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THE SHELL COMPANY OF AUSTRALIA LIMITED

METALS DIVISION

E.L. 7/74 - MOINA

Progress Report on Exploration during the Period

31/7/81 - 30/6/82

21 SEP 1982

Author: W.D. Smyth

Report No: 08-1066

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APPENDICES

APPENDIX 1 : Petrological Reports

APPENDIX 2 : Diamond Drill Hole Log - Lake Gairdner

PLANS

<u>DRAWING NO.</u>	<u>TITLE</u>
D/MZ 01/148	E.L. 7/74, Moina - Regional Geology
D/MZ 01/146	Lake Gairdner - Soil Geochemistry
D/MZ 01/210	Lake Gairdner - Section 1800W - Lithology
D/MZ 01/254	Lake Gairdner - Section 1800W - Assays
D/MZ 01/1098	Lake Gairdner - Terrain Corrected Gravity
D/MZ 01/179	Lower Winterbrook Grid - Soil Geochemistry, Cu, Pb
D/MZ 01/180	Lower Winterbrook Grid - Soil Geochemistry, Zn, Ni
D/MZ 01/224	Winterbrook Grid - Geology
D/MZ 01/261	Winterbrook Grid - Soil Geochemistry, Cu, Pb, Zn, Ni
D/MZ 01/173	Winterbrook Grid - Ground Magnetism
D/MZ 01/198	Winterbrook - Leven River - Soil Geochemistry, Pb
D/MZ 01/199	Winterbrook - Leven River - Soil Geochemistry, Zn
D/MZ 01/200	Winterbrook - Leven River - Soil Geochemistry, Sn, W
D/MZ 01/205	Winterbrook - Leven River - Soil Geochemistry, Pb
D/MZ 01/206	Winterbrook - Leven River - Soil Geochemistry, Zn
D/MZ 01/207	Winterbrook - Leven River - Soil Geochemistry, Sn, W
D/MZ 01/123	Liena Area - Stream Sediment Survey, Cu, Pb, Zn, Ba
D/MZ 01/124	Liena Area - Stream Sediment Survey, Sn, W
D/MZ 01/127	Liena Area - Rock chip sampling, Cu, Pb, Zn, Ba
D/MZ 01/128	Liena Area - Rock chip sampling, Sn, W
D/MZ 01/228	Wattle Valley Grid - Geology
D/MZ 01/253	Wattle Valley Grid - Geochemistry, Cu, Pb, Zn, Ni, Mn
D/MZ 01/240	Wattle Valley Grid - Section 00 E
D/MZ 01/243	Bull Creek Grid - Geology
D/MZ 01/167	Bull Creek Grid - Magnetic Profiles
D/MZ 01/168	Bull Creek Grid - Magnetic Profiles
D/MZ 01/170	Bull Creek Grid - VLF, EM Profiles
D/MZ 01/171	Bull Creek Grid - VLF, EM Profiles
D/MZ 01/190	Bull Creek Grid - Soil Geochemistry, Cu, Pb, Zn, Ni
D/MZ 01/191	Bull Creek Grid - Soil Geochemistry, Sn, W
D/MZ 01/225	Alps Road - Aeromagnetic Anomaly 4141/7
D/MZ 01/181	Nietta Road - Aeromagnetic Anomaly 4141/9

SUMMARY

The Shell Company of Australia Limited^d have now earned an interest in the Moina licence. Investigations by Shell on E.L. 7/74 since July, 1981, have consisted largely of regional work (geochemistry, aeromagnetics) and follow up of anomalies located in the regional studies.

Seven aeromagnetic anomalies were ground checked. The percussion drill hole at the Lake Gairdner anomaly was deepened by a diamond drill hole. No mineralization of economic interest was intersected. None of the other anomalies were thought to be of any further significance, although one will be computer modelled.

The Cambrian volcanics in the Winterbrook area were partly investigated. No zones of interest were located. A reconnaissance investigation of the Cambrian volcanics of Middlesex Plains and the Mt. Jacob area was instigated. No areas of initial interest was located.

Regional geochemical sampling located the main area of interest to date, the Wattle Valley Grid. Geochemical and geophysical sampling have delineated an anomalous zone which requires testing by drilling.

Three geochemical targets located by Comalco have been tested with one, Daisy Dell, still remaining for further follow up work.

Future work will be concentrated on the Wattle Valley Grid and on the numerous aeromagnetic/radiometric and geochemical anomalies previously located.

1.0 INTRODUCTION

This report covers all investigations of E.L. 7/74 Moina from 31st July, 1981 to 30th June, 1982. This licence is part of the Moina Joint Venture Area in partnership with Comalco Limited. Comalco Limited have ceased contributing and now hold a 31% equity in this Joint Venture.

A total of \$144,000 has been spent on this licence area in the previous financial year.

Expenditure commitments for the next financial year to comply with the new mining act total \$202,500.

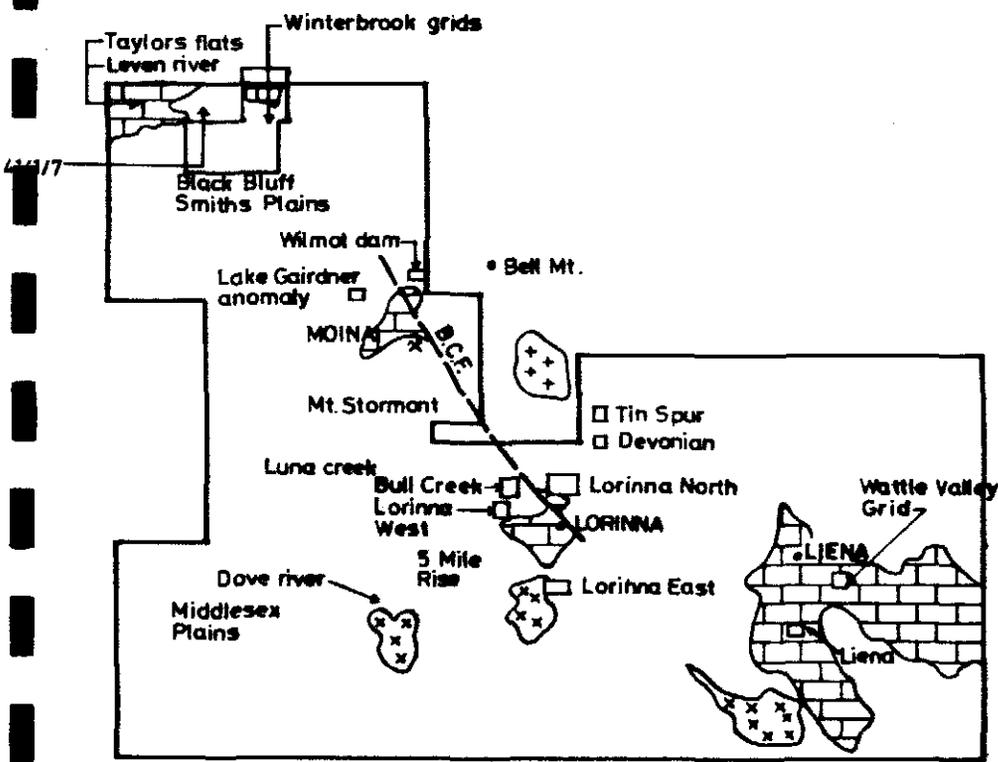
2.0 LOCATION

The licence is located on the Burnie 1:250,000 geological map and the Sheffield, Middlesex and Mackintosh 1 inch to 1 mile geological sheets. (Fig. 1).

3.0 PREVIOUS INVESTIGATIONS

Reports on previous investigations and relevant literature are included in "Progress Report on Exploration during the period 1/1/80 - 30/7/81" S.C.O.A. Report No. 08-1062.

DEVONPORT



- Dolcoath granite
- Dove granite
- Gordon limestone

10K



5 cm

The Shell Company of Australia Limited
METALS DIVISION

E.L.7/74 MOINA

Scale 1:250,000

FIG. No. 1	REPORT No.
ENCL. No.	DRG. No D/MZ01/113
DATE 6 7 81	AUTHOR W.D.S.
DR. H.L.H.	DEVONPORT

4.0 INVESTIGATIONS COMPLETED

4.1 SHEPHERD & MURPHY AREA

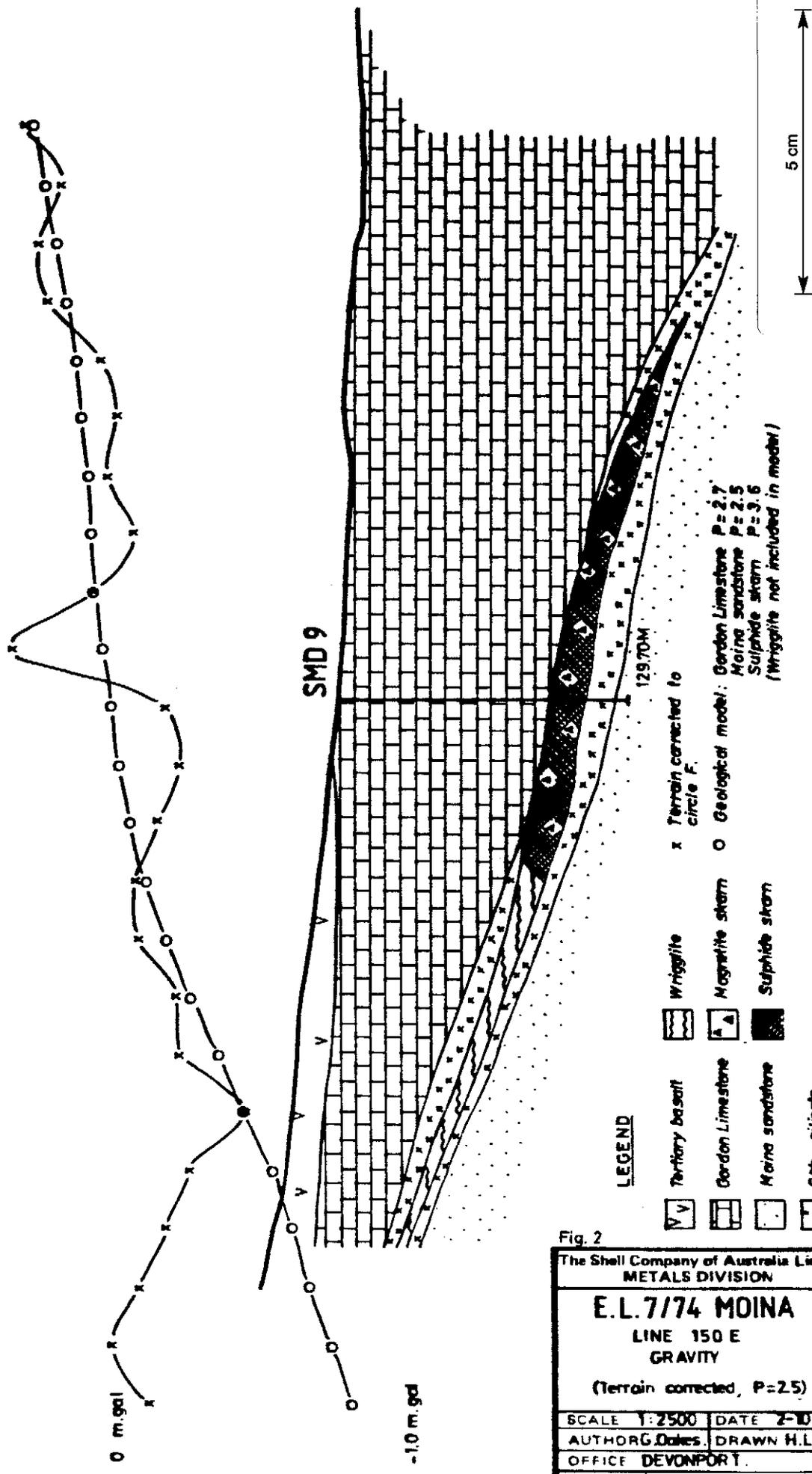
4.1.1 Geophysics - One line of gravity was done on line 150 E from 150m N to 400m S. This covers an area which has a thickness of 30m of skarn including 15m of pyrrhotite-magnetite skarn in SMD 9. The depth to the skarn is 90m. (Fig. 2).

No anomaly was detected. Modelling of the observed thicknesses of skarn show that an anomaly of 0.2 mgals would be expected. It is unlikely that anomalies of this magnitude could be picked with any confidence.

4.1.2 Geochemistry - A soil sample orientation survey was conducted over limestone along lines 50m W, 100m W and 150m W around 00 N. Values were uniformly low, Zn, Ni, Cu, Fe and Mn decreased with depth. As part of the Ni and Zn might be associated with a basalt source the deeper samples are preferred. A bedrock sample or a sample at approximately 300 cm appears to be the best sample to eliminate possible basalt contamination.

N 002
N 001
00
5 001
200 S
300 S

- 1.0 m.gal



LEGEND

- Tertiary basalt
- Gordon Limestone
- Moina sandstone
- Cret. siltstone
- Wriggite
- Magnesite sharn
- Sulphide sharn
- Terrain corrected to circle F
- Geological model
- Gordon Limestone P=2.7
- Moina sandstone P=2.5
- Sulphide sharn P=3.6
- (Wriggite not included in model)

Fig. 2

The Shell Company of Australia Limited
METALS DIVISION

E.L. 7174 MOINA
LINE 150 E
GRAVITY
(Terrain corrected, P=2.5)

SCALE 1:2500	DATE 2-10-81
AUTHOR G. Dales	DRAWN H.L.H.
OFFICE DEVONPORT	
DRG. No. D/MZ01/178	

4.2 LAKE GAIRDNER

4.2.1 Geochemistry - Repeat soil sampling of three previously reported high values failed to repeat the anomalous values. (Refer Plan D/MZ 01/146).

4.2.2 Diamond Drilling - Lake Gairdner diamond drill hole 1 was collared at 440m N 1800m W centred upon the magnetic high.

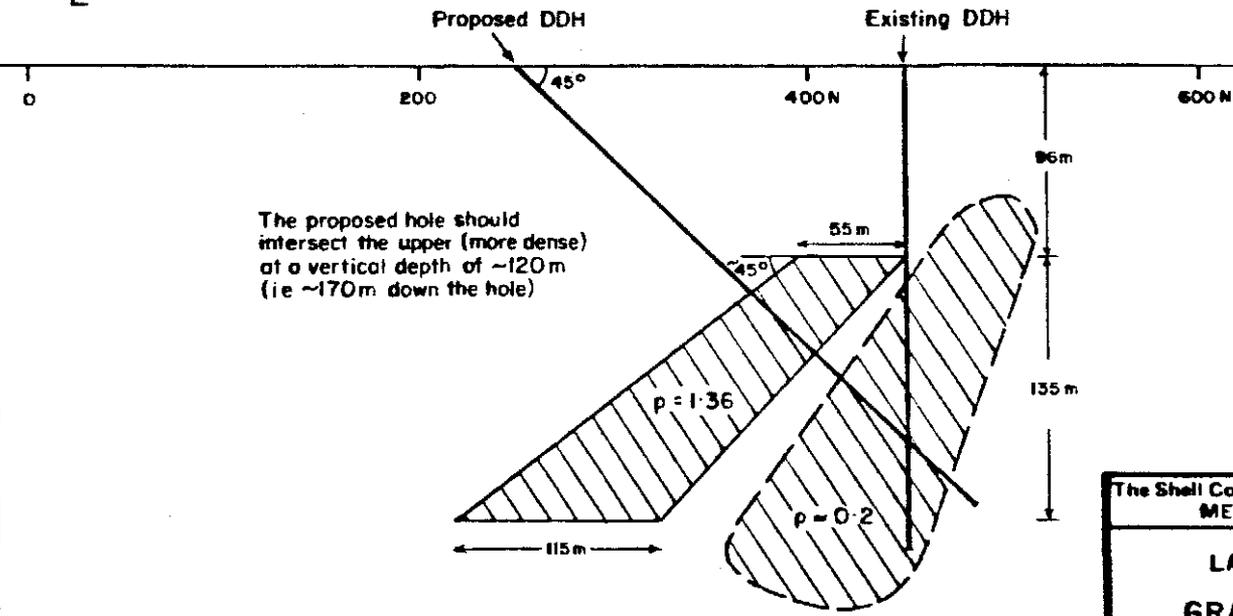
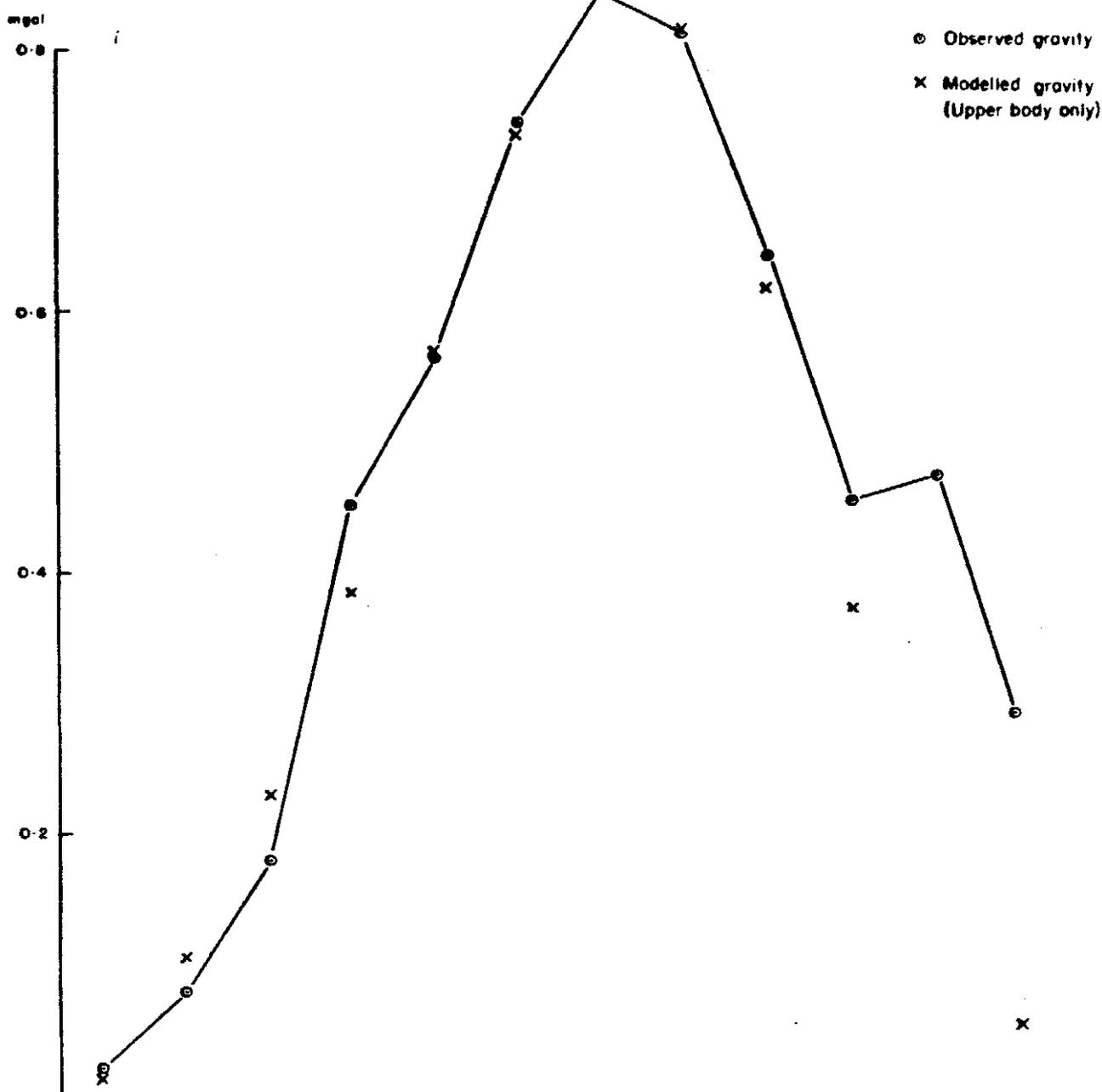
<u>From</u>	<u>To</u>	<u>Core Length</u>	<u>Lithology</u>
0.00	71.0m	71m (perc.)	Moina Sandstone.
	97.90	26.90	F-med gn Moina Sandstone with occasional metasomatised sandstone/siltstone horizon.
	100.80	2.90	Fractured and quartz veined Moina Sandstone.
	253.53	152.73	Cambrian Volcanics. Various siliceous rhyolitic lavas with magnetite in fractures through the sequence.

Assays indicated low values for Sn, W, Cu, Pb, Zn. No other anomalous values were reported. (Refer Plans D/MZ 01/210,211) (Appendix 2).

4.2.3 Geophysics - A gravity survey was conducted on lines 1600 W, 1800 W and 2000 W. A broad anomaly of 0.9 mgal amplitude is superimposed on a strong regional gradient. The anomaly is present on all three lines and has not been closed off to the east or west. (Refer Plan D/MZ 01/1098).

Modelling of this data indicated that the magnetite intersected in the diamond drill hole does not explain the gravity anomaly. More massive mineralization is thought to exist to the south of the initial hole. (Fig. 3).

4.2.4 Recommendations - As the mineralization intersected was of no interest geochemically, no further work will be done on this area.



5 cm

The Shell Company of Australia Limited METALS DIVISION	
LAKE GAIRDNER GRAMOD MODEL LINE 1800 W	
SCALE 1:4000	DATE Nov 81
AUTHOR G Oakes	DRAWN A S
OFFICE AHD	REP. No
DRG. No MZ 01/099	FIG No 3

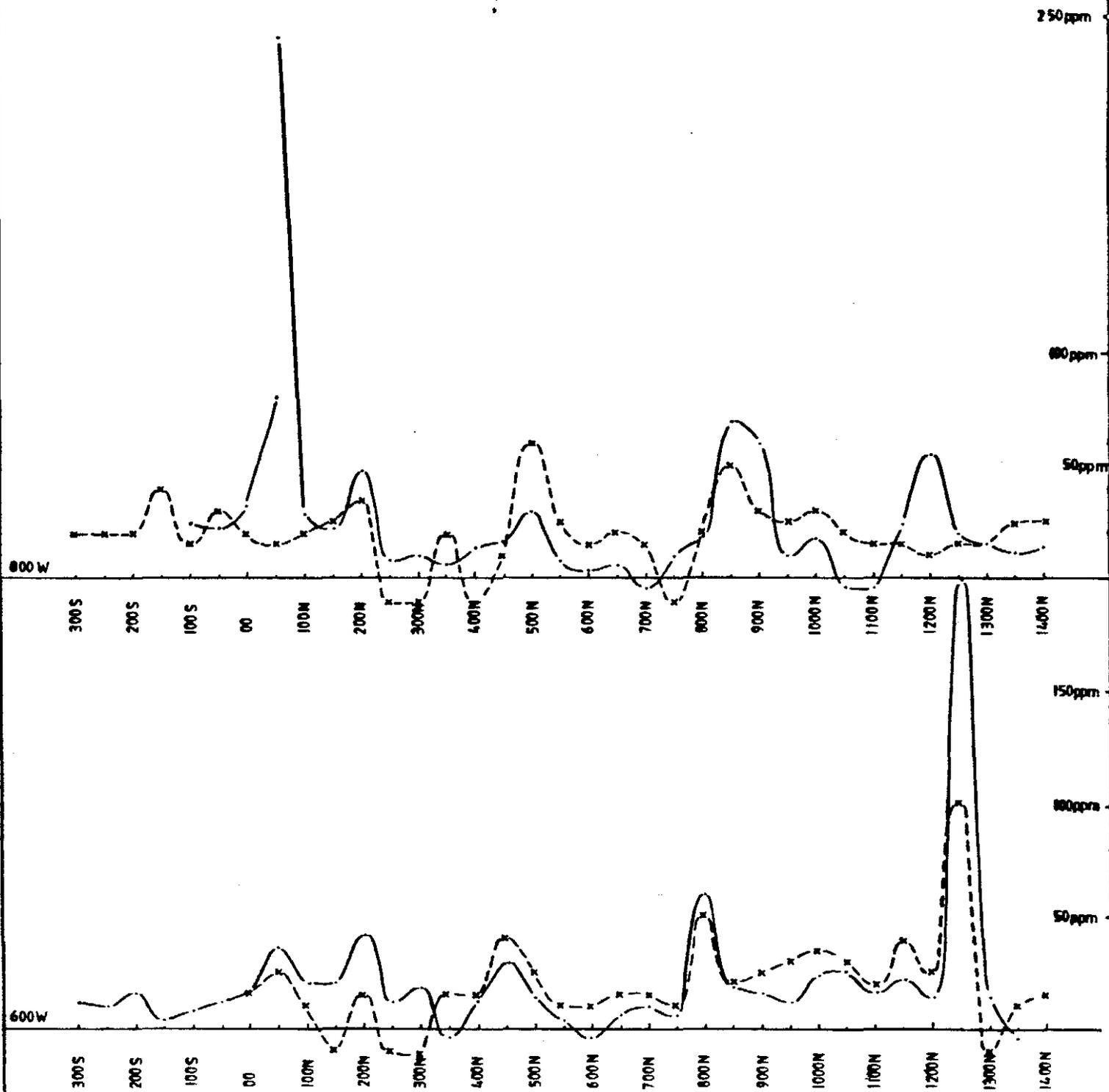
4.3 LOWER WINTERBROOK GRID

4.3.1 Geology - Cambrian volcanic rocks, apparently trending WNW outcrop through the major portion of the area with Moina Sandstone/Roland Conglomerate debris obscuring part of the north of the grid and Tertiary basalt obscuring part of the south of the grid. Acid lavas, ash flows, tuffs and volcanoclastic conglomerate and minor sandstone and siltstones outcrop over the major portion of the grid. Some galena-sphalerite specks were noted. (G. Weste, 1978).

4.3.2 Geochemistry - Six lines of the Comalco Lower Winterbrook Grid were re-sampled using the "C" horizon. Previous sampling by Comalco had been done using "A⁰" horizon soils. It was thought that the "C" horizon emphasises most peaks and showed additional peaks, (Figs. 4, 5) however no major anomalous zones were located by either survey. (Refer Plans D/MZ 01/179, 180).

4.3.3 Geophysics - Comalco carried out a time domain gradient array EIP survey over the entire grid. (G. Weste, 1978). The strongest anomaly was a chargeability feature which peaks at 36 msec, extending from 200 E, 360 S to 00 E 300 S under basalt. A line of dipole-dipole IP with 50m dipole length was done along line 100 E, from 00 S to 600 S. A poor conductor (15.3 msec) is indicated at approximately 300m S at a shallow depth with associated high chargeabilities (274 ohm m). (Figs. 6,7). The possible shallow conductor might be explained by a conductive zone at the bottom of the basalt. The probable geology underlying the basalt in this area is crystal tuffs (quartz and feldspar) and volcanoclastic conglomerates.

A VLF-EM traverse done along the line indicated a possible deep conductor at 400m S with a cross over on the angle measurement and a broad peak in the area. The ground magnetic response along the line was flat.



---x CONALCO "A"
 — SHELL "C"
 Pb

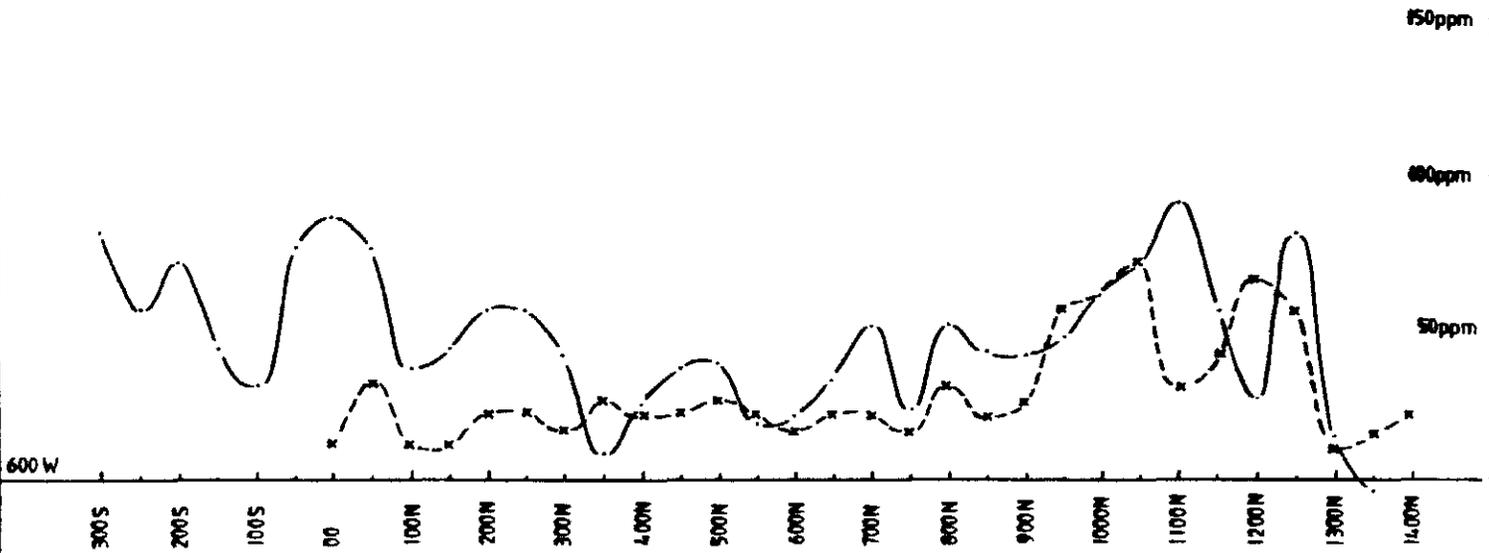
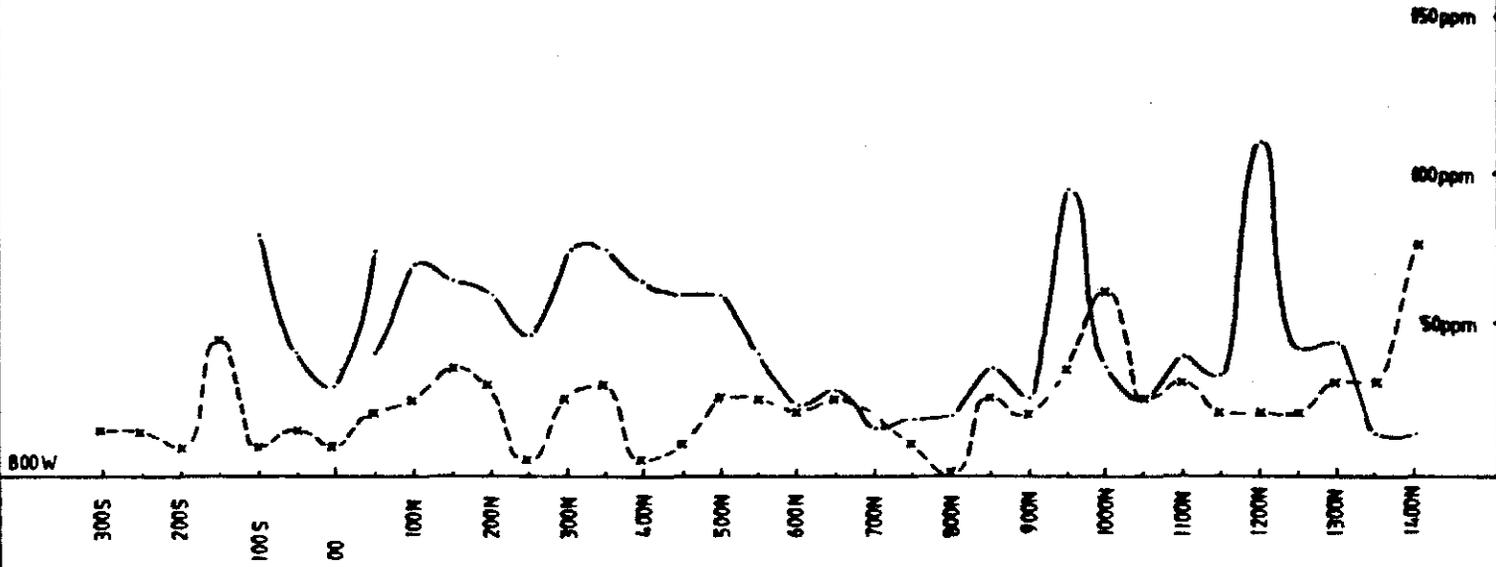
5 cm

The Shell Company of Australia Limited
 METALS DIVISION

E.L. 7174 MOINA
 LOWER WINTERBROOK GRID
 CHECK SOIL SAMPLE LINES

Scale 1:10,000 (horiz.)

