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EXPLORATION AT GRANITE TOR

E.L. 2/78

DURING 1981-82 FIELD SEASON

OPEN FILE

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by D.C. Speijers

June, 1982.

EXPLORATION AT GRANITE TOR, E.L. 2/78 DURING 1981-82 FIELD SEASON

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EXPLORATION AT GRANITE TOR, E.L. 2/78 DURING 1981-82 FIELD SEASON

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- D/NP01/049 : LOCATION OF VICTORIA PEAK AND MURCHISON GRIDS

Note: Above plans all at 1:10,000 scale except D/NP01/070 at 1:40,000 scale.

Grid Line Profiles

- D/NP01/002 : MURCHISON LINE 2330N
- D/NP01/003 : MURCHISON LINE 1000N
- D/NP01/004 : MURCHISON LINE 1640N
- D/NP01/005 : VICTORIA PEAK LINES 200N & 400N
- D/NP01/006 : VICTORIA PEAK LINES 600N & 800N
- D/NP01/008 : VICTORIA PEAK BASELINE 1000E
- D/NP01/009 : ROMULUS WEST LINE 600N (west)
- D/NP01/010 : " " LINE 600N (east)
- D/NP01/011 : " " LINE 800N
- D/NP01/012 : " " LINE 400N
- D/NP01/013 : " " BASELINE 2000E (south)
- D/NP01/014 : " " LINE 2200N
- D/NP01/015A : " " LINE 2400N (west)
- D/NP01/015B : " " LINE 2400N (east)
- D/NP01/016 : " " LINE 2000N
- D/NP01/017 : " " BASELINE 1840E (south)
- D/NP01/018 : " " BASELINE 1840E (north)
- D/NP01/019 : " " LINE 1200N
- D/NP01/020 : " " LINE 720N
- D/NP01/021 : " " LINE 500N (west)
- D/NP01/022 : " " LINE 500N (east)
- D/NP01/023 : " " LINE 300N
- D/NP01/024 : " " BASELINE 900E

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EXPLORATION AT GRANITE TOR, E.L. 2/78 DURING 1981-82 FIELD SEASON

C O N T E N T S ... cont.Grid Line Profiles

D/NP01/025 . :	MURCHISON LINE 2250N
D/NP01/026 . :	" " 2150N
D/NP01/027 . :	" " 2050N
D/NP01/028 . :	ROMULUS WEST LINE 2550N
D/NP01/029 . :	" " BASELINE 1175E
D/NP01/030 . :	ALEXANDRA HILLS LINE 200N
D/NP01/031 . :	" " LINE 100N
D/NP01/032 . :	" " LINE 00N
D/NP01/033 . :	" " LINE 100S
D/NP01/034 . :	" " LINE 200S
D/NP01/035 . :	" " BASELINE 260W
D/NP01/036 . :	ROMULUS EAST LINE 00N
D/NP01/036A . :	" " LINE 00N (with E-M data)(MISSING)
D/NP01/037 . :	" " LINE 200S
D/NP01/038 . :	" " LINE 400S
D/NP01/039 . :	" " LINE 100S & BASELINE 00W
D/NP01/040 . :	BROUGHAM RIVER LINE 720N
D/NP01/041 . :	" " LINE 620N
D/NP01/042 . :	" " LINE 520N
D/NP01/043 . :	SOPHIA LINES 400S and 00N
D/NP01/044 . :	ROMULUS WEST LINE 2700N
D/NP01/050 . :	ROMULUS EAST LINES 100S, 50S, 50N AND 100N
D/NP01/051 . :	VICTORIA PEAK LINE 500N
D/NP01/052 . :	" " LINES 200N, 400N & 600N
D/NP01/053 . :	MURCHISON LINES 2280N & 2380N
D/NP01/054 . :	BROUGHAM RIVER LINES 570N, 670N & 620N
D/NP01/055 . :	FURY FLATS LINE 400N
D/NP01/056 . :	" " BASELINE 400E
D/NP01/057 . :	" " LINE 550N
D/NP01/058 . :	" " LINE 700N
D/NP01/059 . :	MACKINTOSH BASELINE 500E
D/NP01/060 . :	" LINES 500N & 350N
D/NP01/061 . :	" LINE 650N
D/NP01/062 . :	BACKWATER LINE 800N
D/NP01/063 . :	" LINE 400N

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EXPLORATION AT GRANITE TOR, E.L. 2/78 DURING 1981-82 FIELD SEASON

C O N T E N T S ... cont.

Grid Line Profiles

D/NP01/064A .:	BACKWATER LINE 600N (west)
D/NP01/064B .:	" LINE 600N (east)
D/NP01/065 . :	" BASELINE 200E
D/NP01/066 . :	ROMULUS WEST LINE 2850N
D/NP01/067 . :	" " LINE 1260N
D/NP01/068 . :	" " LINE 1360N
D/NP01/069 - :	" " LINE 1460N

Note: All profiles at 1:2,000 horizontal scale

1. SUMMARY AND RECOMMENDATIONS

Exploration Licence 2/78, known as Granite Tor, covers some 322km² to the east of Tullah on the west coast of Tasmania. The terrain is steep and heavily vegetated. This presents some logistical problems in carrying out exploration work.

The licence covers the northern end of the Tyennan Geanticline, a block of strongly deformed Precambrian greenschist-facies metasediments. An Upper Devonian layered granitic body intrudes these rocks and is associated with minor tin mineralisation. The Precambrian block is flanked to the west by the Dundas Trough which contains a Cambrian volcanic-sedimentary sequence, the Mount Read Volcanics, overlain by Ordovician conglomerates, sandstones and limestones. The Cambrian sequence is host for the nearby volcanogenic massive sulphide deposits at Rosebery and Que Rover.

Small but rich lead-silver lodes occur at the Farrell Mines due west of the licence area and the Renison cassiterite-sulphide deposit lies some 20km west. The Farrell and Renison deposits are both of Devonian age and are associated with Tabberabberan structures.

Prior to 1981, the licence area was explored for tin mineralisation by Alcoa of Australia Limited. In 1981 and 1982 the Cambrian and adjacent Precambrian rocks have been investigated in a joint venture between Alcoa and The Shell Company of Australia Limited with the latter as operator. The region covered by the joint venture is designated as area A.

This report covers the exploration work under the joint venture and is principally concerned with the ground follow-up of an airborne electromagnetic survey (Dighem) carried out early in 1981.

Some nineteen Dighem anomalies have been investigated or partially investigated on the ground. In most cases a small grid was established and followed up by ground electromagnetic surveys (mainly VLF), magnetic surveys, soil, rock and sediment sampling and geological mapping. For most of the Dighem anomalies a source of causative body may be postulated; however in many instances ground recovery of the airborne features using the VLF technique was somewhat doubtful. The anomaly sources can be assigned to three groups :

1. Graphitic phyllites - anomalies 4, 5, 10, 11 and probably 8;
2. Basalt sheet edge effects - anomalies 1, 2, 3 and 17;
3. Edge of colluvium/alluvium and/or lake edge - anomalies 7, 15, 19 and possibly 14(?).

No reasonable conclusion can be drawn about the cause of the remaining six anomalies.

The anomalies of the first category overlie lithologies which are thought to be prospective for Farrell-type mineralisation, i.e. hydrothermal fissure lodes of Devonian age. Magnetite-rich lenses have been located at the Murchison and Victoria Peak areas (anomalies 10 and 11), arsenopyrite-pyrite-bismuth-quartz veins have been located at Alexandra Hills (anomaly 8) and elevated lead and arsenic have been found in soil and stream sediments and Romulus East and Fury Valley (anomalies 4 and 5). However the Dighem features themselves are probably due to the host lithology rather than any mineralised bodies.

Minor galena mineralisation has been observed in the Romulus West area at a location known as Ray's Prospect. Nearby soil and ground electromagnetic anomalies have been located. There is evidence to suggest a potential for lead mineralisation over a 5km strike length between Ray's Prospect and the old White Hawk Mines to the south.

Recommendations for further work are in three main directions :

1. The investigations of the Dighem anomalies should be completed as suggested under the individual anomaly headings in chapter 7 of this report, with priority being given to anomalies 4, 5, 8, 10 and 11. The principal aims of this work would be to obtain better geological control and to enhance the ground recovery of the airborne features. This work is estimated to require 25 days of field work for a crew of one geologist and four field hands (NB does not include time required for movement of camps and personnel or any contingency for bad weather).
2. The Rays-White Hawk mineralisation should be further investigated as described in chapter 7. This would include :
 - i) clearing of a new campsite and helipad;
 - ii) fill-in gridding and horizontal-loop ground electromagnetics (max-min);
 - iii) examination of porphyry dyke contacts and chip sampling.

This would entail about six days' field work for one geologist and four field hands.

3. Geological traversing should be carried out with the object of obtaining a better geological understanding of the Cambrian sequence and its relationship to the adjacent Precambrian. This would be best done along rivers and creeks and could include parts of the Murchison, Brougham and Sophia Rivers and Granite, Anio and White Hawk Creeks.

Two or three cross-country traverses should be made in the Mount Swallow-High Tor-Alexandra Hills region to investigate the western contact of the granite. Some further cross-country traverses on the western slopes of Mount Romulus and Romulus Pup to examine the main occurrences of acid volcanics would also be worth while.

This traversing would entail two to three weeks of field work for one geologist and a field hand or two geologists.

2. INTRODUCTION

Location:

Exploration Licence 2/78 lies on the West Coast of Tasmania extending from Lake Mackintosh in the west to the western boundary of the Cradle Mountain - Lake St Clair National Park. It covers an area of 322 square kilometres which is generally referred to as the Granite Tor Area. The topography is that of a heavily dissected plateau with drainage south to the Murchison River and elsewhere into Lake Mackintosh. Most of the terrain is quite rugged with elevations ranging from 230 metres to 1120 metres above sea level. This terrain combined with a heavy vegetation cover severely restricts access and movement in the area.

The Granite Tor area straddles the boundary between the Burnie and Queenstown 1:250,000 sheet areas but is wholly contained within the Sophia 1:100,000 topographic sheet area. Airphoto coverage is available in black and white at 1:40,000 scale from the Tasmanian Government or in colour at 1:20,000 scale from Alcoa of Australia.

Exploration History:

The exploration licence was applied for by Alcoa of Australia Ltd. on 21st January, 1978 and granted on 26th May, 1978. It has been renewed at six-monthly intervals and the current expiry date is on 12th November, 1982.

The area was originally taken up as a grass roots tin exploration project however the prospective nature of Cambrian rocks in the west was recognised as an additional asset.

Early work was directed towards a search for Renison-type mineralisation. An airborne magnetic/radiometric survey and colour aerial photography were flown and followed up with geophysical and photogeological interpretation. During the summer of 1978-9 an extensive program of stream sediment sampling, rock sampling and stream water sampling was undertaken. In the following 1979-80 field season specific areas near Bluff River and Mt. Swallow were examined in more detail. This work however was not completed due to problems with the weather.

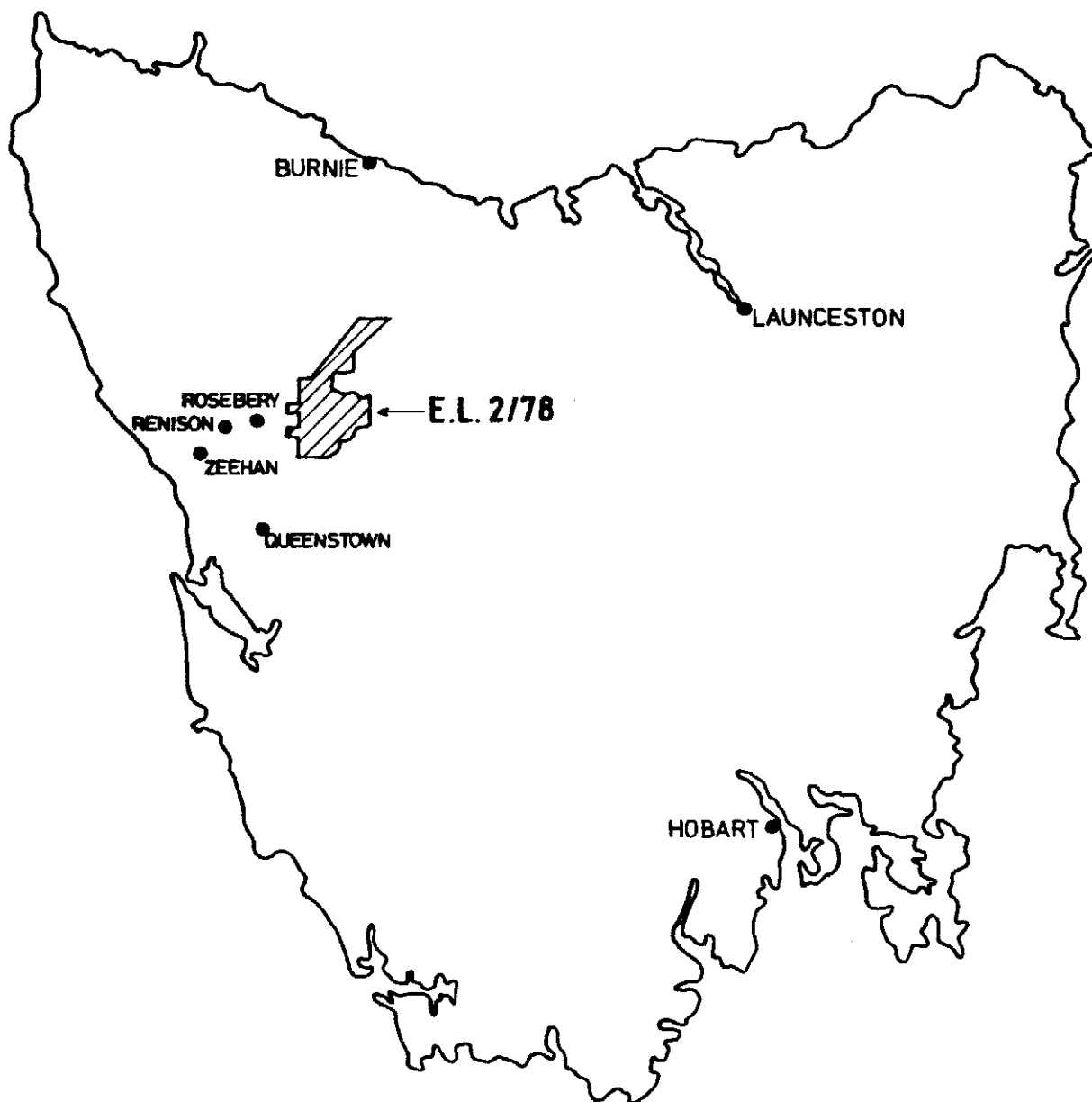
No field work was carried out during the 1980-81 season as negotiations had commenced between Alcoa of Australia Ltd. and The Shell Company of Australia Ltd. in regard to a joint venture over part of E.L. 2/78. These negotiations resulted in a joint venture agreement committing Shell to an exploration program over the western part of the licence area which contained the Palaeozoic rocks. This was designated Area A while the remainder of the licence was designated as Area B (see drawing 070). Shell retained an option over Area B which must be exercised by 1st July, 1982.

Since this time exploration has been oriented towards investigation of the Cambrian Mt Read Volcanics and adjacent parts of the Precambrian and Ordovician sequences. The first stage in this work was the flying of a Dighem E-M survey over parts of Area A. This was followed up by limited helicopter reconnaissance. A full-scale field program was launched in

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The Shell Company of Australia Limited METALS DIVISION	
LOCATION OF E.L. 2/78 GRANITE TOR	
SCALE 1:2000000	DATE 9-8-82
AUTHOR D.C.S.	DRAWN H.L.S.
OFFICE Devonport	REP. No.
DWG No. WNP01/76	FIG No.

the 1981-82 season to recover Dighem anomalies on the ground and to determine whether they indicate any potential for base-metal mineralisation. The bulk of this report concerns the ground follow-up of Dighem anomalies and its results.

3. GEOLOGY OF GRANITE TOR REGION

The Granite Tor region lies on the boundary of the Burnie and Queens-town 1:250,000 geological sheets and is partially covered by the Mackintosh 1-mile geological map. In addition to this published information a photogeological map at 1:40,000 scale has been prepared for Alcoa of Australia by Hunting Geology and Geophysics.

Exploration Licence 2/78 covers an area of deformed Precambrian metasediments known structurally as the Tyennan Geanticline. This is intruded by a substantial Lower Carboniferous or Devonian granitic body known as the Granite Tor Batholith. In the west and north the Precambrian is unconformably overlain by Palaeozoic sediments and volcanics in structural units known as the Dundas Trough and Sophia Synclinerium.

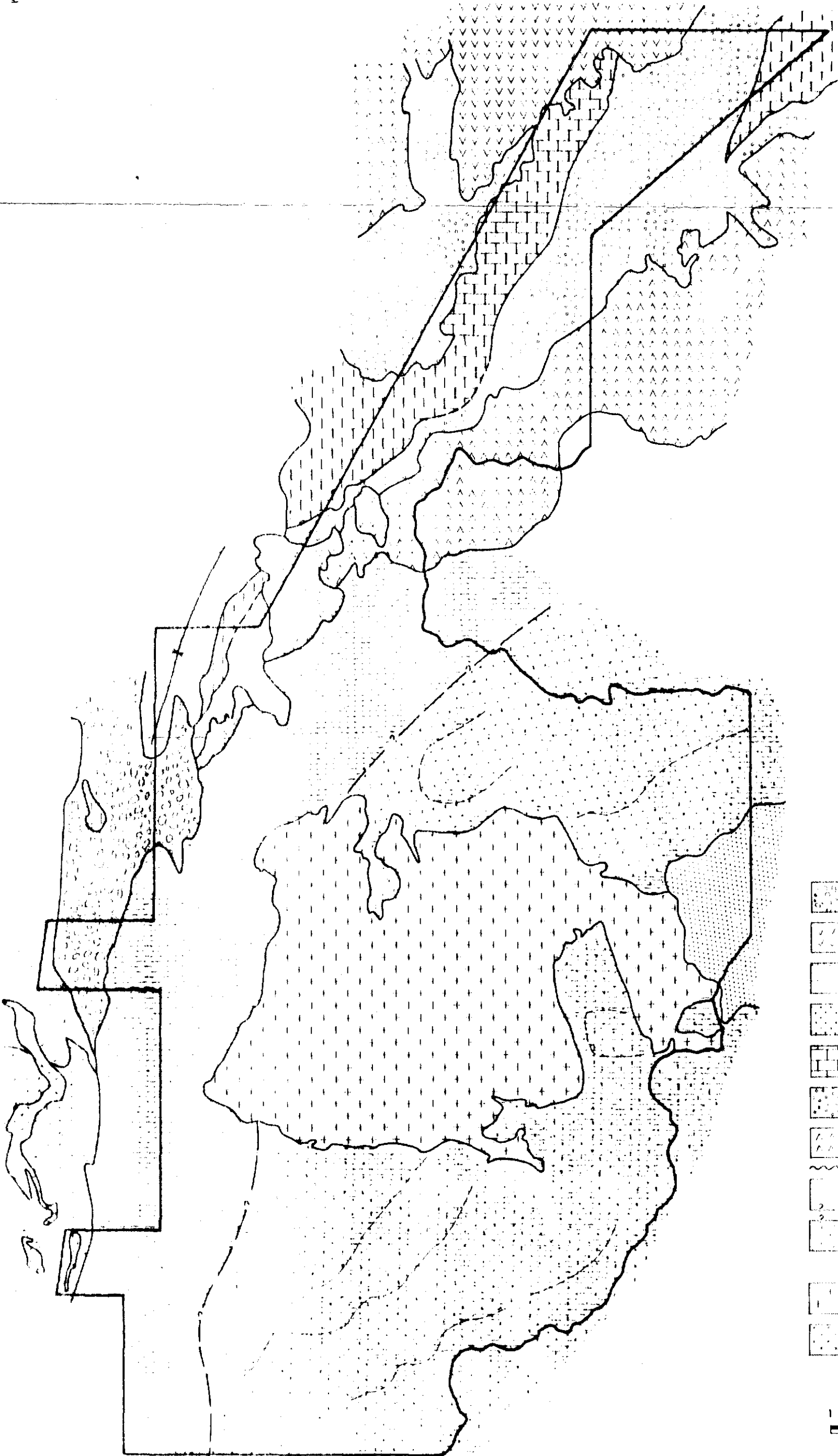
The Precambrian rocks are composed of alternating massive quartzite and metapelitic units. Rare carbonate horizons occur in the southeast of the E.L. and black graphitic phyllites along the western margin. The metamorphic grade is generally upper greenschist facies except close to the contacts of the granite where hornfelsing may occur. The regional strike is east-northeast except on the western margin where it is north-northeast. The relationship of these western rocks to the remaining Precambrian is in doubt. It has been suggested that the western unit may in fact be a Lower Cambrian sedimentary formation. Certainly the metamorphic grade appears to be slightly lower. In this report the western unit is presumed to be Precambrian.

The Granite Tor Batholith is in fact more truly an adamellite with granitic and micro-adamellitic phases. Tin-bearing greisen occurs near Bluff River and is associated with some nearby hybrid phases including a garnet-bearing granite. Granitic dykes and quartz veins with greisenised margins are known near Mt Swallow and an aplitic vein has been reported from the same area.

The Cambrian sequence which abuts the Precambrian in the west consists of quartzose sediments interbedded with acid to intermediate tuffs and porphyries. Cambrian intrusive granites are also known near Mt Murchison and possibly near Mt Romulus. The Cambrian is overlain by Ordovician rocks consisting of the Owen Conglomerate followed by the Gordon Limestone. These two formations are the major units in the northern panhandle portion of E.L. 2/78. Some Silurian quartzites overlie the Ordovician west of Mt Romulus. A sheet of Tertiary basalt overlies many of the Palaeozoic rocks in this area.

Undeformed Permian sediments occur near Mt Inglis obscuring the eastern contact of the granite.

The only other geological unit worthy of note is the Pleistocene glacial and fluvioglacial debris which litters the area. This has three main forms; large erratics perched in almost any topographic position, compact gravels up to a few metres thick which have accumulated in stream valleys and veneers of glacial cobbles which occur mainly on hilltops and on more moderate slopes. Occasionally varved silts are found with the thicker glacial veneers.



5 cm

LEGEND

- Pleistocene Fluvoglaciols
- Tertiary Basalts
- Perinian Sediments
- Siluro-Devonian Sediments
- Gordon Limestone
- Owen Conglomerate
- Cambrian Mt Read Volcanics
- Western Series Metasediments (Precambrian?)
- Precambrian Metasediments
- Devonian Granitic Intrusion
- Cambrian Mulhousen Granite

1 0 1 2 3 km

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
OUTLINE OF REGIONAL
GEOLOGY

100 000 1:50 000 1:25 000
D. SPEIJERS
DE VRIES

That part of the licence known as Area A which is the subject of the Shell Joint Venture covers the Palaeozoic sediments and volcanics as well as the western Precambrian unit mentioned above.

Mineralisation is known in a number of places at Granite Tor. The batholith itself is known to be tin-bearing and tin and tungsten are known from a greisen deposit near Bluff River. This has been worked in the past by sluicing. Wolfram and bismuth occur sporadically with quartz veins outcropping in the Brougham River close to the granite contact.

A small adit near the conjunction of Granite Creek and Sophia River was driven on bismuth-bearing arsenopyrite-pyrite-quartz veins hosted by a graphitic phyllite. Iron sulphides in graphitic phyllites are known from several places in the western Precambrian unit.

At the conjunction of White Hawk Creek and Brougham River several workings were once established on galena/sphalerite veins following joint planes in the Gordon Limestone. Some 5 kilometres north of this place galena has been found in an Ordovician (?) quartzite.

At Mt Remus, molybdenite associated with small amounts of cobalt and vanadium has been recorded as occurring in pyritic quartz bodies within Precambrian schist.

4. DIGHEM SURVEY

During early 1981 Shell carried out a helicopter-borne Dighem survey over parts of Area A at Granite Tor, the objectives and specifications of the survey are not discussed here as the author was not involved with the project at that stage. From the results of this survey, ten anomalies were selected by the Company's geophysicists for ground investigation during the 1981-82 field season. Halfway through the season when some field information was available the Dighem data were re-examined and several more second-order anomalies were listed for ground investigation.

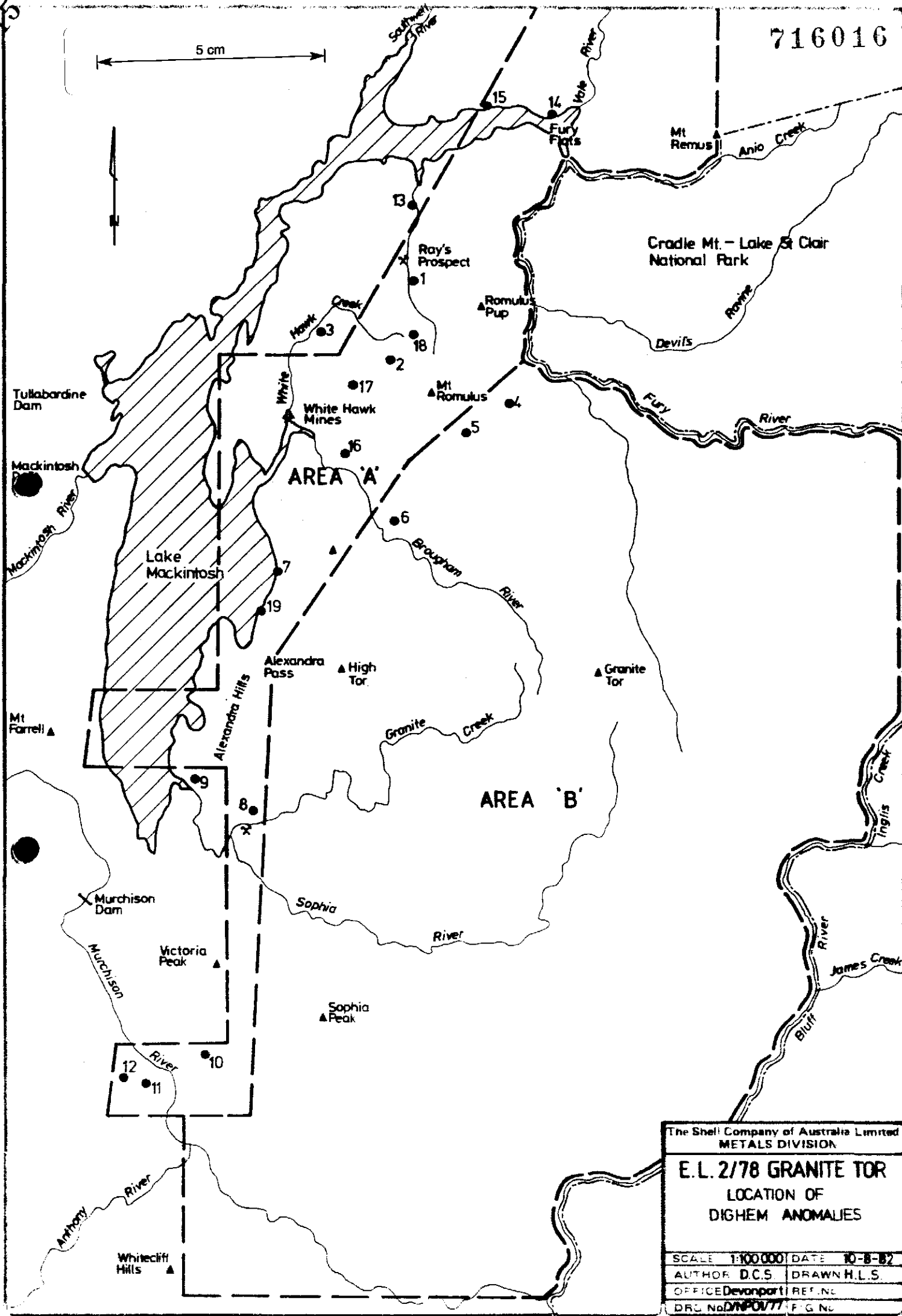
A description of the characteristics of each anomaly appears with the results of the field investigations in chapter seven of this report. There has been some confusion in the designation of the anomalies, the system used by the survey contractors ignored correlations between lines while the system used by Shell's geophysicists lumped together anomalies which were subject to separate ground investigations. In this report the anomalies have been numbered 1 to 19, their numerical order having no particular significance. Geographical names are given to each of the grids since these may cover more than one anomaly but are generally accessed from a single campsite. A table to reconcile all this information is presented below:-

<u>ANOMALY NO.</u>	<u>GRID/AREA NAME</u>	<u>GEOPHYSICISTS DESIGNATION</u>	<u>DIGHEM DESIGNATION</u>
1	ROMULUS WEST	B	43C
2	ROMULUS WEST	C	49A
3	ROMULUS WEST	D	50A, 52A, 53A
4	FURY VALLEY	A	42B, 44A, 44B, 45B, 45C
5	ROMULUS EAST	A	4500A, 48A, 50D
6	BROUGHAM RIVER	E	61A
7	SWALLOW WEST	F	72A
8	ALEXANDRA HILLS	H	108B, 109B, 110A, 111A 111B
9	SOPHIA	G	108A, 109A
10	VICTORIA PEAK	J	201C
11	MURCHISON	I	201A, 201B, 202B, 203A, 204A, 205A, 205B, 207A, 208C, 208D, 209A, 209B, 210A, 212A, 212B, 214A, 214B, 219A, 219B
12	MURCHISON	I	202A
13	BACKWATER	N/A	34A
14	FURY FLATS	N/A	17A, 18A
15	MACKINTOSH	N/A	22A
16	LOWER BROUGHAM	N/A	61B
17	ROMULUS WEST	N/A	55A, 54B
18	ROMULUS WEST	N/A	4500A
19	ALEXANDRA PASS	N/A	74A, 75A

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5 cm



The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
LOCATION OF
DIGHEM ANOMALIES

SCALE 1:100 000 DATE 10-8-82

AUTHOR D.C.S. DRAWN H.L.S.

OFFICE Devonport REF. No.

DRG. No. DNP01/77 FIG. No.

5. LOGISTICS

Field work at Granite Tor presents some logistical problems which are not generally encountered in other parts of Australia. These are mainly related to difficulties of access, terrain and weather.

Access and Movement:

Access can only be gained on foot or by helicopter to most parts of the licence area. Recently however, with the flooding of Lake Mackintosh, it has been possible to reach the western margin of the licence by boat and several Dighem anomalies have been investigated in this manner.

Helicopters however remain the principal means of transport for personnel and camping equipment. Hookway Aviation generally have one or two machines based in Queenstown between November and April to service mining companies and government agencies operating on the West Coast. The Aerospatielle "Squirrel" has been found to be more efficient than the Bell "Jetrainger" for most exploration work. In budget calculations 40 minutes should be allowed for a return ferry in fine weather between Queenstown and Granite Tor and 50 minutes for a return ferry between Queenstown and Pencil Pine Lodge. Out of season work requires that the helicopter travel from Hobart.

Movement on foot is generally restricted to within one or two kilometres of a camp or landing site if a reasonable day's work is to be achieved. This is due to the rugged terrain and thick vegetation cover. On reconnaissance work or if good tracks have been cut, and where a minimum of equipment is carried, this range can be extended to about three kilometres.

Because of the restrictions on movement, camps must be shifted frequently by helicopter. It has been found convenient to use light aluminium mesh baskets for transporting camp equipment since these can be pre-packed (saving on helicopter time) and do not suffer from the settling problems encountered with rope nets when slung beneath the aircraft. Nets are still used for bulky items.

A weekly supply run is generally necessary when a camp is established in one place for any length of time. It is often possible at these times to transport personnel to outlying areas which might not otherwise have been within reach of the camp.

Equipment:

Up to the present it has been found convenient to use a double-walled, specially-built ridge-pole tent for camp accommodation. Pine duckboards are used for flooring. This tent can accommodate six men as well as cooking and eating facilities and is strong enough to withstand the high winds encountered on the elevated plateaus at Granite Tor. Bottled gas is used for cooking, refrigeration and light. Alternatively, the small 300 watt Honda generators can be used for refrigeration and light only.

All food supplies, utensils, sampling requisites and other small loose items are packed in steel luggage trunks for easy transport. These trunks are also used as seating at small folding tables.

Backpacks are essential when working in this area, the half-frame models being preferred. In addition each man should carry an emergency survival kit and full wet-weather clothing at all times. Gum boots are also essential in some areas or when stream sampling.

HF radio contact to Shell's Devonport office, Hobart Radio (5355 kHz) and Melbourne (4125 kHz emergency frequency) is considered essential for efficient and safe field operation.

Lightweight chainsaws with 12" bars have been found the most effective means of cutting grid lines or access tracks. Modified Stihl 009 models were used during the 1981-82 season. The modifications were to improve durability and included fabricated aluminium handles, stainless steel covers over the oil pumps and strengthening of the sprocket covers with thin gauge stainless steel plate. It is necessary to carry a full range of spare parts and fastenings. Although very effective tools, abuse of chainsaws presents the greatest single danger to the operators and great pains must be taken to ensure their careful use.

Maps and airphotos used in the field are generally waterproofed with clear, matt finish "Contact" plastic film. Likewise, notebooks must be waterproof. The refill type produced by Walsh & Son in Hobart are generally adequate although in very bad conditions only the Canadian "Duksbak" field books are fully waterproof.

Personnel:

It is essential in regions such as Granite Tor that personnel are physically fit. The field work is physically demanding and a lack of fitness results in proneness to injury.

As a safety measure, working parties usually consist of two men, although some exceptions can be made when working closely together on an established grid. In any event at least two men are required whenever a chainsaw is being operated.

During the 1981-82 season camps usually held four field hands and one or two geologists. Generally one geologist is sufficient when work is restricted to small grids. Since living conditions are relatively cramped the maximum length of camps was kept to 10 or 12 days.

When helicopters are used on a daily basis it is generally best to operate from an outside base with as many field parties as possible. This makes for the most efficient use of the aircraft cost-wise and time-wise. Unfortunately it also increases the cost if delays are experienced through bad weather.

Weather:

Some time is always lost through bad weather although the extent of this varies greatly from season to season. Experience has shown that most of the losses occur through an inability to move into camp either because helicopters cannot fly or because they are not available. Once in camp only the severest weather causes a loss in working time.

There is little which can be done to counteract the problem of bad weather and it is generally best to ignore the forecasts if planning more than two days in advance. Reducing one's reliance on helicopters is one way of alleviating weather-related losses however this is not always possible at Granite Tor.

6. TECHNIQUES USED IN GROUND FOLLOW-UP

The Dighem anomalies at Granite Tor were investigated on the ground by a variety of means. Several exploratory tools were used at each location since the difficulty of access made it expedient to gather the maximum amount of data in a single visit.

Because of the local ground conditions some techniques were modified to provide more efficient production or better quality data. A discussion of the specific techniques used is presented here as a matter of record and so that limitations in their interpretation may be gauged.

Gridding:

Grid lines were generally cut for minimal access using small chainsaws. No grid pegs were used and stations were marked at 20 metre intervals horizontally by attaching white flagging to the vegetation. Orange flagging was used to keep line direction. This was aided by regular compass checks. Distances along the lines were subject to the vagaries of measurement by topolite and to inaccuracies in the measurement of slopes but in most cases the error over an entire area would be within 10%. Elevation control involved the greatest errors, particularly on some of the steeper grids. Slopes were estimated by clinometer but no specific targets were used when taking readings.

To plot topographic profiles an elevation was estimated for a single station on each grid from the topographic contour plan. All other stations were calculated from this using the slope measurements. The grids were ground-located onto airphoto enlargements before being plotted onto the 1:10,000 location plans in this report.

Geological Control:

Mapping of outcrop, subcrop and float was undertaken on nearly all grid-lines. Streams were traversed where these were available. In some places, the soil samples were individually logged to help determine bedrock. This can be misleading because of severe soil creep and scree cover on many of the steeper slopes. Later in the program this soil logging became too time consuming to continue. Glacial overburden either as blanketing veneers or as thicker accumulations of moraine is a recurring problem in mapping this region. In addition areas of buttongrass or of horizontal scrub are generally devoid of all outcrop. Weathering is not generally a problem with fresh rock and sulphides occurring close to or at the surface.

Soil Sampling and Analysis:

Soil samples were taken at 20 metre intervals along most grid lines using screw or shell augers. When interesting analysis results became available some resampling at five metre intervals was undertaken. Ideally samples of approximately 200 grams were taken from the "C" horizon. In practice this was not always achievable for a variety of reasons including the presence of glacials or scree, a subsurface choked with roots, excessively deep or transported basaltic soils and lack of significant "C" horizon development beneath the humus layer.

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Sampling depths were recorded and were generally less than one metre except in basaltic soils when a depth limit had to be imposed. Severe contamination by humus and other organic matter is also a constant problem necessitating laboratory roasting of many samples to ash the organics before digestion.

Sample preparation consisted of drying and sieving to minus 80 mesh in Devonport. Analyses were carried out by Comlabs Pty. Ltd. in Adelaide. The elements Cu, Pb, Zn, Ni, Co and Bi were determined by AAS after a perchloric acid digestion and Fe and Mn by AAS after a modified digestion. The elements As, Ba and W were determined by x-ray fluorescence from a pressed powder. Selected groups of samples were later analysed for gold and tin by AAS (aqua regia digestion) and XRF respectively.

Rock Sampling:

Chip samples of the main lithologies were taken as a matter of course while the mapping was being done. These consisted of six or more 5 centimetre chips. In addition larger single piece samples were often taken where mineralisation was suspected or where identification work was required. After crushing and pulverising in Adelaide the analysis work was as described for soils except that Fe and Mn were not generally included and Sn was determined on a routine basis. A number of specimens were also sent to Central Mineralogical Services for thin or polished section work.

Stream Sediment Sampling:

1.5 kilogram samples of minus 40 mesh sediment were taken in the vicinity of all anomalies where suitable drainage was available. They were dried and sieved to minus 80 mesh in Devonport before being analysed in Adelaide for Cu, Pb, Zn, Ni, Co, Bi, Fe and Mn by perchloric digestion and AAS followed by a pressed powder/XRF determination of As, W, Ba, Sn, Ta and Mo. The influence of glacial debris in stream sediments is a problem in much of the area since it gives rise to anomalies which are unrelated to bedrock. This is particularly important with Sn and W contents which are often elevated by the presence of glacials which have been derived from the roof zone of the nearby tin-bearing Granite Tor intrusive.

Pan Concentrates:

In some areas pan concentrates were taken in conjunction with the sieved sediment samples. These were examined by ultraviolet light for traces of scheelite and under the binocular microscope to determine their basic mineralogy. After pulverising they were analysed in the same manner as the other sediment samples.

Ground Magnetometer Traverses:

Magnetic traverses were carried out using a Geometrics proton precession instrument with the sensor mounted in a backpack. Readings were taken at 10 metre station intervals along most grid lines. No attempt was made to correct for diurnal variation since to do so would require a recording base station in this difficult terrain. The readings are only suitable for use in profile form.

Ground E-M Surveys:

The VLF technique was used to routinely recover Dighem anomalies on the ground. Only transmissions from the North West Cape station were found to be consistently strong enough to be useful, although intermittent problems with signal strength fluctuation were encountered. Several attempts were made to use transmissions from Japan, but these met with little success. At each station the time, maximum relative field intensity and dip angle were recorded. Anomalies were generally recorded as dip angle crossovers although in some instances there appeared to be a substantial background dip angle and anomalous status was assigned to short steep-gradient sections of the dip angle profile, generally at the estimated inflection point.

In some areas the Dighem anomalies could not be confidently recovered using the VLF technique and the horizontal loop Max-min system was employed. A transmitter-receiver separation of 150 metres was used with readings taken at 20 metre intervals based on the position of the receiver. In most instances readings were taken at all four available frequencies, i.e. 222, 444, 888 and 1777 Hz. The results in general are greatly superior to the VLF measurements.

A prototype vertical loop E-M system known as the Scintrex SE-88 Genie was used on an experimental basis over three selected gridlines. Comparative profiles are presented in Appendix VI.

7. RESULTS OF GROUND FOLLOW-UP

Introduction:

The most important results of the ground investigation of the Dighem anomalies have been summarised in tabular form for quick reference. This table appears as Appendix I.

This chapter provides a fuller description of the field work carried out on individual anomalies. The discussion of results should be read in conjunction with the gridline profiles which are contained in the map section of this report. Conclusions have been drawn from these results and recommendations made for further work where this is required.

A standard procedure has been adopted for handling the anomalies and this is described here.

The first section gives a summary of the geophysical characteristics of the anomaly as provided by Shell's geophysical staff. This is followed by a brief note on the geology as it is known from the photogeological plan and other information collected in previous seasons by Alcoa.

The second section on location gives positional data and map references while the third section discusses geographic and topographic factors. These are critical in planning effective fieldwork in this region. The exact specifications of the cut lines are described under "Gridding".

The section "Geology and Mineralisation" presents only data observed in the field or extrapolated from known outcrops. The results of any petrographic work may also be documented here.

Following this are sections discussing the results of ground geophysical surveys, i.e. E-M techniques and magnetometer traverses. Possible explanations of observed anomalies may be noted. Three sections on sampling and geochemistry follow. As well as recognising anomalies and their more obvious explanations, mention is made of any known sources of contamination.

Under the heading "Conclusions" the above technical data is collated and interpreted where possible. An attempt is made to explain the Dighem anomaly in most cases. Further work may be suggested in the next section where it is felt that the anomaly has not been satisfactorily explained or that the area has some potential for discovery of mineralisation.

The numbering system used for the anomalies has no significance in terms of priorities or order of investigation. For a discussion of priorities see the following chapter.

ANOMALY 1 : ROMULUS WEST

Anomaly Description:

This is a horizontal sheet anomaly with a conductance of about 1 mho. It has an associated magnetic effect of 10 to 20 nT. The anomaly is strongest at line 43/656.5 but there are lesser possibly surficial conductors at line 41/626.5 and line 40/616.0. On the photogeological plan the strongest part of the anomaly lies at the edge of a Tertiary basalt sheet while the other two points lie at the contact of Tertiary gravels with underlying Cambrian acid porphyry.

Location:

The main anomaly is located at AMG 5 386 640N 394 250E. It is covered by 1:20,000 colour airphoto run 7/999. The position of the Romulus West grid which covers several anomalies is shown on Drawing 046. Ground data profiles of the grid lines are on drawings 014, 015B, 016, 017 and 018.

Access and Terrain:

Access is best gained by helicopter to the Romulus West campsite then by walking along a baseline for 1.5 kilometres. It is also possible to walk in from Lake Mackintosh via the Backwater grid, however, this is quite strenuous (see Anomaly 13). Backwater Creek flows through the grid. Vegetation in the area is mainly open forest with some horizontal scrub. The altitude range on the grid is from 451 to 638 metres above sea level.

Gridding:

Some 2.7 kilometres of gridlines were cut and flagged. This included a baseline (1840E) bearing 020° magnetic and three crosslines as follows:

1840E	1200N	to	2400N
2000N	1340E	to	1840E
2200N	1340E	to	1840E
2400N	1340E	to	1840E

All the lines cross Backwater Creek.

Geology and Mineralisation:

All lines except 2400N west of 1500E appear to lie on Tertiary basalts with occasional interspersed sheets of alluvium. Isolated patches of glacial debris including granite erratics are commonly found on ridge tops or in valleys. Outcrop of the basalt is restricted to steep slopes and creek banks. On line 2400N west of 1420E an intermediate porphyry outcrops. It is similar to rocks encountered near Anomaly 18 and south of the White Hawk mines and may be a strike extension of these. It contains phenocrysts of feldspar and biotite (variably chloritised) and locally has hematite on fracture planes. This porphyry appears to be cut by dolerite between 1420E and 1500E. No mineralisation was observed on this grid although small amounts of galena in quartzite were found some distance downstream along Backwater Creek (see Ray's Prospect).

Ground E-M:

All lines were surveyed with VLF measurements. Dip angle anomalies were found at 2000N 1810E, 2200N 1660E, 1840E 1990N and 1840E 2210E. The last one also has an associated field intensity anomaly. There is a possible anomaly around 1500E on line 2400N. Several of these anomalies lie over patches of alluvium which appear to occur between basalt flows in this area. The anomaly at 1840E 2210N is not obviously explicable in this way.

Ground Magnetism:

All grid lines were traversed by magnetometer. Some lines showed a noisy response typical of basalt, e.g. line 1840E, line 2000N west of 1500E, line 2200N east of 1700E. In other parts of the grid the response was still noisy but more subdued, possibly indicating that the basalt sheet is very thin or that only basalt soils are present. This occurred mainly in topographically lower areas.

Soil Geochemistry:

115 soil samples were taken along the grid lines. Basaltic soils contained typically high levels of Cu, Zn, Ni and Co. On line 2200N the geochemistry suggests that there is no basalt west of about 1600E. The high background levels produced by the basalt soils tend to swamp any other anomalies which may be present. An isolated Pb/As anomaly at 2000N 1520E and single point W anomalies at 1720E and 1800E on line 2200N are probably readily explained in terms of glacial debris.

Rock Geochemistry:

Chip samples were taken of dolerite, acid porphyry and fine-grained sediment at the western end of line 2400N. All returned low levels of base metals (see samples 2844, 2845, 2847 and 2848 in Appendix II).

Stream Sediment Samples:

Six stream sediment samples and one pan concentrate were taken in the area of the grid. Only low levels of base metals were encountered except for sample 2856 which contained 48 ppm tin. The presence of a number of large granite erratics upstream from the sample point probably explains this anomaly since most of the granitic glacial material appears to carry some tin.

Conclusions:

The strong VLF anomaly around 2000N 1840E probably correlates with the main airborne Dighem anomaly. The anomaly may be caused by interflow or basal alluvium associated with Tertiary basalt or may simply be related to an edge effect of the basalt sheet. The soil geochemistry and ground magnetism suggest that the mapping may be in error in assuming all areas of brown "basaltic-looking" soil to be underlain by basalt. Much of this may in fact be transported. Also the extent of glacial debris may not have been fully appreciated. In particular the two basalt "outcrops" at the western end of line 2200N are possibly large erratics and some of the cobbles and pebbles mapped as Tertiary alluvials may in fact be of glacial origin. The geochemistry gave no encouragement.

Recommendations:

No further work is recommended on this anomaly.

ANOMALY 2 : ROMULUS WEST (including Mt Romulus traverse)

Anomaly Description:

This is a weak single point anomaly, possibly an edge response. It occurs at line 49/729.9. The associated magnetics indicate a possible geological contact. The photogeological plan shows the area as covered by Tertiary basalt which is probably underlain by Cambrian rocks close to their contact with the Precambrian.

Location:

The anomaly is located at AMG 5 385 030N 393 900E. It is covered by 1:20,000 colour airphoto run 7/999. The position of the Romulus West grid which covers several anomalies is shown on drawing 046. Ground data profiles of the grid lines are on drawings 009 to 013.

Access and Terrain:

Access is best gained by helicopter to the Romulus West campsite which is centrally situated in the grid. The terrain over the gridded area is generally flat and sometimes swampy in low-lying areas. An ill-defined watercourse crosses the grid. Vegetation varies from bauera and cutting rush to thick horizontal scrub. Movement on foot is slow except on cut lines. The extension of line 600N to the east ascends Mt Romulus and is quite steep in places. The altitude range on the grid is from 617 to 966 metres above sea level.

Gridding:

Some 3.3 kilometres of grid line were cut and flagged. This included a baseline (2000E) bearing 020° magnetic, three crosslines and an extension of one crossline (600N) eastwards to the top of Mt Romulus. The lines are as follows:

2000E	400N	to	1200N
400N	1800E	to	2300E
600N	1700E	to	3220E
800N	1800E	to	2300E

The extension of line 600N to the east was for geological reasons and is not related to recovery of the Dighem anomaly.

Geology and Mineralisation:

Apart from the flanks of Mt Romulus the gridded area is almost entirely covered by thick compact fluvioglacial deposits and alluvium as seen in pits dug near the campsite. There may be scattered windows in this overburden as indicated by soil geochemistry although this is by no means certain. Magnetism indicates that there is probably basalt beneath the overburden over most of the grid. On line 600N the basalt has almost certainly petered out at 2240E. Moving eastwards one strikes acid volcanic colluvium and scree mixed with glacials. Sporadic outcrops and float of acid tuffs and porphyries occur east of 2880E and continue to near the top of Mt Romulus where massive quartzite occurs. Minor tourmaline patches and iron-staining were seen in one specimen of tuff.

Ground E-M:

All lines were covered by VLF measurements at 20 metre station spacing. The VLF transmissions were subject to field intensity fluctuations during the time of the survey, however, this does not appear to effect the dip angle measurements. Although there are some indistinct crossover points, e.g. 800N 1820E and 600N 2220E and 2310E, no definite anomalies can be pinpointed. The max-min E-M system was later run over part of line 600N and appears to have located an anomaly at about 2260E with a possible westerly dip (unconfirmed). Note that this corresponds approximately with the two indistinct VLF crossovers on this line.

Line 600N was used as a test line for the Scintrex SE-88 Genie E-M system (see Appendix VI). This showed a small shallow anomaly at 2105E. There were no distinct anomalies coinciding with the max-min and VLF features.

Ground Magnetism:

All lines were traversed by magnetometer using a 10 metre station spacing. A noisy basalt-type response was observed on lines 2000E and 800N, on line 600N west of about 2210E and on line 400N west of about 3050E. The basalt "noise" appears to have been slightly smoothed, presumably by the thickness of glacial overburden.

At 400N 2140E and 600N 2220E there appear to be correlatable magnetic highs of approximately 500nT which probably represent an underlying Cambrian unit. The magnetic response from the Cambrian on Mt Romulus is fairly smooth apart from some small blips near the top.

Soil Geochemistry:

118 soil samples were taken although most of these probably failed to penetrate the glacial-alluvial overburden due to its coarse compact nature. On all the lines there are small Cu/Pb/Zn/Ni anomalies. The strongest is at 600N 1980E. The only other obvious anomalies are lead at 600N 2840E, Cu/Pb/Zn/Ni at 600N 3160E and barium at 600N 3000E. All of these features are of a relatively minor nature. The anomaly at 600N 3160E coincides with a magnetic spike.

Rock Geochemistry:

The only rock samples were taken from the flanks of Mt Romulus and do not relate to the Dighem anomaly. Fifteen samples were sent for analysis. The only ones of interest were sample 2850, a gossanous looking material which carried minor copper and zinc values, sample 2893, a coarse-grained tuff which carried 100 ppm lead and samples 2899 and 2900, which were acid tuffs carrying > 2000 ppm barium, which explains one of the soil anomalies.

Stream Sediment Samples:

None were taken due to a lack of suitable streams.

Conclusions:

The Dighem anomaly appears to have been recovered on the ground but its cause remains uncertain. The magnetics suggest two alternatives, that it may be an effect from the edge of the basalt or that it may be related to the magnetic Cambrian formation in evidence on the profiles, e.g. a pyrrhotite-bearing horizon. There is, however, no geochemical encouragement at the site of the Dighem anomaly.

The small Cu/Pb/Zn/Ni anomalies remain unexplained. The single point soil lead anomaly is only 50 metres uphill from the lead rich tuff scree sample 2893.

Recommendations:

It is suggested that some power auger holes be drilled along line 600N in an attempt to penetrate the glacial material. Failing this, pits could be dug. The sites to be investigated are 1980E, 2160E to 2300E and 2840E.

This work is estimated to require a 2-man crew and one geologist for one day or three days if pits need to be dug. No further geophysics is recommended until this work is completed. If time permits the soil anomaly at 600N 3160E could be examined, resampled and rock chips taken.

ANOMALY 3 : ROMULUS WEST

Anomaly Description:

Two closely associated anomalies are included here. They are both very weak and can be described as a thin, broad, horizontal sheet response. The magnetic contour plan indicates that the anomaly is near the edge of a basalt sheet. The first anomaly occurs at line 50/742.3, line 52/789.2, line 53/798.9 and line 54/812.65. The second occurs at line 53/798.4, line 49/728.2 and line 54/813.0. They both appear to have northeasterly trends with the first and most easterly having an apparent strike length of at least 550 metres. It is noted that flight navigation was very poor in this area and thus the trend and strike lengths may not reflect the truth. The photogeological plan shows that the anomalies lie close to the edge of a basalt sheet and on a talus deposit which probably overlies Ordovician Gordon Limestone and Owen Conglomerate. There are outcrops of suspected Cambrian granite 300 metres to the southeast and 500 metres to the south.

Location:

The strongest points on each anomaly are at AMG 5 385 320N 392 940E and AMG 5 385 650N 392 400E. They are covered by 1:20,000 colour airphoto run 7/999. The position of the Romulus West grid which covers several anomalies is shown on drawing 046. Ground data profiles of the grid lines are on drawings 020 to 024.

Access and Terrain:

Access is best gained by helicopter to the Romulus West campsite then on foot along a cut track which heads west to meet line 500N. The terrain over the gridded area is hilly and often steep. The altitude range is from 378 to 621 metres above sea level with an open forest cover.

Gridding:

Some 3.3 kilometres of grid lines were cut and flagged at 20 metre intervals. This included a baseline (900E) bearing 020° magnetic and three cross lines as below:

900E	300N	to	720N
300N	340E	to	1040E
500N	60W	to	1493E
720N	340E	to	1100E

Line 500N was extended some distance east and west of the main grid to gain some appreciation of the surrounding geology. White Hawk Creek crosses the grid to the west.

Geology and Mineralisation:

There is little outcrop on the grid and most of the geology must be surmised from soil samples or extrapolations from outcrops in the south.

Much of the area appears to be covered by Tertiary basalts which probably have basal and/or interflow alluvial sheets. Talus or scree deposits cover the remainder. Large glacial erratics occur in places, these being composed of both granite (Devonian ?) and quartzite.

Quartzites of probably Silurian age (equivalent to Crotty Quartzite) subcrop around 500N 120E. The quartzite scree which is common on slopes in the western part of the grid is probably from two sources, Ordovician quartzite (equivalent to Moyna Sandstone or Owen Conglomerate) and the overlying Silurian quartzite mentioned above. It is possible that the valley of White Hawk Creek is underlain by the Ordovician Gordon Limestone.

Ground E-M:

VLF measurements were carried out on all lines at 20 metre station spacings. Dip angle anomalies were found at 300N 550E, 500N 630E, 300N 360E and 500N 1300E (possible anomaly). The first two anomalies appear to directly overlie alluvials at the edge of the basalt sheet and could be readily explained in terms of either an edge effect or a conductive layer of basal alluvium. The trend of a line joining these two is approximately northeast and it is likely that they correspond to the eastern Dighem anomaly. In this case the VLF anomaly at 300N 360E is probably the western Dighem anomaly, the grid being too far to the northeast to recover both anomalies entirely. No explanation can be offered for the western anomaly other than a possible contact effect between Ordovician Limestone and quartzite which may underlie this position. The anomaly at 500N 1300E appears to be related to a change in slope. From the magnetics, this probably represents the contact between two basalt flows.

Ground Magnetics:

All lines were traversed by magnetometer. The areas of basalt give a typical noisy response which has greater amplitude in the north than south. This probably relates to the thickness of the basalt sheet. The response from the Silurian and Ordovician sediment is very flat. The only feature of interest is a small, sharp anomaly which occurs over White Hawk Creek on all three crosslines. It reaches 40 nT on line 500N and would appear to be a geological contact (limestone-quartzite?).

Soil Geochemistry:

174 soil samples were collected at 20 metre intervals along all lines. The areas of basalt or basaltic soils are well defined by high Cu/Zn/Ni/Co and low Pb. Some interesting anomalies occur further west including a Pb/Ba anomaly at 500N 460E which is possibly in a similar stratigraphic position to the mineralisation at Ray's Prospect. A Pb/Zn/As/Ba anomaly occurs at 500N 240E and probably overlies Silurian quartzites. A Pb/As anomaly at 720N 400E could overlie quartzites of either Silurian or Ordovician age.

Rock Geochemistry:

No rock samples were taken due to the lack of outcrop.

Stream Sediment Samples:

15 stream sediments and three pan concentrates were collected from White Hawk Creek and its tributaries (see Appendix III, samples 2866 to 2882 and Appendix IV, samples 2867, 2873 and 2892). There were no obvious anomalies apart from a result of 30 ppm W in a small tributary (sample 2877). This value is possibly due to granitic glacial debris which is known to occur in this area.

Conclusions:

The Dighem anomalies have probably been recovered on the ground and appear to be caused by either an edge effect of the basalt or a basal alluvium layer in the case of the eastern anomaly and a geological contact for the western anomaly. The latter anomaly has not been recovered with certainty. Three small soil anomalies were found, one of which may bear some relation to mineralisation at Ray's Prospect and/or White Hawk Mines.

Recommendations:

The recovery of the Dighem anomalies should be confirmed by extending line 300N a further 100 metres west and pegging and surveying a new line at 100S 200E to 650E. The three soil anomalies should be further investigated by digging pits to bedrock and perhaps a max-min line over the more interesting Pb/Ba anomaly. Sample 2877 should be resampled. A search could be made for the Cambrian granite outcrop which is expected to lie at about 550S 1200E. This work is estimated to require a crew of four men and one geologist for two days.

ANOMALY 4 : FURY VALLEY

Anomaly Description:

This is one of the best Dighem anomalies in the area. It lies to the northeast of Anomaly 5 and is possibly a continuation of this. It is a long conductive zone with a strike length in excess of one kilometre and is best modelled as a vertical dyke with conductance of 15 mhos and depth below surface of 25 metres. The anomaly occurs at line 39/603.7, line 41/630.6, line 42/637.65, line 44/666.8 and line 45/685.9. Associated with it are magnetic anomalies of 60 nT, 90 nT, 90 nT, 20 nT and 10-20 nT respectively. All dips appear vertical.

The photogeological plan shows only Precambrian metapelites near the anomaly. Four probable faults are marked in the area, two of which have a trend subparallel to the anomaly but not coincident with it.

Location:

The strongest part of the anomaly is located at AMG 5 383 160N 395 530E. It is covered by 1:20,000 colour airphoto run 8/058. The area is shown on drawing 046. There are no ground data profiles as no gridlines were cut.

Access and Terrain:

The only practical means of access is by helicopter to a pad and campsite alongside the Fury River to the east of the area. An access track has been cut from this site for one kilometre southwest to the anomaly from where flagging extends another kilometre to the westernmost streams sampled.

The area lies on the flanks of Mt Romulus and thus the slopes may be steep. Vegetation varies from open forest to thick horizontal scrub.

Gridding:

No gridlines were cut in this area.

Geology and Mineralisation:

The Precambrian rocks in this area are dominated by phyllites and mica schists with minor quartzite and black graphitic phyllite horizons. Quartz veining is common in these metasediments, but is apparently barren of mineralisation. The veins vary from short pods in the foliation to fold-contorted veinlets. In the western part of the area fine-grained acid quartz-hornblende-felspar porphyries occur as steeply dipping dykes intruded along the Precambrian foliation. They are less than 10 metres thick and in some cases there may be sills. They are more like the Cambrian Mt Reid Volcanics than Devonian granitic dykes. Rock samples 3271 and 3272 were float of red, medium-grained, biotite granite and crystal tuff, which were probably derived from outcrops in the Mt Romulus area.

Quaternary fluvioglacialls form an extensive cover south of the Fury River and may be up to 100 metres thick. They are composed of quartzite, phyllite and granite and may be a terminal moraine outwash from a glacier which flowed north from Granite Tor entering the Fury Valley two kilometres southeast of the work area. The glacials consist of coarse boulder beds with granite blocks to eight metres and interbeds of varved silts and clays. They were originally more extensive as granite erratics occur on the highest slopes. Streams in the area may contain residual heavy mineral, e.g. cassiterite, derived from the glacials. A quartz-cassiterite vein in a granite erratic was seen at one point.

Mineralisation in the area is limited to minor pyrite in darker phyllites and Cambrian dykes.

Ground E-M:

None was carried out.

Ground Magnetics:

None was carried out.

Soil Geochemistry:

No soil sampling was done.

Rock Geochemistry:

Sixteen rock samples were taken and analysed. They included both metasediments and volcanics. The most interesting values were in sample 3270, a fine-grained massive quartzite with iron-stained fractures which contained 185 ppm lead, sample 3274, a fine-grained dark grey tuff with or without quartz phenocrysts and possible minor sphalerite which contained 200 ppm lead, 65 ppm copper and 1100 ppm zinc, and sample 3279, a medium-grained felspar-hornblende (?) intermediate volcanic (?), which contained 55 ppm lead and 140 ppm zinc. Other rocks including three graphitic phyllites and graphitic siltstone gave low levels of basemetals.

Stream Sediment Sampling:

27 stream sediment samples and 27 corresponding pan concentrates were collected (see Appendix III and IV, samples 2585 to 2600, 2801 to 2838). Sediment samples 2823 to 2828 all had anomalous basemetal contents, particularly in lead and zinc, although Cu, Co, Mn and As were also commonly anomalous. Pan concentrates 2807, 2810 and 2811 had anomalous lead contents as well as either molybdenum or arsenic. All these samples came from streams draining the saddle at Romulus East where high lead levels were recorded in the soils.

Conclusions:

The Dighem anomaly is most probably caused by graphitic horizons in the Precambrian (see samples 3268, 3269, 3281). The high basemetal values encountered in the streams are probably related to the anomalous soils at Romulus East (see Anomaly 5) and a successful investigation at that location should suffice to explain the anomalous geochemistry in both areas. The full relationship of the Cambrian rocks to the Precambrian is not as yet understood, particularly in the case of the reported "tuffs" (samples 3271, 3274, 3275).

Recommendations:

Since the work in the Fury Valley was carried out by contractors, no Shell personnel have examined the outcrops. It is suggested that the area be thoroughly reconnoitred with a view to understanding the Cambrian-Precambrian relationship. It is also recommended that VLF readings be taken along the cut access track to verify that the graphitic metasediments are in fact the source of the Dighem anomaly. The work would require two geologists for two days.

Late Note:

The magnetic anomalies have not been explained above. There are two possible causes of these :-

1. a dissemination of pyrrhotite in the graphitic horizon, or
2. a contact effect due to an acid dyke which has been observed in this area.

ANOMALY 5 : ROMULUS EAST

Anomaly Description:

This Dighem anomaly is one of the best encountered in the survey. It has a strike length in excess of one kilometre and may be a continuation of the Fury Valley anomalies (see Anomaly 4). It best fits a westerly dipping thin dyke model with a conductance of about 6 mhos and a depth of 15 metres. The photogeological plan shows the anomaly to overlie a vegetation anomaly within Precambrian quartzites. A possible parallel-trending (i.e. north-easterly) anticlinal axis lies about 100 metres to the southeast.

Location:

The strongest point on the anomaly lies at AMG 5 383 160N 395 530E. It is covered by 1:20,000 colour airphoto run 3/037. The position of the grid which is known as Romulus East is shown on drawings 045 and 046. Ground data profiles are on drawings 036 to 039 and 050.

Access and Terrain:

Access is best gained by helicopter to a rough pad cut on the eastern side of the grid. Alternatively foot access is possible from the Romulus West campsite, but this requires some scrub-bashing. The grid straddles the crest of a ridge resulting in moderate slopes. The vegetation is mainly ti-tree and related scrub plus some bauera with the western edge of the grid penetrating mild horizontal scrub. The grid ranges in altitude from 818 to 712 metres above sea level.

Gridding:

Some 2.5 kilometres of grid lines have been cut and flagged at 20 metre intervals. This included a baseline (00E) bearing 188° magnetic and seven crosslines as follows:-

00E	100N	to	400S
400S	140E	to	240W
200S	140E	to	240W
100S	00E	to	200W
50S	00E	to	200W
00N	140E	to	350W
50N	00E	to	200W
100N	00E	to	200W

Geology and Mineralisation:

The only rocks observed in the area were Precambrian metasediments including quartzite, cream-brown schists, phyllites and at least one horizon of graphitic phyllite approximately 30 metres thick (00N 60W). Outcrop is poor and mapping was mainly done from chips in soil auger holes. A thin veneer of Quaternary fluvioglacial occurs on the most southern line (400S) and granite erratics occur throughout the grid area.

The only sign of mineralisation observed was minor iron staining in quartzites, possibly due to pyrite. Approximately 800 metres north of the campsite, float boulders of red, possibly Cambrian granite and quartz crystal tuff (?) were found. These may, however, have suffered glacial transport.

Ground E-M:

VLF measurements were taken on lines 100N, 00N, 100S, 200S, 400S and baseline 00E. A strong dip angle and amplitude anomaly was found to cross lines 100S, 200S and 00E at 150W, 60W and 280S respectively. This trend runs across the strike projected from mapping, but parallels the topography. It is supported by a weaker but parallel anomaly at 00N 80W and 00E 100S. The main anomaly should cross line 00N at 220W-250W but unfortunately VLF measurements were not carried this far west. Two isolated anomalies occur at 400S 140W (strong) and 100N 80W (weak). Some of the anomalies coincide with mapped black phyllites, e.g. 00N 80W. A close examination of the data on the northern three lines (100N, 00N and 100S) shows a less distinct trend in the readings which more closely aligns with the geological strike.

As a check on the VLF measurements, the max-min system was run along line 00N. Topographically corrected results have not been received at this time, but there is thought to be an anomaly between 10W and 120W, whose source is broad (or possibly multiple thinner sheets) and steeply east-dipping or vertical. A traverse was later carried out using the prototype vertical loop SE-88 Genie system at 50m and 100m separations. Anomalies were detected at about 85W and 245W using the 50m separation and at 115W using the 100m separation.

Ground Magnetics:

All lines except 50N and 50S were traversed by magnetometer. The response was exceptionally flat with no anomalies being detected. There was a slight regional gradient to the west of about 100 nT per kilometre.

Soil Geochemistry:

Initially the lines were soil sampled at 20 metre intervals, but on detecting some elevated basemetal values, parts of the grid were resampled at five metre intervals and some additional lines were cut. Except on line 400S where a veneer of glacials is present the soils are generally residual and fairly shallow. One of the early samples (00N 100W) contained 4400 ppm lead, 6800 ppm zinc and 560 ppm arsenic, however, resampling reduced these values considerably. In general, the soils were unusually high in lead and often arsenic, although the distribution of values is somewhat erratic. Occasionally copper or zinc values are slightly elevated. Follow-up analyses for gold and tin proved negative. Altogether 187 soil samples have been taken on this grid.

