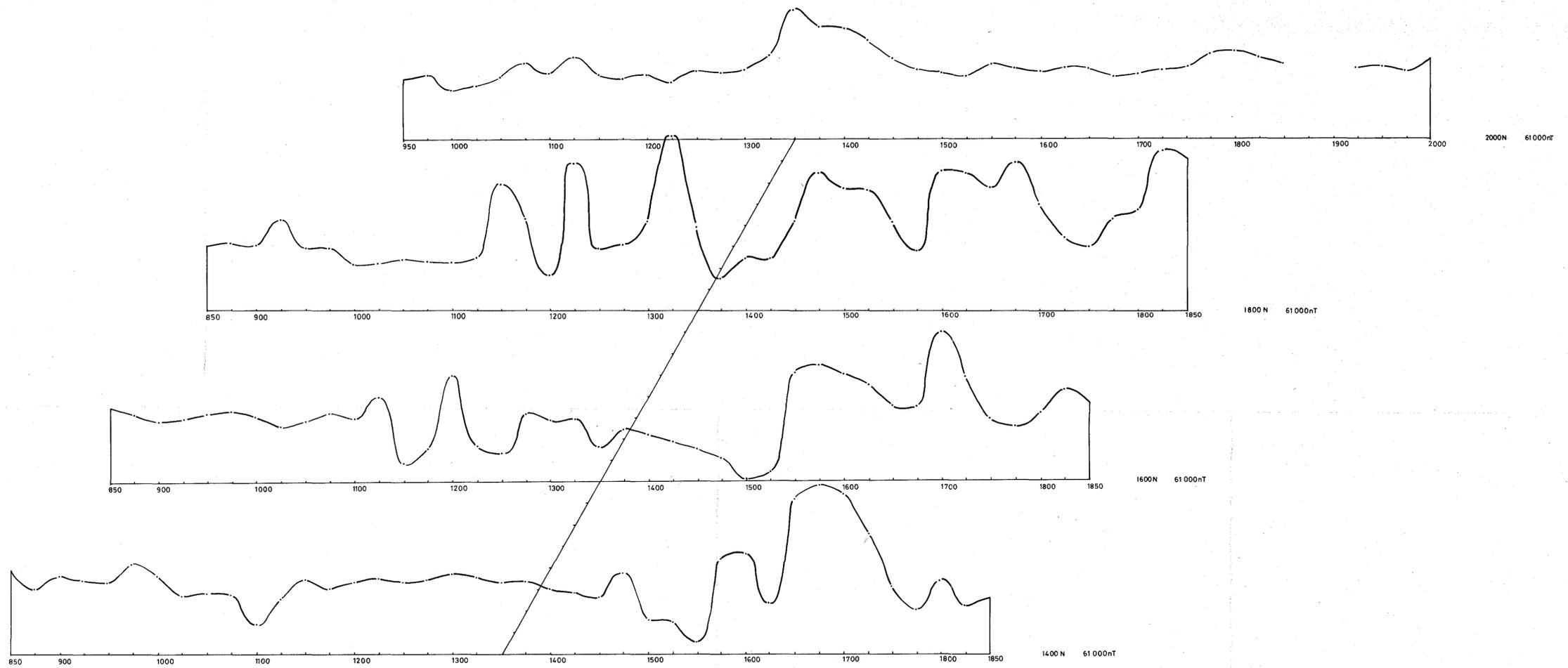
5 461 000 N
407 000 E



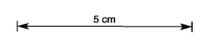
840033



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK UPPER STOWPORT PROSPECT MAGNETIC CONTOURS CONTOUR INTERVAL 500M	
2937	
Scale 1:2500	
FIG. No. 2	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MO 01/003
DATE 9-4-81	AUTHOR L D BANWELL
DRAWN Q.HEDDITCH	OFFICE DEVONPORT