FIG No. 4	REPORT No.
ENCL No.	DRG No. DMZ01/196
DATE 21-10-81	AUTHOR W.D.S.
DRAWN	OFFICE



--- COMALCO "A"
 - - - SHELL "C"
 Zn

5 cm

The Shell Company of Australia Limited
 METALS DIVISION

EL 7/74 MOINA
 LOWER WINTERBROOK GRID
 CHECK SOIL SAMPLE LINES

Scale 1:50,000 (horiz.)

FIG. No.	5	REPORT No.	
ENC. No.		DRG. No.	DMZ01/197
DATE	21-10-81	AUTHOR	M.D.S.
DRAWN	B.H.	OFFICE	ESSENDON

715018

5 cm

180%
160%
140%
120%
100%

80%
30
20
10
0

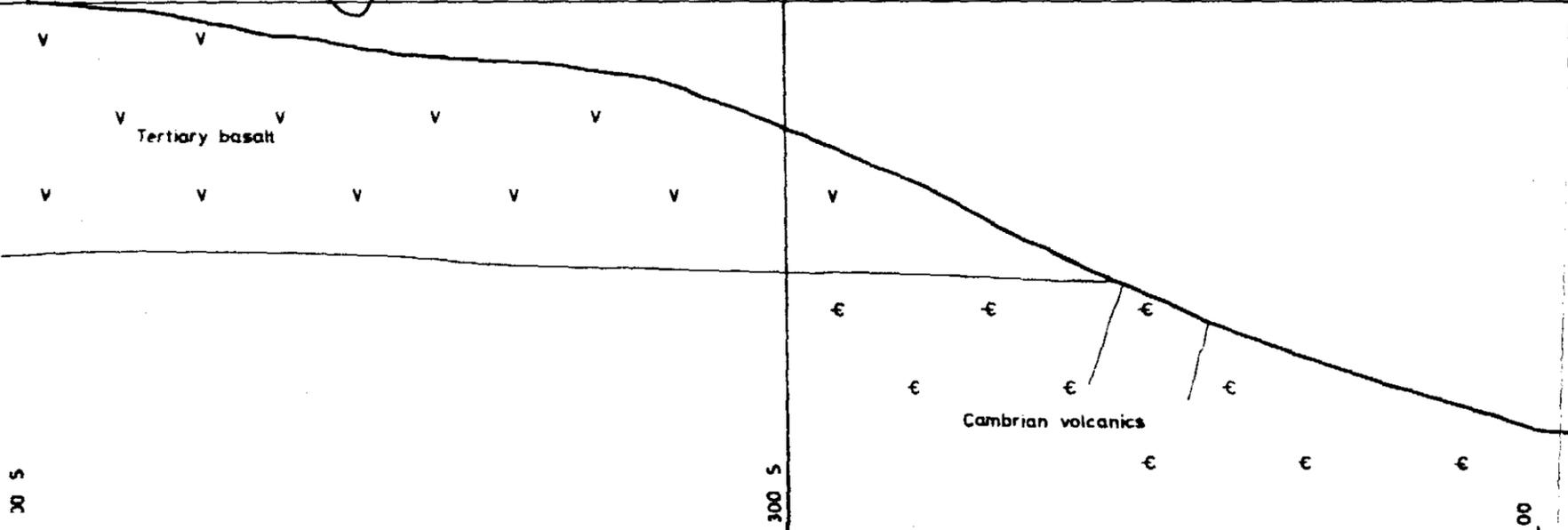
-10
62000nT

61000nT

V.L.F.

MAGNETICS

100 E



0 100 200

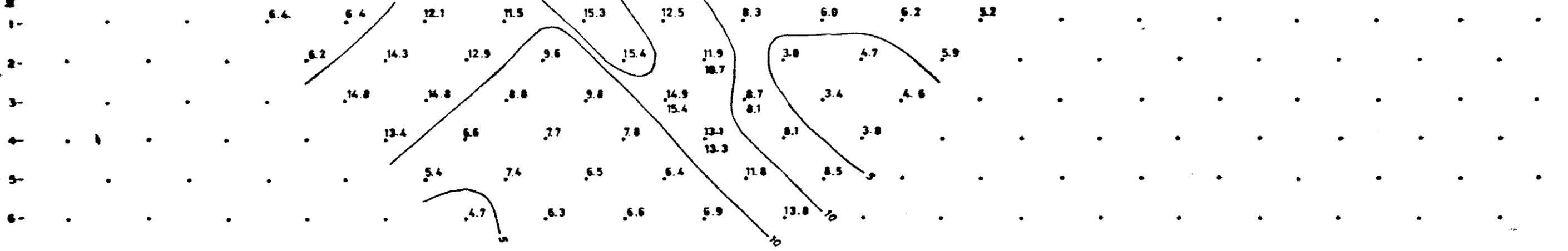
The Shell Company of Australia Limited METALS DIVISION			
E.L.7/74 MOINA LOWER WINTERBROOK SECTION 100 E 00N-600S			
SCALE	1:2500	DATE	7-10-81
AUTHOR	W.D. SMYTH	DRAWN	H.L.H.
OFFICE	DEVONPORT	REP No	
DRG No	D/MZ01/182	FIG No	6

AIRBORNE GEOPHYSICS
(E.M., MAG, etc)

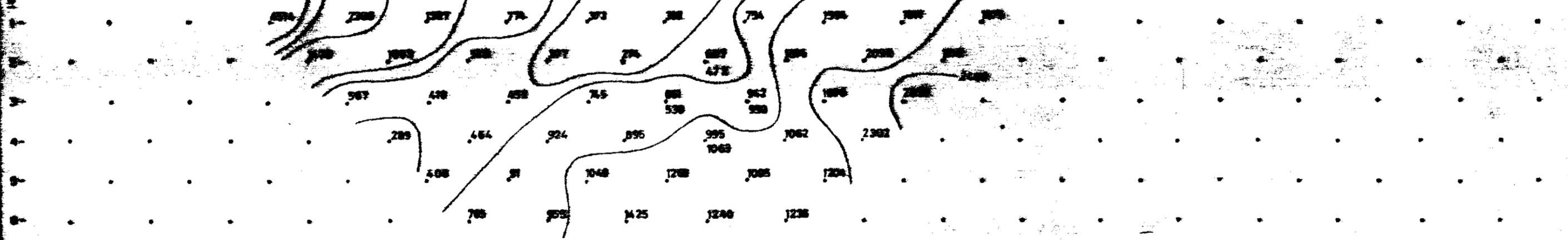
GEOLGOGY
● TOPOGRAPHY

500 S 400 S 300 S 200 S 100 S

APPARENT CHARGEABILITY



APPARENT RESISTIVITY



Contractor : SCHITREE
Date : 24-10-88
Timing : 2 SEC.
Transmitter : IPC 2.5KW
Receiver : IPR 80 708103
Integration time :
Array : DIPOLE - DIPOLE
Dipole length : 50 M

5 cm

IP / RESISTIVITY SERVICE	
WINTERBROOK	
E.L. 77A MOINA	
100 E	
File No. 7	Project No.
Date: 24-10-88	Author: SCHITREE
Drawn: H.L.H.	Checked: DEVOR

4.3.4 Recommendations - As the IP anomalies may be explained by conductive layers in Tertiary sediments at the base of the Tertiary baslat, and the geology does not appear prospective no further work is recommended on the chargeability anomaly.

General low geochemical values over the rest of the grid, and lack of IP anomalous zones down grade the rest of the grid.

4.4 WINTERBROOK GRID

A grid was cut to investigate a zone of black shales and acid volcanics which trend WNW from the northern portion of the Lower Winterbrook Grid.

4.4.1 Geology - The only rocks in the area appear to be float. However, a consistent gross stratigraphy from grid south to grid north has been established as feldspar crystal lithic tuff (fine grained to agglomeratic), shale, sericitised cleaved acidlava?, andesitic tuffs. A petrographic report (Appendix 1) of two suspected gossan samples indicated they were sulphide-rich sericitised partly silicified acid volcanics. One sample was recognised as a rhyolite. Pyrite and pyrrhotite were the only sulphides recognised. (Refer Plan D/MZ 01/224).

(Not there!)
5420?
5421

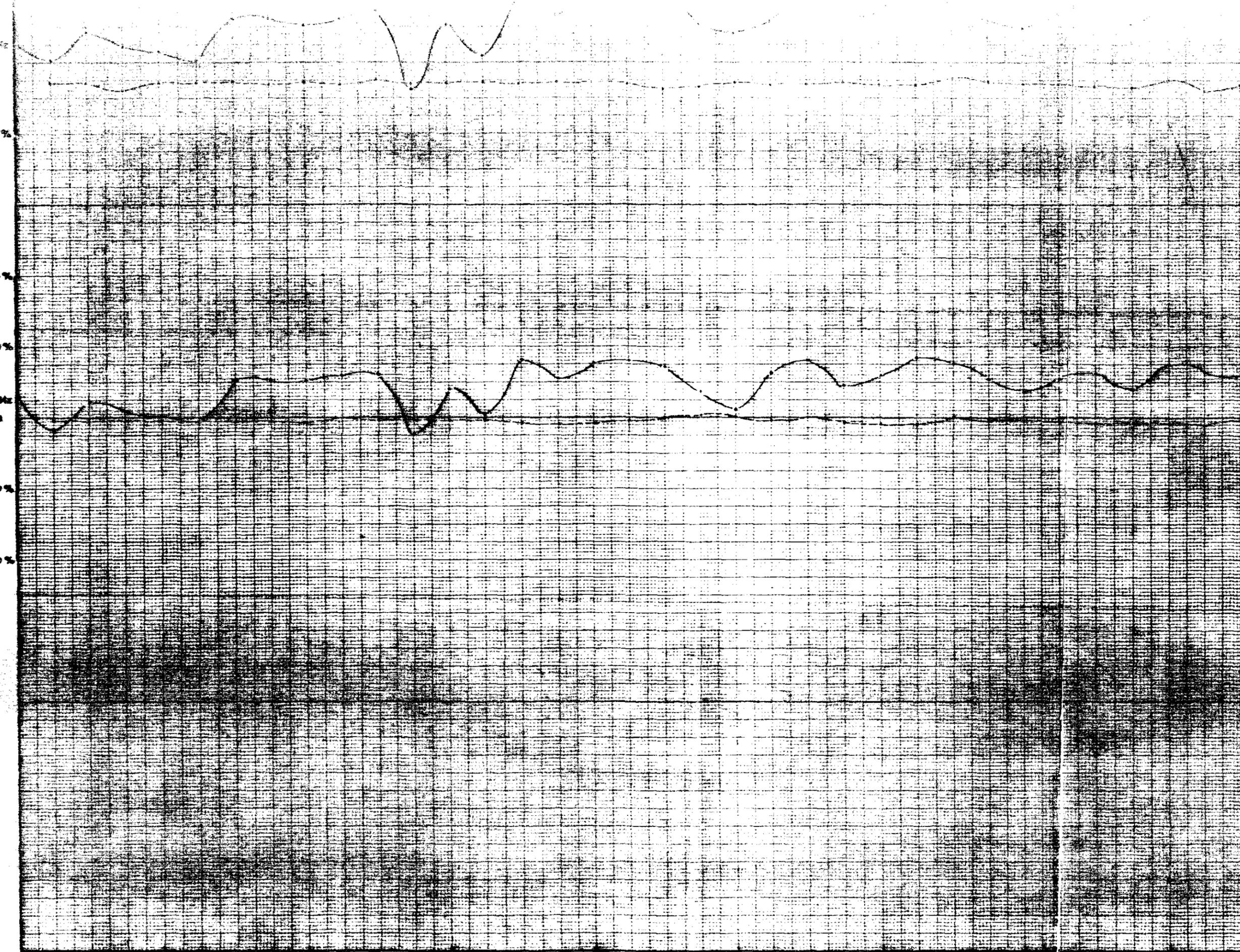
4.4.2 Geochemistry - Results from "C" horizon soil sampling are uniformly low. Results from rock chip sampling are low (Refer Plan D/MZ 01/).

4.4.3 Geophysics - A VLF-EM survey of the grid failed to locate any well defined conductors.

One line of Max-Min EM was done along the base line to test the zone of gossanous outcrop. No anomalous zone was located. A ground magnetic survey was done. No anomalous zone was located (Refer Fig. 8) and the survey did not appear to be useful as a mapping tool. (Refer Plan D/MZ 01/173).

4.4.4 Recommendations

As no geochemical or geophysical anomalous zones were located no further work will be done on this area.



1800 W 1700W 1600W 1500W 1400W 1300W 1200W 1100W 1000W

100 metres

Coil Separation = 100 m

—●— In Phase
 - - - - - Out of Phase

5 cm

The Steel Company of Australia Ltd	
METALS DIVISION	
PROJECT	TASMANIA
SUSPECT	WINTERBROOK
LINE	1000 N
Fig. 8 MAX-MIN E.M.	
SCALE	1:5000
AUTHOR	W.D.S.
DATE	22-
OFFICE	ADD
PREP.	REP.
DWS No. 07/M20/716	

4.5 WINTERBROOK - LEVEN RIVER

This area of limestone was gridded because of two Zn anomalous stream sediment samples in the Winter Brook.

A major fault, an extension of the Bismuth Creek Fault, transects the area. It was thought the Zn anomalies may be associated with skarn mineralization.

4.5.1 Geology - The area gridded is located in a valley in Gordon Limestone with very little outcrop.

4.5.2 Geochemistry - Soil sampling covered the major limestone area at 100m x 200m spacing. Only one anomalous sample of 2200 ppm Pb, 210 ppm Zn was taken initially. Sampling at 50m spacings around the original anomaly did not locate more anomalous values. (Refer Plans D/MZ 01/198, 199, 200, 205, 206, 207).

4.5.3 Recommendations - Further work will depend on results from the Wattle Valley Grid.

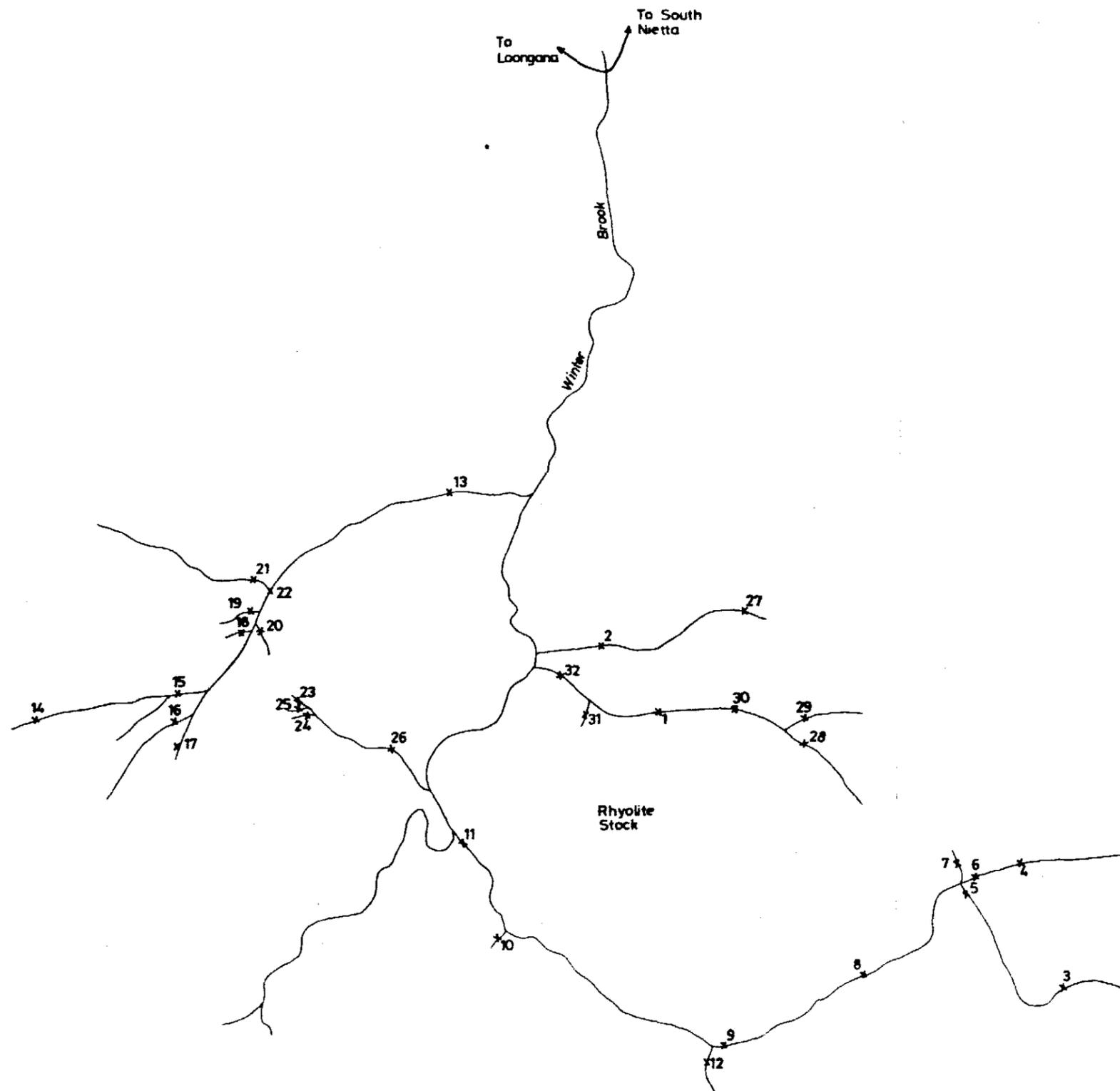
4.6 WINTERBROOK RHYOLITE STOCK

This rhyolite stock was thought to have potential for Ag, Au mineralization and/or base metal mineralization.

4.6.1 Geochemistry - Rock chip sampling across the small stock, including samples of quartz veining failed to indicate significantly anomalous values of Cu, Pb, Zn or Au, Ag.

A localized stream sediment survey which completely surrounded the hill formed by the stock, located no anomalous Au or Ag. Slightly anomalous Pb values appears to come from Moina Sandstone. (Fig. 9).

4.6.2 Recommendations - As no anomalous geochemical values are associated with the rhyolitic stock, no further work will be carried out on it.



	Cu	Pb	Zn	Ni	Co	As	Sb	Mo
1	28	8	42	8	<4	<2	<4	<4
2	34	150	175	8	16	22	<4	<4
3	6	<4	60	26	16	2	<4	<4
4	28	8	34	12	<4	<2	<4	<4
5	30	12	125	55	36	<2	<4	<4
6	34	4	38	8	<4	2	<4	<4
7	22	20	42	6	<4	<2	<4	<4
8	50	16	120	35	20	4	<4	<4
9	32	16	36	10	<4	2	<4	<4
10	32	12	80	20	8	<2	4	<4
11						2	<4	<4
12	42	16	90	26	8	3	4	<4
13	36	50	180	20	16	4	4	<4
14	22	20	65	10	16	4	<4	<4
15	28	24	70	10	16	<2	<4	<4
16	28	16	90	12	8	5	<4	<4
17	16	16	75	8	4	3	<4	<4
18	24	8	70	12	8	<2	4	<4
19	14	4	70	10	8	<2	<4	<4
20	24	12	55	10	12	<2	4	<4
21	12	12	18	4	<4	<2	4	4
22	28	20	85	12	16	<2	<4	<4
23	24	12	48	8	8	<2	<4	<4
24	16	16	75	6	8	4	<4	<4
25	22	12	36	6	<4	2	<4	<4
26	55	28	80	10	8	<2	<4	<4
27	44	200	200	10	12	2	4	<4
28	34	12	40	4	<4	4	<4	<4
29						10	<4	<4
30	34	16	36	18	<4	2	4	<4
31						<2	<4	<4
32	20	16	32	6	<4	<2	<4	<4

Au, Ag - panned con's all less than 0.05ppm Au, 1ppm Ag

Method of analyses:
 Cu, Pb, Zn, Ni, Co = AAS 1
 Ag = AAS 3
 Au = AAS 5
 As, Sb, Mo = XRF 1

5 cm

T696-65 MOINA - BLACK BLUFF
 RUN 2 No 006
 STREAM SEDIMENT SAMPLING

The Shell Company of Australia Limited
 METALS DIVISION

**E.L. 7/74 MOINA
 WINTER BROOK RHYOLITE
 STOCK
 STREAM SEDIMENT SURVEY
 -80th, PANNED CON'S**

SCALE	Air photo 1:10000	DATE	17-8-82
AUTHOR	W.D. SMYTH	DRAWN	H.L.S.
OFFICE	DEVONPORT	REP No	
DRG No	D/MZ01/259	FIG No	9

4.7 LIENA REGIONAL

This area of Gordon Limestone had not been regionally explored for skarn bodies except by aeromagnetics. Anomalous values for Pb and Zn were reported in soil samples from the Liena Aeromagnetic Anomaly which might be related to skarns or various styles of sediment related Pb, Zn mineralization.

4.7.1 Geochemistry - A stream sediment survey was carried out using streams available. Two anomalous values in one stream were located in a stream approximately one kilometer south of Liena township. Soil sampling from "C" horizon was done at 100m spacings along tracks in the area. No anomalous zone was located in the soil sampling. (Refer Plans D/MZ 01/123, 124).

As the streams covered only a small percentage of the area, a soil sampling survey was done around tracks throughout the area at 200m - 300m spacings. One extremely anomalous Pb, Zn value^s was reported (4100 ppm Pb, 2050 ppm Zn) and follow up sampling at 50m spacings confirmed this. A grid was established in the area called the Wattle Valley Grid. This will be dealt with separately. (Figs. , 10, 11).

Rock chip sampling of limestone outcrops in the area has not located anomalous values. (Refer Plans D/MZ 01/127, 128).

MERSEY RIVER

LEMA BRIDGE



5 cm

40 = Sample No.
27 = Assay value

OVERLAY PHOTO ENLARGEMENT
MERSEY MEANDER MAP 1
T 715 21

NOV 1965
T 715 21

Fig. 11

The Most Dangerous of America's Enemies
METALS DIVISION

ELIOTT HONDA
LEMA BRIDGE
FEDERAL POLY-BAGGING

20

DATE: _____

4.8 WATTLE VALLEY GRID

This geochemically anomalous zone was located during a regional soil sampling programme in the Liena Area.

- 4.8.1 Geology - The grid is underlain by the Gordon Limestone. To the north, Moina Sandstone outcrops and to the south Eldon Sandstone. The Moina Sandstone, Gordon Limestone, Eldon Sandstone sequence is a conformable sequence from Ordovician to early Devonian. The Gordon Limestone in this area is reported to be upto 1000m thick. The grid is on the northern side of an east-west trending open syncline with a half width of 3 km. Several northwest trending faults are mapped in the region and one, apparent on air photos, cuts through the gridded area. No evidence for this fault is available on the ground. (Refer Plan D/MZ 01/228).

The limestone in the area is generally poorly bedded, with some bedding showing east west strike and a dip to the south. A cleavage developed throughout the sequence, trends east west and generally vertical. Petrographic descriptions (Appendix 1) show the limestones to be syngenetic - pyritic variably carbonaceous limestones with fabrics ranging from massive-laminated to intraformationally brecciated. Dolomitisation is variably developed, predates incipient regional metamorphic recrystallization, and also predates localised calcite veining and vug filling. No base metal sulphides were reported.

Recent elluvium, derived from Eldon Sandstone cover part of the grid, in the south and south-east.

- 4.8.2 Geochemistry - Soil samples were taken at what was hoped to be bedrock. This was found not to be the case in some samples which have sampled Eldon Sandstone elluvium.

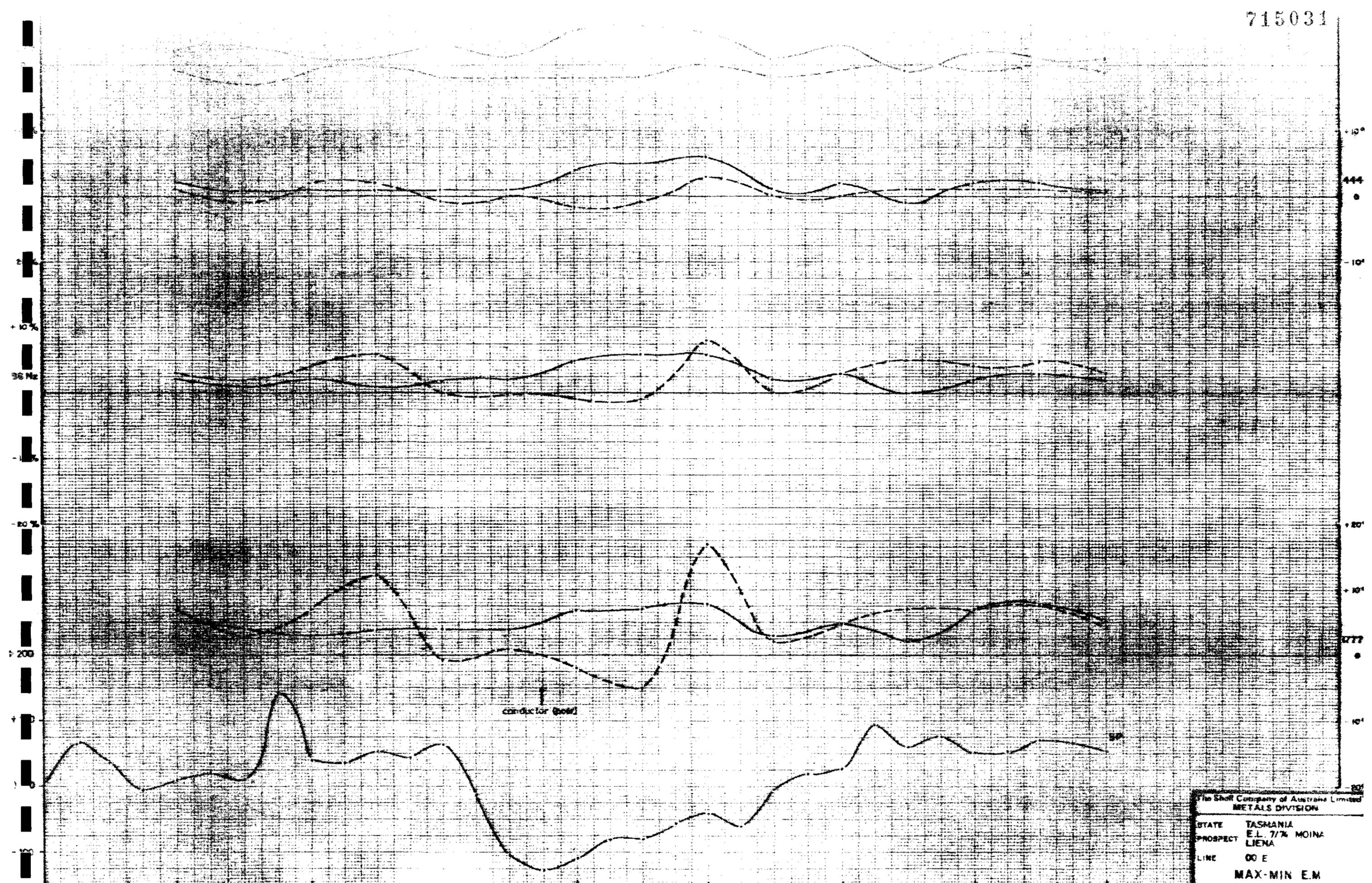
The highest soil sample value of 1900 ppm Pb, 3800 ppm Zn, 4000 ppm Mn and 37 ppm Cd is recorded at 00N/50W. The 100 ppm Pb contour (background approximately 25 ppm) outlines a zone 500m long 100m wide trending WNW from 100 E 100 N to 400 W 150 N. The 1000 ppm Pb contour outlines a zone of 100m long 50m wide along 00 N line from 00 E to 100 W. The grid was put in at 45° to true north which may skew the results. The anomalous zone may in fact be trending parallel to bedding (approximately E-W).

Rock chip sampling on the rocks adjacent to the geochemical anomaly gave values up to 115 ppm Pb, 290 ppm Zn, 380 ppm Mn. (Refer Plan D/MZ 01/253).

4.8.3 Geophysics - A Max-Min EM survey was done on lines 200 W and 00 E (Figs. 12, 13). A conductor was detected on line 00 E at 00 N coincident with the geochemical anomaly. Another possible conductor is located on line 200 W at 300 S although the line needs to be extended to cover the full extent of the anomaly.

A dipole-dipole IP survey (100m spacing, $n = 4$) was done along line 00 E. This located a zone of very high conductivity and low resistivity near 00 N. The source for this anomaly is thought to be quite shallow. (Refer Plan D/MZ 01/240).

Gravity has been surveyed along lines 200 E, 100 E and 00 E. A 0.7 mgal anomaly was detected on line 00 E around 50m N. On line 100 E a 0.35 mgal anomaly was detected at 100 N which probably represents an extension of the anomaly at 00 E, 50 N. Other possible anomalies were located at 100 E, 300 S and 200 E, 300 S. These however, have not been covered in sufficient detail to give an interpretation. (Refer Plan D/MZ 01/240).



conductor (gold)

The Shell Company of Australia Limited	
METALS DIVISION	
STATE	TASMANIA
PROSPECT	E.L. 77% MOINA
	LIENA
LINE	00 E
MAX-MIN E.M.	
SCALE	1:500
DATE	7-9-62
AUTHOR	N.H.
DRAWN	H.L.S.
OFFICE	Devonport
REP. No.	
DR. No.	DA-21-25
	No. 12

5 cm

100 metres

Coil Separation = 200 M

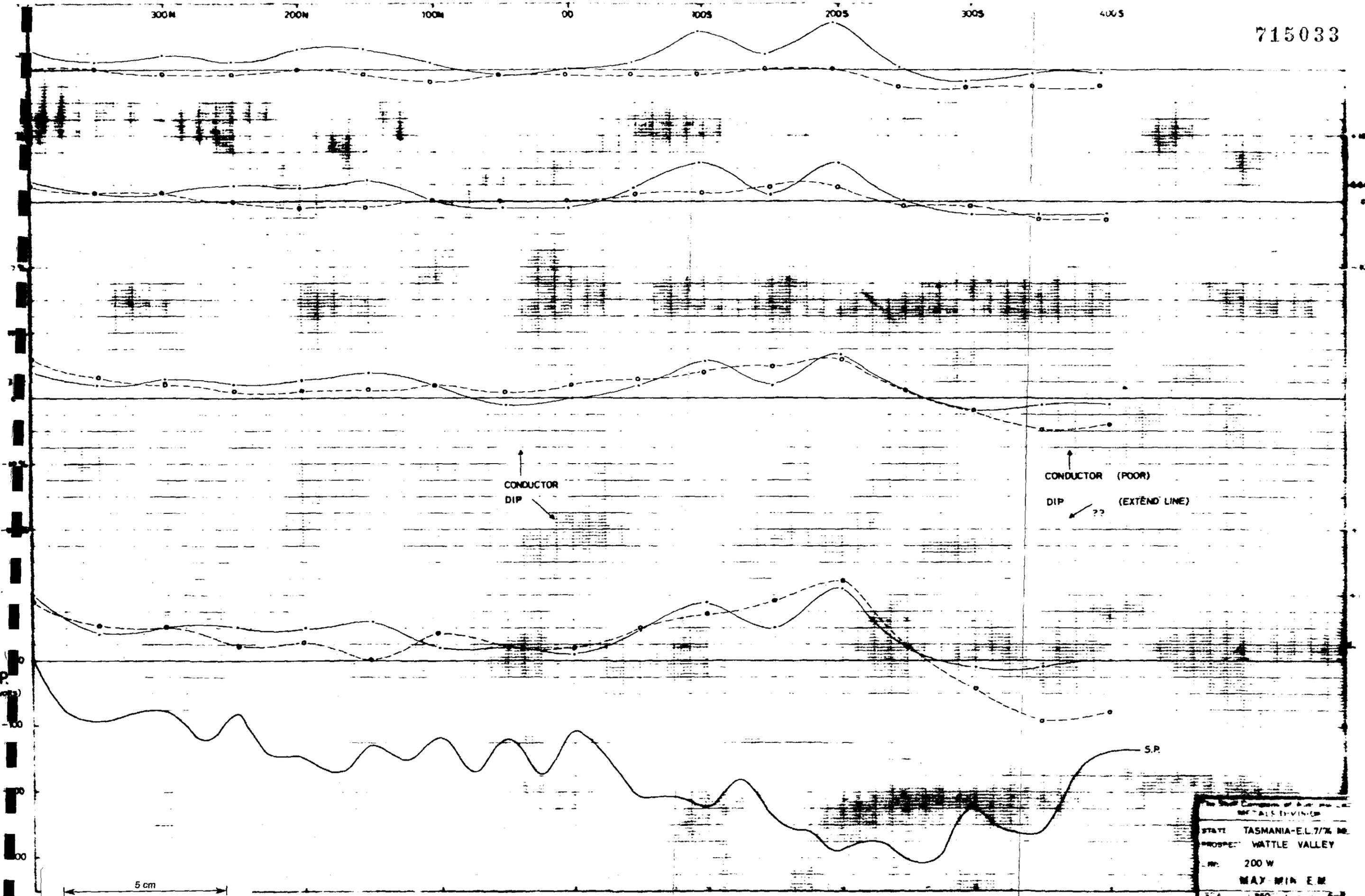
—•— In Phase
 - - - - - Out of Phase

An SP survey was done along lines 200 W, 00 E and 200 E. A good SP anomaly (150 - 200 m V) was recorded at 00 E, 25 N (Fig. 12) and another possible anomaly at 200 W, 275 S (Fig. 13). Readings along 200 E indicate that that part of the survey was not carried out correctly. (Refer Plan D/MZ 01/240).