Rock Geochemistry:

Six rock samples were taken. Sample 2841, an iron-stained quartzite showing shearing and tension gash quartz veinlets, contained 100 ppm lead and 110 ppm arsenic. Sample 2840, another iron-stained quartzite contained 60 ppm lead (see Appendix II). The possible Cambrian rocks found north of the grid (see Appendix II, samples 3271 and 3272) were unremarkable in their basemetal content.

Stream Sediment Samples:

Two streams draining northward from the grid were sampled (see Appendix III and IV, samples 2810, 2811, 2827, 2828). They all contained relatively high levels of lead and sample 2827 also contained 300 ppm zinc and 4000 ppm manganese.

Conclusions:

The high lead content of the soils appears to be related to iron-stained quartzites rather than the graphitic phyllites which occur in the area. These graphitic rocks are probably the cause of the Dighem anomaly but do not completely explain the ground VLF E-M anomalies whose trends are at 40° to the airborne feature. The possibility of Cambrian acid porphyry dykes occurring in the area should be considered as such rocks outcrop along strike to the north (see Anomaly 4). A dark grey fine-grained tuff containing 200 ppm lead and 1100 ppm zinc was also found in this area.

Recommendations:

It is recommended that a series of pits to bedrock be dug on some of the anomalous geochemical and geophysical features. Suitable locations would be 50N 140W, 00N 100W, 00N 75W, 100S 150W, 00N 245W and 200S 60W. Hopefully this will provide more positive geological data with which to explain the anomalies. This is estimated to require four men and one geologist for one day.

ANOMALY 6 : BROUGHAM RIVER

Anomaly Description:

This is a single point anomaly showing an inverted in-phase response probably due to magnetite. It was observed at line 61/900.4. There is a slightly offset magnetic anomaly of 80nT at line 6200/1884.0 and of somewhat lower magnitude at line 61/900.3. It trends approximately 070°.

The photogeological plan indicates Precambrian quartzites occur in this area with fluvio-glacial deposits in the Brougham River valley. Devonian granite is shown 800 metres to the south.

Location:

The Dighem anomaly is located at AMG 5 381 540N 394 120E and the magnetic anomaly maximum some 200 metres west. The area is covered by 1:20,000 colour airphoto run 3/038. The position of the grid which is known as Brougham River is shown on drawing 048. Ground data profiles for the gridlines are on drawings 040, 041, 042 and 054.

Access and Terrain:

Access can only be gained by helicopter, a good landing site being available at an old campsite alongside the Brougham River. Inne's track, which was partially cleared in early 1980, passes 50 metres east of the campsite. Alcoa's Mt. Swallow gridlines also provide local access. The anomaly is located on the opposite side of the river from the campsite and is inaccessible in times of flood. The terrain is undulating and vegetation varies from open buttongrass to heavy ti-tree to thick horizontal scrub. The range in altitude over the grid is from 423 to 505 metres above sea level.

Gridding:

Some 1.6 kilometres of grid lines were cut and flagged. This included a short baseline (300E) bearing 328° magnetic and five crosslines as follows:

300E	520N	to	720N
520N	120N	to	470E
620N	50E	to	500E
720N	120E	to	470E
570N	50E	to	170E
670N	50E	to	170E

The latter two lines were added to check a soil geochemical anomaly.

Geology and Mineralisation:

Outcrop in the gridded area is poor but bedrock is usually within 0.5 metres of surface. Precambrian grey-black phyllites occur throughout with little lithological variation. Possible hornfelsing occurs at 720N 150E. Fluvio-glacial deposits lap onto the western edge of the grid and form a veneer to the east. Mapping on the nearby Swallow Grid has shown that the Devonian granite to the south dips shallowly beneath the metasediments with attendant hornfelsing and some chloritisation. Small granitic dykes and sparsely mineralised quartz veins cut the country rock. Some of the former appear to be associated with localised magnetic anomalies. In addition, some of the hornfelsed sediments are strongly pyritic.

Ground E-M:

VLF measurements were carried out on line 620N only. No significant anomaly was recorded although a vague dip angle crossover occurred where fluvio-glacials lapped onto the phyllites, i.e. at about 350E.

Ground Magnetism:

Lines 300E, 520N, 620N and 720N were traversed by magnetometer. The results show a regional gradient rising to the north-east (grid). The airborne magnetic anomaly was not apparent on the ground.

Soil Geochemistry:

A total of 134 soil samples were taken. Initial sampling showed a minor single point Cu/Pb/Zn/As anomaly at 620N 120E. Additional sampling at five metre intervals showed only a very slight arsenic anomaly at this location but a narrow Zn/As anomaly on line 670N (see drawing 054).

Rock Geochemistry:

Four samples were taken of the metasediments. Analysis showed them to have low levels of basemetals (see Appendix II).

Stream Sediment Samples:

Two small streams draining the grid were sampled (samples 3238 and 3239). Analyses showed them to have low levels of basemetals and slightly elevated tin contents (see Appendix III). The latter is probably due to granitic glacial debris which was observed in the streams.

Conclusions:

The Dighem anomaly or magnetic anomaly has not been located. It is probable that the magnetic anomaly is the same one investigated by Alcoa to the south-east during the 1979-80 season in which case the Dighem flight recovery is in error by some 500 metres. The minor soil geochemical anomalies have no areal extent and in addition are not easily repeatable. They are probably related to small sulphide-bearing quartz veins or to glacial deposits.

Recommendations:

No further work is recommended on this grid. However, if Shell exercises its option on Area B it is recommended that the magnetic anomaly at 5000E 5120N on the Swallow Grid (which is probably the Dighem anomaly) be further investigated by more closely spaced gridlines, E-M, magnetism and soil samples. Such a program is estimated to take about four days for a crew of four men and one geologist. In the event, it would probably be part of a longer program on this grid.

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716041

ANOMALY 7 : SWALLOW WEST

Anomaly Description:

This single-point anomaly is a moderate conductor of about 2 mhos at line 72/1026.9. There appears to be a magnetic contact associated with it.

The photogeological plan shows it to lie within Precambrian metapelites, but close to the edge of extensive fluvioglacial deposits of the Sophia Valley.

Location:

The anomaly lies due west of Mt Swallow at AMG 5 380 590N 391 360E. It is covered by 1:20,000 colour airphoto run 2/027 and by drawing 045.

Terrain and Access:

Access to the area is by boat across Lake Mackintosh. The ground rises steeply from the edge of the lake at 230 metres to Mt Swallow at about 760 metres above sea level. Vegetation is low ti-tree with patches of thick, sometimes scrubby forest, especially along the drainages. Examination of the area by helicopter and later by boat showed the actual plotted position of the anomaly to be well below the current lake level.

Gridding:

None was carried out.

Geology and Mineralisation:

Examination of the area from a boat indicated that there was probably little outcrop. The drainage pattern on the western flank of Mt. Romulus suggests that bedrock may be covered by a layer of Pleistocene glacials or by thick scree deposits.

Ground E-M:

None was carried out.

Ground Magnetics:

None was carried out.

Soil Geochemistry:

No samples were taken.

Rock Geochemistry:

No samples were taken.

Stream Sediment Samples:

None were taken.

Conclusions:

Investigation of this anomaly is precluded by the lake waters.
A possible source for the anomaly is thick colluvial deposits at the base of the hillslope.

Recommendations:

No further work is recommended.

ANOMALY 8 : ALEXANDRA HILLS

Anomaly Description:

This Dighem anomaly has a north-south strike length of greater than 400 metres and is open to the south where it is strongest. It shows on four lines, viz. line 110/2121.4 and line 111/2113.3 where it is a moderate and thick conductor and line 108/1522.4 and line 109/1514.3 where it is a poor conductor. It would appear to be at shallow depth or outcropping and it has an associated magnetic anomaly of 20nT. Also included in the grid area is a minor single point anomaly at line 111/2113.1.

On the photogeological plan the anomaly overlies a deposit of fluvioglacial which is underlain by Precambrian metapelites and probably some quartzite. Devonian granite outcrops some 800 metres to the west and a major north-south shear zone may lie immediately to the west of the anomaly.

Location:

The strongest part of the anomaly is located at AMG 5 375 100N 390 360E. It is covered by 1:20,000 colour airphoto run 2/025. The position of the grid which is known as Alexandra Hills is shown on drawing 048. Ground data profiles for the gridlines are on drawings 030 to 035.

Access and Terrain:

Access is best gained by helicopter, landing sites being available within the gridded area. Alternatively foot access is available in dry weather from Lake Mackintosh by walking some two kilometres along Sophia River and Granite Creek. The terrain over the gridded area is flat and swampy with buttongrass and ti-tree predominant. The altitude is approximately 250 metres above sea level.

Gridding:

Some 2.8 kilometres of grid lines were cut and flagged at 20 metre intervals. This included a baseline (260W) bearing 348° magnetic and five crosslines as follows:-

260W	200S	to	200N
200S	600W	to	260W
100S	500W	to	00W
00N	500W	to	00W
100N	400W	to	00W
200N	500W	to	00W

No slope corrections were required. The southern most line crosses Granite Creek several times.

Geology and Mineralisation:

Quaternary gravels and sands almost completely obscure outcrop within the grid area. These gravels are well exposed in the bank of Granite Creek at 200S 350W where they are greater than four metres thick. The gravels are most likely underlain by Precambrian phyllites, schists and minor quartzites, the closest outcrop to the Dighem anomaly being a grey phyllite at 00N 440W. Despite the paucity of outcrop, early prospectors have located pyrite-arsenopyrite (- bismuth ?) mineralisation associated with quartz veining in black phyllites at 180S 590W. This has been tested by an adit driven at 167° for 28 metres. This lies southwest of the main Dighem anomaly but correlates well with the single point anomaly. Although a sample of the adit ore contained 1700 ppm bismuth, no bismuth minerals have been detected in polished section (see Appendix VII, sample 3297).

Ground E-M:

VLF measurements were carried out on all crosslines. Dip angle readings were quite noisy and there are no outstanding anomalies. A slight dip angle and field intensity anomaly at 100S 450W may correlate with a similar anomaly at 200S 590W passing close to the mineralised adit. A further isolated dip angle/field intensity anomaly occurs at 100N 120W.

Ground Magnetics:

All lines were traversed by magnetometer. A broad (approximately 200 metre north-south and east-west) low amplitude (<70nT) magnetic anomaly is centred on about 00N 240W. A calculation of depth to the top of the causative body gave 70 metres below surface. There are no real clues to its nature.

Soil Geochemistry:

Since most of the grid area is underlain by compact fluvioglacial gravels, sampling was limited to some residual soils at the western end of line 200S (see drawing 034). Anomalous arsenic or bismuth values (not coincident) occur between 560W and 600W reflecting the mineralisation in the adit.

Rock Geochemistry:

Sample 3286 was from quartz-rich ore dumped at the adit entrance. It assayed 16.4% As, 1700 ppm Bi, 750 ppm Co and 180 ppm Pb, but had background levels of Cu, Zn and Sn. Also of interest is the 55 ppm Sn in sample 3285, a contorted graphitic schist with minor pyritic stringers which is the host rock to the mineralisation. Other rock samples yielded no values of interest (see Appendix II).

Stream Sediment Samples:

Eight stream sediment samples and corresponding pan concentrates were collected. The latter commonly contained fine black and coarser (1 mm) red translucent grains and most showed anomalous levels of tin and/or tungsten. Samples 3244, 3246 and 3248 are not readily explained by drainage from granite or glacial deposits and are worthy of further investigation.

Conclusions:

No firm conclusion can be drawn about the cause of the Dighem anomaly due to the difficulty of locating it on the ground using VLF. However it would appear to be formational. The spot anomaly at line 111/2113.1 is probably related to the mineralised graphitic horizon seen in the adit. The fact that tin, albeit at a low level is present in association with bismuth and arsenic in these workings is significant since this is a typical assemblage at both Renison and Cleveland. The unexplained Sn/W stream anomalies indicate either an area of mineralisation or more extensive glacial deposits.

Recommendations:

The following grid extensions are suggested to close the E-M and geochemical anomalies in the south; 100S 500W to 600W, 200S 600W to 700W, 300S 00W to 700W. The grid should be resurveyed with a deeper penetrating E-M technique such as the Max-min system. If a coincidence is found between E-M and magnetics then consideration should be given to some method for sampling below the glacials since conventional soil sampling is not feasible over most of the grid. The unexplained stream anomalies should be tracked down by repeated sampling upstream and geological reconnaissance. The granite contact should be located if possible and an attempt made to determine its attitude.

This is estimated to require a geologist and four men for three days.

ANOMALY 9 : SOPHIA

Anomaly Description:

The anomaly represents a moderate conductor with conductance about 5 mhos. It has a westerly dip and lies at a depth of about 20 metres. It was observed on two lines at line 108/1524.7 and line 109/1512.0 and has an apparent north-easterly trend. The anomaly is closed off to the north and south and no associated magnetic feature was observed.

The photogeological plan shows Precambrian quartzites and pelites in the area with patches of overlying glacial deposits. The anomaly itself may lie on a local anticlinal axis. It is about 150 metres east of the Cambrian-Precambrian unconformity.

Location:

The anomaly is located at AMG 5 376 100N 389 160E. It is covered by 1:20,000 colour airphoto run 2/025. The position of the "grid" which is known as Sophia is shown on drawing 048. Ground data profiles of the grid lines are on drawing 043.

Access and Terrain.

This area is readily accessed by boat from Lake Mackintosh although a helipad and campsite are available if required. The Lake has partially flooded the area of the anomaly. Vegetation consists of low scrub and grasses in the east with thicker swamp vegetation and minor horizontal scrub in the west. The altitude range on the grid is from 241 to 265 metres above sea level based on the topographic plan. In practice the lowest point on the lines is at maximum lake level, i.e. about 230 metres above sea level.

Gridding:

Some 860 metres of rough grid lines were cut in this area. This included two east-west lines and one north-south line (00E). The lines are as follows:-

00E	00N	to	320S
00N	00E	to	400E
400S	00E	to	140E

The eastings on 400S do not correspond with the other lines. Lines 00E and 400S both finish at the lake's edge.

Geology and Mineralisation:

Outcrop in the immediate area of the anomaly is either covered by lake waters or obscured by quartzose talus from the Precambrian. However, from mapping around the area the anomaly appears to be within foliated quartzites and phyllites. There are two distinct deformation styles. One involves foliation, brecciation and a loss of recognisable bedding and the other is represented by undeformed thinly bedded quartzite with siltstone partings and preserved sedimentary structures (this is probably peripheral Cambrian sediments with the former being Precambrian). Cambrian acid volcanics outcrop 100 metres west of the Dighem anomaly and their eastern contact strikes approximately north-south. The volcanics include felspar-quartz crystal tuff with minor volcaniclastic fragments and quartz-hornblende porphyry (groundmass fine and vitric).

Brown soils with gossanous fragments occur at OON 210-250E. This soil is 0.5 metres thick and overlies angular quartzose gravels and sands. The gossanous material would appear to have been transported, being derived from the weathering of iron-rich volcanics 100 metres to the west.

Ground E-M:

Lines OON and 400S were covered with VLF measurements. A dip angle and slight field intensity anomaly at OON 70E probably coincides with the eastern boundary of the Cambrian Volcanics. A dip angle anomaly at 400S 100E coincides approximately with a change of slope. This marks the boundary of quartzites with a metapelite sequence. It possibly corresponds to the airborne anomaly.

Ground Magnetics:

Lines OON and 400S were traversed by magnetometer. Two small anomalies were noted. A 45 nT feature at OON 220E overlies the "transported gossan." At 400S 60E a 40 nT anomaly overlies an area of grey phyllite subcrop but probably has a source which dips shallowly east.

Soil Geochemistry:

A total of 22 soil samples were taken. The area of "transported gossan" showed as a strong Pb/Zn/As anomaly. A very minor Cu/Ni anomaly occurred at the change of slope on line 400S.

Rock Geochemistry:

Four rock samples were taken. Sample 3293 from the "gossan" was highly anomalous in Zn, As and Ba. Sample 3296, a sheared acid tuff contained elevated lead and barium levels.

Stream Sediment Samples:

Two stream sediment samples were taken but showed no anomalous metal values.

Conclusions:

It is not certain whether the Dighem anomaly has been recovered. Its location may now be under water. The gossanous material appears to offer limited possibilities for mineralisation.

Recommendations:

It is suggested that the "transported gossan" be penetrated with pits at two or three places to confirm that it is fully transported. At a time when the lake level is low it may be possible to run a max-min line across the flooded area west of line 400S to definitely locate the Dighem anomaly.

ANOMALY 10 : VICTORIA PEAK

Anomaly Description:

This single point Dighean anomaly is a moderate conductor with conductance about 5 mhos. Its source appears to have an easterly dip and lies at a depth of about 20 metres. It is located at line 201/1089.0. There is an associated 60 nT magnetic anomaly.

The photogeological plan shows the anomaly to lie at the boundary between Precambrian quartzite and pelite units about one kilometre east of the Cambrian/Precambrian unconformity.

Location:

The anomaly is located at AMG 5 369 760N 391 000E. It is covered by 1:20,000 colour airphoto run 1/012. The position of the grid which is known as Victoria Peak is shown on drawing 049. Ground data profiles of the gridlines are on drawings 005, 006, 008, 051 and 052.

Access and Terrain:

The only access to this area is by helicopter to a pad sited near the grid baseline. The two southern grid lines cross a deep ravine and a climbing rope is needed to traverse line 200N. Most of the grid is inaccessible after heavy rain. Vegetation consists of buttongrass, ti-tree and bauera over the quartzites on the eastern side of the grid changing quickly to horizontal scrub and rainforest as one moves west. The altitude range on the grid is from 294 to 445 metres above sea level.

Gridding:

Some 2.5 kilometres of grid lines have been cut and flagged. This included a baseline (1000E) bearing 015° magnetic and five crosslines as follows:-

1000E	200N	to	800N
200N	600E	to	1000E
400N	600E	to	1000E
500N	700E	to	900E
600N	600E	to	1000E
800N	600E	to	1000E

Lines 200N and 400N cross a major creek in a deep ravine and line 1000E crosses the same creek further upstream.

Geology and Mineralisation:

The lithologies encountered here are similar to those on the Murchison grid, although the two areas are not on strike and are part of separate metapelite belts. On the airphoto there appears to be a major fracture trending north-northeast along the ravine described above.

Massive quartzites and quartz-sericite schists outcrop in the south-eastern corner of the grid but across the creek to the north the rocks are covered by a veneer of glacial debris. To the west of these quartzites is a sequence of pelitic schists typically carrying some carbonaceous material. They include carbonaceous phyllite, dark grey schists, carbonaceous quartzite and laminated schists. The lithologies gradually become more siliceous as one moves west with quartzites and quartz-sericite schists on the western edge of the grid. Iron staining and pyrite mineralisation were observed at several locations in the carbonaceous phyllites and dark grey schists. Several seepage zones heavily stained by iron-oxide occur in the areas of pelitic rocks.

Ground E-M:

VLF measurements were taken on all lines. A dip angle anomaly was encountered on all crosslines except 800N where it appears to have closed off. It is also weakening on line 200N. The maximum is at 600N 750E where a field intensity anomaly was also observed.

Ground Magnetics:

All lines were traversed by magnetometer. Two parallel trending magnetic anomalies were observed. The smaller is located at 200N 790E and 400N 820E and reaches a maximum 200 nT. The larger is at 400N 770E, 500N 770E and 600N 790E and reaches a maximum 750 nT. This would appear to be due to a near vertical body somewhat less than 10 metres wide. The magnetic anomalies are closely though not exactly associated with the VLF features mentioned above.

Soil Geochemistry:

A total of 248 soil samples have been collected on this grid. Initial sampling was at 20 metre intervals with follow-up work at five metre intervals. Many small basemetal anomalies show up in the close-spaced sampling and these may simply reflect the observed rapid changes in lithology amongst the pelitic rocks. The combination Cu/Zn/Fe/Ni occurs repeatedly and almost certainly represents a specific lithology. There are three anomalies which show some promise in terms of mineralisation: These are at 200N 795E, a Cu/Pb/Zn/As/Fe/Mn/Ba/Au? anomaly which is also coincident with magnetic and VLF anomalies, at 400N 720E, a Cu/Pb/Zn/As/Fe/Mn/Ni anomaly close to a VLF anomaly and at 400N 830E, a Cu/Pb/Zn/Fe/Ni anomaly associated with what is probably the same magnetic feature as at 200N 795E.

Rock Geochemistry:

A total of 36 rock samples were taken in the area (see Appendix II, samples 2522 to 2567). In addition four iron-rich clayey sludge samples were taken from seepages (samples 2568, 2569, 2571, 2572). Samples 2568 and 2569 contained anomalous lead and arsenic, while sample 2571 contained anomalous arsenic only. Sample 2568 came from 200N 785E. None of the rock samples had high basemetal levels.

Stream Sediment Samples:

Seven stream sediment samples were taken in the area (see Appendix III, samples 2562 to 2570). There were no obvious geochemical anomalies amongst these.

Conclusions:

The Dighem anomaly has been recovered on the ground using VLF measurements. Its source would seem to be one of two possibilities, i.e. either graphitic horizons in the more pelitic rocks or an accumulation of magnetic minerals along a fault or fracture. The airborne magnetic anomaly has also been recovered on the ground and has been resolved into two narrow parallel anomalies of limited strike extent whose source is also unknown. There are iron-rich seepages close to the magnetic/VLF anomaly which contain interesting values of lead and arsenic. Three moderate soil sample anomalies also lie along this zone. Despite this, the levels of basemetals are generally of a low order and erratic, and the area cannot be considered highly prospective.

Recommendations:

It is suggested that a limited amount of test-pitting be carried out to try and establish the source of the anomalies. Further geochemistry is unlikely to clarify the picture. Locations for such pits are as follows (to be modified by detailed magnetic or VLF readings where appropriate): 200N 790E, 400N 720E, 400N 830E, 600N 790E and 600N 750E. This is estimated to require one geologist and four men for one day.

ANOMALY 11 : MURCHISON

Anomaly Description:

This is a long linear north-northeast trending conductive zone with a strike length of greater than 2.3 kilometres. It is open to both north and south. It exhibits conductances of up to 46 mhos (line 202/1102.6). Some fourteen flight lines cross the anomaly and these are numbered between lines 201 and 219. There is an associated magnetic anomaly of 300 nT on line 201, however, its intensity decreases along strike to the south. There is no strict correlation between magnetics and the conductor over the southern half of the strike length.

The photogeological plan shows the anomaly to lie over interbedded Precambrian quartzites and metapelites close to their contact with a peripheral sedimentary unit of the Cambrian Mt Read Volcanics.

Location:

The strongest point on the anomaly is located at AMG 5 369 470N 389 890E. It is covered by 1:20,000 colour airphoto run 1/013. The position of the grid which is known as Murchison is shown on drawing 049. Ground data profiles of the gridlines are on drawings 002, 003, 004 and 053.

Access and Terrain:

Access is best gained by helicopter with good landing sites available on the high quartzite ridge to the east of the anomaly. An excellent landing pad has recently been cleared by the H.E.C. close to where the Dighem anomaly crosses the Murchison River. This river forms a major obstacle to examining the northernmost part of the anomaly as a boat is required for the crossing and no helicopter landing sites are available on the north side of the river. The terrain is very steep as the anomaly runs along a deeply cut creek. Vegetation ranges from ti-tree and bauera to horizontal scrub with some patches of more open rainforest. The ridges to the east and west of the anomaly are capped with buttongrass and ti-tree. The altitude range on the grid is from about 241 to 473 metres above sea level.

Gridding:

Some 4.2 kilometres of grid lines have been cut and flagged. This included a baseline (1000E) bearing 010° magnetic and five crosslines as follows:-

1000E	1000N	to	2330N
1000N	60E	to	1000E
1640N	300E	to	1000E
2280N	600E	to	800E
2330N	300E	to	1000E
2380N	600E	to	800E

All crosslines cross a creek in a deeply cut ravine.

Geology and Mineralisation:

Most of the grid appears to lie on Precambrian quartzites, schists and phyllites, either as separate units or closely interbedded. Some quartz-pebble conglomerates occur but generally the more siliceous rocks are massive with no recognisable bedding. The schists and phyllites are generally grey or dark grey with occasional carbonaceous horizons. Quartz veining is common along the cleavage in the schists and occasionally minor iron sulphides are found in the veins. Some of the carbonaceous phyllites are themselves pyritic. In the southern bank of the Murchison River a zone of spongy iron-oxide approximately two metres wide occurs in carbonaceous phyllites. It appears to be due to seepage or weathering of disseminated sulphides rather than a massive sulphide gossan.

Cambrian Mt Read Volcanics which unconformably overlie the Precambrian occur at the western end of line 1000N. They consist in the main of sheared acid porphyry cut by an intrusive dyke (?) of more intermediate material. The exact position of the unconformity is open to debate, however, it is likely that some quartzitic sediments occur in the Cambrian. Due to a paucity of outcrop much of the mapping has been inferred from examination of soil samples. On steep slopes scree probably obscures some of the geological boundaries.

Ground E-M:

The three major cross-lines (i.e. 1000N, 1640N, 2330N) were covered by VLF measurements but the results are somewhat inconclusive. There appear to be weak anomalies at approximately 1000N 800E, 1640N 720E, 2330N 720E and possibly 1640N 420E. A correlation can possibly be made among the first three of these, although there appears to be little similarity in the geological context. An anomaly was expected over the carbonaceous rocks, however, none was observed.

A test traverse over part of line 2330N was made with the Scintrex SE-88 Genie system. This showed a very large anomaly between 610E and 750E with smaller sharper anomalies at 425E and 535E (positions to be confirmed). The large anomaly undoubtedly corresponds to the Dighem feature.

Ground Magnetism:

All lines were traversed by magnetometer. An anomaly of some 1300nT was observed first on line 2330N and later on lines 2280N and 2380N. It would appear to be caused by two distinct west-dipping lenses with maximum widths of less than 15 metres. The iron-oxide zone in the banks of Murchison River is approximately along strike.

At 2330N 430E and 560E there are low broad anomalies which are probably due to slightly magnetic metasedimentary formations. At the western end of line 1000N as one crosses the probable position of the Cambrian boundary the magnetic field begins to decrease to the west which is probably the negative component of a large anomaly seen on the airborne magnetics.

Soil Geochemistry:

A total of 238 soil samples were collected. Two minor anomalies were detected initially on line 2330N, and these were followed up by sampling at five metre intervals.

The following significant anomalies were noted on lines 2330N, 2280N and 2380N:

- 2280N/605-615E - moderate Fe/Cu(?) anomaly
- 2380N/610E - single point Fe/As/Cu/Pb(?) anomaly
- 2330N/425-435E - moderate base metals with high Fe and peripheral gold values.
- /665E - strong Fe anomaly with minor gold 15 metres west.
- /720E - single point Cu/Zn/Ni/Fe/Mn anomaly.

The anomalies on line 2330N are all associated with magnetic anomalies, the correspondence being precise except for a 20 metre offset in the case of the feature at 720E. This anomaly, however, coincides with a VLF E-M anomaly.

On the other two lines the only features noted were a minor lead anomaly at 1640N 930E and elevated Pb, Zn and Ba values associated with the intermediate intrusive in the Cambrian on line 1000N. No explanation can be offered for the former feature and the latter is not considered unusually high.

Rock Geochemistry:

21 rock samples were taken including a series of chip samples of carbonaceous phyllite outcrops along the main creek (see Appendix II, samples 2501 - 2521). The only high values encountered were Pb, Zn and Ba in samples 2514 and 2521 which were both from the probable intermediate intrusive in the Cambrian.

Stream Sediment Samples:

12 stream sediment samples were taken (see Appendix III, samples 2573 - 2584). Sample 2576 which drained an area south of the grid carried anomalous zinc and sample 2578 carried very low level Pb/As which must have a source within the grid area.

Conclusions:

The Dighem anomaly has been recovered by the Genie E-M system and less convincingly by the VLF system. It is probably caused by carbonaceous phyllites. Two lenses of strongly magnetic material lie within the conductive zone and are associated with slightly anomalous basemetals over a very restricted area. This can be considered only moderately prospective since the soils in this area are well developed and residual. The lenses are possibly iron-rich facies of the original sediments or they may be introduced magnetite-rich veins.

The magnetic/E-M soil geochemistry anomaly at 2330N 430E may well have a similar source to the features above but the peripheral gold values make it more prospective.

Recommendations:

It is recommended that three pits be dug on line 2330N at approximately 430E, 665E and 720E, the exact locations to be decided after detailed magnetic readings.

It is suggested also that some stream sediment sampling and geological reconnaissance be carried out on the north side of the river, since the magnetic/E-M anomaly continues to this location. In addition a stream Pb/As anomaly was found here by Pickands-Mather in the mid sixties. This work is estimated to require three men and two geologists for one day.

ANOMALY 12 : MURCHISON

Anomaly Description:

This anomaly is an isolated single point coaxial in-phase feature to the west of the main Murchison anomaly. No associated magnetic feature was observed.

The photogeological plan shows that the anomaly lies in the Cambrian about 200 metres west of the Cambrian-Precambrian unconformity. It is near the contact between a "darwin-type" rhyolite and a peripheral sedimentary unit.

Location:

The anomaly is located at AMG 5 369 460N 389 340E. It is covered by 1:20,000 colour air photo run 1/012. The position of the grid which is known as Murchison is shown on drawing 049. Ground data profiles of the gridlines are on drawings 025, 026 and 027.

Access and Terrain:

The only access to this area is by helicopter to a rough pad on the grid baseline or to an excellent pad to the east near the river. From the latter place a considerable amount of uphill bushbashing is required. The gridlines traverse a steep cliff and the grid covers an altitude range of from 287 to 440 metres above sea level. Vegetation on the high ground is mainly thick ti-tree changing to bauera on the steep slopes and horizontal scrub in the lower areas.

Gridding:

Some 1160 metres of gridlines have been cut and flagged. This included a baseline (130E) bearing 020° magnetic and three crosslines as follows:

130E	2050N	to	2250N
2050N	130W	to	190E
2150N	130W	to	190E
2250N	130W	to	190E

The lower part of line 2150N is best reached via line 2050N.

Geology and Mineralisation:

The eastern part of the grid appears to be in Precambrian massive quartzites. As one moves west to the cliff-line, well silicified quartzites and siliceous conglomerates are encountered. On the cliff face itself there is evidence of shearing, fine NNE-trending quartz veining and slight brecciation. There is no outcrop west of the cliff as there is a thick overburden of quartzite scree. No mineralisation was observed. The cliff may represent a faulted boundary between Cambrian and Precambrian.

Ground E-M:

VLF measurements were taken on the three crosslines but no anomalies were detected. The readings were in fact remarkably uniform.

Ground Magnetism:

The three crosslines were traversed by magnetometer. Two features were observed on all three lines. Firstly, a large anomaly was beginning to appear at the far western edge of the grid. This would be in excess of 500nT and probably represents one of the Cambrian volcanic units. Secondly a small anomaly averaging 25nT appears at around 70E. This gives the impression of being a contact rather than a specific magnetic formation. It possibly represents the buried Cambrian-Precambrian boundary.

Soil Geochemistry:

A total of 49 soil samples were taken, but no significant anomalies were detected.

Rock Geochemistry:

No rock samples were taken.

Stream Sediment Samples:

None were taken.

Conclusions:

The Dighem anomaly has not been recovered on the ground and there is nothing to indicate any possibility of mineralisation.

Recommendations:

It is suggested that the geophysicists be consulted as to the likelihood of this anomaly being non-genuine. If it is considered genuine then a max-min traverse could perhaps be run along line 2250N, the other lines being unsuitable from an access point of view. A more productive means of gaining geological insight into the area would be to carry out mapping of the Murchison River banks by boat (or canoe). This must be done before the Murchison Dam is filled. One day, one geologist and two men would be required to accomplish both jobs.

ANOMALY 13 : BACKWATER

Anomaly Description:

This is a single point Dighem anomaly at line 34/527.4. It is a poor conductor and appears to be on the eastern flank of a broad low amplitude magnetic anomaly. The photogeological plan shows the anomaly to be located on a deposit of fluvioglacialls which in turn overlies the Ordovician Gordon Limestone. A possible north-northwest trending fault also passes through the anomaly. A weak surface (?) anomaly to the southeast at line 34/527.0 is included in the gridded area. It is shown as occurring on Gordon Limestone directly.

Location:

The main anomaly is located at approximately AMG 5 388 480N 394 330E with the weaker anomaly 350 metres to the southeast. However, flight line recovery in this area is somewhat uncertain due to the uniform heavy rainforest which obscures the drainage. Colour airphoto run 7/998 covers the area. The position of the grid which is known as Backwater, is shown on drawings 046 and 047. Ground data profiles for the gridlines are on drawings 062, 063, 064A, 064B and 065.

Access and Terrain:

There are no available helicopter landing sites near the grid. Access is by cut and flagged foot tracks either from the Romulus West campsite and pad (1½ hours) or from Lake Mackintosh near the drowned mouth of Backwater Creek (½ hour). The latter point is difficult to locate unless one is familiar with the area. The terrain over the gridded area is undulating and covered with heavy rainforest including some very thick horizontal scrub. Higher ridges to the southeast are covered by open sclerophyll forest. The range in altitude over the grid is from 254 to 387 metres above sea level.

Gridding:

Some 3.0 kilometres of grid lines were cut and flagged. This included a baseline (200E) bearing 040° magnetic and three crosslines as follows:-

200E	400N	to	800N
400N	200E	to	1000E
600N	200E	to	1200E
800N	200E	to	1000E

All three crosslines cross Backwater Creek.

Geology and Mineralisation:

The entire grid is devoid of basement outcrop, but bedrock is suspected to be the Ordovician Gordon Limestone over much of the grid. Most of the area is covered by glacial deposits of veneers including thick coarse fluvioglacial gravels as exposed in many creek banks and soft laminated silty argillites, e.g. 800N 430E and 400N 490E, with occasional granite erratics. Some basement quartzite (cf Romulus West lines 2400N to 2850) may be indicated by scree on a ridge at about 800N 1160E (beyond the cut grid).

Ground E-M:

VLF readings were taken along all lines. There are no anomalies which can be convincingly correlated between lines, however, there are some isolated anomalies which could correspond to the airborne features. A moderate dip angle and slight field intensity anomaly occurs at 400N 900E while at 800N 990E there appears to be a dip angle anomaly. On line 600N possible weak dip angle anomalies occur at 270E and 1130E. On line 200E at 540N there is a moderate dip angle/field intensity anomaly. Most of these features appear to be associated with rising ground or changes of slope and thus are probably related to changes in basement geology, e.g. the contact between limestone and underlying quartzite could explain anomalies in the southeast.

Ground Magnetics:

All lines were traversed by magnetometer. There are no significant anomalies and there appeared to be no broad high to the west as indicated on the airborne survey. There are small magnetic disturbances associated with the change from relatively level to rising ground on each of the crosslines. This could be related either to the limestone-quartzite contact mentioned above or to an accumulation of basaltic colluvium at the slope base since the area was probably covered by Tertiary basalt until relatively recent times.

Soil Geochemistry:

Although it was recognised that extensive glacial deposits existed over the grid, routine soil sampling was carried out on all lines since much of the glacial cover may only be a veneer. This was confirmed by the depth of the auger holes which averaged about 0.8 metres. The most outstanding feature of the soils is their relatively high lead content (average approximately 40 ppm lead). Equally obvious is the contact between two geochemically contrasting rock types at 400N 950E and 600N 1080E. At the latter position there is a distinct Pb/Zn/As/Ba/Co anomaly with cobalt at least 15 times background in one sample. A single point Pb/Zn/As/Ni anomaly occurs at 400N 220E. There is a low order Cu/Zn/Ni/Co anomaly at 600N 730E which suggests underlying dolerite. In the vicinity of 800N 500E the As level is elevated as is the general content of basemetals. Two further lithological contacts are apparent at 890E and 1030E on line 600N.

Rock Geochemistry:

No rock samples were taken as there is no outcrop.

Stream Sediment Samples:

No stream sediment samples were taken because of likely severe interference from glacial deposits.

Conclusions:

It has not been possible to conclusively recover the Dighem anomalies on the ground, although likely spot VLF anomalies were located. This uncertainty may be due to the difficulty of recovering flight lines in this area. The multi-element soil anomalies are probably a function of changes in bedrock lithology but interpretation is made difficult by the lack of geological control. Other factors, besides bedrock, which could cause the elevated lead values are shedding from the galena mineralisation at Ray's Prospect (cf Romulus West 2700N/1175E) or a large acid volcanic component in the glacial veneer. The soil anomaly at 600N 1080E is coincident with a VLF anomaly and warrants further investigation.

The greatest hindrance in understanding this area is the lack of outcrop. It is probable, however, that at least three major rock types are present, i.e. limestone, quartzite and an intermediate porphyry dyke or sill.

Recommendations:

In order to remedy the problem of geological control, it is recommended that thirteen deep auger holes to bedrock be dug at the following locations:

- on line 400N at 500E, 800E and 980E
- on line 600N at 300E, 730E, 900E, 1080E and 1180E
- on line 800N at 300E, 480E, 960E and 1100E

It is also recommended that line 600N be surveyed with the max-min system in an attempt to recover the airborne anomalies with greater certainty. This work is estimated to require a geologist and three men for two days.

ANOMALY 14 : FURY FLATS

Anomaly Description:

This is a broad resistivity anomaly, possibly of surficial origin. If it is a bedrock conductor, then it has a shallow dip northwest. There is no associated magnetic effect. The Dighem anomaly is located at line 17/263.2 and line 18/272.0 and appears to have an east-northeast trend. On the photogeological plan it lies over an extensive alluvium deposit adjacent to the Mackintosh River and close to the base of the outcropping Gordon Limestone.

Location:

The anomaly is centred at about AMG 5 390 450N 397 400E, i.e. at the junction of the Fury and Mackintosh Rivers. It is covered by 1:20,000 colour airphoto run 7/997. The position of the grid which is known as Fury Flats is shown on drawing 047. Ground data profiles for the grid lines are on drawings 055 to 058.

Access and Terrain:

Access is best gained by boat from Lake Mackintosh and along the flooded Mackintosh River valley. Helicopter landing sites are available on gravel bars in both the Mackintosh and Fury Rivers and an emergency pad for use in times of flood has been cleared close to the campsite. As all the grid lines cross the river, access is severely restricted after rain. The limestone country is steep but covered by open forest while the alluvial flats may carry heavier rainforest vegetation in parts. Movement on foot is generally easy. The altitude range on the grid is from 230 to 276 metres above sea level.

Gridding:

Some 1.7 kilometres of grid lines were cut and flagged at 20 metre intervals. This included a baseline (400E) bearing 040° magnetic and three crosslines as follows:-

400E	340N	to	700N
400N	300E	to	800E
550N	400E	to	800E
700N	400E	to	800E

Geology and Mineralisation:

Much of the grid covers alluvial boulder and cobble deposits. These are probably in part reworked glacial debris. The Gordon Limestone which outcrops only on the northern side of the river is a dark grey silty limestone with occasional shaley beds. It dips generally northwest at moderate angles and may have a steeply dipping north-south cleavage. The southern boundary of limestone outcrop is marked by a substantial cliff. A veneer of glacial pebbles overlying the limestone is common. Alluvium in creek beds includes pebbles of quartzite and basalt which are probably of glacial origin. No mineralisation was observed.

Ground E-M:

VLF measurements were carried out on all lines. Prominent dip angle anomalies were obtained on lines 400E at 470N and 400N at about 440E. In the former case there is a coincident field intensity anomaly. The trend of these anomalies parallels local cleavage measurements on line 400E and thus is possibly explicable in terms of a fault or fracture. There are no distinct anomalies on the other lines.

Ground Magnetics:

All lines were traversed by magnetometer, but no significant anomalies were observed. There is a slight regional gradient rising to the northwest.

Soil Geochemistry:

Soil sampling was restricted to the areas of limestone where there is some development of residual soils, although contamination by glacials is apparent in the field. At the junction of limestone outcrop and alluvial flats there appears to be a consistent elevation of zinc values. At 400N 320E there is a substantial Pb/Zn anomaly over limestone.

Rock Geochemistry:

Two samples of the Gordon Limestone (samples 21217 and 21218) contained low levels of basemetals (see Appendix II).

Stream Sediment Samples:

No samples were taken.

Conclusions:

Although a substantial VLF anomaly was observed, this does not technically correspond to the Dighem feature, since the two trends are at right angles. In reality they may well be the same anomaly. The base-of-slope zinc anomalies are probably due to basalt boulders in the colluvium, especially since nickel and cobalt values are somewhat higher than normal. The Pb/Zn soil anomaly at 400N 320E remains unexplained, but it is noted again that Ni/Co values are elevated.

Recommendations:

The Dighem recovery and data should be checked in detail to see if a reconciliation of the airborne and ground E-M anomalies is possible. The unexplained soil anomaly should be resampled by a geologist with careful observations on the soil profile and geological environment at each sample site.

The above is estimated to require one geologist for one day (1/2-day office, 1/2-day field).

ANOMALY 15 : MACKINTOSHAnomaly Description:

This is a single point resistivity anomaly and is probably of surficial origin. There is no associated magnetic effect. It occurs at line 22/321.8.

The photogeological plan shows the anomaly as lying over Ordovician Gordon Limestone close to alluvial deposits of the Mackintosh valley. A probably minor north-south fault passes 200 metres to the east.

Location:

The anomaly is located at approximately AMG 5 390 750N 396 150E. It is covered by 1:20,000 colour airphoto run 7/997. The position of the grid which is known as Mackintosh is shown on drawing 047. Ground data profiles for the grid lines are on drawings 059 to 061. The anomaly lies close to the water's edge in the drowned Mackintosh River valley.

Access and Terrain:

The only access to this area is by boat from Lake Mackintosh and entails poling through drowned forest. The terrain rises very steeply from the water's edge, but the forest cover is very open and movement on foot is relatively unimpeded. Sinkholes occur on the north-eastern part of the grid. The altitude range on the grid is from 230 to 377 metres above sea level.

Gridding:

Some 0.9 kilometres of grid lines were cut and flagged at 20 metre intervals. This included a baseline (500E) bearing 040° magnetic and three crosslines as follows:

500E	350N	to	650N
350N	500E	to	540E
500N	500E	to	700E
650N	500E	to	860E

All the crosslines ended at the water's edge.

Geology and Mineralisation:

Outcrop over the grid is poor except close to the Lake. The steep slopes are generally soil or scree covered. Dark grey, compact limestone of the Ordovician Gordon Limestone occurs on line 700N dipping moderately west-northwest. Sinkholes are common. This is overlain by quartzite, not well indurated, but carrying some quartz veins. This is probably Silurian "Crotty Quartzite" although not mapped as such on the Mackintosh 1 mile sheet. It is conformable with the limestone. No mineralisation was observed.

Ground E-M:

VLF measurements were taken along all gridlines. No significant anomalies are apparent.

Ground Magnetics:

All gridlines were traversed by magnetometer. There were no significant anomalies.

Soil Geochemistry:

A total of 48 soil samples were taken. Over the limestone on line 700N base metal values were considerably elevated, especially lead, zinc and nickel. Two other samples appear anomalous, viz. a Pb/Ba anomaly at 500E 460N and a Pb/Zn anomaly at 500N 700E.

Rock Geochemistry:

No rock samples were taken.

Stream Sediment Samples:

No stream sediment samples were taken.

Conclusions:

The Digheem anomaly has not been recovered on the ground and probably lies under water. The high basemetal values on line 700N may reflect high levels in the bedrock, since no other explanation is apparent. The anomalous soil at 500N 700E was taken in colluvium and is probably not significant. The Pb/Ba anomaly at 500E 460N remains unexplained.

Recommendations:

Location 500E 460N should be resampled and examined in detail with a pit. The limestone on line 700N should be chip sampled and examined in detail for mineralisation.

Some soil sampling or chip sampling should be carried out along strike from 700N 740E.

This is estimated to require one day for one geologist and one other man.

ANOMALY 16 : LOWER BROUGHAM

Anomaly Description:

This Dighem anomaly is a very poor conductor recorded at only one point, run 61/898.15. No associated magnetic feature is recorded.

The photogeological plan shows the anomaly to lie directly over an unconformity between the Ordovician Owen Conglomerate and Precambrian quartzites.

Location:

The anomaly lies due north of Mt Swallow at AMG 5 383 050N 392 800E. It is covered by 1:20,000 colour airphoto run 3/037 and by drawing 045.

Terrain and Access:

Access to this area is best by helicopter to a pad cut amongst ti-tree and dead gum trees on a ridge northeast and 200 metres above the bed of the Brougham River. Near the anomaly the country is undulating with much thick regrowth vegetation on the flatter areas and horizontal scrub in the lower parts and along creeks. The drop into the river is very steep, being covered by bracken and Mann ferns. The area lies at above 520 metres above sea level.

Gridding:

None has yet been done.

Geology and Mineralisation:

The area has not yet been examined in detail, but Precambrian quartzites outcrop at the helicopter pad and in the river bed. Some outcrops of intermediate or acid porphyry were seen several hundred metres to the north.

Ground E-M:

None carried out as yet.

Ground Magnetism:

None carried out as yet.

Soil Geochemistry:

None carried out as yet.

Rock Geochemistry:

None carried out as yet.

Stream Sediment Samples:

None taken as yet.

Conclusions:

No work has been done on this anomaly as yet, apart from the clearing of a helicopter pad.

The presence of possible Cambrian rocks warrants further investigation.

Recommendations:

It is recommended that the anomaly and surrounding area be investigated by gridding, geophysics, sampling and mapping as in the case of other Dighem anomalies. This is estimated to require three days for one geologist and four men.

ANOMALY 17 : ROMULUS WEST

Anomaly Description:

This anomaly represents a poor conductor, but has been detected at two points, i.e. line 55/821.0 (the stronger anomaly) and line 54/811.8. No associated magnetic feature has been recorded.

The photogeological plan shows the anomaly to lie over Tertiary basalt close to the edge of its outcrop. Talus deposits occur to the west. These rocks are probably underlain by Owen Conglomerate and possibly by Cambrian granite.

Location:

The anomaly is located at AMG 5 384 620N 393 130E in the Romulus West area. It is covered by 1:20,000 colour airphoto run 3/036 and by drawing 046.

Terrain and Access:

Access to the area is by walking from the Romulus West campsite via the eastern end of line 500N and then south through relatively open rainforest. The anomaly lies in a swampy region near the base of a steep slope. Most of the country is covered by thick rainforest with patches of horizontal scrub. The altitude is about 500 metres above sea level near the anomaly.

Gridding:

None has been carried out.

Geology and Mineralisation:

The position of the anomaly was only passed over in the course of travelling to another area and so no detailed examination has been made. Basalt outcropped slightly to the east of the anomaly and a small outcrop of porphyry was seen about 200 metres to the south. Overall there were very few outcrops.

Ground E-M:

None has been carried out.

Ground Magnetism:

None has been carried out.

Soil Geochemistry:

None has been carried out.

Rock Geochemistry:

None has been carried out.

Stream Sediment Samples:

None have been taken.

Conclusions:

Although little work has been done, it would seem by analogy with areas to the north that the Dighem anomaly may be caused by an edge effect of the basalt or by basal Tertiary alluvium.

Recommendations:

No work is recommended here until such time as the Romulus West area is deemed to be of greater interest. The anomaly is not sufficiently different to others further north which have been investigated and downgraded as a consequence.

ANOMALY 18 : ROMULUS WEST

Anomaly Description:

This is a single point anomaly, rather weak, but possibly representing a bedrock conductor in the Cambrian beneath basalt cover. The anomaly was observed at line 4500/1827.6. The photogeological plan shows the area to be covered by Tertiary basalts, possibly underlain by Cambrian acid porphyry.

Location:

The anomaly is located at 5 385 750N 394 350E. It is covered by 1:20,000 colour airphoto run 7/999. The position of the Romulus West grid which covers several anomalies is shown on drawing 046. Ground data profiles of the gridlines are on drawings 067 to 069.

Access and Terrain:

Access is best gained by helicopter to the Romulus West campsite then on foot along baseline 2000E for about 700 metres. The terrain is flat to gently sloping with a small illdefined watercourse passing through the grid. The vegetation is largely horizontal scrub with occasional patches of bauera. The altitude range on the grid is from 625 to 647 metres above sea level.

Gridding:

Some 1.4 kilometers of gridlines were cut and flagged at 20 metre intervals. This included a short baseline (2000E) bearing 020° and three crosslines as follows:

2000E	1260N	to	1460N
1260N	2000E	to	2300E
1360N	1840E	to	2400E
1460N	2000E	to	2300E

Geology and Mineralisation:

There was no outcrop on the grid, but the area appears to be covered by fluvio-glacial deposits which probably overlie basalt at least in part.

Ground E-M:

VLF measurements have been taken along lines 1360N and 1460N. Time restrictions did not allow line 1260N to be surveyed by VLF or for the max-min system to be used on line 1360N as had originally been intended. The VLF did not produce any significant anomalies.

Ground Magnetics:

All three crosslines were surveyed by magnetometer. A noisy basalt-type response was obtained on all three lines west of approximately 2100E. To the east the response was more subdued.

Soil Geochemistry:

68 soil samples were collected covering all lines. At 1360N 1870E and 980E somewhat elevated Ni/Co/Cu/Zn values probably represent near surface basalt or a basalt component in the glacial overburden. A single point minor Cu/Pb/Zn anomaly at 1460N 2180E has no obvious explanation.

Rock Geochemistry:

No rock samples were taken due to lack of outcrop.

Stream Sediment Samples:

None were taken.

Conclusions:

The Dighem anomaly has not been recovered on the ground as yet. The glacial overburden is probably underlain by basalt in the west and Cambrian (?) rocks in the east.

Recommendations:

VLF measurements should be carried out on line 1260N. In addition line 1360N should be surveyed by the max-min method. If the Dighem anomaly is not recovered then consideration should be given to expanding the grid. Grid location 1460N 2180E should be resampled at a greater depth if possible. This work is estimated to require 3 men for one day.

ANOMALY 19 : ALEXANDRA PASS

Anomaly Description:

This anomaly represents a poor conductor, but has been located on two adjacent lines, i.e. at line 74/1046.0 and at line 75/1052.1. It has no recorded associated magnetic features, but bears some similarity to Anomaly 7.

The photogeological plan shows it to overlie Precambrian quartzites where they are overlapped by the extensive Sophia Valley fluvioglacial deposits.

Location:

The anomaly lies at AMG 5 380 050N 391 200E. It is covered by 1:20,000 colour airphoto run 2/027 and by drawing 045.

Access and Terrain:

Access to the area is best by boat across Lake Mackintosh. The anomaly is at the base of a northwesterly spur of High Tor and the terrain is very steep, rising from lake level at 230 metres to over 520 metres above sea level in less than 500 metres. Vegetation is generally scrubby with ti-tree and some patches of forest. The anomaly itself is below the current lake level.

Gridding:

None was carried out.

Geology and Mineralisation:

The area was examined very briefly by boat. Outcrop is abundant and seems to consist entirely of Precambrian quartzite as mapped. The rock is generally well indurated and contains some irregular quartz veining. Bedding is indistinct.

Ground E-M:

None was carried out.

Ground Magnetism:

None was carried out.

Soil Geochemistry:

No samples were taken.

Rock Geochemistry:

No samples were taken.

Stream Sediment Samples:

None were taken.

Conclusions:

The anomaly itself is no longer accessible and thus it is unlikely that its cause will be determined. It is possibly an effect of colluvial deposits at the slope base. There are no obvious clues given in the current outcrop.

Recommendations:

No further work is recommended.

RAY'S PROSPECT : ROMULUS WEST

Description:

This investigation covered the area around a small galena occurrence discovered during stream sediment sampling of Backwater Creek by R. Duraj. The occurrence is near line 37/567.3 of the Dighem survey, but no anomaly has been recorded here. The nearest feature is a small surficial anomaly at line 37/567.8, i.e. about 400 metres to the southeast. The magnetic contour plan shows a minor magnetic high in the vicinity of the occurrence.

The photogeological plan shows the occurrence to lie in the Ordovician Owen Conglomerate with Cambrian granite and/or Tertiary gravels about 200 metres to the south. Cambrian(?) porphyries occur further to the south and east.

Location:

The galena occurrence is located at approximately AMG 5 387 400N 394 200E. It is covered by 1:20,000 colour airphoto run 3/035. The position of the Romulus West grid which covers several anomalies is shown on drawing 046. Ground data profiles for the gridlines are on drawings 015A, 028, 029, 044 and 066.

Access and Terrain:

Access to this area is somewhat difficult. It can be gained by taking a helicopter to the Romulus West campsite and walking along gridlines for about 2.5 km. Alternatively one can take a boat to the drowned mouth of Backwater Creek and follow a cut track for about 2.5 kilometres. Any further work here will require the clearing of a new helipad. The terrain over the gridded area is very steep with deeply incised streams, especially Backwater Creek. Vegetation varies from horizontal scrub to open sclerophyll forest. The range in altitude on the grid is from 348 to 495 metres above sea level.

Gridding:

Some 2.8 kilometres of gridlines were cut and flagged. This included a baseline (1175E) bearing 020° magnetic and four crosslines as follows:

1175E	2400N	to	2850N
2400N	900E	to	1360E
2550N	895E	to	1495E
2700N	895E	to	1625E
2850N	795E	to	1325E

Backwater Creek crosses all the lines.

Geology and Mineralisation:

Outcrop in this area is generally poor, except along Backwater Creek where exposure is semi-continuous over part of its length. Two principal lithologies occur. To the east lies a chloritic felspar-biotite-quartz porphyry or micro-adamellite (see Appendix V, samples 21215 and 21216). Either side of this body which appears to strike roughly north, lie thick bedded quartzites with some pebbly bands. They are strongly altered at the porphyry contact. The beds dip consistently at about 25° to 300°

and bear a strong resemblance to the lower quartzites at White Hawk Mines where there is also a silicified zone at the contact and the porphyry appears to be a sill-like body.

Galena blebs with minor chalcopyrite and pyrite occur disseminated through the quartzite at 2700N 1175E. There is an accompanying sericitic alteration (see Appendix V, samples 3267A and 3267B). This occurrence is probably about 50 metres west of the porphyry contact.

The western side of the grid is covered by thick glacial deposits, but it is considered likely that these are in part underlain by Gordon Limestone (by analogy with White Hawk Mines area). Thin veneers of glacial debris are common in the remainder of the grid.

Ground E-M:

All crosslines have been covered by VLF measurements except for line 2700N east of 1325E. The most obvious feature is a strong dip angle and field intensity anomaly at 2700N 1100E. Lesser anomalies occur at about 2400N 1000E, 2850N 1080E and possibly at 2550N 1025E (field intensity only). These may be along strike from the much stronger feature on line 2700N. The max-min system was run along line 2700N as a backup. It located a strong anomaly at 1050E. It appears to be due to a moderate conductor dipping west at 60° to 75° with a depth below surface of 30 to 45 metres. It has a conductivity thickness product of greater than 20, which is consistent with either massive sulphides or black shales.

Ground Magnetics:

All crosslines except 2700N east of 1325E have been traversed by magnetometer. The profiles are somewhat noisy and this is thought to be due to the quantity of basaltic material in the glacial debris and/or the transported basalt soils, which blanket much of the area. The most prominent magnetic feature is a spikey anomaly at 2550N 1360E. This overlies an outcrop of heavily altered quartz-pebble quartzite at the eastern contact of the porphyry.

An 80 nT magnetic anomaly at 2700N 1020E appears to have a shallowly west-dipping source and is probably unrelated to the nearby max-min anomaly. Similar magnetic features occur at 2850N 1020E (110 nT) and 2400N 970E (60 nT), but none is apparent on line 2550N.

Soil Geochemistry:

Initially all crosslines were sampled at 20 metre intervals. Unfortunately a combination of quartzite scree, glacial debris and transported basalt soil causes severe contamination or masks any residual soil in much of the area. Nevertheless, a lead anomaly was recognised spreading south and west from the galena occurrence (there is a heavy quartzite scree cover to the north and east which obscures any residual soils).

Resampling of some sections was carried out at 5 metre intervals. This showed the lead anomaly on line 2700N to be disconnected topographically from the galena occurrence.

There is a single point lead anomaly over quartzites at 2550N 1210E and a Cu/Pb anomaly at 2550N 1090E. Boulders of iron-stained gritty quartzite are found near the latter feature. The only other possibly significant anomaly is a minor zinc high at 2850N 1295E. This, however, occurs on a scree slope.

Rock Geochemistry:

18 rock samples were collected in this area. The mineralised quartzite was shown to carry little else but pyrite and galena (see Appendix II, samples 3229, 3262, 3496, 3497 and 3499). The intermediate porphyry carries slightly elevated Cu, Zn, Ni and Ba but no Pb (sample 3265).

Stream Sediment Samples:

Five stream sediment samples were taken in the area. Only one sample (see Appendix III, sample 2860) gave a slightly elevated lead value. Perusal of old Pickands-Mather stream sediment data shows that a lead anomaly was detected downstream from the galena occurrence.

Conclusions:

The most significant features of this area are the max-min, VLF and soil lead anomalies on line 2700N. These are in concurrence with the measured dip of the strata except that the estimated dip of the max-min source is too steep. They and the original galena occurrence are strong evidence for the occurrence of some sort of massive sulphide body. However, the fact that the VLF anomaly can be traced onto other lines adds to the potential of the area and gives some weight to the small soil anomalies on line 2550N. Lesser lead values on lines 2400N and 2850N may yet prove to be important.

Should significant lead sulphide mineralisation be demonstrated at Ray's Prospect, then a strike length of some 5 kilometres south to the White Hawk Mines becomes prospective because of the similar geological environment at the two locations. A small soil lead anomaly has already been found midway between Ray's and White Hawk (see Anomaly 3).

The relationship of the porphyry to the mineralisation is uncertain. Although it would be convenient to assign the galena to "sweating" from an intrusive porphyry, the very low lead content of the porphyry is against this.

The age of the porphyry and its quartzite host rocks is also problematical. If the quartzites are Ordovician as appears the case at White Hawk Mines, then the porphyry is probably Devonian. If the porphyry is in fact Cambrian, as it has been mapped, then the quartzites are at least Cambrian and so also would be the limestones at White Hawk. A Devonian age is preferred by the author.

Recommendations:

It is recommended that the max-min system be run over all the crosslines. In addition, in-fill lines at 50 metre spacing should be placed either side of line 2700N so that the anomaly maximum can be located. Deeper power augering in the vicinity of the anomalies should aid in their definition, especially on lines 2400N and 2850N. At the completion of

this work, if the evidence is still positive, the prospect should be drilled. One well placed core hole should provide enough information for a decision on whether to enlarge the scope of the investigation to cover the whole strike length of prospective ground. This work (excluding drilling) is estimated to require one geologist and four men for five days. In addition a new helipad and campsite would have to be cleared.

8. DISCUSSION

Applicability and Limitations of Exploration Methods:

A number of lessons have been learned concerning the application of the various exploration methods used during the past season. These are discussed below with some suggestions for improvement.

The flight line recovery in the Dighem survey has been found to be inaccurate in some instances. As an example, the recovered position of Anomaly 6 which is a magnetic feature appears to be about 500 metres north of its true ground position. This poor recovery is probably due to two factors. Firstly the navigation was sub-standard and secondly the recovery film images are inferior. Attempts by the author to improve on or at least verify the recovery of several anomalies met with little success. For accurate recovery in such heavily forested terrain very straight tracking is required; cf 1979 airborne magnetic survey of same area by Georex Pty. Ltd.

The author is also not convinced that the Dighem survey has thoroughly tested the ground for conductors. As an example, on line 2700N of the Romulus West grid, i.e. Ray's Prospect, there is a strong conductor detected by both VLF and max-min techniques on the ground. There is no evidence of this in the airborne survey despite two flight lines being plotted as passing within 60 metres of the anomaly. It is recommended that on any future airborne surveys in this area close attention be given to the qualifications of both pilot and navigator for operating geophysical surveys in this terrain. In addition a close watch should be kept on recovery with daily checking by Shell personnel during the course of the survey.

The ground VLF technique as a means of recovering airborne anomalies has also been found to be wanting. Although in a few instances an excellent reconciliation was achieved (e.g. Anomaly 10) in the majority of cases correlation between the two was vague, the ground anomalies being ill-defined. This is possibly due to the shallow depth penetration of VLF E-M as well as the lack of a transmitting station in a suitable direction for maximum coupling with the dominant strike direction. The North-West Cape transmitter was employed exclusively, the transmissions from Japan being too weak and variable to be of use. Problems were also experienced with fluctuating signals from North-West Cape on certain days. A further complication was the presence of a background positive or negative dip angle in some areas making it difficult to define a precise crossover point.

In summary the VLF technique is best restricted in use to initial reconnaissance of stronger airborne anomalies.

Three grid lines were surveyed using the max-min horizontal-loop E-M system. On line 00N at Romulus East the airborne anomaly was clearly recovered with this system but only vaguely with VLF. Again on line 600N at Romulus West a weak Dighem anomaly was recovered with max-min whereas the VLF results were doubtful.

Three lines were surveyed on an experimental basis using the vertical loop Genie E-M system. This also recovered the anomaly at Romulus East but probably failed to detect that at Romulus West.

In summary from the limited data available the max-min system appears to be an excellent way of recovering the airborne Dighem anomalies. One of its drawbacks in steep heavily vegetated terrain is its comparative bulk requiring wider grid lines than normal.

For effective soil sampling on the West Coast of Tasmania it is essential that good "C" horizon samples are taken. In some parts of the Granite Tor area it is difficult to obtain such samples with simple hand augers due to thin glacial veneers, scree or the density of plant roots. In such areas there may be an advantage in using power augers.

A limiting factor in the interpretation of soil sample results in this region is the effective recognition of transported overburden including scree, creeping soils (especially basaltic) and glacials. In particular the presence of granitic glacials should be noted as these are known to carry tin and tungsten mineralisation which can affect both soil and stream sediment results. A further point to watch is the quantity of humic material in samples. Some "soil" samples were found to be so dominated by humus and organic litter as to be virtually ineffective. This can be more due to lack of proper soil development than inattention by field staff.

Questions of Geology and Mineralisation:

There is some field evidence which suggests that most if not all the anomalies investigated during the past season were located in rocks of Lower Cambrian age rather than Precambrian age as has been assumed through this report. The rocks in question have been referred to earlier as the "western unit" since they form the western margin of what has been mapped to date as the Precambrian Tyennan Block. The assignation of this unit to the Cambrian is supported by the following:-

1. The unit's strike direction is dominantly north-northeast subparallel to the known Cambrian and opposed to the regional east-northeast trend of the Precambrian.
2. The deformation style differs from that of the Precambrian, in particular the quartzites are less fractured and do not suffer medium-scale isoclinal folding; the pelites are less inclined to cremulation cleavage and the development of mica appears more minor.
3. Acid tuffs have been reported in the Fury Valley and near the Brougham River within this western unit.
4. The style of sedimentation appears to vary from the flysch-type sediments of the Precambrian to graphitic phyllites, laminated and banded rocks and cleaner quartzites which are sometimes pebbly.

The possibility of a Cambrian age for these rocks has some economic implications especially if it is positively demonstrated that acid volcanics form a significant part of the sequence. It is noted that the Hercules and Rosebery deposits are closely associated with black slates. The Farrell and Murchison deposits are also in black slates although these bodies are small and probably hydrothermal fracture fillings.

Based on the photogeological plan the Cambrian rocks in E.L. 2/78 cover about 9 square kilometres. However field work at Mt Romulus has already pushed the Precambrian boundary 0.5 to 1 kilometre further to the east. If we accept the western unit as Cambrian and include basalt covered rocks then the area of prospective rocks may well triple. There is a great

need for further investigation of the stratigraphy in this western part of the licence area.

Another question with economic implications is the subsurface distribution of the main granite intrusive. The gravity map of Tasmania shows a gravity ridge extending from Granite Tor west to the Heemskirk Granite suggesting a continuity between the two masses. The Renison Bell tin mine which has associated granitic outcrops lies on this ridge. Field observations tend to confirm that the Granite Tor body has shallowly dipping contacts, particularly near Mt. Swallow in the northwest. The potential of the western contact area of the intrusive is enhanced if the granite has a shallow dip beneath the country rocks in this direction. A greater priority should then be given to the mineralisation at Granite Creek and to the small magnetic anomalies close to this contact. It should be noted, however, that Huntings Geology & Geophysics in their photogeological study of this area considered the granite to dip steeply west.

Granitic dykes which outcrop in the Brougham valley east of Mt Swallow are also of some economic interest since they are associated with quartz veins containing minor wolfram and bismuth. The magnetic anomaly (Anomaly 6) located in this area is probably associated with such a dyke which can be traced over a number of lines on the airborne magnetic survey of 1979. This dyke probably straddles the boundary between Areas A and B and a possible connection with the Romulus East lead soil anomaly is worthy of further investigation.

The White Hawk Mines - Ray's Prospect lead mineralisation has been discussed in the last section of chapter seven and is not further pursued in this section.

Potential for Mineralisation Associated with Dighem Anomalies of Area A:

Of the nineteen Dighem anomalies investigated on the ground none show any obvious potential for a geological situation similar to that found at the Rosebery, Hercules, Que River or Mt Lyell mines. This is not to say that such settings are not possible in Area A. Rather, it points to the fact that no anomalies were located over the main areas of outcropping or subcropping Cambrian volcanics, i.e. as seen on the western slopes of Mt Romulus.

The anomalies may tentatively be categorised according to their source as follows:

1. Graphitic phyllites are the probable cause of anomalies 4, 5, 10, 11 and possibly 8.
2. Basalt sheet edge effects are the likely cause of anomalies 1, 2, 3 and 17.
3. The edge of a thick alluvium/colluvium layer and/or lake edge is a possible cause for anomalies 7, 15, 19 and 14 (?).

No reasonable conclusions can yet be drawn about anomalies 6, 9, 12, 13, 16 or 18.