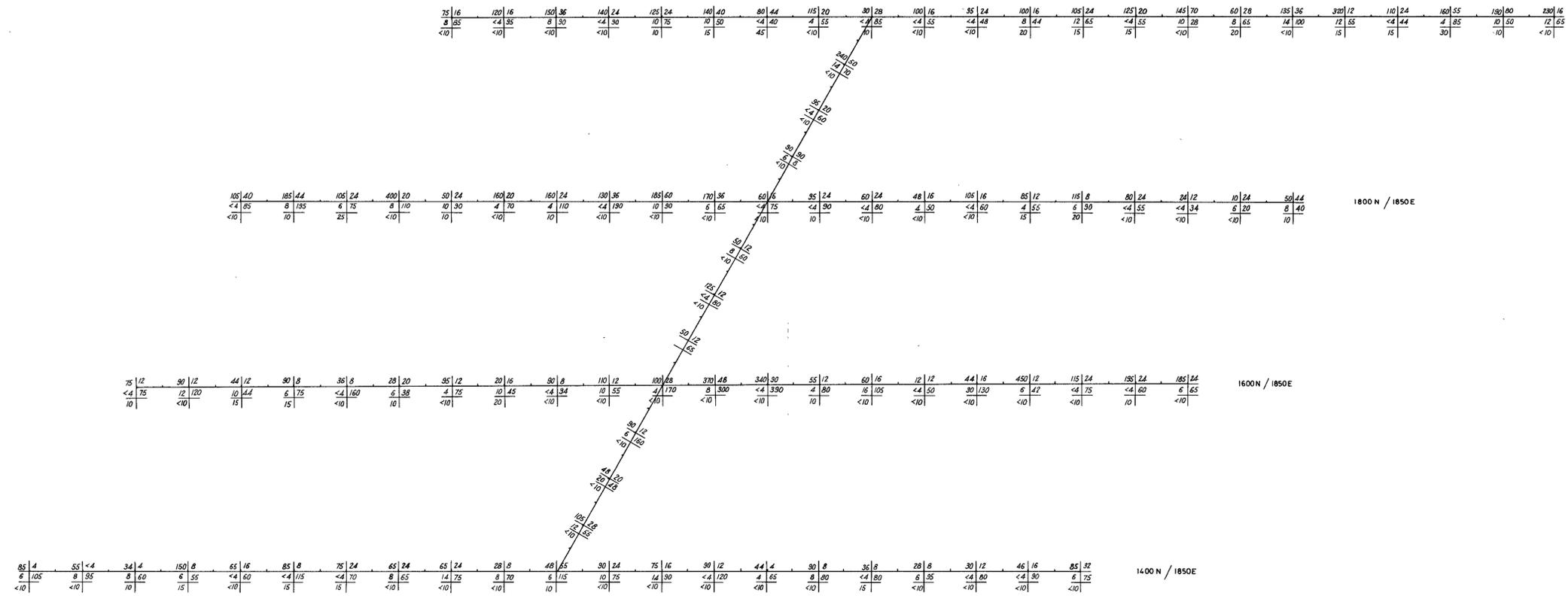
840034



2908

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14 80 HAYES PEAK UPPER STOWPORT PROSPECT STACKED MAGNETIC PROFILES 4044/2	
1cm=500nT Vertical Scale : J: 2500 Horizontal	
FIG. No. 3	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MQ 01/005
DATE 16-4-81	AUTHOR L.D. BANWELL
DRAWN O.HEDDITCH	OFFICE DEVONPORT