- 4.8.4 Recommendations - The results to date indicate a Pb, Zn target of small width (10m) and limited dip extent (100m) at a shallow depth (20m) on line 00 E at 50N. The zone possibly extends from 100 E (geochem., gravity anomaly) to 200 W (geochem., SP, Max-Min anomaly) giving a strike length of 300m. A possible target of 900,000 tonnes (10m x 100m x 300m x 3t/m³) is outlined. Extra lines of gravity should be done on the western lines of the grid to check for westward extensions. A drill hole will be sited on the target outlined by IP, SP, Max-Min EM, gravity and geochemistry at 00 E, 50m N. (Refer Plan D/MZ 01/240).

715033

300M 200M 100M 00 100S 200S 300S 400S



CONDUCTOR
DIP

CONDUCTOR (POOR)
DIP (EXTEND LINE)

S.P.

5 cm

Co. Separation = 200M

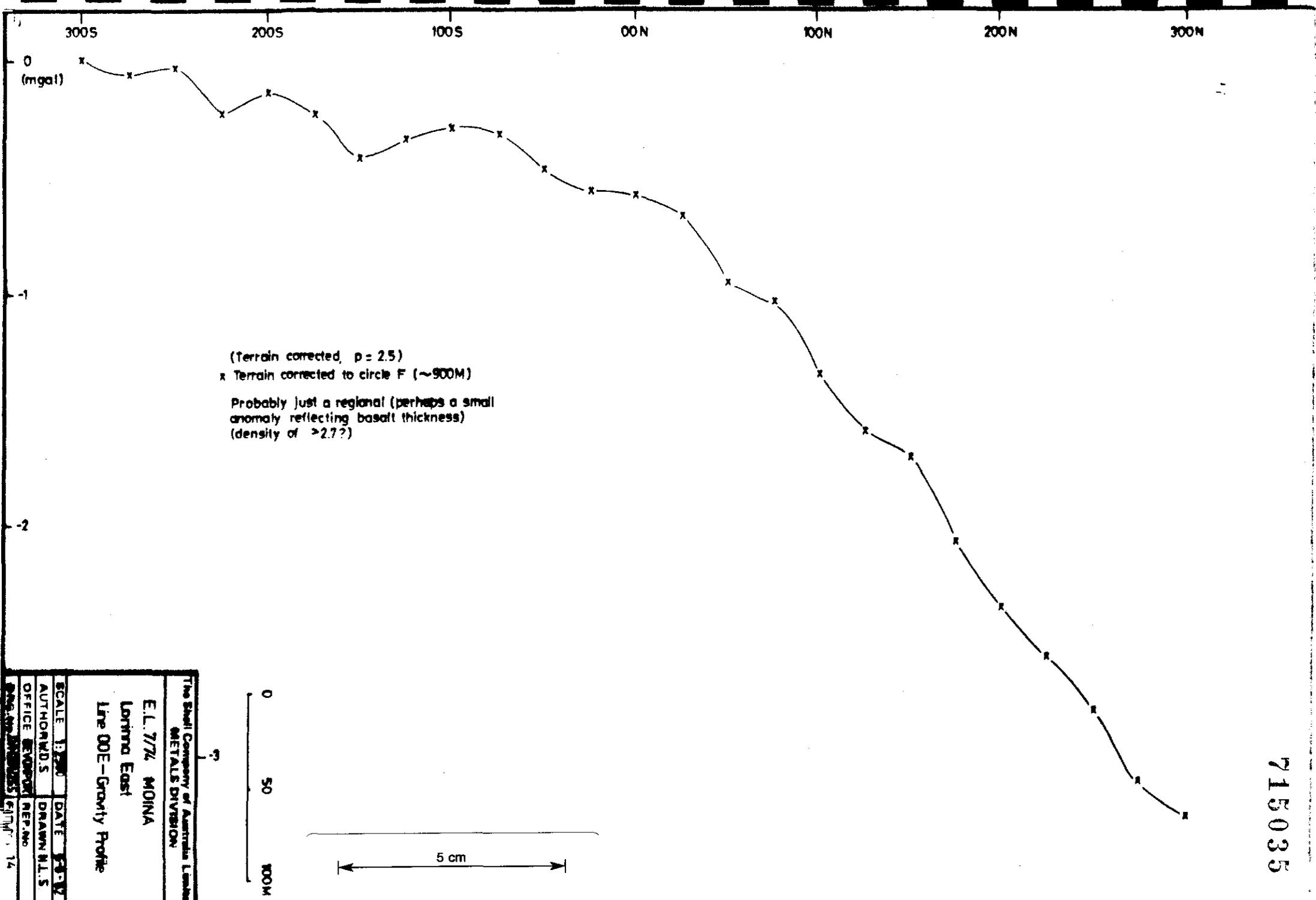
STATE TASMANIA-EL. 7/76 M.
 PROSPECT WATTLE VALLEY
 NO. 200 W
 MAY MIN. E.M.
 1950
 N.H.
 D.M. 20/257 FIG. 13

4.9 LORINNA EAST AEROMAGNETIC ANOMALY 4239/3

This aeromagnetic anomaly had been drill tested and reported on in the previous annual report. Two geophysical tests were conducted over the known geology.

4.9.1 Geophysics - A gravity survey was conducted along line 00 E. No clear anomaly was detected. The gravity reflects the topography, suggesting a basalt hill with a density of the order of 3.0 to 3.2 gm/m³. Fig. 14.

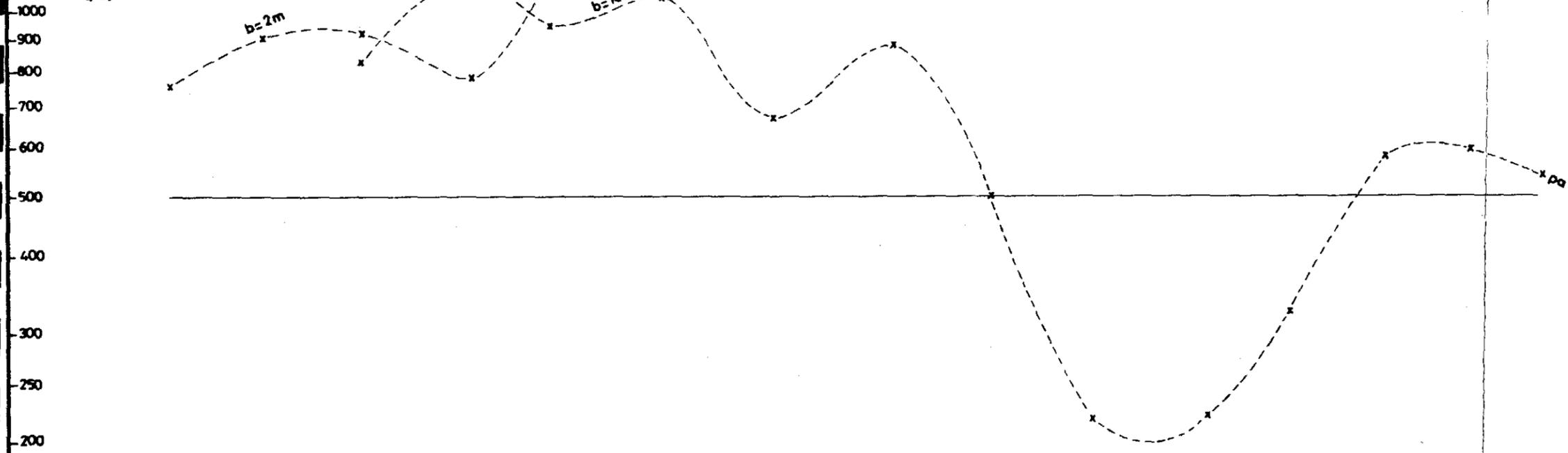
A Schlumberger array IP survey was conducted to test the method for its accuracy for depth soundings over basalt covered areas. The method appeared to work quite well in this instance. (Fig. 15).



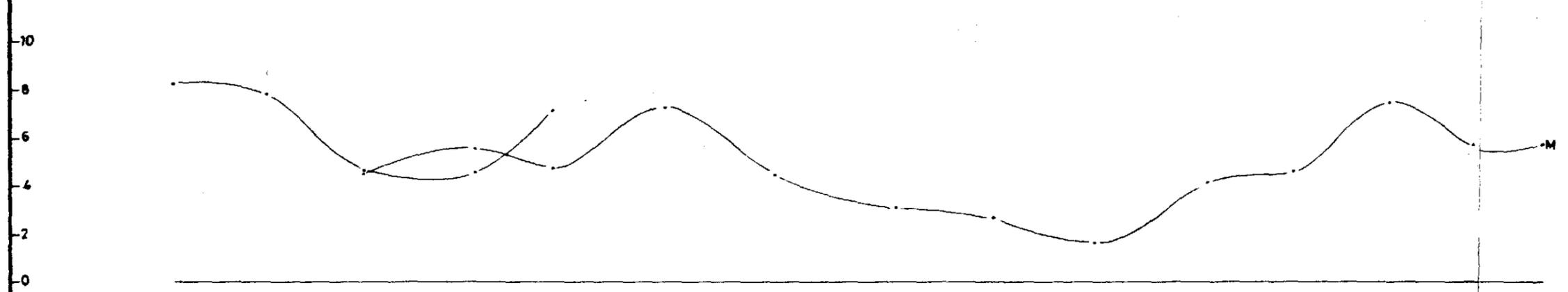
715035

DEPTH (metres) 5 7 10 15 20 25 30 40 50 60 70 80 90 100 150 200 250 300 400 500 600 700 800 900 1000

RESISTIVITY
(in ohm metres)
(ρ)



CHARGEABILITY
(in millivolts/volt (M))



5 cm

The Shell Company of Australia Limited METALS DIVISION		
E.L.7/74 MOINA LORINNA EAST SCHLUMBERGER ARRAY DEPTH SOUNDING		
SCALE	Logarithmic 2:1 cycles	DATE 6-8-82
AUTHOR	W.D. SMYTH	DRAWN H.L. SMYTH
OFFICE	DEVONPORT	REP No
ORG No	D/MZ01/256	FIG No 15

4.10 BULL CREEK GRID/AEROMAGNETIC ANOMALIES 4240/4, 4240/5

A grid was cut to cover an aeromagnetic high and a low.

4.10.1 Geology - The grid covers a zone of Cambrian volcanics and sediments at the eastern end, overlain by Tertiary Basalt to the west. A zone of quartz and quartzitic pebbles in the middle of the basalt area may indicate two flows. The Bismuth Creek Fault is thought to bisect the grid. (Refer Plan D/MZ 01/243).

4.10.2 Geophysics - A ground magnetic survey showed a magnetic high of approximately 63,000 nT over an area of volcanics and a low of 60,605 nT in the basalt area. Basalt susceptibilities ranges from 150×10^{-6} SI units up to 3000×10^{-5} SI units, and susceptibilities of the Cambrian volcanics/sediments ranged from 30 to 1000×10^{-5} SI units. (Refer Plans D/MZ 01/164, 167, 168).

A VLF-EM survey along the grid failed to locate a significant conductor even though the grid cuts the supposed position of the Bismuth Creek Fault. (Refer Sections D/MZ 01/170,171).

4.10.3 Geochemistry - "C" horizon soil sampling was done over the area of Cambrian volcanics. A high background of 30 ppm Pb and 100 ppm Zn was recorded with maximum values of 370 ppm Zn and 90 ppm Pb. (Refer Plans D/MZ 01/190,191).

4.10.4 Recommendations - No further work is proposed for this grid.

4.11 ALPS ROAD AEROMAGNETIC ANOMALY 4141/7

4.11.1 Geology - This anomaly is located over Tertiary basalt which overlies Gordon Limestone.

4.11.2 Geophysics - A ground magnetic survey was done over approximately 5 km of grid. The results appear to be irregular and spiky. Magnetic susceptibilities in the order of $800 - 1000 \times 10^{-5}$ SI units were measured. (Refer Plan D/MZ 01/225).

Modelling of the ground magnetic results show the profiles to be due to the basalt.

4.11.3 Recommendations - No further work will be done on this grid.

4.12 NIETTA ROAD AEROMAGNETIC ANOMALY 4141/9

This low order anomaly is located over outcropping basalt which may at the western end overlie Gordon Limestone.

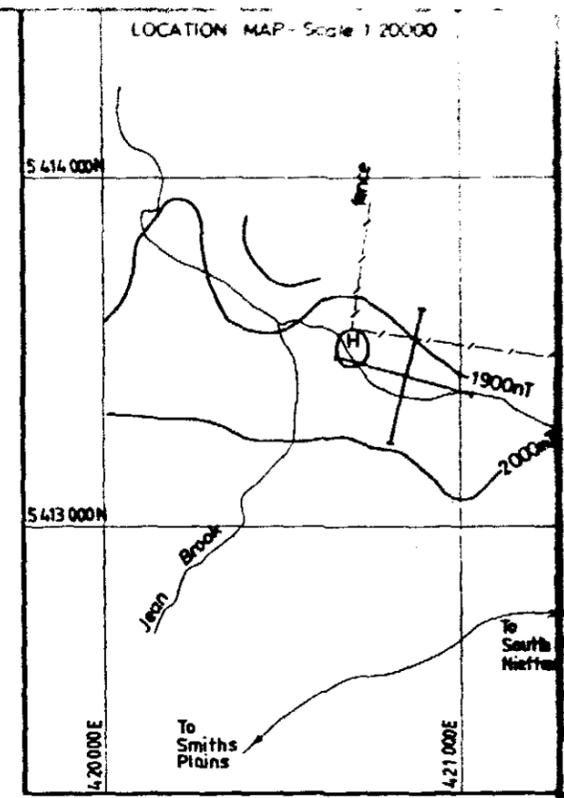
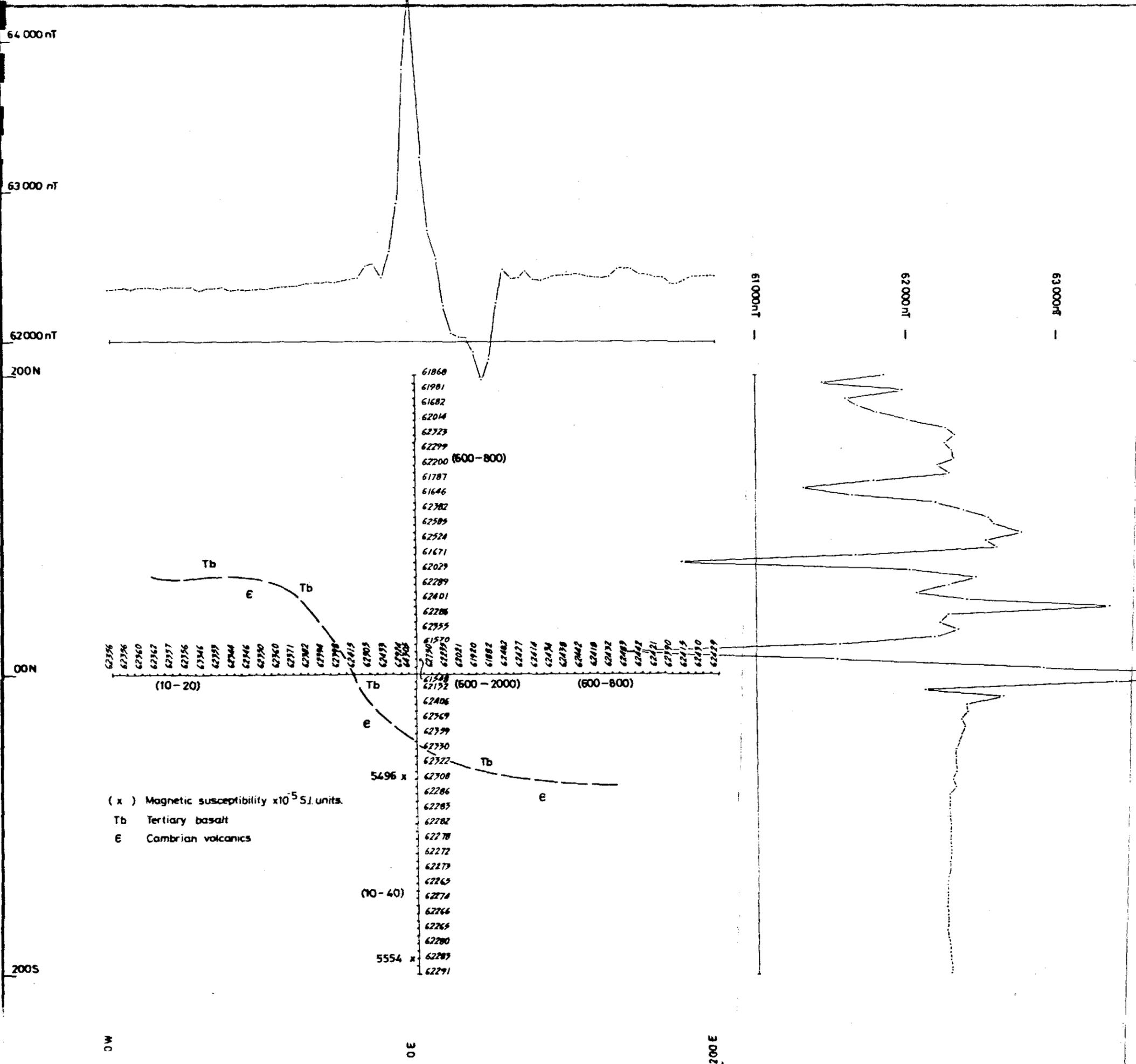
A ground magnetic survey was paced out adjacent to the main Nietta - Loongana road which cuts through the main anomaly. One isolated peak of 63,000 nT and a broad anomaly of 62,300 nT were located. Susceptibilities on the basalts ranges from 100 - 700 x 10⁻⁵ SI units. (Refer Plan D/MZ 01/181).

The anomaly is thought to be due to basalt. No further work will be done on the anomaly.

4.13 JEAN BROOK AEROMAGNETIC ANOMALY 4241/4

A cross grid was established over this small high on a broad regional high (Fig. 16).

- 4.13.1 Geology - The grid covers sheared volcanics in the west and south with the anomaly being over a probably thin basalt capping. The volcanics consist mainly of sheared sericitised acid volcanics, probably a lapilli tuff, with haematite along the cleavage. Numerous barren quartz veining occurs along the line to the south.
- 4.13.2 Geophysics - The anomaly is located over the basalt part of the grid centred on 00 N, 00 E. The ground magnetics indicates a near surface, noisy source, probably the basalt. The magnetic susceptibilities of the basalts range from $(600 - 2000) \times 10^{-5}$ SI units and that of the volcanics from $(10 - 40) \times 10^{-5}$ SI units.
- 4.13.3 Recommendations - No further work should be done on this grid.



5 cm



0 50 100 150

715041

The Shell Company of Australia Limited
METALS DIVISION

E.L. 7174 MOINA
Aeromagnetic Anomaly
4241/4 - JEAN BROOK

SCALE	1:2500	DATE	8-7-82
AUTHOR	W.D. SMYTH	DRAWN	H.L. SMYTH
OFFICE	DEVONPORT	REP No	
DRG No	D/MZ01/251	FIG No	16

M.D.

30

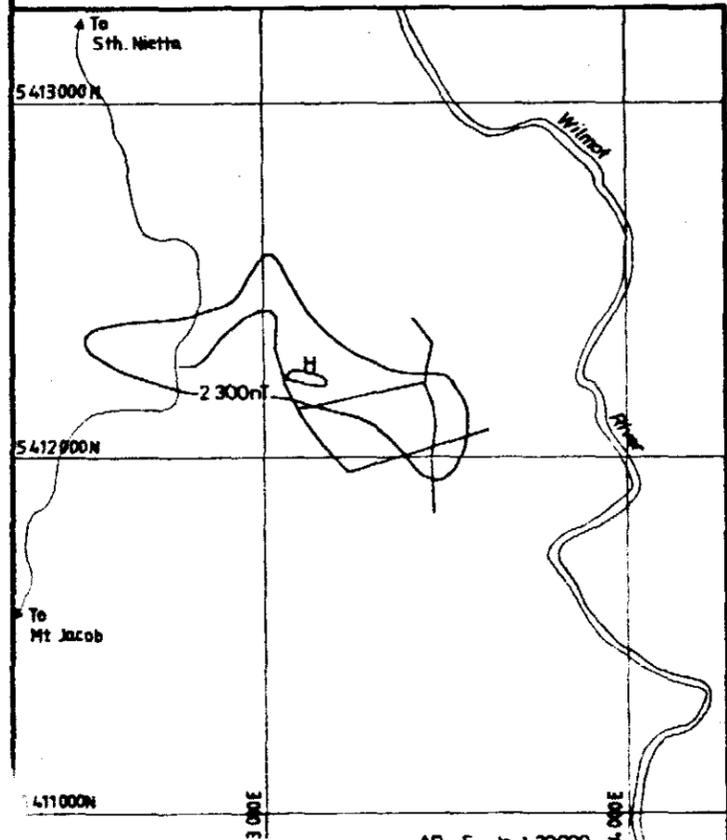
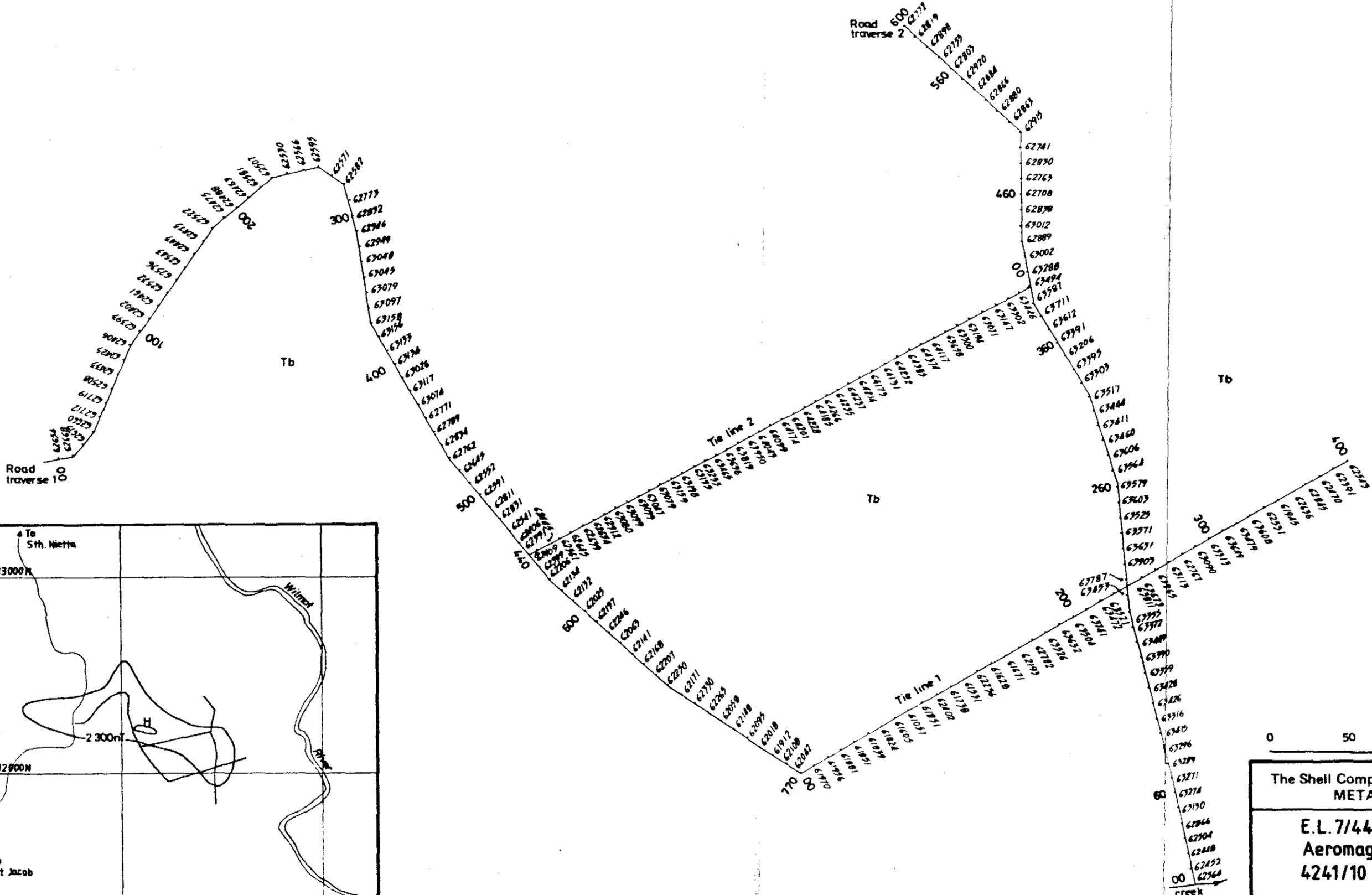
300 E

4.14 SOUTH NIETTA AEROMAGNETIC ANOMALY 4241/10

Road traverses were done over this broad extensive feature (Fig. 17).

The area is covered by basalt which overlies Cambrian volcanics. The broad aeromagnetic feature appears to be associated with volcanics.

The feature located by the ground magnetics appears to be formational. Modelling of the ground magnetic profiles will be done to try to determine the nature of the anomaly. If necessary a permanent grid will be established in the area.



5 cm

M.N.

0 50 100 150M

The Shell Company of Australia Limited METALS DIVISION			
E.L. 7/44 MOINA Aeromagnetic Anomaly 4241/10 - SOUTH NIETTA			
SCALE	1: 2500	DATE	8-7-82
AUTHOR	W.D. SMYTH	DRAWN	H.L. SMYTH
OFFICE	DEVONPORT	REP No.	
ORG No.	D/MZ01/252	FIG No.	17

4.15 DAISY DELL STREAM SEDIMENT ANOMALY

Stream sediment sampling by Comalco located a string of three Pb anomalous samples in Bull Creek near Daisy Dell.

4.15.1 Geology - The area is mostly covered by Tertiary basalt, however, a window of Moina Sandstone, not previously recognised has been located. (Fig. 18).

4.15.2 Geochemistry - A repeat stream sediment survey relocated the low order Pb anomaly. Petrographic examination of the panned concentrates from this area identified tourmaline and fluorite in trace amounts.

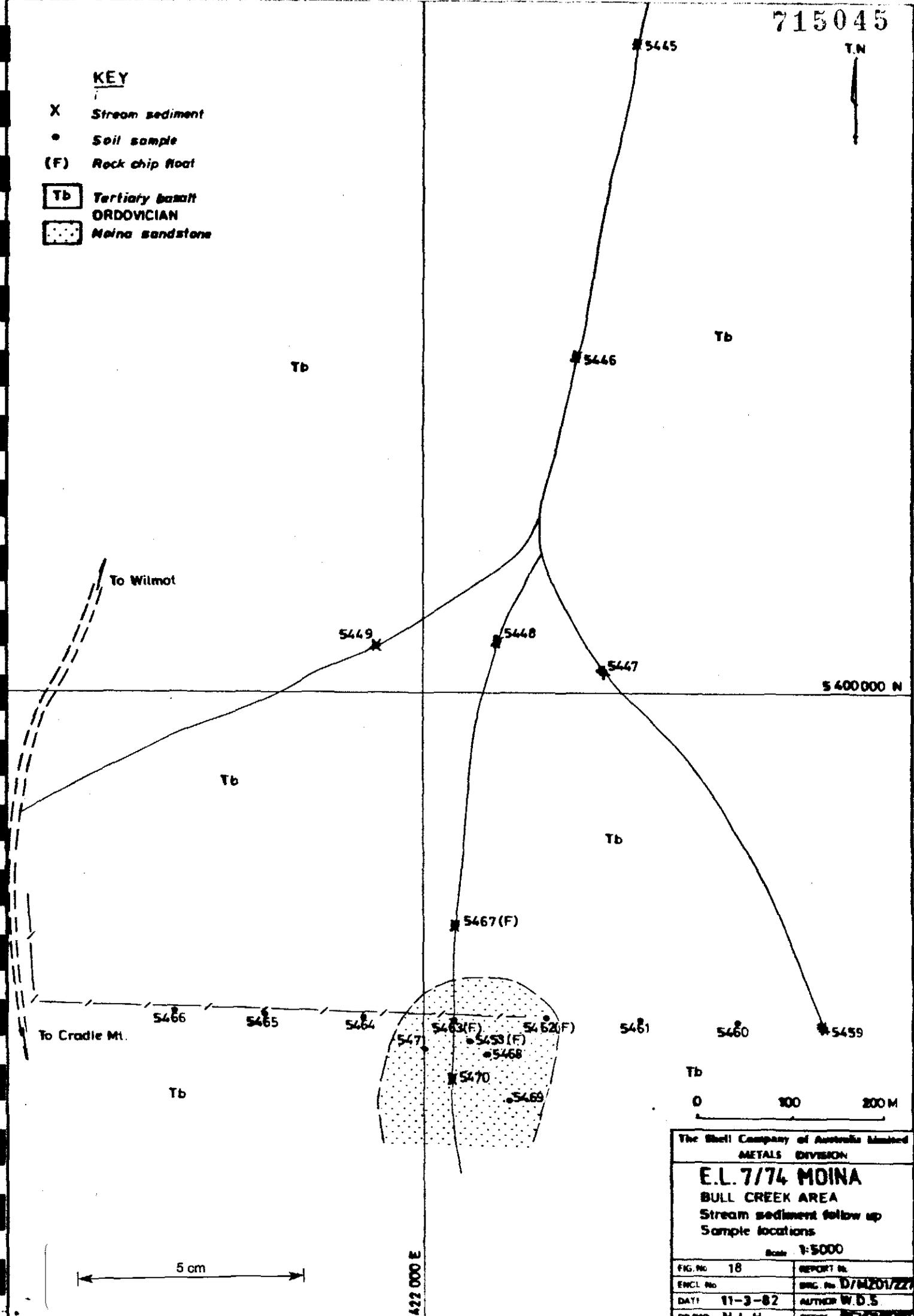
A three sample extension of the stream sediment sampling programme has further traced the anomaly into an area of Moina Sandstone. An associated soil sampling programme, one line across the headwaters, located one anomalous sample of 220 ppm Pb. (Fig. 19).

4.15.3 Recommendations - Although the anomalies are generally low order, the association of fluorite and tourmaline indicates the presence of a possible granite related mineralising system. This area requires further geochemical sampling.



KEY

- X Stream sediment
- Soil sample
- (F) Rock chip float
- Tb Tertiary basalt
- ORDOVICIAN
- Moina sandstone



The Shell Company of Australia Limited
METALS DIVISION

E.L. 7/74 MOINA
BULL CREEK AREA
Stream sediment follow up
Sample locations

Scale 1:5000

FIG. No. 18	REPORT No.
ENCL. No.	DRG. No. D/M201/ZZ
DATE 11-3-82	AUTHOR W.D.S.

4.16 OLIVIA CREEK STREAM SEDIMENT ANOMALY

Stream sediment sampling by Comalco located a Cu and separate Ag anomalies in Olivia Creek in Middlesex Plains.

4.16.1 Geology - A small quarry of Precambrian quartz-sericite schists was located beside the road. Tertiary basalt outcrops throughout the rest of the area. (Fig. 20).