Only the anomalies of the first category offer some potential for mineralisation. The potential is probably greatest for orebodies

similar to the Farrell-Murchison lodes. These are dominantly lead-silver hydrothermal lodes lying along shears of Devonian age. They are found within an 800 metre wide belt of fine-grained Cambrian sediments known as the Farrell Slates. These sediments include black shales and minor tuffs as well as laminated mudstones and greywackes. The rocks as described in the literature are not dissimilar to those of the western unit in which the category 1 anomalies occur. One can draw attention here to the narrow lenses of magnetite ? at anomalies 10 and 11 and to the minor arsenopyrite-pyrite mineralisation at Granite Creek (anomaly 8). These all appear to be hydrothermal fissure fillings.

The Farrell lodes contain oreshoots at their intersections with tuffaceous units. In view of this fact the lead and arsenic values in soil and stream sediments in the Romulus East and Fury Valley areas assume some significance since tuffaceous units have been observed at the latter location and most probably exist at Romulus East as well.

An unfortunate characteristic of the Farrell orebodies known to date is that although they are rich (typically 10-15% lead and 300-400 gm/tonne silver) they are also small (typically 0.5 million tonnes or less).

9. REFERENCES

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APPENDIX I

TABLE SUMMARISING RESULTS OF
FIELDWORK ON DIGHEM ANOMALIES

ANOM NO.	GRID (OR AREA)	DIGHEM ANOMALY		AMG COORDS	AIRBORNE RESPONSE		GROUND FOLLOW-UP					CAUSE OF ANOMALY	
		LINE	FID		DIGHEM	MAGNETICS	GRIDDING	GEOLOGY	MAGNETICS	VLF-EM	MAX-MIN		GEOCHEM
1	ROMULUS WEST	43 41 40	656.5 626.5 616.0	5 386 640N 394 250E	Horizontal sheet anom, $\delta t \sim 1$ mho	10-20nT ? at edge of basalt sheet	1.9km incl ^g 3 crosslines	Tert. bas. u'lain by Camb. (?) porphyry, minor dolerite o'lain by Pleist. glacials in part	3 crosslines Noisy basalt-type response	3 crosslines Dip-angle anom. at 2000N 1810E and 2200N 1640E	nil	96 soils @ 20m spacing; No signif. anom; Sn in seds prob. due to glacials	Prob. sheets of alluvials between basalt flows. Conductive due to either water sat. or clay content.
2	ROMULUS WEST	49	729.9	5 385 030N 393 900E	Weak anom, edge response ?	Contact	2.1 km 3 crosslines	Pleist fluvio-glacials overlying Tert. bas. & poss. Camb. rocks in SE. No outcrop	3 crosslines Noisy "basalt" response. Smoother in SE.	3 crosslines	1 x 600m line IP/OP response on 222 & 888 Hz at ~600N 2200E	108 soils @ 20m spacing; minor Pb/Zn/Ni anom at 600N 1960E	Poss. related to edge of basalt sheet against Cambrian volcanics.
3	ROMULUS WEST	50 52 53 54 53 49 54	742.3 789.2 798.9 812.65 798.4 728.2 813.0	5 385 320N 392 940E 5 385 650N 392 400E	Very weak anom as thin, broad, horizontal sheet response.	-	3.4 km 3 crosslines NB. 1 grid covers both anom.	Tert. bas. with coarse interflow alluvium. Occl glacial erratics. U'lain by Sil-Ord sediments incl. Crotty Quartzite.	3 crosslines Noisy "basalt" response in NE. Smooth in SW & W. Prob. two basalt types	3 crosslines Dip-angle anom. at 300N 560E & 500N 630E. Dip change at 500N 1280E	nil	173 soils @ 20m spacing, 7 stream seds; No significant anomalies	Prob. related to bas. interflow zone, eg alluvials or conductive clays, as indicated by contact of two magnetic patterns of basalt type Related to edge of basalt sheet.
4	FURY	44 42 45 41 39	666.8 637.65 685.9 630.6 603.7	5 384 420N 396 560E	Strong anom. with strike > 1 km, vert dyke, $\delta t \sim 15$ mhos depth ~25m	20nT) All 90nT) dips 10-20nT) near 90nT) ver- 60nT) tical	nil	p6 quartzites & schists & graphitic phyllite horizon. Poss. acid tuff & porph. Extensive fluvio-glacial cover granite erratics (Sn-bearing)	nil	nil	nil	27 s. seds/pan conc. Pb anom draining from Rom. East area 16 rocks, minor Pb/Zn anom, 1 tuff contained 1100 ppm Zn.	Dighem anom. prob. caused by graphitic phyllite horizon. Mag. anom. due to either po dissem. in above or effect of acid dyke.
5	ROMULUS EAST	50 4500 48 49	738.1 1830.6 716.5 733.1	5 383 160N 395. 530E	Strong lin. anom. with strike > 1km; Thin W-dipping dyke, $\delta t \sim 6$ mhos, depth ~15m Maybe contin. c Anom. 4.	10 nT ? 10 nT ?	2.3 km 7 crosslines	p6 quartzites & schists with graphitic pyllite horizon. Minor glacials incl. granite erratics.	5 crosslines Flat response sl. regl grad to W	5 crosslines Strong anom// topog. Weak anom//geol. strike.	1 x 340m line. Strong broad anom. centred ~00N 70W	187 soils @ 20 & 5 m spacing. Erratic but persistent Pb/As anomalies. Six rocks, minor Pb in Fe-st.qtzite 4 s. seds, all anom in Pb, one also in Zn/Mo.	Dighem anom. prob. related to graphitic phyllite horizon. Mag anom. not detected.

ANOM NO.	GRID (OR AREA)	DIGHEM ANOMALY		AMG COORDS	AIRBORNE RESPONSE		GROUND FOLLOW-UP					CAUSE OF ANOMALY	
		LINE	FID		DIGHEM	MAGNETICS	GRIDDING	GEOLOGY	MAGNETICS	VLF-EM	MAX-MIN		GEOCHEM
6	BROUGHAM RIVER	61	900.4	5 381 540N 394 120E	Inverted I.P. response due to magnetite	80 nT	1.6 km 5 crosslines	p6 homog. grey- black phyllites. Poss. shallow u'lying granite & acid dykes, minor glacials.	3 crosslines Flat response Sl. regl grad. NE	1 crossline Vague anom. at ~620N 350E	nil	134 soils at 20 & 5m spacing. Two v. minor As anoms (single point) prob. relate to qtz veins. 4 rocks - no anoms. 2 s. seds - minor Sn prob. glacial.	Anom. not detected. Suspect airborne recovery grossly in error.
7	SWALLOW WEST	72	1026.9	5 380 590N 391 360E	Moderate conductor	Mag. contact	nil	Prob. p6 pelites, colluvium & fluvioglacials. Now below lake level.	nil	nil	nil	nil	Unexplained. Poss. related to colluvial deposits.
8	ALEXANDRA HILLS	110 111 109 108 111	2121.4 2113.3 1514.3 1522.4 2113.1	5 375 100N 390 360E	Mod thick) strike cond.) >400m Poor cond) Prob. " ") o'cg Isolated) anom.)	- 20 nT - - -	2.8 km 5 crosslines	Pleist. compact (fluvioglacial?) gravels. Prob. u'lain by p6 qtzite-schist. Old adit has qtz- apy-py veins in black phyllite.	5 crosslines. Minor broad 35nT anom. at 00N 240W. Depth ~70m.	5 crosslines Noisy. Poss. anom. over adit. Isolated anom. at 100N 120W	nil	9 soils at 20m spacing; Bi & As anoms near adit. Some rocks, adit ore contained As/Bi/Co/Pb; host rock has minor Sn 8 s. seds, anom Sn/W unexplained	Unexplained and not properly recovered. Prob. due to graphitic phyllite in p6. Mag anom. detected but not explained.
9	SOPHIA	108 109	1524.7 1512.0	5 376 100N 389 160E	Mod. cond. St ~5 mhos W dip, depth ~20m	- -	0.5 km 2 crosslines	Obscured by talus or lake. Prob. u'lain by p6 qtzites/phyllites E a.v.'s 100m W Transported "gossan" at 400S 250E.	2 crosslines Small (40nT) sharp anom. at 400S 60E Sm. anom. over "gossan"	2 crosslines Anom. at a.v. body. Sm. anom. at change of slope.	nil	22 soils at 20m spacing, Pb/Zn/As anom over "gossan" minor Ni/Co at slope change. 4 rocks, anom. Zn/As/Ba in gos- san, high Pb/Ba in E tuff.	Recovery uncertain due to presence of lake. Poss. 6-p6 boundary.
10	VICTORIA PEAK	201	1089.0	5 369 760N 391 000E	Mod. cond., St ~5 mhos E dip, depth ~20m	60 nT	2.5 km 5 crosslines	Interbedded & occ. lam'd p6 qtzites, schists, some graphitic; Fe- rich seepages.	5 crosslines 2 sharp anoms up to 750 nT & 200 nT	5 crosslines Dip-angle anoms assoc. c mag.	nil	248 soils at 20, 5m spacings; multi-elem anoms asscd c mag/VLF features; Sm anoms prob. due to lithological change. 36 rocks, no anoms; 4 sludge from seepages, 2 c high Pb/As; 7 s. seds, no anoms.	Either graphitic horizon or accumulation of mag. minerals on fault. Mag/VLF anoms <u>not</u> exactly coincident, hence may have differ- ent causes

APPENDIX I - RESULTS OF FIELDWORK ON DIGHEM ANOMALIES

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ANOM NO.	GRID (OR AREA)	DIGHEM ANOMALY		AMG COORDS	AIRBORNE	RESPONSE	GROUND FOLLOW-UP					CAUSE OF ANOMALY	
		LINE	FID		DIGHEM	MAGNETICS	GRIDDING	GEOLOGY	MAGNETICS	VLF-EM	MAX-MIN		GEOCHEM
11	MURCHISON	202 201 to 219	1102.6)vari-)ous)	5 369 470N 389 890E	Excellent conductors, 46mhos on line 202, strike length >2.3km.	300 nT on line 201 decr ^g to S; no mag. on S half of strike.	4.2 km 5 crosslines	p ^g massive Qtzite, graphitic phyllite in creek bed has Qtz veins & minor sulph. Gossan in river bank, 6 a.v.'s to W.	5 crosslines Strong (1100nT) anom. at 2330N 660E	3 crosslines Weak dip angle anom coincident & mag on 2330N	nil N.B. Genie gives v. strong anom at 2330N 680E, smaller at 2330N 480E	238 soils at 20, 5m spacing Multi-elem. (incl ^g Fe, minor Au) anom. over mag features. 21 rocks, no signif. anom.; 12 s.seds, minor Zn & Pb/ As anom. at south end; 1 gossan, no signif. values	Anom. probably due to graphitic phyllites; Mag. either due to Fe-rich sed. facies or magnetite veins.
12	MURCHISON	202	1101.5	5 369 460N 389 340E	Only coax in-phase response.	-	1.2 km 3 crosslines	Poor o'c; p ^g Qtzite-conglom; E-p ^g contact prob. along W edge; pos. N-S fault in p ^g , valley below fault filled with Qtzite talus.	3 crosslines Marked grad at E? contact; ~30 nT anom over fault.	3 crosslines No anomalies	nil	49 soils at 20m spacing; no signif. anom.	Unexplained; possibly a spurious anomaly.
13	BACKWATER	34 34	527.4 527.0	5 388 480N 394 330E	Poor conductor Separate weak surf.? anom.	-	3.0 km 3 crosslines	No o'c, glacial & soil cover; Poss. u'lain by Ordov. 1st/Qtzite; poss. also intermed. porphyry.	3 crosslines No signif. anomalies.	3 crosslines Isolated anom. relate to slope changes	nil	151 soils at 20m spacing; gen. high Pb; Lithologies may reflect in geochem; multi- elem. anom. on contact at 600N 1080E.	Anom. location doubtful; anom. unexplained but poss. contact effect, e.g. glacials-bedrock or 1st-Qtzite, etc.
14	FURY FLATS	17 18	263.2 272.0	5 390 450N 397 400E	Broad res- istivity anom., poss.surf.? If bedrock then shal- low dip NW	-	1.7 km 3 crosslines	Gordon 1st on N side of river, Thick alluvials elsewhere; 1st dips mod ^y NW, N-S cleavage.	3 crosslines No signif. anomalies.	3 crosslines strong anom// 1st cleavage	nil	soils at 20m spacing; Zn values at 1st/alluvium contact, poss. basalt glacials Pb/Zn anom. over 1st at 400N 320E.	Prob. due to fault or fracturing on 1st; however bedrock dip observed similar to estimated anom. dip.
15	MACKINTOSH	22	321.8	5 390 750N 396 150E	Isolated resistivity anom; Prob. surficial	-	0.9 km 3 crosslines	Gordon 1st o'lain by Qtzite, dip WNW prob. thick alluv- ials covered by lake waters	3 crosslines No signif. anomalies.	3 crosslines No signif. anomalies.	nil	48 soils at 20m spacing; Pb/Zn/Ni anom over 1st unexplained.	Anom. probably under lake waters; Maybe contact effect of 1st-alluvium.

ANOM. NO.	GRID (OR AREA)	DIGHEM ANOMALY		AMG COORDS	AIRBORNE DIGHEM	RESPONSE MAGNETICS	GROUND FOLLOW-UP						CAUSE OF ANOMALY
		LINE	FID				GRIDDING	GEOLOGY	MAGNETICS	VLF-EM	MAX-MIN	GEOCHEM	
16	LOWER BROUGHAM	61	898.15	5 383 050N 392 800E	v. poor conductor	-	nil	p6 qtzites; nearby intermed/acid porphyries.	nil	nil	nil	nil	Investigation not completed.
17	ROMULUS WEST	55 54	821.0 811.8	5 384 620N 393 130E	Poor conductor	-	nil	Tert. basalts overlie porphyry. Poor o'c.	nil	nil	nil	nil	Not fully investigated. Prob. basalt edge effect or due to basal Tert. alluv.
18	ROMULUS WEST	4500	1827.6	5 385 750N 394 350E	Weak but poss bed-rock conductor beneath basalt.	- Basalt "noise"	1.4 km 3 cross-lines	No o'c. Fluvio-glacials prob. overlie Tert. basalt.	3 crosslines Basalt W of 2100E.	2 crosslines No signif. anom.	nil	68 soils; single point Cu/Pb/Zn anom at 1460N 2180E unexplained.	Anom. not located.
19	ALEXANDRA PASS	74 75	1046.0 1052.1	5 380 050N 391 200E	Poor conductor Sim. to Anom. 7	-	nil	Massive p6 qtzite, area partly under lake waters.	nil	nil	nil	nil	Anom location now below lake level. Prob. sim. cause to Anom. 7.
RAYS PROSPECT	ROMULUS WEST	No airborne feature		5 387 400N 394 200E	No airborne feature detected		2.8 km 4 cross-lines	Bedded qtzites (Ordov?); sill(?) of chlc intermed. porphyry. Extens. glacials in west. Galena occ. in qtzite.	4 crosslines. Noisy response Spikey anom. over porph.; 60-110nT anom//strike.	4 crosslines Strong dip angle anom. W of gal. occ; lesser on adj. lines	1 cross-line. Strong anom. assoc. with VLF anom.	soils at 20, 5m spacing; Pb anom near gal. occ., other minor anom; 18 rocks, no signif. results; 5 s. seds, Pb anom near gal. occ.	Feature not detected in airborne survey despite strong VLF and max-min anomalies.

APPENDIX II

ROCK SAMPLE ANALYSES

- Notes: 1. All results generally in ppm except Fe in percent
2. AMG Coordinates given as northing first
3. Key to area or grid given below :

F - Fury
FF - Fury Flats
RE - Romulus East
RW - Romulus West
BW - Backwater
Mac - Mackintosh
B - Brougham
LB - Lower Brougham
SW - Swallow West
AP - Alexandra Pass
AH - Alexandra Hills
S - Sophia
M - Murchison
MW - Murchison West
VP - Victoria Peak
R - Mount Romulus
Ray - Ray's Prospect

APPENDIX II - ROCK SAMPLE RESULTS

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn			Description of Rock
M	2501	68400 88330	18	4	18	8	6	<4			14	<10	560	6			Dark grey phyllite
M	2502	68500 88340	30	4	26	8	<4	<4			10	<10	600	<4			" " "
M	2503	68600 88350	16	8	24	18	4	<4			10	10	570	8			" " "
M	2504	68690 88380	12	4	32	10	<4	<4			6	<10	580	12			" " "
M	2505	68780 88420	20	12	22	<4	<4	<4			36	<10	550	6			" " "
M	2506	68840 88490	24	4	38	6	4	<4			26	10	480	4			" " "
M	2507	69050 88520	12	24	50	<4	<4	<4			18	10	620	6			" " "
M	2508	69120 88570	12	12	36	<4	6	<4			20	10	490	4			" " "
M	2509	69220 88600	10	16	24	<4	<4	<4			14	10	540	6			" " "
M	2510	69280 88670	24	16	38	8	<4	<4			16	10	310	6			" " "
M	2511	69370 88690	10	12	32	<4	<4	<4			18	<10	530	6			" " "
M	2512	69470 88700	12	8	34	<4	<4	<4			14	10	430	6			" " "
M	2513	69670 88740	20	4	50	20	<4	<4			16	10	670	8			" " "
M	2514	68570 87750	4	60	340	<4	6	<4			<2	<10	1200	4			Sheared intermed intrusive or porphyry
M	2515	68340 88120	4	4	6	<4	<4	6			4	<10	65	4			Quartz pebble conglomerate
M	2516	68500 87890	4	<4	4	<4	<4	<4			2	<10	150	4			Float silicified rhyolite (?) or quartzite
M	2517	68430 88050	6	<4	<2	<4	<4	<4			<2	<10	90	<4			Silicified rhyolite (?) or quartzite
M	2518	68530 88350	6	<4	28	<4	<4	<4			20	15	540	4			-
M	2519	68410 88080	4	<4	<2	<4	<4	<4			3	<10	155	6			Grey fine-grained sheared pelite; shows banding
M	2520	69520 88740	14	12	50	<4	<4	<4			5	10	730	10			Dark grey carbonac. phyllite; some lamination; Minor Fe staining
M	2521	68530 87840	16	65	420	<4	8	<4			3	<10	1050	<4			Acid/intermediate porphyry
VP	2522	69750 89620	4	4	4	<4	<4	<4			<2	<10	80	4			White massive quartzite; slightly sericitic
VP	2523	69740 89650	10	16	18	<4	<4	<4			7	<10	550	<4			Black cleaved carbonac. phyllite, Fe staining
VP	2524	69690 89760	32	12	8	<4	<4	6			44	<10	270	10			Black fine-grained carbonac. phyllite
VP	2525	69670 89790	6	20	65	18	8	<4			20	10	85	<4			Red-brown/cream-pink qtz-sericite schist; carbonaceous; pyritic quartz filled tension gashes
VP	2526	69670 89790	8	4	18	<4	<4	<4			30	<10	35	4			Massive white quartzite
VP	2527	69670 89800	8	8	8	<4	<4	<4			2	<10	120	<4			Massive white quartzite; some Fe staining
VP	2528	69660 89820	30	28	20	4	<4	<4			24	<10	460	6			Black carbonaceous phyllite
VP	2529	69660 89820	6	4	4	<4	<4	<4			3	10	250	4			White massive quartzite; minor sericite
VP	2530	69650 89820	4	<4	2	<4	<4	<4			2	10	470	8			White quartzite; minor sericite development
VP	2531	69650 89820	6	<4	4	<4	<4	<4			2	<10	610	4			" " " " "
VP	2532	69640 89850	6	4	2	<4	<4	<4			<2	<10	105	<4			Massive white quartzite with sericite bands around quartzite kernels
VP	2533	69620 89890	6	<4	<2	<4	<4	<4			2	<10	35	4			White sericitic schist; kink-banded

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APPENDIX II - ROCK SAMPLE RESULTS

Area or Grid	Sample No	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn			Description of Rock
VP	2534	69590 89990	6	4	<2	<4	<4	<4			2	<10	15	<4			Massive white quartzite
VP	2535	70110 89800	6	4	2	<4	<4	<4			2	10	250	<4			Float; quartzite with sericitic films
VP	2536	70090 89850	6	<4	2	<4	<4	<4			<2	<10	135	4			White massive quartzite
VP	2537	70020 89980	6	<4	<2	<4	<4	<4			2	10	10	<4			Massive quartzite
VP	2538	69920 89750	6	<4	2	<4	<4	<4			<2	<10	260	<4			White massive quartzite
VP	2539	69870 89840	8	4	4	<4	<4	<4			20	<10	320	<4			Black carbonaceous phyllite; float
VP	2540	69880 89830	16	20	20	10	<4	<4			42	10	510	8			" " "
VP	2541	69840 89890	6	4	6	<4	<4	<4			4	<10	320	6			White quartz-sericite schist; part carbonaceous
VP	2542	69840 89890	8	12	6	<4	4	<4			14	<10	25	8			Massive quartz veining; 1 metre wide
VP	2543	69840 89890	8	4	8	<4	<4	<4			4	<10	50	<4			-
VP	2544	69840 89890	12	4	12	<4	<4	<4			5	<10	90	<4			Pyritic quartz veins in shale
VP	2545	69840 89890	22	8	48	<4	4	<4			50	10	500	10			Black carbonaceous shale
VP	2546	69830 89910	8	<4	14	<4	<4	<4			3	10	65	4			White massive quartzite; some quartz veining
VP	2547	69820 89930	6	<4	4	<4	<4	<4			<2	<10	280	6			Shale float
VP	2548	69820 89930	4	<4	<2	<4	<4	<4			<2	<10	15	<4			Massive quartzite
VP	2549	69760 90070	6	<4	14	<4	<4	<4			7	<10	520	8			Massive white quartzite
VP	2550	69760 90070	6	4	10	<4	<4	<4			9	<10	220	<4			Carbonaceous shale/phyllite
VP	2551	70260 89970	8	<4	<2	<4	<4	<4			<2	<10	85	<4			Massive quartzite float
VP	2552	70250 89980	6	<4	22	<4	<4	<4			10	10	770	<4			Well cleaved carbonaceous quartzite/sandy shale
VP	2553	70250 90000	4	<4	14	<4	<4	<4			10	15	860	6			Well bedded shale/quartzite bands
VP	2554	70240 90010	4	<4	14	4	<4	<4			5	<10	570	6			Carbonaceous quartzite/sandy shale
VP	2555	69810 90100	4	4	<2	<4	<4	<4			<2	<10	20	4			Massive quartzite
VP	2556	69820 90030	10	8	22	<4	<4	<4			6	<10	200	<4			Black shale/quartzite interbedded; trace very fine pyrite
VP	2557	69840 89990	8	<4	14	<4	<4	<4			6	<10	180	<4			Carbonaceous phyllite; minor quartz veins, Fe staining
VP	2558	69850 89950	12	16	10	<4	<4	<4			22	<10	420	<4			Carbonaceous phyllite; minor quartz veins, trace pyrite
VP	2559	69760 89830	24	4	4	<4	<4	<4			12	<10	310	6			Black carbonaceous shale/phyllite
VP	2560	69760 89830	6	4	6	<4	<4	<4			4	<10	125	4			Grey-green quartz-sericite schist
VP	2561	69760 89830	32	4	18	<4	6	<4			14	<10	165	<4			White-grey massive quartzite; carbonaceous specks and pyrite
VP	2568	69680 89770	22	90	30	<4	8	<4			380	<10	190				Orange-red clay from seepage
VP	2569	69680 89770	24	85	32	<4	16	<4			280	<10	145				" " " " "
VP	2571	70100 89820	16	8	50	<4	36	<4			195	<10	95				" " " " "
VP	2572	69850 89970	14	8	42	<4	8	<4			36	<10	370				" " " " "

APPENDIX II - ROCK SAMPLE RESULTS

Area or Grid	Sample No	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn		Description of Rock
RE	2839	83710 95620	<2	8	6	4	-	-			9	<10	<10			Medium-grained well indurated quartzite
RE	2840	83780 95440	30	60	70	10	-	-			24	<10	320			Fine-grained, Fe stained, well indurated quartzite
RE	2841	83800 95400	8	100	60	8	-	-			110	<10	155			F/m-g, well indurated quartzite with qtz veinlets
RE	2842	83700 95640	10	26	14	<4	-	-			105	<10	25			F/m-g, slightly Fe stained massive quartzite
R	2843	84310 94910	10	8	38	8	-	-			4	10	1500			Cambrian (?) granite; slightly sheared
RW	2844	86980 94310	6	8	12	4	-	-			4	<10	360			F-g, grey massive sandstone (?)
RW	2845	86980 94310	60	<4	20	22	-	-			<2	<10	150			Dolerite
R	2846	84560 94620	44	12	10	4	-	-			6	20	560			Intermed. volcanic with pyrite voids
RW	2847	87010 94250	6	12	210	34	-	-			4	10	1000			Quartz-biotite-felspar porphyry
RW	2848	87000 94260	6	<4	115	28	-	-			<2	10	810			" " " "
R	2849	84550 94670	75	<4	24	12	-	-			55	10	15			F-g sediment or tuff
R	2850	84580 94650	140	46	240	16	-	-			42	30	130			Gossaneous Fe oxide
R	2851	84540 94700	12	10	36	4	-	-			<2	<10	30			Coarse lithic tuff (?)
R	2893	84750 94480	36	100	12	<4	<4	12			5	20	410	36		Weathered c-g tuff with quartz phenocrysts; py voids
R	2894	84740 94500	10	8	14	<4	<4	<4			3	15	240	16		Weathered c-g welded acid tuff (?); hem-sericite (?) coating on fractures
R	2895	84700 94570	8	4	10	<4	<4	<4			2	20	890	20		M-c-g acid tuff; 3% py; unknown black mineral
R	2896	84700 94570	4	18	8	<4	<4	<4			2	10	890	10		Quartz porphyry; phenocrysts 3mm
R	2897	84680 94580	4	14	4	<4	<4	<4			5	10	350	8		Quartz-felspar porphyry
R	2898	84670 94600	22	<4	10	<4	<4	<4			3	20	300	12		Acid volcanic with qtz phenocrysts; hem. blebs
R	2899	84640 94660	12	<4	12	<4	<4	<4			2	10	2350	14		F-g Acid volcanic, minor qtz phenocrysts; unknown disseminated black mineral
R	2900	84620 94680	10	<4	14	<4	<4	<4			<2	15	2150	8		M-c-g acid tuff
Ray	3229	87430 94240	16	2000	70	16	8	<4			10	10	50	<4		M-g clean quartzite with dissem. gal/py/cpy (rare)
Ray	3259	87540 94240	6	16	8	4	<4	<4			<2	10	30	8		-
Ray	3260	87400 94240	10	28	14	<4	4	<4			<2	10	25	4		-
Ray	3261	87400 94240	22	32	20	12	<4	<4			6	<10	35	4		-
Ray	3262	87340 94250	18	750	55	12	<4	<4			12	<10	55	6		-
Ray	3263	87330 94250	28	16	16	20	4	<4			8	<10	75	4		-
Ray	3264	87300 94250	12	12	12	20	<4	<4			12	<10	110	4		-
Ray	3265	87300 94250	130	8	75	85	12	<4			3	15	860	10		Cambrian volcanic
Ray	3266	87300 94250	18	50	16	16	<4	<4			12	10	155	<4		Sandstone
Ray	3267	87370 94210														Quartzite with gal/cpy
F	3268	84420 96360	30	12	42	12	10	<4			9	10	390	8		Grey phyllite-schist, black phyllite with minor py
F	3269	84280 96250	36	12	60	8	6	<4			6	<10	340	<4		Siltstone; laminated, soft, black, graphitic slightly pyritic

APPENDIX II - ROCK SAMPLE RESULTS

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn		Description of Rock
F	3270	84270 96480	12	185	28	8	4	<4			70	<10	15	8		F-g massive quartzite with Fe-stained fractures
F	3271	84410 95730	14	16	70	12	24	<4			16	10	280	6		F-g grey-green tuff (?); quartz phxsts; minor py.
F	3272	84450 95690	22	12	60	8	10	<4			3	<10	1050	6		Float; (?) Cambrian granite; f-g tuff
F	3273	84890 96100	12	50	26	12	<4	<4			115	10	650	8		Phyllite, quartzose, contorted schistosity
F	3274	84890 96100	65	200	1100	12	6	<4			6	<10	1050	<4		F-g, dark grey tuff; minor sph (?)
F	3275	84860 96640	16	<4	34	4	8	<4			10	<10	590	<4		F-g, chloritic (?) tuff with qtz/fel phxsts
F	3276	84860 96640	10	4	36	4	4	<4			2	10	410	8		Dark grey, finely laminated schist
F	3277	85020 96410	30	4	50	20	12	<4			8	<10	650	<4		Dark grey, quartz-mica schist; abundant py.
F	3278	85200 96230	12	4	30	8	6	<4			7	<10	1100	6		F-g, even textured acid volcanic
F	3279	85120 97100	32	55	140	44	20	<4			9	10	360	8		M-g fels/hbl rock; intermediate volcanic (?)
F	3280	83800 96450	16	4	38	12	8	<4			7	<10	360	<4		Grey-green quartz-felspar-mica schist
F	3281	84250 96420	22	12	42	12	<4	<4			<2	10	390	6		Strongly graphitic phyllite; Fe staining after py
F	3282	83970 97600	6	12	50	28	8	<4			14	<10	610	4		Quartz-mica schist
F	3283	83970 97600	8	4	16	12	4	<4			<2	20	35	28		M-g Z-mica adamellite; glacial erratic (?)
AH	3284	74670 90500	6	<4	32	20	10	<4			3	<10	460	8		Quartz-mica schist; Fe stained blebs (carbonate?)
AH	3285	74960 90700	24	170	42	36	8	<4			95	20	320	55		Contorted graphitic schist; minor pyritic stringers
AH	3286	74960 90700	70	180	4	90	750	1700			16.4%	<10	40	12		Vein quartz with py/apy from adit dump
AH	3287	75210 91620	65	<4	30	8	8	<4			130	<10	540	8		Foliated quartzite; trace py
AH	3288	75290 91690	22	<4	14	24	10	<4			75	10	400	10		Contorted, foliated quartzite
B	3289	81650 94050	20	8	140	32	16	<4			26	10	320	8		Siltstone, grey, foliated
B	3290	81720 94120	6	<4	70	20	6	<4			20	15	240	<4		Laminated grey siltstone
B	3291	81720 93960	12	4	24	16	4	<4			14	10	250	6		Dark grey siltstone with prominent foliation
B	3292	81820 93930	12	4	48	8	6	<4			22	10	220	8		F-g, foliated quartzite
S	3293	76240 89800	10	<4	350	4	6	<4			2700	<10	8800	<4		Porous Fe-oxide; probable false gossan
S	3294	76040 89500	14	12	160	40	12	<4			10	10	1350	4		Sl. chloritic acid tuff with qtz/fels phxsts & clasts.
S	3295	76040 89500	10	32	20	16	4	<4			14	<10	210	4		F-g thinly bedded quartzite with some siltstone
S	3296	76510 89420	12	55	28	<4	4	<4			10	40	1600	10		Sl. sheared acid tuff; some chips bleached
AH	3297	74960 90700														Siliceous veins with semi-massive py/apy
AH	3298	74960 90700														Black schist; contorted veined impregnated with sulphides
AH	3299	74960 90700														Puggy dark grey decomposed rock; minor veining and some Fe staining
RW	3300	83670 91960														Acid porphyry
R	3485	84580 94760	16	<4	12	<4	<4	<4			8	10	200	<4		F-g, siliceous rock; rhyolite ?
R	3486	84540 94830	32	6	4	<4	<4	<4			8	<10	1150	8		F-m-g acid tuff(?) or quartzite; minor lim. x sulphide
RW	3487	86340 94410	4	4	30	<4	<4	<4			<2	<10	65	14		Weathered Z-mica granite (prob. glacial erratic)

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn			Description of Work
RW	3488	86200 94470	32	8	85	90	28	<4			<2	10	410	<4			Basalt
RW	3489	86060 94730	160	16	85	20	<4	<4			6	<10	890	4			C-g acid crystal tuff, minor chloritisation of feldspars
RW	3490	86060 94730	14	12	36	12	<4	<4			3	10	820	8			Acid tuff with quartz/feldspar phxsts
RW	3491	86060 94730	12	8	6	8	<4	<4			3	10	80	6			Quartzite; minor limonite on fractures
RW	3492	85770 94840	4	8	4	8	<4	<4			2	10	25	4			Silic. quartz pebble conglomerate with sandy matrix
RW	3493	85570 94840	12	70	28	4	<4	<4			12	10	650	4			F-g acid volcanic; quartz phxsts; Fe oxide blebs
RW	3494	85570 94840	28	150	330	32	4	<4			3	20	300	6			Chloritic acid volcanic with quartz phxsts & lim. staining
RW	3495	85420 94840	16	4	10	4	<4	<4			<2	<10	410	<4			F-g quartzite (or rhyolite?); quartz veins; rare py(?)
Ray	3496	87320 94250	18	2500	55	12	8	<4			10	<10	45	8			M-g grey indurated quartzite with dissem. gal/py/rare cpy
Ray	3497	87320 94250	14	170	24	12	<4	<4			8	<10	90	6			M-g quartzite overlying 3496
Ray	3498	87320 94250	18	34	16	<4	<4	<4			24	10	90	<4			M-g, dirtier, thicker quartzite overlying 3497
Ray	3499	87320 94250	12	450	65	16	4	<4			14	<10	70	8			Quartzite, minor dissem py; downdip from 3496
Ray	3500	87280 94260	8	14	115	36	8	<4			4	<10	830	4	<u>Sb</u>	<u>Mo</u>	Prob. intermed. volcanic; sl. chloritic; Qtz/fels/biot/hbl? phxsts
B	21202		50	12	260	<4	<4	<4	1.00	600	8000	30	10	1.72%	4	4	Greisen with dissem. tourm.; cassit. selvage on one face
B	21203		6	12	32	<4	<4	<4	0.55	700	440	3600	<10	160	<4	6	Greisenised granite with quartz-wolfram vein.
B	21204																Altered microgranite
B	21205		4	10	24	<4	<4	<4	0.60	1000	390	15	590	18	<4	<4	Diopside-magnetite skarn
B	21206		4	16	14	<4	<4	<4	0.20	550	60	10	1600	<4	6	<4	Pale green-grey skarn rock (wollastonite?)
B	21207		2	10	16	<4	<4	<4	0.25	560	95	<10	730	12	4	4	Banded pale green-grey skarn
M	21208		10	46	60	8	<4	<4	26.0	34	46	10	130	<4	10	6	Fe oxide zone in carbonaceous phyllites
AH	21212																Dolerite (glacial boulder)
Ray	21214																C-g chloritised sediment
Ray	21215																Pink intermediate porphyry
Ray	21216																Heavily chloritised intermediate porphyry
FF	21217		10	30	16	4	<4	<4	0.35	75	36	<10	40	4	<4	12	Dark grey silty limestone (Gordon Limestone)
FF	21218		8	<4	10	4	<4	<4	0.20	70	7	<10	15	<4	4	12	Dark grey foliated limestone with calcite veins

N.B. 21202 - 21218 all <0.05 Au & ≤2 Ag

APPENDIX III

STREAM SEDIMENT SAMPLE ANALYSES

Notes:

1. All results generally in ppm except Fe in percent
2. AMG coordinates given as northing first
3. Key to area or grid given in Appendix II

APPENDIX III - STREAM SEDIMENT SAMPLE RESULTS

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn	Ta	Mo
VP	2562	69850 90070	2	<4	<4	4	<4	<4	0.18	24	3	<10	25	<4	<10	6
VP	2563	69850 90040	6	<4	6	<4	<4	<4	0.14	16	3	<10	15	6	<10	6
VP	2564	69880 89960	4	<4	4	<4	<4	<4	0.11	30	4	10	55	4	<10	8
VP	2565	70050 89940	8	<4	6	<4	<4	<4	0.18	18	2	<10	45	<4	<10	8
VP	2566	70050 89980	6	<4	6	<4	<4	<4	0.55	75	9	10	130	4	<10	10
VP	2567	70020 90050	4	<4	6	<4	<4	<4	0.18	60	2	10	30	6	<10	10
VP	2570	70120 89820	6	<4	8	4	<4	<4	0.49	12	6	10	135	6	<10	6
M	2573	68510 87850	12	<4	12	<4	<4	<4	0.18	30	2	10	100	4	<10	12
M	2574	68390 88090	4	<4	6	<4	<4	<4	0.10	12	2	10	40	4	<10	10
M	2575	68300 88270	16	4	16	8	<4	<4	0.33	14	2	10	185	4	<10	10
M	2576	68300 88290	14	<4	70	4	<4	<4	0.18	10	2	15	55	4	<10	8
M	2577	68510 88360	16	<4	12	12	<4	<4	0.20	14	4	<10	105	6	<10	10
M	2578	68620 88340	14	18	16	4	<4	<4	0.63	90	12	10	195	4	<10	6
M	2579	68620 88360	8	<4	6	6	<4	<4	0.14	10	<2	10	75	4	<10	10
M	2580	68910 88500	16	8	12	8	<4	<4	0.46	32	4	<10	160	4	<10	8
M	2581	69560 88720	6	6	4	<4	<4	<4	0.25	14	6	<10	155	8	<10	10
M	2582	69350 88700	12	6	16	<4	<4	<4	0.52	20	7	<10	300	6	<10	8
M	2583	69200 88600	8	6	8	4	<4	<4	0.31	16	8	<10	150	6	<10	8
M	2584	69060 88510	6	4	4	<4	<4	<4	0.15	10	2	<10	80	<4	<10	8
F	2585	84640 96760	24	16	44	10	<4		1.45	195	4	15	180	20	<10	8
F	2586	84460 96540	12	16	48	8	4		0.90	410	3	<10	85	6	<10	10
F	2587	84380 96370	26	20	30	6	8		1.70	370	5	<10	85	4	<10	10
F	2588	84350 96260	22	<4	20	4	4		0.90	195	9	10	125	<4	<10	12
F	2589	84840 96170	24	75	60	4	12		1.70	780	26	15	420	8	<10	12
F	2590	84870 96150	12	70	50	<4	8		1.15	330	9	15	550	4	<10	18
F	2591	84640 96310	18	12	16	4	<4		1.10	36	12	<10	130	8	<10	6
F	2592	84800 96650	10	4	12	6	<4		1.00	34	6	<10	120	8	<10	8
F	2593	85050 96660	16	8	32	6	<4		1.00	165	4	<10	135	42	<10	8
F	2594	85230 96170	12	20	24	4	<4		0.90	75	6	10	760	8	<10	12
F	2595	85170 96470	18	28	26	6	<4		1.05	95	9	15	1150	14	<10	16
F	2596	84030 96720	18	12	42	8	<4		1.60	220	6	<10	240	10	<10	8
F	2597	83800 96450	12	<4	36	8	<4		1.20	165	5	10	160	6	<10	6
F	2598	84000 97600	4	<4	32	<4	<4		0.50	130	<2	10	120	18	<10	10
F	2599	83780 97770	6	4	12	<4	<4		0.50	125	4	15	165	38	<10	6
F	2823	84660 96740	24	60	100	10	28	<4	2.50	890	12	10	160	8	<10	8
F	2824	84480 96530	30	170	300	16	90	<4	4.60	3550	32	<10	155	6	<10	8
F	2825	84210 96240	32	220	450	24	195	<4	7.20	5600	48	10	140	<4	<10	10

APPENDIX III - STREAM SEDIMENT SAMPLE RESULTS

716094

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn	Ta	Mo
F	2826	84220 96220	26	70	300	26	28	<4	4.00	3360	36	10	120	8	<10	8
F	2827	84440 95770	36	100	300	16	48	<4	3.20	4000	12	10	820	10	<10	18
F	2828	84430 95790	14	90	28	8	8	<4	1.60	580	55	<10	170	4	<10	8
F	2829	85000 96500	32	80	60	8	8	<4	2.30	560	20	15	450	6	10	16
F	2830	84980 96260	10	16	16	8	4	<4	0.46	36	5	<10	115	12	<10	8
F	2834	84240 96850	20	20	38	8	4	<4	2.00	160	6	<10	250	16	<10	4
F	2836	84610 97420	16	6	14	6	<4	<4	0.34	70	4	10	105	105	<10	10
F	2837	84240 97470					<4	<4	0.45	75				95	<10	6
F	2838	83480 97480					4	<4	0.97	120				42	<10	10
RW	2852	86190 94250	8	4	14	<4	<4		1.35	160	3	15	70	85	<10	6
RW	2853	86530 94370	6	8	12	4	6		0.96	140	2	<10	170	10	<10	4
RW	2854	86600 94310	6	8	14	4	6		1.20	125	3	15	75	24	<10	4
RW	2855	86720 94270	8	8	22	24	4		1.05	130	<2	<10	210	10	<10	4
RW	2856	86720 94290	10	8	22	20	4		1.50	155	4	10	330	48	<10	8
RW	2857	87000 94240	10	12	60	28	8		2.60	210	4	10	610	10	<10	4
Ray	2859	87290 94260	8	8	38	20	6		2.00	190	5	10	460	22	<10	6
Ray	2860	87590 94230	12	28	42	20	6		1.35	250	2	10	140	50	<10	6
Ray	2861	87580 94250	10	16	38	10	6		1.75	190	3	20	350	16	<10	6
Ray	2862	87780 94280	8	12	34	10	4		1.55	115	3	<10	360	14	<10	6
Ray	2863	87790 94260	10	8	32	18	6		1.50	155	3	15	160	90	<10	6
RW	2864	86900 94240	8	8	20	18	6		1.10	130	2	<10	175	6	<10	4
RW	2865	86400 94400	12	16	26	24	6		1.85	180	5	20	540	18	10	8
RW	2866	86010 92410	22	10	75	70	22		3.20	560	3	10	310	8	<10	4
RW	2868	85890 92250	12	12	30	28	8		1.55	130	<2	10	195	12	<10	4
RW	2869	85660 92090	8	12	18	16	6		1.20	130	<2	10	180	10	<10	4
RW	2870	85640 92090	8	10	18	14	6		1.25	110	2	15	140	6	<10	6
RW	2871	85540 91880	6	16	26	12	6		1.05	110	<2	<10	165	<4	<10	<4
RW	2872	85470 91900	16	10	65	70	16		2.70	370	3	10	190	10	<10	4
RW	2874	85250 91790	12	4	42	46	12		2.00	300	2	<10	140	8	<10	<4
RW	2875	85260 91760	8	16	28	16	10		1.15	120	4	15	170	8	<10	8
RW	2876	86130 92520	6	6	20	14	6		1.15	115	4	10	165	16	<10	<4
RW	2877	86320 92680	16	8	50	50	14		2.40	430	4	30	180	4	<10	4
RW	2878	86350 92690	8	18	22	20	8		1.35	140	<2	15	185	12	<10	<4
RW	2879	86270 93000	12	16	30	30	10		1.85	190	3	10	175	28	<10	6
RW	2880	86180 93160	10	10	26	32	6		1.60	145	2	10	145	38	<10	4
RW	2881	85930 93290	10	8	18	24	6		1.25	120	2	15	130	26	<10	12
RW	2882	85720 93440	6	10	14	18	<4		0.95	80	<2	15	130	14	<10	4
RW	2883	86190 94480	12	16	30	28	6		1.70	145	4	10	630	10	<10	12

APPENDIX III - STREAM SEDIMENT SAMPLE RESULTS

716095

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn	Ta	Mo
RW	2884	86060 94600	10	10	24	24	6		1.30	90	2	<10	185	32	<10	<4
RW	2885	86060 94720	8	12	10	8	4		0.41	42	3	15	850	10	<10	12
RW	2886	86000 94850	10	14	24	22	6		1.00	95	<2	<10	850	10	<10	6
RW	2887	85810 94860	8	12	8	8	4		0.49	60	5	15	740	28	<10	10
RW	2888	85660 94860	6	18	14	4	<4		0.28	32	2	15	2050	28	<10	4
RW	2889	85560 94810	8	16	12	4	4		0.71	175	5	20	125	26	<10	12
RW	2890	85500 94840	6	12	8	<4	<4		0.37	48	3	15	600	20	<10	8
RW	2891	85180 94820	12	10	10	8	<4		0.97	60	4	25	520	32	<10	24
AH	3230	75020 90780	30	8	8	<4	<4		0.25	90	<2	15	50	12	<10	<4
AH	3231	75010 90810	16	8	<2	<4	<4		0.20	24	2	<10	50	12	<10	4
AH	3232	74990 90660	8	6	<2	<4	<4		0.50	165	3	10	65	14	<10	<4
AH	3233	75280 91670	6	4	<2	<4	<4		0.20	50	2	<10	25	12	<10	<4
AH	3234	75380 90870	6	6	<2	<4	<4		0.30	135	3	10	45	16	<10	<4
AH	3235	75410 90990	8	<4	<2	<4	<4		0.20	48	2	<10	60	<4	<10	<4
AH	3236	75700 91270	8	12	<2	<4	<4		0.55	185	9	10	65	18	<10	<4
AH	3237	75520 91410	6	4	<2	<4	<4		0.35	65	2	15	75	<4	<10	4
B	3238	81620 93920	12	18	16	<4	<4		0.80	200	10	10	90	28	15	<4
B	3239	81720 93910	12	20	32	4	4		0.80	240	12	15	75	36	10	4
S	3240	76250 89550	8	4	<2	<4	<4		0.25	34	2	<10	70	8	<10	<4
S	3241	75930 89900	8	<4	12	<4	<4		0.25	44	2	10	15	22	<10	<4

APPENDIX IV

STREAM SEDIMENT PAN CONCENTRATE ANALYSES

Notes:

1. All results generally in ppm except Fe in percent
2. AMG Coords given as northing first
3. Key to area or grid given in Appendix II

APPENDIX IV - STREAM SEDIMENT PAN CONCENTRATES

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn	Ta	Mo
F	2600	84640 96760														
F	2801\	84660 96740	50	22	55	12	8		1.50	210	3	25	170	310	<10	8
F	2802\	84460 96540	34	28	48	12	<4		1.90	195	10	55	125	250	<10	10
F	2803\	84480 96530	50	38	120	12	20		2.40	640	18	15	250	135	<10	6
F	2804	84380 96370	40	18	34	12	<4		1.65	115	4	15	190	95	<10	8
F	2805\	84350 96260	24	16	34	8	4		1.40	250	10	<10	330	<4	<10	<4
F	2806\	84210 96240	24	48	110	8	20		2.60	630	22	10	220	6	<10	8
F	2807\	84840 96170	32	75	60	<4	<4		1.60	290	22	10	550	8	<10	14
F	2808\	84870 96150	18	65	50	<4	<4		0.83	85	7	15	580	12	<10	12
F	2809\	84220 96220	22	32	125	8	<4		2.35	550	24	10	175	8	<10	8
F	2810\	84440 95770	44	85	55	4	<4		1.70	180	9	15	630	32	<10	30
F	2811\	84430 95790	18	90	32	<4	<4		1.45	150	50	<10	260	12	<10	4
F	2812\	84640 96310	20	24	26	<4	<4		0.97	50	2	65	165	2500	<10	4
F	2813\	84800 96650	18	18	22	4	<4		1.30	50	6	25	220	1000	<10	6
F	2814\	85050 96660	14	22	34	8	<4		1.35	180	14	90	240	2300	<10	4
F	2815	85000 96500	30	60	20	<4	<4		1.50	210	16	<10	550	22	<10	12
F	2816\	85230 96170	24	44	46	4	<4		1.15	100	6	40	1000	65	<10	18
F	2817\	84030 96720	14	22	34	8	<4		1.40	175	9	10	380	44	<10	<4
F	2818\	83800 96450	14	30	28	8	<4		1.05	140	7	15	290	22	<10	4
F	2819\	84240 97470	10	18	14	4	<4		0.46	145	<2	95	90	2500	<10	6
F	2820\	84000 97600	10	14	30	4	<4		0.50	185	<2	25	160	510	<10	6
F	2821\	83780 97770	14	16	18	4	<4		0.48	130	<2	35	105	2100	<10	6
F	2822\	83480 97480	12	18	20	<4	<4		0.48	210	<2	65	175	3600	<10	4
F	2831\	84980 96260	12	22	28	<4	<4		0.60	40	2	70	165	340	<10	4
F	2832\	85170 96470	20	32	34	4	<4		1.05	115	7	30	960	75	<10	14
F	2833\	84240 96850	18	26	34	8	<4		1.45	185	7	10	330	470	<10	4
F	2835\	84610 97420	12	<4	18	4	<4		0.45	175	<2	70	70	2800	<10	6
RW	2858\	87000 94240														
RW	2867	86010 92410														
RW	2873\	85540 91880	16	10	30	12	<4		0.83	145	4	15	90	75	<10	<4
RW	2892\	85720 93440	10	<4	18	<4	<4		0.39	75	<2	10	45	100	<10	<4
AH	3242\	75020 90780	12	20	48	8	<4		1.35	1450	<2	105	70	360	<10	<4
AH	3243	75010 90810	36	14	22	4	<4		0.80	480	<2	70	20	650	<10	6

APPENDIX IV - STREAM SEDIMENT PAN CONCENTRATES

716098

Area or Grid	Sample No.	AMG Coords	Cu	Pb	Zn	Ni	Co	Bi	Fe	Mn	As	W	Ba	Sn	Ta	Mo
AH	3244	74990 90660	36	18	28	4	4		1.35	810	3	35	175	510	<10	4
AH	3245	75280 91670	12	10	14	<4	<4		0.38	185	<2	30	15	430	<10	6
AH	3246	75380 90870	10	20	42	4	<4		1.40	1150	4	40	80	110	<10	<4
AH	3247	75410 90990	18	<4	20	8	<4		0.65	410	3	20	55	12	<10	4
AH	3248	75700 91270	8	10	22	<4	<4		0.77	630	6	250	75	360	<10	6
AH	3249	75520 91410	12	6	14	<4	<4		0.52	280	<2	480	65	65	<10	4

APPENDIX V

PETROGRAPHIC AND MINERALOGICAL REPORTS

Includes samples: 3267A, 3267B
3297, 3300, 21201
21202, 21204-7,
21209-18

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 January, 1982

REPORT CMS 82/1/8

YOUR REFERENCE: Sample Despatch
No. 4049/NP01/WDS/104

DATE RECEIVED: 12th January, 1982

SAMPLE NOS.: 3267A, 3267B

SUBMITTED BY: W.D. Smyth

WORK REQUESTED: Petrology

H.W. Fander

H.W. Fander, M. Sc.

REPORT CMS 82/1/3Rock Samples 3267A, 3268A

Two samples were received for petrological and mineralogical study; thin- and polished sections were prepared and are described below.

3267A

(T.S., P.S. 40469)

This is an orthoquartzite, weakly mineralised and pervasively sericitised; the sulphides are epigenetic and are associated with the sericite.

The rock is composed of subrounded to rounded, weakly stressed quartz grains; they are closely-packed and range in size from 0.1 mm to 1 mm. The grains are poorly-sorted and -sized, and there is no indication of bedding; it is because of the range of grainsizes that the grains are so well-packed. Thin interstitial films of illite-sericite occur throughout, incipiently replacing quartz grains and forming small aggregates. Rounded heavy-mineral grains are relatively common and comprise mainly picrochromite and rutile, with occasional zircon, tourmaline and leucoxene.

Sulphides comprise very small grains of pyrite, irregular masses of galena up to 1 mm in size (generally single crystals) and isolated chalcopyrite grains up to 1 mm across. Galena and chalcopyrite are interstitial, and also replace framework grains in places.

3267B

(T.S., P.S. 40470)

This is a weakly stressed, sericitised, mineralised orthoquartzite and closely resembles 3267A in all its features; in addition to dispersed epigenetic sulphides, it also contains narrow, discontinuous, vein-like zones with sulphides. These zones are apparently due to localised shearing and recrystallization.

The framework of the rock is composed of subangular to subrounded, weakly stressed quartz grains, 0.1 - 1.0 mm in size, but mostly 0.2 - 0.3 mm, i.e. showing closer sizing than 3267A. For this reason, sericite is more abundant interstitially (because there are more spaces between framework grains); the sericite has incipiently replaced the framework grains, and contains numerous ultrafine leucoxene grains, giving it a white appearance. Detrital heavy minerals include chromite (brown cores, opaque rims) and zircon.

101

716102

Page 2

CMS 82/1/3

Sulphides are associated with the sericite, occurring interstitially and occasionally partly replacing framework grains; they consist of granular to subhedral pyrite with very fine relict radial textures suggesting low-temperature formation, and irregular patches of galena as semi-continuous stringers along zones of shearing/recrystallization.

H.W. Fander, M. Sc.

Central Mineralogical Services



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

22nd April, 1982

REPORT CMS 82/3/24

YOUR REFERENCE:	Sample Despatch No. 4083/NP01/JJL/67
DATE RECEIVED:	16th March, 1982
SAMPLE NOS.:	3 Samples
SUBMITTED BY:	D.C. Speijers
WORK REQUESTED:	Petrology/Mineralogy

H.W. Fander
H.W. Fander, M. Sc.

REPORT CMS 82/3/24

Three samples were received for petrological-mineragraphic examination; thin-sections were prepared and the offcuts were potash-stained.

21201 (T.S. 41402) K-stain test positive.
This is a partly argillised biotite granodiorite, cut by broad shears with vein-type minerals.

The rock consists of about 40 % quartz, as stressed anhedral patches, with 40 % oligoclase as well-formed, largely argillised stout prismatic crystals, with about 15 % fresh orthoclase and 5 % biotite as stubby, partly chloritised flakes. Fresh and leucoxenised (adjacent to shears) magnetite is a primary accessory mineral, and isolated chlorite patches may be pseudomorphs after hornblende.

The shear zone is flanked by coarse carbonate, and consists of fine carbonate, foliated chlorite, quartz fragments and granular epidote, with preferred orientation.

3300 (T.S. 41401) K-stain test positive (phenocrysts, groundmass).
This is a porphyritic microgranite, with weak pervasive deuteric alteration.

The phenocrysts comprise large embayed quartz crystals, euhedral albite and K-feldspar crystals, and completely chloritised biotite laths with secondary leucoxene. They are randomly-distributed and -orientated in a medium-grained, uniform groundmass of K-feldspar and quartz. Primary accessories include magnetite and apatite.

Fine cloudy epidote and siderite patches occur throughout, in the groundmass and phenocrysts, and there are chlorite aggregates which are distinct from the chloritised biotite.

3297 (P.S. 41400)
This sample consists dominantly of massive, coarsely-granular to euhedral arsenopyrite, with patches of quartz; it is cut by pyrite veins and veinlets which postdate a microfracturing phase. Very small grains of pyrrhotite are enclosed in arsenopyrite, and rare chalcopyrite grains are embedded in quartz. However, no Bi minerals were detected, and the sulphides present are not reported as containing Bi in solid solution (older analyses of arsenopyrite in Dana's System, reporting Bi, are very probably unreliable because of the difficulty of obtaining a pure sample). It is concluded that Bi minerals are probably sporadically distributed, causing sampling problems. Bismuth is commonly associated with arsenopyrite (as native bismuth and bismuthinite) in ore deposits such as Renison.

The hand specimen shows the development of pale greenish-yellow scorodite through oxidation of the arsenopyrite.

H.W. Fander, M. Sc.

Central Mineralogical Services

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Mr. J.J. Lawton
Senior Geologist
The Shell Co. of Aust. Ltd.
Metals Division
P.O. Box 860
DEVONPORT / TAS. 7310

5th May, 1982

REPORT CMS 82/4/5

YOUR REFERENCE:	Sample Despatch No. 4088/NP01/JJL/72
DATE RECEIVED:	5th April, 1982
SAMPLE NOS.:	15 Samples
SUBMITTED BY:	J.J. Lawton
WORK REQUESTED:	Petrology


H.W. Fander, M. Sc.

REPORT CMS 82/4/5

Fifteen rock samples were received for petrological examination, and results are compiled in the attached tables. Descriptions incorporate data from microscopic (stereobinocular, petrological) examination of representative thin-sections and offcuts, together with results of K-feldspar or carbonate staining tests, where applicable, and include interpretative comments.

Summary

This suite is a composite of igneous rocks and sediments with a subordinate pneumatolytic or greisen-style facies of Sn-mineralisation also represented.

Igneous Rocks. These include altered rhyolitic lavas and tuffs (21209, 21210, 21213), altered micro-adamellites of differentiated intermediate character (21215, 21216), a fresh microgabbro (21212), and a greisenized "granitic" biotite micro-adamellite (21204), in addition to the Sn-mineralised greisen (21202) which is similarly altered biotite-granitic in part.

Field relationships are unknown, but the differentiated intermediate rocks carry accessory smoky apatite of a type that is semi-ubiquitous in the Mt. Read Volcanics. Similarly, the biotite-micro-adamellite is petrologically similar to the mineralising Devonian granites of N.W. Tasmania. The microgabbro is of Tertiary character, if only by virtue of its unaltered state which contrasts with the typically, at least moderately altered Jurassic and relatively altered Lower Palaeozoic basics.

Sediments are similarly diverse. Included here are impure, partly dolomitised limestones (21217, 21218), which are algal bioconstructed in part, a rather featureless quartz-mica siltstone (21211), and a "quartz pebble" orthoquartzite (21214). A group of diopside-sanidine rocks (21205, 21206, 21207) is interpreted as skarnised labile sediments on the basis of relict banding, and particularly the distribution of accessories. This assemblage is reminiscent of sanidine facies, that is, "maximum" grade hornfelsing. However, sanidine is known to occur, typically in veins, in some of the Sn, W-bearing, medium- to high-grade skarn situations in Tasmania, where it is a metasomatic rather than strictly metamorphic phase.

D. Cowan, B. Sc.

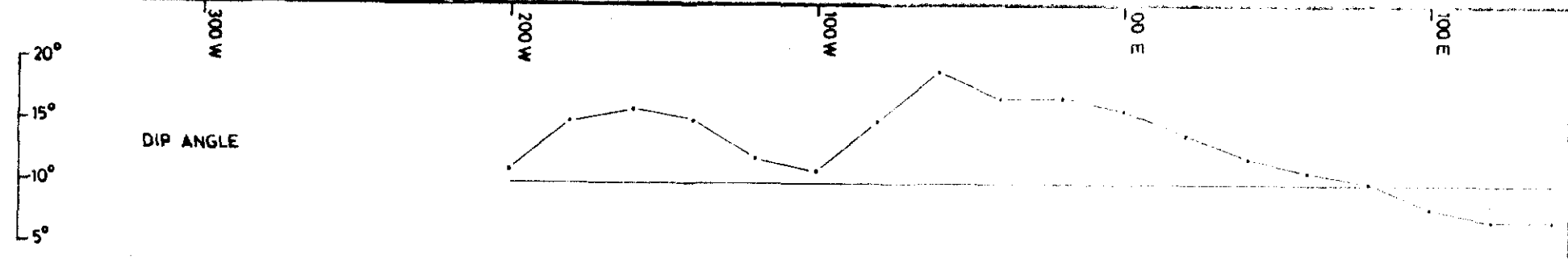
Sample No.	Classification - Composition	Fabric	Accessories	Central Mineralogical Services Comments
1202 T.S. 1596)	<u>Greisen</u> . Quartz and muscovite with disseminated clusters of variably muscovitised/sericitised topaz. Thinly disseminated apatite.	Medium-grained, crudely banded, locally vuggy (quartz, topaz, muscovite); elsewhere vaguely relict granitic.	Ill-defined muscovitised biotite flakes, traces cassiterite, rare zircons, rare pyrite.	Thoroughly greisenized "biotite microgranite" in part, but gradational to slightly vuggy vein or segregation. <u>Cassiterite quartz-inte granular, colour-zoned, sized 100-250µ</u>
1204	<u>"Greisenized" Micro-adamellite</u> . Quartz, mildly muscovitised oligoclase, variable similarly altered orthoclase, minor muscovitised biotite. Conspicuous semi-poikilitic muscovite. Late kaolin, limonite stainings.	Even-medium-grained, granitic; weakly banded (orthoclase distribution), rare quartz phenocrysts.	Sparsely disseminated metamict zircons. Minor albite (selvedges on oligoclase).	Exhibits late-magmatic concentration of muscovite, quartz, minor albite "grading" into mild pneumatolytic greisenizing/muscovitisation of feldspar and particularly biotite.
1205	<u>Diopside-Sanidine Rock</u> . Diopside-hedenbergite with subordinate intergrown sanidine.	Medium-grained, granular, very incipiently banded.	Thinly disseminated pyrrhotite, rare dark hornblende, minor late chlorite stainings.	High-grade skarnised (pyrometamorphic) facies, featureless in terms of original rock type.
1206	<u>Diopside-Sanidine Rock</u> . Diopside-hedenbergite and sanidine in varying proportions, minor disseminations of cloudy sphene.	Similar to 21205, but finer-grained with granular to poikilitic diopside; distinctly banded.	Traces apatite, rare zircons.	Close affinities with 21205; finer-grained with marked metasomatised banding. Sphene (after Ti-opaques), apatite of relict detrital character.
1207	<u>Diopside-Sanidine Rock</u> . Diopside-hedenbergite and sanidine in varying proportions with relatively conspicuous fine cloudy sphene.	Closely analogous to 21206. Contorted to displaced relict banding.	Traces apatite, minor traces allanite, rare zircons.	Near-identical with 21206. Deformation of banding is pre- or early-syn-pyrometamorphism. General features consistent with skarnised labile siltstone/fine sandstone.
1209	<u>Sericitised Rhyolite</u> . Frequent relict quartz, chloritised/sericitised biotite, relatively minor sericitised feldspar phenocrysts, sparse similarly altered lava clasts with sericite-stained quartzofeldspathic groundmass.	Porphyry-like, with semi-perlitic microcrystalline groundmass. Weakly flow-structured.	Leucoxenised opaques, rare zircon, apatite. Minor discontinuous quartz veinlets.	Extensively sericitised weakly clastic rhyolitic lava (trend tuff lava). No pyroclastic features. Groundmass is subvitric.
1210	<u>Sericitised Rhyolitic Tuff</u> . Frequent quartz, subordinate sericitic alkali feldspar crystals, crystal fragments, minor sericite-quartz-chlorite-altered biotite flakes. Sericite/microcrystalline quartz matrix.	Flow-banded/structured with semi-pervasive lineated ("eutaxitic") microshards.	Leucoxenised opaques. Rare sericitised/silicified lithic (vitric tuff) clasts.	Rhyolitic vitric-crystal tuff. Finer detail partly obscured, but consistent with a weakly flow-brecciated Ignimbrite. Alteration closely analogous to 21209.
1211	<u>Siltstone</u> . Fine to semi-sericitic muscovite, subordinate splintery to angular detrital silt-sized quartz, minor sericitised feldspar, pale phlogopite.	Slumped, silty clastic. Minor discontinuous quartz veinlets, sericitic microfractures.	Traces carbonaceous matter, detrital schorl. Pervasive degraded/oxidised fine-grained carbonate.	Slumped, strongly micaceous ?dolomitic siltstone, possibly weakly tuffaceous ("vitroclastic"). Partly recrystallized, but no specific alteration/metamorphic effects.

sample no.	Classification - Composition	Fabric	Accessories	Central Mineralogical Services Comments
1212	<u>Microgabbro</u> . Labradorite and pigeonite with sparse felsic mesostasis, thinly disseminated magnetite, ilmenite.	Weakly pigeonite-porphyrritic, "doleritic" (subophitic).	Fine acicular apatite, traces montmorillonite, rare pyrite in mesostasis.	Essentially unaltered microgabbro of "Tertiary" character.
1213	<u>Sericitised Rhyolitic Tuff</u> . Weakly chlorite-stained sericite aggregates with closely intergrown microcrystalline quartz; disseminated quartz crystals/fragments, frequent chloritised biotite flakes.	Flow-structured/banded, weakly lithic-fragmental (flow-brecciated) vaguely shaly matrix.	Sparse to conspicuous sericitised/silicified; feldspar crystals/fragments. Leucoxenised opaques.	Finer details partly obscured, but general features consistent with a flow- or autobrecciated ignimbritic vitric-crystal tuff. Close affinities with 21210.
1214	<u>Sericitic Orthoquartzite</u> . Framework (70-75 %) of subangular to rounded quartz, minor chert clasts, fragments of vein-quartz, thinly disseminated feldspar grains. Sericitic, weakly chloritic kaolin-illite matrix.	Poorly (trend bimodally) sorted, pebbly to gritty, weakly bedded. Stressed.	Disseminated detrital magnetite, chromite, minor traces detrital schorl, leucoxenic semi-opaques.	Mature fluvial sandstone. Matrix includes minor traces oxidised ultrafine authigenic pyrite.
1215	<u>Chloritic Micro-adamellite</u> . Frequent saussuritic albitised plagioclase, chloritised biotite, subordinate quartz, minor K-spar, chloritised amphibole phenocrysts with K-feldspar/quartz groundmass.	Strongly porphyritic, medium granular groundmass (mean 50 μ). Incipiently chlorite-epidote amygdaloidal.	Apatite, Fe-pigmentation of groundmass.	Quartz content barely exceeds accessory proportions; strictly quartz-monzonitic and of differentiated intermediate character.
216	<u>Altered Porphyry</u> . Frequent illitised feldspar, chloritised biotite, subordinate quartz, chloritised pyroxene (+ amphibole) phenocrysts with silicified/chlorite-stained groundmass, sporadic chlorite veinlets.	Analogous to 21215, slightly coarser groundmass.	Apatite, magnetite, leucoxenised opaques, rare oxidised pyrite, minor relics K-spar (groundmass).	Relatively altered, but clearly closely related to 21215, similarly inferred as differentiated intermediate rather than strictly granitic.
217	<u>Dolomitic Limestone Breccia</u> . Clasts of microcrystalline/microlaminated, slightly quartz-silty limestone. Sparry dolomite matrix with intergranular relics of microcrystalline calcite.	Irregular, partly stylolite-bounded, dimensionally orientated clasts, homogeneous matrix, incipiently sheared.	Traces carbonaceous matter, "syngenetic" pyrite. Minor sericitic argillaceous components (matrix).	Partly dolomitised, slump-brecciated intercalation of slightly impure microlaminated and argillaceous/carbonaceous limestone. Non-fossiliferous, but ?algal in part.
218 [S.S. 610]	<u>Dolomitic Limestone</u> . Platy to irregular zones of microcrystalline/microlaminated carbonaceous limestone with interstices of sparry calcite. Patchy replacements, veinlets, vugs of sparry dolomite.	Platy limestone breccia-like. Weakly discontinuously micro-stylolitic, weakly sheared.	Traces syngenetic pyrite.	Close affinities with 21217, but fabric more consistent with algal-mat-bioconstructed limestone ("stromatolitic"); locally filamentous (calcitised).