32-1689

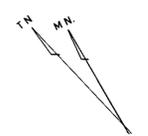


2000N / 2000E

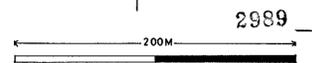
1800N / 1850E

1600N / 1850E

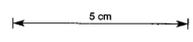
1400N / 1850E



NOTE ANALYSES IN PPM
 Cu Pb
 Sn Zn
 W



840035

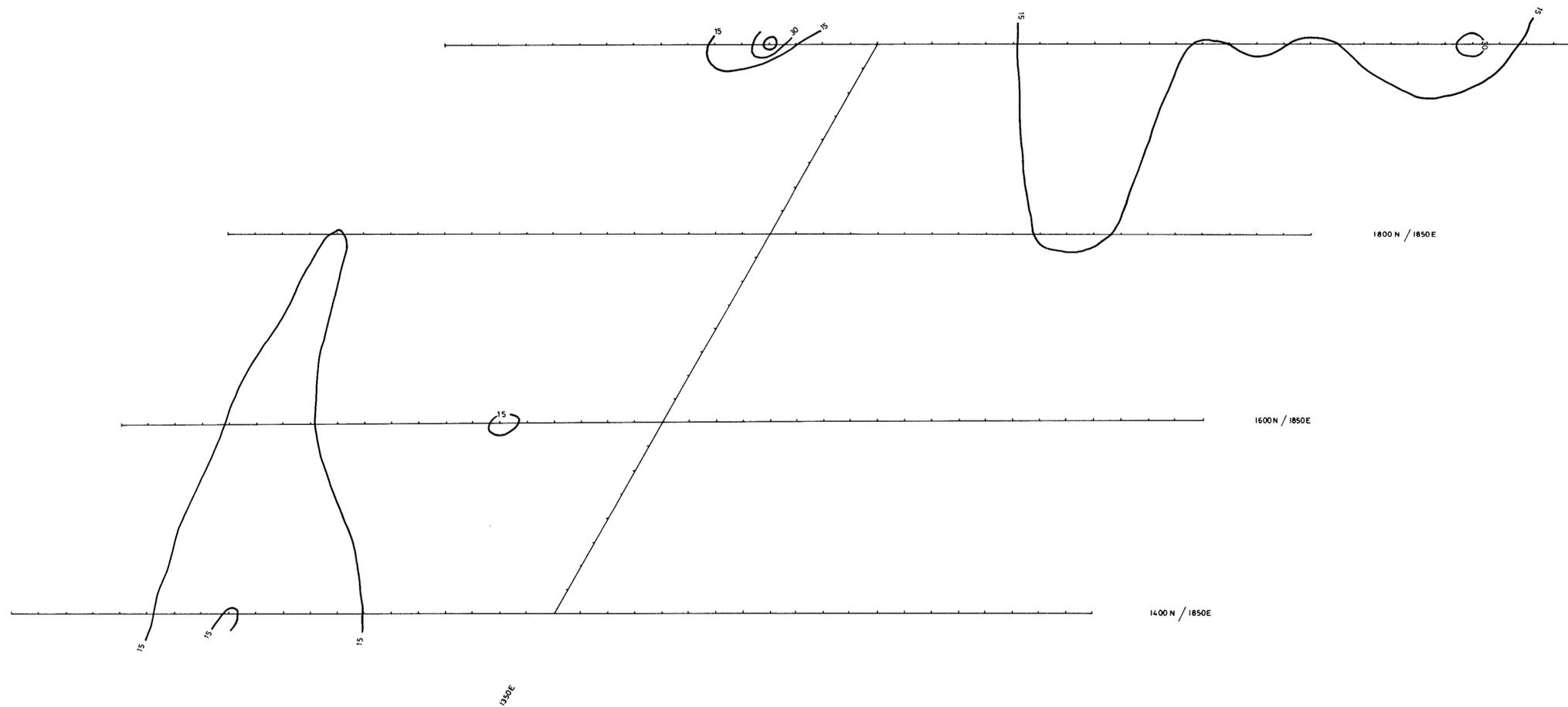


The Shell Company of Australia Limited
 METALS DIVISION
 E.L. 14/80 HAYES PEAK
 UPPER STOWPORT PROSPECT
 SOIL GEOCHEMISTRY

Scale - 1 2500

FIG No.	4	REPORT No.	08-1061
ENCL. No.		DRG. No.	D/MQ 01/004
DATE	10-4-81	AUTHOR	L D BANWELL
DRAWN	O.HEDDITCH	OFFICE	DEVONPORT

82-1689



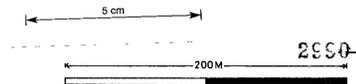
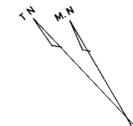
2000N / 2000E