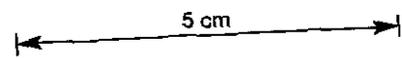
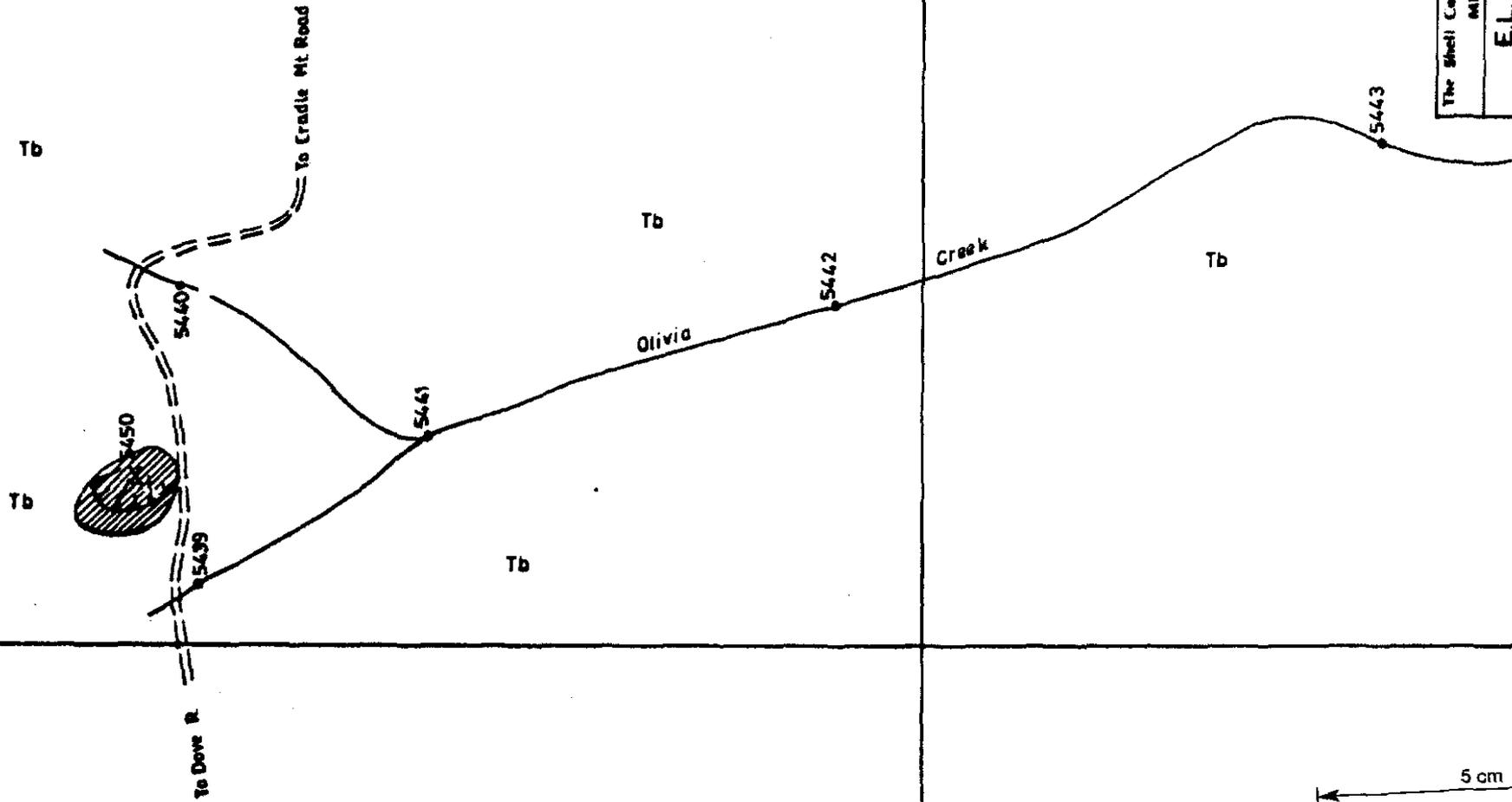
4.16.2 Geochemistry - A repeat stream sediment sampling programme failed to relocate any anomalous Ag samples (all less than 1 ppm Ag) and no anomalous Cu values are reported. One sample however reported 42 ppm Sn from the -20# sample. (Fig. 21).

4.16.3 Recommendations - A close inspection of the area is required plus analysis of panned concentrates from the Sn anomalous sample position.

715048

5 397 000 m N

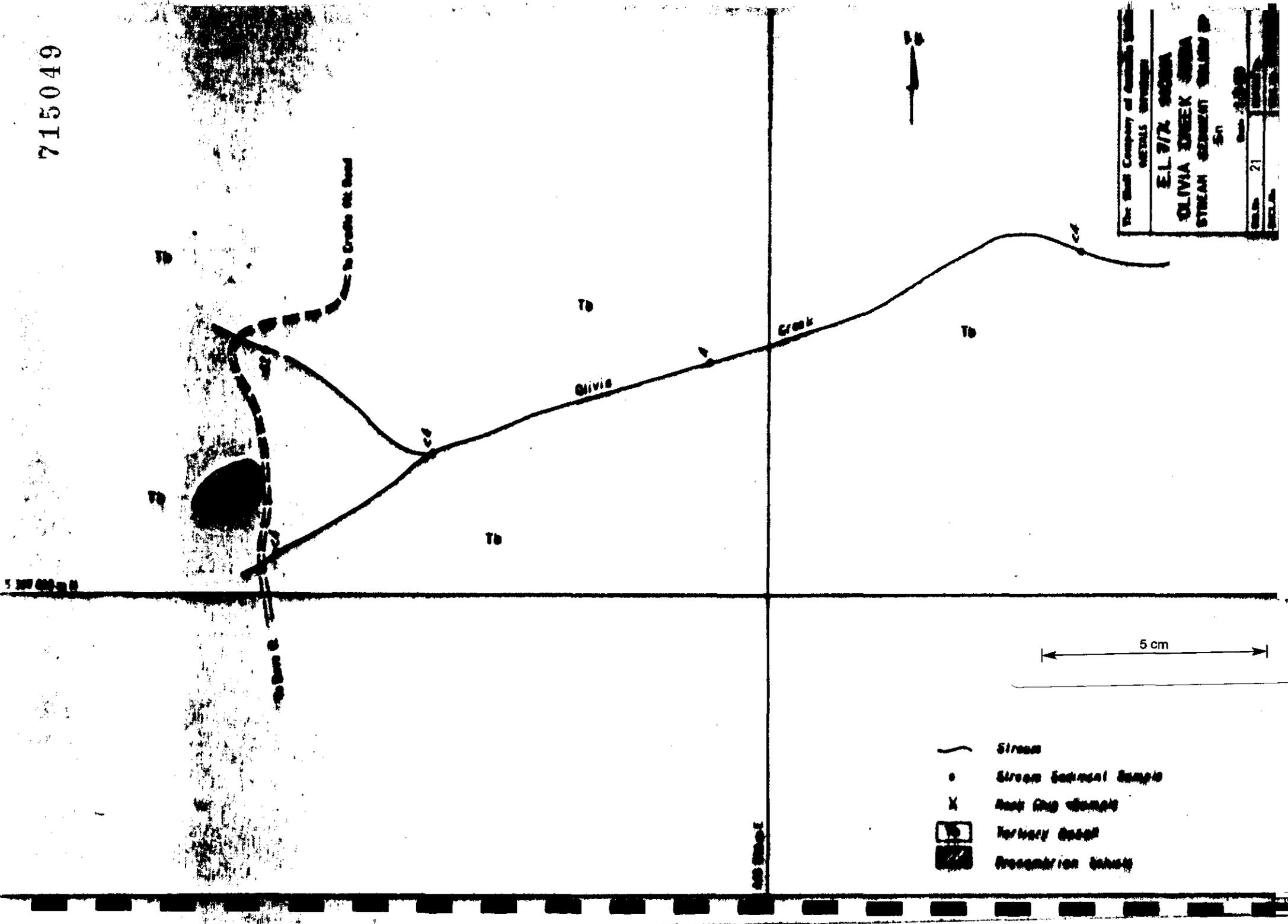
418 800 m E



-  Stream
-  Stream Sediment Sample
-  Rock Chip Sample
-  Tertiary Basalt
-  Precambrian Schists

The Shell Company of Australia Limited	
METALS DIVISION	
E.L. 7174 MOINA	
OLIVIA CREEK AREA	
STREAM SEDIMENT FOLLOW UP	
Scale	1:5 000
FIG. NO.	20
ENCL. NO.	
DATE	3-3-82
REPORT NO.	
DRG. NO.	
AUTHOR	M.D.S.

715049



The West Company of America Inc.
 METALS SURVEY
 E.L. 7/74 9000A
 OLIVIA CREEK - MINA
 STREAM SEDIMENT SURVEY #1
 Scale: 1:2500
 Sheet: 21
 Date: 1974

-  Stream
-  Stream Sediment Sample
-  Rock Chip Sample
-  Tertiary basal
-  Precambrian schist

5 cm



4.17 SMITH'S PLAINS GEOCHEMICAL ANOMALY 4241/11

An anomalous soil sample (1060 ppm Pb, 155 ppm Zn, 130 ppm Cu) was reported by Comalco from the Smith's Plains area on regional profile line A at 1800m.

- 4.17.1 Geochemistry - A small grid was established in the area and "C" horizon soil samples taken at 40m spacings. The original line was located and the 1850 S peg. "C" horizon samples were taken at 1850m S and the supposed position of 1800m S.

Slightly anomalous results were reported from two of the samples (170 ppm Pb, 120 ppm Pb). (Fig. 22).

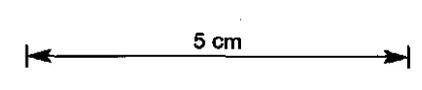
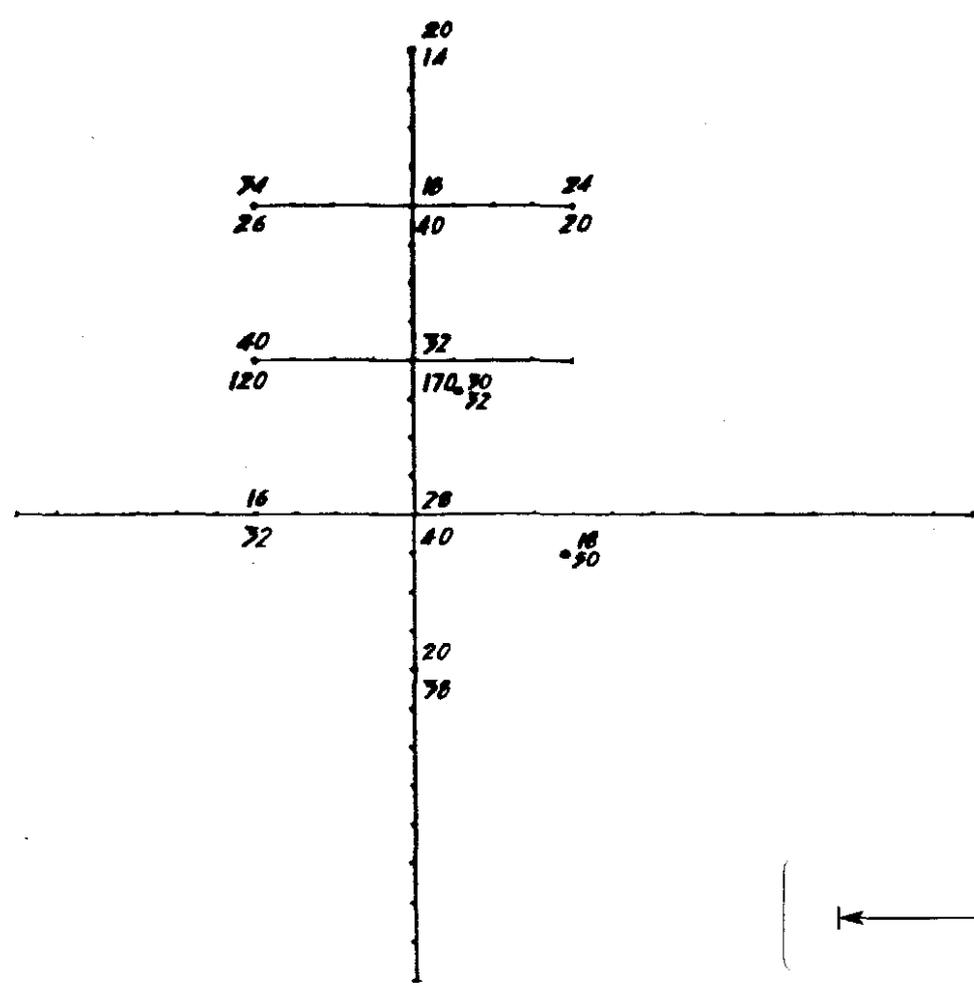
- 4.17.2 Geophysics - A ground magnetic survey was done over the grid and extensions. A magnetic anomaly was located in the south of the grid possibly related to basalt.

- 4.17.3 Recommendations - Closer spaced sampling should be done around the elevated samples and sampling extended to cover the magnetic anomaly.

715051

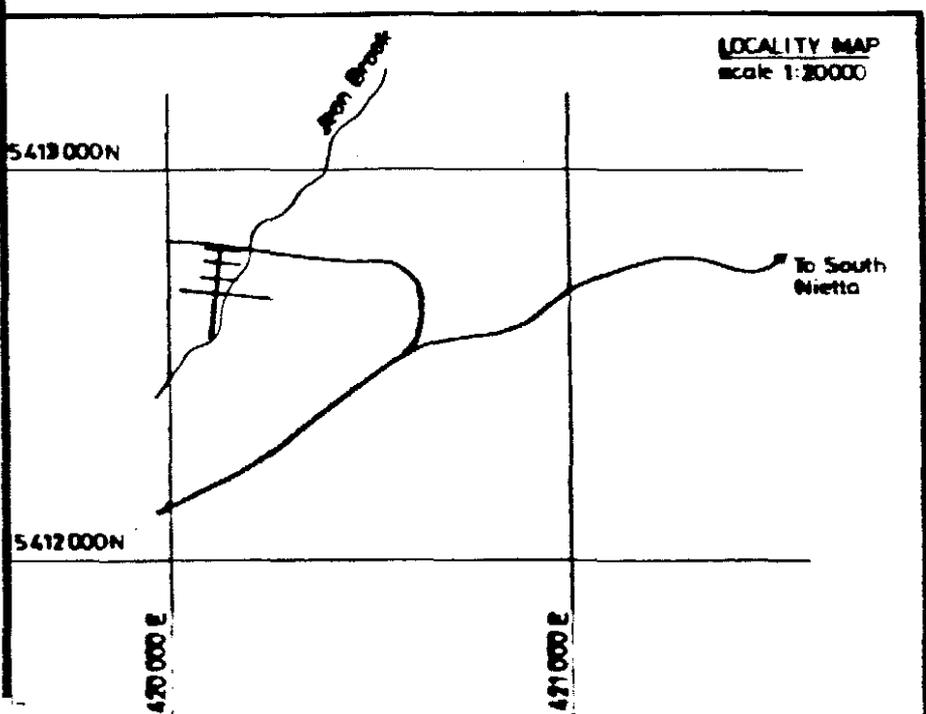
100 W 20 E 20 E 20 E 20 E

80 N
40 S
80 S
120 S
240 S



Cu
Pb

0 20 40 60 80M



LOCALITY MAP
scale 1:20000

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA SMITHS PLAINS Comalco Soil Sample Anomaly 4241/11 Soil Geochemistry Cu, Pb	
SCALE 1:500	DATE 11-1-74
AUTHOR W.D.S.	DRAWN M.L.S.
OFFICE Devonport	REP. No.
DRG No. 870272	FIG. No. 22

4.18 REGIONAL - PRECAMBRIAN

The area of Precambrian quartzites and quartz schists in the south of the licence has not been previously extensively investigated.

A localized stream sediment survey by Comalco in the Campbell River area located a zone of anomalous Cu associated with dyke like material in the Precambrian. No further work has been done on this area.

A small mineralized zone of intense silicification and pyritization with a few quartz veins and massive pyrite veins was located in a small quarry one kilometre south of Olivia Creek. The zone, exposed over 30m x 4m appears to be associated with a shear zone which strikes at approximately 310° , vertical, cross-cutting the schistosity of the Precambrian rocks. This NW trend is common in the region and is associated with Au, Pb mineralization on Five Mile Rise. This zone was anomalous in Mo (260 ppm), As (85 ppm), Ba (350 ppm), Sn (46 ppm) and W (35 ppm). The mineralization is very localised and no further work will be done on it.

Pyritic carbonaceous Precambrian shales were located and sampled at two localities south of the Dove River.

Minor quartz veining parallel to schistosity is common throughout the Precambrian, with pyritic quartz veins associated with the carbonaceous shales. Results from the carbonaceous shales are all low.

A regional stream sediment survey will be done to fully explore the area.

4.19 REGIONAL - CAMBRIAN

A regional investigation of the Cambrian rocks in the area was instigated. The object of the survey is to locate and assess the potential for mineralization of the various areas.

Several small isolated outcrops of Cambrian Volcanics in the Middlesex Plains area have been sampled. Petrological examination indicated the presence of rhyolitic lavas, intrusive quartz porphyrys (with tourmaline and pyrite) and metaquartzites. No anomalous values were reported from rock chip samples.

A Pb (90 ppm) stream sediment anomaly at Luna Creek was investigated. Highly sheared, possibly acid volcanics were located. However large quartz veins in the adjacent Moina Sandstone have elevated Pb values (80 ppm). This may explain the stream sediment anomaly.

At Smith's Plains, investigation of a newly constructed road indicated general agreement with Comalco mapping of the area.

5.0 CONCLUSIONS & RECOMMENDATIONS

Only one target of prime interest has been located. This is in the Wattle Valley Grid area. A shallow percussion drill hole should resolve questions as to the origin of the various associated anomalies.

The several aeromagnetic anomalies tested appear to have basalt sources. Follow up work on the few remaining aeromagnetic anomalies not tested will however continue.

Testing of geochemical anomalies has been slow. Only one anomaly tested requires intensive follow up. Several more will be located and tested in the coming period.

Investigation of the Cambrian volcanics have not located any anomalous areas. This investigation will continue with emphasis being placed on areas with associated stream sediment anomalies (Dove River) and the Upper Winterbrook Grid of Comalco.

The area of Precambrian in the south of the licence might be further tested by a stream sediment survey. Access to the area is not difficult and a survey with a sample density of one sample/square kilometre could be rapidly done.

W.D. SMYTH
Exploration Geologist

APPENDIX 1

Central Mineralogical Services



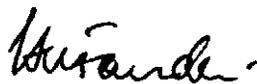
39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. W.D. Smyth
Exploration Geologist
The Shell Co. of Aust. Ltd.
Metals Division
P.O. Box 860
DEVONPORT / TAS. 7310

29th October, 1981

REPORT CMS 81/9/68

YOUR REFERENCE:	Sample Despatch No. 4023/MZ01/WDS/80
DATE RECEIVED:	30th September, 1981
SAMPLE NOS.:	838 - 844
SUBMITTED BY:	W.D. Smyth
WORK REQUESTED:	Petrology


H.W. Fander, M. Sc.

REPORT CMS 81/9/68Petrology of Core Samples 838 - 844

Seven core samples were received for thin-section preparation and petrological examination; they are briefly described in the accompanying table.

Summary

Two of the rocks are igneous, the remainder are modified clastic sediments.

The igneous rocks are sericitised porphyritic rhyolites and resemble rocks in the series 784-787.

The sediments are all dominantly quartzose, and were orthoquartzites ranging perhaps into feldspathic quartzites, with siltstone intercalations (841), but no evidence of carbonate units in any form. Alteration was metasomatic, with some associated recrystallization, rather than metamorphic; metasomatism was quite minor except in 838, which contains appreciable magnetite and actinolite as well as arsenopyrite. In fact, the occurrence of magnetite as a metasomatic mineral seems to be characteristic in this particular geological setting (e.g. wrigglites, Kara, 782, 783).

H.W. Fander, M. Sc.

Central Mineralogical Services

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

Mr. W.D. Smyth
Exploration Geologist
The Shell Co. of Aust. Ltd.
Metals Division
P.O. Box 860
DEVONPORT / TAS. 7310

28th May, 1982

REPORT CMS 82/5/16

YOUR REFERENCE: Sample Despatch
 No. 4129/MZ01/WDS/134

DATE RECEIVED: 11th May, 1982

SAMPLE NOS.: 5688 - 5691

SUBMITTED BY: W.D. Smyth

WORK REQUESTED: Petrology

H.W. Fander, M. Sc.

REPORT CMS 82/5/16

Four rock samples from the Gordon Limestone were submitted for petrological examination. Since the four rocks are essentially similar, brief tabulated descriptions were prepared. These incorporate data from carbonate-staining tests and microscopic (stereobinocular, petrological) examination of representative thin-sections and offcuts, and include interpretative comments.

All four rocks can be classified as incipiently syngenetic-pyritic limestones. Fabrics range from massive-laminated to intraformationally brecciated. Dolomitisation is variably developed, predates incipient regional metamorphic recrystallization, and also predates localised calcite veining and vug-filling. These limestones are variably carbonaceous and more or less typical of the Gordon Limestone. There are no indications of base metal mineralisation.

D. Cowan, B. Sc.

Sample	Classification - Composition	Fabric	Accessories	Comments
588 T.S. 2130)	<u>Dolomitic Limestone Breccia</u> . Clasts, interspersed bands of microcrystalline to semi-porcellanous, weakly carbonaceous limestone with extensively dolomitised sparry calcite cement, minor stylolites.	Soft-pebble conglomerate-like with mildly corrosive cement. Minor late calcite veins. Mildly stressed.	Traces authigenic quartz (in matrix). Minor traces ultrafine "syngenetic" pyrite.	Intraformationally brecciated, finely laminated, carbonaceous, weakly fossiliferous limestone; partly dolomitised, subsequently weakly calcite-veined.
589 T.S.	<u>Dolomitic Limestone "Breccia"</u> . Microcrystalline to semi-porcellanous, weakly carbonaceous limestone with irregular veins, impregnations of fine sparry dolomite with thin selvages calcite.	Microlaminated limestone with pygmatic dolomite veins, incipiently sheared.	Traces quartz (silty, detrital), minor traces ultrafine "syngenetic" pyrite.	Extensively diagenetically dolomite veined/partly dolomitised, microlaminated, carbonaceous, weakly pyritic limestone sim. 5688, but relatively massive.
590 T.S. 2130E	<u>Impure Limestone</u> . Microcrystalline to semi-porcellanous calcite, weakly pervasively carbonaceous. Minor (<5-10 %) silt-sized detrital quartz. Minor localised dolomitisation.	Massive to weakly laminated, mildly slumped, with incipient discordant slaty cleavage.	Minor traces ultrafine pyrite.	Relatively massive, relatively weakly laminated impure microcrystalline limestone. Very incipiently dolomitised in comparison to 5688, 5689.
591 T.S. 2133)	<u>Limestone</u> . Microcrystalline to semi-porcellanous calcite with pervasive fine-scale semi-lustre-mottled calcite cavity fillings.	Banded to microlaminated, massive to silty fine sandy clastic ("calcarenitic"). Stressed.	Traces recrystallized "syngenetic" pyrite; minor traces carbonaceous matter.	Unusually vuggy limestone. General features suggestive of algal bioconstruction, but lacks the intricate banding of stromatolitic types. Undolomitised.
	715061			

Central Mineralogical Services



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

Mr. W.D. Smyth
Exploration Geologist
The Shell Co. of Aust. Ltd.
Metals Division
P.O. Box 860
DEVONPORT / TAS. 7310

16th July, 1982

REPORT CMS 82/6/15

YOUR REFERENCE: Sample Despatch
 No. 4136/MZ01/WDS/141

DATE RECEIVED: 18th June, 1982

SAMPLE NOS.: 6 Samples

SUBMITTED BY: W.D. Smyth

WORK REQUESTED: Petrology

H. W. Fander.

H.W. Fander, M. Sc.

Rebate July 82

REPORT CMS 82/6/15Cambrian Volcanics - Northern Tasmania

Six rock samples were received for petrological examination; thin-sections were prepared, and offcuts were subjected to potash stain tests to aid identification and interpretation. The rocks are briefly described in the accompanying table.

Summary

All six rocks are believed to be igneous; five of them are broadly similar, but 5480 is quite different and appears out of context with the others in both composition and fabric; it is a deuterically altered andesite thought to be post-Cambrian.

The five similar rocks are all altered to varying degrees, with superimposed mild shearing; two are thought to be rhyolitic lavas (5478, 5483), one is a biotitised intrusive rhyolite (5494), and two appear to be fragmental (5495, 5496), possibly tuff-lavas or related "mixed" pyroclastic/extrusive types, of broadly rhyolitic composition.

H.W. Fander, M. Sc.

Sample No. Rock Type - Composition

Fabric

Minor Minerals

5478
(T.S.
2480)

Altered Porphyritic Rhyolite. Corroded, embayed phenocrysts of beta-quartz set in a groundmass of quartz, fine illite-sericite aggregates.

Poorly-preserved flow-banding in places. Fine-grained, featureless.

Fe-staining. Compact hematite-goethite patches after ?sulphides.

"Rhyolite" used in broad sense only because all feldspars argillised. Probably extrusive.

5480

Epidotised Porphyritic ?Andesite. Numerous small euhedral oligoclase-andesine phenocrysts; plagioclase groundmass largely replaced by fine epidote.

Random orientation; spherulitic or orbicular textures in groundmass.

Epidotised hornblende. Isolated oxide opaques. Quartz veins.

Lack of flow-features suggests rock was intrusive. Feldspar-rich (leucocratic), with pervasive deuteric alteration.

5483

Sheared Porphyritic Rhyolite. Embayed phenocrysts of beta-quartz and of albite set in sheared groundmass of fine quartz, sericite, feldspar.

Quite well-preserved flow-banding, small-scale brecciation.

Small leucoxene patches. Accessory apatite.

Similar to, and probably correlatable with, 5478, but fresher; a sodic rhyolite (no K), probably extrusive.

5494

Biotitised Porphyry. Scattered quartz and sericitised feldspar phenocrysts, many pseudomorphs of fine dark biotite aggregates; fine quartz matrix.

Random porphyritic fine-grained igneous fabric. Intrusive.

Accessory zircon, leucoxene. Goethite veinlets.

Fabric suggests a minor intrusive; biotite probably replaces plagioclase, and rock was intrusive rhyolite/toscanite.

5495

Altered Acid Volcanic. Crystal fragments of quartz, K-feldspar, and patches of finely-intergrown quartz-topaz, in fine quartz-K-feldspar matrix.

Vaguely banded or bedded, with some ?clastic/pyroclastic features.

Isolated euhedral zircon. Replacive muscovite flakes.

Relationships not clear; may be a mixed rock, lava with pyroclastic material ("tuff-lava").

5496
T.S.
2485)

Sheared, Sericitised Acid Volcanic. Elongate fragments of altered porphyry, felsite, quartz, altered feldspar; schistose sericitic matrix.

Poor sorting/sizing; good schistosity, mainly confined to sericite.

Isolated fragments of quartz-mica schist; fine hematite in places.

Could have been a lapilli tuff or coarse tuff-lava, but shearing and sericitisation are superimposed on fabric.

715064

APPENDIX 2

DRILL LOG SHEET

PROJECT : MGINA

Hole No : L.G.D. 1

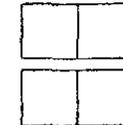
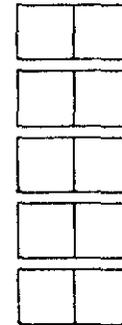
COLLAR CO-ORDINATES : 440N/1800W

LOCATION CODE : MZ 01

COLLAR R.L. :

LOCATION : Lake Gardner. Aeromagnetic Anomaly..... MAP/PHOTO REFERENCE : 4240/1	DATE STARTED	8-8-81	HOLE SIZE		FROM	TO	TOTAL	CORE STORAGE					
	DATE FINISHED	16-9-81	NOM CORE		0	71m	71m	Nº OF TRAYS					
	TOTAL DEPTH	253.52						SAMPLE STORAGE					
HOLE SURVEY DATA			LOGGED BY	W.D. SMYTH	CORE	NQ	71m	72m	1m	ASSAY LAB.	Comlacs		
INSTRUMENT : TROPARI			CONTRACTOR	A.D.D.		BQ	72m	253.52m	181.52m	ASSAY REPORTS			
DEPTH	INSTRUMENT		ACID ETCH		REMARKS	RIG							
	INCL.	AZ.	INCL.	AZ.									
COLLAR	-90°					F 30							
150m	-83°					DRILL CREW	K. Brooker R. Febey	CASING	NQ	0	71m	71m	MIN. & PET. LAB
100m	-81°												
253°	-75°							CASING LEFT	PVC	0	71m	71m	MIN. & PET. REPORTS

GRAPHIC / LETTER SYMBOL LOGGING KEY



STRUCTURE / ALTERATION CODE

- B BEDDING
- J JOINTING
- C CLEAVAGE
- F FOLIATION
- sh SHEARING
- q QUARTZ VEINS
- O OXIDATION

DRILLING SUMMARY :