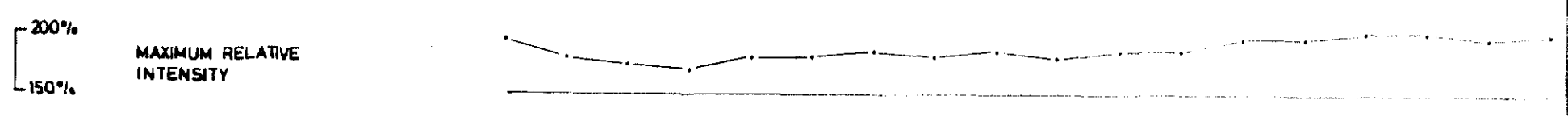
APPENDIX VI

E-M COMPARISON

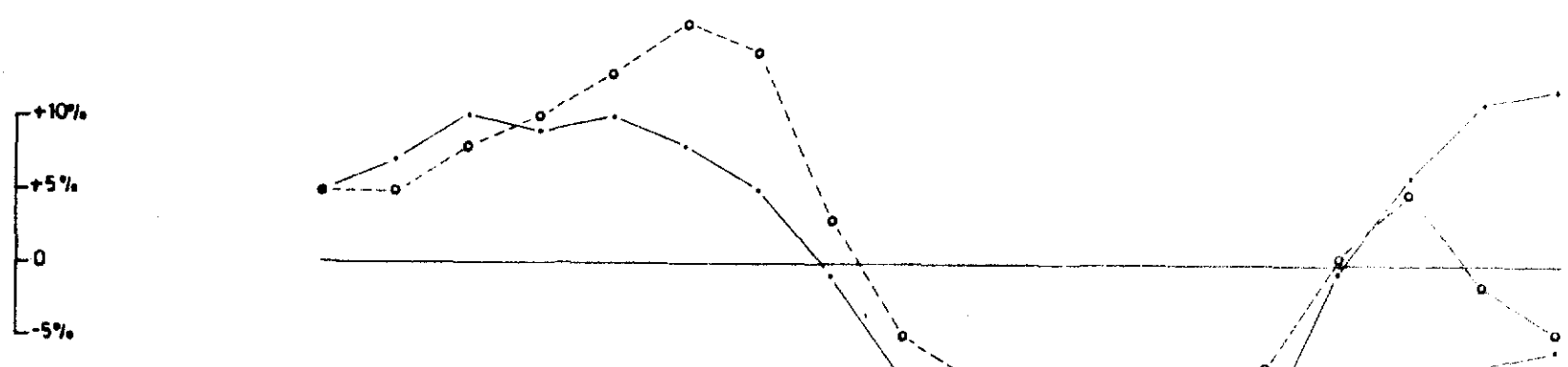
V.L.F.



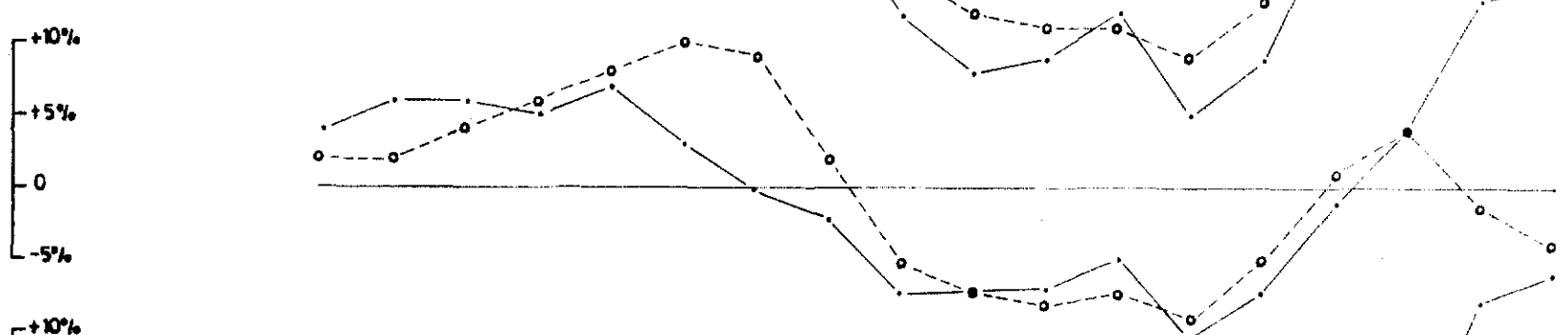
V.L.F.



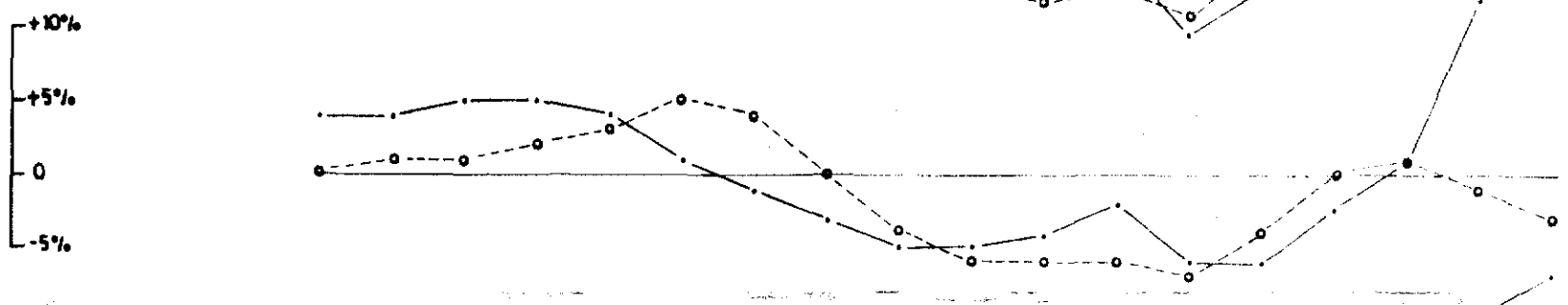
MAX-MIN
1777 Hz
(150M sepⁿ)



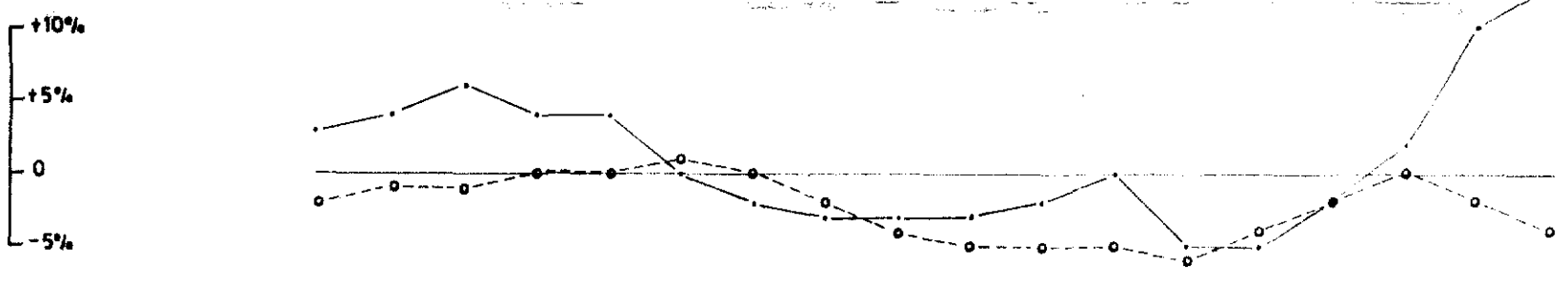
MAX-MIN
888 Hz
(150M sepⁿ)



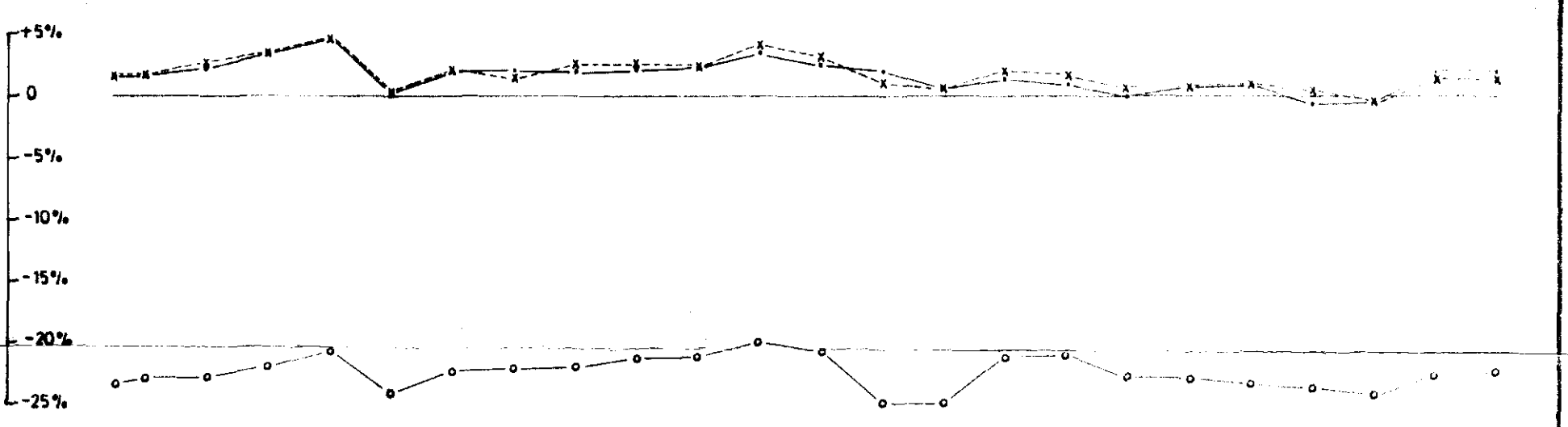
MAX-MIN
444 Hz
(150M sepⁿ)



MAX-MIN
222 Hz
(150M sepⁿ)

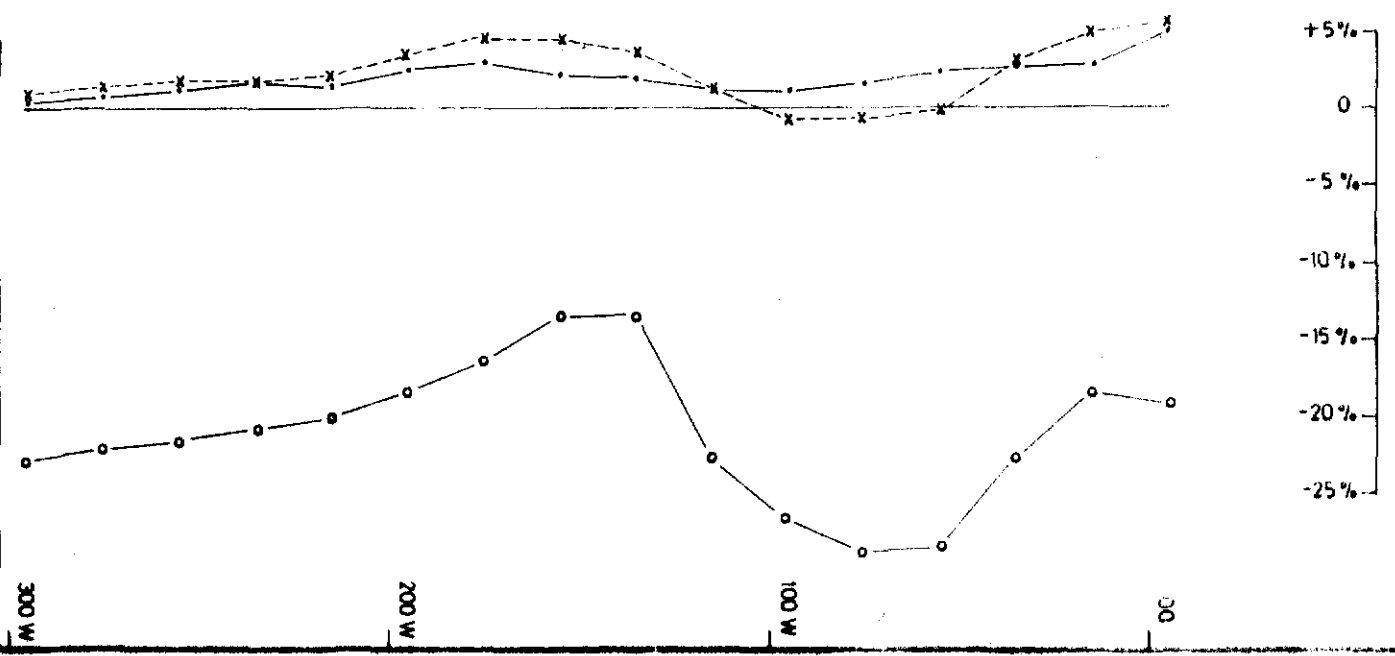


GENIE
(50M sepⁿ)



5 cm

GENIE
(100M sepⁿ)



The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
APPENDIX VI-EM COMPARISON
ROMULUS EAST-LINE 00N

SCALE	1:20 000	DATE	10-8-82
AUTHOR	D. SPEIJERS	DRAWN	H.L.S.
OFFICE	DEVONPORT	REVISION	
DATE	01/07/88		

APPENDIX VII

INDEX TO FIELD BOOKS

- Note: 1) R - refers to data contained in report by Poltock Bros.
 2) Number in each column refers to field book in which original data may be found.

Grid	Line	Clino.	Soils	Mag.	VLF	Geol.
Alexandra Hills	200S		R	10	9	R
	100S			10	9	R
	00N			10	9	R
	100N			10,17	9	R
	200N			10	15,9,17	R
	260W			10,17	9	R
Backwater	400N	25,22		25,22		18
	600N	24		19	18,19,20	18,19,20
	800N	24		19	19	19
	200E	25,24,22		19	19	18,19,20
Brougham	520N	R	R	R		R
	570N	17				
	620N	R	R	R	17	R
	670N	17				
	720N	R	R	R		R
	300E	R	R			R
Fury Flats	400N	24		25,22	17,19,21	19
	550N	24		25,22	19	19
	700N	24		25,22	19	19
	400E	24		25,22	19	18,20
Mackintosh	350N	25,22		25,22	17,21	18,19,20
	500N	25,22		25,22	17,21	19,20
	650N	25,22		25,22	17,21	18,19,20
	500E	25,22		25,22	17,21	18,19,20
Murchison	1000N	1	1,13	2	3	13
	1640N	1	1,13	2	4	13
	2050N	10	9	9	4	4
	2150N	8,10	9	9	4	4
	2250N	8,10	9	9	4	4
	2280N	17		17		
	2330N	1	1,13	2	4,3	13
	2380N	15,17		17		
	1000E	3		2	3	
	130E	9,10				
Romulus East	400S	R	R	6	14	R
	200S	R	R	6	14	R
	100S	16,17,R	R		15,14,17	R
	50S	16,17				
	00N	15,17,R	R	6	5	R
	50N	15,16,17				
	100N	15,17			15,17	
	00E(W)	15,17		6	14	
Romulus West	300N	7		6	11	13
	400N	10		6	11	
	500N	7		6	11	13
	600N	4,10	5	6	12,11	4
	720N	7		6	11	11
	800N	7		6	11	
	1200N	7		6	5	
	1260N	24		23,26		

Grid	Line	Clino.	Soils	Mag.	VLF	Geol.
Romulus	1360N	24		23,26	24	
West	1460N	25,22		23,26	24	
cont.	2000N	14		6	24	5
	2200N	14	12	6	5	5
	2400N	17,8,7,21	18,12,20	17,6	5,19,21	5,19
	2550N	17,10,21	18,19,20	17	19,21	19
	2700N	18,8,24,20		17	19,21	9,19
	2850N	18,8,20		17	19,21	9,19
	900E			6	11	11,13
	1175E	8				
	1840E	7	12	6	5	
	2000E	25,24,7,10,22		6,23,26	24,5,11	5
Sophia	400S	R	R	R	19	R
	00N	R	R	R	19	R
Victoria	200N	3	3,13	13	2	2
Peak	400N	1	1,13	13	2	2
	500N	17		17	15,17	
	600N	1	1,13	13	2	2
	800N	3	1,13	13	2	2
	1000E	1,3		13	2	
	760E	17				

APPENDIX VIII

ANALYTICAL REPORTS

(including index to soil sample results)

This Appendix includes the following reports :

<u>Comlabs Ref.</u>	<u>Sample Nos.</u>
811759	5220-5226
812052	2201-2402, 2572
812054	2501-2561
812075	2585-2600, 2801-2822
812138	2839-2851, 3701-4000, 21701-21730
812179	2562-2567, 2570, 2573-2584, 2823-2838
812192	3401-3484
820016	2403-2500, 3101-3228, 21731-21800
820024	3230-3241, 3250, 3253-3258
820025	2893-2900, 3229, 3259-3266, 3485-3500
820093	3251-3252, 3268-3296
820097	2801-2822, 2831-2833, 2835, 2873, 2892, 3242-3249
820368	3301-3400, 3501-3685
820461	3686-3700, 4501-4535, 4537-4571, 4573-4700
820468	3297-3299
820576	4701-5116
820609	21202-21203, 21205-21210, 21217-21218
820660	3328-3400, 3501-3503, 3528-3700, 4501-4543, 4669
820661	2600, 2801-2822, 2831-2833, 2835
820668	5117-5185

114 INDEX TO SOIL SAMPLE RESULTS

Note: 1) Analysis results for other sample types appear in this appendix but are not listed in this index since they are dealt with in other appendices.

2) The analytical reports are arranged in order of their Comlabs Reference Number. Page numbers refer to the individual Comlabs report.

3) * indicates repeat or more detailed soil sampling.

GRID	LINE	STATIONS	SAMPLE NOS	COMLABS REF	PAGES
Alexandra Hills	200S	440W-600W	3250-3258	820024	3, 4
				820093	1, 3
Backwater	400N	220E-1000E	4840-4879	820576	6-8, 23-25
	600N	220E-1120E	4755-4799	820576	3-4, 20-21
		1140E-1200E	4901-4904	820576	9, 26
	800N	220E-1000E	4800-4839	820576	5-6, 22-23
	200E	400N-800N	4880-4900	820576	8-9, 25-26
Brougham	520N	120E-460E	3416-3433	812192	1-2, 5-6
	570N	50E - 170E	4626-4650	820461	6-7, 15-16
	620N	120E-500E	3452-3471	812192	3, 7
		50E - 170E	4676-4700 *	820461	8-9, 17-18
	670N	50E - 170E	4651-4675	820461	7-8, 16-17
	720N	120E-460E	3434-3451	812192	2-3, 6-7
	300E	540N-700N	3401-3408	812192	1, 5
Fury Flats	400N	300E-460E	4729-4736	820576	2, 19
	550N	420E-560E	4721-4727	820576	1-2, 18-19
		800E	4728	820576	2, 19
	700N	420E-680E	4737-4750	820576	2, 19
		740E-800E	4751-4754	820576	3, 20
	400E	340N-700N	4701-4720	820576	1, 18
Mackintosh	350N	520E-540E	4950-4951	820576	11, 28
	500N	500E-700E	4920-4930	820576	9-10, 26-27
	650N	500E-860E	4931-4949	820576	10, 27
	500E	350N-640N	4905-4919	820576	9, 26
Murchison	1000N	1000E-140E	2201-2244	812052	1-2, 10-11
	1640N	1000E-300E	2245-2280	812052	2-4, 11-13
	2050N	110W-200E	3178-3194	820016	8, 20
	2150N	130W-200E	3195-3211	820016	8-9, 20-21
	2250N	130W-184E	3212-3228	820016	9-10, 21
	2280N	600E-800E	4585-4625	820461	4-6, 13-15
	2330N	1000E-300E	2281-2316	81252	4-5, 13-15
		400E-470E	3686-3700	820461	1, 10
				820660	10
		475E-480E	4501-4502	820461	1, 10
				820660	10, 11
		600E-800E	4503-4543	820461	1-3, 10-12
				820660	11-12
	2380N	600E-800E	4544-4584	820461	3-4, 12-13

APPENDIX VIII - INDEX TO SOIL SAMPLE RESULTS cont.

GRID	LINE	STATIONS	SAMPLE NOS	COMLABS REF	PAGES
Romulus East	400S	140E-240W	3842-3861	812138	7, 21
	200S	140E-240W	3822-3841	812138	6-7, 20-21
	100S	00W-100W	3816-3821	812138	6, 20
		50W-200W	3504-3527 *	820368	5-6, 17-18
	50S	00E-150W	3376-3400	820368	4, 16
				820660	2-3
		160W-200W	3501-3503	820368	5, 17
				820660	3-4
	00N	140E-200W	3801-3815	812138	5-6, 19-20
		50W-150W	3355-3375 *	820368	3, 15
				820660	2
	50N	00E-200W	3328-3354	820368	2-3, 14-15
				820660	1-2
	100N	00E-200W	3301-3327	820368	1-2, 13-14
Romulus West	300N	340E-1040E	3758-3793	812138	3-5, 17-19
	400N	2300E-1800E	3862-3887	812138	7-8, 21-22
	500N	60W-1500E	3913-3992	812138	10-13, 24-27
	600N	1800E-1700E	2450-2455	820016	2-3, 14-15
		2300E-1800E	3706-3731	812138	1-2, 15-16
		3220E-2300E	2403-2448	820016	1-2, 13-14
		3240E	2449	820016	2, 14
	720N	340E-500E	3992-4000	812138	14, 28
		520E-1100E	21701-21730	812138	13-14, 27-28
	800N	2300E-1800E	3732-3757	812138	3-4, 17-18
	1200N	1980-1860E	2463-2466	820016	3, 15
	1260N	2020E-2300E	5127-5141	820668	1, 4
	1360N	1840E-2400E	5142-5169	820668	2, 5
	1460N	2000E-2280E	5170-5184	820668	3, 6
	2000N	1340E-1820E	3103-3127	820016	5, 17
	2200N	1340E-1840E	3128-3152	820016	6, 18
	2400N	900E-1340E	4952-4974	820576	11, 28
		1340E-1820E	3153-3177	820016	7, 19
	2550N	895E-1495E	5027-5116 *	820576	14-17, 31-34
		1035E-1015E	3101-3102	820016	4, 16
		1325E-1055E	21787-21800	820016	12, 24
	2700N	895E-1190E	5003-5026 *	820576	13-14, 30-31
		1195E-1025E	21772-21780	820016	11, 23
		1215E	21763	820016	11, 23
		1225E-1315E	21781-21786	820016	11-12, 23-24
	2850N	815E-1325E	4976-5002 *	820576	12-13, 29-30
		1025E-1325E	21740-21755	820016	10, 22
	900E	320N-440N	3794-3800	812138	5, 19
		460N-700N	3901-3912	812138	9, 23
	1175E	2840N-2720N	21756-21762	820016	11, 22-23
		2680N-2550N	21764-21771	820016	11, 23
	1840E	1220N-2280N	2467-2500	820016	3-4, 15-16
		2300N-2400N	21731-21736	820016	9-10, 22
	2000E	420N-680N	3888-3900	812138	9, 23
		700-780N	3701-3705	812138	1, 15
		820N-900N	21737-21739	820016	10, 22
		940N-1180N	2456-2462	820016	3, 15
		1260N-1440N	5117-5126	820668	1, 4

APPENDIX VIII - INDEX TO SOIL SAMPLE RESULTS ... cont.

GRID	LINE	STATIONS	SAMPLE NOS	COMLABS REF	PAGES
Sophia	400S	00E-120E	3409-3415	812192	1, 5
	00N	160E-400E	3472-3484	812192	3-4, 7-8
Victoria Peak	200N	1000E-600E	2317-2337	812052	5-6, 14-15
		770E-790E	2401-2402	812052	8-9, 17-18
		700E-770E	3528-3542 *	820368	6, 18
				820660	4
		650E-695E	3543-3552 *	820368	6-7, 18-19
	400N			820660	4-5
		795E-850E	3553-3562 *	820368	7, 19
				820660	5
		1000E-600E	2338-2358	812052	6-7, 15-16
		700E-920E	3563-3605 *	820368	7-9, 19-21
	500N			820660	5-7
		700E-900E	3645-3685	820368	10-12, 22-24
	600N			820660	8-10
		1000E-600E	2359-2379	812052	7-8, 16-17
		700E-880E	3606-3644	820368	9-10, 21-22
	800N			820660	7-8
		1000E-600E	2380-2400	812052	8, 17

147

716118



COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES



NATA REGISTERED No. 1526

OUR REF.: COM 811759

YOUR REF.: 4030/NP01/RGW/004

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) 266 4748

Mr. R. Wright,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

29.10.81

Dear Sir,

RE: JOB COM 811759

Enclosed are the assays for the samples delivered to our laboratory on the
21st October, 1981.

Yours sincerely,

Harry Fishman
Managing Director



COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

716119

JOB COM811759

O/N : 4030/NP01/R6W/004

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
5220	42	24	28	<4	4	<4
5221	32	6	16	<4	<4	<4
5222	28	10	14	<4	<4	<4
5223	32	6	14	4	<4	<4
5224	Insufficient Sample					
5225	40	4	24	4	<4	<4
5226	Insufficient Sample					

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1



COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

716120

JOF CONF11750

O/R : 4030/EP01/PCV/004

Results in ppm

SAMPLE	Cd	%Fe	Mn	Cr	Ag	Mo	V
5220	3	2.10	230	4	<1	24	20
5221	2	0.90	90	8	<1	4	10
5222	2	0.85	46	8	<1	4	10
5223	2	0.90	60	8	<1	4	10
5224	Insufficient Sample						
5225	2	1.10	60	8	<1	4	10
5226	Insufficient Sample						

Method of Analysis : Fe Mn Cr : AAS2
: Ag Mo V : AAS3
: Cd : AAS1

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716121



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COMPUTERISED ANALYTICAL LABORATORIES



NATA REGISTERED No. 1526

OUR REF.: COM 812052

YOUR REF.: 4044/NP01/WDS/99

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

Mr. W. Smyth,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

22.12.81

Dear Bill,

RE: JOB COM 812052

Enclosed are the assays for the samples delivered to our laboratory on the 30th November, 1981.

Yours sincerely,

Harry Fishman
Managing Director

Date Recd 23/12/81		File
Date Ass		
Ref.	Info.	Ref.



ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2201	8	4	4	6	<4	<4
2202	4	<4	4	<4	<4	<4
2203	4	4	<2	4	<4	<4
2204	4	8	6	8	<4	<4
2205	4	4	<2	<4	<4	<4
2206	16	48	18	<4	<4	<4
2207	6	4	<2	6	<4	<4
2208	8	20	12	4	<4	<4
2209	8	8	4	10	<4	<4
2210	16	36	16	<4	<4	<4
2211	16	24	14	14	<4	<4
2212	2	4	4	<4	<4	<4
2213	8	8	10	6	<4	<4
2214	6	8	6	<4	<4	<4
2215	10	12	14	14	<4	<4
2216	4	4	4	<4	<4	<4
2217	4	8	6	4	<4	<4
2218	2	12	<2	<4	<4	<4
2219	<2	8	4	6	<4	<4
2220	<2	12	<2	<4	<4	<4
2221	2	12	4	6	<4	<4
2222	2	24	12	<4	<4	<4
2223	6	8	8	4	<4	<4
2224	12	16	8	<4	<4	<4
2225	2	8	4	<4	<4	<4



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ANALYTICAL REPORT

JOE COME12052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2226	2	4	4	12	<4	<4
2227	<2	12	8	4	<4	<4
2228	6	8	<2	<4	<4	<4
2229	2	12	4	<4	<4	<4
2230	14	28	12	6	<4	<4
2231	14	<4	8	6	<4	<4
2232	16	4	10	12	<4	<4
2233	14	20	18	6	<4	<4
2234	18	<4	12	14	<4	<4
2235	10	20	30	<4	<4	<4
2236	14	44	50	12	<4	<4
2237	4	16	26	4	<4	<4
2238	4	4	22	<4	<4	<4
2240	4	48	85	<4	<4	<4
2241	4	120	70	<4	<4	<4
2242	4	130	46	<4	<4	<4
2243	2	40	220	<4	<4	<4
2244	2	36	200	<4	<4	<4
2245	4	4	20	<4	<4	<4
2246	<2	<4	6	<4	<4	<4
2247	4	8	4	12	<4	<4
2248	8	55	16	<4	<4	<4
2249	12	50	20	<4	<4	<4
2250	20	28	24	6	<4	<4
2251	8	20	18	4	<4	<4

ANALYTICAL REPORT

JOE COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2252	8	8	10	6	<4	<4
2253	4	4	4	14	<4	<4
2254	6	<4	4	10	<4	<4
2255	6	<4	8	<4	<4	<4
2256	4	<4	4	<4	<4	<4
2257	2	<4	4	<4	<4	<4
2258	2	<4	6	<4	<4	<4
2259	<2	<4	4	<4	<4	<4
2260	2	4	4	<4	<4	<4
2261	8	8	6	4	<4	<4
2262	14	24	24	<4	<4	<4
2263	12	16	22	8	<4	<4
2264	6	4	<2	6	<4	<4
2265	8	12	8	<4	<4	<4
2266	6	4	4	<4	<4	<4
2267	4	<4	<2	<4	<4	<4
2268	6	<4	<2	<4	<4	<4
2269	8	12	8	<4	<4	<4
2270	12	12	6	<4	<4	<4
2271	6	10	10	4	<4	<4
2272	10	4	<2	<4	<4	<4
2273	6	<4	<2	<4	<4	<4
2274	10	20	12	<4	<4	<4
2275	14	36	30	<4	<4	<4
2276	12	20	24	<4	<4	<4

ANALYTICAL REPORT

JOE COM812052

O/E : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2277	10	12	22	6	<4	<4
2278	8	8	16	6	<4	<4
2279	4	<4	4	16	<4	<4
2280	8	8	16	<4	<4	<4
2281	10	4	8	4	<4	<4
2282	20	8	16	14	<4	<4
2283	8	20	18	6	<4	<4
2284	6	<4	4	4	<4	<4
2285	6	10	4	<4	<4	<4
2286	6	<4	6	6	<4	<4
2287	4	<4	6	<4	<4	<4
2288	6	<4	2	<4	<4	<4
2289	12	24	12	6	<4	<4
2290	12	28	20	<4	<4	<4
2291	8	16	12	4	<4	<4
2292	10	16	18	6	<4	<4
2293	6	<4	2	<4	<4	<4
2294	10	12	14	8	<4	<4
2295	10	12	10	10	<4	<4
2296	6	4	8	<4	<4	<4
2297	4	4	4	6	<4	<4
2298	16	36	18	10	<4	<4
2299	6	4	6	4	<4	<4
2300	8	<4	8	<4	<4	<4
2301	Insufficient Sample					

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ANALYTICAL REPORT

JOB COM812052

O/E : 4044/EP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
2302	8	8	8	10	<4	<4
2303	8	4	6	6	<4	<4
2304	8	<4	8	6	<4	<4
2305	10	8	8	14	<4	<4
2306	4	<4	4	4	<4	<4
2307	8	8	14	12	<4	<4
2308	4	4	6	8	<4	<4
2309	10	48	38	16	<4	<4
2310	6	4	6	6	<4	<4
2311	Insufficient Sample					
2312	4	<4	4	6	<4	<4
2313	Insufficient Sample					
2314	6	<4	6	8	<4	<4
2315	10	8	4	12	<4	<4
2316	6	<4	4	10	<4	<4
2317	4	<4	4	6	<4	<4
2318	6	<4	6	8	<4	<4
2319	6	<4	4	6	<4	<4
2320	8	<4	<2	8	<4	<4
2321	4	<4	<2	4	<4	<4
2322	4	<4	<2	8	<4	<4
2323	4	<4	4	8	<4	<4
2324	4	<4	2	6	<4	<4
2325	4	<4	4	<4	<4	<4
2326	4	<4	2	8	<4	<4



ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
2327	110	40	46	12	8	<4
2328	14	28	14	14	<4	<4
2329	4	<4	6	<4	<4	<4
2330	4	<4	4	6	<4	<4
2331	4	<4	6	6	<4	<4
2332	4	<4	6	8	<4	<4
2333	4	<4	6	<4	<4	<4
2334	4	<4	4	<4	<4	<4
2335	4	<4	8	<4	<4	<4
2336	6	4	18	<4	<4	<4
2337	2	<4	6	8	<4	<4
2338	4	<4	6	<4	<4	<4
2339	8	<4	2	<4	<4	<4
2340	6	<4	2	8	<4	<4
2341	4	<4	<2	<4	<4	<4
2342	6	<4	2	10	<4	<4
2343	2	<4	<2	<4	<4	<4
2344	Insufficient Sample					
2345	6	<4	4	8	<4	<4
2346	8	<4	6	12	<4	<4
2347	Insufficient Sample					
2348	Insufficient Sample					
2349	8	<4	10	10	<4	<4
2350	18	12	20	14	<4	<4
2351	14	4	10	14	<4	<4

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ANALYTICAL REPORT

JOB COMP12052

O/N : 4044/EP01/VDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2352	8	<4	4	10	<4	<4
2353	6	<4	6	6	<4	<4
2354	6	<4	4	6	<4	<4
2355	6	<4	20	6	<4	<4
2356	4	<4	6	6	<4	<4
2357	4	<4	6	8	<4	<4
2358	6	<4	6	10	<4	<4
2359	6	<4	6	6	<4	<4
2360	8	<4	<2	14	<4	<4
2361	6	<4	<2	8	<4	<4
2362	4	<4	<2	10	<4	<4
2363	6	<4	<2	8	<4	<4
2364	6	<4	2	10	<4	<4
2365	6	<4	4	4	<4	<4
2366	6	<4	4	6	<4	<4
2367	4	<4	2	8	<4	<4
2368	8	12	10	6	<4	<4
2369	6	<4	80	80	28	<4
2370	6	<4	<2	4	<4	<4
2371	6	<4	<2	8	<4	<4
2372	6	<4	<2	10	<4	<4
2373	4	<4	4	<4	<4	<4
2374	6	<4	4	8	<4	<4
2375	4	<4	4	4	<4	<4
2376	8	<4	4	12	<4	<4

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ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
2377	6	<4	4	6	<4	<4
2378	6	<4	<2	4	<4	<4
2379	6	<4	4	<4	<4	<4
2380	8	<4	4	10	<4	<4
2381	4	<4	<2	6	<4	<4
2382	4	<4	<2	4	<4	<4
2383	4	<4	<2	<4	<4	<4
2384	6	<4	4	8	<4	<4
2385	4	<4	<2	8	<4	<4
2386	8	<4	4	10	<4	<4
2387	8	<4	4	8	<4	<4
2388	8	8	6	12	<4	<4
2389	8	4	6	4	<4	<4
2390	12	<4	6	8	<4	<4
2391	10	<4	4	6	<4	<4
2392	12	<4	6	8	<4	<4
2393	24	<4	20	4	<4	<4
2394	8	<4	8	6	<4	<4
2395	10	<4	4	6	<4	<4
2396	8	<4	4	6	<4	<4
2397	8	<4	2	<4	<4	<4
2398	6	<4	<2	<4	<4	<4
2399	8	4	2	<4	<4	<4
2400	8	<4	2	6	<4	<4
2401	8	<4	2	4	<4	<4

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ANALYTICAL REPORT

JOB COM812052

O/R : 4044/NP01/WDS/99

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2402	32	20	20	8	<4	<4
2568	22	90	30	<4	8	<4
2569	24	85	32	<4	16	<4
2571	16	8	50	<4	36	<4
2572	14	8	42	<4	8	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	As	W	Pb
2201	<2	10	160
2202	9	10	390
2203	3	<10	240
2204	<2	<10	15
2205	<2	<10	10
2206	8	<10	15
2207	3	10	15
2208	4	<10	20
2209	3	<10	40
2210	4	<10	20
2211	3	<10	20
2212	5	10	510
2213	12	10	280
2214	3	<10	290
2215	6	<10	460
2216	3	<10	280
2217	6	<10	530
2218	4	<10	35
2219	2	10	240
2220	3	10	45
2221	<2	<10	10
2222	3	<10	20
2223	3	<10	40
2224	4	10	420
2225	5	10	70



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ANALYTICAL REPORT

JOE CON812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	As	W	Fe
2226	4	<10	15
2227	3	<10	320
2228	3	10	25
2229	4	15	10
2230	4	<10	20
2231	5	10	20
2232	4	10	45
2233	4	<10	15
2234	2	10	15
2235	4	<10	10
2236	2	<10	35
2237	<2	<10	360
2238	2	10	330
2240	5	10	690
2241	5	10	1000
2242	<2	10	1000
2243	3	10	1100
2244	2	10	910
2245	<2	<10	20
2246	2	<10	10
2247	3	10	10
2248	4	<10	10
2249	5	<10	15
2250	6	<10	15
2251	2	<10	15

**ANALYTICAL REPORT**

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	As	W	Ba
2252	3	<10	15
2253	3	<10	10
2254	4	<10	45
2255	6	<10	530
2256	12	10	540
2257	<2	10	100
2258	3	15	290
2259	3	15	80
2260	<2	10	25
2261	<2	<10	35
2262	5	<10	65
2263	18	10	510
2264	3	10	165
2265	9	<10	330
2266	6	<10	440
2267	4	10	50
2268	<2	<10	95
2269	3	<10	85
2270	4	<10	15
2271	7	<10	15
2272	2	<10	20
2273	3	10	85
2274	4	<10	15
2275	5	<10	20
2276	6	<10	10

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ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	As	W	Ba
2277	4	<10	15
2278	2	<10	40
2279	4	10	60
2280	3	<10	15
2281	<2	10	15
2282	2	<10	20
2283	4	<10	15
2284	3	<10	10
2285	4	<10	10
2286	2	<10	<10
2287	2	10	200
2288	3	<10	15
2289	3	<10	15
2290	3	<10	15
2291	4	<10	20
2292	2	<10	15
2293	3	<10	25
2294	3	<10	20
2295	<2	<10	25
2296	<2	<10	270
2297	2	10	390
2298	26	10	410
2299	4	10	125
2300	7	<10	260
2301	5	15	220

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ANALYTICAL REPORT

JOF COM812052

O/N : 4044/EP01/WDS/99

Results in ppm

SAMPLE	As	W	Ba
2302	6	15	300
2303	3	10	80
2304	<2	<10	35
2305	2	10	80
2306	<2	<10	400
2307	4	10	80
2308	2	<10	115
2309	24	<10	270
2310	5	10	165
2311	6	<10	30
2312	2	<10	10
2313	5	<10	20
2314	6	<10	95
2315	3	15	15
2316	3	<10	15
2317	2	15	390
2318	2	<10	90
2319	2	<10	80
2320	3	15	80
2321	2	<10	<10
2322	2	<10	20
2323	<2	<10	10
2324	3	<10	35
2325	<2	<10	80
2326	<2	<10	95

ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	As	W	Ba
2327	70	<10	160
2328	10	10	110
2329	3	<10	380
2330	3	<10	400
2331	3	10	330
2332	3	10	300
2333	<2	10	470
2334	6	15	480
2335	2	10	210
2336	<2	10	380
2337	2	<10	430
2338	5	15	220
2339	2	15	20
2340	<2	<10	10
2341	3	<10	<10
2342	2	<10	15
2343	3	10	10
2344	2	<10	10
2345	3	<10	<10
2346	4	10	155
2347	16	<10	85
2348	10	10	105
2349	9	<10	190
2350	20	10	45
2351	8	<10	145

ANALYTICAL REPORT

JOB COM812052

O/N : 4044/NP01/WDS/99

Results in ppm

SAMPLE	As	W	Ba
2352	2	<10	55
2353	<2	<10	50
2354	2	10	35
2355	2	10	210
2356	2	<10	400
2357	<2	15	480
2358	2	10	250
2359	<2	<10	130
2360	3	<10	25
2361	2	<10	120
2362	<2	<10	15
2363	<2	10	<10
2364	<2	15	20
2365	2	<10	25
2366	2	<10	80
2367	<2	<10	150
2368	14	10	320
2369	20	10	115
2370	3	<10	60
2371	2	15	65
2372	2	<10	40
2373	3	10	135
2374	<2	10	165
2375	<2	<10	420
2376	3	15	80

ANALYTICAL REPORT

JOB COM812052

O/N : 4044/EP01/WDS/99

Results in ppm

SAMPLE	As	W	Pb
2377	<2	<10	200
2378	4	<10	320
2379	3	<10	90
2380	<2	<10	150
2381	3	<10	35
2382	2	<10	50
2383	3	<10	55
2384	5	10	20
2385	3	<10	110
2386	2	<10	110
2387	<2	<10	90
2388	<2	10	510
2389	2	<10	520
2390	5	10	115
2391	2	<10	120
2392	3	<10	150
2393	<2	10	195
2394	<2	10	250
2395	2	10	70
2396	4	<10	95
2397	<2	<10	20
2398	<2	<10	195
2399	2	<10	25
2400	3	<10	10
2401	<2	10	80



ANALYTICAL REPORT

JOB COM812052

O/R : 4044/NP01/VDS/99

Results in ppm

SAMPLE	As	W	Ba
2402	22	10	320
2568	380	<10	190
2569	280	<10	145
2571	195	<10	95
2572	36	<10	370

Method of Analysis : As W Ba : XRF1



COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

716140



NATA REGISTERED No. 1526

OUR REF.: COM 812054

YOUR REF.: 4045/NP01/WDS/1⁰80

Head Office and
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TELEX: AA89323

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

Mr. W Smyth,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

18.12.81

Dear Bill,

RE: JOB COM 812054

Enclosed are the assays for the samples delivered to our laboratory on the
30th November, 1981.

Yours sincerely,

Harry Fishman
Managing Director

ANALYTICAL REPORT

JOB COM812054

O/N : 4045/NP01/WDS/100

Results in ppm

SAMPLE	As	W	Sn	Ba
2501	14	<10	6	560
2502	10	<10	<4	600
2503	10	10	8	570
2504	6	<10	12	580
2505	36	<10	6	550
2506	26	10	4	480
2507	18	10	6	620
2508	20	10	4	490
2509	14	10	6	540
2510	16	10	6	310
2511	18	<10	6	530
2512	14	10	6	430
2513	16	10	8	670
2514	<2	<10	4	1200
2515	4	<10	4	65
2516	2	<10	4	150
2517	<2	<10	<4	90
2518	20	15	4	540
2519	3	<10	6	155
2520	5	10	10	730
2521	3	<10	<4	1050
2522	<2	<10	4	80
2523	7	<10	<4	550
2524	44	<10	10	270
2525	20	10	<4	85

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COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM812054

O/N : 4045/NP01/WDS/100

Results in ppm

SAMPLE	As	W	Sn	Ba
2526	30	<10	4	35
2527	2	<10	<4	120
2528	24	<10	6	460
2529	3	10	4	250
2530	2	10	8	470
2531	2	<10	4	610
2532	<2	<10	<4	105
2533	2	<10	4	35
2534	2	<10	<4	15
2535	2	10	<4	250
2536	<2	<10	4	135
2537	2	10	<4	10
2538	<2	<10	<4	260
2539	20	<10	<4	320
2540	42	10	8	510
2541	4	<10	6	320
2542	14	<10	8	25
2543	4	<10	<4	50
2544	5	<10	<4	90
2545	50	10	10	500
2546	3	10	4	65
2547	<2	<10	6	280
2548	<2	<10	<4	15
2549	7	<10	8	520
2550	9	<10	<4	220

**ANALYTICAL REPORT**

JOB COM812054

O/N : 4045/NP01/WDS/100

Results in ppm

SAMPLE	As	W	Sn	Ba
2551	<2	<10	<4	85
2552	10	10	<4	770
2553	10	15	6	860
2554	5	<10	6	570
2555	<2	<10	4	20
2556	6	<10	<4	200
2557	6	<10	<4	180
2558	22	<10	<4	420
2559	12	<10	6	310
2560	4	<10	4	125
2561	14	<10	<4	165

Method of Analysis : As W Sn Ba : XRF1

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COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM812054

O/N : 4045/NP01/WDS/100

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2501	18	4	18	8	6	<4
2502	30	4	26	8	<4	<4
2503	16	8	24	18	4	<4
2504	12	4	32	10	<4	<4
2505	20	12	22	<4	<4	<4
2506	24	4	38	6	4	<4
2507	12	24	50	<4	<4	<4
2508	12	12	36	<4	6	<4
2509	10	16	24	<4	<4	<4
2510	24	16	38	8	<4	<4
2511	10	12	32	<4	<4	<4
2512	12	8	34	<4	<4	<4
2513	20	4	50	20	<4	<4
2514	4	60	340	<4	6	<4
2515	4	4	6	<4	<4	6
2516	4	<4	4	<4	<4	<4
2517	6	<4	<2	<4	<4	<4
2518	6	<4	28	<4	<4	<4
2519	4	<4	<2	<4	<4	<4
2520	14	12	50	<4	<4	<4
2521	16	65	420	<4	8	<4
2522	4	4	4	<4	<4	<4
2523	10	16	18	<4	<4	<4
2524	32	12	8	<4	<4	6
2525	6	20	65	18	8	<4

ANALYTICAL REPORT

JOB COM812054

O/N : 4045/NP01/WDS/100

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2526	8	4	18	<4	<4	<4
2527	8	8	8	<4	<4	<4
2528	30	28	20	4	<4	<4
2529	6	4	4	<4	<4	<4
2530	4	<4	2	<4	<4	<4
2531	6	<4	4	<4	<4	<4
2532	6	4	2	<4	<4	<4
2533	6	<4	<2	<4	<4	<4
2534	6	4	<2	<4	<4	<4
2535	6	4	2	<4	<4	<4
2536	6	<4	2	<4	<4	<4
2537	6	<4	<2	<4	<4	<4
2538	6	<4	2	<4	<4	<4
2539	8	4	4	<4	<4	<4
2540	16	20	20	10	<4	<4
2541	6	4	6	<4	<4	<4
2542	8	12	6	<4	4	<4
2543	8	4	8	<4	<4	<4
2544	12	4	12	<4	<4	<4
2545	22	8	48	<4	<4	<4
2546	8	<4	14	<4	<4	<4
2547	6	<4	4	<4	<4	<4
2548	4	<4	<2	<4	<4	<4
2549	6	<4	14	<4	<4	<4
2550	6	4	10	<4	<4	<4

ANALYTICAL REPORT

JOB COM812054

O/N : 4045/NP01/WDS/100

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2551	8	<4	<2	<4	<4	<4
2552	6	<4	22	<4	<4	<4
2553	4	<4	14	<4	<4	<4
2554	4	<4	14	4	<4	<4
2555	4	4	<2	<4	<4	<4
2556	10	8	22	<4	<4	<4
2557	8	<4	14	<4	<4	<4
2558	12	16	10	<4	<4	<4
2559	24	4	4	<4	<4	<4
2560	6	4	6	<4	<4	<4
2561	32	4	18	<4	6	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1



COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES



NATA REGISTERED No. 1526

OUR REF.: COM 812075

YOUR REF.: 4046/NP01/WDS/101

Head Office and
Central Laboratory
305 SOUTH ROAD,
MILE END SOUTH
STM. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA88323

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

Mr. W. Smyth,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

22.12.81

Dear Bill,

RE: JOB COM 812075

Enclosed are the assays for the samples delivered to our laboratory on the
2nd December, 1981.

Yours sincerely,

Harry Fishman
Managing Director

23/12/81



ANALYTICAL REPORT

JOB COM812075

O/N : 4046/NP01/WDS/101

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	%Fe	Mn
2585	24	16	44	10	<4	1.45	195
2586	12	16	48	8	4	0.90	410
2587	26	20	30	6	8	1.70	370
2588	22	<4	20	4	4	0.90	195
2589	24	75	60	4	12	1.70	780
2590	12	70	50	<4	8	1.15	330
2591	18	12	16	4	<4	1.10	36
2592	10	4	12	6	<4	1.00	34
2593	16	8	32	6	<4	1.00	165
2594	12	20	24	4	<4	0.90	75
2595	18	28	26	6	<4	1.05	95
2596	18	12	42	8	<4	1.60	220
2597	12	<4	36	8	<4	1.20	165
2598	4	<4	32	<4	<4	0.50	130
2599	6	4	12	<4	<4	0.50	125
2600	32	16	48	10	<4	1.30	250
2801	36	16	60	6	8	1.55	270
2802	20	8	42	12	8	1.25	350
2803	28	12	30	10	8	1.70	340
2804	36	12	38	10	8	2.15	280
2805	30	8	42	20	20	2.00	550
2806	40	125	290	18	140	4.55	4000
2807	40	80	75	12	16	2.20	950
2808	30	80	75	8	8	1.70	480
2809	32	44	200	26	20	3.25	1950

FOR
ANALYSIS

ANALYTICAL REPORT

JOB COM812075

O/N : 4046/NP01/WDS/101

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	ZFe	Mn
2810	65	100	100	14	8	2.50	640
2811	30	70	42	8	<4	1.85	230
2812	16	12	18	8	<4	1.20	55
2813	18	4	20	4	<4	1.20	46
2814	22	12	40	12	<4	1.20	240
2815	34	70	60	10	4	2.25	360
2816	48	60	65	12	<4	1.75	165
2817	36	8	65	14	<4	2.05	340
2818	28	8	60	14	4	1.70	280
2819	26	4	30	6	<4	0.95	340
2820	16	4	60	6	<4	0.90	360
2821	26	8	26	6	<4	0.85	310
2822	24	12	34	8	<4	1.00	570

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

ANALYTICAL REPORT

JOB COM812075

O/N : 4046/NP01/WDS/101

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	No
2585	4	15	180	20	<10	8
2586	3	<10	85	6	<10	10
2587	5	<10	85	4	<10	10
2588	9	10	125	<4	<10	12
2589	26	15	420	8	<10	12
2590	9	15	550	4	<10	18
2591	12	<10	130	8	<10	6
2592	6	<10	120	8	<10	8
2593	4	<10	135	42	<10	8
2594	6	10	760	8	<10	12
2595	9	15	1150	14	<10	16
2596	6	<10	240	10	<10	8
2597	5	10	160	6	<10	6
2598	<2	10	120	18	<10	10
2599	4	15	165	38	<10	6
2600	7	15	200	70	10	10
2801	6	10	165	18	<10	6
2802	3	<10	105	34	<10	14
2803	5	10	115	22	<10	12
2804	7	<10	210	4	<10	10
2805	9	<10	330	4	<10	10
2806	34	10	185	<4	<10	10
2807	22	10	490	8	<10	16
2808	12	25	570	10	<10	18
2809	32	<10	145	8	<10	12

**ANALYTICAL REPORT**

JOB COM812075

O/N : 4046/NP01/WDS/101

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	Mo
2810	14	10	720	10	<10	30
2811	40	10	230	6	<10	8
2812	16	<10	170	16	<10	8
2813	8	15	175	75	<10	8
2814	2	15	145	310	<10	8
2815	20	15	460	12	<10	12
2816	7	50	1600	65	10	22
2817	7	15	280	44	10	4
2818	8	15	240	30	10	10
2819	<2	20	125	660	<10	8
2820	3	20	170	135	10	6
2821	2	15	150	410	<10	6
2822	<2	45	230	2250	<10	10

Method of Analysis : As W Ba Sn Ta Mo : XRF1

**COMLABS Pty. Ltd.**

COMPUTERISED ANALYTICAL LABORATORIES



NATA REGISTERED No. 1526

OUR REF.: COM 812138

YOUR REF.: Order No. 4065/NP01/JJL/49

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

Mr. J. Lawton,
The Shell Co. of Aust. Ltd.,
Metals Division,
O. Box 860,
DEVONPORT. TAS. 7310.

31.12.81

Dear John,

RE: JOB COM 812138

Enclosed are the assays for the samples delivered to our laboratory on
the 10th December, 1981.

Yours sincerely,

Phillip Harvey
Laboratory Manager

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Es	W
2839	9	<10	<10
2840	24	320	<10
2841	110	155	<10
2842	105	25	<10
2843	4	1500	10
2844	4	360	<10
2845	<2	150	<10
2846	6	560	20
2847	4	1000	10
2848	<2	810	10
2849	55	15	10
2850	42	130	30
2851	<2	30	<10
3701 -80#	3	55	15
3702 -80#	<2	35	10
3703 -80#	2	230	15
3704 -80#	5	220	15
3705 -80#	4	520	10
3706 -80#	3	560	20
3707 -80#	3	390	20
3708 -80#	<2	370	25
3709 -80#	3	490	15
3710 -80#	3	290	15
3711 -80#	4	420	15
3712 -80#	2	370	20

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ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3713 -80#	10	500	<10
3714 -80#	5	600	20
3715 -80#	3	260	15
3716 -80#	4	550	20
3717 -80#	7	380	10
3718 -80#	5	95	15
3719 -80#	2	370	<10
3720 -80#	2	155	15
3721 -80#	12	155	<10
3722 -80#	10	160	10
3723 -80#	3	160	10
3724 -80#	2	65	10
3725 -80#	2	140	15
3726 -80#	2	85	10
3727 -80#	3	60	<10
3728 -80#	2	115	<10
3729 -80#	14	200	10
3730 -80#	5	150	15
3731 -80#	4	260	15
3732 -80#	2	125	<10
3733 -80#	3	55	15
3734 -80#	<2	70	<10
3735 -80#	2	50	10
3736 -80#	<2	100	<10
3737 -80#	<2	70	15

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3738 -80#	2	60	<10
3739 -80#	2	115	15
3740 -80#	10	460	10
3741 -80#	2	320	15
3742 -80#	4	280	10
3743 -80#	2	70	<10
3744 -80#	<2	220	<10
3745 -80#	3	210	<10
3746 -80#	3	340	15
3747 -80#	5	450	10
3748 -80#	9	460	15
3749 -80#	6	490	20
3750 -80#	5	350	20
3751 -80#	4	120	10
3752 -80#	2	115	10
3753 -80#	12	115	10
3754 -80#	<2	125	10
3755 -80#	2	170	<10
3756 -80#	3	320	10
3757 -80#	4	300	10
3758 -80#	2	25	<10
3759 -80#	3	90	<10
3760 -80#	2	50	10
3761 -80#	3	15	10
3762 -80#	2	20	10

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c



ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3763 -80#	2	10	<10
3764 -80#	2	35	10
3765 -80#	<2	40	<10
3766 -80#	<2	40	<10
3767 -80#	2	165	10
3768 -80#	2	65	15
3769 -80#	5	270	<10
3770 -80#	5	240	<10
3771 -80#	3	240	<10
3772 -80#	5	220	<10
3773 -80#	5	140	<10
3774 -80#	3	200	10
3775 -80#	6	85	<10
3776 -80#	4	105	10
3777 -80#	3	185	<10
3778 -80#	4	140	<10
3779 -80#	6	220	<10
3780 -80#	5	170	<10
3781 -80#	9	310	<10
3782 -80#	3	330	<10
3783 -80#	4	260	10
3784 -80#	8	340	10
3785 -80#	<2	195	<10
3786 -80#	2	220	<10
3787 -80#	2	250	<10

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3788 -80#	<2	230	<10
3789 -80#	3	185	<10
3790 -80#	4	115	<10
3791 -80#	6	130	<10
3792 -80#	3	115	<10
3793 -80#	<2	270	<10
3794 -80#	4	240	<10
3795 -80#	<2	175	10
3796 -80#	5	210	<10
3797 -80#	5	105	<10
3798 -80#	<2	210	<10
3799 -80#	<2	110	<10
3800 -80#	2	90	<10
3801 -80#	16	380	<10
3802 -80#	12	400	15
3803 -80#	14	50	<10
3804 -80#	<2	15	10
3805 -80#	2	20	<10
3806 -80#	3	360	10
3807 -80#	22	310	<10
3808 -80#	5	420	10
3809 -80#	18	380	10
3810 -80#	12	480	10
3811 -80#	120	280	10
3812 -80#	560	350	10

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ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3813 -80#	55	260	15
3814 -80#	80	290	10
3815 -80#	50	290	15
3816 -80#	5	420	10
3817 -80#	18	500	15
3818 -80#	10	470	<10
3819 -80#	14	410	<10
3820 -80#	2	320	<10
3821 -80#	145	260	<10
3822 -80#	30	560	<10
3823 -80#	24	570	<10
3824 -80#	10	460	<10
3825 -80#	12	380	<10
3826 -80#	12	510	<10
3827 -80#	18	390	10
3828 -80#	10	400	<10
3829 -80#	16	430	<10
3830 -80#	24	380	10
3831 -80#	60	370	15
3832 -80#	60	380	10
3833 -80#	16	430	<10
3834 -80#	14	420	15
3835 -80#	12	460	10
3836 -80#	22	540	<10
3837 -80#	22	390	10

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3838 -80#	20	380	10
3839 -80#	10	400	<10
3840 -80#	4	230	<10
3841 -80#	4	110	<10
3842 -80#	28	470	10
3843 -80#	4	360	10
3844 -80#	3	350	10
3845 -80#	36	350	<10
3846 -80#	4	290	15
3847 -80#	3	350	<10
3848 -80#	5	320	<10
3849 -80#	6	210	<10
3850 -80#	9	240	10
3851 -80#	4	155	15
3852 -80#	6	280	15
3853 -80#	10	270	15
3854 -80#	5	260	10
3855 -80#	9	360	10
3856 -80#	16	230	<10
3857 -80#	6	180	10
3858 -80#	6	260	<10
3859 -80#	4	150	10
3860 -80#	5	290	10
3861 -80#	2	230	15
3862 -80#	3	1150	35

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3863 -80#	<2	800	30
3864 -80#	6	730	30
3865 -80#	5	650	30
3866 -80#	5	310	<10
3867 -80#	4	570	20
3868 -80#	2	270	10
3869 -80#	3	320	10
3870 -80#	<2	195	15
3871 -80#	2	60	<10
3872 -80#	8	330	10
3873 -80#	2	70	15
3874 -80#	4	250	10
3875 -80#	3	175	10
3876 -80#	3	75	10
3877 -80#	7	420	15
3878 -80#	16	280	10
3879 -80#	<2	210	25
3880 -80#	8	155	10
3881 -80#	16	175	<10
3882 -80#	6	220	15
3883 -80#	16	350	20
3884 -80#	<2	330	10
3885 -80#	6	310	15
3886 -80#	9	330	10
3887 -80#	16	240	10


ANALYTICAL REPORT
716161
JOB COM812138
O/N : 4065/NP01/JJL/49
Results in ppm

SAMPLE	As	Ba	W
3888 -80#	2	45	10
3889 -80#	9	380	10
3890 -80#	12	250	10
3891 -80#	<2	35	<10
3892 -80#	5	85	15
3893 -80#	3	40	15
3894 -80#	12	270	<10
3895 -80#	28	310	<10
3896 -80#	5	300	10
3897 -80#	<2	30	15
3898 -80#	5	155	10
3899 -80#	2	45	<10
3900 -80#	3	280	10
3901 -80#	<2	110	<10
3902 -80#	2	195	<10
3903 -80#	4	240	<10
3904 -80#	<2	250	<10
3905 -80#	4	270	<10
3906 -80#	2	310	<10
3907 -80#	<2	280	<10
3908 -80#	3	350	<10
3909 -80#	<2	4100	<10
3910 -80#	<2	450	<10
3911 -80#	6	200	10
3912 -80#	3	420	<10

ANALYTICAL REPORT

716162

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3913 -80#	3	15	<10
3914 -80#	<2	15	<10
3915 -80#	3	10	10
3916 -80#	<2	10	<10
3917 -80#	<2	10	<10
3918 -80#	2	15	10
3919 -80#	2	15	<10
3920 -80#	2	15	10
3921 -80#	3	40	<10
3922 -80#	4	40	<10
3923 -80#	3	55	10
3924 -80#	3	20	10
3925 -80#	<2	15	<10
3926 -80#	2	25	10
3927 -80#	2	25	<10
3928 -80#	10	300	10
3929 -80#	28	150	10
3930 -80#	3	130	10
3931 -80#	3	40	10
3932 -80#	4	240	10
3933 -80#	8	180	<10
3934 -80#	2	20	15
3935 -80#	2	20	10
3936 -80#	2	20	<10
3937 -80#	4	50	10

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c



ANALYTICAL REPORT

716163

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3938 -80#	3	540	15
3939 -80#	7	580	<10
3940 -80#	8	~~550~~	<10
3941 -80#	<2	155	<10
3942 -80#	<2	250	<10
3943 -80#	2	35	10
3944 -80#	3	20	<10
3945 -80#	<2	35	<10
3946 -80#	6	155	10
3947 -80#	<2	90	<10
3948 -80#	6	140	10
3949 -80#	5	200	<10
3950 -80#	3	330	10
3951 -80#	6	300	<10
3952 -80#	2	380	<10
3953 -80#	4	120	<10
3954 -80#	3	190	<10
3955 -80#	2	155	<10
3956 -80#	2	150	<10
3957 -80#	7	380	<10
3958 -80#	4	135	<10
3959 -80#	4	125	<10
3960 -80#	<2	140	<10
3961 -80#	4	110	<10
3962 -80#	4	180	<10

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ANALYTICAL REPORT

716164

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3963 -80#	3	200	<10
3964 -80#	<2	390	<10
3965 -80#	3	170	<10
3966 -80#	5	140	<10
3967 -80#	2	100	<10
3968 -80#	2	135	<10
3969 -80#	5	115	10
3970 -80#	6	85	<10
3971 -80#	6	80	<10
3972 -80#	6	120	<10
3973 -80#	5	125	<10
3974 -80#	5	135	10
3975 -80#	3	85	10
3976 -80#	3	100	<10
3977 -80#	2	135	<10
3978 -80#	6	155	<10
3979 -80#	2	80	<10
3980 -80#	2	135	<10
3981 -80#	<2	210	<10
3982 -80#	5	155	<10
3983 -80#	6	140	<10
3984 -80#	5	155	<10
3985 -80#	3	175	<10
3986 -80#	5	90	<10
3987 -80#	5	100	<10

ANALYTICAL REPORT

716165

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
3988 -80#	4	50	<10
3989 -80#	3	180	<10
3990 -80#	5	65	<10
3991 -80#	6	125	<10
3992 -80#	4	115	<10
3993 -80#	3	50	<10
3994 -80#	2	320	<10
3995 -80#	46	190	<10
3996 -80#	<2	220	10
3997 -80#	<2	60	<10
3998 -80#	2	25	<10
3999 -80#	2	40	10
4000 -80#	3	40	<10
21701 -80#	2	320	10
21702 -80#	<2	320	10
21703 -80#	7	170	<10
21704 -80#	<2	50	10
21705 -80#	2	135	10
21706 -80#	2	190	<10
21707 -80#	6	230	<10
21708 -80#	3	220	<10
21709 -80#	2	165	<10
21710 -80#	2	180	<10
21711 -80#	3	195	<10
21712 -80#	<2	360	10



ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	As	Ba	W
21713 -80#	2	240	<10
21714 -80#	<2	490	<10
21715 -80#	2	530	<10
21716 -80#	2	410	<10
21717 -80#	2	410	<10
21718 -80#	6	230	<10
21719 -80#	4	80	<10
21720 -80#	<2	270	<10
21721 -80#	<2	210	15
21722 -80#	5	95	<10
21723 -80#	4	210	<10
21724 -80#	3	200	<10
21725 -80#	2	130	<10
21726 -80#	4	170	<10
21727 -80#	3	155	<10
21728 -80#	3	100	<10
21729 -80#	3	80	<10
21730 -80#	3	120	<10

Method of Analysis : As Ba W : XRF1

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2839	<2	8	6	4	-	-
2840	30	60	70	10	-	-
2841	8	100	60	8	-	-
2842	10	26	14	<4	-	-
2843	10	8	38	8	-	-
2844	6	8	12	4	-	-
2845	60	<4	20	22	-	-
2846	44	12	10	4	-	-
2847	6	12	210	34	-	-
2848	6	<4	115	28	-	-
2849	75	<4	24	12	-	-
2850	140	46	240	16	-	-
2851	12	10	36	4	-	-
3701 -80#	10	<4	8	8	<4	<4
3702 -80#	6	4	6	10	<4	<4
3703 -80#	6	18	12	16	<4	<4
3704 -80#	6	<4	12	14	<4	<4
3705 -80#	24	20	34	16	<4	<4
3706 -80#	16	<4	10	<4	<4	<4
3707 -80#	24	6	10	<4	<4	<4
3708 -80#	16	<4	12	6	<4	<4
3709 -80#	16	<4	14	10	<4	<4
3710 -80#	8	10	10	8	<4	<4
3711 -80#	12	12	10	<4	<4	<4
3712 -80#	12	14	10	<4	<4	<4

ANALYTICAL REPORT

716168

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3713 -80#	60	22	30	40	6	<4
3714 -80#	14	18	14	16	<4	8
3715 -80#	4	16	8	12	<4	<4
3716 -80#	16	20	10	8	6	<4
3717 -80#	22	26	26	32	8	<4
3718 -80#	16	12	14	14	6	<4
3719 -80#	18	16	14	16	<4	<4
3720 -80#	14	16	20	32	6	<4
3721 -80#	24	70	55	135	10	<4
3722 -80#	10	90	36	44	8	<4
3723 -80#	8	20	16	10	6	<4
3724 -80#	4	6	6	4	4	<4
3725 -80#	8	14	12	8	4	<4
3726 -80#	6	12	8	4	<4	4
3727 -80#	10	<4	<2	4	<4	<4
3728 -80#	6	4	8	6	<4	<4
3729 -80#	12	26	28	18	<4	<4
3730 -80#	6	20	14	10	<4	<4
3731 -80#	14	75	30	30	8	<4
3732 -80#	10	4	6	<4	4	6
3733 -80#	<2	<4	4	8	<4	8
3734 -80#	<2	<4	6	<4	<4	6
3735 -80#	6	<4	6	<4	<4	8
3736 -80#	4	<4	6	<4	<4	6
3737 -80#	6	<4	2	<4	<4	4