1800N / 1850E

1600N / 1850E

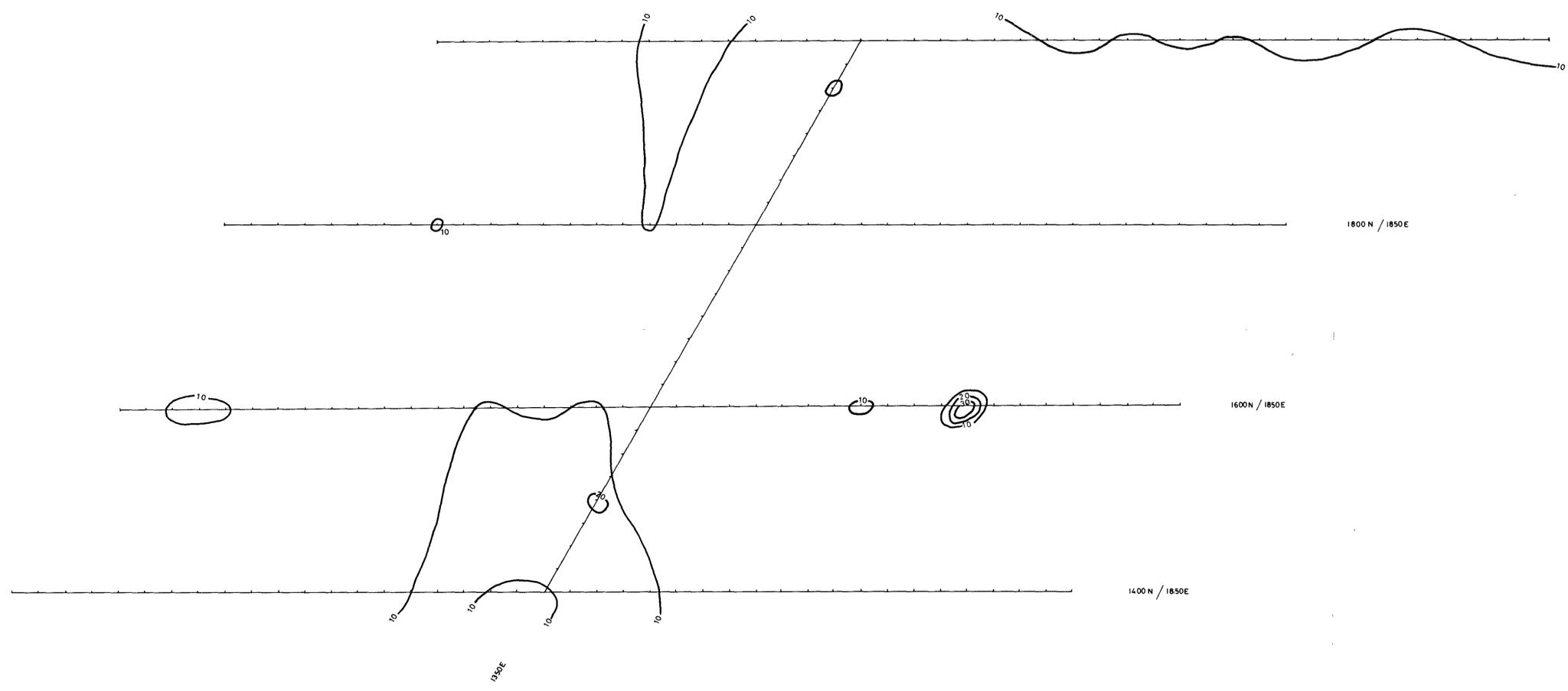
1400N / 1850E

Dike



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14 80 HAYES PEAK UPPER STOWPORT PROSPECT SOIL GEOCHEMISTRY W CONTOURS CONTOUR INTERVAL 15ppm.	
Scale - 1 2500	
FIG No. 5	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MO 01/006
DATE 29-4-81	AUTHOR L D BANWELL
DRAWN HLH	OFFICE DEVONPORT

840036



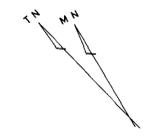
2000N / 2000E

1800 N / 1850 E

1600N / 1850E

1400 N / 1850E

1350E



5 cm

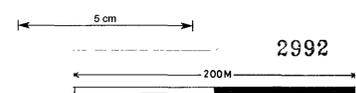
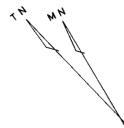
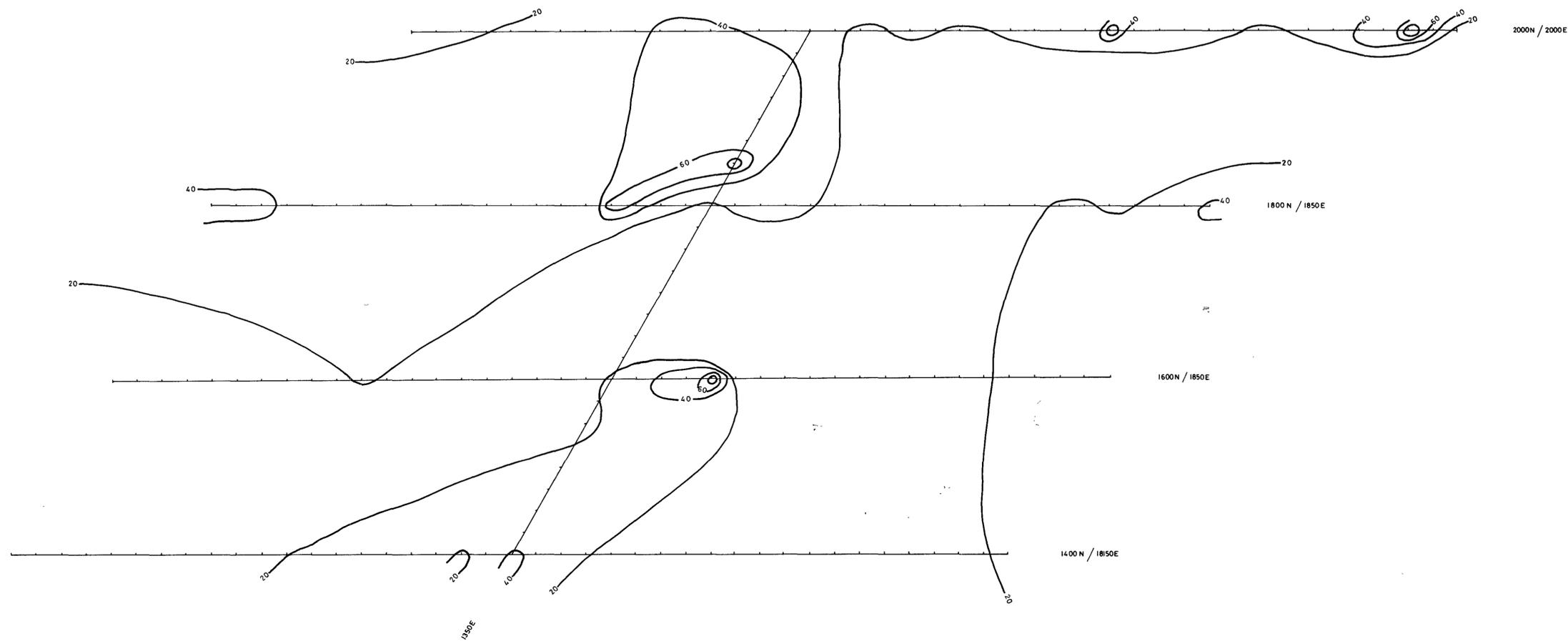
200M