715066

DIAMOND DRILL LOG - SAMPLING RECORD

HOLE NO: GD 1

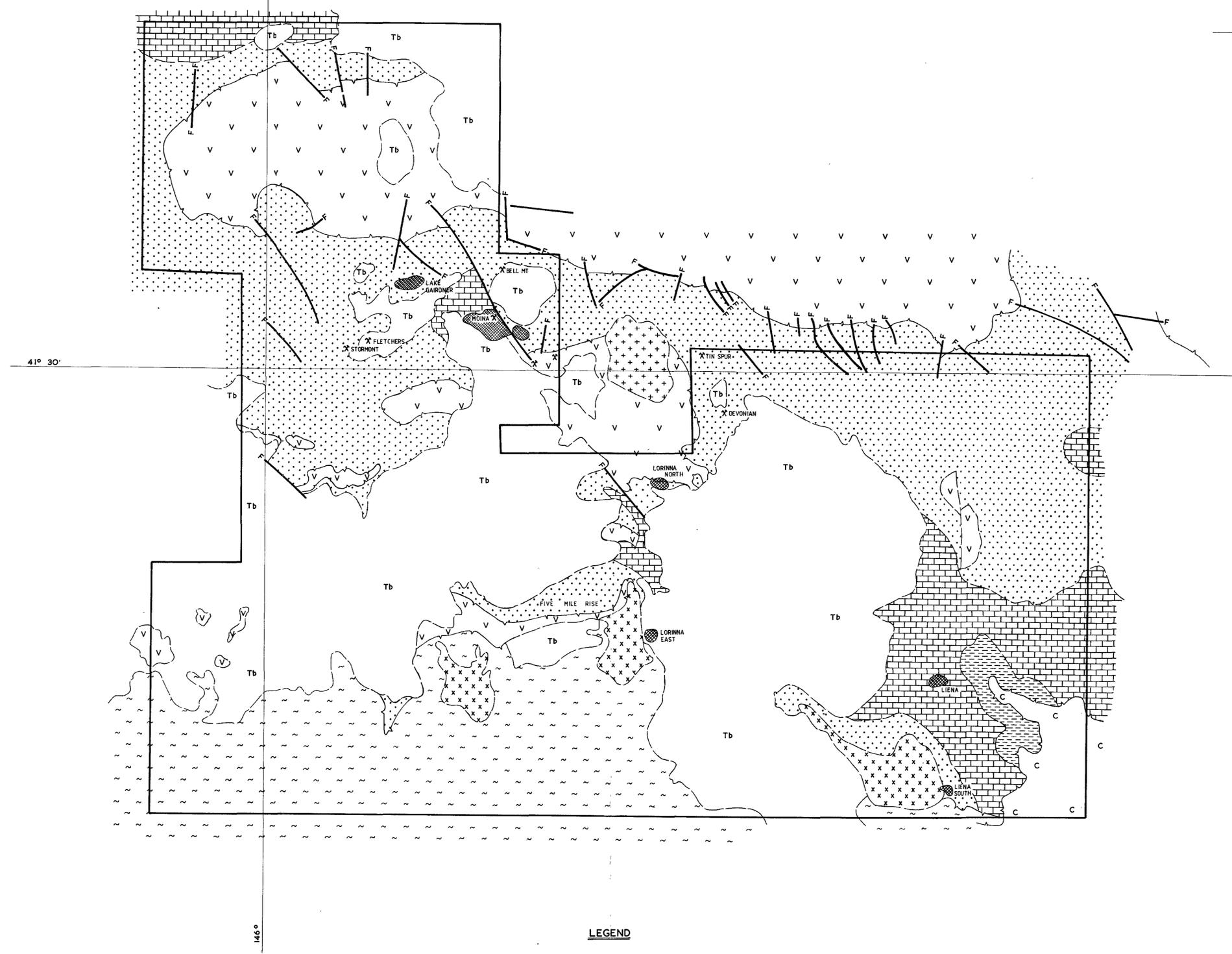
Interval (m)	Core Rec'd (m)	Sample No.	Compos No.	Assays							weighted Assays/Ratios		% Estimates		Core Angles	F.S. Alt. P.S.	Description
				Sn	Al	CaF ₂	Cu	Pb	Zn	Mo	Au						
71.00	74.50		875	F	<4	1100		410	12	450	16						MOINA SANDSTONE. Grey-white f-med gn. tubular sandstone.
74.50	75.10		876	S	20	25		115	6	110	<4						Dark green/black chloritic siliceous fragmental rock.
75.10	77.10		877	F	C1	6	1400	330	500	4	500	8	<0.05				Grey white f-med gn. sandstone. Pyritic.
77.10	78.70		878	S	16	10		110	4	34	<4						
78.70	81.50		879	F	<4	1150		500	4	470	8						
81.50	83.10		880	S	24	10		145	<4	85	<4						Dark green/black metamorphosed sandstone/siltstone.
83.10	85.80		881	F	C12	6	550	2400	240	<4	195	<4	<0.05				Dull grey/grey-green bedded siltstone/sandstone.
85.80	88.15		882	S	10	20		50	6	90	<4						Dark green/black metamorphosed sandstone/siltstone.
88.15	88.75		883	S	8	45		390	6	175	<4						
88.75	95.00		884	F	C2	22	230	1300	520	10	130	<4	<0.05				Dull grey/grey-green bedded siltstone/sandstone.
95.00	97.90		885	F	10	200		260	<4	85	<4						
97.90	100.80		886	S	8	25	420	48	4	18	<4	<0.05					Grey fractured and quartz veined quartzite.
100.80	104.00		887	S	55	65		12	4	14	<4						CAMBRIAN VOLCANICS. Grey siliceous f.gn. quartz porphyritic lava? Magnetite.
104.00	107.60		888	S	90	75		10	<4	14	<4						
107.60	111.00		889	S	40	40		10	6	10	<4						Dark brown-green f.gn. qtz. quartz porphyritic lava. Magnetite.
111.00	115.00		890	S	C3	30	30	370	8	6	10	<4	<0.05				
115.00	117.50		891	S	22	20		6	<4	6	<4						
117.50	118.50		892	S	36	20		8	4	8	<4						
118.50	121.00		893	S	22	25		8	<4	8	<4						
121.00	124.10		894	S	100	70		12	<4	14	<4						
124.10	126.10		895	S	70	45		6	<4	12	<4						
126.10	130.65		896	S	65	45		6	<4	8	<4						
130.65	133.00		897	S	C4	50	20	250	8	<4	14	<4	<0.05				Dark brown brecciated f.gn. equigranular lava? Magnetite.
133.00	136.00		898	S	55	80		8	<4	16	<4						
136.00	138.00		899	S	65	85		8	<4	16	<4						Dark brown/grey f.gn. siliceous lava? Magnetite.
138.00	142.60		900	S	60	75		6	<4	20	<4						
142.60	150.00		901	F	75	200		40	10	46	<4						
150.00	158.00		902	F	C5	90	210	500	44	10	50	16	<0.05				
158.00	160.90		903	F	75	250		135	6	125	4						Pink f.gn. equigranular siliceous lava. Magnetite.
160.90	171.90		904	F	C6	42	350	210	105	6	115	4	<0.05				Dark grey white speckled f-med gn. siliceous sericitic tuff?
171.90	174.40		905	F	34	290		135	4	90	<4						Grey/grey white siliceous sericitic lava?
174.40	175.00		906	S	42	40		150	10	24	<4						Magnetite-chlorite-pyrite.
175.00	186.20		907	F	C7	14	220	250	70	<4	60	4	<0.05				
186.20	187.10		908	S	16	55		10	<4	36	<4						Qtz-chl/Mag veining.
187.10	195.00		909	F	C8	22	210	230	50	4	66	4	<0.05				f-med gn. siliceous sericitic tuff? lava?
195.00	206.10		910	F	24	210		50	6	55	4						
206.10	219.00		911	F	16	110		40	<4	40	<4						Pink f.gn. equigranular siliceous lava?
219.00	220.15		912	F	C9	28	150	450	34	<4	46	<4	<0.05				
220.15	228.00		913	F	24	230		60	<4	85	4						Grey f.gn. siliceous sericitic tuff?
228.00	234.70		914	F	50	310		90	14	85	20						Dark grey f-med gn. siliceous sericitic lava?
234.70	235.95		915	S	C10	240	120	290	20	4	36	<4	<0.05				Massive magnetite with quartz veins.
235.95	247.80		916	F	48	240		230	<4	75	16						Dark grey f-med gn. siliceous sericitic lava?
247.80	249.20		917	F	28	130		210	<4	42	12						Grey/grey-white f.gn. equigranular siliceous lava?
249.20	257.40		918	F	C11	42	130	370	50	<4	48	8	<0.05				
257.40	258.52		919	S	125	75		165	10	55	<4						Mag veining.

715067

DIAMOND DRILL LOG

Time	To	Interl (a)	Core Rec'd	% Rec	Sample No.	Compos No.	Assays								weighted Assays, Rat		
							Ag	Bi	As	Cd	Fe%	Mn	Co	Ba			
71.00	74.50	220	315	100	875	f	<1	16	14	<1	2.70	120	160	50			
74.50	75.10	60	460	100	876	s	<1	10	7	<1	3.50	1050	14	105			
75.10	77.10	200	100	100	877	f	<1	24	9	<1	3.10	350	180	50			
77.10	78.10	100	100	100	878	s	<1	4	8	<1	4.70	530	12	30			
78.10	81.60	240	100	100	879	f	<1	30	10	<1	2.50	320	145	60			
81.60	83.60	150	100	100	880	s	<1	18	4	<1	4.80	800	10	35			
83.60	85.80	270	100	100	881	f	<1	14	9	<1	1.70	510	60	210			
85.80	88.15	230	210	100	882	f	<1	12	1350	<1	14.5	1150	30	160			
88.15	88.75	60	100	100	883	s	<1	270	530	<1	17.5	1350	24	200			
88.75	95.00	620	615	100	884	f	<1	70	14	<1	4.40	740	44	230			
95.00	97.90	290	290	100	885	f	<1	20	4	<1	2.20	350	28	330			
97.90	100.80	290	470	100	886	s	<1	10	16	<1	2.20	210	18	370			
100.80	104.00	150	300	100	887	s	<1	44	18	<1	8.30	110	6	470			
104.00	107.60	300	100	100	888	s	<1	4	8	<1	8.50	70	10	510			
107.60	111.00	150	100	100	889	s	<1	4	4	<1	7.30	46	6	460			
111.00	115.00	400	400	100	890	s	<1	22	2	<1	6.60	36	6	450			
115.00	117.50	470	250	100	891	s	<1	8	42	<1	3.30	20	44	570			
117.50	118.50	100	100	100	892	s	<1	8	42	<1	6.20	38	6	420			
118.50	121.00	250	250	100	893	s	<1	6	5	<1	6.00	28	6	620			
121.00	124.10	110	100	100	894	s	<1	4	6	<1	12.5	80	12	370			
124.10	126.10	200	200	100	895	s	<1	6	2	<1	8.30	85	12	160			
126.10	130.65	455	455	100	896	s	<1	44	42	<1	6.50	65	12	340			
130.65	133.00	455	235	100	897	s	<1	44	2	<1	8.30	80	12	185			
133.00	136.00	320	100	100	898	s	<1	4	4	<1	11.5	85	10	135			
136.00	138.00	320	320	100	899	s	<1	4	4	<1	12.8	115	10	240			
138.00	142.60	120	300	100	900	s	<1	6	5	<1	11.0	165	12	230			
142.60	150.00	740	740	100	901	f	<1	44	8	<1	11.0	145	24	260			
150.00	158.00	800	600	100	902	f	<1	6	48	<1	10.5	90	44	660			
158.00	160.90	400	400	100	903	f	<1	8	3	<1	3.60	160	50	500			
160.90	171.90	1100	1100	100	904	f	<1	8	4	<1	8.50	150	70	350			
171.90	174.40	220	250	100	905	f	<1	8	14	<1	4.00	170	65	370			
174.40	175.00	60	100	100	906	s	<1	18	155	<1	9.60	185	65	610			
175.00	185.20	1100	1120	100	907	f	<1	44	5	<1	3.10	115	40	480			
185.20	187.10	90	100	100	908	s	<1	44	2	<1	8.20	320	34	510			
187.10	195.00	630	630	100	909	f	<1	44	5	<1	7.40	135	36	340			
195.00	206.10	1100	1110	100	910	f	<1	44	9	<1	3.30	80	36	360			
206.10	213.00	840	840	100	911	f	<1	44	12	<1	3.10	210	24	380			
213.00	220.15	515	505	100	912	f	<1	44	8	<1	3.00	590	20	410			
220.15	228.00	535	535	100	913	f	<1	44	4	<1	9.50	200	10	460			
228.00	234.70	520	520	100	914	f	<1	44	2	<1	8.10	115	90	340			
234.70	235.95	120	120	100	915	s	<1	10	9	<1	20.0	145	110	75			
235.95	247.80	1185	1185	100	916	f	<1	44	3	<1	7.70	185	75	370			
247.80	249.20	140	140	100	917	f	<1	44	42	<1	3.10	125	55	430			
249.20	252.40	120	320	100	918	f	<1	44	6	<1	12.5	220	150	530			
252.40	253.58	110	100	100	919	s	<1	10	10	<1	26.0	340	125	520			

715068



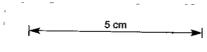
LEGEND

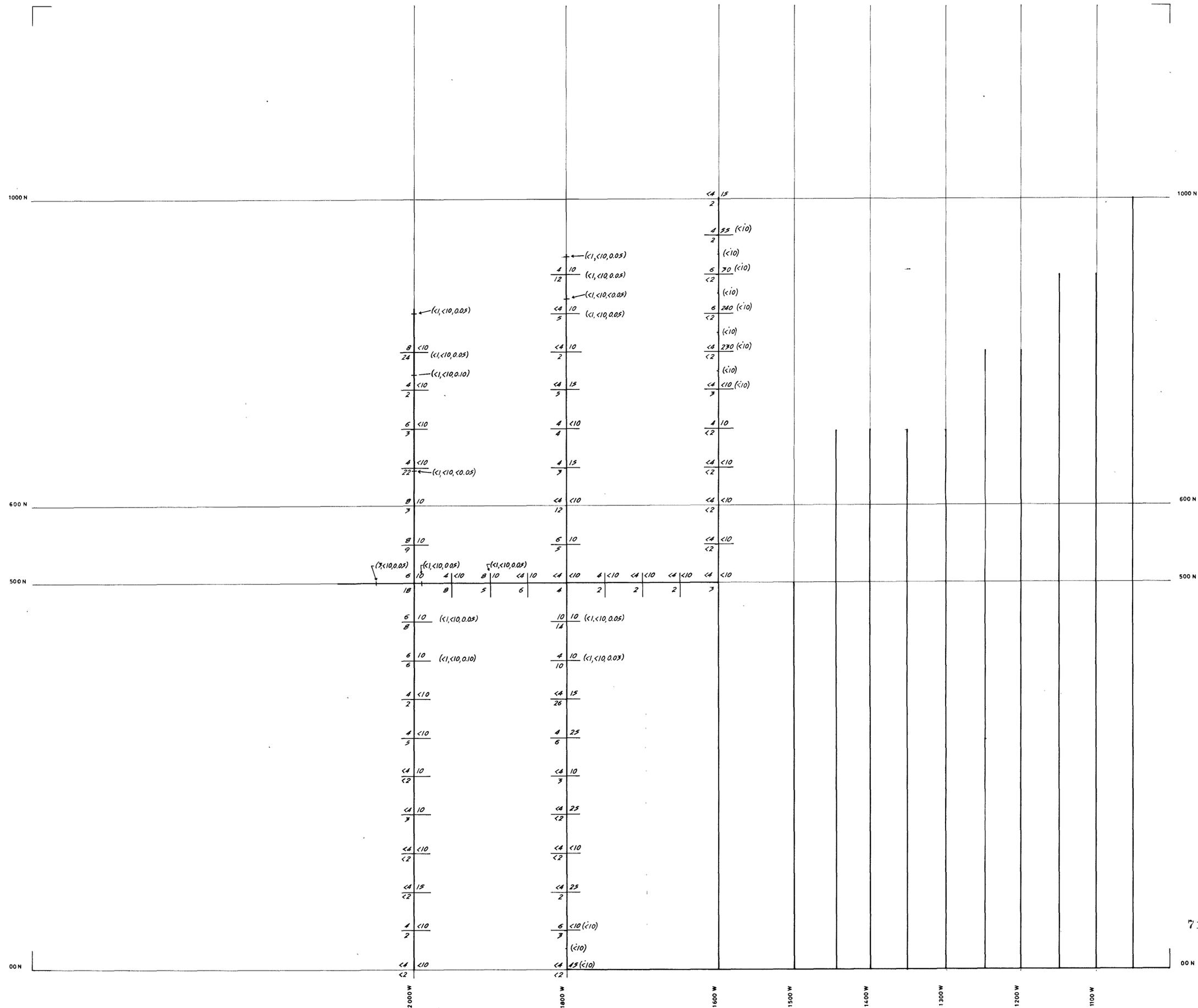
TERTIARY	Tb	Basalt	Ordovician	Gordon Limestone	DEVONIAN	+ + +	Dalcoath Granite
CARBONIFEROUS	C	Sediments		Moina Sandstone / Roland Conglomerate		x x x	Dove Granite
SILURIAN		Eldon Group		Unconformity		F — F	Fault
			CAMBRIAN	V V		◐	Aeromagnetic Anomaly
				Unconformity			
			PreCambrian	~ ~ ~			
				Quartzite			



715070

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA REGIONAL GEOLOGY 82-1826 vol 2/2	
Scale 1:63,360	
FIG No.	REPORT No.
ENCL No.	DRG No D / MZ01/148
DATE 27-8-81	AUTHOR W D SHYTH
DRAWN O HEDDICH	OFFICE DEVONPORT

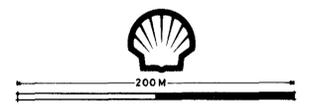
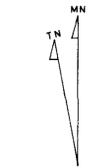




(Sn,W,Au) = ROCK CHIP SAMPLES

NOTE - Analyses in ppm.

$\frac{Sn}{W}$ = SOIL SAMPLES
 $\frac{As}{W}$ = SOIL SAMPLES
 (W) "CHECK" SOIL SAMPLE

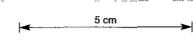


715071

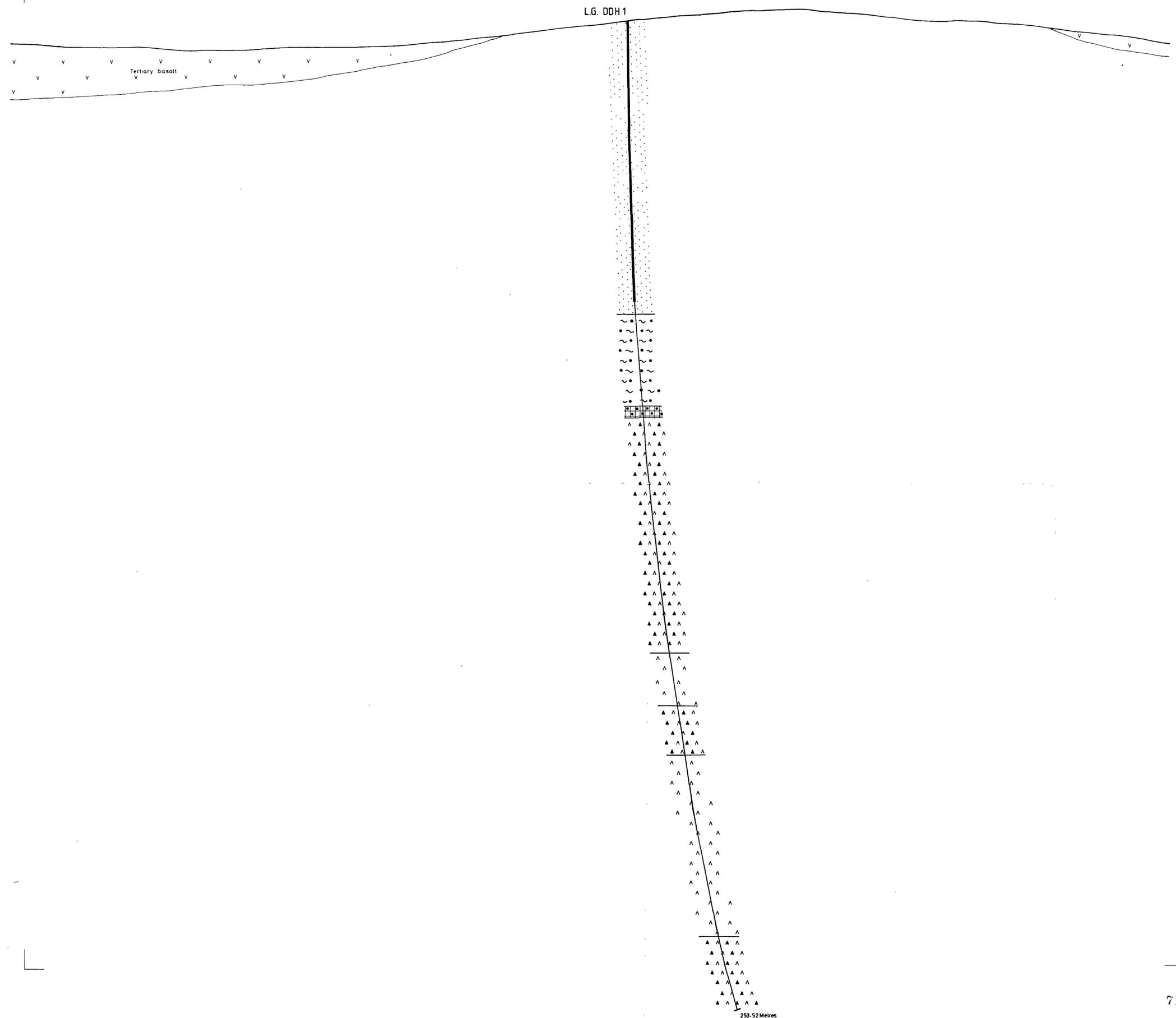
The Shell Company of Australia Limited
 METALS DIVISION

E.L. 7174 MOINA 82-1826
 LAKE GARDNER ANOMALY (4240/1)
 MOINA GRID & EXTENSIONS
 Soil & Rock Chip Geochemistry
 Scale 1:2500

FIG No	REPORT No
ENCL No	DRG No D/MZ01/146
DATE 24-4-81	AUTHOR W.D.S
DRAWN H.L.H.	OFFICE DEVONPORT



600 N 500 N 400 N 300 N



PERCUSSION DRILL HOLE
DIAMOND DRILL HOLE

LEGEND

-  Moina Sandstone
-  Magnetite Skarn
-  Cambrian Volcanics
-  Quartzite
-  Chlorite Skarn
-  Veining



0 10 20 30 Metres

The Shell Company of Australia Limited
METALS DIVISION

E L. 7174 MOINA
LAKE GAIRDNER ANOMALY
(4240/1) LITHOLOGY
SECTION 1800 W 82-1826
Vol 12/2

FIG No	REPORT No
ENCL No	DRG No D/M201/210
DATE 26-11-81	AUTHOR W D SMYTH
DRAWN H L H.	OFFICE DEVONPORT

715072

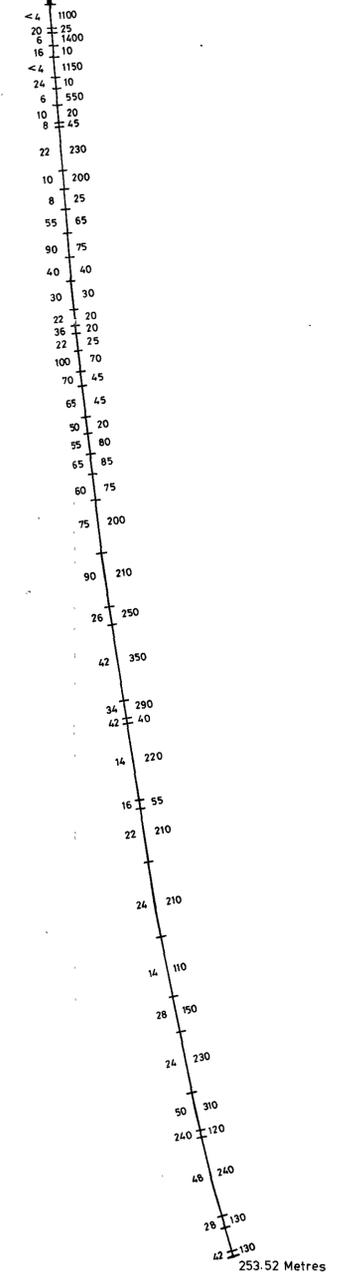
5 cm

253.52 Metres

600 N 500 N 400 N 300 N

L.G. DDH 1

Tertiary basalt



PERCUSSION DRILL HOLE
DIAMOND DRILL HOLE

Sn W

NOTE: Analyses in ppm



0 10 20 30 Metres

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA LAKE GAIRDNER ANOMALY (4240/1) ASSAYS SECTION 1800 W 82-1826 Vol 2/2	
FIG No	REPORT No
ENCL No	DRG No D/M201/254
DATE 26-11-81	AUTHOR W D SMYTH
DRAWN H.L.H	OFFICE DEVONPORT

715073

5 cm

2200 W

2000 W

1800 W

1600 W

200 S

0

200 N

400 N

600 N

800 N

North

Vertical Scale 1 cm = 0.2 mgal

5 cm

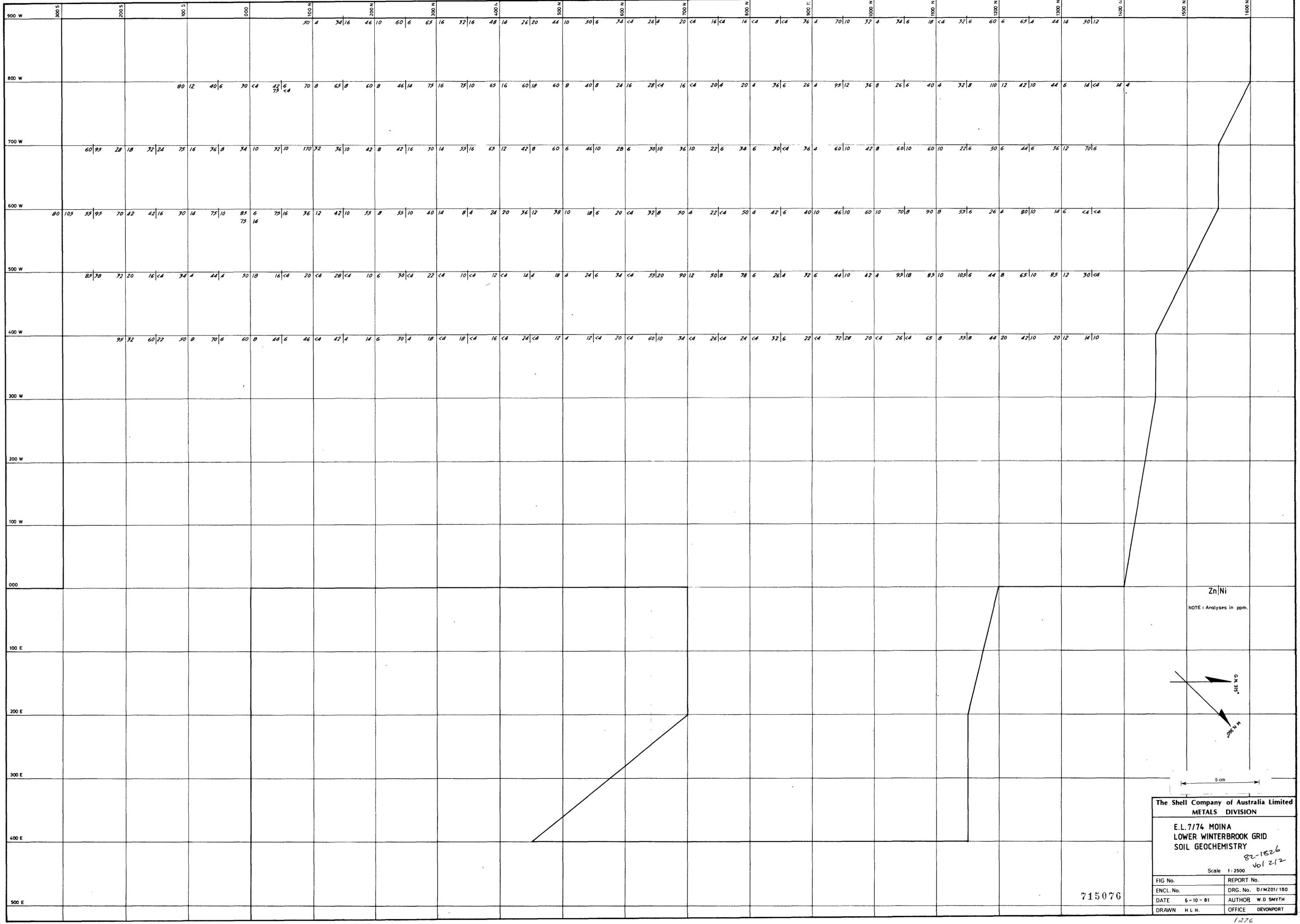
1000 N

ANOMALY DUE TO UPPER BODY

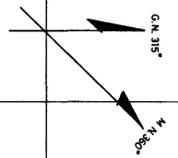
ANOMALY DUE TO LOWER BODY

715074

The Shell Company of Australia Limited METALS DIVISION	
LAKE GAIRDNER	
TERRAIN CORRECTED GRAVITY 62-1826 Vol 2/2	
SCALE 1:2500	DATE Nov 1981
AUTHOR G Oakes	DRAWN A S
OFFICE A H O	REP No
DPG No MZ01/1098	FIG No 8



Zn/Ni
NOTE: Analyses in ppm.



The Shell Company of Australia Limited
METALS DIVISION

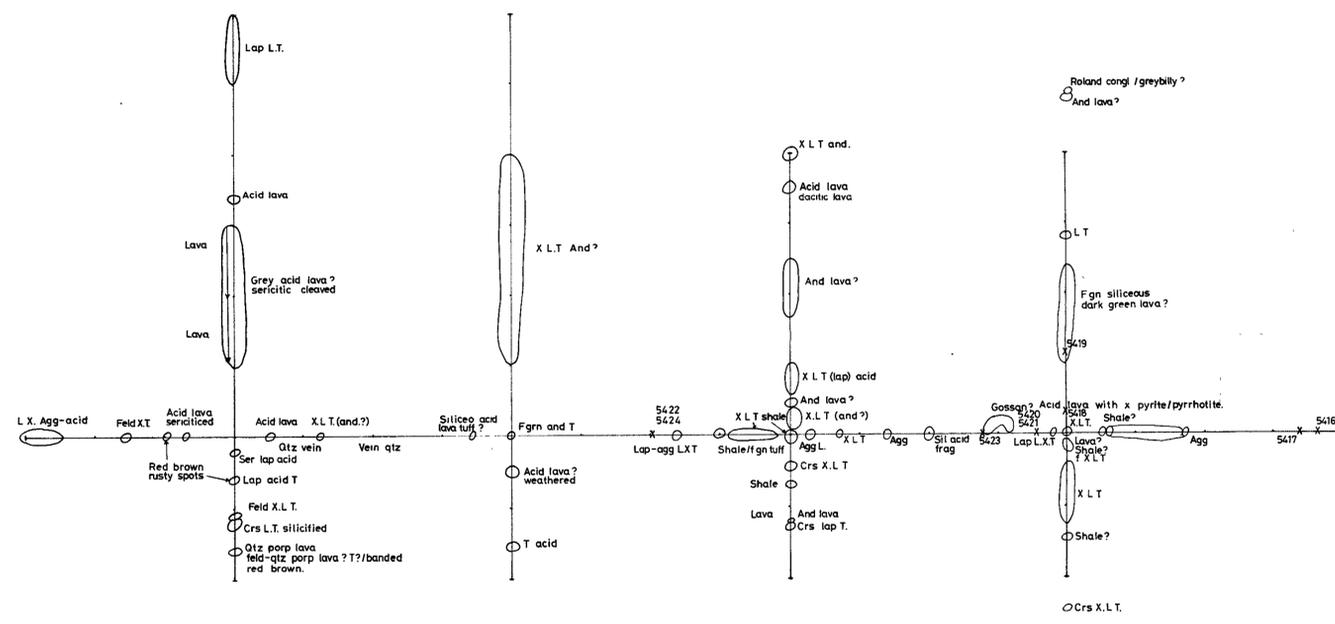
E.L. 7174 MOINA
LOWER WINTERBROOK GRID
SOIL GEOCHEMISTRY

82-1826
Vol 2/2

Scale 1:2500

FIG No.	REPORT No.
ENCL. No.	DRG. No. D/M201/180
DATE 6-10-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

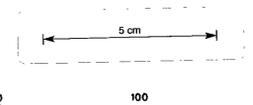
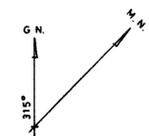
715076



	Cu	Pb	Zn	Bi	Ag
5416	14	55	24	<4	<1
5417	30	26	28	<4	<1
5418	4	6	12	<4	<1
5419	80	<4	24	<4	<1
5420	8	11	8	<4	<1
5421	4	<4	10	<4	<1
5422	8	4	6	<4	<1

Analyses in ppm.
 Cu,Pb,Zn,Bi = AAS 1
 Ag = AAS 3

and andesitic
 feld feldspar
 porp porphyritic
 lap lapilli
 L lithic
 X crystal
 Agg agglomerate
 T tuff

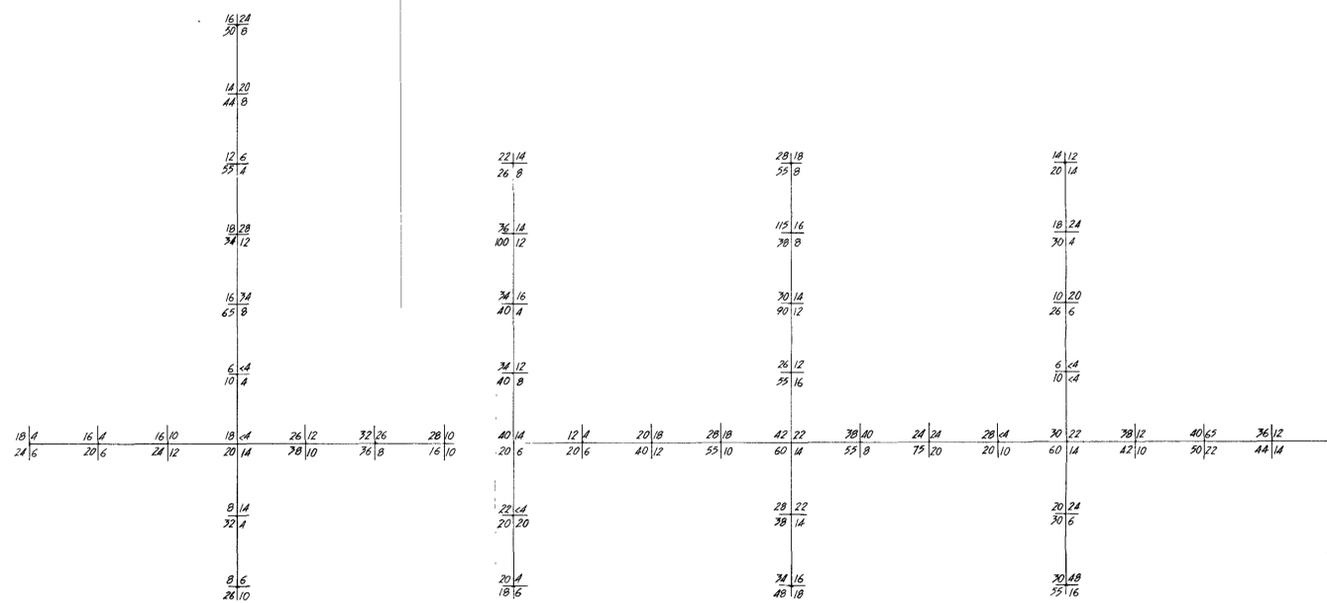


The Shell Company of Australia Limited
 METALS DIVISION
 E.L. 7/74 MOINA
 WINTERBROOK GRID
 FLOAT MAP
 Scale 1:2500

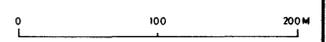
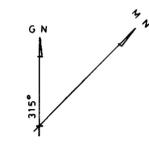
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/224
DATE	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT.