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ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Ri
3738 -80#	4	<4	4	<4	<4	<4
3739 -80#	6	8	6	<4	<4	8
3740 -80#	30	24	28	18	16	10
3741 -80#	12	6	10	<4	<4	<4
3742 -80#	10	10	12	6	<4	10
3743 -80#	2	8	4	<4	<4	10
3744 -80#	2	16	6	<4	<4	6
3745 -80#	6	18	16	12	<4	4
3746 -80#	6	10	8	4	<4	<4
3747 -80#	18	14	20	4	6	4
3748 -80#	24	48	32	36	<4	<4
3749 -80#	14	22	22	12	<4	8
3750 -80#	6	14	14	8	6	<4
3751 -80#	6	10	12	4	4	<4
3752 -80#	2	18	10	4	<4	4
3753 -80#	16	24	44	30	10	6
3754 -80#	4	20	8	<4	<4	8
3755 -80#	6	22	6	<4	<4	12
3756 -80#	10	32	16	<4	<4	10
3757 -80#	12	16	14	8	<4	6
3758 -80#	<2	4	6	<4	<4	8
3759 -80#	4	14	6	<4	<4	<4
3760 -80#	4	14	10	<4	<4	<4
3761 -80#	4	4	4	<4	<4	<4
3762 -80#	4	<4	4	<4	<4	<4

ANALYTICAL REPORT

716170

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3763 -80#	4	4	2	<4	<4	<4
3764 -80#	4	8	4	<4	<4	<4
3765 -80#	2	6	2	<4	<4	<4
3766 -80#	2	6	2	<4	<4	<4
3767 -80#	4	16	8	<4	<4	<4
3768 -80#	4	6	6	<4	<4	8
3769 -80#	10	4	32	12	<4	<4
3770 -80#	46	6	115	130	42	<4
3771 -80#	30	6	85	90	24	<4
3772 -80#	28	8	80	95	30	<4
023 ✓ 3773 -80#	32	8	80	110	18	<4
3774 -80#	60	10	120	200	28	<4
3775 -80#	42	10	80	115	26	<4
3776 -80#	36	10	80	125	28	<4
3777 -80#	60	4	130	195	55	<4
3778 -80#	60	6	140	210	60	<4
3779 -80#	36	12	80	85	28	<4
3780 -80#	30	10	75	75	18	<4
3781 -80#	24	8	110	85	55	<4
3782 -80#	55	8	135	175	100	<4
3783 -80#	40	4	125	140	50	<4
3784 -80#	28	14	75	50	16	<4
3785 -80#	50	<4	110	185	40	<4
3786 -80#	36	<4	90	100	34	<4
3787 -80#	50	<4	135	210	65	<4

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ANALYTICAL REPORT

JOB COMB12138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3788 -80#	55	4	115	220	75	<4
3789 -80#	55	8	135	240	70	<4
3790 -80#	55	6	145	200	70	<4
027 ✓ 3791 -80#	65	4	160	220	70	4
3792 -80#	65	<4	145	210	60	<4
3793 -80#	75	6	150	310	65	<4
3794 -80#	48	4	125	185	44	<4
3795 -80#	65	<4	135	190	48	<4
3796 -80#	55	4	145	230	55	<4
024 ✓ 3797 -80#	40	32	120	120	42	<4
3798 -80#	65	8	175	190	55	<4
3799 -80#	42	16	130	165	44	<4
3800 -80#	70	10	150	185	48	<4
3801 -80#	65	60	14	<4	<4	<4
3802 -80#	10	42	26	<4	<4	<4
3803 -80#	6	18	10	<4	<4	<4
3804 -80#	<2	14	6	<4	<4	<4
3805 -80#	<2	10	6	<4	<4	<4
026 ✓ 3806 -80#	4	34	20	<4	<4	<4
3807 -80#	6	85	18	<4	<4	<4
3808 -80#	2	22	22	<4	<4	<4
3809 -80#	6	34	26	<4	4	<4
3810 -80#	32	75	28	<4	<4	<4
3811 -80#	20	100	75	<4	<4	<4
3812 -80#	75	4400	6800	<4	6	<4

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3813 -80#	8	165	230	<4	<4	<4
3814 -80#	4	105	70	<4	<4	<4
3815 -80#	10	60	44	<4	<4	<4
3816 -80#	6	26	18	4	<4	<4
3817 -80#	14	75	160	16	10	<4
3818 -80#	28	48	80	12	8	<4
3819 -80#	16	95	125	8	6	<4
3820 -80#	6	90	24	<4	<4	<4
3821 -80#	6	40	16	<4	<4	<4
3822 -80#	16	18	85	20	14	6
3823 -80#	4	12	26	18	6	<4
3824 -80#	46	26	60	16	8	<4
3825 -80#	10	14	24	10	6	<4
3826 -80#	12	10	55	20	10	<4
3827 -80#	14	65	75	22	6	<4
3828 -80#	30	105	130	24	10	<4
3829 -80#	6	65	46	14	8	<4
3830 -80#	10	200	36	8	6	<4
3831 -80#	22	190	70	12	4	<4
3832 -80#	28	120	75	12	6	<4
3833 -80#	26	125	105	12	6	<4
3834 -80#	18	110	60	18	8	<4
3835 -80#	20	36	55	18	8	<4
3836 -80#	40	125	70	22	6	<4
3837 -80#	24	130	75	18	10	<4

ANALYTICAL REPORT

716173

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3838 -80#	38	190	70	24	6	<4
3839 -80#	32	125	55	14	4	<4
3840 -80#	10	60	22	4	<4	<4
3841 -80#	6	28	12	4	<4	<4
3842 -80#	18	50	60	10	<4	<4
3843 -80#	14	60	38	14	6	<4
3844 -80#	18	60	44	14	<4	<4
3845 -80#	16	48	40	8	8	<4
3846 -80#	10	38	26	4	<4	<4
3847 -80#	12	65	44	6	<4	<4
3848 -80#	16	105	50	10	4	<4
3849 -80#	16	150	65	6	4	<4
3850 -80#	10	65	30	4	6	<4
3851 -80#	10	28	20	6	4	<4
3852 -80#	14	48	28	4	<4	<4
3853 -80#	18	60	26	18	<4	<4
3854 -80#	12	55	28	20	<4	<4
3855 -80#	40	60	195	16	<4	<4
3856 -80#	14	55	200	12	<4	<4
3857 -80#	8	80	32	6	<4	<4
3858 -80#	6	50	30	8	<4	<4
3859 -80#	6	22	14	4	<4	<4
3860 -80#	4	32	14	4	<4	<4
3861 -80#	4	20	12	4	<4	<4
3862 -80#	34	28	20	8	<4	<4

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ANALYTICAL REPORT

716174

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3863 -80#	22	14	14	4	<4	<4
3864 -80#	55	28	16	4	<4	<4
3865 -80#	34	20	34	10	<4	<4
3866 -80#	28	32	22	6	<4	<4
3867 -80#	20	14	16	12	<4	<4
3868 -80#	4	12	10	10	<4	<4
3869 -80#	4	18	12	6	<4	<4
3870 -80#	4	4	4	<4	<4	<4
3871 -80#	4	4	4	<4	<4	<4
3872 -80#	10	34	22	22	<4	<4
3873 -80#	4	<4	6	6	<4	<4
3874 -80#	4	<4	6	6	<4	<4
3875 -80#	4	<4	6	6	<4	<4
3876 -80#	4	<4	4	<4	<4	<4
3877 -80#	22	12	28	55	<4	<4
3878 -80#	48	55	75	90	<4	<4
3879 -80#	4	<4	8	12	<4	<4
3880 -80#	<2	<4	8	6	<4	<4
3881 -80#	32	26	70	65	10	<4
3882 -80#	8	10	14	6	<4	<4
3883 -80#	12	26	24	20	<4	<4
3884 -80#	22	14	14	4	<4	<4
3885 -80#	18	28	28	24	<4	<4
3886 -80#	20	24	30	6	<4	<4
3887 -80#	46	135	60	70	6	<4



ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3888 -80#	4	<4	6	<4	<4	<4
3889 -80#	46	40	55	46	6	<4
3890 -80#	22	20	32	46	4	<4
3891 -80#	6	6	6	<4	<4	<4
3892 -80#	4	<4	6	<4	<4	<4
3893 -80#	6	4	10	6	<4	<4
3894 -80#	26	34	55	90	10	<4
3895 -80#	48	65	50	95	10	<4
3896 -80#	16	20	30	65	<4	<4
3897 -80#	4	4	6	4	<4	<4
3898 -80#	10	36	28	20	<4	<4
3899 -80#	4	<4	4	<4	<4	<4
3900 -80#	12	26	18	22	<4	<4
3901 -80#	60	<4	125	200	70	<4
3902 -80#	60	4	125	190	75	<4
3903 -80#	50	<4	115	150	55	<4
3904 -80#	65	<4	140	230	60	<4
3905 -80#	60	<4	120	180	50	<4
3906 -80#	55	<4	125	175	55	<4
3907 -80#	55	6	130	180	55	<4
3908 -80#	60	<4	125	210	48	<4
3909 -80#	75	<4	150	230	60	<4
3910 -80#	50	<4	105	175	46	<4
3911 -80#	55	4	120	210	50	<4
3912 -80#	46	<4	130	220	65	<4

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3913 -80#	4	<4	10	<4	<4	<4
3914 -80#	<2	<4	6	8	<4	<4
3915 -80#	10	<4	10	10	<4	<4
3916 -80#	10	<4	8	<4	<4	<4
3917 -80#	6	4	4	<4	<4	<4
3918 -80#	10	<4	10	<4	<4	<4
3919 -80#	16	<4	14	<4	<4	<4
3920 -80#	10	10	10	10	<4	<4
3921 -80#	42	28	38	12	<4	<4
3922 -80#	22	32	26	6	<4	<4
3923 -80#	10	18	16	4	<4	<4
3924 -80#	10	14	12	4	<4	<4
3925 -80#	8	<4	8	<4	<4	<4
3926 -80#	8	10	6	<4	<4	<4
3927 -80#	8	6	10	8	<4	<4
3928 -80#	16	40	36	12	<4	<4
3929 -80#	24	24	34	<4	<4	<4
3930 -80#	14	24	16	<4	<4	<4
3931 -80#	4	<4	6	<4	<4	<4
3932 -80#	34	22	48	48	8	<4
3933 -80#	6	44	20	16	<4	<4
3934 -80#	6	6	6	4	<4	<4
3935 -80#	6	12	6	8	<4	<4
3936 -80#	2	8	4	12	<4	<4
3937 -80#	8	10	8	12	<4	<4

ANALYTICAL REPORT

716177

JOB COM812138

O/E : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3938 -80#	8	60	14	18	<4	<4
3939 -80#	6	60	20	12	<4	<4
3940 -80#	8	65	24	12	<4	<4
3941 -80#	4	6	4	<4	<4	<4
3942 -80#	8	18	6	10	<4	<4
3943 -80#	6	<4	<2	4	<4	<4
3944 -80#	4	<4	2	<4	<4	<4
3945 -80#	6	<4	<2	<4	<4	<4
3946 -80#	12	14	16	18	<4	<4
3947 -80#	6	4	6	4	<4	<4
3948 -80#	36	18	38	26	6	<4
3949 -80#	44	22	65	55	12	<4
3950 -80#	18	14	40	28	4	<4
3951 -80#	40	16	80	55	12	<4
3952 -80#	85	12	155	280	60	<4
3953 -80#	60	8	140	195	50	<4
3954 -80#	70	4	140	200	60	<4
3955 -80#	65	6	125	155	50	<4
3956 -80#	46	<4	120	180	38	<4
3957 -80#	42	6	140	120	40	<4
3958 -80#	55	10	145	200	60	<4
3959 -80#	55	12	115	175	42	<4
3960 -80#	80	6	130	210	65	<4
3961 -80#	55	12	100	165	46	<4
3962 -80#	70	10	145	210	60	<4

027

177
c



716178

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3963 -80#	70	8	155	230	50	<4
3964 -80#	75	<4	160	250	65	<4
3965 -80#	70	8	120	220	60	<4
3966 -80#	75	<4	140	210	55	<4
3967 -80#	65	<4	125	195	50	<4
3968 -80#	70	6	150	230	65	<4
3969 -80#	65	8	145	200	55	<4
3970 -80#	50	10	95	105	24	<4
3971 -80#	60	4	115	155	44	<4
3972 -80#	65	6	140	165	44	<4
3973 -80#	60	<4	140	210	50	<4
3974 -80#	48	14	115	165	40	<4
3975 -80#	42	16	90	115	30	<4
3976 -80#	46	6	100	160	40	<4
3977 -80#	50	4	110	185	50	<4
3978 -80#	55	<4	115	210	55	<4
3979 -80#	46	<4	95	125	36	<4
3980 -80#	55	<4	115	195	50	<4
3981 -80#	60	4	115	210	50	<4
3982 -80#	60	<4	115	200	55	<4
3983 -80#	44	4	95	165	40	<4
3984 -80#	65	<4	175	200	60	<4
3985 -80#	55	<4	115	175	55	<4
3986 -80#	36	10	100	105	32	<4
3987 -80#	28	14	65	70	22	<4

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716179

ANALYTICAL REPORT

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3988 -80#	24	26	85	60	16	<4
3989 -80#	42	<4	100	155	50	<4
3990 -80#	28	26	70	75	28	<4
3991 -80#	36	8	95	130	44	<4
3992 -80#	6	8	10	20	<4	<4
3993 -80#	4	<4	6	4	<4	<4
3994 -80#	2	6	8	16	<4	<4
3995 -80#	14	32	22	6	<4	<4
3996 -80#	2	10	10	10	<4	<4
3997 -80#	2	<4	2	12	<4	<4
3998 -80#	4	<4	4	6	<4	<4
3999 -80#	<2	<4	<2	14	<4	<4
4000 -80#	12	<4	10	12	<4	<4
21701 -80#	16	10	12	<4	<4	<4
21702 -80#	6	16	6	4	<4	<4
21703 -80#	60	26	70	65	10	<4
21704 -80#	20	8	16	22	4	<4
21705 -80#	18	14	18	16	<4	<4
21706 -80#	18	12	16	<4	<4	<4
21707 -80#	90	18	95	80	16	<4
21708 -80#	70	4	130	180	40	<4
21709 -80#	90	10	140	155	48	<4
21710 -80#	80	12	140	220	50	<4
21711 -80#	80	6	145	190	55	<4
21712 -80#	70	<4	135	190	48	<4



ANALYTICAL REPORT

716180

JOB COM812138

O/N : 4065/NP01/JJL/49

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
21713 -80#	60	6	135	200	60	<4
21714 -80#	75	<4	135	210	50	<4
21715 -80#	75	<4	130	260	55	<4
21716 -80#	80	6	145	210	55	<4
21717 -80#	70	<4	130	270	55	<4
21718 -80#	105	22	135	150	38	<4
21719 -80#	42	14	65	70	22	<4
21720 -80#	85	8	155	200	55	<4
21721 -80#	55	4	115	170	50	<4
21722 -80#	115	10	160	150	44	<4
21723 -80#	75	4	140	180	55	<4
21724 -80#	90	12	140	175	55	<4
21725 -80#	55	16	120	80	38	<4
21726 -80#	85	8	145	145	44	<4
21727 -80#	75	16	155	140	44	<4
21728 -80#	80	6	115	95	34	<4
21729 -80#	120	12	190	155	40	<4
21730 -80#	85	6	130	150	46	<4

Method of Analysis : Cu Pb Zn Ni Co Pi : AAS1

180°
 COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

716181



NATA REGISTERED No. 1526

OUR REF.: COM 812179

YOUR REF.: 3068/NP01/JJL/52

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310

22.1.82

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

Dear John,

RE: JOB COM 812179

Enclosed are the assays for the samples delivered to our laboratory on the
15th December, 1982.

Yours sincerely,

Harry Fishman
Managing Director

Date Recd	25/1/82
By	
Initials	
Signature	
Stamp	
Remarks	

ANALYTICAL REPORT

716182

JOB COM812179

O/N : 4068/NP01/JJL/52

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	As	Ba	W
2562 -80#	2	<4	<4	4	3	25	<10
2563 -80#	6	<4	6	<4	3	15	<10
2564 -80#	4	<4	4	<4	4	55	10
2565 -80#	8	<4	6	<4	2	45	<10
2566 -80#	6	<4	6	<4	9	130	10
2567 -80#	4	<4	6	<4	<2	30	10
2570 -80#	6	<4	8	4	6	135	10
2573 -80#	12	<4	12	<4	2	100	10
2574 -80#	4	<4	6	<4	2	40	10
2575 -80#	16	4	16	8	2	185	10
2576 -80#	14	<4	70	4	2	55	15
2577 -80#	16	<4	12	12	4	105	<10
2578 -80#	14	18	16	4	12	195	10
2579 -80#	8	<4	6	6	<2	75	10
2580 -80#	16	8	12	8	4	160	<10
2581 -80#	6	6	4	<4	6	155	<10
2582 -80#	12	6	16	<4	7	300	<10
2583 -80#	8	6	8	4	8	150	<10
2584 -80#	6	4	4	<4	2	80	<10
2823 -80#	24	60	100	10	12	160	10
2824 -80#	30	170	300	16	32	155	<10
2825 -80#	32	220	450	24	48	140	10
2826 -80#	26	70	300	26	36	120	10
2827 -80#	36	100	300	16	12	820	10
2828 -80#	14	90	28	8	55	170	<10



ANALYTICAL REPORT

716183

JOE COM812179

O/N : 4068/NP01/JJL/52

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	As	Ba	W
2829 -80#	32	80	60	8	20	450	15
2830 -80#	10	16	16	8	5	115	<10
2831 -80#	24	12	26	10	3	140	15
2832 -80#	60	50	60	16	9	1200	35
2833 -80#	50	24	60	18	10	240	15
2834 -80#	20	20	38	8	6	250	<10
2835 -80#	24	8	22	12	<2	95	60
2836 -80#	16	6	14	6	4	105	10
2837 -80#	8	10	12	4	5	135	10
2838 -80#	22	18	22	12	12	220	10

Method of Analysis : Cu Pb Zn Ni : AAS1
As Ba W : XRF1

ANALYTICAL REPORT

716184

JOB COM812179

O/N : 4068/NP01/JJL/52

Results in ppm

SAMPLE	Co	Bi	%Fe	Mn	Sn	Ta	Mo
2562 -80#	<4	<4	0.18	24	<4	<10	6
2563 -80#	<4	<4	0.14	16	6	<10	6
2564 -80#	<4	<4	0.11	30	4	<10	8
2565 -80#	<4	<4	0.18	18	<4	<10	8
2566 -80#	<4	<4	0.55	75	4	<10	10
2567 -80#	<4	<4	0.18	60	6	<10	10
2570 -80#	<4	<4	0.49	12	6	<10	6
2573 -80#	<4	<4	0.18	30	4	<10	12
2574 -80#	<4	<4	0.10	12	4	<10	10
2575 -80#	<4	<4	0.33	14	4	<10	10
2576 -80#	<4	<4	0.18	10	4	<10	8
2577 -80#	<4	<4	0.20	14	6	<10	10
2578 -80#	<4	<4	0.63	90	4	<10	6
2579 -80#	<4	<4	0.14	10	4	<10	10
2580 -80#	<4	<4	0.46	32	4	<10	8
2581 -80#	<4	<4	0.25	14	8	<10	10
2582 -80#	<4	<4	0.52	20	6	<10	8
2583 -80#	<4	<4	0.31	16	6	<10	8
2584 -80#	<4	<4	0.15	10	<4	10	8
2823 -80#	28	<4	2.50	890	8	<10	8
2824 -80#	90	<4	4.60	3550	6	<10	8
2825 -80#	195	<4	7.20	5600	<4	<10	10
2826 -80#	28	<4	4.00	3360	8	<10	8
2827 -80#	48	<4	3.20	4000	10	<10	18
2828 -80#	8	<4	1.60	580	4	<10	8

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c



716185

ANALYTICAL REPORT

JOB COM812179

O/N : 4068/NP01/JJL/52

Results in ppm

SAMPLE	Co	Bi	%Fe	Mn	Sn	Ta	Mo
2829 -80#	8	<4	2.30	560	6	10	16
2830 -80#	4	<4	0.46	36	12	<10	8
2831 -80#	<4	<4	0.64	70	38	<10	10
2832 -80#	8	<4	2.10	210	60	<10	16
2833 -80#	8	<4	2.40	240	125	<10	6
2834 -80#	4	<4	2.00	160	16	<10	4
2835 -80#	<4	<4	0.64	190	2000	<10	10
2836 -80#	<4	<4	0.34	70	105	<10	10
2837 -80#	<4	<4	0.45	75	95	<10	6
2838 -80#	4	<4	0.97	120	42	<10	10

Method of Analysis : Sn Ta Mo : XRF1
Co Bi : AAS1
Fe Mn : AAS2/2A

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COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

716186



NATA REGISTERED No. 1526

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

OUR REF.: COM 812192

YOUR REF.: 4069/NP01/JJL/53

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

18.1.81

Dear John,

RE: JOB COM 812192

Enclosed are the assays for the samples delivered to our laboratory on the
17th December, 1981.

Yours sincerely,

Harry Fishman
Managing Director



COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES



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ANALYTICAL REPORT

716187

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3401	30	16	60	22	8	<4
3402	16	16	26	14	4	<4
3403	18	12	85	55	10	<4
3404	8	12	14	10	4	<4
3405	12	12	16	12	6	<4
3406	18	12	8	10	<4	<4
3407	6	20	4	10	4	<4
3408	4	12	<2	16	<4	<4
3409	4	8	6	12	<4	<4
3410	6	<4	4	10	4	<4
3411	10	<4	<2	4	4	<4
3412	4	4	<2	4	6	<4
3413	38	4	16	28	6	<4
3414	10	<4	<2	6	4	<4
3415	6	<4	<2	4	4	<4
3416	8	8	<2	12	4	<4
3417	6	<4	<2	8	<4	<4
3418	8	8	<2	6	4	<4
3419	12	8	16	6	<4	<4
3420	8	16	34	12	6	<4
3421	6	8	8	<4	4	<4
3422	16	28	40	6	4	<4
3423	14	18	50	8	6	<4
3424	12	12	26	8	4	<4
3425	22	8	26	10	6	<4

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ANALYTICAL REPORT

716188

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3426	20	8	50	10	6	<4
3427	12	8	10	8	6	<4
3428	14	4	12	<4	<4	<4
3429	20	14	18	12	4	<4
3430	16	8	16	12	<4	<4
3431	36	12	24	10	6	<4
3432	26	12	42	22	6	<4
3433	18	8	22	14	4	<4
3434	14	8	12	12	4	<4
3435	12	4	12	14	<4	<4
3436	14	6	16	4	6	<4
3437	14	4	26	4	6	<4
3438	12	<4	10	6	4	<4
3439	14	8	10	6	6	<4
3440	26	10	20	10	4	<4
3441	10	10	10	4	4	<4
3442	8	4	12	<4	<4	<4
3443	12	8	14	12	4	<4
3444	18	6	14	4	4	<4
3445	8	60	24	10	4	<4
3446	10	16	10	14	<4	<4
3447	16	12	16	6	<4	<4
3448	16	32	14	12	4	<4
3449	14	12	18	8	6	<4
3450	10	8	14	6	6	<4



ANALYTICAL REPORT

716189

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3451	16	8	12	10	6	<4
3452	48	44	115	28	8	<4
3453	12	4	10	14	4	<4
3454	10	4	22	12	4	<4
3455	18	8	14	10	<4	<4
3456	10	8	12	8	<4	<4
3457	12	8	12	14	4	<4
3458	10	4	16	6	4	<4
3459	10	8	22	10	<4	<4
3460	20	24	38	8	<4	<4
3461	16	8	16	14	6	<4
3462	18	8	14	16	4	<4
3463	16	4	14	10	4	<4
3464	12	8	8	8	6	<4
3465	20	12	18	18	4	<4
3466	16	10	16	20	<4	<4
3467	14	<4	8	14	<4	<4
3468	16	4	24	18	4	<4
3469	18	32	46	12	<4	<4
3470	22	16	16	16	4	<4
3471	20	12	24	20	<4	<4
3472	14	6	8	18	<4	<4
3473	12	<4	8	6	4	<4
3474	14	<4	12	14	<4	<4
3475	18	16	145	12	6	<4

.../ 4

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3476	16	<4	24	18	6	<4
3477	26	130	55	22	6	<4
3478	22	90	100	14	6	<4
3479	24	150	16	10	6	<4
3480	22	<4	12	16	4	<4
3481	20	<4	12	8	4	<4
3482	20	8	12	8	<4	<4
3483	20	<4	12	8	6	<4
3484	10	<4	<2	8	6	<4
3475A	24	46	1600	10	6	<4
3476A	22	32	430	12	6	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

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COMPUTERISED ANALYTICAL LABORATORIES

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716191

ANALYTICAL REPORT

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	As	Ba	W
3401	46	420	10
3402	12	300	10
3403	9	210	10
3404	2	240	15
3405	<2	260	15
3406	<2	310	15
3407	2	270	10
3408	3	135	<10
3409	4	450	10
3410	3	430	20
3411	2	800	15
3412	3	900	20
3413	6	40	20
3414	2	10	15
3415	3	20	20
3416	<2	230	10
3417	<2	240	10
3418	6	200	10
3419	5	210	10
3420	10	350	10
3421	5	180	10
3422	26	400	<10
3423	12	350	10
3424	14	330	<10
3425	24	370	<10

**ANALYTICAL REPORT****716192**

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	As	Ba	W
3426	38	350	10
3427	<2	100	<10
3428	<2	165	10
3429	6	170	10
3430	<2	260	<10
3431	2	270	10
3432	<2	250	15
3433	7	300	15
3434	12	75	10
3435	6	270	10
3436	6	85	10
3437	<2	240	10
3438	<2	280	<10
3439	2	175	15
3440	<2	145	<10
3441	4	240	10
3442	3	220	10
3443	2	270	<10
3444	2	200	15
3445	4	240	10
3446	4	260	<10
3447	2	160	15
3448	8	340	15
3449	<2	260	10
3450	5	210	10

ANALYTICAL REPORT

716193

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	As	Ba	W
3451	4	95	15
3452	160	260	15
3453	6	280	<10
3454	12	170	<10
3455	6	220	15
3456	3	210	20
3457	<2	210	10
3458	4	175	<10
3459	<2	210	<10
3460	10	320	10
3461	3	300	15
3462	<2	380	10
3463	<2	310	10
3464	<2	195	10
3465	<2	180	10
3466	3	320	10
3467	<2	60	10
3468	5	370	<10
3469	9	420	10
3470	3	210	10
3471	4	300	<10
3472	3	55	<10
3473	4	40	<10
3474	2	45	<10
3475	90	190	20



716194

ANALYTICAL REPORT

JOB COM812192

O/N : 4069/NP01/JJL/53

Results in ppm

SAMPLE	As	Ba	W
3476	28	210	15
3477	46	190	25
3478	20	185	15
3479	4	35	15
3480	3	140	25
3481	4	50	20
3482	4	130	15
3483	5	200	20
3484	3	110	20
3475A	1900	145	35
3476A	1300	200	50

Method of Analysis : As Ba W : XRF1

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COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

716195



NATA REGISTERED No. 1526

OUR REF.: COM 820016

YOUR REF.: 4071/NP01/JJL/55

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

20.1.82

Dear John,

RE: JOB COM 820016

Enclosed are the assays for the samples delivered to our laboratory on the
5th January, 1982.

Yours sincerely,

Harry Fishman
Managing Director

Date Rec'd		File
Date Ans		
Action	Info	Notes

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2403 -80#	<2	20	12	4	<4	<4
2404 -80#	4	6	12	8	<4	<4
2405 -80#	28	16	16	10	<4	<4
2406 -80#	40	46	46	32	<4	<4
2407 -80#	12	12	12	8	<4	<4
2408 -80#	8	30	16	10	<4	<4
2409 -80#	8	14	16	10	<4	<4
2410 -80#	4	10	10	6	<4	<4
2411 -80#	4	18	10	6	<4	<4
2412 -80#	4	6	8	4	<4	<4
2413 -80#	6	6	14	4	<4	<4
2414 -80#	4	8	8	4	<4	<4
2415 -80#	8	8	14	<4	<4	<4
2416 -80#	8	10	14	<4	<4	<4
2417 -80#	8	20	14	<4	<4	<4
2418 -80#	10	20	14	10	<4	<4
2419 -80#	4	20	14	4	<4	<4
2420 -80#	12	10	14	4	<4	<4
2421 -80#	8	18	18	6	<4	<4
2422 -80#	10	150	14	4	<4	<4
2423 -80#	8	10	8	6	<4	<4
2424 -80#	8	20	14	8	<4	<4
2425 -80#	8	14	12	6	<4	<4
2426 -80#	12	24	18	8	<4	<4
2427 -80#	16	28	20	8	<4	<4

2403-245
2/NP01/009
9010



716197

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2428 -80#	8	18	20	6	<4	<4
2429 -80#	44	30	34	6	<4	<4
2430 -80#	16	14	20	4	<4	<4
2431 -80#	18	14	18	6	<4	<4
2432 -80#	16	28	16	4	<4	<4
2433 -80#	2	22	6	4	<4	<4
2434 -80#	20	18	8	<4	<4	<4
2435 -80#	12	6	14	4	<4	<4
2436 -80#	10	12	6	<4	<4	<4
2437 -80#	12	18	8	4	<4	<4
2438 -80#	8	14	6	4	<4	<4
2439 -80#	2	10	6	<4	<4	<4
2440 -80#	2	16	8	<4	<4	<4
2441 -80#	12	16	12	<4	<4	<4
2442 -80#	6	16	8	<4	<4	<4
2443 -80#	10	18	8	4	<4	<4
2444 -80#	16	16	10	<4	<4	<4
2445 -80#	12	10	6	<4	<4	<4
2446 -80#	10	12	12	<4	<4	<4
2447 -80#	16	12	10	<4	<4	<4
2448 -80#	12	12	6	<4	<4	<4
2449 -80#	6	16	6	6	<4	<4
2450 -80#	<2	12	4	10	<4	<4
2451 -80#	14	40	38	60	<4	<4
2452 -80#	10	20	14	18	<4	<4

ANALYTICAL REPORT

716198

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2453 -80#	12	16	8	10	<4	<4
2454 -80#	10	8	<4	<4	<4	<4
2455 -80#	8	22	8	8	<4	<4
2456 -80#	14	22	14	22	<4	<4
2457 -80#	38	38	42	40	<4	<4
2458 -80#	28	20	20	22	<4	<4
2459 -80#	<2	12	<4	8	<4	<4
2460 -80#	4	<4	4	4	<4	<4
2461 -80#	12	6	8	<4	<4	<4
2462 -80#	<2	<4	<4	<4	<4	<4
2463 -80#	8	<4	6	6	6	<4
2464 -80#	28	8	28	65	10	<4
2465 -80#	30	20	26	44	6	<4
2466 -80#	8	<4	6	6	6	<4
2467 -80#	10	12	22	18	6	<4
2468 -80#	8	6	8	12	4	<4
2469 -80#	8	8	8	12	6	<4
2470 -80#	8	12	8	16	6	<4
2471 -80#	26	16	36	48	6	<4
2472 -80#	12	8	16	28	6	<4
2473 -80#	24	18	40	44	10	<4
2474 -80#	36	24	22	30	6	<4
2475 -80#	55	8	80	105	14	<4
2476 -80#	65	6	185	210	70	<4
2477 -80#	60	4	90	130	28	<4


ANALYTICAL REPORT
716199
JOB COM820016
O/N : 4071/NP01/JJL/55
Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2478 -80#	38	8	60	75	22	<4
2479 -80#	32	20	60	65	26	<4
2480 -80#	55	8	100	195	55	<4
2481 -80#	36	8	60	85	24	<4
2482 -80#	60	4	105	220	48	<4
2483 -80#	50	6	85	155	46	<4
2484 -80#	65	<4	125	210	50	<4
2485 -80#	70	<4	135	230	50	<4
2486 -80#	60	<4	100	160	30	<4
2487 -80#	80	<4	140	240	60	<4
2488 -80#	55	<4	130	190	50	<4
2489 -80#	75	<4	140	210	50	<4
2490 -80#	70	<4	135	195	50	<4
2491 -80#	75	<4	165	230	60	<4
2492 -80#	65	<4	130	205	48	<4
2493 -80#	65	14	120	200	60	<4
2494 -80#	60	20	120	170	40	<4
2495 -80#	46	14	105	150	42	<4
2496 -80#	65	10	120	160	38	<4
2497 -80#	65	12	145	190	50	<4
2498 -80#	55	14	150	170	46	<4
2499 -80#	70	8	150	230	50	<4
2500 -80#	75	12	125	220	44	<4
3101 -80#	42	30	75	80	16	<4
3102 -80#	40	28	60	60	8	<4

ANALYTICAL REPORT

716200

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3103 -80#	55	24	95	160	24	<4
3104 -80#	16	24	40	40	4	<4
3105 -80#	40	12	55	110	12	<4
3106 -80#	70	18	125	230	50	<4
3107 -80#	90	6	145	230	40	<4
3108 -80#	70	8	100	210	38	<4
3109 -80#	60	6	105	180	38	<4
3110 -80#	55	6	80	130	42	<4
3111 -80#	70	14	85	160	50	<4
3112 -80#	38	115	55	90	26	<4
3113 -80#	100	18	95	180	60	<4
3114 -80#	70	14	115	190	50	<4
3115 -80#	55	20	90	170	42	<4
3116 -80#	46	18	85	140	40	<4
3117 -80#	55	20	80	140	38	<4
3118 -80#	80	16	125	190	60	<4
3119 -80#	65	22	105	130	40	<4
3120 -80#	48	22	85	140	20	<4
3121 -80#	85	16	130	210	40	<4
3122 -80#	48	22	85	130	28	<4
3123 -80#	50	16	90	150	24	<4
3124 -80#	50	18	70	120	32	<4
3125 -80#	80	12	105	190	38	<4
3126 -80#	70	18	155	230	60	<4
3127 -80#	90	18	175	180	70	<4

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ANALYTICAL REPORT

716201

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3128 -80#	18	8	14	12	<4	<4
3129 -80#	12	6	6	6	<4	<4
3130 -80#	8	4	8	4	<4	<4
3131 -80#	6	4	6	6	<4	<4
3132 -80#	12	14	12	8	<4	<4
3133 -80#	8	<4	4	4	<4	<4
3134 -80#	14	8	16	18	<4	<4
3135 -80#	20	26	36	50	<4	<4
3136 -80#	20	12	20	36	<4	<4
3137 -80#	34	24	34	32	4	<4
3138 -80#	50	18	55	60	10	<4
3139 -80#	28	16	55	60	10	<4
3140 -80#	42	16	55	60	10	<4
3141 -80#	22	12	22	28	<4	<4
3142 -80#	12	8	12	10	<4	<4
3143 -80#	50	14	75	42	24	<4
3144 -80#	100	14	130	260	36	<4
3145 -80#	60	16	80	130	24	<4
3146 -80#	90	12	150	210	50	<4
3147 -80#	80	14	115	200	38	<4
3148 -80#	70	12	145	210	60	<4
3149 -80#	60	14	110	170	28	<4
3150 -80#	60	10	120	190	40	<4
3151 -80#	70	10	120	200	48	<4
3152 -80#	60	22	125	160	32	<4

ANALYTICAL REPORT

716202

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3153 -80#	55	14	55	38	16	<4
3154 -80#	10	14	50	16	8	<4
3155 -80#	12	26	26	10	<4	<4
3156 -80#	16	14	32	18	<4	<4
3157 -80#	65	14	60	55	8	<4
3158 -80#	30	14	30	36	6	<4
3159 -80#	55	18	28	44	6	<4
3160 -80#	55	16	28	55	4	<4
3161 -80#	60	26	34	48	6	<4
3162 -80#	14	44	22	12	<4	<4
3163 -80#	75	18	38	70	4	<4
3164 -80#	6	<4	4	4	<4	<4
3165 -80#	12	10	16	32	<4	<4
3166 -80#	46	10	145	60	8	<4
3167 -80#	8	12	10	10	<4	<4
3168 -80#	4	4	<4	6	<4	<4
3169 -80#	20	10	18	50	4	<4
3170 -80#	60	12	95	210	50	<4
3171 -80#	44	16	65	135	18	<4
3172 -80#	65	12	75	155	18	<4
3173 -80#	65	12	75	160	90	<4
3174 -80#	70	12	90	210	32	<4
3175 -80#	70	14	90	200	28	<4
3176 -80#	65	12	70	185	16	<4
3177 -80#	75	8	120	230	50	<4

ANALYTICAL REPORT

716203

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Bi
3178 -80#	<2	<4	10	<4	<4	<4
3179 -80#	<2	<4	<4	<4	<4	<4
3180 -80#	<2	14	<4	<4	<4	<4
3181 -80#	<2	12	<4	<4	<4	<4
3182 -80#	<2	12	<4	<4	<4	<4
3183 -80#	6	<4	4	4	<4	<4
3184 -80#	<2	<4	4	4	<4	<4
3185 -80#	8	6	10	16	<4	<4
3186 -80#	6	14	8	8	<4	<4
3187 -80#	4	8	6	<4	<4	<4
3188 -80#	8	28	20	<4	<4	<4
3189 -80#	6	8	4	<4	<4	<4
3190 -80#	10	<4	6	32	<4	<4
3191 -80#	10	6	6	10	<4	<4
3192 -80#	4	10	8	6	<4	<4
3193 -80#	6	8	<4	22	<4	<4
3194 -80#	4	<4	4	12	<4	<4
3195 -80#	6	8	16	4	<4	<4
3196 -80#	6	14	20	12	<4	<4
3197 -80#	8	10	60	6	<4	<4
3198 -80#	2	4	4	<4	<4	<4
3199 -80#	2	6	10	<4	<4	<4
3200 -80#	4	6	8	<4	<4	<4
3201 -80#	2	6	20	<4	<4	<4
3202 -80#	28	12	22	14	<4	<4

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ANALYTICAL REPORT

716204

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3203 -80#	<2	<4	10	<4	<4	<4
3204 -80#	Insufficient Sample for Analysis					
3205 -80#	<2	6	<4	12	<4	<4
3206 -80#	<2	<4	<4	<4	<4	<4
3207 -80#	4	6	4	6	<4	<4
3208 -80#	<2	<4	<4	6	<4	<4
3209 -80#	2	6	6	<4	<4	<4
3210 -80#	16	<4	14	10	<4	<4
3211 -80#	18	6	16	6	<4	<4
3212 -80#	8	14	20	4	<4	<4
3213 -80#	12	<4	<4	30	<4	<4
3214 -80#	10	<4	6	8	<4	<4
3215 -80#	8	<4	<4	<4	<4	<4
3216 -80#	6	<4	4	<4	<4	<4
3217 -80#	10	<4	16	<4	<4	<4
3218 -80#	4	<4	6	<4	<4	<4
3219 -80#	10	<4	10	18	<4	<4
3220 -80#	6	6	8	4	<4	<4
3221 -80#	10	4	6	10	<4	<4
3222 -80#	20	6	14	22	<4	<4
3223 -80#	14	<4	6	<4	<4	<4
3224 -80#	6	<4	6	8	<4	<4
3225 -80#	12	<4	12	6	<4	<4
3226 -80#	6	<4	10	8	<4	<4
3227 -80#	8	<4	4	6	<4	<4

ANALYTICAL REPORT

716205

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3228 -80#	10	<4	8	<4	<4	<4
21731 -80#	75	8	10	230	60	<4
21732 -80#	80	6	145	220	70	<4
21733 -80#	80	8	125	230	70	<4
21734 -80#	80	10	150	210	40	<4
21735 -80#	80	12	115	200	50	<4
21736 -80#	18	24	115	38	<4	<4
21737 -80#	16	16	26	12	<4	<4
21738 -80#	14	18	12	30	<4	<4
21739 -80#	50	18	16	42	4	<4
21740 -80#	32	22	38	65	6	<4
21741 -80#	30	22	46	65	8	<4
21742 -80#	Insufficient Sample for Analysis					
21743 -80#	48	26	80	100	20	<4
21744 -80#	8	6	12	6	<4	<4
21745 -80#	12	8	4	10	<4	<4
21746 -80#	12	10	<4	<4	<4	<4
21747 -80#	14	4	6	12	<4	<4
21748 -80#	16	<4	<4	6	<4	<4
21749 -80#	14	8	6	12	<4	<4
21750 -80#	16	6	10	14	<4	<4
21751 -80#	12	<4	<4	12	<4	<4
21752 -80#	8	<4	<4	<4	<4	<4
21753 -80#	6	6	<4	6	<4	<4
21754 -80#	10	<4	<4	4	<4	<4

ANALYTICAL REPORT**716206**

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
21755 -80#	14	16	12	6	<4	<4
21756 -80#	6	8	<4	4	<4	<4
21757 -80#	14	24	12	8	<4	<4
21758 -80#	6	<4	<4	<4	<4	<4
21759 -80#	8	4	<4	4	<4	<4
21760 -80#	10	<4	<4	6	<4	<4
21761 -80#	12	<4	<4	8	<4	<4
21762 -80#	10	<4	<4	6	<4	<4
21763 -80#	8	6	<4	<4	<4	<4
21764 -80#	65	240	40	24	<4	<4
21765 -80#	190	230	95	55	10	<4
21766 -80#	155	155	65	38	<4	<4
21767 -80#	80	110	44	24	<4	<4
21768 -80#	10	10	10	10	<4	<4
21769 -80#	12	8	6	8	<4	<4
21770 -80#	6	<4	<4	<4	<4	<4
21771 -80#	8	4	6	4	<4	<4
21772 -80#	10	6	6	6	<4	<4
21773 -80#	60	180	60	46	14	<4
21774 -80#	26	46	26	14	<4	<4
21775 -80#	48	230	60	22	<4	<4
21776 -80#	38	30	32	42	4	<4
21777 -80#	60	26	60	70	10	<4
21778 -80#	60	24	70	95	18	<4
21779 -80#	36	20	24	22	4	<4

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716207

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
21780 -80#	34	24	34	38	6	<4
21781 -80#	20	<4	8	6	<4	<4
21782 -80#	20	<4	6	4	<4	<4
21783 -80#	18	<4	6	<4	<4	<4
21784 -80#	18	<4	8	4	<4	<4
21785 -80#	20	<4	6	<4	<4	<4
21786 -80#	24	<4	8	6	<4	<4
21787 -80#	22	18	18	<4	<4	<4
21788 -80#	26	24	16	6	<4	<4
21789 -80#	24	105	32	6	<4	<4
21790 -80#	50	24	24	6	<4	<4
21791 -80#	90	26	36	18	<4	<4
21792 -80#	30	28	18	12	<4	<4
21793 -80#	26	60	24	16	<4	<4
21794 -80#	18	4	10	4	<4	<4
21795 -80#	20	12	12	<4	<4	<4
21796 -80#	36	44	22	10	<4	<4
21797 -80#	34	30	18	10	<4	<4
21798 -80#	135	46	90	36	6	<4
21799 -80#	120	26	80	48	<4	<4
21800 -80#	170	22	80	100	30	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

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ANALYTICAL REPORT**716208**

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
2403 -80#	6	10	250
2404 -80#	3	<10	90
2405 -80#	3	15	990
2406 -80#	9	<10	880
2407 -80#	6	<10	770
2408 -80#	7	<10	100
2409 -80#	4	<10	45
2410 -80#	<2	15	240
2411 -80#	2	15	430
2412 -80#	3	15	650
2413 -80#	3	15	1400
2414 -80#	<2	15	1900
2415 -80#	3	25	1300
2416 -80#	<2	15	1300
2417 -80#	4	15	200
2418 -80#	2	20	135
2419 -80#	4	10	120
2420 -80#	2	20	1400
2421 -80#	<2	15	1000
2422 -80#	<2	20	460
2423 -80#	<2	20	360
2424 -80#	<2	25	350
2425 -80#	3	25	610
2426 -80#	5	20	470
2427 -80#	3	20	820

ANALYTICAL REPORT

716209

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
2428 -80#	4	20	610
2429 -80#	4	30	670
2430 -80#	4	15	1100
2431 -80#	<2	20	710
2432 -80#	4	20	740
2433 -80#	2	15	720
2434 -80#	4	35	950
2435 -80#	2	10	710
2436 -80#	4	15	870
2437 -80#	<2	15	850
2438 -80#	2	20	940
2439 -80#	<2	20	990
2440 -80#	5	10	770
2441 -80#	3	20	710
2442 -80#	<2	25	740
2443 -80#	2	20	850
2444 -80#	<2	10	740
2445 -80#	<2	20	660
2446 -80#	3	20	540
2447 -80#	<2	25	620
2448 -80#	<2	15	440
2449 -80#	<2	<10	1150
2450 -80#	4	15	110
2451 -80#	8	<10	125
2452 -80#	7	20	140

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
2453 -80#	5	10	220
2454 -80#	3	15	35
2455 -80#	4	10	135
2456 -80#	5	10	185
2457 -80#	9	<10	400
2458 -80#	7	10	400
2459 -80#	3	10	90
2460 -80#	4	10	25
2461 -80#	4	10	30
2462 -80#	3	<10	25
2463 -80#	3	<10	40
2464 -80#	3	10	410
2465 -80#	6	10	350
2466 -80#	5	<10	100
2467 -80#	2	<10	150
2468 -80#	3	<10	55
2469 -80#	2	10	125
2470 -80#	2	10	80
2471 -80#	10	<10	165
2472 -80#	4	10	125
2473 -80#	12	<10	175
2474 -80#	4	10	165
2475 -80#	3	<10	140
2476 -80#	3	<10	170
2477 -80#	6	<10	100

ANALYTICAL REPORT**716211****JOB COM820016****O/N : 4071/NP01/JJL/55****Results in ppm**

SAMPLE	As	W	Ba
2478 -80#	6	10	130
2479 -80#	6	<10	45
2480 -80#	3	<10	110
2481 -80#	6	<10	90
2482 -80#	3	<10	110
2483 -80#	4	<10	145
2484 -80#	4	<10	135
2485 -80#	3	<10	185
2486 -80#	4	10	240
2487 -80#	<2	<10	145
2488 -80#	3	<10	125
2489 -80#	4	<10	115
2490 -80#	3	<10	135
2491 -80#	2	<10	170
2492 -80#	<2	<10	250
2493 -80#	6	<10	95
2494 -80#	5	<10	115
2495 -80#	6	<10	120
2496 -80#	3	<10	170
2497 -80#	6	10	150
2498 -80#	<2	<10	135
2499 -80#	<2	<10	220
2500 -80#	<2	<10	135
3101 -80#	12	<10	115
3102 -80#	12	<10	145

ANALYTICAL REPORT

716212

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
3103 -80#	8	<10	85
3104 -80#	8	<10	65
3105 -80#	4	<10	55
3106 -80#	4	<10	80
3107 -80#	5	<10	100
3108 -80#	5	<10	75
3109 -80#	5	<10	85
3110 -80#	2	<10	90
3111 -80#	4	<10	60
3112 -80#	<u>32</u>	<10	40
3113 -80#	3	10	125
3114 -80#	5	<10	90
3115 -80#	9	<10	105
3116 -80#	5	<10	105
3117 -80#	2	<10	195
3118 -80#	3	<10	120
3119 -80#	5	<10	160
3120 -80#	3	10	115
3121 -80#	2	10	95
3122 -80#	5	15	105
3123 -80#	6	<10	105
3124 -80#	5	<10	240
3125 -80#	4	10	135
3126 -80#	5	<10	170
3127 -80#	4	<10	150



ANALYTICAL REPORT

716213

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
3128 -80#	2	10	90
3129 -80#	<2	15	40
3130 -80#	2	<10	30
3131 -80#	<2	<10	70
3132 -80#	<2	10	70
3133 -80#	<2	<10	10
3134 -80#	2	<10	125
3135 -80#	4	<10	240
3136 -80#	2	10	175
3137 -80#	8	10	95
3138 -80#	5	10	130
3139 -80#	3	<10	140
3140 -80#	4	<10	200
3141 -80#	5	<10	135
3142 -80#	3	10	180
3143 -80#	<2	<10	240
3144 -80#	6	<10	150
3145 -80#	3	<10	100
3146 -80#	3	35	180
3147 -80#	<2	<10	130
3148 -80#	6	<10	175
3149 -80#	<2	10	115
3150 -80#	2	25	110
3151 -80#	3	10	125
3152 -80#	4	<10	95

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ANALYTICAL REPORT

716214

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
3153 -80#	16	15	380
3154 -80#	4	10	600
3155 -80#	8	15	400
3156 -80#	5	<10	340
3157 -80#	7	<10	230
3158 -80#	8	10	100
3159 -80#	12	10	105
3160 -80#	5	<10	130
3161 -80#	3	<10	100
3162 -80#	<2	10	105
3163 -80#	2	<10	115
3164 -80#	3	<10	20
3165 -80#	3	<10	80
3166 -80#	<2	<10	260
3167 -80#	<2	10	240
3168 -80#	2	<10	120
3169 -80#	4	<10	155
3170 -80#	7	10	95
3171 -80#	5	<10	80
3172 -80#	5	15	65
3173 -80#	6	<10	80
3174 -80#	5	<10	80
3175 -80#	6	10	70
3176 -80#	9	<10	80
3177 -80#	5	<10	110

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716215

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
3178 -80#	<2	<10	230
3179 -80#	<2	<10	75
3180 -80#	2	10	30
3181 -80#	4	<10	60
3182 -80#	3	10	20
3183 -80#	3	<10	60
3184 -80#	2	<10	35
3185 -80#	6	<10	120
3186 -80#	4	<10	15
3187 -80#	<2	10	10
3188 -80#	5	<10	25
3189 -80#	8	30	15
3190 -80#	2	<10	15
3191 -80#	5	10	20
3192 -80#	3	10	20
3193 -80#	3	25	10
3194 -80#	2	15	15
3195 -80#	4	<10	125
3196 -80#	4	10	90
3197 -80#	2	<10	45
3198 -80#	4	<10	45
3199 -80#	3	<10	70
3200 -80#	3	<10	110
3201 -80#	3	10	155
3202 -80#	6	<10	45

ANALYTICAL REPORT

716216

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
3203 -80#	3	10	40
3205 -80#	<2	<10	20
3206 -80#	<2	<10	25
3207 -80#	4	10	20
3208 -80#	<2	<10	30
3210 -80#	4	10	15
3211 -80#	2	<10	15
3212 -80#	8	10	95
3213 -80#	3	10	10
3214 -80#	3	<10	110
3215 -80#	<2	<10	25
3216 -80#	3	<10	15
3217 -80#	<2	<10	15
3218 -80#	3	<10	45
3219 -80#	5	<10	20
3220 -80#	4	10	65
3221 -80#	2	<10	20
3222 -80#	<2	<10	20
3223 -80#	3	<10	20
3224 -80#	4	<10	160
3225 -80#	2	<10	15
3226 -80#	2	15	15
3227 -80#	4	10	15
3228 -80#	3	<10	15
21731 -80#	4	<10	105

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
21732 -80#	2	<10	135
21733 -80#	3	<10	90
21734 -80#	3	<10	80
21735 -80#	5	10	60
21736 -80#	<2	15	150
21737 -80#	<2	15	330
21738 -80#	5	10	240
21739 -80#	4	10	410
21740 -80#	7	<10	155'
21741 -80#	7	10	155
21743 -80#	9	10	220
21744 -80#	<2	<10	130
21745 -80#	2	10	20
21747 -80#	<2	<10	15
21748 -80#	4	<10	10
21749 -80#	<2	<10	20
21750 -80#	<2	<10	10
21751 -80#	2	<10	<10
21752 -80#	<2	<10	<10
21753 -80#	2	<10	10
21754 -80#	<2	10	15
21755 -80#	3	<10	15
21756 -80#	3	<10	15
21757 -80#	3	<10	25
21758 -80#	2	10	10

ANALYTICAL REPORT

716218

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
21759 -80#	<2	<10	15
21760 -80#	3	10	10
21761 -80#	3	<10	10
21762 -80#	<2	10	<10
21763 -80#	2	<10	10
21764 -80#	18.	10	85
21765 -80#	16	20	250
21766 -80#	22	30	250
21767 -80#	14	15	550
21768 -80#	5	20	85
21769 -80#	5	<10	15
21770 -80#	<2	<10	10
21771 -80#	<2	15	15
21772 -80#	2	<10	10
21773 -80#	18	15	70
21774 -80#	12.	<10	110
21775 -80#	16	10	210
21776 -80#	6	10	85
21777 -80#	10	10	135
21778 -80#	8	10	195
21779 -80#	5	10	140
21780 -80#	6	10	125
21781 -80#	<2	10	10
21782 -80#	<2	<10	15
21783 -80#	<2	<10	<10

**ANALYTICAL REPORT****716219**

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba
21784 -80#	<2	15	15
21785 -80#	<2	<10	<10
21786 -80#	2	<10	10
21787 -80#	3	10	330
21788 -80#	5	<10	270
21789 -80#	5	15	210
21790 -80#	3	30	390
21791 -80#	2	20	510
21792 -80#	5	15	530
21793 -80#	<2	20	460
21794 -80#	3	10	<10
21795 -80#	2	15	25
21796 -80#	7	15	75
21797 -80#	3	15	40
21798 -80#	7	15	330
21799 -80#	9	10	380
21800 -80#	7	<10	160

Method of Analysis : As W Ba : XRF1

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	Mo
2852 -80#	3	15	70	85	<10	6
2853 -80#	2	<10	170	10	<10	4
2854 -80#	3	15	75	24	<10	4
2855 -80#	<2	<10	210	10	<10	4
2856 -80#	4	10	330	48	<10	8
2857 -80#	4	10	610	10	<10	4
2859 -80#	5	10	460	22	<10	6
2860 -80#	2	10	140	50	<10	6
2861 -80#	3	20	350	16	<10	6
2862 -80#	3	<10	360	14	<10	6
2863 -80#	3	15	160	90	<10	6
2864 -80#	2	<10	175	6	<10	4
2865 -80#	5	20	540	18	10	8
2866 -80#	3	<10	310	8	<10	4
2868 -80#	<2	<10	195	12	<10	4
2869 -80#	<2	10	180	10	<10	4
2870 -80#	2	15	140	6	<10	6
2871 -80#	<2	<10	165	<4	<10	<4
2872 -80#	3	10	190	10	<10	4
2874 -80#	2	<10	140	8	<10	<4
2875 -80#	4	15	170	8	<10	8
2876 -80#	4	10	165	16	<10	<4
2877 -80#	4	30	180	4	<10	4
2878 -80#	<2	15	185	12	<10	<4
2879 -80#	3	10	175	28	<10	6

STREAM
SEDIMENT
Removal
Wf. 9.

716221

ANALYTICAL REPORT

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	Mo
2880 -80#	2	10	145	38	<10	4
2881 -80#	2	15	130	26	<10	12
2882 -80#	<2	15	130	14	<10	4
2883 -80#	4	10	630	10	<10	12
2884 -80#	2	<10	185	32	<10	<4
2885 -80#	3	15	850	10	<10	12
2886 -80#	<2	<10	850	10	<10	6
2887 -80#	5	15	740	28	<10	10
2888 -80#	2	15	2050	28	<10	4
2889 -80#	5	20	125	26	<10	12
2890 -80#	3	15	600	20	<10	8
2891 -80#	4	25	520	32	<10	24

Method of Analysis : As W Ba Sn Ta Mo : XRF1

ANALYTICAL REPORT

716222

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	%Fe	Mn
2852 -80#	8	4	14	<4	<4	1.35	160
2853 -80#	6	8	12	4	6	0.96	140
2854 -80#	6	8	14	4	6	1.20	125
2855 -80#	8	8	22	24	4	1.05	130
2856 -80#	10	8	22	20	4	1.50	155
2857 -80#	10	12	60	28	8	2.60	210
2859 -80#	8	8	38	20	6	2.00	190
2860 -80#	12	28	42	20	6	1.35	250
2861 -80#	10	16	38	10	6	1.75	190
2862 -80#	8	12	34	10	4	1.55	115
2863 -80#	10	8	32	18	6	1.50	155
2864 -80#	8	8	20	18	6	1.10	130
2865 -80#	12	16	26	24	6	1.85	180
2866 -80#	22	10	75	70	22	3.20	560
2868 -80#	12	12	30	28	8	1.55	130
2869 -80#	8	12	18	16	6	1.20	130
2870 -80#	8	10	18	14	6	1.25	110
2871 -80#	6	16	26	12	6	1.05	110
2872 -80#	16	10	65	70	16	2.70	370
2874 -80#	12	4	42	46	12	2.00	300
2875 -80#	8	16	28	16	10	1.15	120
2876 -80#	6	6	20	14	6	1.15	115
2877 -80#	16	8	50	50	14	2.40	430
2878 -80#	8	18	22	20	8	1.35	140
2879 -80#	12	16	30	30	10	1.85	190

ANALYTICAL REPORT

716223

JOB COM820016

O/N : 4071/NP01/JJL/55

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	ZFe	Mn
2880 -80#	10	10	26	32	6	1.60	145
2881 -80#	10	8	18	24	6	1.25	120
2882 -80#	6	10	14	18	<4	0.95	80
2883 -80#	12	16	30	28	6	1.70	145
2884 -80#	10	10	24	24	6	1.30	90
2885 -80#	8	12	10	8	4	0.41	42
2886 -80#	10	14	24	22	6	1.00	95
2887 -80#	8	12	8	8	4	0.49	60
2888 -80#	6	18	14	4	<4	0.28	32
2889 -80#	8	16	12	4	4	0.71	175
2890 -80#	6	12	8	<4	<4	0.37	48
2891 -80#	12	10	10	8	<4	0.97	60

Method of Analysis : Cu Pb Zn Ni Co : AAS1
Fe Mn : AAS2/2A

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716224



NATA REGISTERED No. 1526

OUR REF.: COM 820024

YOUR REF.: 4072/NP01/JJL/56

Head Office and
Central Laboratory
305 SOUTH ROAD,
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AAB9323

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

29.1.82

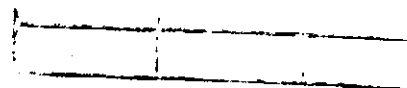
Dear John,

RE: JOB COM 820024

Enclosed are the assays for the samples delivered to our laboratory on the
7th January, 1982.

Yours sincerely,

Harry Fishman
Managing Director



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716225

ANALYTICAL REPORT

JOB COM820024

O/N : 4072/NP01/JJL/56

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	Mo
3230 -80#	<2	15	50	12	<10	<4
3231 -80#	2	<10	50	12	<10	4
3232 -80#	3	10	65	14	<10	<4
3233 -80#	2	<10	25	12	<10	<4
3234 -80#	3	10	45	16	<10	<4
3235 -80#	2	<10	60	<4	<10	<4
3236 -80#	9	10	65	18	<10	<4
3237 -80#	2	15	75	<4	<10	4
3238 -80#	10	10	90	28	15	<4
3239 -80#	12	15	75	36	10	4
3240 -80#	2	<10	70	8	<10	<4
3241 -80#	2	10	15	22	<10	<4

Method of Analysis : As W Ba Sn Ta Mo : XRF1

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ANALYTICAL REPORT

716226

JOB COM820024

O/N : 4072/NP01/JJL/56

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	%Fe	Mn
3230 -80#	30	8	8	<4	<4	0.25	90
3231 -80#	16	8	<2	<4	<4	0.20	24
3232 -80#	8	6	<2	<4	<4	0.50	165
3233 -80#	6	4	<2	<4	<4	0.20	50
3234 -80#	6	6	<2	<4	<4	0.30	135
3235 -80#	8	<4	<2	<4	<4	0.20	48
3236 -80#	8	12	<2	<4	<4	0.55	185
3237 -80#	6	4	<2	<4	<4	0.35	65
3238 -80#	12	18	16	<4	<4	0.80	200
3239 -80#	12	20	32	4	4	0.80	240
3240 -80#	8	4	<2	<4	<4	0.25	34
3241 -80#	8	<4	12	<4	<4	0.25	44

Method of Analysis : Cu Pb Zn Ni Co : AAS1
Fe Mn : AAS2/2A

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716227

ANALYTICAL REPORT

JOB COM820024

O/N : 4072/NP01/JJL/56

Results in ppm

SAMPLE	As	W	Ba
3253 -80#	4	15	120
3254 -80#	5	10	470
3255 -80#	12	10	450
3256 -80#	9	10	340
3257 -80#	75	15	150
3258 -80#	95	<10	220
3250 -80#	5	10	125

Method of Analysis : As W Ba : XRF1



ANALYTICAL REPORT

JOB CON820024

O/N : 4072/NP01/JJL/56

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3253 -80#	10	4	4	4	<4	8
3254 -80#	26	12	16	8	<4	8
3255 -80#	14	12	26	8	<4	8
3256 -80#	10	4	10	4	<4	12
3257 -80#	8	6	<2	<4	<4	4
3258 -80#	22	38	10	8	<4	4
3250 -80#	20	28	6	8	<4	4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

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COMPUTERISED ANALYTICAL LABORATORIES

716229



NATA REGISTERED No. 1526

OUR REF.: COM 820025
YOUR REF.: 4073/NP01/JJL/57

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

2.2.82

Dear Sir,

RE: JOB COM 820025

Enclosed are the assays for the samples delivered to our laboratory on the
7th January, 1982.

Yours sincerely,

Harry Fishman
Managing Director

Date Rec'd		File
Date Ans		
Action	Info.	Initials

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COMPUTERISED ANALYTICAL LABORATORIES



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ANALYTICAL REPORT

716230

JOB COM820025

O/N : 4073/NP01/JJL/57

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
2893	36	100	12	<4	<4	12
2894	10	8	14	<4	<4	<4
2895	8	4	10	<4	<4	<4
2896	4	18	8	<4	<4	<4
2897	4	14	4	<4	<4	<4
2898	22	<4	10	<4	<4	<4
2899	12	<4	12	<4	<4	<4
2900	10	<4	14	<4	<4	<4
3229	16	2000	70	16	8	<4
3259	6	16	8	4	<4	<4
3260	10	28	14	<4	4	<4
3261	22	32	20	12	<4	<4
3262	18	750	55	12	<4	<4
3263	28	16	16	20	4	<4
3264	12	12	12	20	<4	<4
3265	130	8	75	85	12	<4
3266	18	50	16	16	<4	<4
3485	16	<4	12	<4	<4	<4
3486	32	6	4	<4	<4	<4
3487	4	4	30	<4	<4	<4
3488	32	8	85	90	28	<4
3489	160	16	85	20	<4	<4
3490	14	12	36	12	<4	<4
3491	12	8	6	8	<4	<4
3492	4	8	4	8	<4	<4

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ANALYTICAL REPORT**716231**

JOB COM820025

O/N : 4073/NP01/JJL/57

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3493	12	70	28	4	<4	<4
3494	28	150	330	32	4	<4
3495	16	4	10	4	<4	<4
3496	18	2500	55	12	8	<4
3497	14	170	24	12	<4	<4
3498	18	34	16	<4	<4	<4
3499	12	450	65	16	4	<4
3500	8	14	115	36	8	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1



ANALYTICAL REPORT

716232

JOB COM820025

O/N : 4073/NP01/JJL/57

Results in ppm

SAMPLE	As	W	Sn	Ba
2893	5	20	36	410
2894	3	15	16	240
2895	2	20	20	890
2896	2	10	10	890
2897	5	10	8	350
2898	3	20	12	300
2899	2	10	14	2350
2900	<2	15	8	2150
3229	10	10	<4	50
3259	<2	10	8	30
3260	<2	10	4	25
3261	6	<10	4	35
3262	12	<10	6	55
3263	8	<10	4	75
3264	12	<10	4	110
3265	3	15	10	860
3266	12	10	<4	155
3485	8	10	<4	200
3486	8	<10	8	1150
3487	<2	<10	14	65
3488	<2	10	<4	410
3489	6	<10	4	890
3490	3	10	8	820
3491	3	10	6	80
3492	2	10	<4	25

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM820025

O/N : 4073/NP01/JJL/57

Results in ppm

SAMPLE	As	W	Sn	Ba
3493	12	10	4	650
3494	3	20	6	300
3495	<2	<10	<4	410
3496	10	<10	8	45
3497	8	<10	6	90
3498	24	10	<4	90
3499	14	<10	8	70
3500	4	<10	4	830

Method of Analysis : As W Sn Ba : XRF1

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COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

716234



NATA REGISTERED No. 1526

OUR REF.: COM 820093

YOUR REF.: Order No. 4076/NP01/JJL/60

Head Office and
Central Laboratory305 SOUTH ROAD,
MILE END SOUTH
STH. AUST. 5031
TEL: (08) 43 5722
TELEX: AA89323Queensland
Preparation Laboratory172 LAVARACK AVE.,
EAGLE FARM,
QUEENSLAND. 4007
TEL: (07) 268 4748

Mr. D. Speifer,
The Shell Co. of Aust. Ltd.,
Metals Division,
P.O. Box 860,
DEVONPORT. TAS. 7310.

18.2.82

Dear Sir,

RE: JOB COM 820093

Enclosed are the assays for the samples delivered to our laboratory on
the 19th January, 1982.

Yours sincerely,

Harry Fishman
Managing Director

Date	22-2-82	
File No.		
Action	Info.	Info.