2991

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14 80 HAYES PEAK UPPER STOWPORT PROSPECT SOIL GEOCHEMISTRY Sn CONTOURS CONTOUR INTERVAL 10ppm.	
Scale 1:2500	
FIG. No. 6	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MQ 01/007
DATE 29-4-81	AUTHOR L D BANWELL
DRAWN H L H	OFFICE DEVONPORT

840037

32-1684

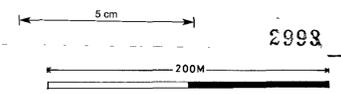
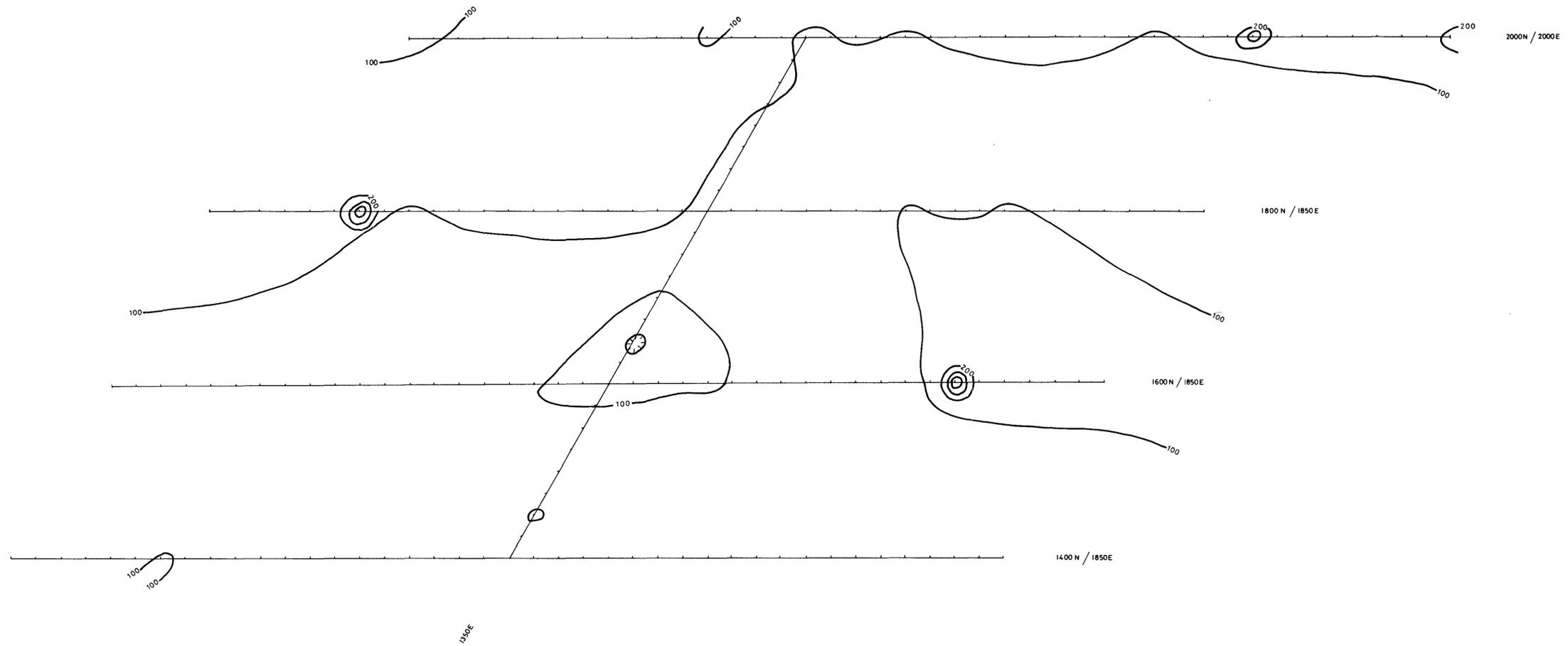


2992

The Shell Company of Australia Limited METALS DIVISION	
E.L. 14 80 HAYES PEAK UPPER STOWPORT PROSPECT SOIL GEOCHEMISTRY Pb CONTOURS CONTOUR INTERVAL 20ppm.	
Scale : 1:2500	
FIG. No. 7	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MQ 01/008
DATE 29-4-81	AUTHOR L D BANWELL
DRAWN H.L.H.	OFFICE DEVONPORT