821826
 10/12/74

715077

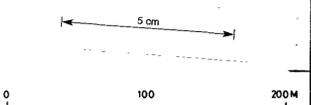
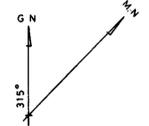
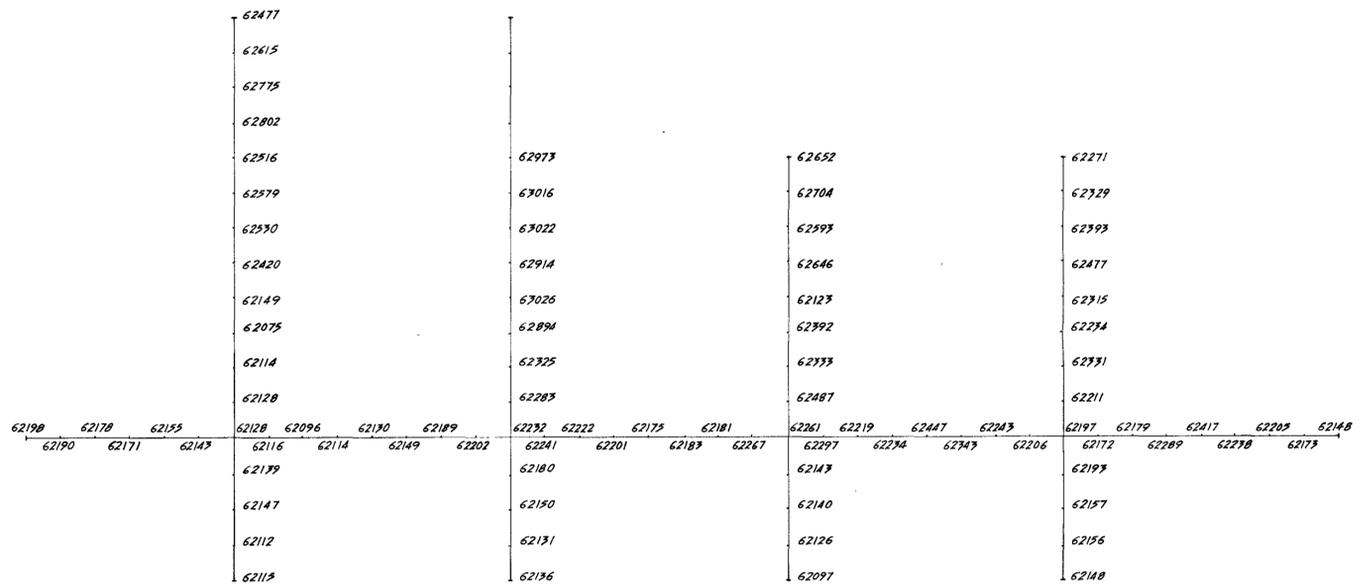


Cu Pb
Zn Ni
Analyses in ppm



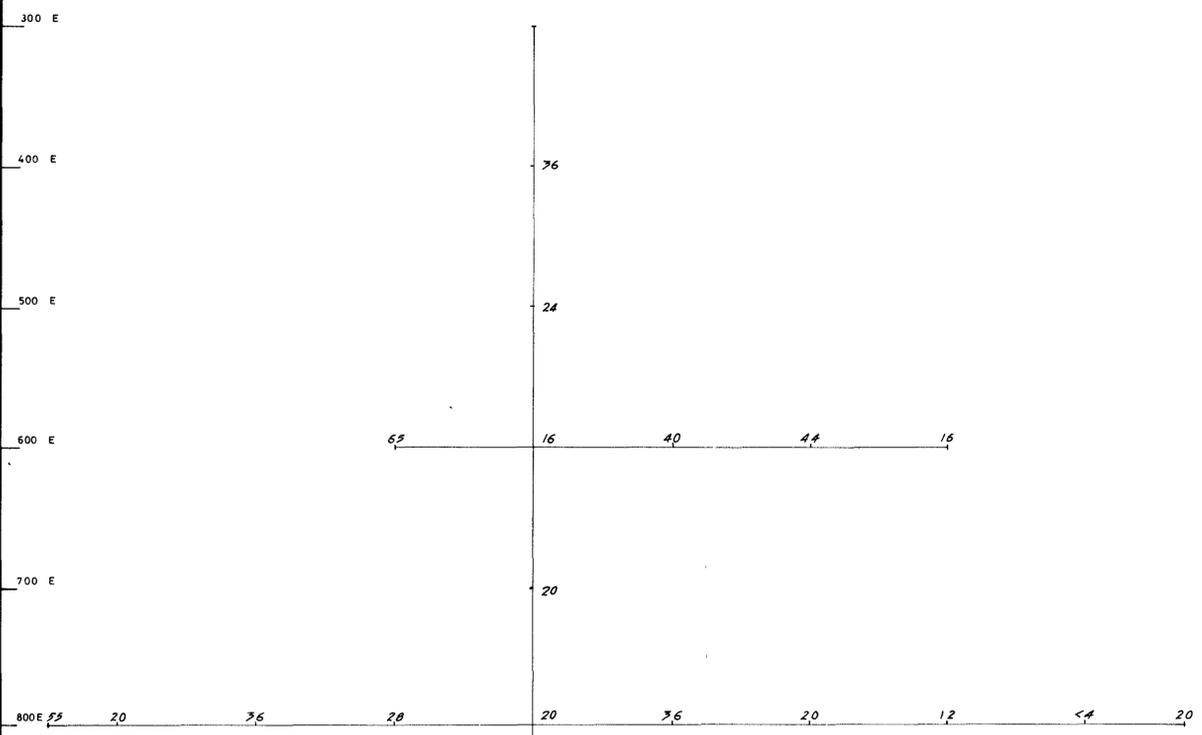
715078

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7174 MOINA WINTERBROOK GRID SOIL GEOCHEMISTRY Cu, Pb, Zn, Ni.	
Scale 1:2500	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/261
DATE 20-8-82	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT.



The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA WINTERBROOK GRID GROUND MAGNETICS	
Scale 1:2500	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/173
DATE 23-9-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

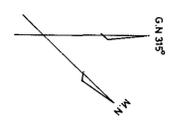
715079



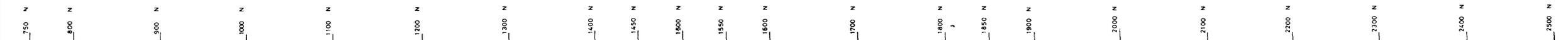
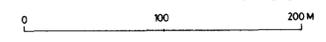
5 cm

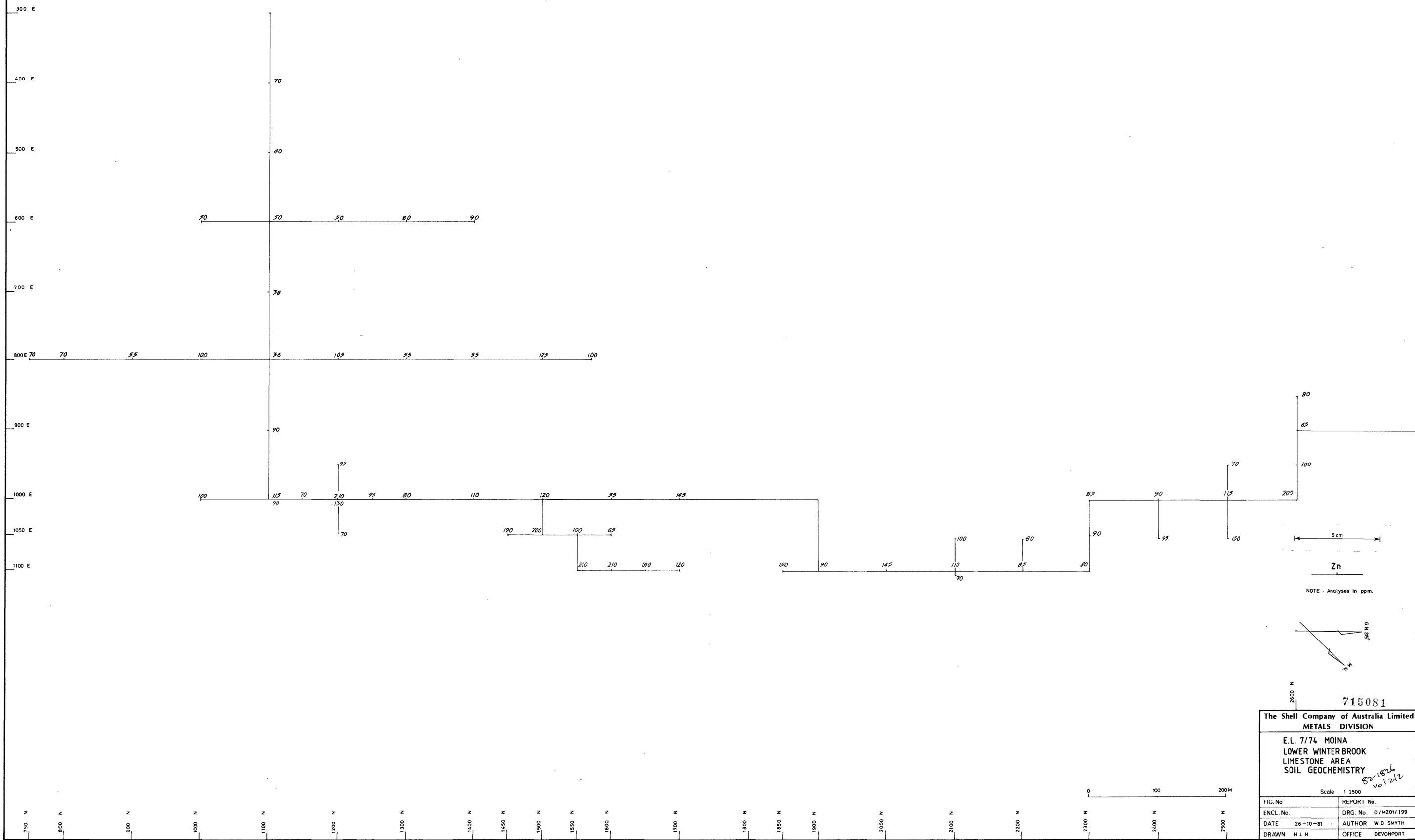
Pb

NOTE: Analyses in ppm.



The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA LOWER WINTERBROOK LIMESTONE AREA SOIL GEOCHEMISTRY	
715080	
Scale 1:2500	
FIG. No.	REPORT No.
ENCL No.	DRG No. D/MZ01/198
DATE 26-10-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

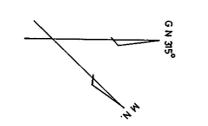




5 cm

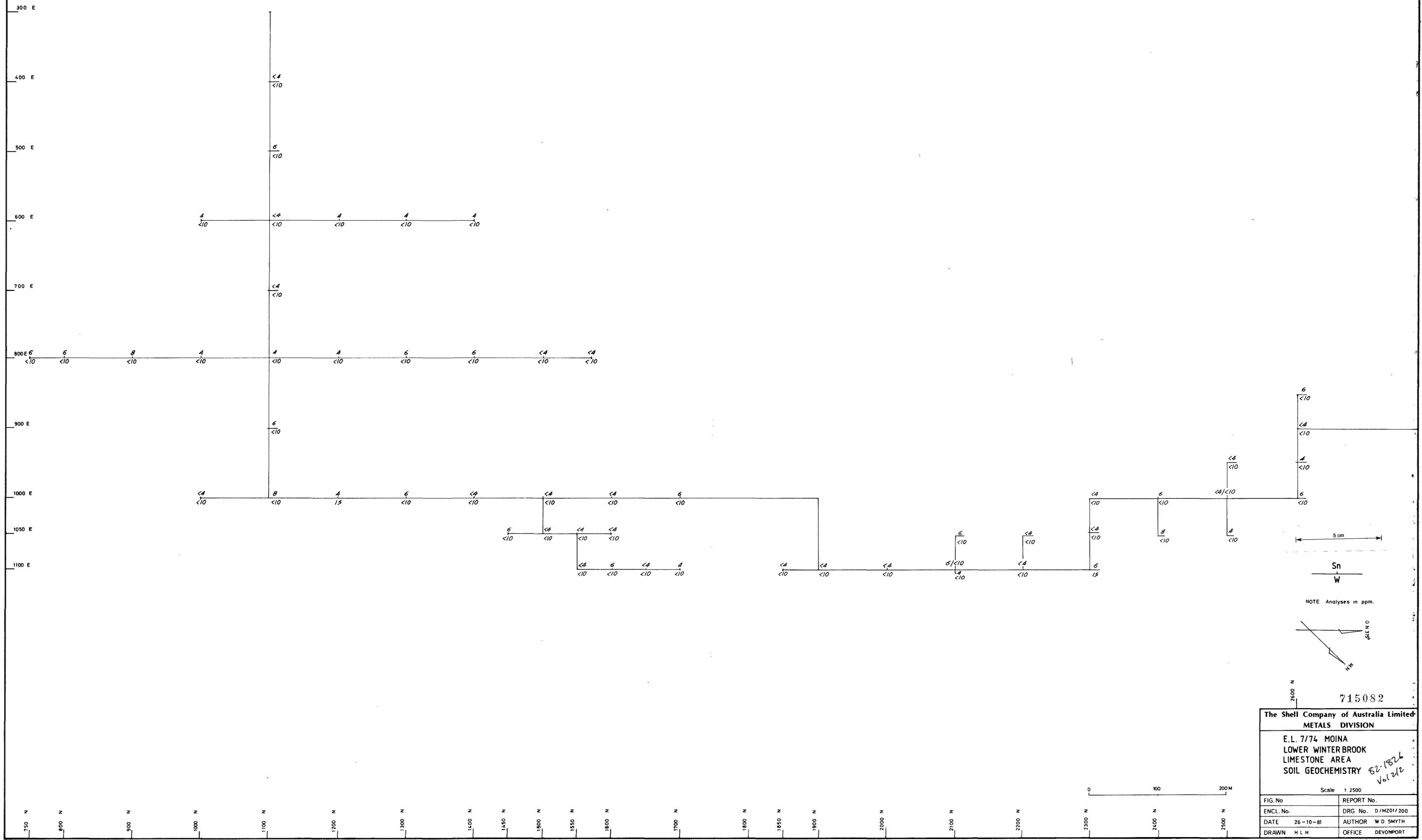
Zn

NOTE: Analyses in ppm.



715081

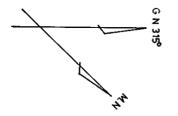
The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA LOWER WINTERBROOK LIMESTONE AREA SOIL GEOCHEMISTRY	
Scale 1:2500	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/M201/199
DATE 26-10-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT



5 cm

Sn
W

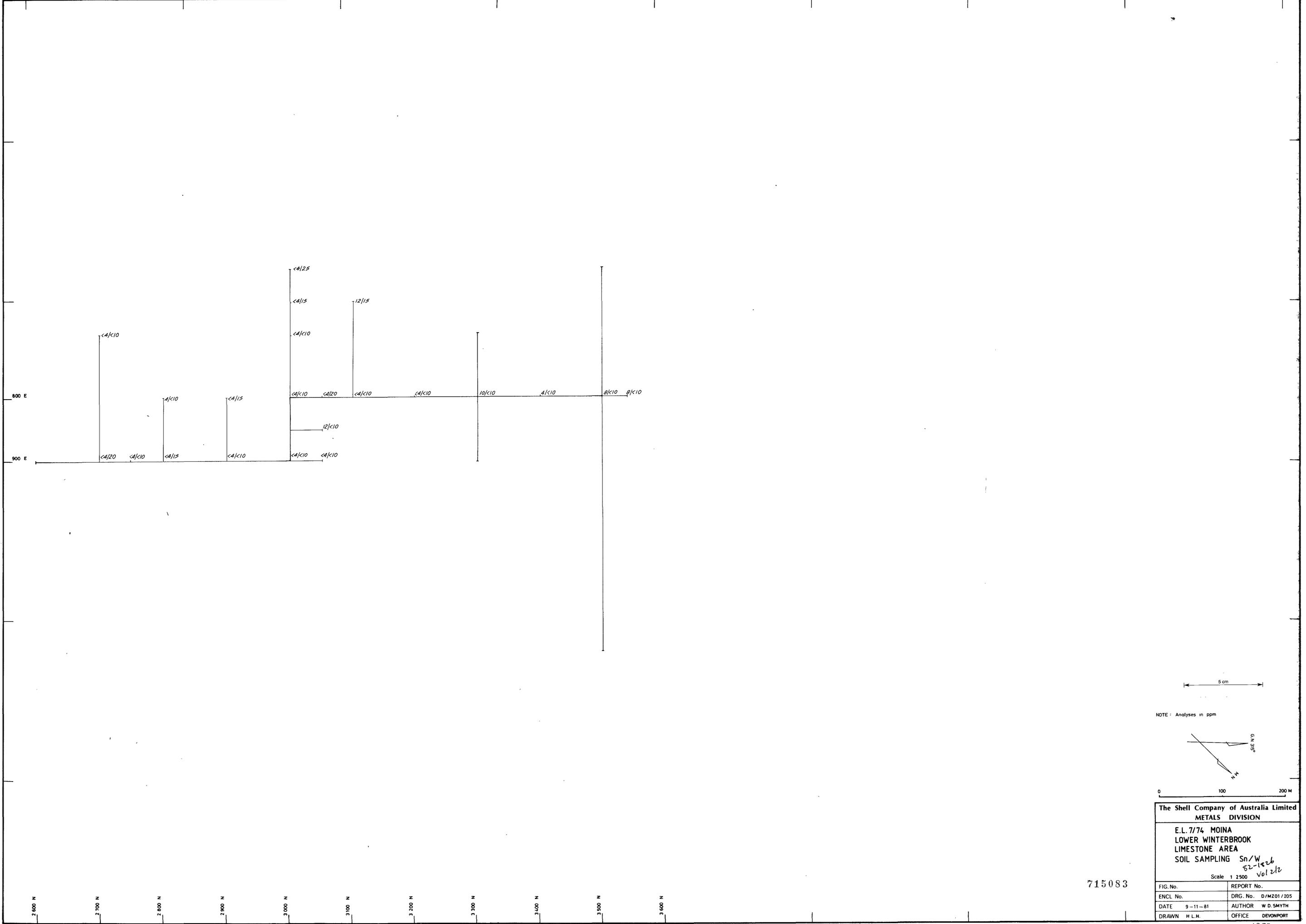
NOTE Analyses in ppm.



715082

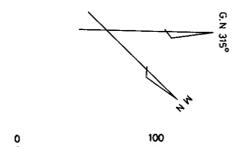
The Shell Company of Australia Limited METALS DIVISION	
E.L. 7174 MOINA LOWER WINTERBROOK LIMESTONE AREA SOIL GEOCHEMISTRY	
Scale 1:2500	
FIG. No.	REPORT No.
ENCL. No.	DRG No. D/MZ01/200
DATE 26-10-81	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT

82-1826
Vol 2/2



5 cm

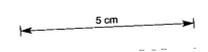
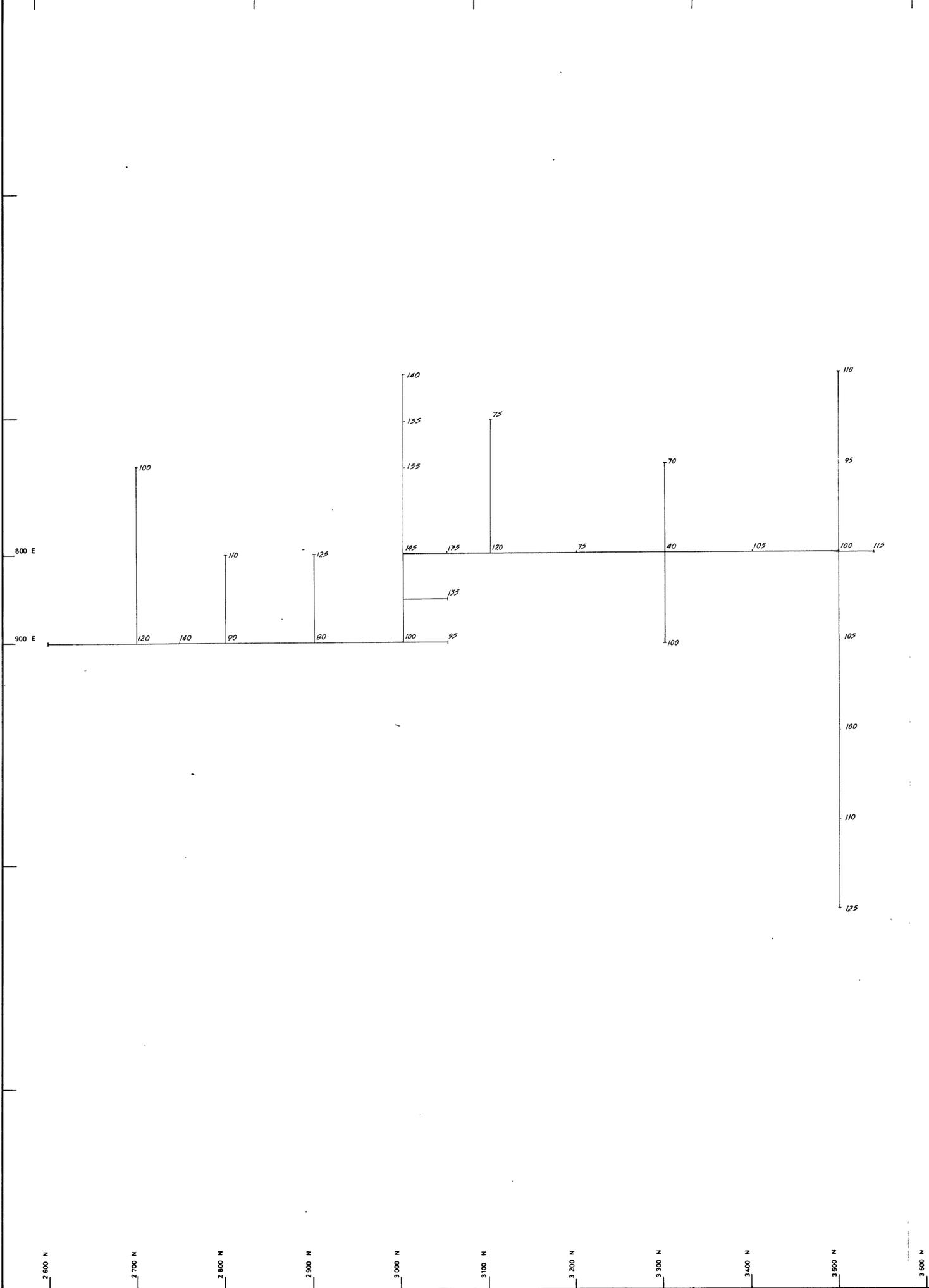
NOTE: Analyses in ppm



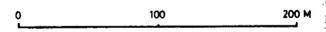
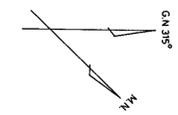
0 100 200 M

The Shell Company of Australia Limited METALS DIVISION	
E.L. 774 MOINA LOWER WINTERBROOK LIMESTONE AREA SOIL SAMPLING Sn/W 82-1426 Vol 2/2	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/205
DATE 9-11-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

715083



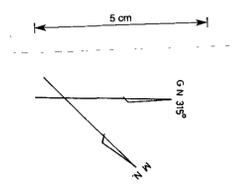
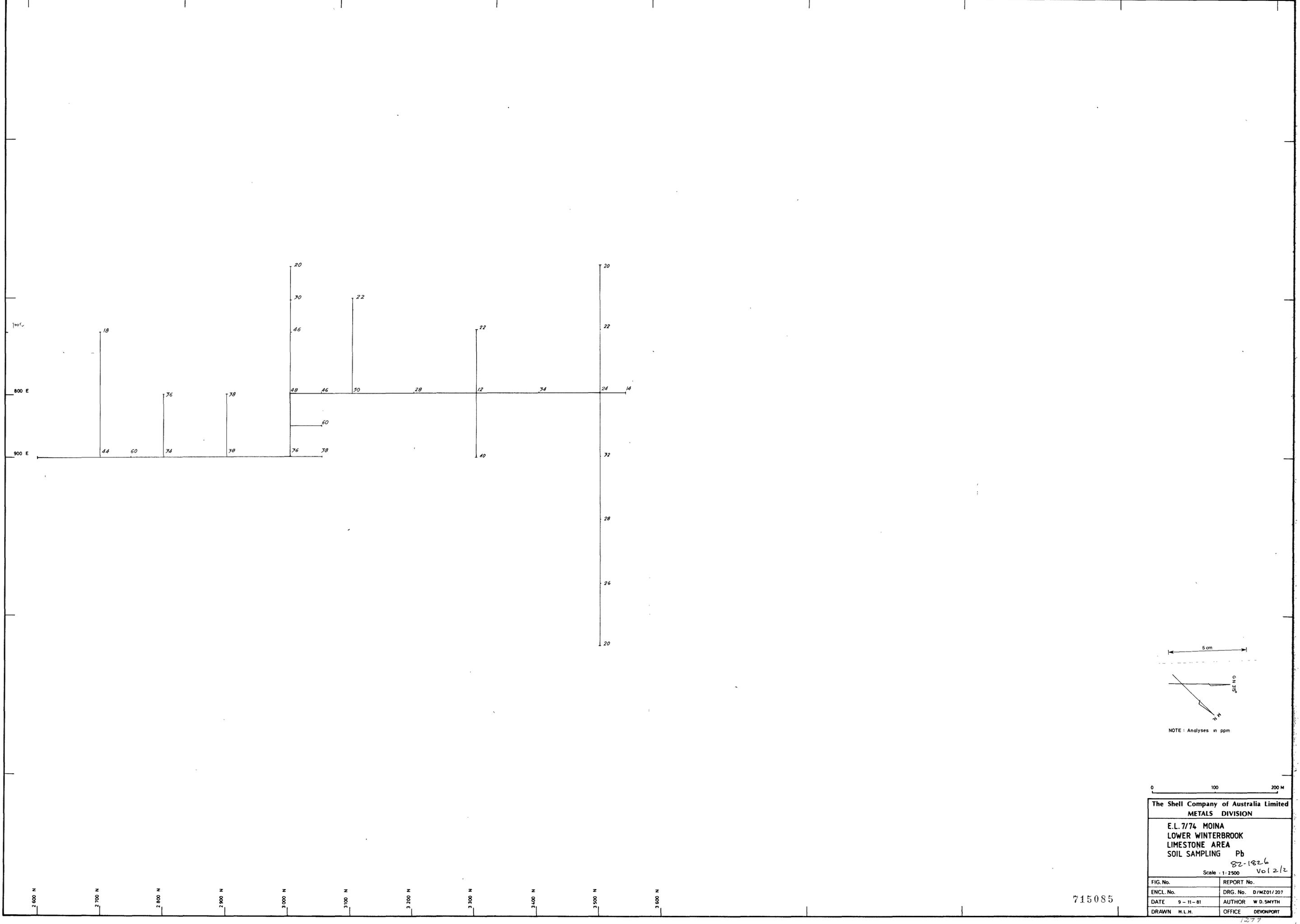
NOTE - Analyses in ppm



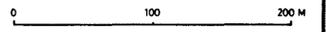
The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA LOWER WINTERBROOK LIMESTONE AREA SOIL SAMPLING Zn	
Scale 1:2500	
FIG No.	REPORT No.
ENCL No.	DRG. No. D/MZ01/206
DATE 9-11-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

715084

*82-1826
Vol 2/2*

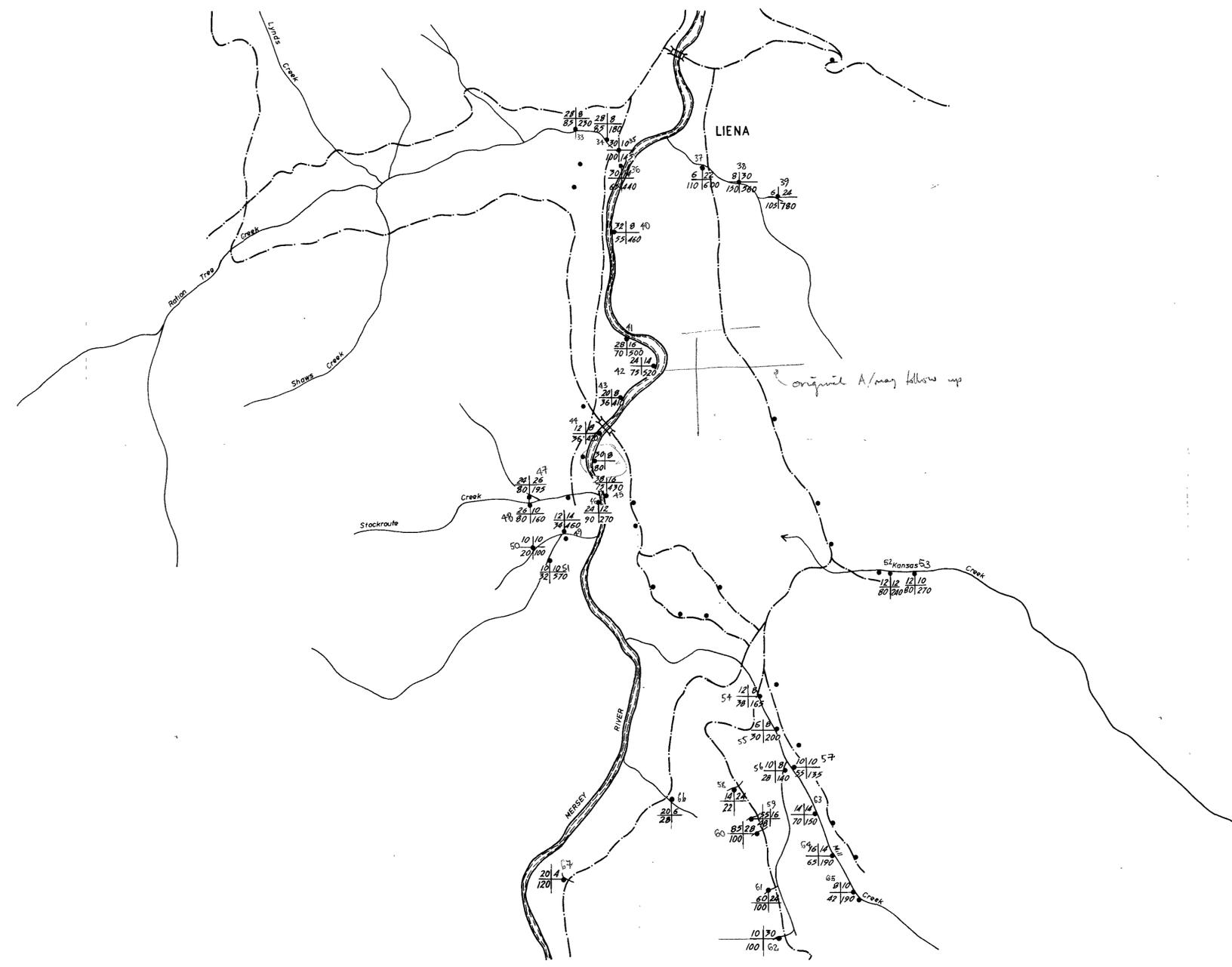


NOTE: Analyses in ppm



The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA LOWER WINTERBROOK LIMESTONE AREA SOIL SAMPLING Pb	
Scale: 1:2500 82-1826 Vol 2/2	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/207
DATE 9-11-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