ANALYTICAL REPORT

JOB COM820093

O/E : 4076/PP01/JJL/60

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3251	10	<4	8	4	<4	<4
3252	12	<4	6	8	<4	<4
3268	30	12	42	12	10	<4
3269	36	12	60	8	6	<4
3270	12	185	28	8	4	<4
3271	14	16	70	12	24	<4
3272	22	12	60	8	10	<4
3273	12	50	26	12	<4	<4
3274	65	200	1100	12	6	<4
3275	16	<4	34	4	8	<4
3276	10	4	36	4	4	<4
3277	30	4	50	20	12	<4
3278	12	4	30	8	6	<4
3279	32	55	140	44	20	<4
3280	16	4	38	12	8	<4
3281	22	12	42	12	<4	<4
3282	6	12	50	28	8	<4
3283	8	4	16	12	4	<4
3284	6	<4	32	20	10	<4
3285	24	170	42	36	8	<4
3286	70	180	4	90	750	1700
3287	65	<4	30	8	8	<4
3288	22	<4	14	24	10	<4
3289	20	8	140	32	16	<4
3290	6	<4	70	20	6	<4

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ANALYTICAL REPORT

JOF COM820093

O/N : 4076/NP01/JJL/60

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Li
3291	12	4	24	16	4	<4
3292	12	4	48	8	6	<4
3293	10	<4	350	4	6	<4
3294	14	12	160	40	12	<4
3295	10	32	20	16	4	<4
3296	12	55	28	<4	4	<4

Method of Analysis : Cu Pb Zn Ni Co Li : AAS1

ANALYTICAL REPORT

716237

JOB CON820093

O/N : 4076/FP01/JJL/60

Results in ppm

SAMPLE	As	W	Sn	Ba
3251	<2	<10	12	15
3252	7	<10	8	15
3268	9	10	8	390
3269	6	<10	<4	340
3270	70	<10	8	15
3271	16	10	6	280
3272	3	<10	6	1050
3273	115	10	8	650
3274	6	<10	<4	1050
3275	10	<10	<4	590
3276	2	10	8	410
3277	8	<10	<4	650
3278	7	<10	6	1100
3279	9	10	8	360
3280	7	<10	<4	360
3281	<2	10	6	390
3282	14	<10	4	610
3283	<2	20	28	35
3284	3	<10	8	460
3285	95	20	55	320
3286	16.4%	<10	12	40
3287	130	<10	8	540
3288	75	10	10	400
3289	26	10	8	320
3290	20	15	<4	240



716238

ANALYTICAL REPORT

JOB COM820093

O/R : 4076/NP01/JJL/60

Results in ppm

SAMPLE	As	W	Sn	Ba
3291	14	10	6	250
3292	22	10	8	220
3293	2700	<10	<4	8800
3294	10	10	4	1350
3295	14	<10	4	210
3296	10	40	10	1600

Method of Analysis : As W Sn Ba : XRF1/2

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COMPUTERISED ANALYTICAL LABORATORIES

716239



NATA REGISTERED No. 1526

OUR REF.: COM 820097

YOUR REF.: 4077/NP01/JJL/61

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

29.1.82

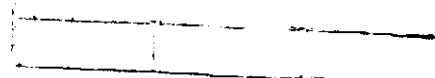
Dear John,

RE: JOB COM 820097

Enclosed are the assays for the samples delivered to our laboratory on the
20th January, 1982.

Yours sincerely,

Harry Fihman
Managing Director



ANALYTICAL REPORT

716240

JOB COM820097

O/N : 4077/NP01/JJL/61

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	%Fe	Mn
2801	50	22	55	12	8	1.50	210
2802	34	28	48	12	<4	1.90	195
2803	50	38	120	12	20	2.40	640
2804	40	18	34	12	<4	1.65	115
2805	24	16	34	8	4	1.40	250
2806	24	48	110	8	20	2.60	630
2807	32	75	60	<4	<4	1.60	290
2808	18	65	50	<4	<4	0.83	85
2809	22	32	125	8	<4	2.35	550
2810	44	85	55	4	<4	1.70	180
2811	18	90	32	<4	<4	1.45	150
2812	20	24	26	<4	<4	0.97	50
2813	18	18	22	4	<4	1.30	50
2814	14	22	34	8	<4	1.35	180
2815	30	60	20	<4	<4	1.50	210
2816	24	44	46	4	<4	1.15	100
2817	14	22	34	8	<4	1.40	175
2818	14	30	28	8	<4	1.05	140
2819	10	18	14	4	<4	0.46	145
2820	10	14	30	4	<4	0.50	185
2821	14	16	18	4	<4	0.48	130
2822	12	18	20	<4	<4	0.48	210
2831	12	22	28	<4	<4	0.60	40
2832	20	32	34	4	<4	1.05	115
2833	18	26	34	8	<4	1.45	185

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ANALYTICAL REPORT

JOB COM820097

O/N : 4077/EP01/JJL/61

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	%Fe	Mn
3242	12	20	48	8	<4	1.35	1450
3243	36	14	22	4	<4	0.80	480
3244	36	18	28	<4	<4	1.35	810
3245	12	10	14	<4	<4	0.38	185
3246	10	20	42	4	<4	1.40	1150
3247	18	<4	20	8	<4	0.65	410
3248	8	10	22	<4	<4	0.77	630
3249	12	6	14	<4	<4	0.52	280
2835	12	<4	18	4	<4	0.45	175
2873	16	10	30	12	<4	0.83	145
2892	10	<4	18	<4	<4	0.39	75

Method of Analysis : Cu Pb Zn Ni Co : AAS1
Fe Mn : AAS2/2A

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716242

ANALYTICAL REPORT

JOB COM820097

O/N : 4077/NP01/JJL/61

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	Mo
2801	3	25	170	310	<10	8
2802	10	55	125	250	<10	10
2803	18	15	250	135	<10	6
2804	4	15	190	95	<10	8
2805	10	<10	330	<4	<10	<4
2806	22	10	220	6	<10	8
2807	22	10	550	8	<10	14
2808	7	15	580	12	<10	12
2809	24	10	175	8	<10	8
2810	9	15	630	32	<10	30
2811	50	<10	260	12	<10	4
2812	2	65	165	2500	<10	4
2813	6	25	220	1000	<10	6
2814	14	90	240	2300	<10	4
2815	16	<10	550	22	<10	12
2816	6	40	1000	65	<10	18
2817	9	10	380	44	<10	<4
2818	7	15	290	22	<10	4
2819	<2	95	90	2500	<10	6
2820	<2	25	160	510	<10	6
2821	<2	35	105	2100	<10	6
2822	<2	65	175	3600	<10	4
2831	2	70	165	340	<10	4
2832	7	30	960	75	<10	14
2833	7	10	330	470	<10	4



716243

ANALYTICAL REPORT

JOB COM820097

O/N : 4077/NP01/JJL/61

Results in ppm

SAMPLE	As	W	Ba	Sn	Ta	Mo
3242	<2	105	70	360	<10	<4
3243	<2	70	20	650	<10	6
3244	3	35	175	510	<10	4
3245	<2	30	15	430	<10	6
3246	4	40	80	110	<10	<4
3247	3	20	55	12	<10	4
3248	6	250	75	360	<10	6
3249	<2	480	65	65	<10	4
2835	<2	70	70	2800	<10	6
2873	4	15	90	75	<10	<4
2892	<2	10	45	100	<10	<4

Method of Analysis : As W Ba Sn Ta Mo : XRF1

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COMPUTERISED ANALYTICAL LABORATORIES



NATA REGISTERED No. 1526

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

OUR REF: COM 820368

YOUR REF: Order No. 4079/NP01/JJL/63

Mr. D. Speijers,
The Shell Co. of Aust. Ltd.,
Metals Division,
P.O. Box 860.
DEVONPORT TAS. 7310.

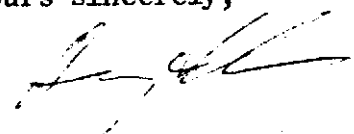
17.3.82

Dear Sir,

RE: JOB COM 820368

Enclosed are the assays for the samples delivered to our laboratory on the
3rd March, 1982.

Yours sincerely,


Harry Fishman
Managing Director

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COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES



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716245

ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
3301	6	30	10	0.42	26
3302	8	75	10	0.23	16
3303	8	110	10	0.35	22
3304	20	165	15	0.28	24
3305	28	460	10	1.50	110
3306	28	240	<10	0.53	38
3307	26	300	15	0.47	36
3308	18	570	10	0.43	34
3309	26	340	10	0.60	46
3310	26	280	10	0.52	26
3311	30	195	<10	0.55	38
3312	18	240	<10	0.32	20
3313	16	180	<10	0.39	26
3314	12	180	20	0.31	22
3315	14	150	<10	0.35	26
3316	42	190	10	0.29	20
3317	44	290	10	0.54	38
3318	40	180	15	0.31	22
3319	60	320	10	0.44	30
3320	60	310	10	0.42	28
3321	110	370	<10	1.00	36
3322	46	270	10	0.34	26
3323	44	510	10	0.42	28
3324	50	260	10	0.35	18
3325	18	390	<10	0.81	95

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
3326	85	330	15	1.85	90
3327	75	570	10	3.45	200
3328	4	30	<10	0.33	22
3329	28	120	10	0.36	34
3330	7	570	<10	1.65	175
3331	18	160	10	0.39	26
3332	8	440	10	0.49	36
3333	12	105	<10	0.44	34
3334	12	105	10	0.48	30
3335	12	105	10	0.40	28
3336	12	210	10	0.33	22
3337	14	190	10	0.42	28
3338	12	185	<10	0.44	28
3339	32	560	15	0.39	115
3340	350	290	<10	0.68	38
3341	155	460	10	0.88	95
3342	50	390	<10	0.50	36
3343	75	250	10	0.56	44
3344	48	400	10	0.70	40
3345	50	360	<10	1.45	85
3346	165	370	<10	4.00	195
3347	125	195	<10	0.96	36
3348	240	330	<10	3.20	200
3349	230	400	10	2.10	55
3350	190	270	<10	2.60	185



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COMLABS Pty. Ltd.
ANALYTICAL LABORATORIES

ANALYTICAL REPORT

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3351	165	300	10	0.58	22
3352	22	250	10	0.82	95
3353	65	270	20	0.74	30
3354	180	190	10	0.61	28
3355	100	240	<10	0.42	30
3356	48	230	15	0.61	32
3357	6	400	<10	0.38	48
3358	180	350	15	0.55	40
3359	14	540	10	1.25	18
3360	14	530	15	2.10	70
3361	36	330	10	0.68	42
3362	65	360	15	0.36	32
3363	80	230	15	0.51	34
3364	18	340	<10	0.38	36
3365	620	290	<10	3.40	55
3366	36	240	<10	0.91	32
3367	20	350	10	2.00	120
3368	12	330	<10	0.79	44
3369	7	75	10	0.63	36
3370	690	155	15	0.82	22
3371	55	390	<10	5.90	310
3372	7	175	10	0.60	32
3373	9	220	10	0.56	34
3374	65	200	10	0.39	18
3375	9	200	15	0.61	26

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ANALYTICAL REPORT

716248

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
3376	3	140	10	0.54	26
3377	32	320	15	1.15	90
3378	5	300	15	0.58	38
3379	5	310	15	0.48	28
3380	4	510	10	1.95	170
3381	10	390	<10	1.40	70
3382	4	300	10	0.54	32
3383	12	390	10	2.10	120
3384	10	360	<10	1.55	90
3385	6	430	15	1.15	90
3386	310	420	10	2.80	165
3387	18	340	15	0.80	60
3388	9	320	<10	0.79	90
3389	20	470	<10	3.80	60
3390	4	210	10	1.45	240
3391	9	480	<10	2.15	160
3392	12	550	<10	0.57	20
3393	<2	450	15	0.51	30
3394	5	440	<10	0.49	28
3395	6	290	<10	0.46	38
3396	12	430	<10	0.44	8
3397	110	230	10	0.97	50
3398	9	175	10	0.45	32
3399	7	145	15	0.38	22
3400	26	270	10	1.25	32

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COMPUTERISED ANALYTICAL LABORATORIES

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716249

ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3501	16	280	<10	0.55	28
3502	200	440	10	1.20	18
3503	220	370	10	2.80	60
3504	6	310	15	0.76	48
3505	4	430	10	1.00	75
3506	4	350	<10	1.65	115
3507	4	380	10	0.87	85
3508	2	210	<10	0.45	24
3509	2	480	10	2.30	170
3510	9	510	10	1.20	105
3511	<2	580	10	0.65	55
3512	<2	430	<10	0.50	32
3513	6	470	<10	1.20	50
3514	9	390	10	1.05	85
3515	3	530	10	0.75	55
3516	14	370	<10	1.50	140
3517	7	310	10	1.45	185
3518	5	145	<10	0.49	26
3519	<2	250	<10	0.34	20
3520	3	400	10	0.36	18
3521	5	430	<10	0.39	18
3522	7	330	10	0.75	32
3523	4	195	10	0.26	20
3524	8	250	10	0.54	32
3525	7	250	15	0.38	26

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- 6 -



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716250

ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3526	<2	620	<10	2.05	250
3527	3	450	10	0.88	46
3528	<2	320	10	0.37	20
3529	4	470	<10	0.38	16
3530	3	65	10	0.29	16
3531	<2	240	<10	0.28	12
3532	<2	130	10	0.20	10
3533	3	190	15	0.28	14
3534	<2	210	10	0.18	10
3535	<2	25	10	0.27	18
3536	<2	130	10	0.19	10
3537	<2	390	15	0.20	12
3538	<2	135	<10	0.17	10
3539	<2	250	10	0.23	10
3540	<2	175	15	0.18	14
3541	2	80	15	0.33	20
3542	4	55	10	0.23	24
3543	5	230	10	0.55	32
3544	2	160	10	0.30	18
3545	4	75	10	1.55	90
3546	<2	170	10	0.29	16
3547	<2	30	10	3.20	150
3548	<2	185	10	0.33	16
3549	4	150	15	0.26	10
3550	2	260	<10	0.21	12

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3551	2	370	<10	0.37	24
3552	4	170	<10	6.50	115
3553	30	270	<10	8.80	750
3554	85	270	10	0.33	28
3555	2	45	10	0.33	24
3556	<2	25	<10	0.25	30
3557	3	30	<10	0.54	36
3558	4	155	<10	0.32	34
3559	2	15	<10	0.47	46
3560	2	80	<10	0.26	20
3561	<2	35	10	0.41	38
3562	4	50	10	5.50	290
3563	9	20	10	0.28	28
3564	6	40	<10	0.40	40
3565	7	30	20	0.41	34
3566	4	50	<10	0.34	30
3567	26	125	<10	8.90	570
3568	3	50	<10	0.35	32
3569	<2	85	10	0.36	24
3570	3	80	<10	0.26	22
3571	12	20	10	2.40	135
3572	8	195	15	0.41	60
3573	7	70	10	0.49	65
3574	20	115	10	0.82	55
3575	24	20	<10	0.96	50



ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3576	36	310	15	1.10	80
3577	8	145	10	0.60	50
3578	4	135	10	0.43	48
3579	9	185	10	0.64	75
3580	14	115	10	1.45	80
3581	14	180	<10	1.30	145
3582	18	260	<10	1.60	140
3583	10	160	<10	2.10	140
3584	5	100	10	0.57	60
3585	2	45	<10	0.35	28
3586	14	55	<10	6.10	200
3587	8	105	10	3.70	200
3588	5	15	<10	2.20	140
3589	4	65	<10	0.61	50
3590	6	20	<10	0.60	48
3591	2	20	<10	0.64	44
3592	3	45	<10	0.64	55
3593	3	10	<10	0.83	55
3594	Listed Not Received				
3595	6	<10	<10	3.75	230
3596	7	15	10	6.00	290
3597	5	15	<10	2.75	180
3598	6	35	10	3.40	175
3599	5	15	<10	2.30	160
3600	<2	15	10	0.24	30

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ANALYTICAL REPORT

716253

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3601	3	15	10	0.32	26
3602	<2	10	<10	0.31	30
3603	<2	20	10	0.45	30
3604	2	10	<10	0.35	34
3605	3	10	<10	0.34	26
3606	3	120	<10	0.33	44
3607	2	10	<10	0.54	44
3608	3	35	<10	0.25	32
3609	4	25	10	0.31	30
3610	3	20	<10	0.40	48
3611	2	10	10	0.21	22
3612	<2	20	<10	0.33	32
3613	2	40	15	0.42	42
3614	4	20	10	0.62	65
3615	<2	240	10	0.28	40
3616	3	210	10	0.33	90
3617	2	100	10	0.30	60
3618	3	50	<10	0.29	28
3619	2	60	10	0.27	36
3620	4	105	<10	0.30	200
3621	<2	40	10	0.33	370
3622	2	10	10	0.36	160
3623	5	35	<10	0.74	145
3624	14	120	10	6.40	390
3625	5	40	10	0.59	520

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	ZFe	Mn
3626	9	95	<10	2.90	400
3627	24	110	<10	7.10	360
3628	4	160	10	0.58	75
3629	8	165	<10	2.70	270
3630	<2	310	15	0.50	34
3631	5	290	15	1.65	135
3632	14	280	10	3.50	140
3633	2	70	10	0.36	55
3634	3	85	10	0.33	34
3635	4	30	<10	0.26	30
3636	3	50	<10	0.26	34
3637	<2	45	<10	0.42	55
3638	4	40	10	0.28	30
3639	3	50	<10	0.30	40
3640	<2	105	<10	0.34	65
3641	2	70	<10	0.45	120
3642	<2	50	10	0.51	32
3643	4	40	10	0.41	38
3644	4	15	10	0.41	34
3645	2	135	10	0.42	34
3646	2	130	10	0.42	28
3647	2	125	10	0.43	32
3648	3	120	<10	0.37	24
3649	3	105	15	0.43	30
3650	4	95	<10	0.31	20

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
3651	<2	110	<10	0.39	28
3652	<2	75	<10	0.47	28
3653	3	110	10	0.54	38
3654	2	55	15	0.51	36
3655	3	105	<10	0.49	34
3656	4	55	15	0.33	20
3657	2	20	10	0.49	40
3658	4	15	10	0.57	38
3659	5	25	10	0.50	46
3660	5	15	10	0.36	26
3661	3	440	<10	0.47	55
3662	2	15	15	0.41	55
3663	<2	10	<10	0.30	44
3664	3	10	10	0.56	65
3665	3	25	10	0.50	60
3666	4	20	10	0.66	65
3667	4	25	10	0.45	70
3668	4	50	10	0.49	65
3669	3	320	<10	0.47	32
3670	4	80	<10	0.74	55
3671	2	125	10	0.50	55
3672	2	75	10	0.40	55
3673	6	370	<10	0.69	135
3674	5	95	<10	0.37	80
3675	2	45	15	1.60	160

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ANALYTICAL REPORT

716256

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
3676	7	115	10	2.50	175
3677	3	185	10	0.50	40
3678	4	520	10	1.05	60
3679	5	140	<10	0.29	36
3680	2	110	10	0.63	26
3681	<2	160	<10	0.69	55
3682	6	65	15	0.35	30
3683	5	55	<10	0.34	34
3684	5	20	<10	3.90	200
3685	10	460	<10	1.30	120

Method of Analysis : As Ba W : XRF1
Fe Mn : AAS2/2A

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ANALYTICAL REPORT

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JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
301	8	14	7	8	<4	<4
3302	3	26	8	6	<4	6
3303	4	28	9	8	<4	<4
3304	5	55	18	8	<4	<4
3305	4	46	32	12	4	<4
3306	3	60	22	10	<4	<4
3307	3	130	22	10	<4	<4
3308	2	390	24	6	<4	<4
3309	7	115	24	12	<4	<4
3310	6	100	16	8	<4	<4
3311	9	135	14	12	<4	<4
3312	3	100	10	8	<4	<4
3313	5	70	8	6	<4	<4
3314	4	65	10	8	<4	<4
3315	5	60	9	8	<4	<4
3316	4	140	10	6	<4	<4
3317	10	170	20	10	<4	<4
3318	3	155	12	6	<4	<4
3319	4	165	14	6	<4	<4
3320	5	160	16	6	<4	<4
3321	7	150	20	6	<4	<4
3322	7	175	16	4	<4	<4
3323	5	95	16	4	<4	<4
3324	6	110	10	6	<4	<4
3325	6	22	20	6	<4	<4

ANALYTICAL REPORT

716258

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3326	16	200	60	8	<4	<4
3327	20	65	95	16	4	<4
3328	5	10	9	10	<4	<4
3329	9	65	18	10	<4	4
3330	6	460	44	12	4	<4
3331	10	80	16	14	<4	<4
3332	9	105	14	8	<4	<4
3333	12	46	14	16	<4	<4
3334	10	34	9	18	<4	<4
3335	10	110	12	16	<4	12
3336	8	70	9	12	<4	<4
3337	8	65	14	16	<4	6
3338	10	40	12	14	<4	<4
3339	12	115	65	12	<4	<4
3340	9	770	24	10	<4	4
3341	14	440	100	14	<4	4
3342	10	260	22	14	<4	<4
3343	8	250	26	14	<4	<4
3344	9	105	22	10	<4	<4
3345	10	175	55	14	<4	<4
3346	42	210	90	12	<4	<4
3347	10	300	20	8	<4	10
3348	55	340	65	8	<4	8
3349	125	1100	80	6	<4	10
3350	20	150	75	6	<4	6

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3351	5	290	22	4	<4	4
3352	9	250	100	8	<4	<4
3353	14	145	20	4	<4	<4
3354	5	130	14	4	<4	<4
3355	9	150	22	8	<4	<4
3356	5	125	14	12	<4	<4
3357	65	60	18	18	<4	<4
3358	34	460	28	10	<4	<4
3359	22	36	10	6	<4	<4
3360	20	55	32	4	<4	<4
3361	9	100	38	8	<4	<4
3362	8	270	22	<4	<4	<4
3363	8	320	18	8	<4	<4
3364	7	150	30	10	<4	<4
3365	22	310	130	10	<4	<4
3366	12	80	26	8	<4	<4
3367	16	340	85	8	<4	<4
3368	10	75	60	4	<4	<4
3369	18	38	20	6	<4	<4
3370	10	660	40	<4	<4	<4
3371	42	155	160	10	<4	<4
3372	10	85	36	6	<4	<4
3373	6	60	24	6	<4	<4
3374	8	125	18	8	<4	<4
3375	12	55	18	10	<4	<4

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3376	12	12	12	10	<4	<4
3377	12	50	24	10	<4	<4
3378	10	18	12	6	<4	<4
3379	10	22	16	8	<4	<4
3380	12	16	50	16	4	<4
3381	18	18	36	16	<4	<4
3382	16	8	20	10	<4	<4
3383	28	34	50	22	4	<4
3384	20	24	40	14	<4	<4
3385	20	36	44	12	4	<4
3386	90	430	65	14	4	<4
3387	34	42	40	10	<4	<4
3388	12	46	24	8	<4	<4
3389	95	195	46	16	<4	<4
3390	30	230	60	16	<4	<4
3391	22	330	46	16	4	<4
3392	12	75	18	12	<4	<4
3393	14	80	20	8	<4	<4
3394	20	110	20	10	<4	<4
3395	22	65	20	8	<4	<4
3396	10	18	12	<4	<4	<4
3397	42	270	36	8	<4	240
3398	14	22	14	6	<4	16
3399	12	26	14	10	<4	<4
3400	14	55	34	6	<4	<4

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3501	24	125	22	8	<4	<4
3502	24	100	40	4	<4	<4
3503	32	48	40	4	<4	<4
3504	14	8	20	12	<4	<4
3505	12	8	30	12	<4	<4
3506	30	18	50	18	4	4
3507	10	6	28	10	<4	<4
3508	20	34	16	10	<4	<4
3509	16	440	60	18	6	4
3510	14	110	46	12	4	<4
3511	16	300	26	8	<4	<4
3512	12	200	24	8	<4	8
3513	20	38	30	10	<4	<4
3514	24	60	44	12	<4	4
3515	12	16	22	8	<4	<4
3516	14	40	42	12	<4	<4
3517	26	115	46	10	<4	<4
3518	18	24	14	10	<4	4
3519	22	110	14	10	<4	<4
3520	28	40	28	14	<4	<4
3521	18	22	26	6	4	4
3522	28	32	24	8	<4	<4
3523	14	26	12	6	<4	6
3524	22	26	18	6	<4	4
3525	18	60	12	8	<4	<4



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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3526	22	115	65	14	4	<4
3527	26	32	38	18	<4	<4
3528	28	<4	20	6	<4	<4
3529	18	4	18	6	<4	<4
3530	18	6	14	8	<4	<4
3531	12	<4	7	4	<4	4
3532	12	<4	7	4	<4	<4
3533	10	<4	6	6	<4	<4
3534	12	<4	9	6	<4	10
3535	12	<4	5	6	<4	6
3536	10	<4	5	4	<4	<4
3537	7	<4	4	4	<4	<4
3538	12	<4	8	4	<4	<4
3539	10	<4	8	<4	<4	<4
3540	10	<4	8	4	<4	8
3541	10	<4	7	6	<4	10
3542	9	<4	<2	4	<4	8
3543	26	8	18	10	<4	8
3544	14	<4	10	4	<4	8
3545	50	<4	22	24	<4	4
3546	14	<4	10	<4	<4	<4
3547	70	<4	28	40	<4	6
3548	10	<4	8	4	4	4
3549	14	<4	8	<4	<4	<4
3550	10	<4	8	<4	<4	8

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ANALYTICAL REPORT

716263

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3551	34	<4	22	<4	<4	4
3552	46	24	26	6	<4	<4
3553	120	55	46	6	4	<4
3554	14	<4	6	4	<4	4
3555	14	<4	7	4	<4	8
3556	8	<4	5	4	<4	6
3557	24	<4	12	8	<4	6
3558	7	<4	2	4	<4	<4
3559	18	<4	8	4	<4	<4
3560	8	<4	7	<4	<4	<4
3561	14	<4	7	6	<4	<4
3562	125	<4	38	65	6	<4
3563	10	<4	5	4	<4	<4
3564	24	<4	16	4	<4	<4
3565	20	<4	8	6	<4	<4
3566	9	<4	5	4	<4	4
3567	115	95	36	46	8	6
3568	14	<4	6	6	<4	<4
3569	12	<4	6	6	<4	<4
3570	9	<4	3	<4	<4	<4
3571	75	30	30	34	<4	<4
3572	14	<4	6	4	<4	<4
3573	20	6	9	8	<4	<4
3574	26	18	14	6	<4	6
3575	75	20	48	10	<4	<4

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ANALYTICAL REPORT

716264

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3576	16	8	10	6	<4	<4
3577	28	<4	14	10	<4	<4
3578	22	<4	16	6	<4	<4
3579	14	<4	8	6	<4	4
3580	24	12	20	10	<4	<4
3581	20	10	14	8	<4	6
3582	12	12	14	6	<4	<4
3583	40	34	24	26	4	<4
3584	8	10	5	4	<4	8
3585	16	<4	10	6	<4	10
3586	44	42	24	16	<4	6
3587	80	14	20	55	6	<4
3588	55	10	28	18	<4	4
3589	10	<4	3	8	<4	<4
3590	12	8	3	4	<4	4
3591	28	4	14	8	<4	<4
3592	7	4	3	10	<4	<4
3593	30	<4	12	14	<4	<4
3594	Listed Not Received					
3595	65	6	28	32	4	<4
3596	135	12	36	80	8	8
3597	48	6	20	24	<4	6
3598	70	6	22	42	4	<4
3599	36	<4	18	20	<4	10
3600	8	<4	<2	<4	<4	6

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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3601	10	<4	<2	<4	<4	10
3602	8	<4	<2	<4	<4	8
3603	16	<4	6	4	<4	8
3604	5	<4	<2	<4	<4	6
3605	8	<4	<2	6	<4	8
3606	5	<4	3	<4	<4	6
3607	10	<4	<2	8	<4	<4
3608	6	<4	<2	<4	<4	6
3609	14	<4	4	<4	<4	8
3610	26	<4	14	<4	<4	4
3611	9	<4	6	<4	<4	<4
3612	8	<4	2	4	<4	6
3613	10	<4	4	6	<4	<4
3614	14	<4	6	<4	<4	<4
3615	7	<4	2	<4	<4	<4
3616	8	<4	4	<4	<4	<4
3617	8	8	3	<4	<4	<4
3618	10	<4	3	<4	<4	<4
3619	8	<4	4	<4	<4	<4
3620	9	<4	3	<4	<4	<4
3621	6	<4	5	<4	<4	4
3622	7	<4	4	<4	<4	6
3623	18	<4	5	8	<4	<4
3624	7	14	10	6	<4	8
3625	12	4	7	6	<4	<4



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ANALYTICAL REPORT

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3626	7	14	8	<4	<4	<4
3627	18	22	18	4	4	<4
3628	8	<4	5	<4	<4	<4
3629	10	22	9	4	<4	6
3630	8	4	4	<4	<4	6
3631	9	10	4	4	<4	<4
3632	8	16	6	<4	<4	4
3633	5	<4	<2	4	<4	<4
3634	8	46	3	<4	<4	<4
3635	10	<4	2	<4	<4	6
3636	7	<4	<2	4	<4	<4
3637	8	<4	3	<4	<4	<4
3638	9	<4	4	<4	<4	8
3639	10	<4	5	<4	<4	4
3640	9	<4	4	<4	<4	<4
3641	12	<4	12	<4	<4	<4
3642	10	<4	12	6	<4	4
3643	12	<4	14	<4	<4	<4
3644	12	<4	14	8	<4	<4
3645	10	<4	12	4	<4	<4
3646	12	<4	14	6	<4	<4
3647	12	<4	12	6	<4	<4
3648	12	<4	12	4	<4	<4
3649	9	<4	12	6	<4	<4
3650	10	<4	12	6	<4	<4



ANALYTICAL REPORT

716267

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3651	12	<4	12	<4	<4	4
3652	14	<4	12	6	<4	<4
3653	16	<4	16	4	<4	<4
3654	16	<4	14	10	<4	<4
3655	12	4	14	4	<4	<4
3656	10	<4	12	4	<4	6
3657	14	<4	12	4	<4	4
3658	16	<4	14	8	<4	<4
3659	14	4	12	6	<4	<4
3660	12	<4	12	4	<4	4
3661	12	<4	14	4	<4	6
3662	14	<4	14	6	<4	<4
3663	6	<4	10	4	<4	<4
3664	12	<4	12	10	<4	6
3665	12	<4	14	6	<4	<4
3666	18	<4	14	12	<4	4
3667	10	<4	12	4	<4	<4
3668	16	<4	12	10	<4	<4
3669	14	<4	20	16	<4	<4
3670	22	<4	16	14	<4	4
3671	16	<4	9	<4	<4	<4
3672	14	<4	6	4	<4	<4
3673	14	6	10	6	<4	<4
3674	14	<4	7	6	<4	<4
3675	28	12	20	14	<4	<4

ANALYTICAL REPORT

716268

JOB COM820368

O/N : 4079/NP01/JJL/63

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3676	90	34	34	30	<4	<4
3677	16	12	9	6	<4	<4
3678	30	10	12	16	<4	<4
3679	10	<4	4	4	<4	8
3680	12	12	8	8	<4	<4
3681	20	<4	9	8	<4	4
3682	14	<4	4	4	<4	12
3683	10	<4	3	6	<4	<4
3684	75	4	12	48	4	<4
3685	28	16	12	10	<4	4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

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COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

716269



NATA REGISTERED No. 1526

OUR REF.: COM 820461

YOUR REF.: 4080/NP01/JJL/64

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

31.3.82

Dear John,

RE: JOB COM 820461

Enclosed are the assays for the samples delivered to our laboratory on the
15th March, 1982.

Yours sincerely,

Harry Fishman
Managing Director

Date Rec'd 1/4/82		File
From / To		
Assay	Info.	Notes

ANALYTICAL REPORT

716270

JOB COM820461

O/N : 4080/NPO1/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Pi
3686	10	10	4	4	<4	<4
3687	10	6	4	8	<4	<4
3688	10	4	2	8	<4	<4
3689	16	16	12	12	<4	<4
3690	14	10	8	16	<4	<4
3691	16	60	60	20	20	<4
3692	50	185	120	65	6	<4
3693	12	120	80	12	10	<4
3694	10	35	24	16	<4	<4
3695	10	10	10	8	<4	<4
3696	8	12	6	8	<4	<4
3697	6	4	6	12	<4	<4
3698	8	10	6	8	<4	<4
3699	6	8	6	8	<4	<4
3700	8	6	4	4	<4	<4
4501	16	8	6	16	<4	<4
4502	24	10	12	28	<4	<4
4503	20	22	22	24	<4	<4
4504	20	12	14	20	<4	<4
4505	10	14	12	16	<4	<4
4506	8	26	6	8	<4	<4
4507	8	6	6	8	<4	<4
4508	6	<4	2	<4	<4	<4
4509	6	<4	2	<4	<4	<4
4510	20	12	8	16	<4	<4

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ANALYTICAL REPORT

716271

JCF CONF20461

O/N : 4080/NP01/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Bi
4511	8	<4	8	8	<4	<4
4512	6	6	4	4	<4	<4
4513	12	10	4	8	<4	<4
4514	22	40	10	24	<4	<4
4515	22	22	16	24	<4	<4
4516	28	28	18	8	<4	<4
4517	6	4	4	4	<4	<4
4518	12	<4	4	12	<4	<4
4519	14	4	8	8	<4	<4
4520	10	<4	6	8	<4	<4
4521	10	6	4	4	<4	<4
4522	12	4	6	12	<4	<4
4523	18	<4	14	16	<4	<4
4524	10	<4	6	12	<4	<4
4525	8	<4	6	8	<4	<4
4526	18	<4	6	20	<4	<4
4527	155	12	75	44	8	<4
4528	20	<4	4	28	4	<4
4529	65	12	24	44	6	<4
4530	8	<4	28	8	<4	<4
4531	20	16	4	16	<4	<4
4532	8	<4	20	8	<4	<4
4533	44	10	14	55	6	<4
4534	8	4	8	28	<4	<4
4535	32	10	10	44	<4	<4

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ANALYTICAL REPORT

716272

JOB CON820461

O/E : 4080/BPO1/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Fe	Co	Bi
4537	12	50	22	16	<4	<4
4538	20	10	24	16	<4	<4
4539	6	12	4	16	<4	<4
4540	14	<4	6	28	<4	<4
4541	6	<4	2	12	<4	<4
4542	26	<4	8	36	<4	<4
4543	16	<4	4	28	<4	<4
4544	18	14	14	20	<4	<4
4545	16	10	14	32	<4	<4
4546	80	42	30	16	<4	<4
4547	22	<4	8	28	<4	<4
4548	8	<4	6	4	<4	<4
4549	6	<4	2	4	<4	<4
4550	4	<4	2	<4	<4	<4
4551	4	<4	2	4	<4	<4
4552	8	<4	2	8	<4	<4
4553	8	<4	6	8	<4	<4
4554	16	<4	10	4	<4	<4
4555	6	<4	8	4	<4	<4
4556	4	<4	2	4	<4	<4
4557	4	<4	2	4	<4	<4
4558	4	<4	2	4	<4	<4
4559	6	<4	4	<4	<4	<4
4560	4	<4	4	<4	<4	<4
4561	6	<4	2	4	<4	<4

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ANALYTICAL REPORT

716273

JOE COM820461

O/N : 4080/NP01/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4562	8	<4	2	8	<4	<4
4563	6	<4	2	8	<4	<4
4564	4	<4	2	4	<4	<4
4565	8	<4	2	8	<4	<4
4566	16	<4	8	12	<4	<4
4567	12	<4	4	8	<4	<4
4568	18	<4	6	16	<4	<4
4569	8	14	2	4	<4	<4
4570	16	<4	4	16	<4	<4
4571	8	<4	4	8	<4	<4
4573	16	<4	4	20	<4	<4
4574	16	<4	4	16	<4	<4
4575	18	<4	8	8	<4	<4
4576	20	8	12	20	<4	<4
4577	20	16	14	12	<4	<4
4578	10	<4	8	12	<4	<4
4579	40	10	14	20	<4	<4
4580	32	12	22	20	<4	<4
4581	20	10	10	12	<4	<4
4582	28	12	20	12	<4	<4
4583	55	8	30	32	4	<4
4584	80	10	40	36	4	<4
4585	16	4	16	12	<4	<4
4586	50	20	32	20	<4	<4
4587	30	18	20	16	<4	<4

ANALYTICAL REPORT

JOB COM820461

O/R : 4080/FP01/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4588	14	<4	12	8	<4	<4
4589	12	<4	10	4	<4	<4
4590	12	<4	10	8	<4	<4
4591	8	4	2	12	<4	<4
4592	12	8	4	8	<4	<4
4593	6	<4	2	8	<4	<4
4594	10	<4	4	8	<4	<4
4595	12	<4	10	8	<4	<4
4596	10	<4	6	8	<4	<4
4597	22	<4	8	24	<4	<4
4598	14	<4	4	20	<4	<4
4599	10	<4	6	12	<4	<4
4600	4	<4	2	8	<4	<4
4601	10	<4	6	12	<4	<4
4602	10	<4	6	12	<4	<4
4603	8	<4	4	8	<4	<4
4604	14	<4	6	16	<4	<4
4605	12	<4	6	8	<4	<4
4606	24	26	12	8	<4	<4
4607	22	18	6	24	<4	<4
4608	30	24	14	20	<4	<4
4609	30	26	16	20	<4	<4
4610	30	20	20	8	<4	<4
4611	27	20	10	18	<4	<4
4612	14	14	8	4	<4	<4

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ANALYTICAL REPORT**716275**

JOB COM820461

O/E : 4080/EP01/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Bi
4613	44	30	28	8	<4	<4
4614	40	28	26	8	<4	<4
4615	14	38	10	8	<4	<4
4616	22	16	22	4	<4	<4
4617	24	14	12	20	<4	<4
4618	8	20	6	12	<4	<4
4619	12	22	10	12	<4	<4
4620	40	18	24	12	<4	<4
4621	14	10	10	4	<4	<4
4622	22	16	8	20	<4	<4
4623	20	10	10	8	<4	<4
4624	20	26	8	12	<4	<4
4625	24	10	16	12	<4	<4
4626	10	8	8	8	<4	<4
4627	10	18	10	8	<4	<4
4628	8	10	10	8	<4	<4
4629	20	8	10	20	<4	<4
4630	10	12	6	4	<4	<4
4631	6	14	8	8	<4	<4
4632	16	10	10	8	<4	<4
4633	16	14	10	4	<4	<4
4634	6	16	6	4	<4	<4
4635	6	18	6	8	<4	<4
4636	12	20	18	4	<4	<4
4637	10	16	12	4	<4	<4

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ANALYTICAL REPORT

716276

JOE COMF20461

O/N : 4080/NPG1/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4638	10	12	10	4	<4	<4
4639	14	30	38	8	<4	<4
4640	22	18	24	8	<4	<4
4641	18	20	20	4	<4	<4
4642	18	20	16	4	<4	<4
4643	12	14	12	4	<4	<4
4644	22	16	20	4	<4	<4
4645	16	16	22	8	<4	<4
4646	12	16	24	4	<4	<4
4647	10	20	28	4	<4	<4
4648	36	38	65	8	<4	<4
4649	22	22	36	4	<4	<4
4650	30	30	60	20	<4	<4
4651	12	14	4	4	<4	<4
4652	8	8	2	8	<4	<4
4653	6	14	2	4	<4	<4
4654	12	14	4	8	<4	<4
4655	8	10	4	8	<4	<4
4656	10	12	4	8	<4	<4
4657	6	10	4	4	<4	<4
4658	10	12	4	4	<4	<4
4659	12	12	6	8	<4	<4
4660	10	10	6	<4	<4	<4
4661	8	12	4	8	<4	<4
4662	12	10	10	12	<4	<4

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ANALYTICAL REPORT

716277

JCF COM820461

O/E : 4080/NP01/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
4663	20	18	18	8	<4	<4
4664	16	18	22	8	<4	<4
4665	14	8	16	8	<4	<4
4666	10	16	34	12	<4	<4
4667	10	14	18	12	<4	<4
4668	14	26	60	20	<4	<4
4669	42	32	2000	90	170	<4
4670	4	16	55	8	<4	<4
4671	18	28	75	16	6	<4
4672	6	14	28	12	<4	<4
4673	6	8	18	8	<4	<4
4674	8	14	24	12	<4	<4
4675	4	10	26	8	<4	<4
4676	8	26	32	16	<4	<4
4677	6	20	16	12	<4	<4
4678	<2	20	16	12	<4	<4
4679	2	18	16	12	<4	<4
4680	2	12	14	12	<4	<4
4681	8	14	20	16	<4	<4
4682	8	12	22	16	<4	<4
4683	10	12	16	12	<4	<4
4684	6	14	16	16	<4	<4
4685	8	10	16	16	<4	<4
4686	6	20	14	20	<4	<4
4687	8	<4	6	12	<4	<4

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ANALYTICAL REPORT

716278

JOB COME20461

O/N : 4080/EP01/JJL/64

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4688	<2	4	8	16	<4	<4
4689	2	6	6	12	<4	<4
4690	2	8	8	16	<4	<4
4691	<2	8	4	12	<4	<4
4692	<2	<4	8	12	<4	<4
4693	4	6	6	8	<4	<4
4694	<2	4	8	12	<4	<4
4695	6	6	8	12	<4	<4
4696	4	6	6	8	<4	<4
4697	6	12	10	8	<4	<4
4698	6	14	12	12	<4	<4
4699	20	18	40	16	<4	<4
4700	4	6	14	8	<4	<4

Method of Analysis : Cu Pb Zn Ni Co Pi : AAS1

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ANALYTICAL REPORT

716279

JOE CONF20461

O/N : 4080/NP01/JJL/64

Results in ppm

SAMPLE	%Fe	Mn	As	Pb	V
3686	0.25	22	3	50	10
3687	0.26	20	3	310	10
3688	0.30	16	<2	75	10
3689	1.05	70	18	650	15
3690	0.65	30	6	185	10
3691	2.40	860	125	290	10
3692	9.50	390	240	240	<10
3693	4.00	610	220	340	<10
3694	1.50	90	36	240	<10
3695	0.36	24	6	170	10
3696	0.34	18	<2	260	15
3697	0.30	20	3	185	15
3698	0.28	22	<2	310	15
3699	0.22	12	<2	50	10
3700	0.24	14	<2	25	10
4501	0.70	44	4	15	15
4502	1.10	50	3	70	20
4503	1.80	115	10	400	10
4504	2.00	90	10	470	10
4505	1.05	115	5	340	10
4506	0.53	20	4	410	10
4507	0.31	20	2	230	10
4508	0.13	8	2	50	<10
4509	0.14	8	<2	105	<10
4510	1.10	22	6	300	10



ANALYTICAL REPORT

716280

JOB COM820461

O/R : 4080/FP01/JJL/64

Results in ppm

SAMPLE	Zr	Mn	As	Fe	W
4511	0.26	28	3	200	10
4512	0.18	12	3	70	<10
4513	0.35	16	<2	70	15
4514	2.10	30	16	210	<10
4515	1.50	34	7	410	<10
4516	14.5	46	16	195	<10
4517	0.22	8	<2	105	10
4518	0.60	20	2	110	10
4519	0.23	14	<2	260	<10
4520	0.24	12	<2	155	15
4521	0.18	8	<2	105	<10
4522	0.32	14	2	110	10
4523	0.34	24	3	520	10
4524	0.26	18	3	130	<10
4525	0.28	12	3	175	15
4526	0.74	32	<2	65	<10
4527	12.0	800	12	20	20
4528	1.10	50	<2	10	15
4529	1.95	80	2	10	10
4530	0.28	26	3	150	<10
4531	0.86	50	3	15	<10
4532	0.21	20	<2	25	<10
4533	1.90	85	3	15	15
4534	0.77	36	<2	25	<10
4535	1.60	65	<2	20	<10

ANALYTICAL REPORT

JOE COM820461

O/N : 4080/EP01/JJL/64

Results in ppm

SAMPLE	%Fe	Nn	As	Ba	V
4537	0.16	65	7	15	<10
4538	0.43	44	3	10	<10
4539	0.24	16	<2	10	<10
4540	0.49	26	2	10	<10
4541	0.23	14	<2	<10	<10
4542	0.98	38	3	10	<10
4543	0.85	42	2	10	10
4544	1.20	32	10-	240	<10
4545	2.00	38	16	310	20
4546	12.5	115	105	320	<10
4547	1.20	55	3	155	<10
4548	2.10	170	5	550	10
4549	0.17	20	2	30	<10
4550	0.20	34	<2	200	10
4551	0.14	18	2	10	10
4552	0.36	24	2	25	<10
4553	0.42	20	<2	190	10
4554	0.38	16	<2	560	<10
4555	0.32	12	2	510	<10
4556	0.15	12	<2	145	<10
4557	0.17	8	<2	340	10
4558	0.17	12	<2	470	15
4559	0.15	14	3	710	10
4560	0.10	6	2	55	<10
4561	0.20	22	<2	105	<10

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ANALYTICAL REPORT

716282

JOB COM820461

O/E : 4080/NP01/JJL/64

Results in ppr

SAMPLE	%Fe	Mn	As	Pb	W
4562	0.28	34	<2	50	<10
4563	0.20	32	2	210	<10
4564	0.22	34	<2	75	<10
4565	0.20	22	2	50	10
4566	0.48	32	3	240	<10
4567	0.38	20	3	95	10
4568	0.79	36	<2	25	<10
4569	0.20	12	2	390	15
4570	0.78	38	4	15	10
4571	0.18	14	3	15	<10
4573	0.73	32	<2	25	<10
4574	0.64	30	<2	10	<10
4575	0.37	22	<2	10	<10
4576	0.81	42	2	10	<10
4577	0.53	40	2	15	<10
4578	0.29	36	2	10	<10
4579	0.94	55	<2	15	<10
4580	0.85	280	3	15	<10
4581	0.40	30	2	15	<10
4582	0.72	44	3	20	<10
4583	1.10	85	<2	15	<10
4584	1.90	100	3	15	<10
4585	1.30	60	7	280	<10
4586	2.80	100	7	200	10
4587	1.10	36	12	430	<10

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

716283

JOE COM820461

O/N : 4080/EP01/JJL/64

Results in ppm

SAMPLE	ZFe	Mn	As	Pb	W
4588	2.00	22	4	360	<10
4589	0.56	12	3	480	<10
4590	0.32	14	<2	50	10
4591	0.30	14	2	65	10
4592	0.24	10	<2	290	<10
4593	0.26	12	2	50	10
4594	0.27	12	<2	80	15
4595	0.36	14	<2	590	<10
4596	0.24	10	<2	280	10
4597	1.10	48	3	100	<10
4598	0.59	30	<2	30	15
4599	0.72	30	2	240	20
4600	0.26	22	2	65	10
4601	0.24	20	3	200	<10
4602	0.23	10	2	120	15
4603	0.20	10	3	70	<10
4604	0.34	16	<2	65	10
4605	0.30	12	<2	170	<10
4606	0.25	14	2	55	10
4607	1.15	55	<2	65	<10
4608	0.92	48	2	15	<10
4609	0.75	42	4	20	10
4610	0.42	26	2	10	<10
4611	0.80	42	<2	10	10
4612	0.30	18	2	20	10

ANALYTICAL REPORT

JOB COM820461

O/R : 4080/PP01/JJL/64

Results in ppm

SAMPLE	%Fe	Mn	As	Ba	V
4613	0.65	40	5	15	<10
4614	0.62	40	5	15	<10
4615	0.29	16	<2	30	<10
4616	0.30	28	<2	15	<10
4617	1.10	60	2	15	<10
4618	0.34	20	<2	15	<10
4619	0.30	34	<2	15	<10
4620	0.89	60	3	15	<10
4621	0.10	8	2	15	<10
4622	0.72	32	4	10	10
4623	0.36	24	2	10	10
4624	0.58	26	<2	<10	<10
4625	0.40	20	3	10	<10
4626	0.56	185	6	110	10
4627	0.56	175	7	90	15
4628	1.35	165	14	230	<10
4629	0.99	195	<2	70	<10
4630	0.55	220	6	85	10
4631	1.00	220	26	170	10
4632	0.80	220	10	115	10
4632	0.66	185	14	210	10
4634	0.53	195	6	100	<10
4635	0.52	195	4	125	20
4636	1.55	155	16	200	<10
4637	0.62	185	3	130	<10


ANALYTICAL REPORT
716285

JOB COME20461

O/E : 4080/FP01/JJL/64

Results in ppm

SAMPLE	%Fe	Mn	As	Ba	V
4638	0.71	195	4	95	15
4639	1.35	155	14	260	<10
4640	1.10	280	9	230	<10
4641	0.72	125	8	220	15
4642	0.77	145	4	115	15
4643	0.47	160	<2	155	10
4644	0.71	160	<2	105	15
4645	0.94	180	7	155	10
4646	0.78	240	5	135	10
4647	1.05	270	4	155	10
4648	3.50	180	18	210	10
4649	1.25	230	7	165	10
4650	4.40	230	32	270	<10
4651	0.36	90	2	130	15
4652	0.53	105	<2	220	<10
4653	0.36	140	3	260	15
4654	0.42	95	4	65	10
4655	0.36	125	5	125	10
4656	0.46	140	4	340	15
4657	0.39	200	2	60	10
4658	0.54	320	4	110	15
4659	0.58	240	3	85	10
4660	0.64	270	5	125	<10
4661	0.56	210	2	170	<10
4662	0.71	280	5	160	10

ANALYTICAL REPORT

716286

JCF COM220461

O/N : 4080/FP01/JJL/64

Results in ppm

SAMPLE	%Fe	Mn	As	Ba	W
4663	0.89	350	12	200	10
4664	0.86	480	9	260	10
4665	0.87	200	6	330	<10
4666	0.73	155	6	410	20
4667	0.81	220	8	220	15
4668	2.20	330	28	230	<10
4669	2.20	165	195	450	20
4670	0.85	145	24	260	<10
4671	1.05	150	8	210	20
4672	1.10	145	8	230	10
4672	0.58	210	<2	160	15
4674	1.65	155	16	190	10
4675	1.85	110	8	260	15
4676	1.85	210	4	210	<10
4677	0.83	230	6	180	20
4678	0.69	170	4	200	<10
4679	0.61	145	6	220	<10
4680	0.64	190	2	175	10
4681	1.05	260	8	155	10
4682	0.98	290	6	110	10
4682	0.95	195	8	115	20
4684	0.76	165	8	110	<10
4685	0.83	180	8	140	15
4686	0.81	230	5	145	15
4687	1.25	115	14	140	15

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

716287

JOB COME20461

O/N : 4080/NP01/JJL/64

Results in ppm

SAMPLE	%Fe	Mn	As	Pb	W
4688	0.87	195	10	145	<10
4689	2.05	160	32	200	10
4690	1.35	155	65	195	<10
4691	1.20	270	20	120	10
4692	0.38	190	<2	120	<10
4693	1.10	170	18	250	10
4694	0.40	220	5	135	<10
4695	0.41	185	<2	85	<10
4696	0.25	85	<2	80	15
4697	0.42	105	3	170	<10
4698	0.45	130	5	130	15
4699	4.60	110	46	185	<10
4700	0.35	85	4	135	15

Method of Analysis : Fe Mn : AAS2/2A
As Pb V : XRF1

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COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

716288



NATA REGISTERED No. 1526

OUR REF.: COM 820468

YOUR REF.: 4084/NP01/JJL/68

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

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd,
P.O. Box 860,
DEVONPORT TAS 7310,

5.4.82

Dear John,

RE: JOB COM 820468

Enclosed are the assays for the samples delivered to our
laboratory on the 16th March, 1982.

Yours sincerely,

per

by Lawton

Harry Fishman
Managing Director

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ANALYTICAL REPORT

716289

JOB COM820468

O/N : 4084/NP01/JJL/68

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
3297	75	270	2	95	700	770
3298	75	60	65	46	12	8
3299	75	410	44	80	<4	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

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COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

716290

JOB COM820468

O/N : 4084/NP01/JJL/68

Results in ppm

SAMPLE	%Fe	Mn	Ag	Mo	Au
3297	13.0	<4	8	<4	0.30
3298	3.50	1400	<1	16	<0.05
3299	0.40	80	<1	12	<0.05

Method of Analysis : Fe Mn : AAS2/2A
Ag Mo : AAS3
Au : AAS5A

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COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES



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ANALYTICAL REPORT

716291

JOB COM820468

O/N : 4084/NP01/JJL/68

Results in ppm

SAMPLE	As	Ba	W	Sn
3297	20.5%	<10	30	4
3298	420	25	15	22
3299	170	115	<10	34

Method of Analysis : As Ba W Sn : XRF1/2

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**COMLABS Pty. Ltd.**

COMPUTERISED ANALYTICAL LABORATORIES

716292



NATA REGISTERED No. 1526

OUR REF.: COM 820576

YOUR REF.: Order No. 4085/NP01/JJL/69

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

Mr. J. Lawton,
The Shell Co. of Aust. Ltd.,
Metals Division,
P.O. Box 860,
DEVONPORT. TAS. 7310.

20.4.82

Dear John,

RE: JOB COM 820576

Enclosed are the assays for the samples delivered to our laboratory on
the 30th March, 1982.

Yours sincerely,

Harry Fishman
Managing Director

ANALYTICAL REPORT

716293

JCI COM820576

O/R : 4055/EP01/JJL/69

Results in ppm

SAMPLE	As	Pb	W	%Fe	Un
4701	60	220	<10	1.95	280
4702	46	170	<10	2.60	195
4703	24	145	<10	1.95	230
4704	20	160	<10	2.60	250
4705	10	270	<10	3.10	1450
4706	14	210	<10	3.60	1700
4707	14	220	<10	3.50	990
4708	10	170	<10	3.10	90
4709	12	165	15	2.00	95
4710	10	165	<10	1.60	60
4711	12	175	10	2.00	300
4712	12	170	<10	2.05	760
4713	10	125	10	1.30	320
4714	14	185	<10	3.10	350
4715	14	220	<10	3.10	910
4716	14	220	<10	3.70	380
4717	14	180	<10	3.20	940
4718	12	130	<10	2.05	240
4719	14	145	<10	2.80	95
4720	14	100	<10	2.10	70
4721	12	175	<10	1.90	1500
4722	9	175	<10	2.60	130
4723	7	160	<10	1.45	80
4724	10	200	<10	3.30	950
4725	10	160	<10	1.90	65

ANALYTICAL REPORT

716294

JCF COM820576

O/E : 4085/FP01/JJL/69

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
4726	7	250	<10	2.90	2500
4727	6	190	<10	1.65	850
4728	18	210	10	1.70	270
4729	10	85	<10	2.60	1250
4730	26	155	<10	3.00	2650
4731	16	110	<10	1.55	250
4732	32	185	<10	3.40	2800
4733	18	180	<10	2.80	220
4734	16	240	<10	2.50	125
4735	10	165	15	2.10	310
4736	10	210	<10	1.55	550
4737	8	105	15	2.00	50
4738	9	135	<10	2.50	80
4739	3	35	<10	0.15	10
4740	4	70	<10	0.45	14
4741	12	140	<10	2.80	150
4742	9	55	10	1.75	32
4743	14	105	<10	2.20	55
4744	6	65	<10	0.80	36
4745	10	100	<10	2.35	185
4746	12	190	<10	2.05	910
4747	7	220	<10	2.00	520
4748	6	250	<10	2.00	1200
4749	5	175	<10	2.10	700
4750	6	180	<10	2.10	650



ANALYTICAL REPORT

JOF CON820576

O/E : 4085/YF01/JJL/09

Results in ppm

SAMPLE	As	Pb	W	ZFe	Hn
4751	14	270	10	1.90	165
4752	14	290	<10	1.75	190
4753	18	220	10	2.10	120
4754	20	270	<10	2.10	110
4755	2	140	10	0.35	40
4756	2	75	15	0.30	38
4757	4	50	<10	0.30	42
4758	4	60	<10	0.25	36
4759	4	65	<10	0.25	28
4760	4	60	<10	0.25	32
4761	2	90	<10	0.40	42
4762	3	115	<10	0.45	48
4763	6	135	<10	1.75	70
4764	4	130	<10	0.50	55
4765	12	65	<10	7.60	165
4766	2	95	15	0.45	40
4767	3	75	15	0.40	44
4768	2	65	<10	0.40	42
4769	6	190	<10	1.25	50
4770	5	185	<10	0.45	44
4771	4	95	<10	4.40	70
4772	10	195	<10	4.60	85
4773	4	190	10	2.60	70
4774	2	240	10	0.70	55
4775	4	250	<10	0.95	75

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716296

ANALYTICAL REPORT

JOB CONE20576

O/R : 4085/EP01/JNL/69

Results in ppm

SAMPLE	As	Ba	V	%Fe	En
4776	10	195	10	4.80	110
4777	8	250	10	3.30	100
4778	8	290	10	3.40	150
4779	5	390	<10	7.10	400
4780	10	270	<10	7.20	430
4781	5	220	10	1.90	110
4782	5	200	10	2.40	100
4783	6	300	10	2.10	95
4784	3	280	<10	1.60	150
4785	4	350	10	2.10	70
4786	6	310	10	1.90	75
4787	6	390	10	2.20	85
4788 A	2	400	10	1.70	80
4789	5	270	<10	1.85	65
4790	3	310	10	1.80	85
4791	3	165	<10	0.75	60
4792	4	410	<10	2.20	70
4793	2	260	10	0.80	50
4794	5	520	10	1.85	100
4795	10 -	480	<10	4.20	95
4796	42	570	10	4.40	115
4797	40	890	<10	5.00	3800
4798	4	<10	<10	0.40	40
4799	2	<10	10	0.25	80



716297

ANALYTICAL REPORT

JOE COME20576

O/E : 4085/EPC1/JJI/69

Results in ppr

SAMPLE	As	La	W	%Fe	Nn
4800	4	85	10	4.90	75
4801	5	115	<10	4.60	95
4802	7	165	<10	4.50	165
4803	5	190	<10	2.00	70
4804	9	300	<10	2.30	75
4805	12	420	10	3.30	115
4806	6	195	<10	1.25	65
4807	14	410	<10	3.40	90
4808	5	220	<10	1.65	75
4809	8	230	<10	0.70	46
4810	4	185	<10	0.80	60
4811	18	410	<10	4.10	760
4812	8	330	10	1.80	90
4813	65	340	<10	5.30	410
4814	26	440	<10	4.30	180
4815	10	370	10	1.95	90
4816	50	470	<10	4.10	170
4817	34	460	15	4.00	155
4818	10	410	10	2.40	105
4819	6	240	<10	1.20	65
4820	4	320	<10	2.40	95
4821	4	270	<10	1.70	220
4822	14	340	<10	4.50	550
4823	8	460	<10	3.50	170
4824	4	210	<10	1.35	105

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ANALYTICAL REPORT

716298

JOF COM820576

C/N : 4085/EP01/JJL/69

Results in ppm

SAMPLE	As	Pb	W	Zn	Mn
4825	2	185	<10	1.40	70
4826	3	170	<10	1.25	44
4827	<2	90	<10	0.65	65
4828	5	180	10	1.60	60
4829	2	75	<10	0.65	50
4830	3	125	10	0.40	55
4831	10	480	<10	3.20	490
4832	6	360	<10	2.40	1050
4833	4	310	10	2.20	100
4834	5	410	<10	2.50	115
4835	4	290	<10	1.05	60
4836	6	330	<10	1.90	70
4837	6	310	<10	1.45	55
4838	4	280	<10	1.20	60
4839	5	155	15	0.55	44
4840	30	320	<10	6.90	60
4841	3	110	10	1.20	44
4842	4	60	<10	0.30	44
4843	2	<10	10	0.50	22
4844	4	460	<10	1.75	85
4845	5	440	<10	2.00	60
4846	2	130	<10	0.60	22
4847	2	200	<10	0.25	28
4848	2	60	<10	0.25	30
4849	2	115	<10	0.55	36

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

716299

JOE COME20576

O/R : 4085/EP01/JJ1/69

Results in ppm

SAMPLE	As	Pb	W	Zn	Mn
4850	<2	140	<10	0.25	38
4851	5	200	<10	1.55	46
4852	5	165	10	0.85	44
4853	4	220	10	0.95	46
4854	5	155	<10	0.70	50
4855	4	165	<10	0.80	40
4856	2	45	<10	0.30	42
4857	9	160	10	3.20	55
4858	5	160	<10	2.20	46
4859	2	15	<10	0.30	44
4860	7	120	10	0.95	60
4861	5	280	10	1.45	55
4862	6	200	<10	2.10	46
4863	3	200	<10	1.25	55
4864	5	250	10	1.75	50
4865	4	220	<10	0.80	60
4866	4	260	10	0.45	42
4867	3	170	<10	1.20	50
4868	3	230	10	1.90	155
4869	8	210	<10	6.10	120
4870	4	140	<10	1.45	65
4871	2	90	<10	0.90	55
4872	10	220	<10	5.00	75
4873	18	195	<10	7.20	80
4874	2	20	<10	0.25	38

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ANALYTICAL REPORT

716300

JOB COME20576

C/R : 4085/PT01/JJL/69

Results in ppm

SAMPLE	As	Ca	V	Zn	Mn
4875	<2	70	<10	0.65	48
4876	5	380	10	0.70	60
4877	4	15	<10	0.35	24
4878	<2	10	<10	0.25	20
4879	3	10	<10	0.25	24
4880	6	250	10	1.55	36
4881	18	390	10	6.60	46
4882	5	350	<10	1.70	55
4883	5	290	<10	1.95	50
4884	7	340	<10	2.30	55
4885	4	160	10	0.80	55
4886	6	165	10	5.00	75
4887	10	115	<10	5.90	330
4888	10	95	<10	5.80	80
4889	7	260	<10	2.10	65
4890	7	210	<10	1.90	50
4891	4	250	<10	1.50	50
4892	14	350	10	4.50	55
4893	10	250	10	5.10	60
4894	4	290	<10	2.80	70
4895	5	250	15	2.30	55
4896	3	110	<10	0.85	75
4897	7	115	15	1.95	50
4898	4	50	<10	0.75	60
4899	10	340	15	2.50	65

716301

ANALYTICAL REPORT

JOY COM820576

O/E : 4085/FP01/JJL/69

Results in ppm

SAMPLE	As	Ca	W	ZFe	Mn
4900	3	190	<10	1.70	50
4901	3	25	10	0.55	22
4902	2	15	10	0.45	34
4903	2	10	<10	0.25	24
4904	3	<10	<10	0.40	34
4905	8	570	<10	2.30	36
4906	6	580	<10	2.40	20
4907	3	210	<10	0.55	28
4908	3	210	<10	1.50	46
4909	5	490	<10	1.25	22
4910	4	470	<10	0.85	24
4911	7	1450	<10	2.80	36
4912	4	110	10	0.30	16
4913	7	135	10	1.85	14
4914	12	95	<10	1.60	18
4915	3	20	<10	0.55	20
4916	10	110	10	3.70	18
4917	7	65	<10	1.45	12
4918	5	70	10	0.55	18
4919	3	95	10	0.45	18
4920	2	30	<10	0.60	24
4921	6	90	<10	1.60	28
4922	4	90	<10	1.50	46
4923	3	60	<10	0.70	20
4924	8	195	<10	2.20	22


ANALYTICAL REPORT
716302

JOB COM820576

C/N : 4085/FP01/JJL/69

Results in ppm

SAMPLE	As	Pb	W	ZFe	Mn
4925	5	30	<10	0.05	16
4926	5	20	<10	0.55	36
4927	2	25	<10	0.50	60
4928	<2	15	<10	0.15	18
4929	<2	15	<10	0.25	22
4930	14	195	<10	1.60	185
4931	2	50	<10	0.25	14
4932	<2	130	10	0.35	16
4933	6	125	<10	0.75	12
4934	3	20	<10	0.10	22
4935	6	35	<10	0.10	24
4936	3	10	<10	0.10	12
4937	3	10	<10	0.10	12
4938	2	100	<10	0.15	14
4939	<2	25	10	0.20	32
4940	20	440	<10	3.40	130
4941	22	150	<10	1.80	740
4942	24	500	10	3.20	520
4943	55	370	<10	4.80	1.05%
4944	55	390	<10	7.60	1.10%
4945	28	310	<10	4.20	2800
4946	16	270	<10	3.80	880
4947	18	250	<10	3.70	710
4948	20	300	<10	4.00	1050
4949	20	310	<10	3.90	2250


ANALYTICAL REPORT
716303

JOT COM820576

C/R : 4085/EPO1/JJL/69

Results in ppm

SAMPLE	As	Es	W	%Fe	Mn
4950	12	230	10	1.80	55
4951	12	390	<10	2.70	75
4952	6	65	10	3.00	95
4953	6	75	10	5.00	110
4954	3	165	<10	4.90	710
4955	4	125	<10	6.00	460
4956	3	240	10	2.50	160
4957	4	155	<10	5.70	710
4958	9	120	<10	5.60	300
4959	7	140	<10	6.00	530
4960	6	110	15	4.70	140
4961	4	125	10	4.80	100
4962	3	175	<10	5.50	460
4963	8	190	20	6.50	310
4964	10	290	20	6.50	250
4965	5	270	20	1.80	140
4966	4	165	30	2.00	42
4967	5	300	10	2.30	36
4968	4	490	15	8.10	570
4969	<2	440	<10	2.70	90
4970	6	460	10	3.70	145
4971	3	220	<10	2.80	55
4972	9	420	<10	3.70	230
4973	12	420	<10	4.70	680
4974	12	200	25	3.00	60

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ANALYTICAL REPORT

716304

JOF COM820576

O/R : 4085/EP01/JJL/69

Results in ppm

SAMPLE	As	Ba	W	Zn	Mn
4975	<2	25	10	0.50	70
4976	8	85	10	4.55	85
4977	<2	210	<10	7.25	175
4978	8	75	<10	6.10	150
4979	7	70	10	6.80	85
4980	7	55	10	4.50	65
4981	5	90	<10	4.20	155
4982	3	150	<10	5.40	1700
4983	9	150	<10	6.50	410
4984	4	165	<10	6.60	170
4985	8	195	<10	8.00	205
4986	8	280	<10	6.70	200
4987	6	230	<10	8.30	240
4988	6	165	<10	6.60	145
4989	3	200	10	5.60	330
4990	6	195	<10	6.70	260
4991	4	105	10	0.40	220
4992	<2	10	<10	0.30	20
4993	<2	15	<10	0.40	30
4994	<2	15	<10	0.45	38
4995	2	10	10	0.40	32
4996	3	10	<10	0.50	30
4997	4	15	10	0.35	24
4998	2	15	<10	0.40	26
4999	3	10	<10	0.25	18