840038

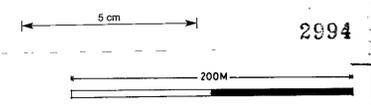
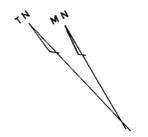
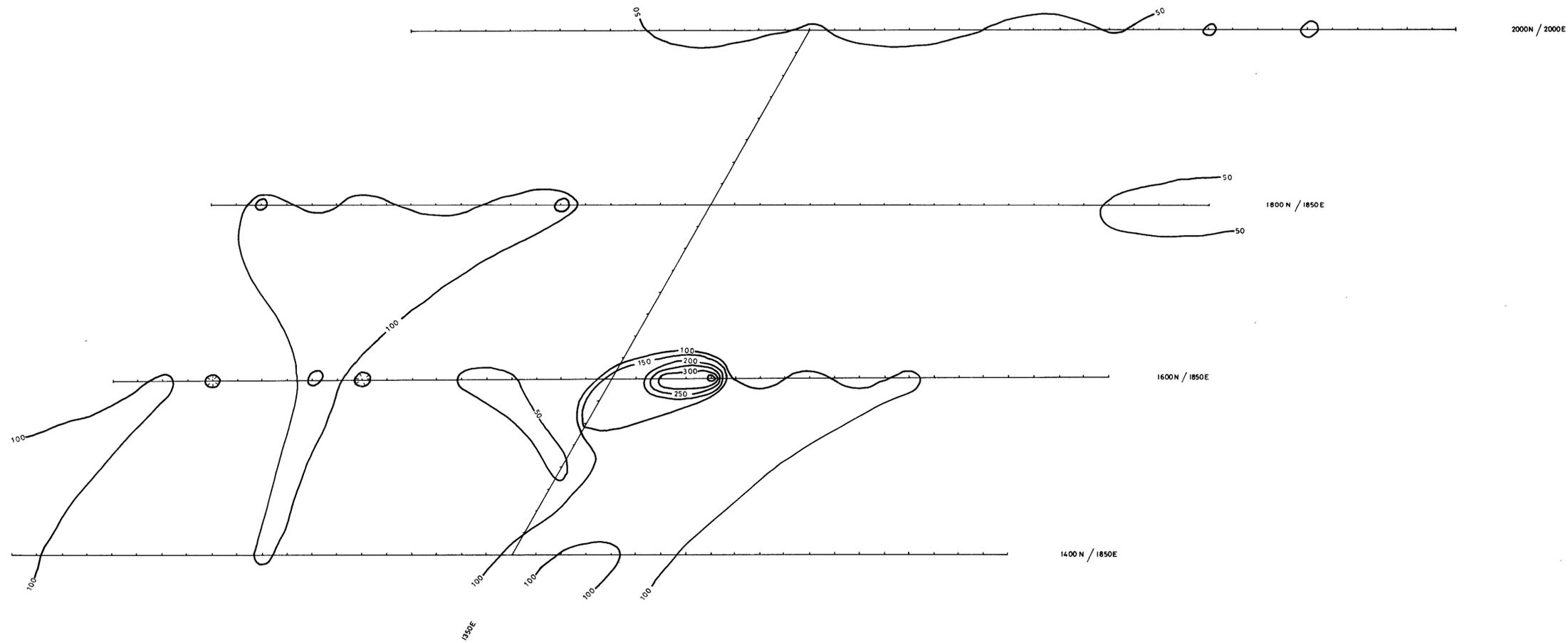
82-1689



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14 80 HAYES PEAK UPPER STOWPORT PROSPECT SOIL GEOCHEMISTRY Cu CONTOURS CONTOUR INTERVAL 100ppm.	
Scale 1:2500	
FIG. No. 8	REPORT No. 08-1061
ENCL. No	DRG. No 0/MQ 01/009
DATE 29-4-81	AUTHOR L O BANWELL
DRAWN H L H	OFFICE DEVONPORT