715085



Cu | Pb
Zn | Ba



LEGEND

- CREEK
- RIVER
- ROADS

NOTE: Analyses in ppm.
-80 #

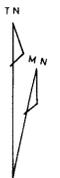
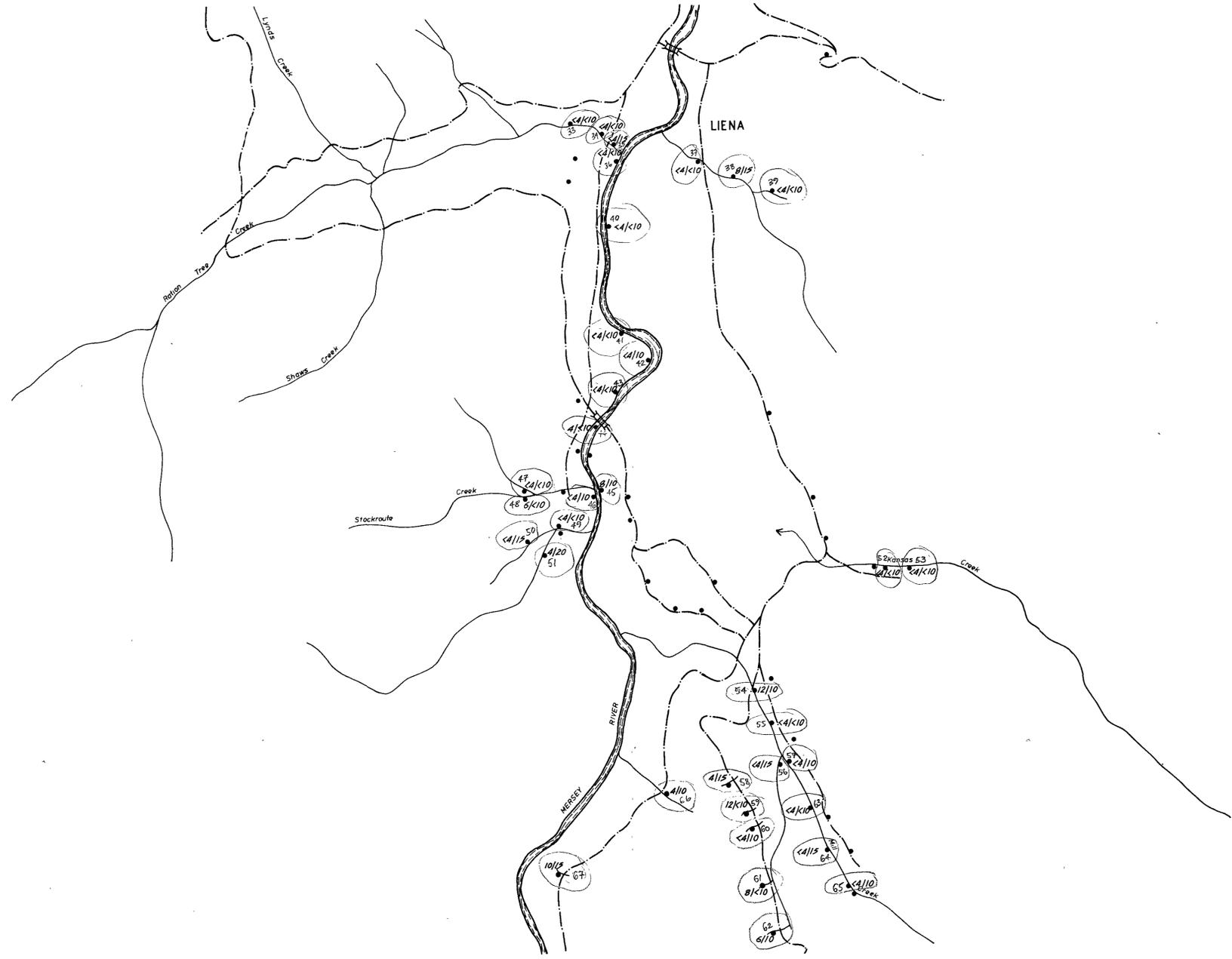


1km

The Shell Company of Australia Limited METALS DIVISION	
E.L.7/74 MOINA 82-1826	
LIENA AREA vol 2/2	
Stream sediment sample assay results - Cu, Pb, Zn, Ba.	
Scale 1:20000	
FIG No	REPORT No
ENCL No	DRG No D/M201/123
DATE 5-8-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

715086

5 cm



Sn/W

LEGEND

-  CREEK
-  RIVER
-  ROADS

NOTE Analyses in ppm.
-80 #

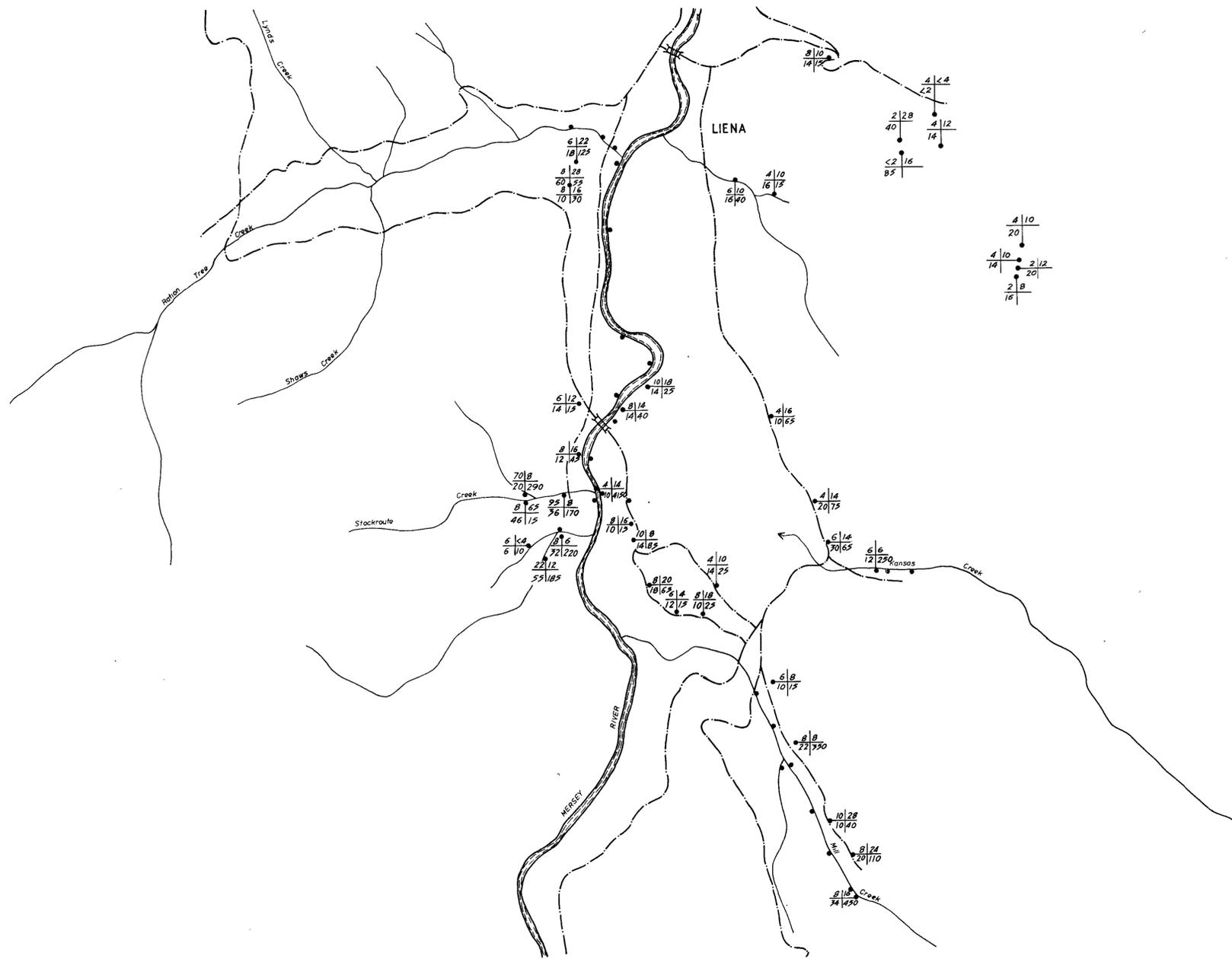


1km

The Shell Company of Australia Limited METALS DIVISION	
E.L. 774 MOINA 82-1826	
LIENA AREA Vol 2/2	
Stream sediment sample assay results - Sn, W.	
Scale 1:20000	
FIG No	REPORT No
ENCL No	DRG No D/MZ01/124
DATE 6-8-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

715087

5 cm



Cu Pb
Zn Ba



LEGEND

- CREEK
- RIVER
- ROADS

NOTE: Analyses in ppm



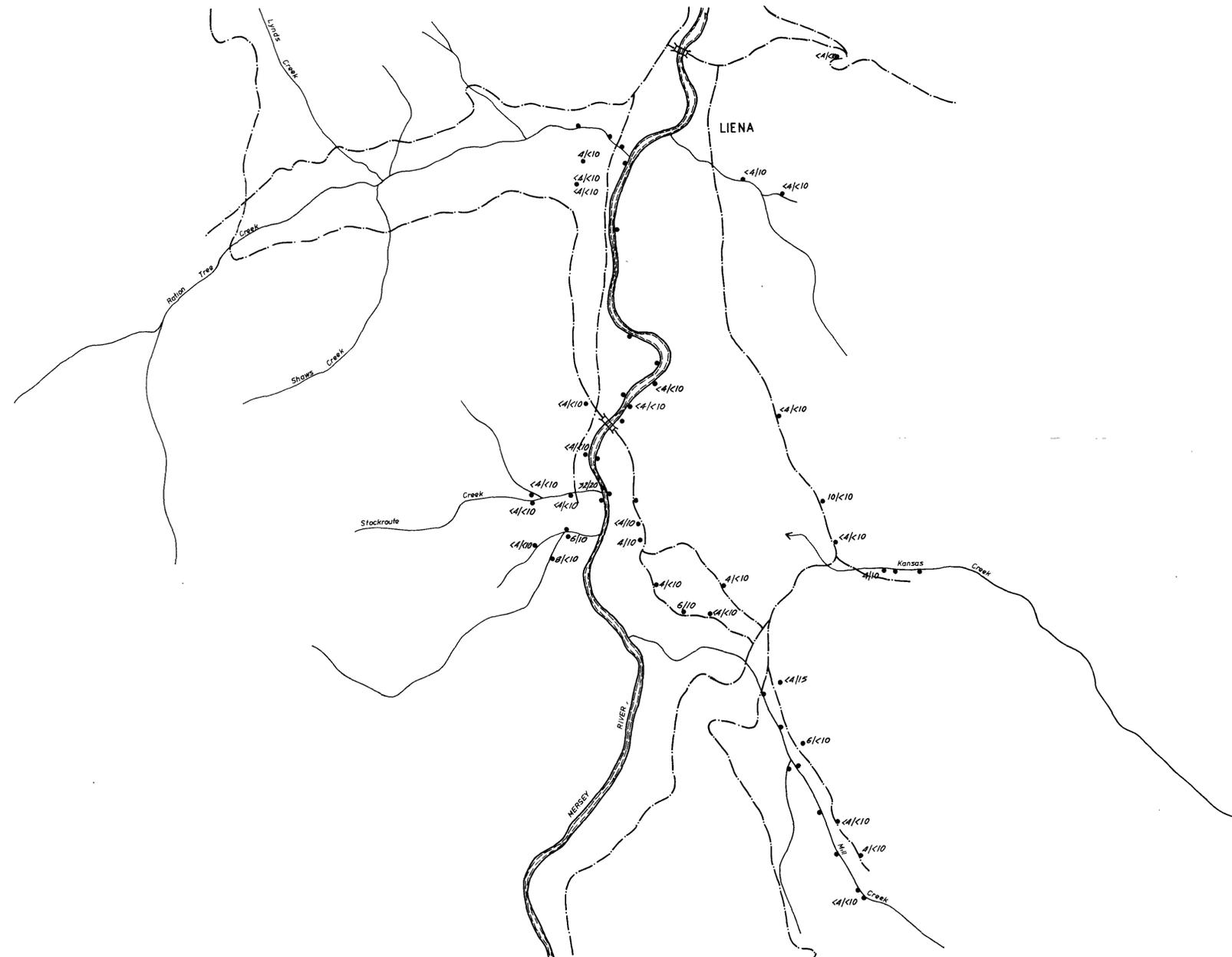
1km

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA	82-1826
LIENA AREA	Vol 2/2
Rock chip assay results - Cu, Pb, Zn, Ba.	
Scale 1:20000	
FIG No	REPORT No
ENCL No	DRG No D/MZ01/127
DATE 11-8-81	AUTHOR W.D. SMYTH
DRAWN H.L.H.	OFFICE DEVONPORT

RC 19
22/14
8/20
RC 32
22/65
14/35

715088

5 cm



Sn/W



LEGEND

-  CREEK
-  RIVER
-  ROADS



1km

The Shell Company of Australia Limited
 METALS DIVISION
 E. L. 7/74 MOINA
 LIENA AREA 82-1826
 Rock chip assay results - Vol 2/2
 Sn, W.

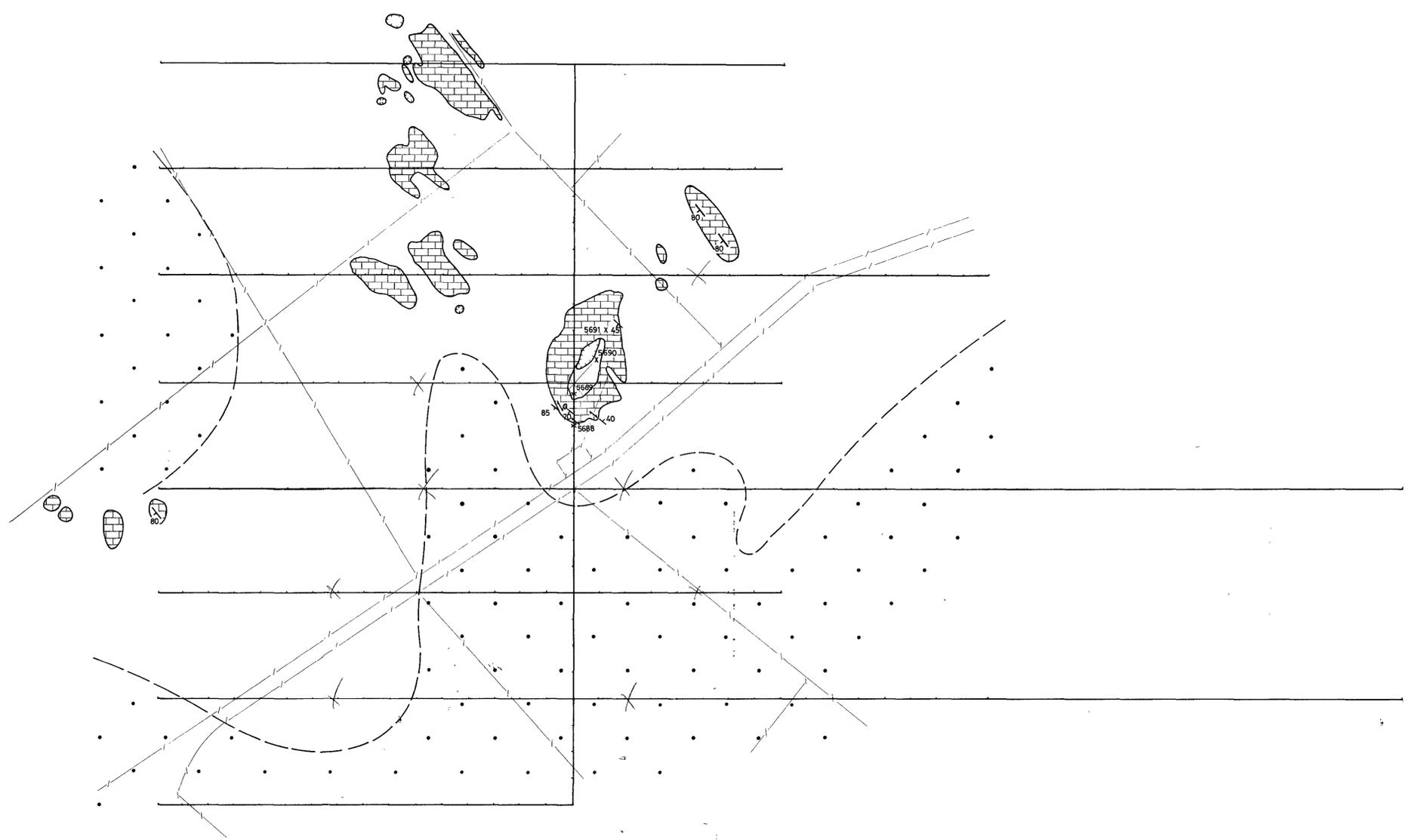
Scale 1:20000

FIG No	REPORT No
ENCL No	DRG No D/MZ01/128
DATE 11-8-81	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT

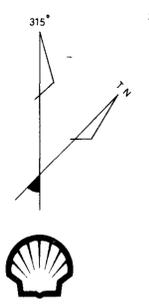
RC 19
 22/15
 RC 32
 $4/k10$

715089

5cm



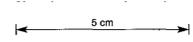
-  Transported overburden/Eldon Sandstone rubble
-  Gordon Limestone
-  Sinkhole



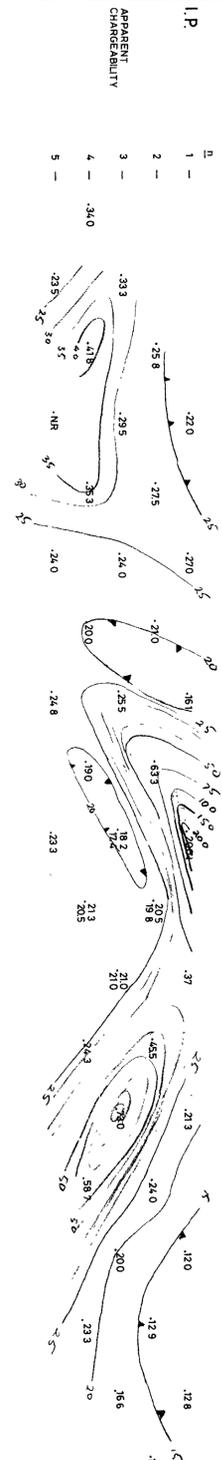
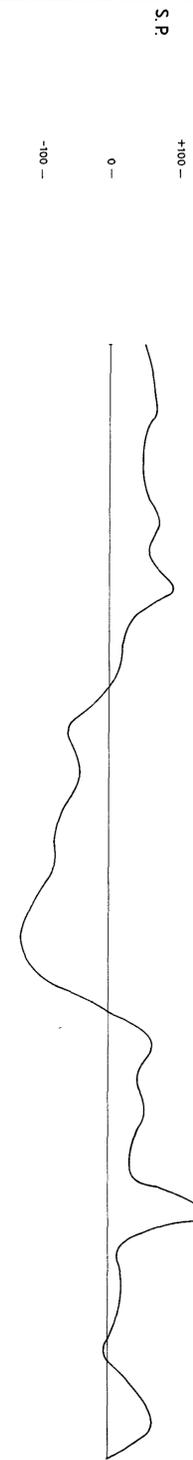
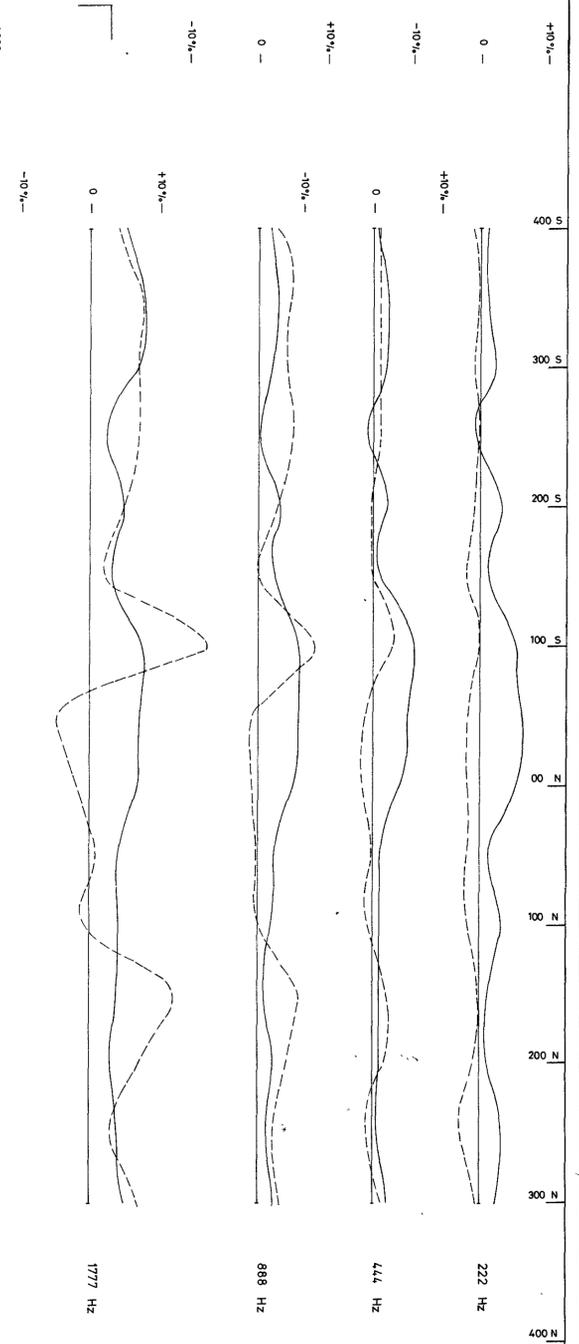
0 100 200 M

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA WATTLE VALLEY GRID GEOLOGY	
82-1826 Vol 2/2	
Scale 1:2500	
FIG No	REPORT No
ENCL No	DRG No D/M201/228
DATE 4-12-81	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT

715090



Max - Min
 - - - In Phase
 - - - Out of phase



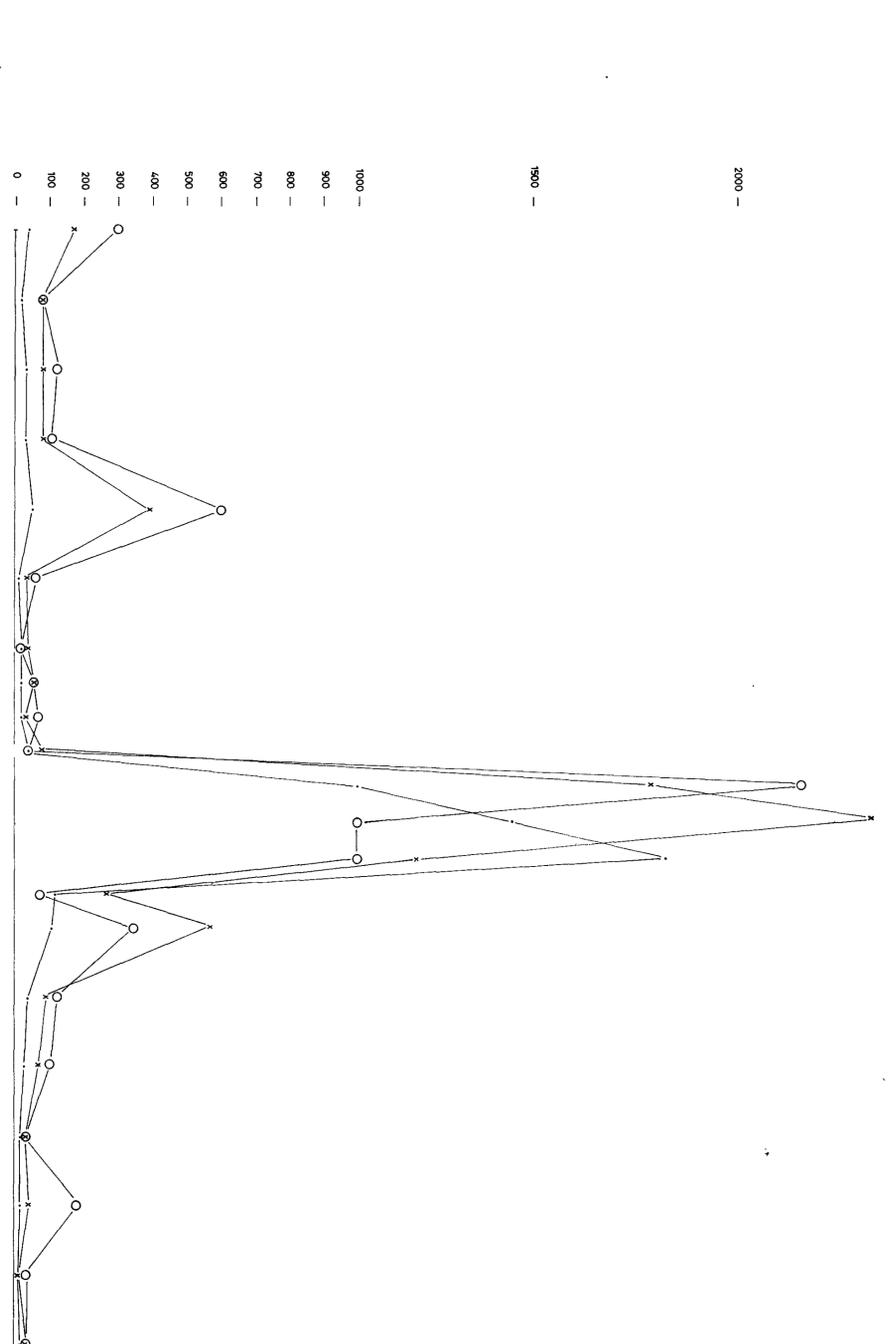
APPARENT CHARGEABILITY

1	.233	.220	.270	.240	.205	.37	.128	.1843
2	.258	.275	.275	.240	.255	.210	.129	.1847
3	.233	.225	.240	.240	.255	.210	.129	.1847
4	.233	.225	.240	.240	.255	.210	.129	.1847
5	.233	.225	.240	.240	.255	.210	.129	.1847

1	.114	.545	.743	.40	.383	.454	.140	.802
2	.631	.839	.205	.92	.565	.203	.1801	.1847
3	.502	.597	.1343	.399	.763	.57	.2639	.3079
4	.594	.344	.175	.421	.721	.584	.334	.4803
5	.451	.149	.1875	.723	.723	.723	.334	.4803



Geochemistry
 - - - Pb
 - - - Zn
 - - - Mn



Approx. regional due to terrain corrections (to circles)

The Shell Company of Australia Limited
 METALS DIVISION

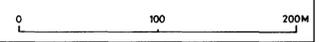
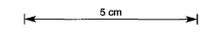
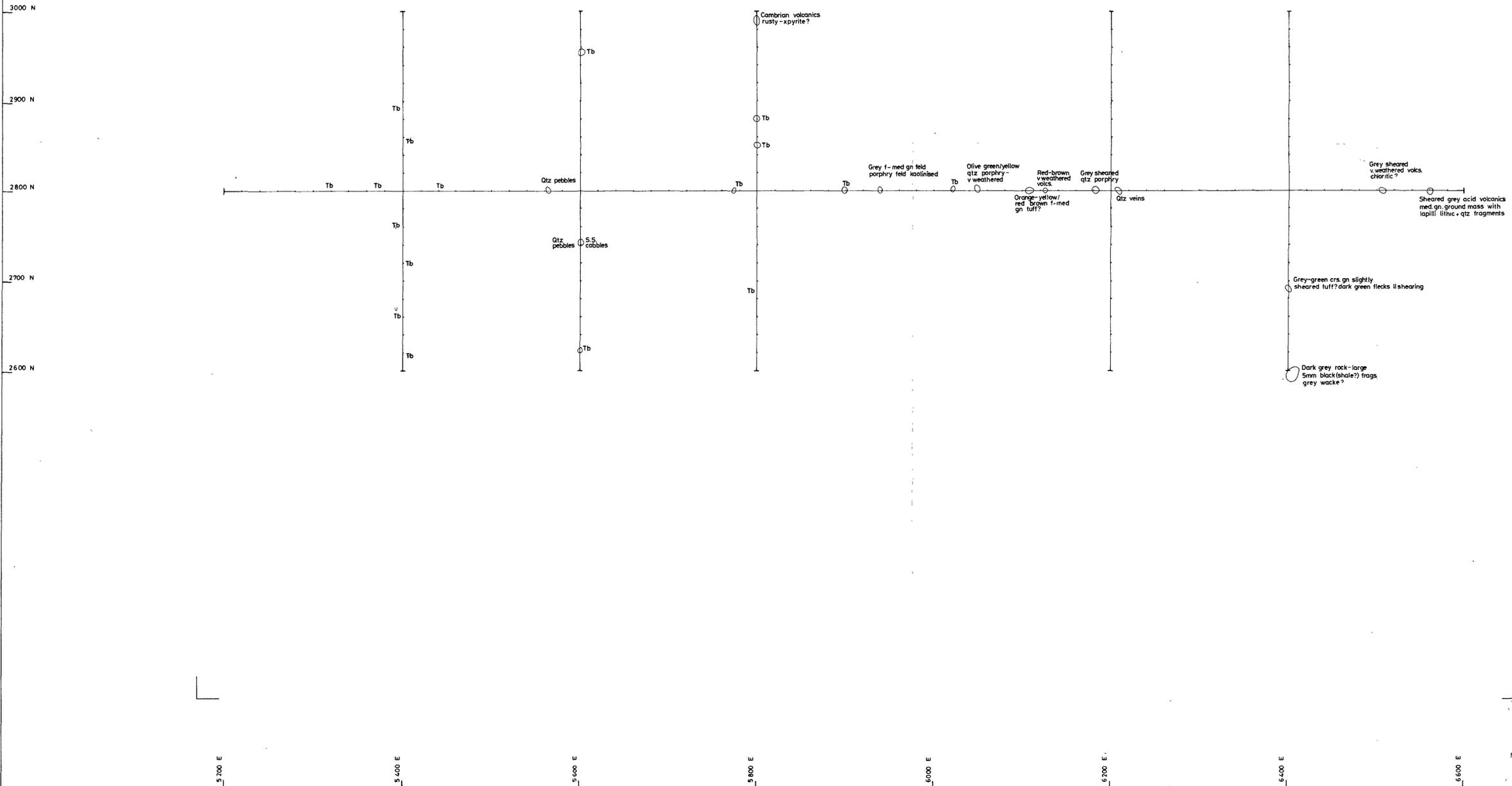
E.L. 7/74 MOINA
 WATTLE VALLEY GRID
 LINE 00m E
 PROFILES

82-1826
 vol 2/2

Scale 1:2500

FIG No	REPORT No
ENCL No	DRG No. D/MZ01/240
DATE 13-5-82	AUTHOR WD SMYTH
DRAWN H.L.H	OFFICE DEVONPORT

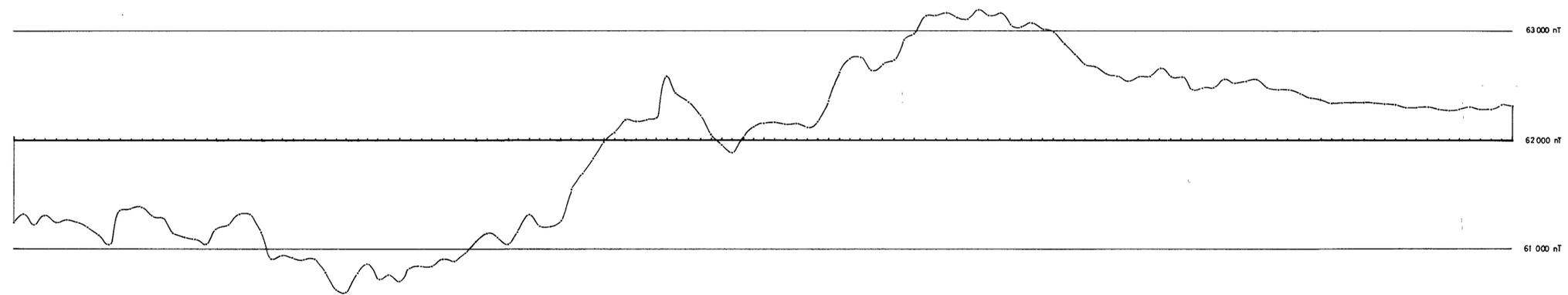
715092



The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA BULL CREEK GRID ANOMALIES 4240/4,5 GEOLOGY	
Scale 1:2500	
FIG No	REPORT No
ENCL No	DRG No D/MZ01/243
DATE 22-6-82	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT

715093

LINE 2800 N



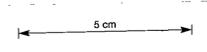
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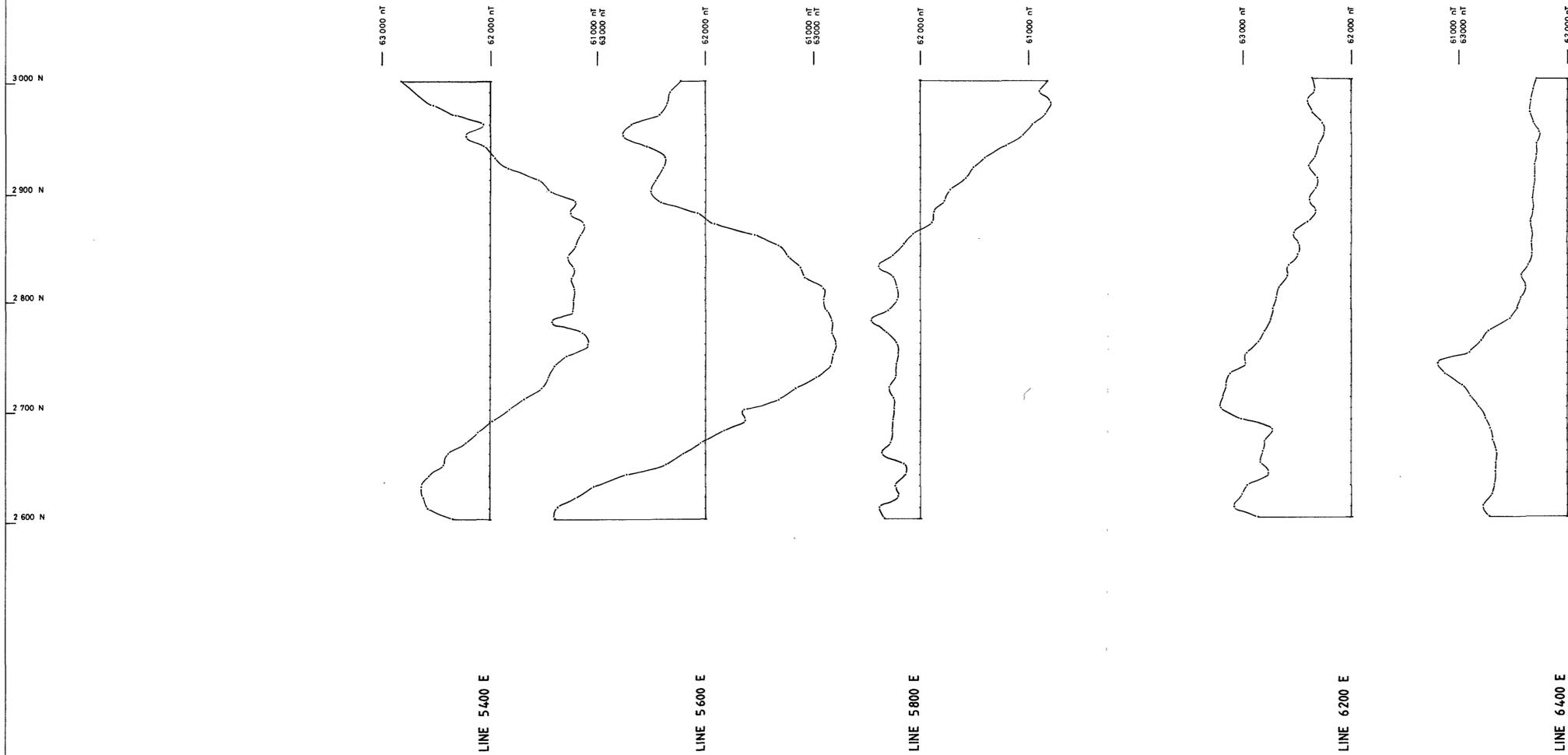


0 100 200 M

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA BULL CREEK GRID ANOMALIES 4240/4,5 MAGNETIC PROFILE	
82-1826 Vol 2/2	Scale 1cm = 250nT VERTICAL 1:2500 HORIZONTAL
FIG No.	REPORT No.
ENCL No.	DRG No. D/MZ01/167
DATE 17-9-81	AUTHOR W.D. SMYTH.
DRAWN H.L.H.	OFFICE DEVONPORT.