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716305

ANALYTICAL REPORT

JOB COM820576

O/E : 4085/KP01/JJL/69

Results in ppm

SAMPLE	As	Pa	V	%Fe	Mn
5000	<2	<10	<10	0.25	20
5001	<2	<10	10	0.40	26
5002	4	10	15	0.45	24
5003	14	175	<10	10.5	270
5004	2	30	15	0.80	105
5005	10	160	<10	6.90	870
5006	4	280	<10	3.20	230
5007	3	140	15	7.80	195
5008	9	105	<10	7.80	105
5009	6	130	<10	8.90	170
5010	7	100	<10	6.50	135
5011	6	135	<10	7.50	170
5012	9	140	<10	7.50	220
5013	6	155	<10	8.00	490
5014	7	190	<10	4.20	420
5015	20	145	10	5.60	240
5016	26	150	15	6.30	770
5017	8	180	20	1.15	145
5018	12	260	<10	2.10	410
5019	6	85	<10	1.75	200
5020	9	50	10	2.90	155
5021	14	85	15	5.20	60
5022	16	45	10	5.50	85
5023	14	30	<10	4.20	60
5024	4	35	<10	1.65	65



716306

ANALYTICAL REPORT

JOI COM820576

O/E : 4015/EP01/JJL/69

Results in ppr

SAMPLE	As	Pb	V	%Fe	Mn
5025	2	10	<10	1.60	80
5026	4	20	15	1.45	95
5027	2	340	<10	10.5	1050
5028	6	170	<10	6.80	960
5029	5	180	<10	6.90	400
5030	3	120	<10	7.50	310
5031	5	135	10	6.00	175
5032	5	175	10	6.80	190
5033	7	110	<10	5.70	170
5034	8	150	10	8.10	250
5035	10	90	10	7.30	310
5036	9	90	<10	7.80	220
5037	12	115	15	7.50	240
5038	10	75	<10	9.20	220
5039	6	120	<10	7.70	185
5040	10	50	15	7.60	270
5041	14	80	<10	9.30	300
5042	9	90	10	7.60	300
5043	12	105	10	7.00	240
5044	10	145	10	7.30	400
5045	9	110	<10	7.00	280
5046	5	125	<10	6.90	310
5047	5	120	10	7.10	420
5048	6	130	15	7.20	200
5049	5	380	<10	5.80	320

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ANALYTICAL REPORT

716307

JOB COME20576

O/N : 4085/EP01/JJL/69

Results in ppm

SAMPLE	As	Pb	W	%Fe	Mn
5050	6	220	<10	5.10	860
5051	7	125	10	8.70	410
5052	6	210	<10	11.5	240
5053	5	70	<10	4.50	100
5054	4	110	10	2.30	75
5055	7	115	10	3.80	60
5056	4	40	35	0.90	48
5057	2	20	20	0.70	46
5058	3	55	<10	2.70	44
5059	2	65	20	3.60	44
5060	3	40	20	1.20	42
5061	3	20	30	0.85	55
5062	4	10	30	0.55	42
5063	2	45	10	0.55	40
5064	3	15	20	0.90	24
5065	2	35	10	1.40	32
5066	<2	45	20	0.35	30
5067	8	25	10	0.70	20
5068	4	40	25	0.50	20
5069	4	<10	15	0.50	34
5070	<2	15	10	0.35	24
5071	3	15	<10	0.45	30
5072	<2	<10	<10	0.30	20
5073	2	10	10	1.35	60
5074	2	15	<10	0.45	24



ANALYTICAL REPORT

JOB COM20576

O/R : 4085/EP01/JJL/69

Results in ppr

SAMPLE	As	Pb	V	ZFe	Mn
5075	2	20	<10	0.45	30
5076	2	30	15	0.65	40
5077	<2	280	25	1.30	30
5078	8	250	20	2.50	30
5079	5	520	20	5.00	120
5080	3	540	30	2.70	30
5081	2	520	25	2.60	50
5082	3	170	15	3.70	105
5083	5	490	20	4.20	75
5084	5	400	20	2.80	150
5085	2	550	15	3.10	210
5086	4	460	15	3.20	100
5087	<2	540	25	3.80	175
5088	7	240	15	4.20	115
5089	4	310	15	1.90	85
5090	2	95	<10	1.50	44
5091	4	35	<10	0.35	140
5092	4	220	15	2.40	40
5093	4	280	10	1.80	40
5094	4	400	20	2.20	105
5095	2	125	<10	3.20	185
5096	3	120	<10	1.50	100
5097	5	290	10	2.60	135
5098	4	240	10	3.00	175
5099	5	160	15	1.20	24

ANALYTICAL REPORT

716309

JOB COME20576

O/E : 4085/FR01/JJL/69

Results in ppm

SAMPLE	As	Pa	W	%Fe	Ir.
5100	<2	185	10	0.55	26
5101	2	60	<10	0.45	18
5102	3	70	<10	0.75	44
5103	4	20	10	0.35	20
5104	4	15	<10	0.50	34
5105	4	20	15	0.30	22
5106	4	15	10	0.45	30
5107	<2	<10	20	0.40	24
5108	<2	<10	<10	0.45	32
5109	<2	<10	<10	0.25	20
5110	2	15	<10	0.40	30
5111	6	75	25	3.60	42
5112	3	15	<10	0.37	28
5113	4	100	10	0.60	32
5114	2	30	10	0.45	28
5115	3	85	<10	0.65	38
5116	<2	70	<10	0.50	46

Method of Analysis : As Ia W : XRF1
Fe Ir : AAS2/2A

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ANALYTICAL REPORT

716310

JOI COM820576

O/E : 4015/PPG1/JJ1/09

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Pt
4701	26	26 -	55 -	12	10	<4
4702	26	55	75	16	8	<4
4703	14	60	100	16	6	<4
4704	20	90	170	26	6	<4
4705	18	36	90	34	8	<4
4706	20	34	160	38	10	<4
4707	20	28	100	40	12	<4
4708	12	30	36	30	10	<4
4709	10	14	38	14	<4	<4
4710	8	14	26	10	<4	<4
4711	10	24	26	12	4	<4
4712	12	22	28	10	4	<4
4713	8	14	20	8	4	<4
4714	20	22	60	26	4	<4
4715	22	32	65	24	10	<4
4716	30	46	135	48	8	<4
4717	24	40	155	40	10	<4
4718	10	26	34	10	4	<4
4719	10	40	44	10	<4	<4
4720	6	34	28	8	<4	<4
4721	10	16	42	14	4	<4
4722	10	16	40	14	4	<4
4723	4	<4	16	6	<4	<4
4724	12	34	75	42	10	<4
4725	8	10	30	16	<4	<4

5304
1501

ANALYTICAL REPORT

JOB COME20576

O/E : 4005/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pf
4726	10	20	60	20	10	<4
4727	14	22	70	20	8	<4
4728	12	14	26	8	<4	<4
4729	20	34	100	24	8	<4
4730	34	450	450	44	10	<4
4731	10	120	350	16	8	4
4732	34	130	500	36	20	4
4733	14	65	150	20	8	8
4734	12	60	110	16	6	6
4735	14	38	80	18	10	<4
4736	12	28	60	16	10	<4
4737	8	18	18	6	<4	<4
4738	10	32	28	10	<4	<4
4739	6	<4	6	<4	<4	<4
4740	2	12	8	<4	<4	<4
4741	14	50	60	18	<4	<4
4742	6	16	22	4	<4	4
4743	10	12	55	18	8	<4
4744	4	<4	12	<4	<4	<4
4745	8	18	40	14	<4	<4
4746	20	55	180	34	14	6
4747	14	40	120	28	12	<4
4748	14	42	125	24	16	4
4749	14	36	100	28	18	<4
4750	14	38	100	24	12	<4



716312

ANALYTICAL REPORT

JCF COME20576

O/R : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4751	16	28	36	10	4	<4
4752	14	22	30	8	4	<4
4753	16	24	28	8	<4	<4
4754	10	20	20	4	6	<4
4755	6	18	12	4	<4	<4
4756	4	10	10	6	4	<4
4757	4	<4	8	<4	<4	<4
4758	4	4	16	<4	<4	<4
4759	4	8	10	<4	<4	<4
4760	4	8	8	<4	<4	<4
4761	8	8	10	6	<4	<4
4762	6	8	10	8	<4	<4
4763	10	22	16	14	<4	<4
4764	8	14	14	10	<4	<4
4765	42	44	55	14	8	<4
4766	6	12	8	10	<4	<4
4767	8	6	8	8	<4	<4
4768	8	10	10	6	<4	<4
4769	14	20	24	14	<4	<4
4770	10	18	14	10	<4	<4
4771	22	36	34	24	<4	<4
4772	28	50	42	20	<4	<4
4773	26	50	34	22	<4	<4
4774	8	14	14	12	<4	<4
4775	6	14	18	10	<4	<4

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ANALYTICAL REPORT

716313

JOB COM820576

O/R : 4085/KP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
4776	18	32	32	20	<4	<4
4777	24	36	36	20	<4	<4
4778	24	50	55	36	4	<4
4779	50	60	85	65	14	<4
4780	55	60	90	65	14	<4
4781	16	36	28	16	<4	<4
4782	36	60	44	26	<4	<4
4783	12	42	28	14	<4	<4
4784	14	38	26	14	<4	<4
4785	12	50	36	12	<4	<4
4786	12	42	30	14	<4	<4
4787	14	44	36	14	<4	<4
4788 A	12	40	30	14	<4	<4
4788 F	14	18	8	20	<4	<4
4789	10	36	28	12	<4	<4
4790	16	50	36	14	<4	<4
4791	8	26	18	6	<4	<4
4792	14	50	34	10	<4	<4
4793	8	24	16	8	<4	<4
4794	20	70	55	18	<4	<4
4795	20	100	55	20	<4	<4
4796	24	85	80	20	<4	<4
4797	36	120	95	24	60	<4
4798	10	<4	46	8	<4	<4
4799	8	<4	36	6	<4	<4

ANALYTICAL REPORT

JOF CONE20576

C/E : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
4800	16	20	26	18	<4	<4
4801	24	24	26	32	4	<4
4802	24	34	38	42	8	<4
4803	16	24	20	18	<4	<4
4804	18	46	32	16	<4	<4
4805	24	46	50	22	<4	<4
4806	10	18	16	12	<4	<4
4807	28	55	50	24	<4	<4
4808	20	18	24	12	<4	<4
4809	14	24	24	16	<4	<4
4810	14	22	26	16	<4	<4
4811	40	80	75	34	26	<4
4812	12	32	22	12	<4	<4
4813	60	80	100	65	22	<4
4814	48	90	85	32	6	<4
4815	28	55	42	16	<4	<4
4816	50	75	80	24	6	<4
4817	22	60	60	18	4	<4
4818	30	60	60	20	4	<4
4819	14	20	24	8	<4	<4
4820	48	48	60	16	<4	<4
4821	30	44	32	14	<4	<4
4822	75	70	85	28	6	<4
4823	26	60	60	20	4	<4
4824	20	24	22	14	<4	<4

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716315

ANALYTICAL REPORT

JOF COM820576

O/N : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4825	22	24	24	12	<4	<4
4826	16	24	16	6	<4	<4
4827	14	10	12	8	<4	<4
4828	18	24	20	6	<4	<4
4829	14	6	12	8	<4	<4
4830	10	8	12	6	<4	<4
4831	24	60	65	24	8	<4
4832	28	75	60	20	10	<4
4833	12	36	28	12	<4	<4
4834	18	55	40	16	<4	<4
4835	16	32	24	8	<4	<4
4836	28	48	36	12	<4	<4
4837	24	48	32	12	<4	<4
4838	14	28	24	10	<4	<4
4839	12	16	14	8	<4	<4
4840	42	155	95	135	10	<4
4841	6	16	10	8	<4	<4
4842	16	20	12	8	<4	<4
4843	8	<4	6	6	<4	<4
4844	18	65	30	22	<4	<4
4845	22	65	24	20	<4	<4
4846	12	16	14	8	<4	<4
4847	10	26	14	10	<4	<4
4848	10	6	10	4	<4	<4
4849	10	14	12	8	<4	<4


ANALYTICAL REPORT
716316

JOB COM820576

O/N : 4085/NP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Pi
4850	10	16	12	10	<4	<4
4851	14	20	16	14	<4	<4
4852	12	18	14	10	<4	<4
4853	16	30	20	14	<4	<4
4854	10	24	16	14	<4	<4
4855	16	18	14	12	<4	<4
4856	6	6	6	6	<4	<4
4857	20	28	24	22	<4	<4
4858	14	24	18	12	<4	<4
4859	6	<4	4	4	<4	<4
4860	14	12	12	16	<4	<4
4861	28	55	32	22	<4	<4
4862	14	28	16	18	<4	<4
4863	8	24	16	16	<4	<4
4864	12	30	22	18	<4	<4
4865	20	32	26	20	<4	<4
4866	8	36	14	12	<4	<4
4867	20	24	22	18	<4	<4
4868	14	20	34	30	6	<4
4869	40	36	60	75	10	<4
4870	18	30	24	30	4	<4
4871	10	16	14	12	<4	<4
4872	24	55	40	36	4	<4
4873	24	55	42	40	4	<4
4874	14	14	14	12	<4	<4

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716317

ANALYTICAL REPORT

JOB CODE 20576

O/E : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4875	14	6	14	12	<4	<4
4876	30	75	34	28	<4	<4
4877	10	<4	14	8	<4	<4
4878	6	<4	14	8	<4	<4
4879	6	6	18	6	<4	<4
4880	6	34	12	12	<4	<4
4881	12	110	24	22	4	<4
4882	8	48	22	16	<4	<4
4883	8	48	22	16	<4	<4
4884	18	60	28	22	<4	<4
4885	14	24	12	18	<4	<4
4886	14	34	24	28	<4	<4
4887	26	36	40	50	12	<4
4888	26	36	40	34	4	<4
4889	24	55	32	28	4	<4
4890	10	36	20	18	<4	<4
4891	22	50	26	24	<4	<4
4892	20	90	34	22	<4	<4
4893	26	80	40	26	4	<4
4894	20	65	26	28	4	<4
4895	20	50	26	22	4	<4
4896	12	16	12	12	<4	<4
4897	6	28	12	10	<4	<4
4898	12	14	8	16	4	<4
4899	14	50	26	22	<4	<4



716318

ANALYTICAL REPORT

JOB COM820576

O/R : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Fe	Co	Bi
4900	10	38	10	20	4	<4
4901	18	22	32	12	4	<4
4902	12	0	22	12	4	<4
4903	8	<4	18	10	4	<4
4904	12	4	26	10	4	<4
4905	24	26	22	18	6	<4
4906	22	26	24	18	4	<4
4907	18	28	20	12	<4	<4
4908	36	20	20	32	4	<4
4909	16	16	14	12	<4	<4
4910	26	24	14	16	<4	<4
4911	24	110	42	20	<4	<4
4912	10	18	6	6	<4	<4
4913	8	42	10	12	<4	<4
4914	14	28	8	12	<4	<4
4915	24	22	18	10	<4	<4
4916	12	36	14	10	<4	<4
4917	16	26	10	10	<4	<4
4918	12	30	8	12	<4	<4
4919	10	24	14	14	<4	<4
4920	28	26	14	18	<4	<4
4921	24	30	16	22	<4	<4
4922	55	32	22	34	<4	<4
4923	22	12	12	14	4	<4
4924	24	32	20	22	<4	<4



716319

ANALYTICAL REPORT

JOB COM820576

O/E : 40P5/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Fe
4925	8	4	12	<4	<4	<4
4926	55	24	24	12	<4	<4
4927	36	18	22	12	<4	<4
4928	8	<4	4	6	<4	<4
4929	10	4	4	6	<4	<4
4930	14	90	150	24	<4	<4
4931	8	8	4	6	6	<4
4932	8	20	8	6	<4	<4
4933	6	30	6	10	<4	<4
4934	18	20	16	6	<4	<4
4935	6	14	22	<4	<4	<4
4936	6	6	<2	4	<4	<4
4937	4	<4	<2	<4	<4	<4
4938	6	30	4	<4	<4	<4
4939	8	<4	2	6	<4	<4
4940	28	80	70	24	<4	<4
4941	16	70	250	24	6	<4
4942	42	160	140	30	18	<4
4943	40	250	550	80	20	<4
4944	30	200	500	80	20	<4
4945	20	90	300	48	14	<4
4946	20	50	250	44	10	<4
4947	26	50	120	46	12	<4
4948	24	80	250	55	16	<4
4949	24	85	350	55	12	<4

ANALYTICAL REPORT

716320

JOB COM820576

O/N : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
4950	32	36	26	16	<4	<4
4951	38	55	40	14	<4	<4
4952	20	20	22	24	<4	<4
4953	44	24	44	50	4	<4
4954	55	26	90	70	20	<4
4955	46	22	85	90	22	<4
4956	28	60	95	60	12	<4
4957	55	34	65	80	18	<4
4958	40	20	60	70	10	<4
4959	46	24	60	70	10	<4
4960	30	18	38	36	4	<4
4961	32	14	36	32	4	<4
4962	55	22	50	70	28	<4
4963	42	38	38	34	4	<4
4964	95	42	60	44	8	<4
4965	20	8	20	12	<4	<4
4966	42	10	18	18	<4	<4
4967	30	<4	12	14	<4	<4
4968	24	8	160	42	4	<4
4969	18	<4	46	18	<4	<4
4970	28	10	55	38	4	<4
4971	18	10	22	20	<4	<4
4972	55	16	80	42	12	<4
4973	65	16	75	50	20	<4
4974	30	16	20	10	<4	<4

ANALYTICAL REPORT

JOF CONE20576

O/R : 4085/RP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pd
4975	10	6	10	6	<4	<4
4976	34	28	44	60	6	<4
4977	60	20	110	145	30	<4
4978	46	24	50	80	10	<4
4979	32	28	34	55	4	<4
4980	16	28	18	20	<4	<4
4981	26	26	34	44	4	<4
4982	75	30	85	75	18	<4
4983	65	24	85	130	22	<4
4984	42	26	60	90	14	<4
4985	34	22	55	75	10	<4
4986	55	20	75	120	22	<4
4987	60	20	80	140	20	<4
4988	38	26	50	80	12	<4
4989	40	50	70	105	18	<4
4990	55	28	80	110	20	<4
4991	8	12	20	12	<4	<4
4992	10	<4	6	8	<4	<4
4993	10	6	6	10	<4	<4
4994	10	6	10	10	<4	<4
4995	10	<4	8	8	<4	<4
4996	12	<4	10	14	<4	<4
4997	8	<4	8	8	<4	<4
4998	10	4	6	10	<4	<4
4999	8	4	6	6	<4	<4

321 c



ANALYTICAL REPORT

716322

JOB COM820576

C/E : 4085/FP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Mn	Co	Pi
5000	6	10	10	6	<4	<4
5001	12	<4	10	8	<4	<4
5002	12	<4	6	10	<4	<4
5003	55	36	75	105	20	<4
5004	8	14	14	10	<4	<4
5005	55	24	70	95	46	<4
5006	30	20	110	110	16	<4
5007	42	26	50	90	12	<4
5008	40	24	40	65	8	<4
5009	38	26	50	65	10	<4
5010	46	30	55	75	12	<4
5011	55	28	70	100	16	<4
5012	65	32	75	100	16	<4
5013	70	36	80	105	26	<4
5014	40	50	65	65	20	<4
5015	32	250	60	36	6	<4
5016	55	450	65	30	18	<4
5017	26	250	70	24	6	<4
5018	28	120	70	28	8	<4
5019	16	20	14	14	<4	<4
5020	34	38	36	40	8	<4
5021	20	48	22	22	4	<4
5022	26	46	44	24	4	<4
5023	22	50	20	22	4	<4
5024	44	16	32	34	6	<4



ANALYTICAL REPORT

716323

JCF COM820576

O/K : 4085/HP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
5025	50	10	30	30	6	<4
5026	20	8	14	32	6	<4
5027	65	14	110	230	55	<4
5028	55	26	90	90	20	<4
5029	48	60	95	75	16	<4
5030	46	28	55	65	10	<4
5031	50	16	60	70	10	<4
5032	55	18	50	55	6	<4
5033	24	14	38	55	4	<4
5034	60	18	75	90	10	<4
5035	44	16	60	75	8	<4
5036	50	18	70	85	10	<4
5037	42	18	60	80	12	<4
5038	46	22	60	80	8	<4
5039	50	18	60	70	6	<4
5040	48	20	70	95	10	<4
5041	50	24	70	95	12	<4
5042	50	24	70	95	16	<4
5043	55	24	65	80	8	<4
5044	65	18	85	110	10	<4
5045	48	18	60	65	6	<4
5046	60	22	65	60	6	<4
5047	55	20	65	65	6	<4
5048	130	24	95	55	6	<4
5049	90	20	60	38	4	<4



716324

ANALYTICAL REPORT

JCF COM820576

O/N : 4085/NP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
5050	75	24	55	30	<4	<4
5051	110	30	55	26	4	<4
5052	150	80	85	65	6	<4
5053	60	50	42	44	4	<4
5054	38	20	28	30	<4	<4
5055	60	30	28	32	<4	<4
5056	16	12	18	14	<4	<4
5057	16	4	20	10	<4	<4
5058	40	22	22	24	<4	<4
5059	32	26	22	24	<4	<4
5060	24	12	26	12	<4	<4
5061	20	6	20	16	<4	<4
5062	18	10	44	10	<4	<4
5063	10	14	22	12	<4	<4
5064	12	16	16	10	<4	<4
5065	14	20	18	12	<4	<4
5066	8	8	14	8	<4	<4
5067	10	<4	20	8	<4	<4
5068	8	12	14	10	<4	<4
5069	6	4	8	8	<4	<4
5070	6	<4	8	6	<4	<4
5071	6	<4	10	6	<4	<4
5072	6	<4	14	6	<4	<4
5073	24	<4	18	24	<4	<4
5074	12	<4	18	10	<4	<4

ANALYTICAL REPORT

JOE COME20576

O/E : 4085/EP01/JJL/69

Results in ppr

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
5075	10	10	24	8	<4	<4
5076	22	120	28	16	<4	<4
5077	14	32	16	14	<4	<4
5078	22	55	18	14	<4	<4
5079	28	48	34	26	<4	<4
5080	16	24	14	12	<4	<4
5081	26	16	18	14	<4	<4
5082	60	28	28	38	<4	<4
5083	60	26	30	28	<4	<4
5084	42	24	22	32	<4	<4
5085	70	28	50	24	<4	<4
5086	34	18	26	22	<4	<4
5087	65	10	40	20	<4	<4
5088	36	34	30	18	<4	<4
5089	20	32	34	34	<4	<4
5090	16	46	26	8	<4	<4
5091	14	16	28	<4	<4	<4
5092	16	60	24	12	<4	<4
5093	18	22	18	10	<4	<4
5094	22	20	20	16	<4	<4
5095	22	48	28	12	<4	<4
5096	16	24	14	18	<4	<4
5097	16	28	20	12	<4	<4
5098	18	36	28	22	<4	<4
5099	14	26	18	12	<4	<4

ANALYTICAL REPORT

716326

JOB COM820576

O/L : 4085/EP01/JJL/69

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
5100	10	24	6	8	<4	<4
5101	8	34	4	10	<4	<4
5102	14	20	18	14	<4	<4
5103	6	14	<2	6	<4	<4
5104	10	4	10	8	<4	<4
5105	8	<4	24	8	<4	<4
5106	10	<4	<2	8	<4	<4
5107	8	<4	4	8	<4	<4
5108	8	<4	10	6	<4	<4
5109	6	<4	<2	6	<4	<4
5110	6	<4	12	6	<4	<4
5111	18	20	14	20	<4	<4
5112	8	4	10	8	<4	<4
5113	14	14	12	22	<4	<4
5114	10	18	4	10	<4	<4
5115	12	8	6	16	<4	<4
5116	6	6	<2	8	<4	<4

Method of Analysis : Cu Pb Zn Ni Co Pi : AAS1

326.



COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

716327



NATA REGISTERED No. 1526

OUR REF.: COM 820609

YOUR REF.: 4087/NP01/JJL/71

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7310.

22.4.82

Dear John,

RE: JOB COM 820609

Enclosed are the assays for the samples delivered to our laboratory on the
5th April, 1982.

Yours sincerely,

Harry Fishman
Managing Director

ANALYTICAL REPORT

716328

JOB COM820609

O/N : 4087/NP01/JJL/71

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi
21202	50	12	260	<4	<4	<4
21203	6	12	32	<4	<4	<4
21205	4	10	24	<4	<4	<4
21206	4	16	14	<4	<4	<4
21207	2	10	16	<4	<4	<4
21208	10	46	60	8	<4	<4
21209	14	450	205	4	<4	<4
21210	10	140	65	<4	<4	<4
21217	10	30	16	4	<4	<4
21218	8	<4	10	4	<4	<4

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

716329

JOB COM820609

O/N : 4087/NP01/JJL/71

Results in ppm

SAMPLE	Ba	Sb	Sn	As	W
21202	10	4	1.72%	8000	30
21203	<10	<4	160	440	3600
21205	590	<4	18	390	15
21206	1600	6	<4	60	10
21207	730	4	12	95	<10
21208	130	10	<4	46	10
21209	1150	<4	<4	60	15
21210	180	4	12	20	<10
21217	40	<4	4	36	<10
21218	15	4	<4	7	<10

Method of Analysis : Ba Sb Sn As W : XRF1/2

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ANALYTICAL REPORT**716330**

JOB COM820609

O/N : 4087/NP01/JJL/71

Results in ppm

SAMPLE	%Fe	Mn	Ag	Mo	Au
21202	1.00	600	2	4	<0.05
21203	0.55	700	<1	6	<0.05
21205	0.60	1000	<1	<4	<0.05
21206	0.20	550	<1	<4	<0.05
21207	0.25	560	<1	4	<0.05
21208	26.0	34	2	6	<0.05
21209	1.35	420	<1	4	<0.05
21210	0.55	115	<1	4	<0.05
21217	0.35	75	1	12	<0.05
21218	0.20	70	1	12	<0.05

Method of Analysis : Fe Mn : AAS2/2A
Ag Mo : AAS3
Au : AAS5

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**COMLABS Pty. Ltd.**

COMPUTERISED ANALYTICAL LABORATORIES

716331



NATA REGISTERED No. 1526

OUR REF.: COM 820660

YOUR REF.: Order No. 4089/NP01/JJL/73

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

Mr. D. Speijer,
The Shell Co. of Aust. Ltd.,
Petals Division,
P.O. Box 860,
DEVONPORT. TAS. 7310.

4.5.82

Dear Sir,

RE: JOB COM 820660

Enclosed are the results requested as Additional to our Jobs COM 820368
and COM 820461.

Yours sincerely,

Harry Fishman
Managing Director

ANALYTICAL REPORT

716332

JOB COM820660

O/E : 4089

Results in ppm

SAMPLE	Sn	Au
3328	10	<0.05
3329	16	<0.05
3330	14	<0.05
3331	22	<0.05
3332	4	<0.05
3333	12	<0.05
3334	8	<0.05
3335	8	<0.05
3336	14	<0.05
3337	16	<0.05
3338	8	<0.05
3339	26	<0.05
3340	22	<0.05
3341	8	<0.05
3342	20	<0.05
3343	10	<0.05
3344	22	<0.05
3345	16	<0.05
3346	<4	<0.05
3347	4	<0.05
3348	16	<0.05
3349	36	<0.05
3350	10	<0.05
3351	26	<0.05
3352	32	<0.05

ANALYTICAL REPORT

716333

JOB COME20660

O/N : 4089

Results in ppm

SAMPLE	Sn	Au
3353	<4	<0.05
3354	18	<0.05
3355	55	<0.05
3356	18	<0.05
3357	8	<0.05
3358	6	<0.05
3359	<4	<0.05
3360	8	<0.05
3361	4	<0.05
3362	12	<0.05
3363	8	<0.05
3364	<4	<0.05
3365	14	<0.05
3366	14	<0.05
3367	28	<0.05
3368	26	<0.05
3369	30	<0.05
3370	38	<0.05
3371	<4	<0.05
3372	18	<0.05
3373	18	<0.05
3374	14	<0.05
3375	22	<0.05
3376	30	<0.05
3377	8	<0.05

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ANALYTICAL REPORT**716334**

JOB COM820660

O/E : 4089

Results in ppm

SAMPLE	Sn	Au
3378	12	<0.05
3379	30	<0.05
3380	16	<0.05
3381	12	<0.05
3382	<4	<0.05
3383	36	<0.05
3384	20	<0.05
3385	18	<0.05
3386	22	<0.05
3387	<4	<0.05
3388	30	<0.05
3389	18	<0.05
3390	20	<0.05
3391	12	<0.05
3392	22	<0.05
3393	18	<0.05
3394	18	<0.05
3395	14	<0.05
3396	8	<0.05
3397	30	<0.05
3398	12	<0.05
3399	12	<0.05
3400	8	<0.05
3501	20	<0.05
3502	14	<0.05

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ANALYTICAL REPORT**716335**

JOP COM820660

O/P : 4089

Results in ppm

SAMPLE	Sn	Au
3503	32	<0.05
3528	34	<0.05
3529	20	<0.05
3530	28	<0.05
3531	<4	<0.05
3532	8	<0.05
3533	14	<0.05
3534	8	<0.05
3535	4	<0.05
3536	24	<0.05
3537	16	<0.05
3538	10	<0.05
3539	24	<0.05
3540	<4	<0.05
3541	10	<0.05
3542	12	<0.05
3543	14	<0.05
3544	16	<0.05
3545	22	<0.05
3546	10	<0.05
3547	I.S.	<0.05
3548	14	<0.05
3549	12	<0.05
3550	6	<0.05
3551	4	<0.05

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**ANALYTICAL REPORT****716336**

JOP COM820660

O/N : 4089

Results in ppm

SAMPLE	Sn	Au
3552	10	<0.05
3553	16	0.05
3554	I.S.	<0.05
3555	12	<0.05
3556	12	<0.05
3557	16	<0.05
3558	14	<0.05
3559	12	<0.05
3560	8	<0.05
3561	6	I.S.
3562	I.S.	<0.05
3563	14	0.05
3564	14	<0.05
3565	26	<0.05
3566	8	<0.05
3567	18	I.S.
3568	22	<0.05
3569	<4	<0.05
3570	4	<0.05
3571	I.S.	I.S.
3572	10	<0.05
3573	16	<0.05
3574	I.S.	<0.05
3575	I.S.	I.S.
3576	6	<0.05



ANALYTICAL REPORT

716337

JOB COMF20660

O/R : 4089

Results in ppm

SAMPLE	Sn	Au
3577	26	<0.05
3578	<4	<0.05
3579	<4	<0.05
3580	10	<0.05
3581	18	<0.05
3582	<4	<0.05
3583	I.S.	I.S.
3584	12	<0.05
3585	4	<0.05
3586	I.S.	I.S.
3587	I.S.	I.S.
3588	I.S.	I.S.
3589	6	<0.05
3590	20	<0.05
3591	18	<0.05
3592	8	<0.05
3593	I.S.	<0.05
3594	LFE	LFE
3595	I.S.	I.S.
3596	I.S.	I.S.
3597	I.S.	I.S.
3598	I.S.	I.S.
3599	I.S.	I.S.
3600	8	<0.05
3601	12	<0.05

334



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ANALYTICAL REPORT**716338**

JOB COM820660

O/E : 4089

Results in ppm

SAMPLE	Sn	Au
3602	12	<0.05
3603	10	<0.05
3604	16	<0.05
3605	22	<0.05
3606	12	<0.05
3607	20	<0.05
3608	8	<0.05
3609	10	<0.05
3610	8	<0.05
3611	8	<0.05
3612	12	<0.05
3613	4	<0.05
3614	16	<0.05
3615	10	<0.05
3616	14	<0.05
3617	<4	<0.05
3618	8	<0.05
3619	6	<0.05
3620	14	<0.05
3621	8	<0.05
3622	6	<0.05
3623	12	<0.05
3624	<4	<0.05
3625	14	<0.05
3626	6	<0.05

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ANALYTICAL REPORT

716339

JOB CODE 20660

O/F : 4089

Results in ppm

SAMPLE	Sn	Au
3627	4	<0.05
3628	8	<0.05
3629	22	I.S.
3630	22	<0.05
3631	16	<0.05
3632	4	<0.05
3633	<4	<0.05
3634	6	<0.05
3635	10	<0.05
3636	4	<0.05
3637	10	<0.05
3638	14	<0.05
3639	10	<0.05
3640	10	<0.05
3641	4	<0.05
3642	8	<0.05
3643	12	<0.05
3644	6	<0.05
3645	8	<0.05
3646	6	<0.05
3647	16	<0.05
3648	4	<0.05
3649	10	<0.05
3650	10	<0.05
3651	12	<0.05

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ANALYTICAL REPORT

716340

JOB COMF20660

O/E : 4089

Results in ppm

SAMPLE	Sn	Au
3652	16	<0.05
3653	4	<0.05
3654	8	<0.05
3655	10	<0.05
3656	10	<0.05
3657	14	<0.05
3658	<4	<0.05
3659	16	<0.05
3660	24	<0.05
3661	14	<0.05
3662	6	<0.05
3663	8	<0.05
3664	14	<0.05
3665	10	<0.05
3666	4	<0.05
3667	<4	<0.05
3668	6	<0.05
3669	14	<0.05
3670	12	<0.05
3671	6	<0.05
3672	14	<0.05
3673	10	<0.05
3674	8	<0.05
3675	I.S.	I.S.
3676	I.S.	I.S.

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- 10 -



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716341

ANALYTICAL REPORT

JOF COME20660

O/N : 4089

Results in ppm

SAMPLE	Sn	Au
3677	12	<0.05
3678	30	<0.05
3679	10	<0.05
3680	6	<0.05
3681	16	<0.05
3682	8	<0.05
3683	6	<0.05
3684	24	I.S.
3685	18	I.S.
3686	8	<0.05
3687	12	<0.05
3688	12	<0.05
3689	16	0.50
3690	8	0.15
3691	10	<0.05
3692	I.S.	I.S.
3693	16	<0.05
3694	22	0.25
3695	16	0.05
3696	14	<0.05
3697	8	<0.05
3698	4	<0.05
3699	16	<0.05
3700	6	0.10
4501	I.S.	I.S.

**ANALYTICAL REPORT****716342**

JOB COM820660

O/E : 4089

Results in ppm

SAMPLE	Sn	Au
4502	I.S.	I.S.
4503	I.S.	I.S.
4504	I.S.	I.S.
4505	I.S.	I.S.
4506	8	<0.05
4507	14	<0.05
4508	8	<0.05
4509	6	<0.05
4510	I.S.	I.S.
4511	<4	<0.05
4512	8	<0.05
4513	8	0.20
4514	I.S.	I.S.
4515	I.S.	I.S.
4516	I.S.	I.S.
4517	8	<0.05
4518	I.S.	I.S.
4519	I.S.	I.S.
4520	10	<0.05
4521	8	<0.05
4522	14	<0.05
4523	I.S.	I.S.
4524	14	<0.05
4525	26	<0.05
4526	I.S.	I.S.

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COMPUTERISED ANALYTICAL LABORATORIES

- 12 -



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ANALYTICAL REPORT

716343

JOB COM820660

O/N : 4089

Results in ppm

SAMPLE	Sn	Au
4527	I.S.	I.S.
4528	I.S.	I.S.
4529	I.S.	I.S.
4530	10	<0.05
4531	I.S.	I.S.
4532	4	<0.05
4533	I.S.	I.S.
4534	I.S.	I.S.
4535	I.S.	I.S.
4536	I.S.	I.S.
4537	I.S.	I.S.
4538	I.S.	I.S.
4539	38	<0.05
4540	14	<0.05
4541	8	<0.05
4542	I.S.	I.S.
4543	I.S.	I.S.
4669	<4	<0.05

Method of Analysis : SE : XFF1
AU : AAS5A

343



COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

716344



NATA REGISTERED No. 1526

OUR REF.: COM 820661

YOUR REF.: Order No. 4090/NP01/JJL/74

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

Mr. D. Speijer,
The Shell Co. of Aust. Ltd.,
Metals Division,
P.O. Box 860,
DEVONPORT. TAS. 7310.

4.5.82

Dear Sir,

RE: JOB COM 820661

Enclosed are the results requested as Additional to our Jobs COM 812075
and COM 820097.

Yours sincerely,

Harry Fishman
Managing Director

344



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COMPUTERISED ANALYTICAL LABORATORIES



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ANALYTICAL REPORT

716345

JOB COMP20661

O/E : 4090/EP01/JJL/74

Results in ppm

SAMPLE	Au
2600	<0.05
2801	<0.05
2802	<0.05
2803	<0.05
2804	<0.05
2805	<0.05
2806	<0.05
2807	<0.05
2808	<0.05
2809	<0.05
2810	<0.05
2811	<0.05
2812	<0.05
2813	<0.05
2814	<0.05
2815	<0.05
2816	<0.05
2817	<0.05
2818	<0.05
2819	<0.05
2820	<0.05
2821	<0.05
2822	<0.05
2831	<0.05
2832	<0.05

345



COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

- 2 -



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ANALYTICAL REPORT

716346

JOE COM820601

O/N : 4090/FP01/JJL/74

Results in ppm

SAMPLE	Au
2833	<0.05
2835	<0.05

Method of Analysis : Au : AAS5

346



COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

716347



NATA REGISTERED No. 1526

OUR REF.: COM 820668

YOUR REF.: 4091/NP01/JJL/75

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

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

Mr. J. Lawton,
The Shell Co Of Aust. Ltd.,
P.O. Box 860,
DEVONPORT. TAS. 7360.

3.5.82

Dear John,

RE: JOB COM 820668

Enclosed are the assays for the samples delivered to our Laboratory on the
13th April, 1982.

Yours sincerely,

Harry Fishman
Managing Director

ANALYTICAL REPORT

JOB COM820668

O/E : 4091/NP01/JJL/75

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
5117 -80#	16	<4	14	10	<4	<4
5118 -80#	10	<4	8	<4	<4	<4
5119 -80#	8	<4	6	<4	<4	<4
5120 -80#	8	<4	6	8	4	<4
5121 -80#	20	<4	22	26	8	<4
5122 -80#	12	<4	20	10	<4	<4
5123 -80#	12	<4	12	10	6	<4
5124 -80#	10	<4	8	12	8	<4
5125 -80#	10	<4	8	8	6	<4
5126 -80#	10	<4	6	14	<4	<4
5127 -80#	8	<4	10	<4	8	<4
5128 -80#	16	<4	16	28	<4	<4
5129 -80#	10	6	12	18	<4	<4
5130 -80#	12	<4	8	14	<4	<4
5131 -80#	6	<4	12	8	<4	<4
5132 -80#	6	<4	8	<4	<4	<4
5133 -80#	6	<4	12	8	<4	<4
5134 -80#	6	<4	4	8	<4	<4
5135 -80#	12	10	12	22	<4	<4
5136 -80#	8	<4	6	12	<4	<4
5137 -80#	10	<4	8	10	<4	<4
5138 -80#	18	8	8	14	<4	<4
5139 -80#	18	<4	4	10	<4	<4
5140 -80#	18	6	8	20	<4	<4
5141 -80#	10	8	8	12	<4	<4

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716349

ANALYTICAL REPORT

JOB COM820668

O/N : 4091/EP01/J3L/75

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pi
5167 -80#	8	8	10	12	<4	<4
5168 -80#	6	12	12	16	<4	<4
5169 -80#	6	18	14	12	<4	<4
5170 -80#	6	8	12	12	<4	<4
5171 -80#	6	<4	8	10	6	<4
5172 -80#	4	4	6	10	4	<4
5173 -80#	6	14	12	18	<4	<4
5174 -80#	10	<4	10	14	<4	<4
5175 -80#	8	<4	8	36	<4	<4
5176 -80#	6	<4	8	20	<4	<4
5177 -80#	12	8	8	6	<4	<4
5178 -80#	32	50	26	12	<4	<4
5179 -80#	10	6	8	4	<4	<4
5180 -80#	8	10	8	6	<4	<4
5181 -80#	12	8	10	10	<4	<4
5182 -80#	10	<4	8	8	<4	<4
5183 -80#	10	<4	8	12	<4	<4
5184 -80#	10	<4	8	10	<4	<4
5185 -80#	10	<4	6	8	<4	<4

Method of Analysis : Cu Pb Zn Ni Co Li : AAS1

349



716350

ANALYTICAL REPORT

JOB COM820668

O/N : 4091/EP01/JJL/75

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
5117 -80#	4	80	<10	0.30	70
5118 -80#	2	65	15	0.40	55
5119 -80#	2	20	10	0.40	50
5120 -80#	3	15	15	0.41	55
5121 -80#	4	340	10	0.65	65
5122 -80#	2	195	10	0.45	60
5123 -80#	4	105	<10	0.40	44
5124 -80#	3	310	10	0.40	55
5125 -80#	2	70	15	0.50	70
5126 -80#	2	45	15	0.60	75
5127 -80#	2	45	15	0.40	55
5128 -80#	5	290	10	0.65	85
5129 -80#	<2	480	<10	0.55	50
5130 -80#	3	75	10	0.40	34
5131 -80#	2	85	<10	0.30	28
5132 -80#	2	40	10	0.25	26
5133 -80#	<2	90	10	0.35	34
5134 -80#	2	45	10	0.35	34
5135 -80#	2	185	<10	0.60	55
5136 -80#	2	145	<10	0.40	50
5137 -80#	2	105	10	0.40	42
5138 -80#	2	290	10	0.50	60
5139 -80#	3	155	15	0.40	34
5140 -80#	4	230	20	0.45	38
5141 -80#	3	230	15	0.40	36



ANALYTICAL REPORT

JOB COM820668

O/E : 4091/NP01/JJL/75

Results in ppm

SAMPLE	As	Ba	W	%Fe	Mn
5142 -80#	8	95	10	5.70	85
5143 -80#	9	125	<10	5.20	95
5144 -80#	12	270	<10	3.90	100
5145 -80#	5	210	10	1.70	95
5146 -80#	2	160	<10	0.60	46
5147 -80#	3	45	10	0.60	95
5148 -80#	2	105	<10	0.60	80
5149 -80#	4	240	<10	1.45	95
5150 -80#	<2	55	<10	0.45	55
5151 -80#	3	130	15	0.40	44
5152 -80#	3	160	15	0.30	46
5153 -80#	2	175	10	0.45	55
5154 -80#	2	110	15	0.50	60
5155 -80#	3	195	10	0.45	60
5156 -80#	2	195	<10	0.60	70
5157 -80#	<2	90	10	0.35	65
5158 -80#	2	50	10	0.40	55
5159 -80#	2	75	10	0.45	60
5160 -80#	2	50	10	0.40	60
5161 -80#	2	40	15	0.25	60
5162 -80#	<2	30	<10	0.35	46
5163 -80#	3	65	<10	0.30	40
5164 -80#	2	45	<10	0.25	38
5165 -80#	2	35	15	0.40	46
5166 -80#	2	125	20	0.40	65

ANALYTICAL REPORT

716352

JOE CCM820668

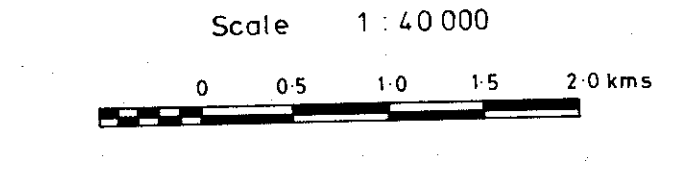
O/F : 4091/EP01/JJL/75

Results in ppm

SAMPLE	As	Pb	W	%Fe	Mn
5167 -80#	3	140	15	0.45	75
5168 -80#	<2	90	15	0.30	50
5169 -80#	2	110	10	0.30	40
5170 -80#	2	120	10	0.45	65
5171 -80#	3	80	<10	0.45	55
5172 -80#	4	70	10	0.35	65
5173 -80#	<2	95	10	0.50	70
5174 -80#	3	40	10	0.45	60
5175 -80#	2	45	10	0.50	80
5176 -80#	2	30	10	0.30	60
5177 -80#	2	170	10	0.45	60
5178 -80#	4	320	<10	1.05	65
5179 -80#	3	105	15	0.35	50
5180 -80#	<2	120	10	0.35	55
5181 -80#	2	150	15	0.50	75
5182 -80#	2	55	15	0.40	70
5183 -80#	<2	145	<10	0.35	60
5184 -80#	<2	60	15	0.45	55
5185 -80#	2	30	10	0.35	44

Method of Analysis : As Pb W : XRF1
Fe Mn : AAS2/2A

ALCOA OF AUSTRALIA LIMITED
GRANITE TOR AREA
PLAN I
TOPOGRAPHIC BASE PLAN



Control interval - 50 feet

5/59 - photo centre, run / frame
[ref Conical Rocks - Sophia
F423 1974-1975]

- Boundary of E.L. 2/78

The Shell Company of Australia Limited METALS DIVISION	
E.L. 2/78 GRANITE TOR BOUNDARY OF AREA'S 'A' & 'B' LOCATION MAPS 2475	
SCALE 1:40 000	DATE 6-5-82
AUTHOR D. SPEIJERS	DRAWN M.L.H.
OFFICE DEVONPORT	REP. No.
DRG. No. D/NP01/070	FIG. No.

KEY

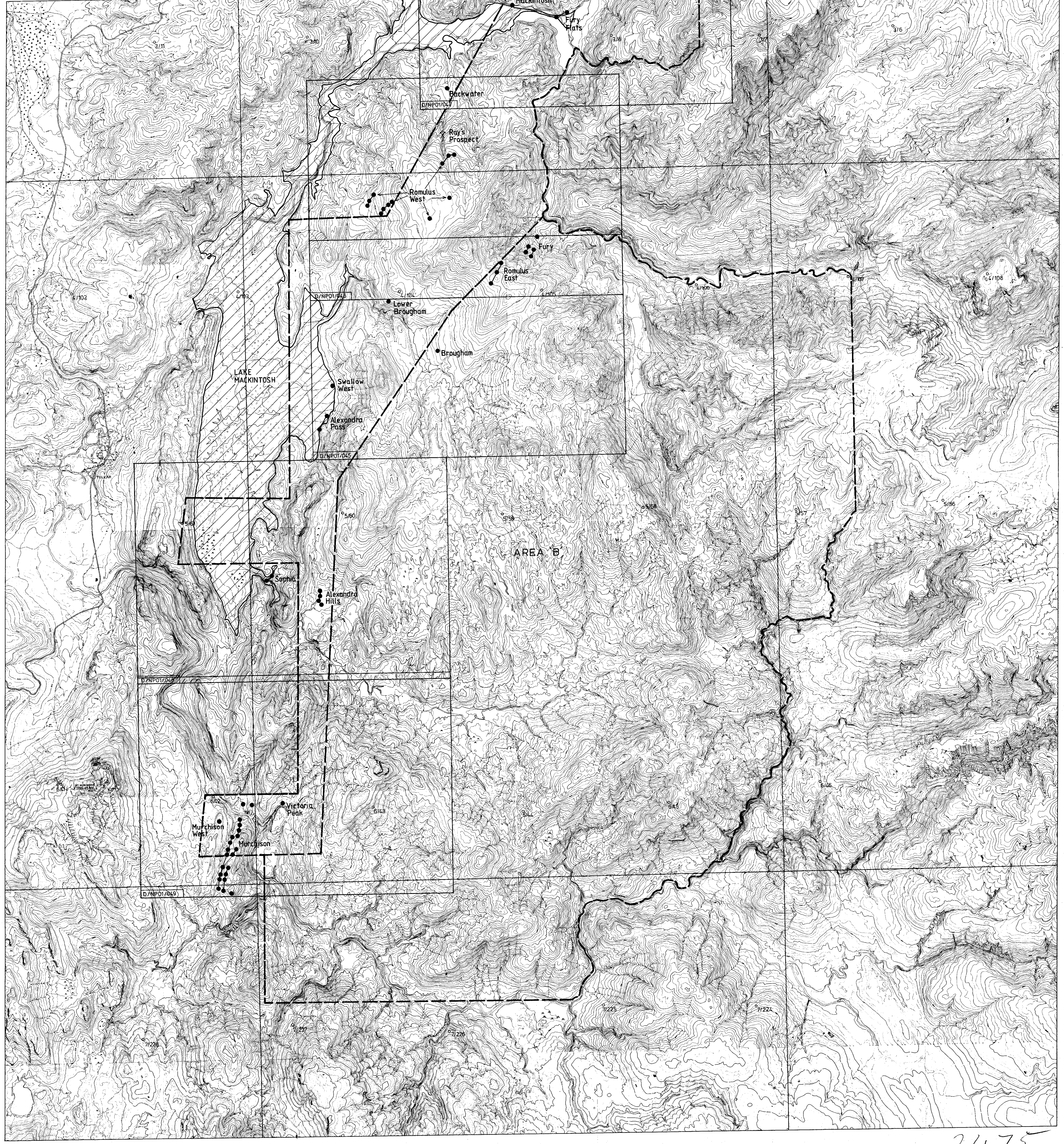
--- Boundary of E.L. - Areas 'A' & 'B'

--- Boundary of 1:10 000 Grid location maps

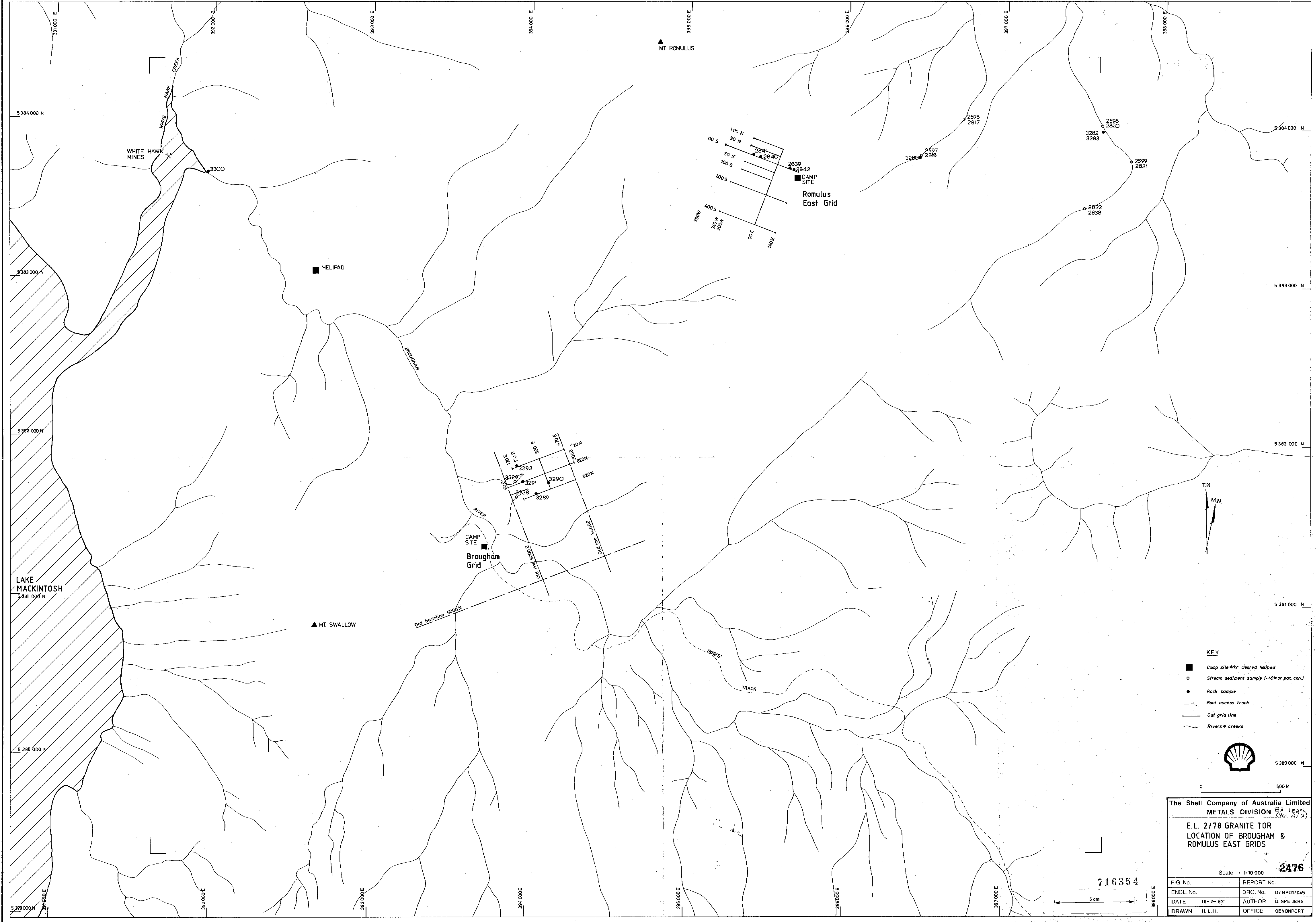
• Diphem Anomalies

D/NP01/ Drawing No.

Compiled by: HEC, Tasmania
Peter Livings & Assoc.
D. Speijers



2475



KEY

- Camp site or cleared helipad
- Stream sediment sample (-60# or pan con.)
- Rock sample
- Foot access track
- Cut grid line
- Rivers & creeks



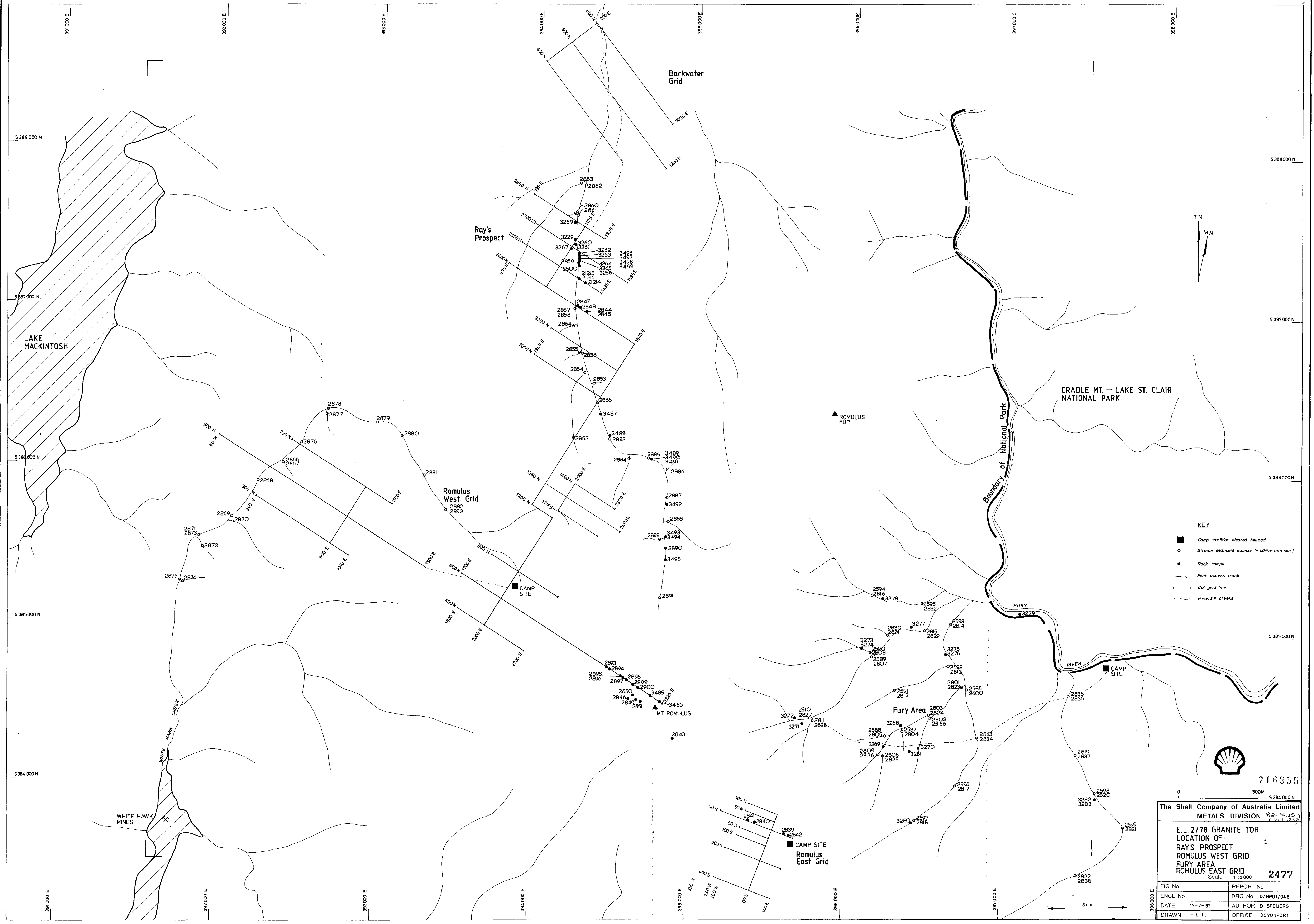
0 500 M

The Shell Company of Australia Limited
METALS DIVISION 152-1535
Vol 2/2

**E.L. 2/78 GRANITE TOR
LOCATION OF BROUGHAM &
ROMULUS EAST GRIDS**

Scale 1:10 000 **2476**

FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/NP01/045
DATE 16-2-82	AUTHOR D. SPEIJERS
DRAWN H.L.H.	OFFICE OEVONPORT



- KEY
- Camp site or cleared helipad
 - Stream sediment sample (-40# or pan con)
 - Rock sample
 - - - Foot access track
 - - - Cut grid line
 - ~ Rivers & creeks



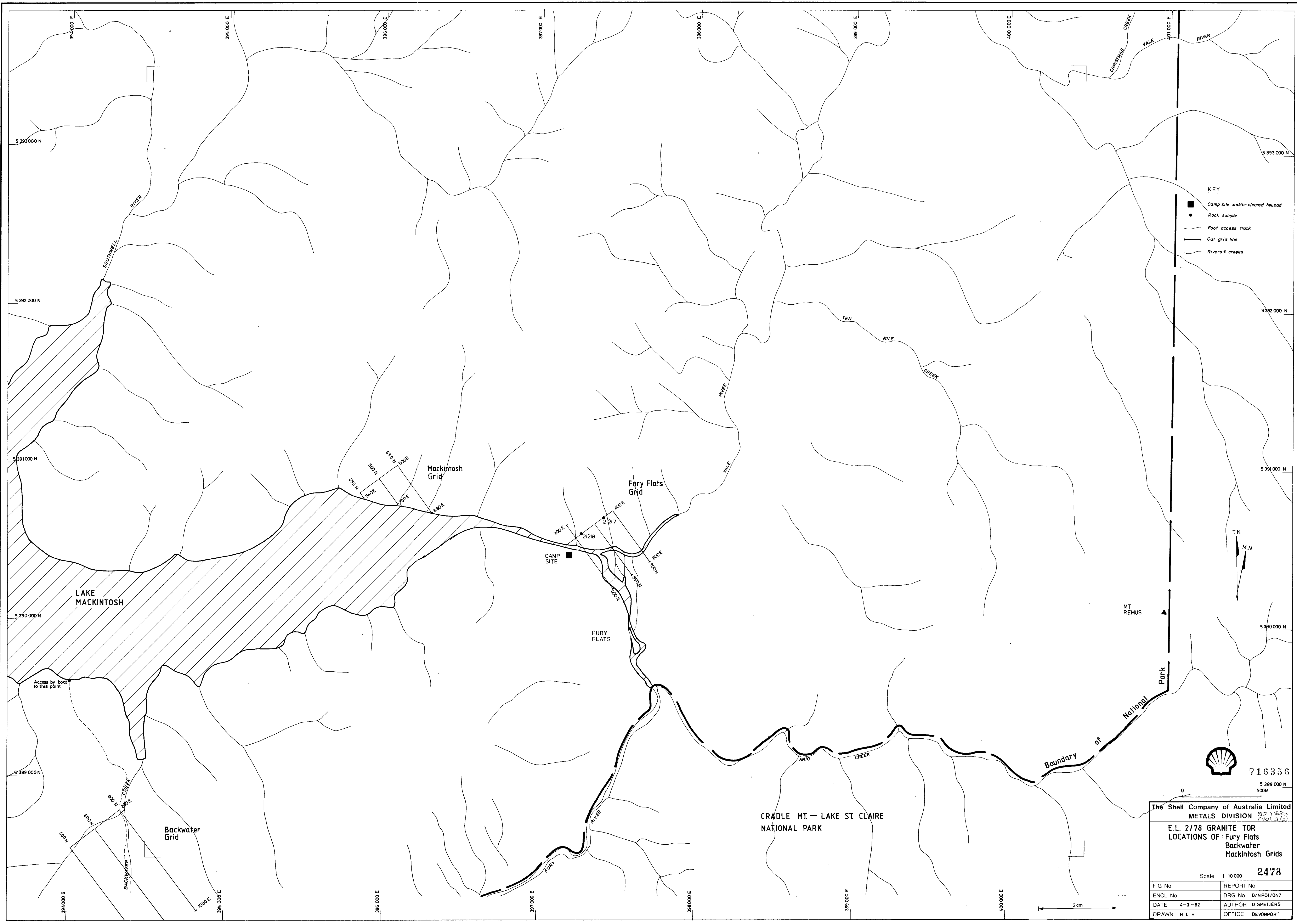
716355

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
LOCATION OF
RAY'S PROSPECT
ROMULUS WEST GRID
FURY AREA
ROMULUS EAST GRID
Scale 1:10,000

2477

FIG No	REPORT No
ENCL No	DRG No D/NP01/046
DATE 17-2-82	AUTHOR D SPEIJERS
DRAWN H L H.	OFFICE DEVONPORT





KEY

-  *Camp site*/or cleared helipad*
-  *Stream sediment sample (-40# or pan con.)*
-  *Rock sample*
-  *Foot access track*
-  *Cut grid line*
-  *Rivers & creeks*
-  *Roads*



716357
500M

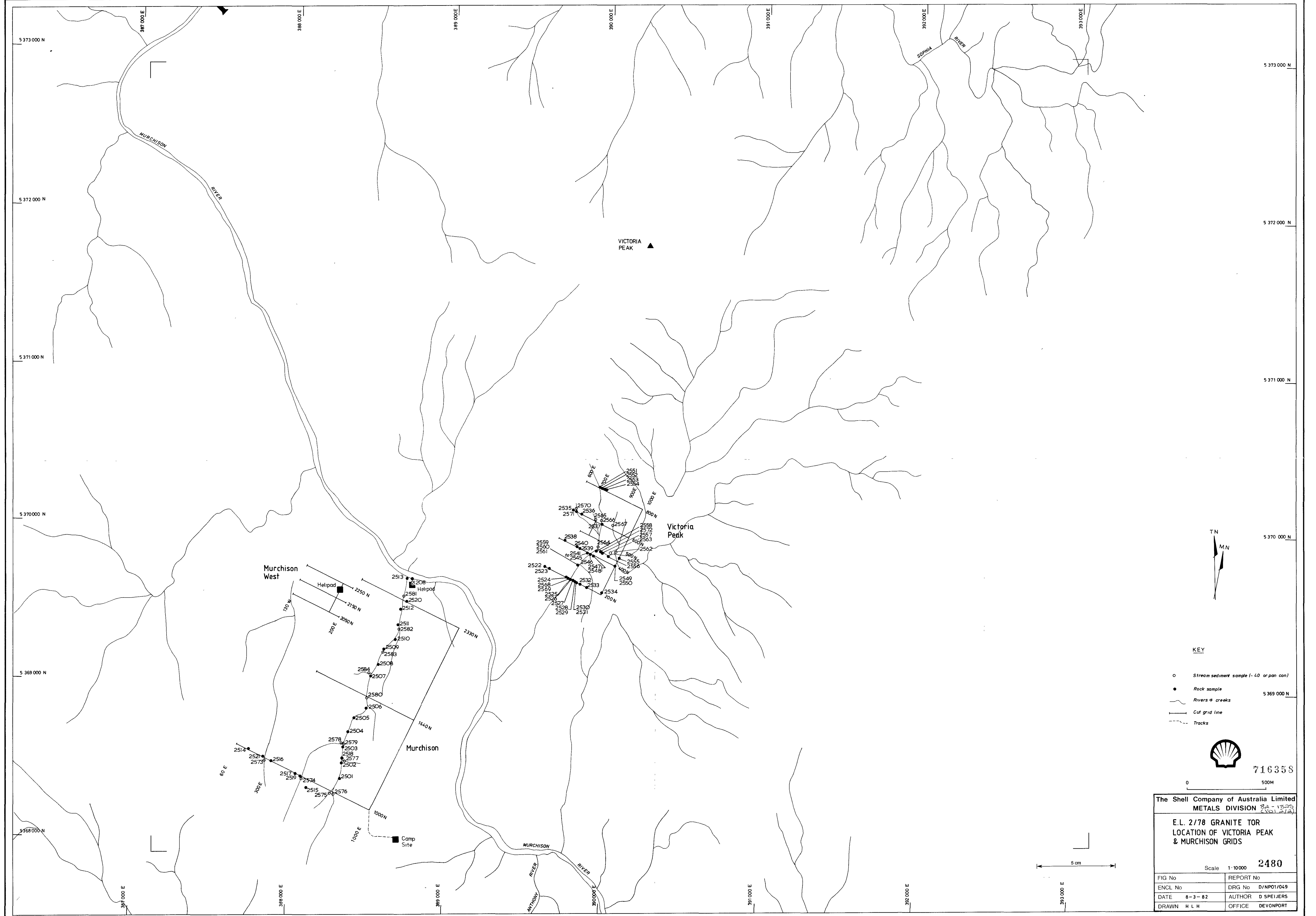
The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
LOCATION OF SOPHIA &
ALEXANDRA HILLS GRIDS

2479

Scale 1 10000

FIG No	REPORT No
ENCL No	DRG No D/NP01/048
DATE 5-3-82	AUTHOR D SPEIJERS
DRAWN H L H	OFFICE DEVONPORT



KEY

- Stream sediment sample (~40 or pan con)
- Rock sample
- Rivers & creeks
- Cut grid line
- Tracks



716358

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
LOCATION OF VICTORIA PEAK
& MURCHISON GRIDS

Scale 1:10000

2480

FIG No	REPORT No
ENCL No	DRG No D/NP01/049
DATE 8-3-82	AUTHOR D SPEIJERS
DRAWN H L H	OFFICE DEVONPORT

Total Magnetic Intensity

N B 1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

V. L. F.

RELATIVE FIELD INTENSITY
300 %
250 %
200 %
150 %

N.B. Readings taken using NW Cape transmitter.

V. L. F.

DIP ANGLE
20°
15°
10°
5°
0°
-5°

Topography & Geology

N B 1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop(oc) and subcrop(sc) indicated where present.