840039

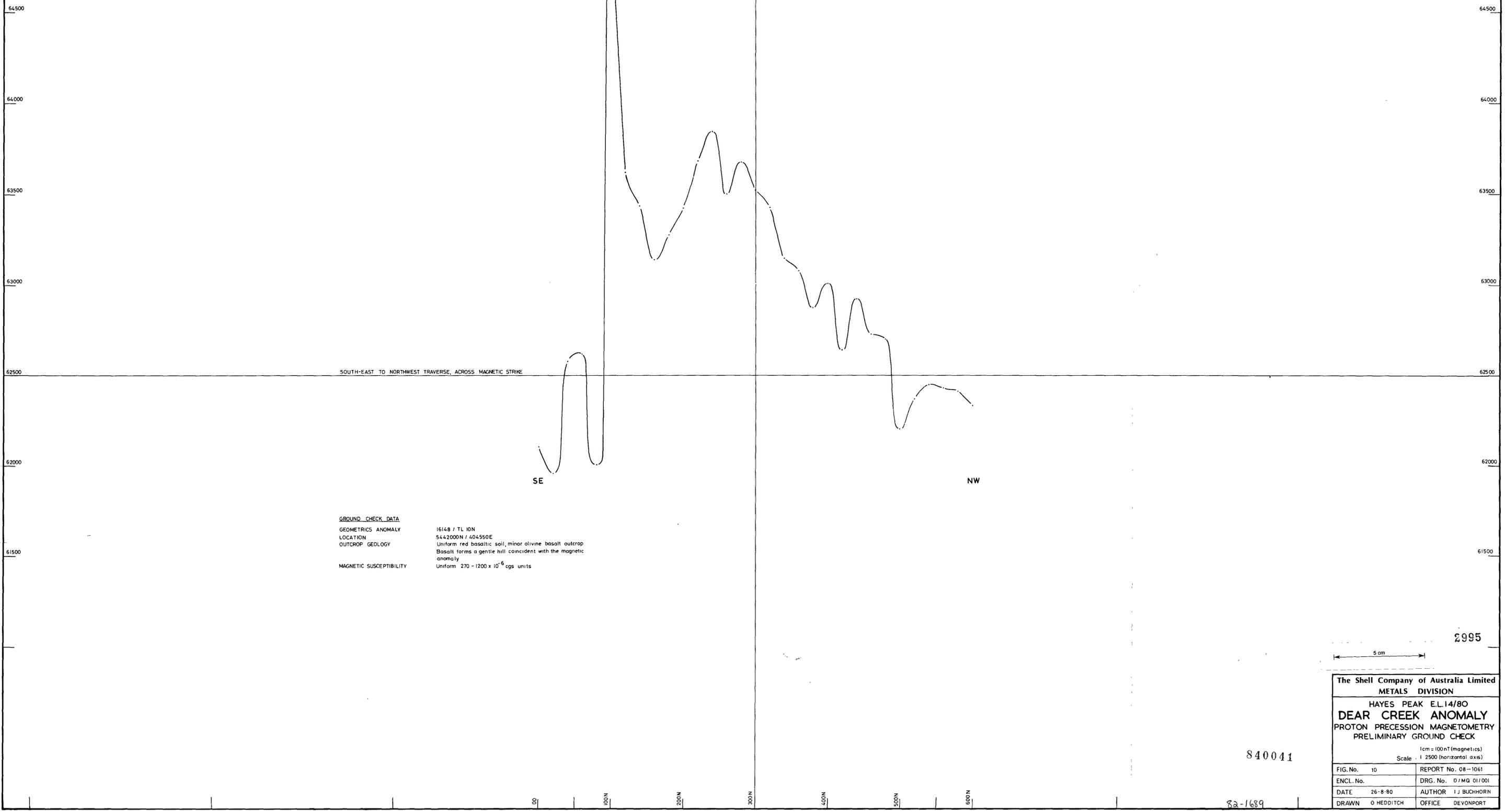
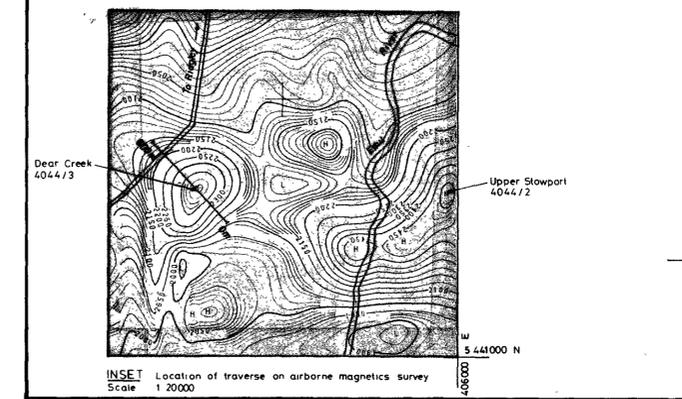
9a-1659



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14 80 HAYES PEAK UPPER STOWPORT PROSPECT SOIL GEOCHEMISTRY Zn CONTOURS CONTOUR INTERVAL 50ppm.	
Scale 1:2500	
FIG. No. 9	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MQ 01/010
DATE 29-4-81	AUTHOR L.D. BANWELL
DRAWN H.L.H.	OFFICE DEVONPORT