715094

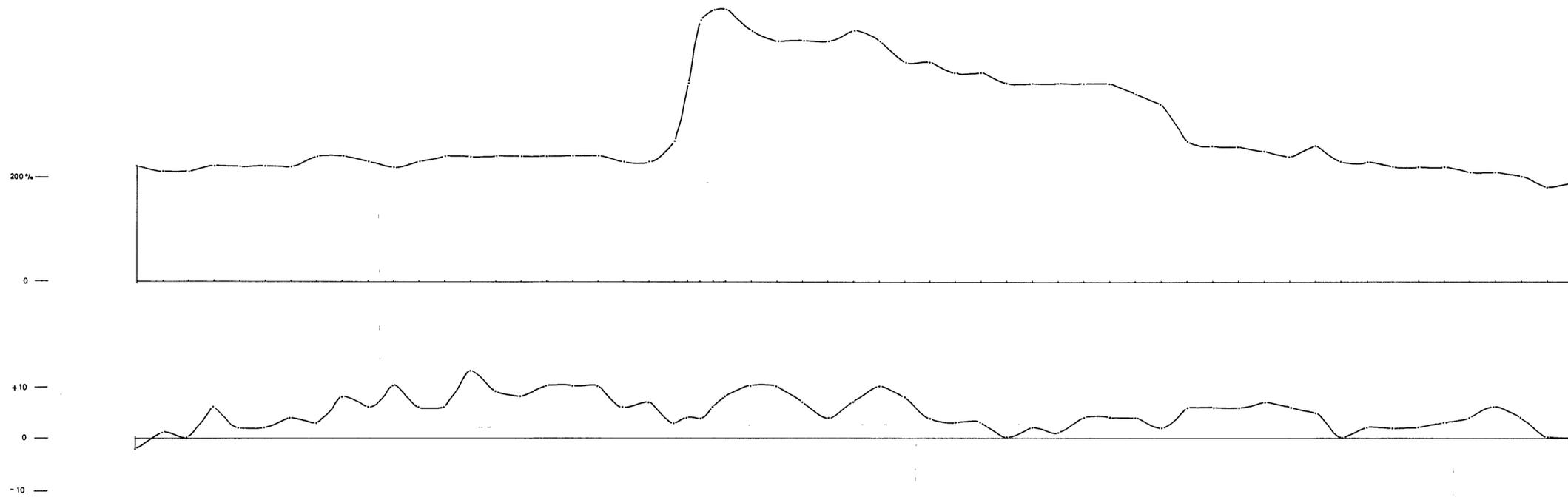




0 100 200 M

The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA 82-1826 BULL CREEK GRID Vol 2/2 ANOMALIES 4240/4,5 MAGNETIC PROFILES	
Scale 1cm = 250 nT VERTICAL 1:2500 HORIZONTAL	
FIG No.	REPORT No.
ENCL No.	DRG No. 0/MZ01/168
DATE 17-9-81	AUTHOR W.D. SMYTH.
DRAWN H.L.H.	OFFICE DEVONPORT.

715095



E 200 E

E 400 E

E 600 E

E 800 E

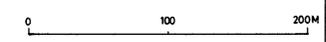
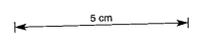
6000 E

E 200 E

E 400 E

E 600 E

715096

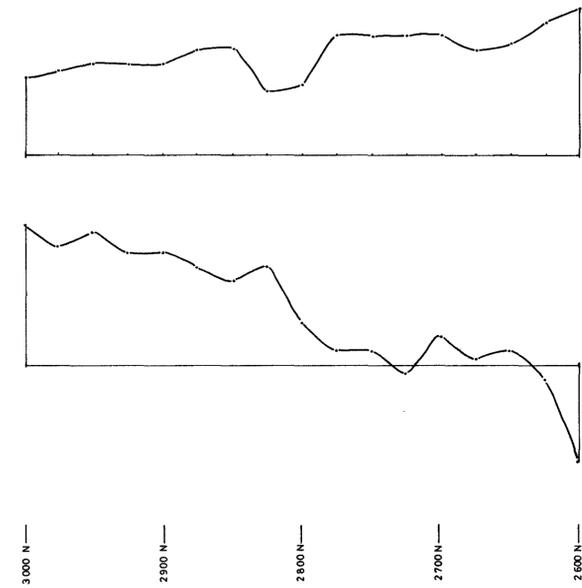
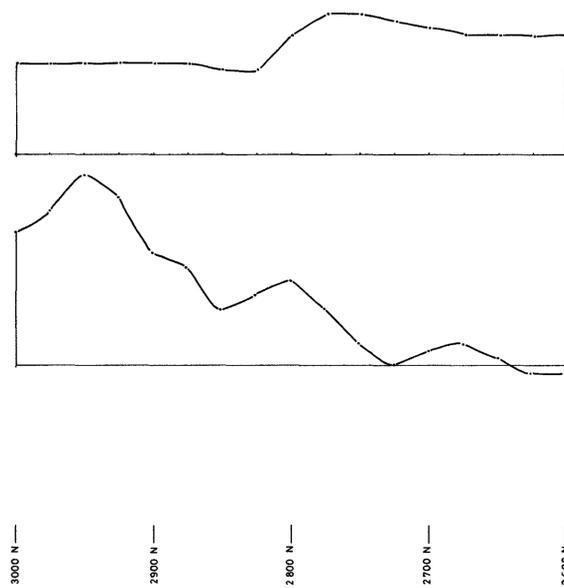
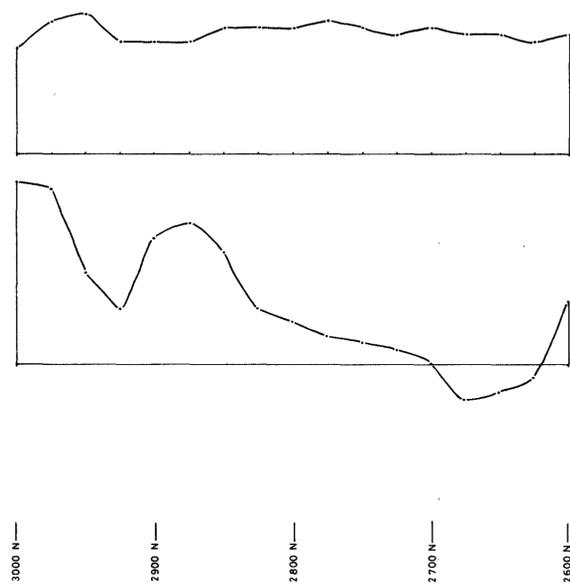


The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA BULL CREEK GRID 82.1826 ANOMALIES 4240/4,5 Vol 2/2 VLF - LINE 2800 N	
Scale 1:500 VERTICAL 1:2500 HORIZONTAL	
FIG No	REPORT No
ENCL No	DRG No D/MZ01/170
DATE 21-9-81	AUTHOR W.D SMYTH.
DRAWN H.L.H.	OFFICE DEVONPORT

LINE 5400 E

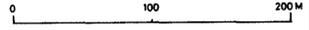
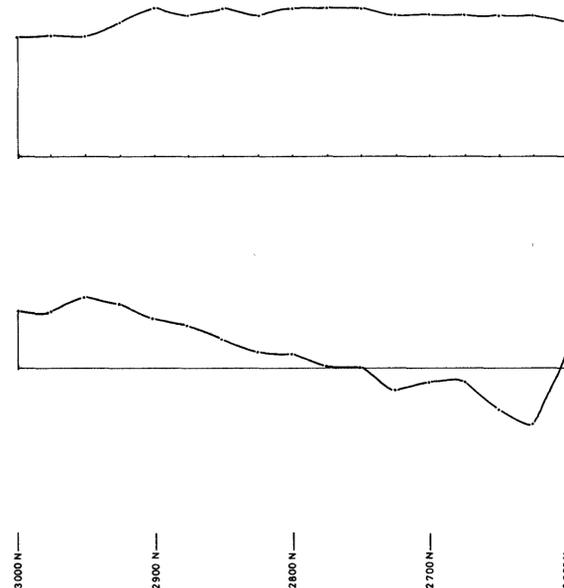
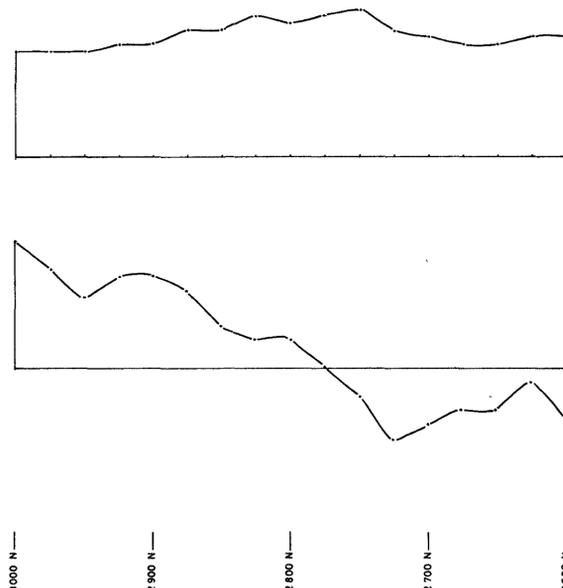
LINE 5800 E

LINE 5600 E



LINE 6200 E

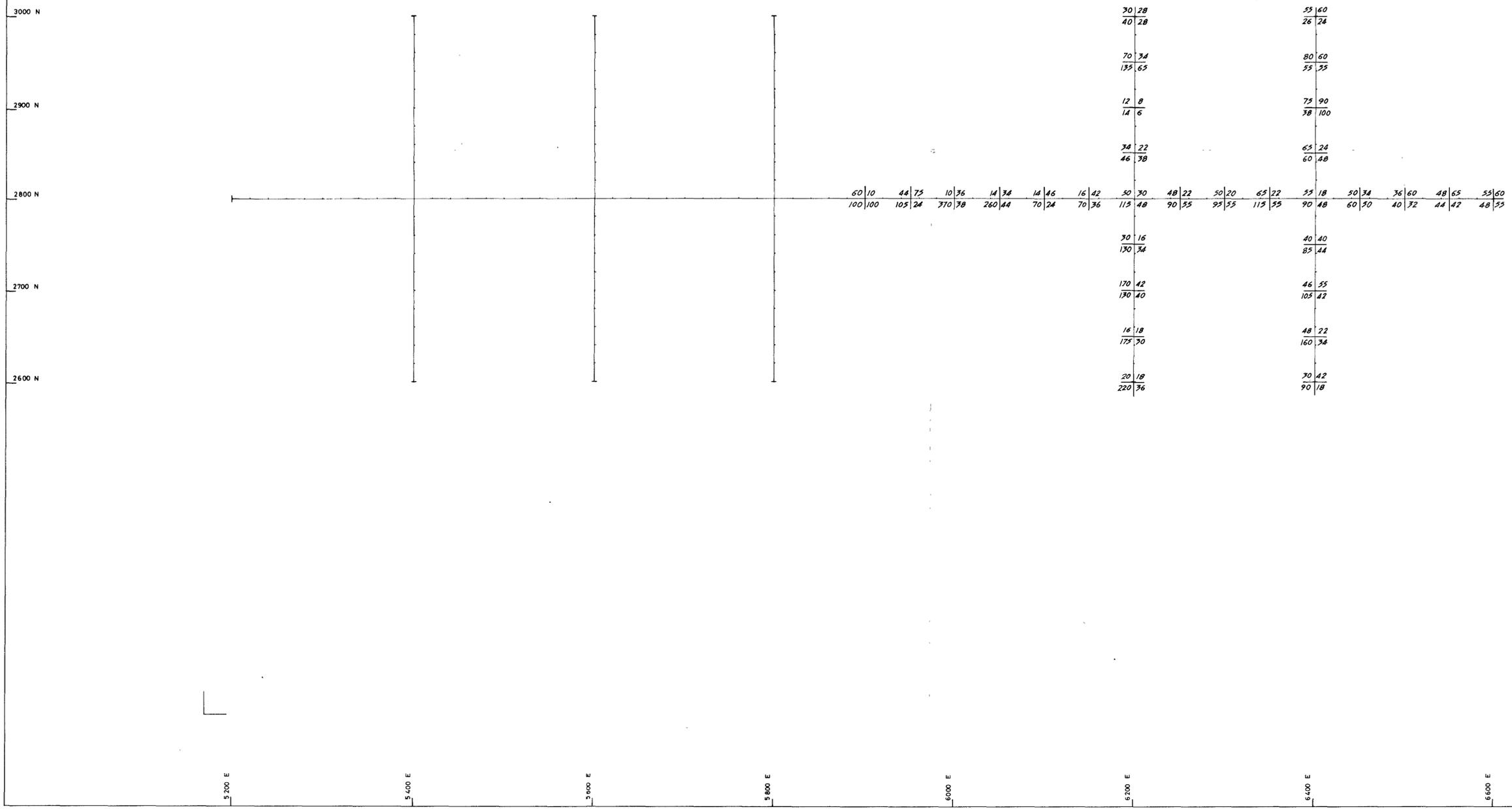
LINE 6400 E



715097

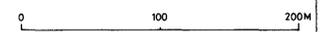
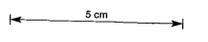


The Shell Company of Australia Limited METALS DIVISION	
E.L. 7/74 MOINA BULL CREEK GRID ANOMALIES 4240/4,5 V.L.F. <i>82 1826</i> <i>10/2/2</i>	
Scale: 1:500 VERTICAL 1:2500 HORIZONTAL	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/171
DATE 22-9-81	AUTHOR W.D.SMYTH.
DRAWN H.L.H.	OFFICE DEVONPORT.



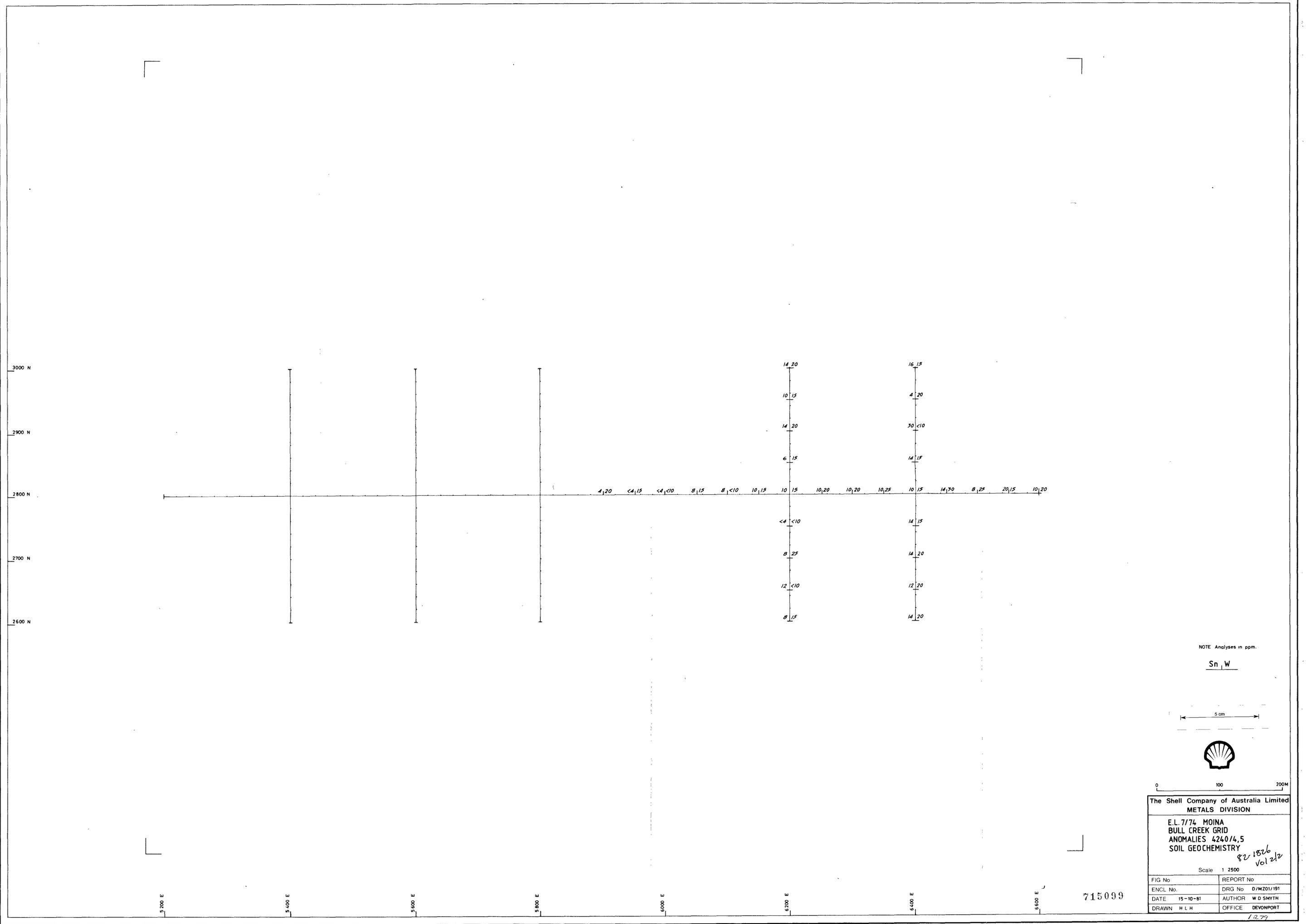
NOTE: Analyses in ppm.

Cu | Pb
Zn | Ni



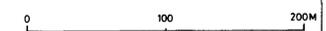
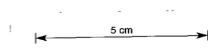
The Shell Company of Australia Limited METALS DIVISION	
E.L. 7174 MOINA BULL CREEK GRID ANOMALIES 4240/4,5 GEOCHEMISTRY 82-1826 Vol 2/2	
Scale 1:2500	
FIG No	REPORT No
ENCL No	DRG No D/MZ01/190
DATE 15-10-81	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT

715098



NOTE Analyses in ppm.

Sn, W



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METALS DIVISION

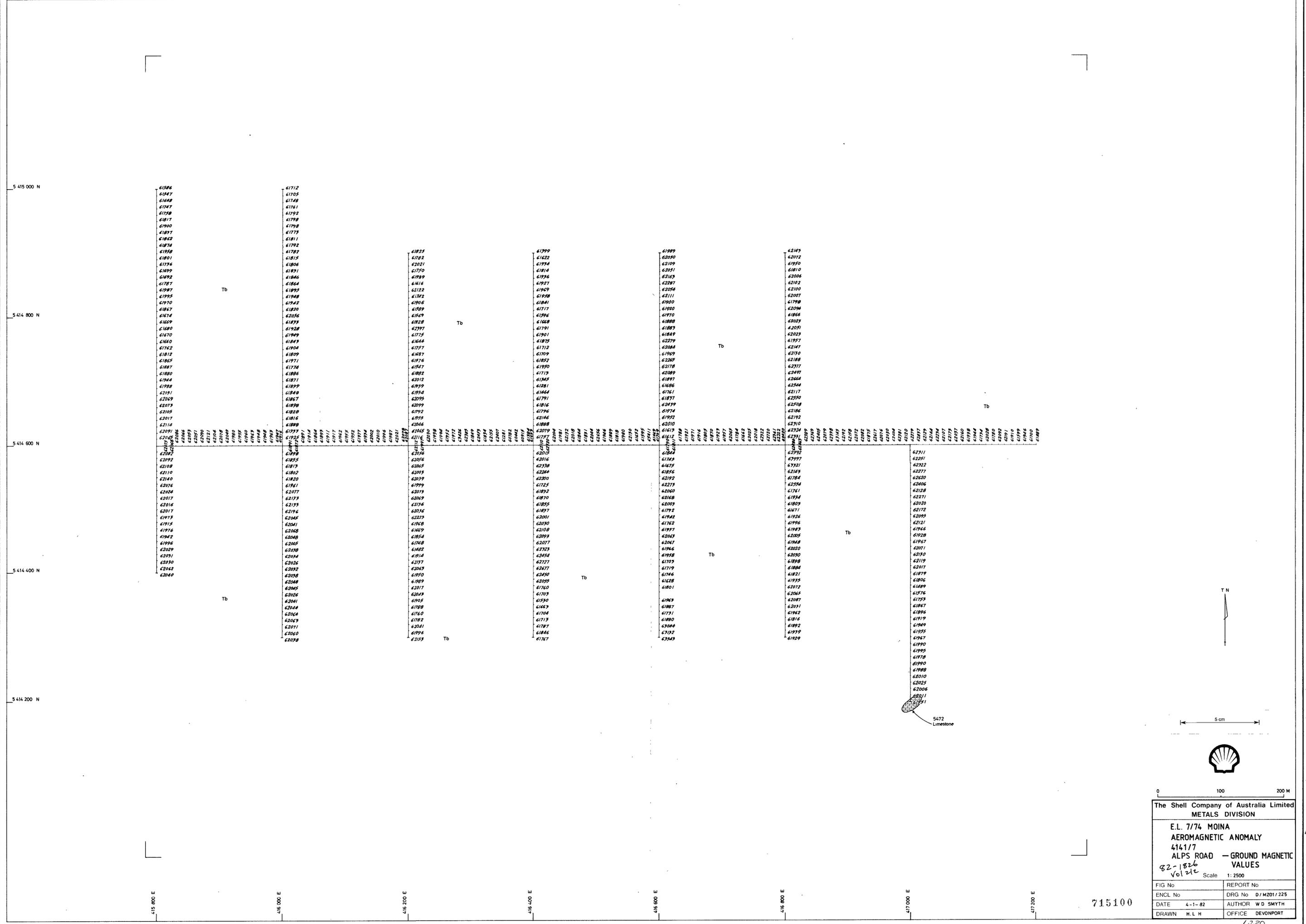
E.L. 7/74 MOINA
BULL CREEK GRID
ANOMALIES 4240/4,5
SOIL GEOCHEMISTRY

82 1826
Vol 2/2

Scale 1:2500

FIG No.	REPORT No.
ENCL No.	DRG No. D/MZ01/191
DATE 15-10-81	AUTHOR W D SMYTH
DRAWN H L H	OFFICE DEVONPORT

715099



5 cm

N

0 100 200 M

The Shell Company of Australia Limited
METALS DIVISION

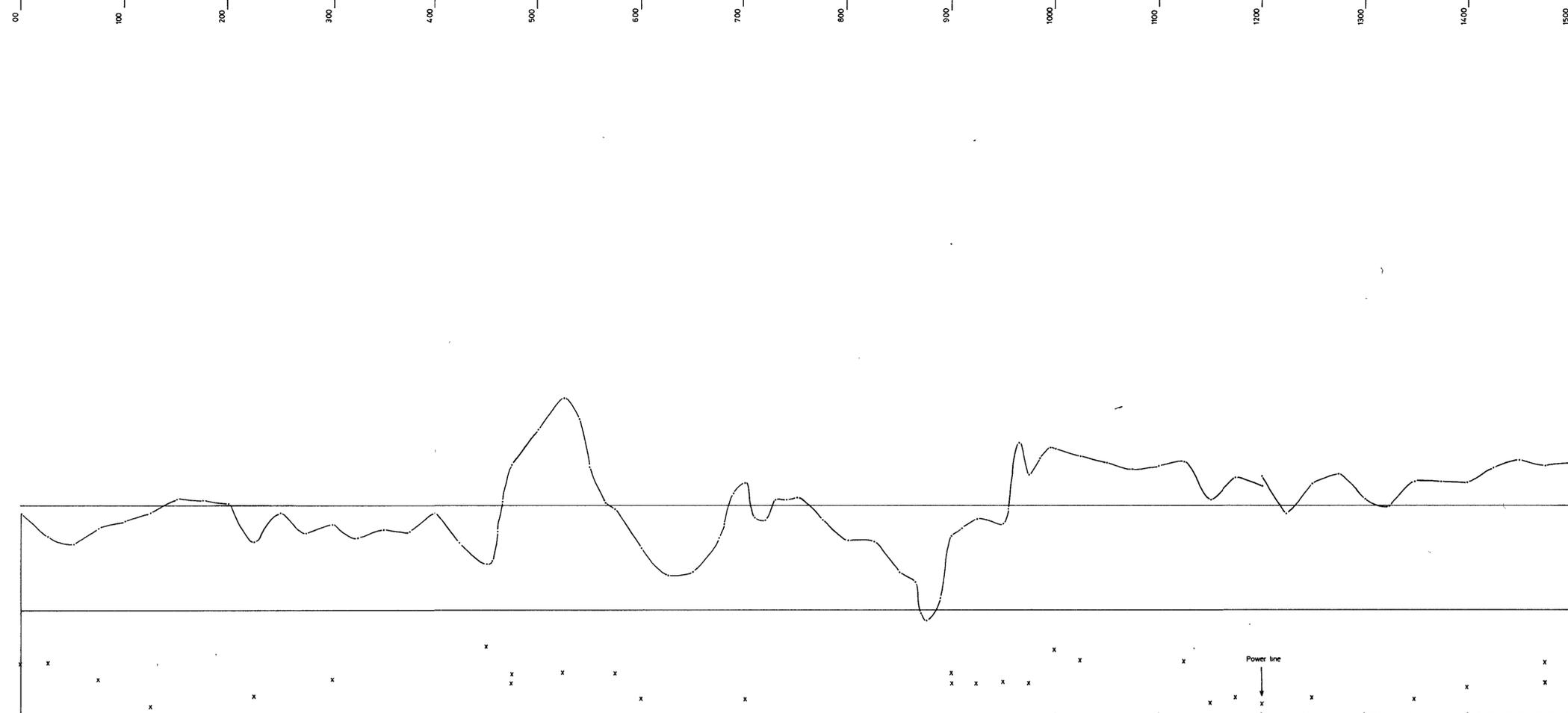
E.L. 7/74 MOINA
AEROMAGNETIC ANOMALY
4141/7
ALPS ROAD — GROUND MAGNETIC
VALUES
82-1826
Vol 21c

Scale 1:2500

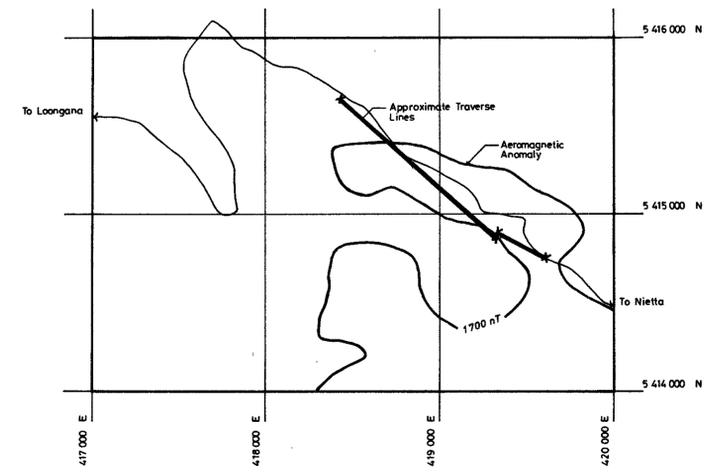
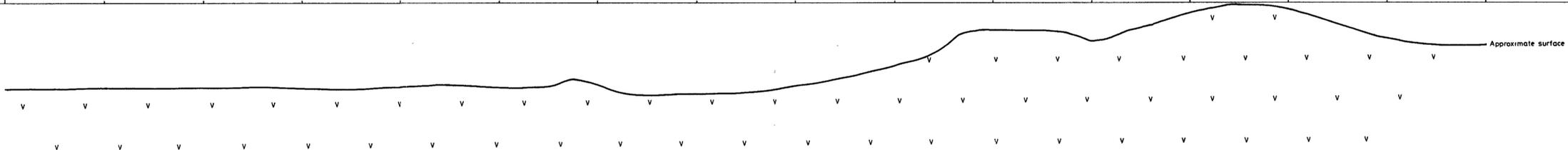
FIG No	REPORT No
ENCL No	DRG No D/MZ01/225
DATE 4-1-82	AUTHOR W D SMYTH
DRAWN H. L. H	OFFICE DEVONPORT

1280

715100



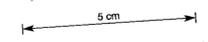
Magnetic Susceptibility $\chi = 10^{-5} \text{ S.I.}$



CADASTRAL SHEET 4141
Scale = 1:20000

NOTE:
Pace and compass traverses.
Total magnetic field - 1cm = 250 nT
Magnetic susceptibility $\chi = 10^{-5} \text{ S.I.}$

V V Tertiary basalt



The Shell Company of Australia Limited METALS DIVISION	
E.L. 7174 MOINA 82-1826 NIETTA ROAD 4141/19 60126	
RECONNAISSANCE TRAVERSE TOTAL MAGNETIC FIELD	
Scale 1:2500	
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/MZ01/181
DATE 7-10-81	AUTHOR W.D. SMYTH
DRAWN H. L. H.	OFFICE DEVONPORT

715101