840040

82-189



GROUND CHECK DATA
 GEOMETRICS ANOMALY 16148 / TL 10N
 LOCATION 5442000N / 404550E
 OUTCROP GEOLOGY Uniform red basaltic soil, minor olivine basalt outcrop
 Basalt forms a gentle hill coincident with the magnetic anomaly
 MAGNETIC SUSCEPTIBILITY Uniform 270 - 1200 x 10⁻⁶ cgs units

2995

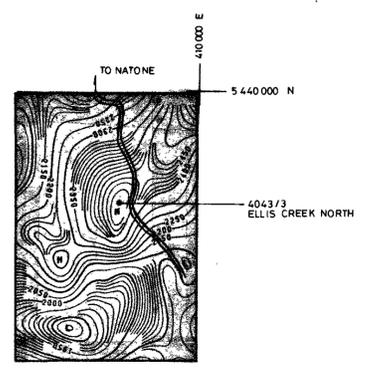
5 cm

840041

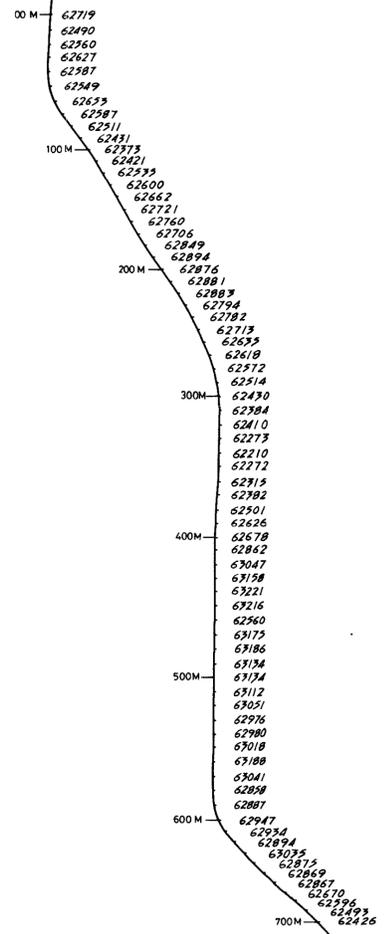
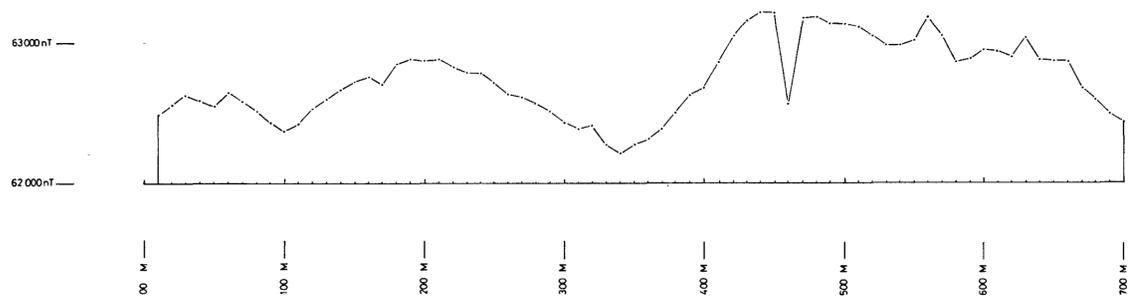
82-1689

The Shell Company of Australia Limited METALS DIVISION	
HAYES PEAK E.L. 14/80 DEAR CREEK ANOMALY PROTON PRECESSION MAGNETOMETRY PRELIMINARY GROUND CHECK	
1cm = 100nT (magnetics) Scale - 1:2500 (horizontal axis)	
FIG. No. 10	REPORT No. 08-1061
ENCL. No.	DRG. No. D/MQ. 01/001
DATE 26-8-80	AUTHOR I J BUCHHORN
DRAWN O HEDDITCH	OFFICE DEVONPORT

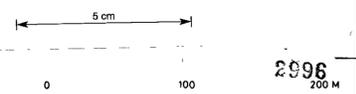
TO NATONE



INSET = LOCATION OF ROAD TRAVERSE ON AIRBORNE MAGNETIC SURVEY
Scale = 1:2000



NOTE
ALONG TRAVERSE OUTCROPPING ROCK TYPE IS TERTIARY BASALT WITH A MAGNETIC SUSCEPTIBILITY OF 100-300 X 10⁻⁶ EGGS UNITS



The Shell Company of Australia Limited METALS DIVISION	
E.L. 14/80 HAYES PEAK INITIAL GROUND RECONNAISSANCE OF MAGNETIC ANOMALY 4043/3 ELLIS CREEK NORTH	
Scale 1:2500	
FIG No. 11	REPORT No. 08-1061
ENCL No	DRG. No. D7/MQ01/011
DATE 25-9-81	AUTHOR L D BANWELL
DRAWN H L H.	OFFICE DEVONPORT

840042

82-1689