Soil Sample No's & Depths (m)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

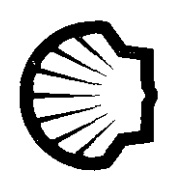
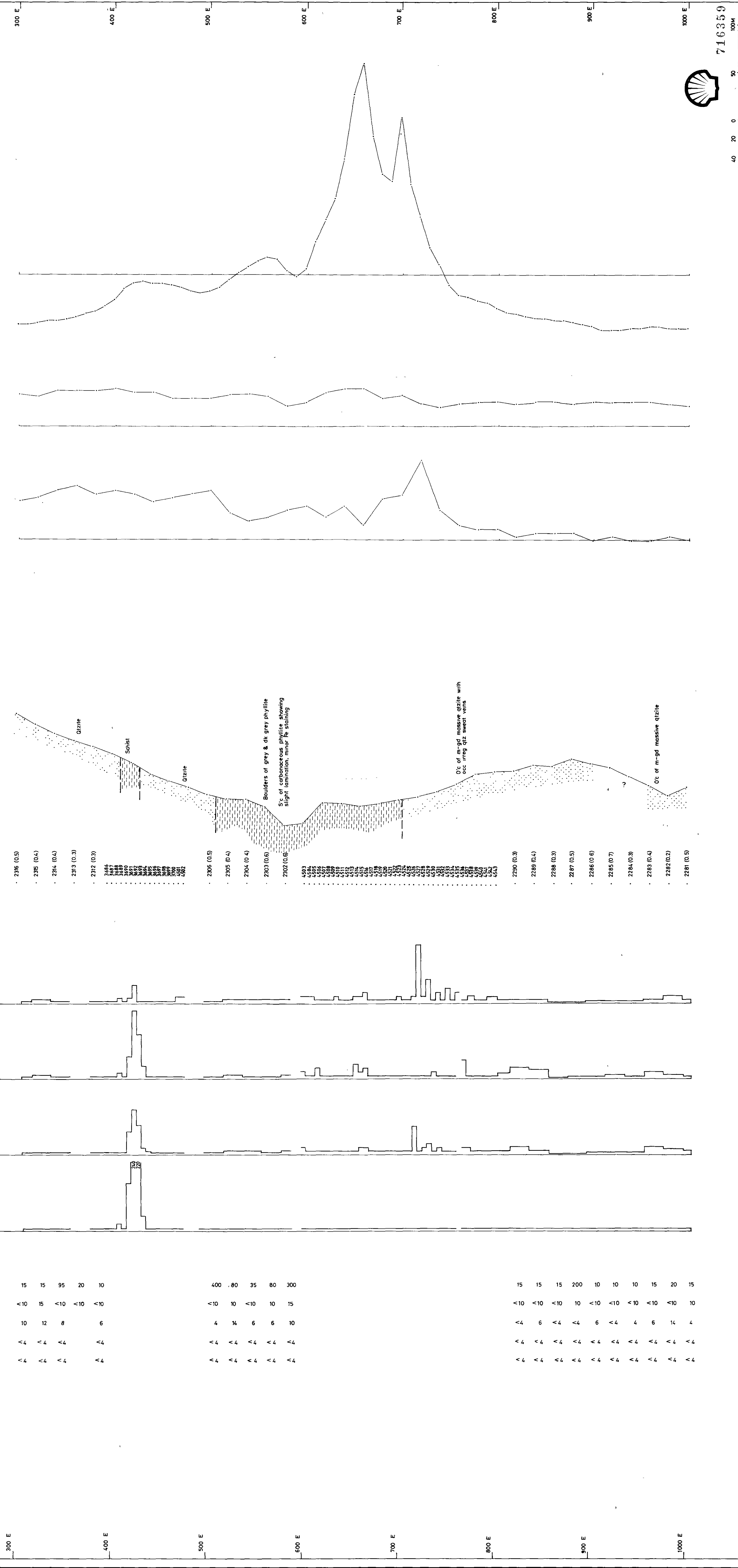
BARIIUM (ppm)

TUNGSTEN (ppm)

NICKEL (ppm)

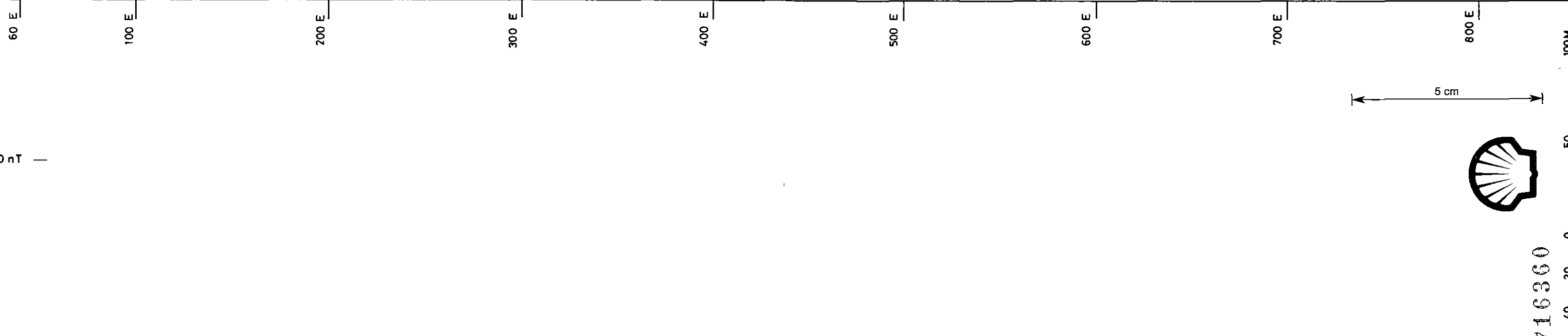
COBALT (ppm)

BISMUTH (ppm)



716359

The Shell Company of Australia Limited
METALS DIVISION
E.L. 2/78 GRANITE TOR
MURCHISON: ANOMALY 11
LINE 2330 N
300E - 1000E
2481
Scale 1:2000 Horizontal
FIG No REPORT No
ENCL No DRG No D/NP01/002
DATE 19-11-81 AUTHOR D. SPEIJERS
DRAWN H.L.H. OFFICE DEWONPORT



Total Magnetic Intensity

NB
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

V.L.F.

• NW Cape
• Japan

NOTE VLF DATA NOT RELIABLE
RESURVEY REQUIRED

V.L.F.

• NW Cape (N)
• Japan (E)

Topography & Geology

NB
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (o/c) and subcrop (s/c) indicated where present

Soil Sample No's & Depths (m)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

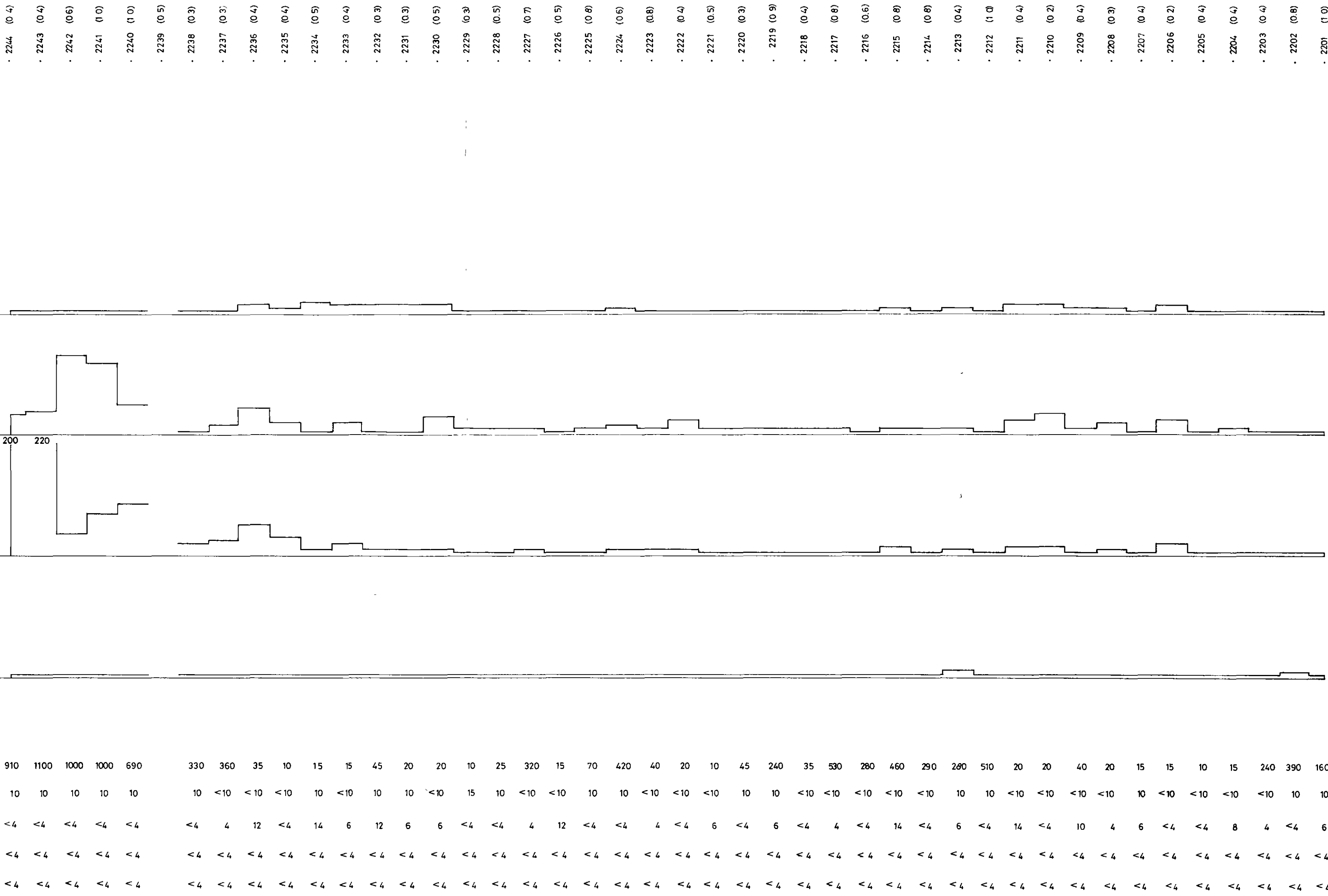
BARIIUM (ppm)

TUNGSTEN (ppm)

NICKEL (ppm)

COBALT (ppm)

BISMUTH (ppm)



300 E 400 E 500 E 600 E 700 E 800 E 900 E 1000 E

63000 nT

63500 nT

Total Magnetic Intensity

N.B. 1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

62000 nT

V.L.F.

RELATIVE FIELD INTENSITY

N.B. Readings taken using NW Cape transmitter

350 %

300 %

250 %

200 %

150 %

V.L.F.

DIP ANGLE

+15°

+10°

+5°

0°

-5°

Topography & Geology

(Metres A S L)

N.B. 1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples.
3) Outcrop (oc) and subcrop (sc) indicated where present.

480

460

440

420

400

380

360

340

320

300

280

260

240

Soil Sample No's & Depths (m)

2280 (0.4) 2279 (0.6) 2278 (0.2) 2277 (0.2) 2276 (0.1) 2275 (0.1) 2274 (0.4) 2273 (0.6) 2272 (0.3) 2271 (0.5) 2270 (0.2) 2269 (0.4) 2268 (0.5) 2267 (0.5) 2266 (0.3) 2265 (0.9) 2264 (0.5) 2263 (0.5) 2262 (0.1) 2261 (0.5) 2260 (0.3) 2259 (0.6) 2258 (0.6) 2257 (0.5) 2256 (0.7) 2255 (0.8) 2254 (0.4) 2253 (0.4) 2252 (0.3) 2251 (0.2) 2250 (0.4) 2249 (0.2) 2248 (0.2) 2247 (0.3) 2246 (0.7) 2245 (1.0)

Soil Sampling Results

COPPER (ppm)

150

100

50

0

LEAD (ppm)

150

100

50

0

ZINC (ppm)

150

100

50

0

ARSENIC (ppm)

150

100

50

0

BARIUM (ppm)

15 60 40 15 10 20 15 85 20 15 15 85 95 50 440 330 165 510 65 35 25 80 290 100 540 530 45 10 15 15 15 10 10 10 20

TUNGSTEN (ppm)

<10 10 <10 <10 <10 <10 <10 10 <10 <10 <10 <10 <10 10 <10 <10 10 10 <10 <10 10 15 15 10 10 <10 <10 <10 <10 <10 <10 <10 <10 <10

NICKEL (ppm)

<4 16 6 6 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 6 8 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4

COBALT (ppm)

<4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4

BISMUTH (ppm)

<4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4

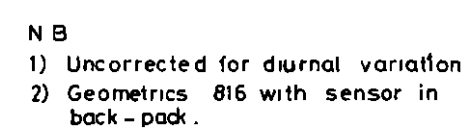
716361



50 0 50 100M

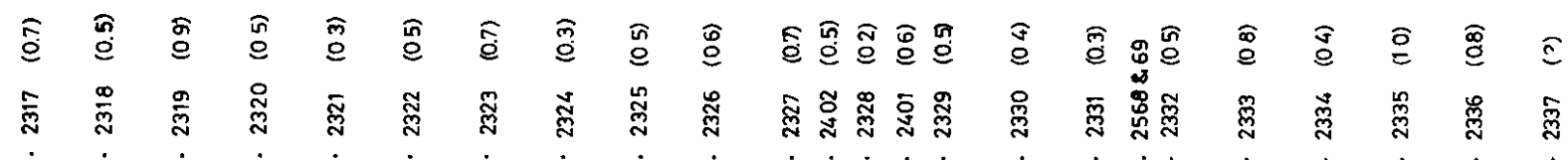
The Shell Company of Australia Limited
METALS DIVISION
E.L. 2/78 GRANITE TOR
MURCHISON: ANOMALY 11
LINE 1640N
300E — 1000E 2483
Scale 1:2000 Horizontal
FIG No. REPORT No.
ENCL No. DRG No. D/NP01/004
DATE 26-11-81 AUTHOR D. SPEIJERS
DRAWN H.L.H. OFFICE DE WILPONT

5 m

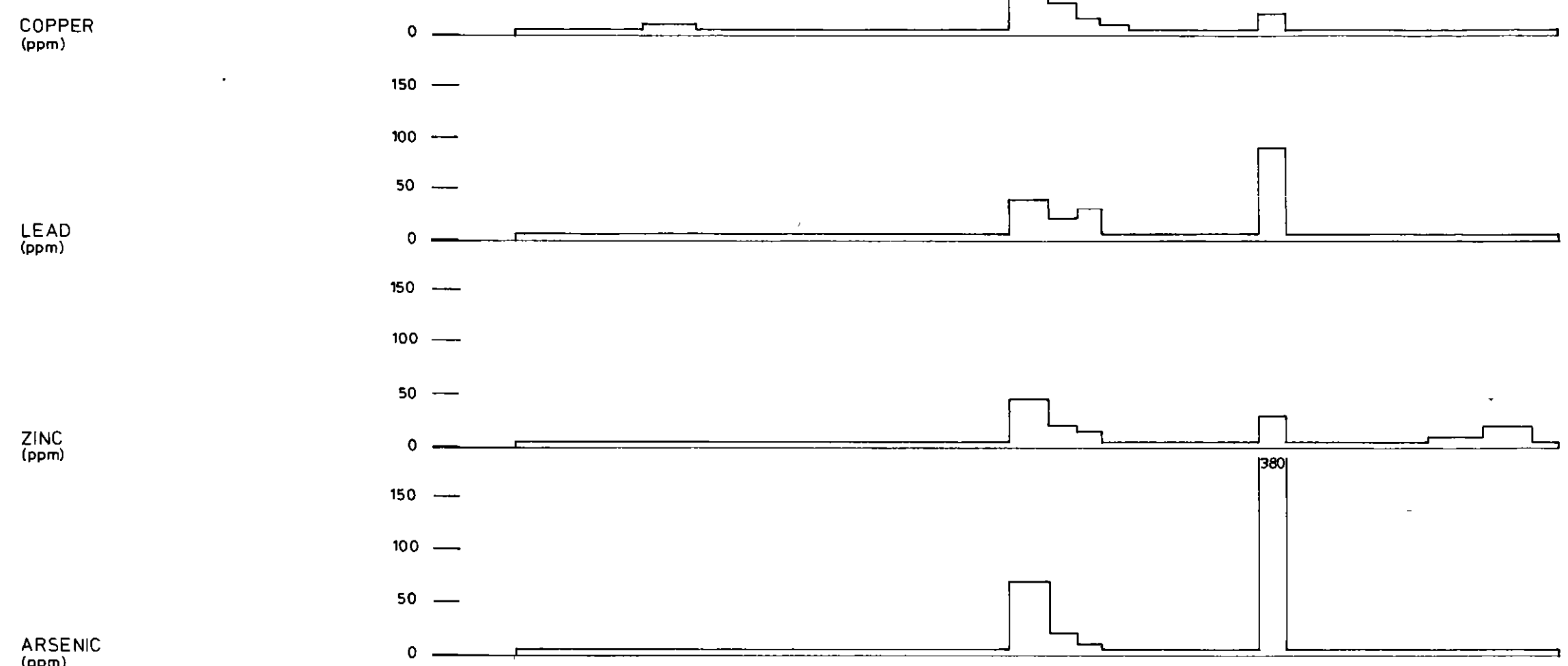
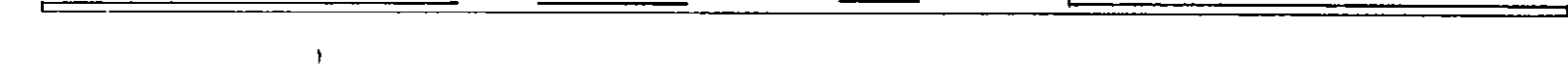
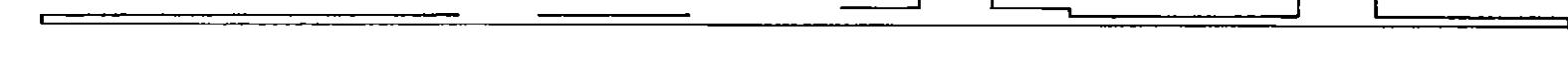
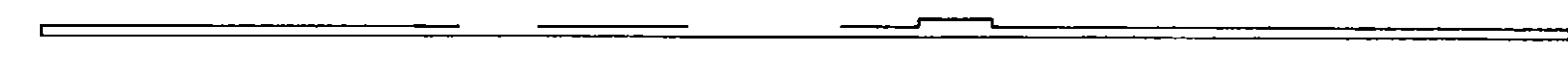
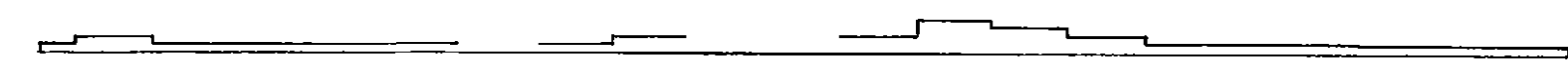
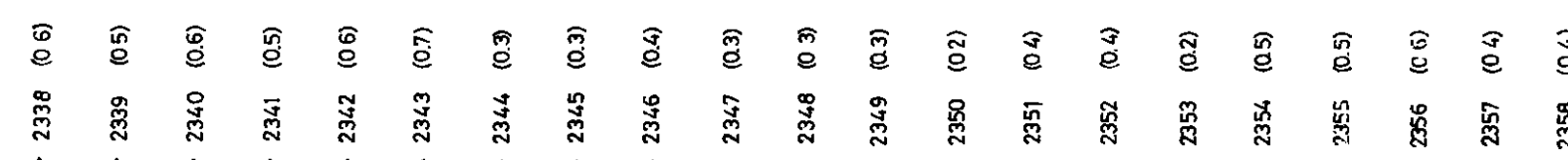
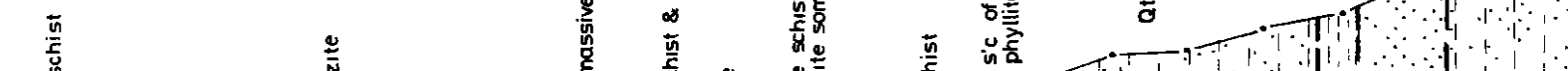
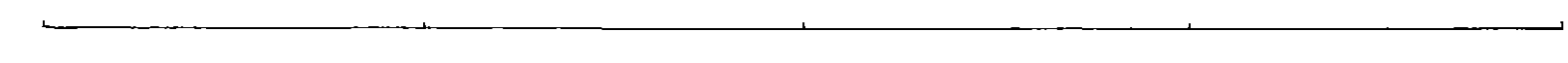
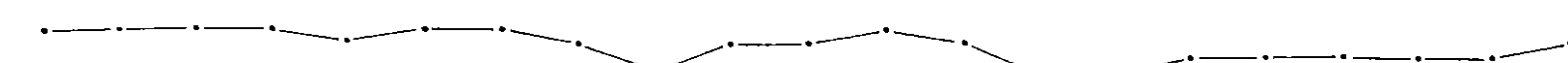


(Metres A.S.L)

- N.B.
- 1) Topography by Topolite and clinometer
 - 2) Geology from outcrop and examination of soil samples
 - 3) Outcrop (o'c) and subcrop (st) indicated where present

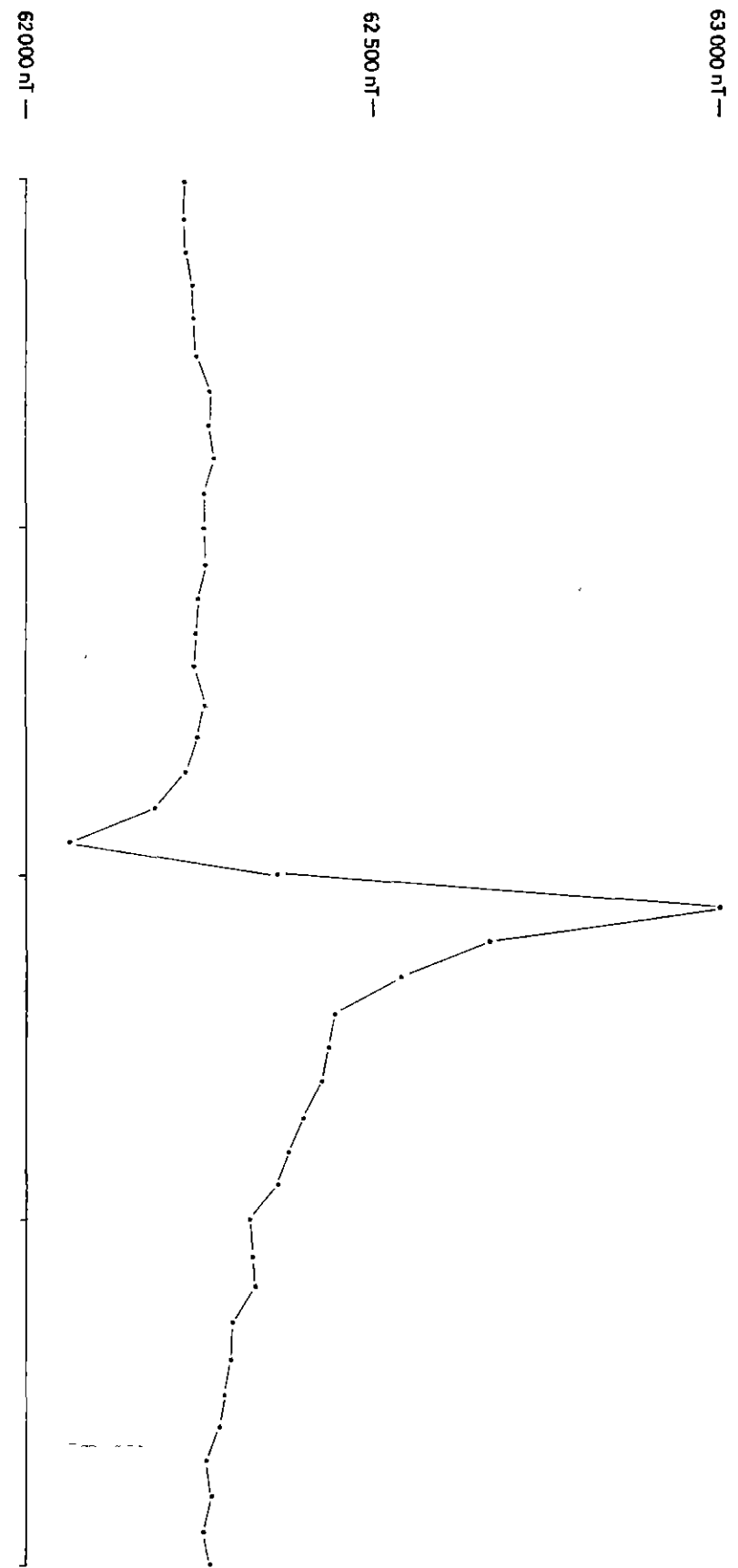


COPPER
(ppm)

[illegible][illegible]

Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation.
2) Corrected for diurnal variation.
3) Corrected for diurnal variation.
4) Corrected for diurnal variation.



LINE 600 N

716363

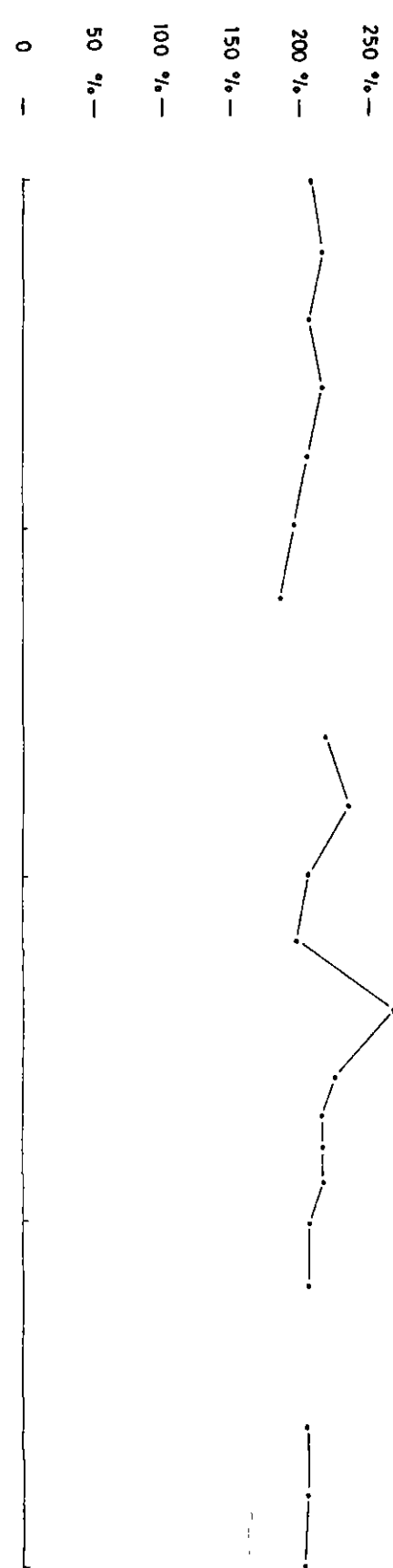


Scale 1 : 2000 Horizontal

The Shell Company of Australia Limited METALS DIVISION			
E.L. 2/78 GRANITE TOR VICTORIA PEAK: ANOMALY 10 LINES 600 & 800 N 600E - 1000E			
2435			
FIG No	REPORT No		
ENCL No	DRG No D/NP01/006		
DATE	1 - 12-81		
DRAWN	H.L.H.		
OFFICE		DEVONPORT	

V.L.F.

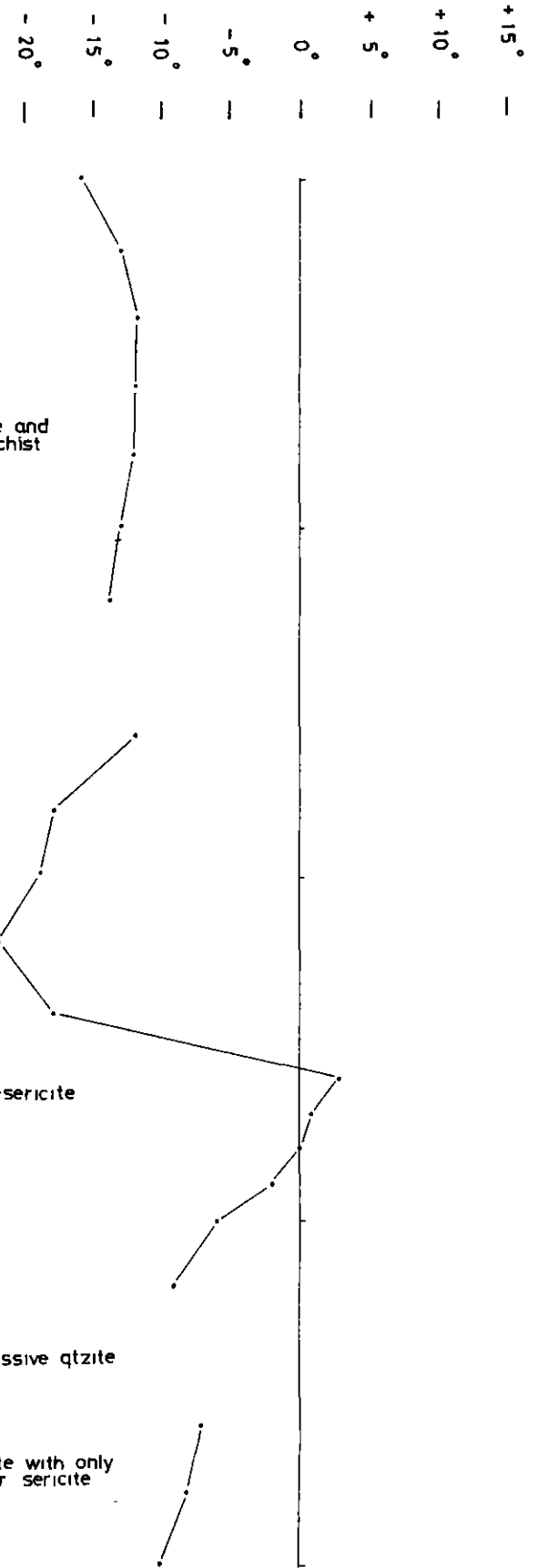
RELATIVE FIELD
INTENSITY



N.B. Readings taken using
NW Cape transmitter

V.L.F.

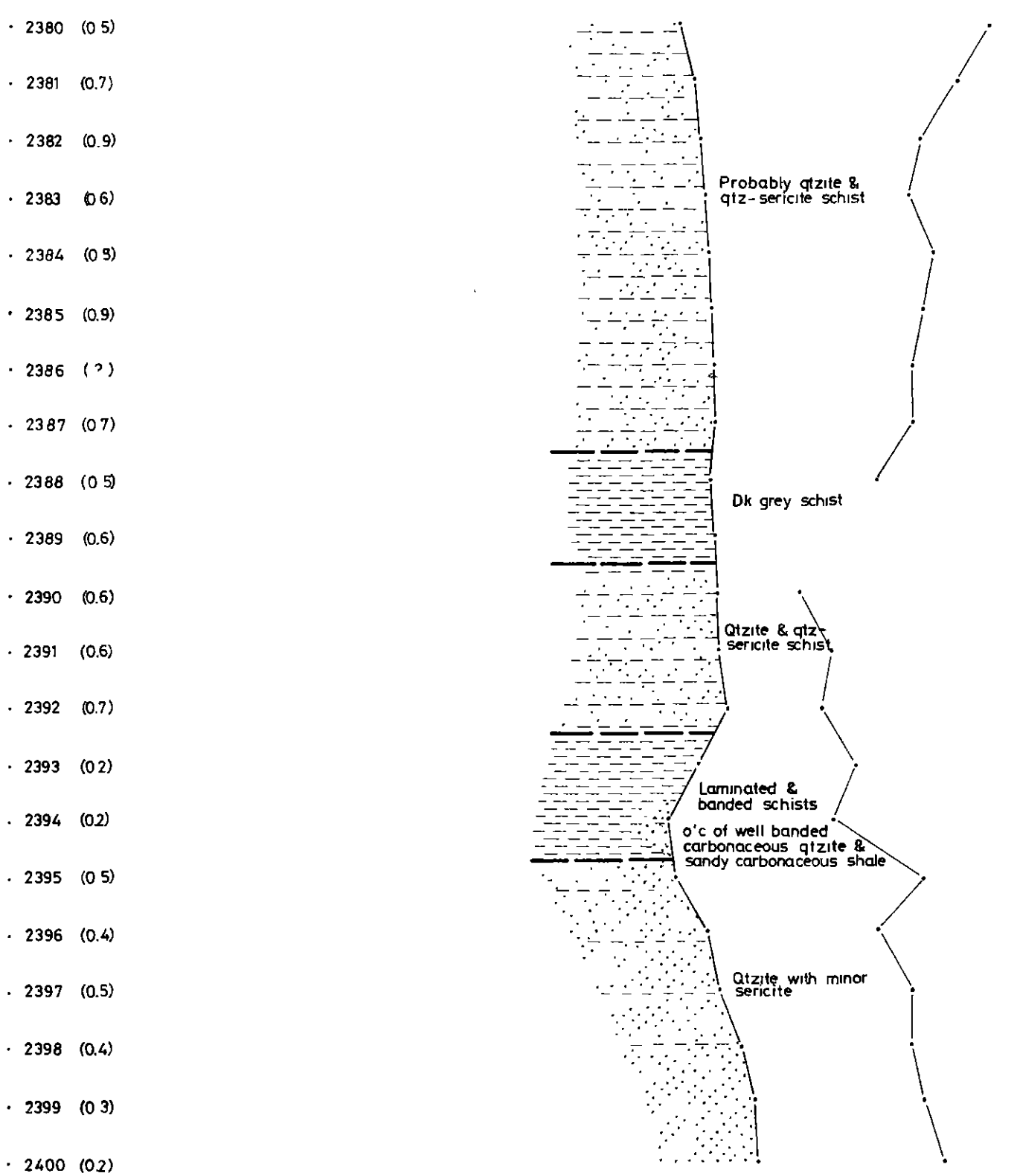
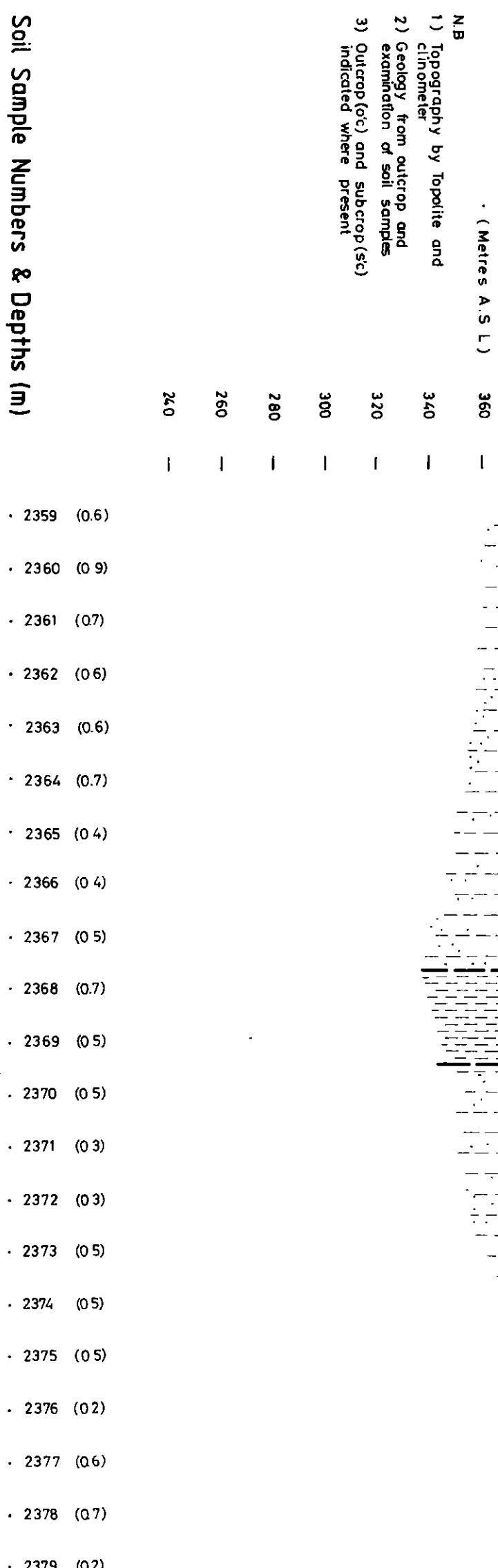
DIP ANGLE



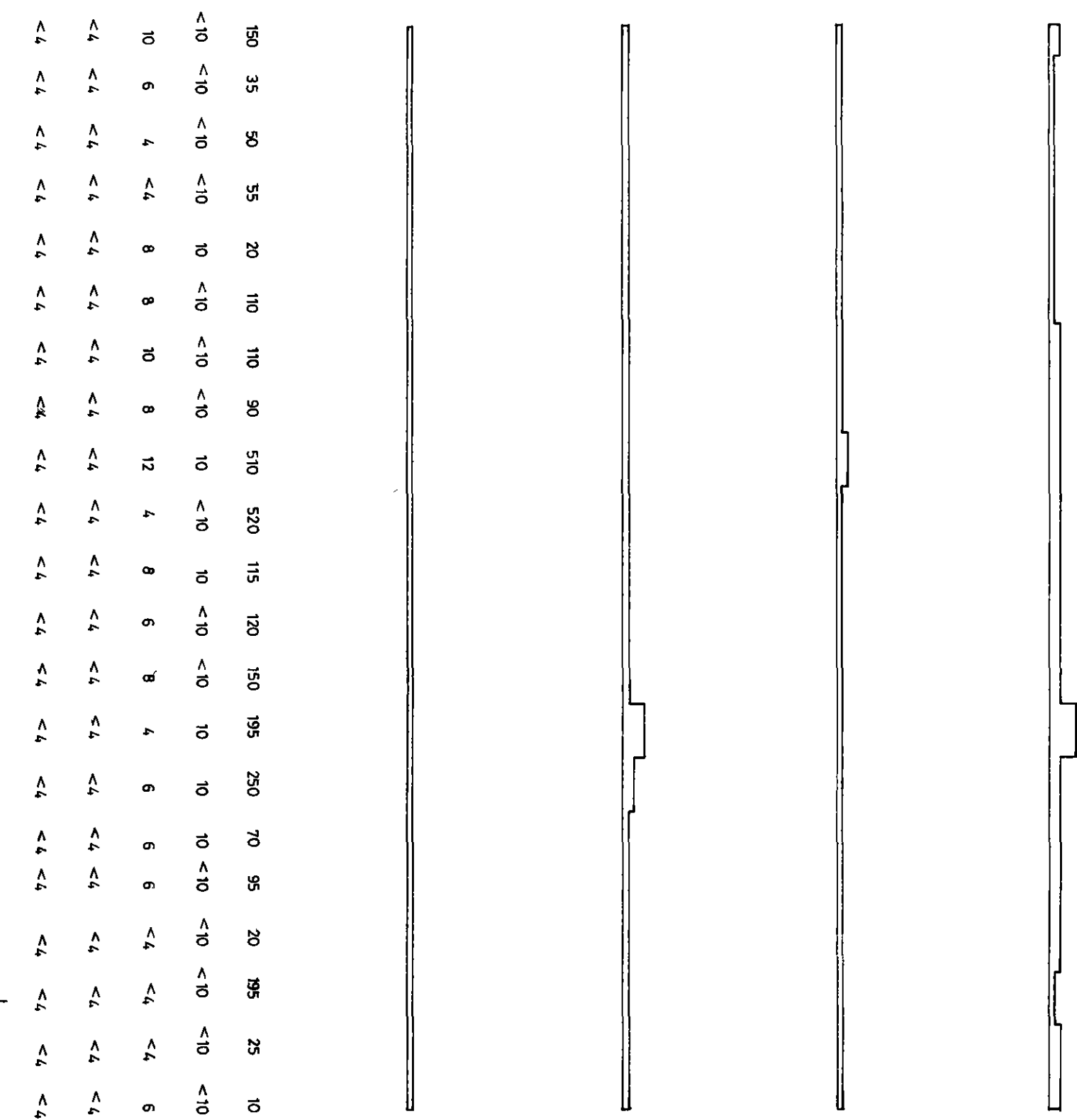
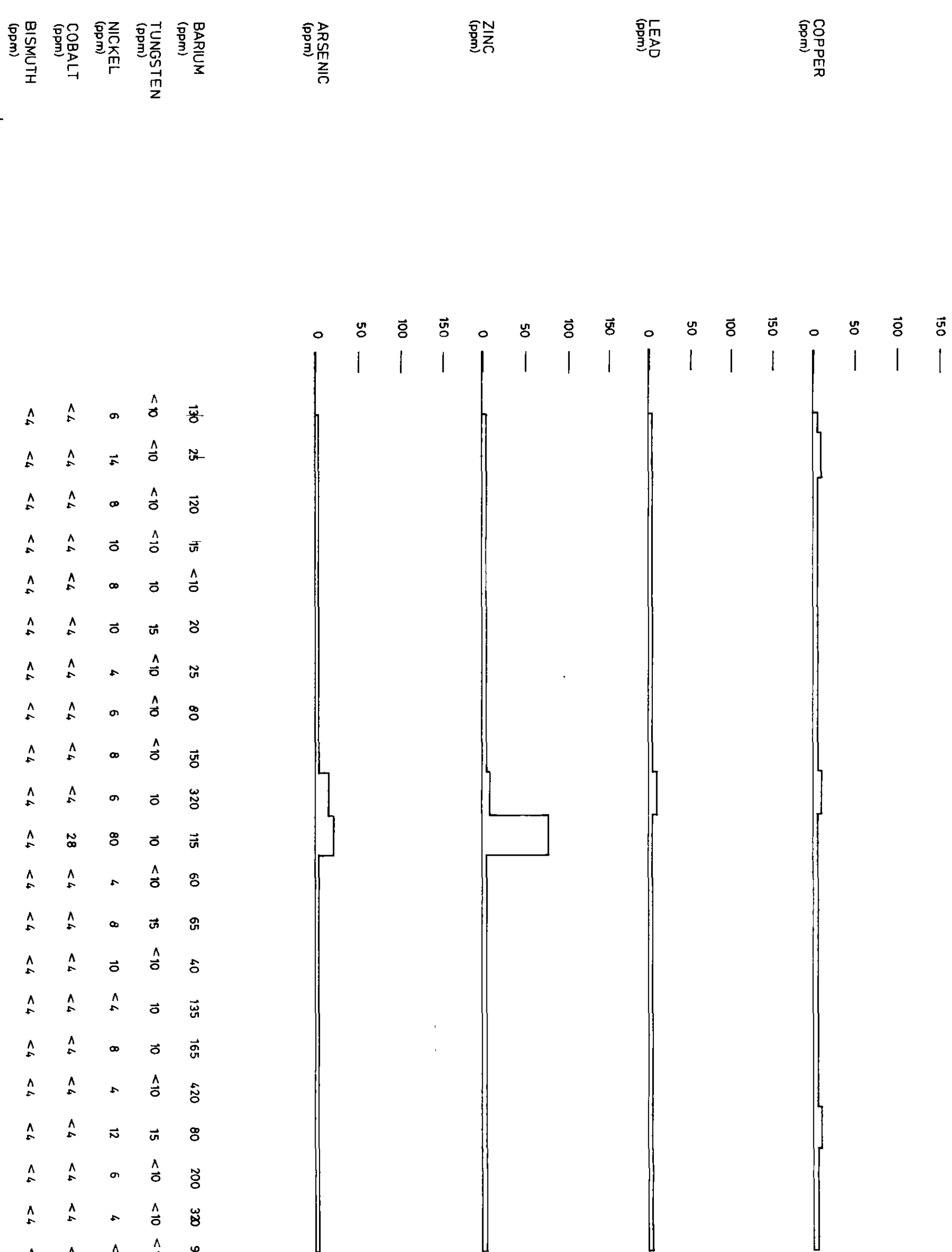
Topography & Geology

(Metres A.S.L.)

N.B.
1) Topography by Toppette and
clinometer
2) Geology from outcrop and
aerial photograph
3) Outcrop (top) and subcrop (ss)
indicated where present



Soil Sampling Results



200 N 300 N 400 N 500 N 600 N 700 N 800 N

716364

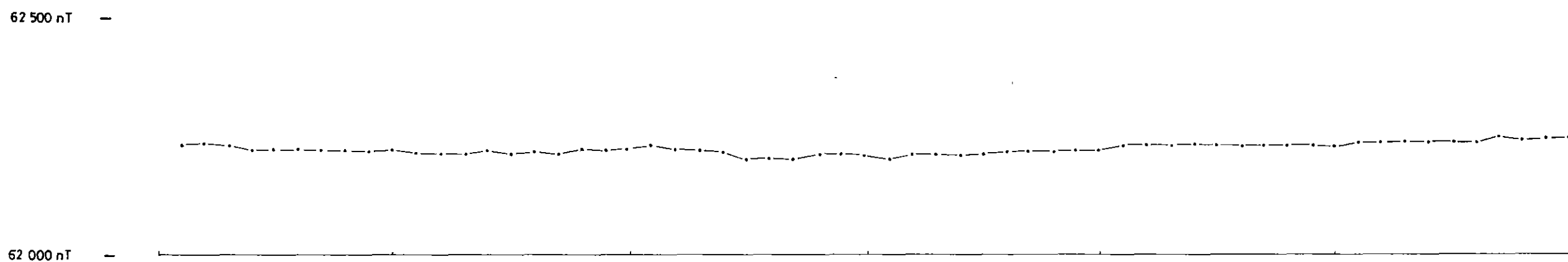
50 40 30 20 10 0 50 100M



The Shell Company of Australia Limited		METALS DIVISION		E.L. 2/78 GRANITE TOR	
VICTORIA PEAK: ANOMALY 10		BASELINE 1000 E		200N - 800N	
2486		Scale 1:2000 Horizontal		REPORT No.	
FIG. No.		DRG. No. D/NP01/008		AUTHOR D. SPEIJERS	
DATE 2-12-81		DRAWN H. L. H.		OFFICE DEVONPORT	

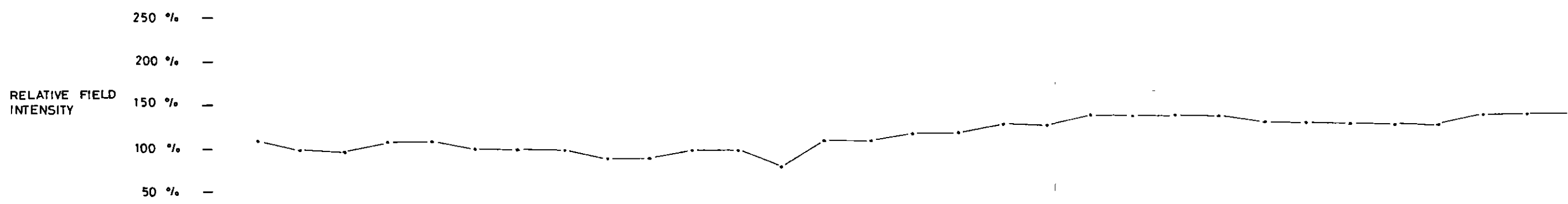
Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

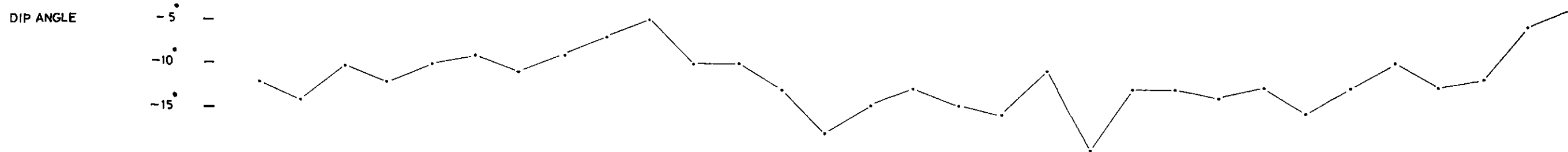


V.L.F.

N.B.
READINGS TAKEN USING
N.W. CAPE TRANSMITTER



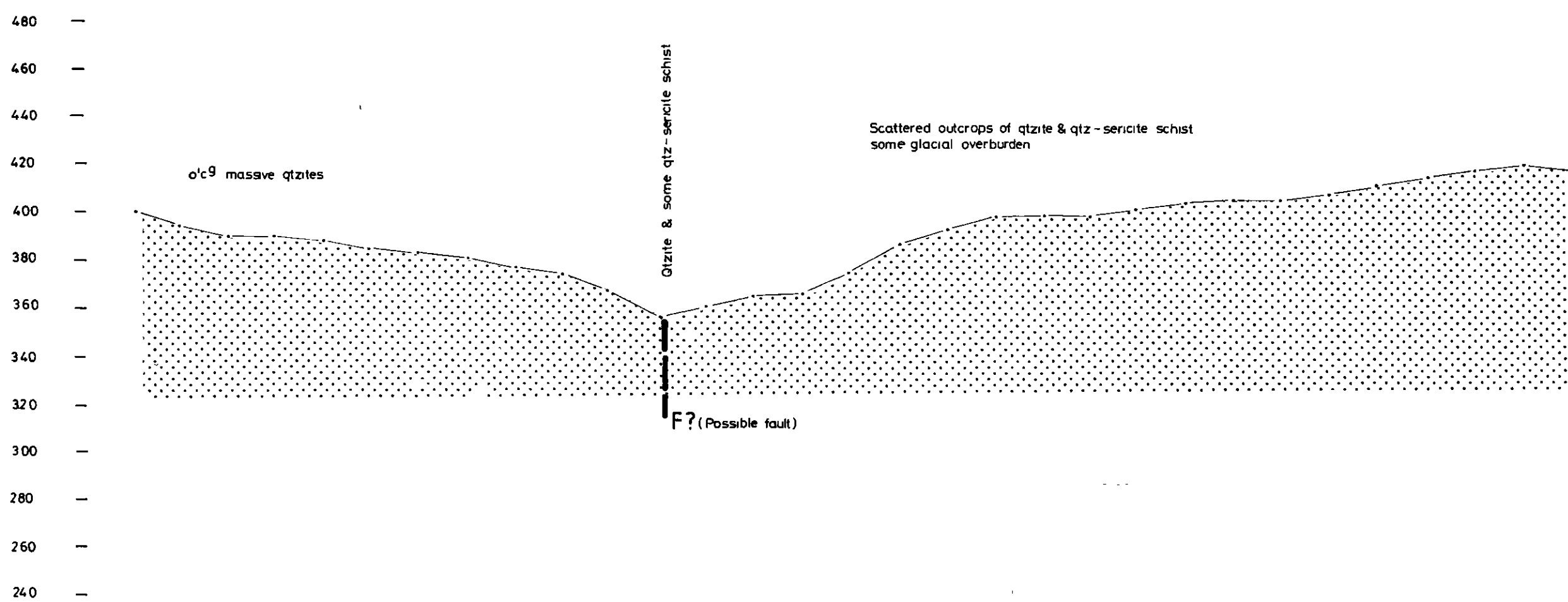
V.L.F.



Topography & Geology

N.B.
1) Topography by Topolite and clinometer.
2) Geology from outcrop and examination of soil samples.
3) Outcrop (oc) and subcrop (sc) indicated where present.

(Metres A.S.L.)



Total Magnetic Intensity

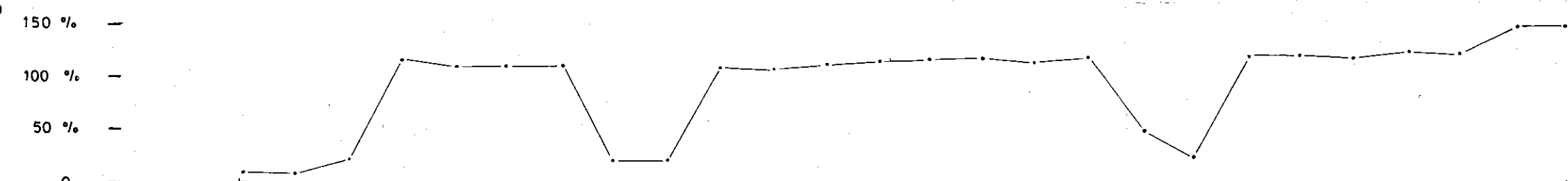
N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack.



V.L.F.

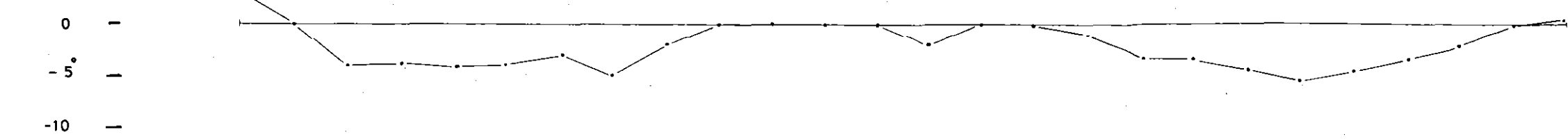
N.B.
READINGS TAKEN USING N.W. CAPE TRANSMITTER

RELATIVE FIELD INTENSITY



V.L.F.

DIP ANGLE

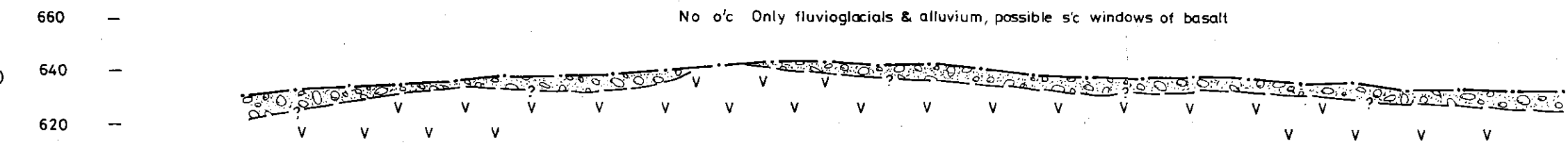


NOTE:
Fluctuations in amplitude of V.L.F. transmission occurred during survey.

Topography & Geology

N.B.
1) Topography by Topolite and clinometer.
2) Geology from outcrop and examination of soil samples.
3) Outcrop (o/c) and subcrop (s/c) indicated where present.

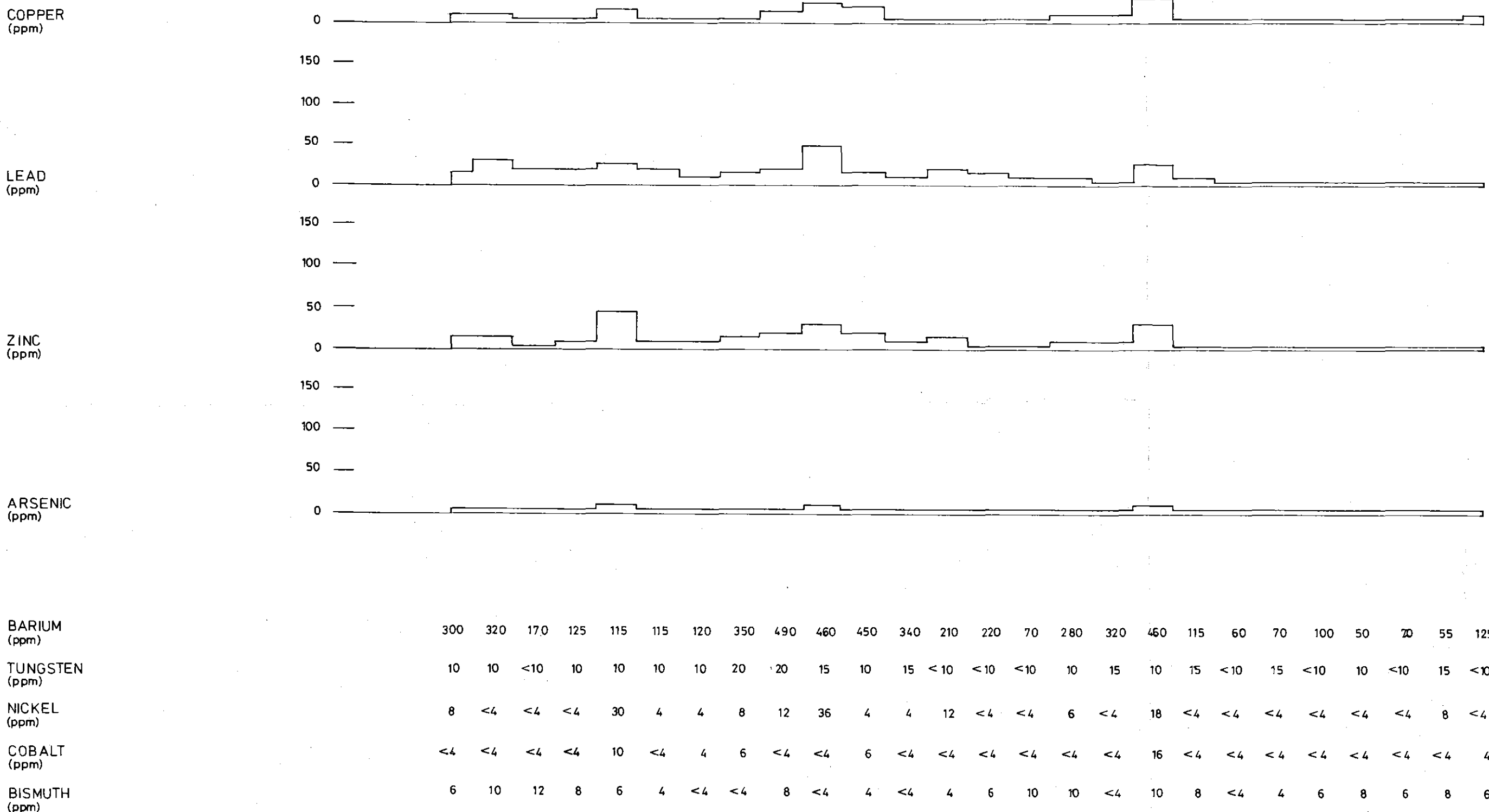
(Metres A.S.L.)

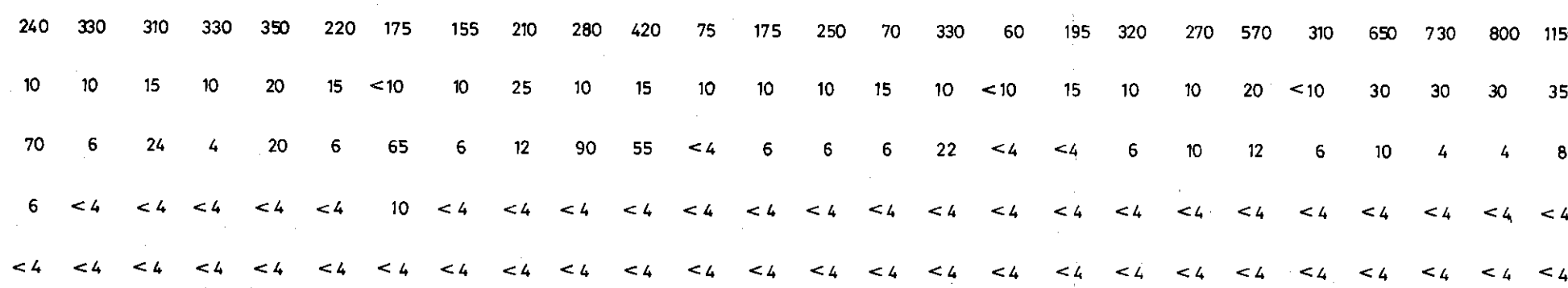
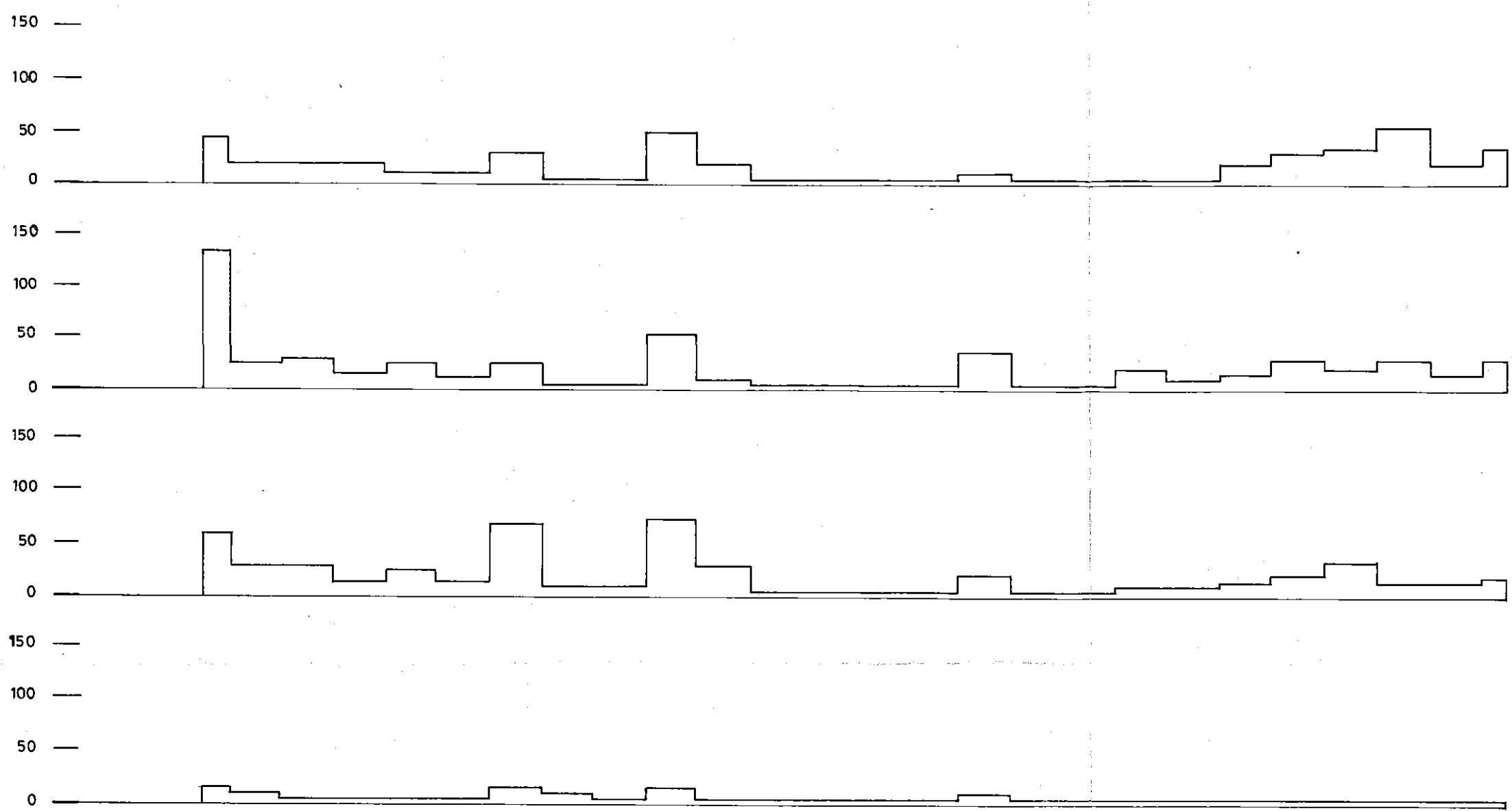
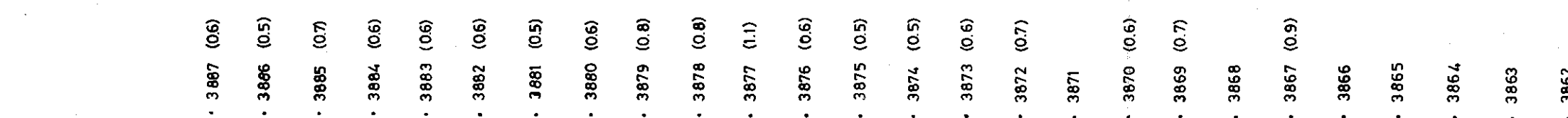
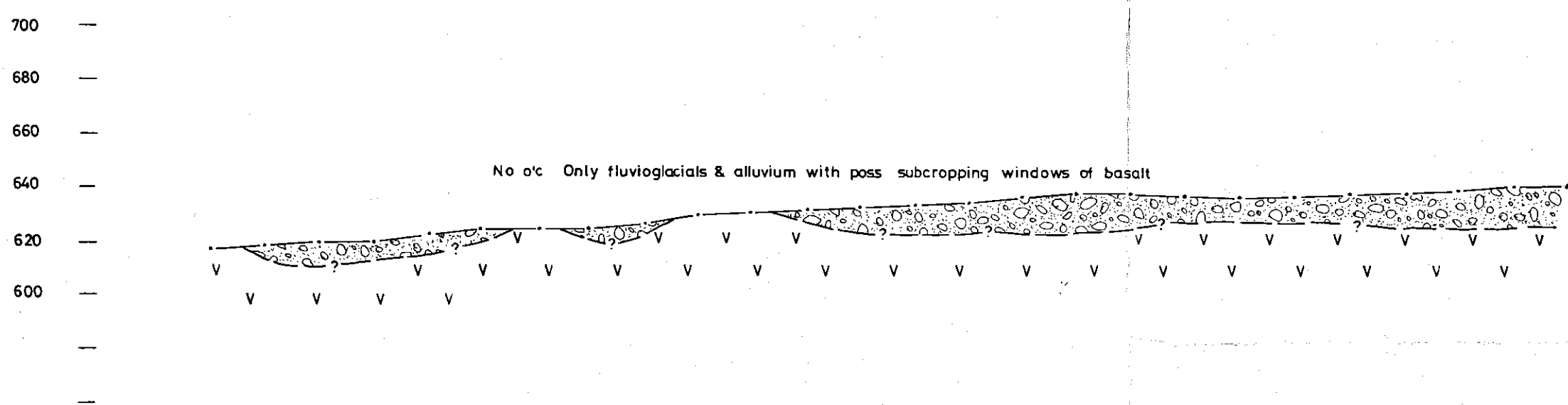
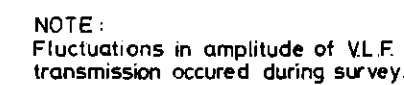
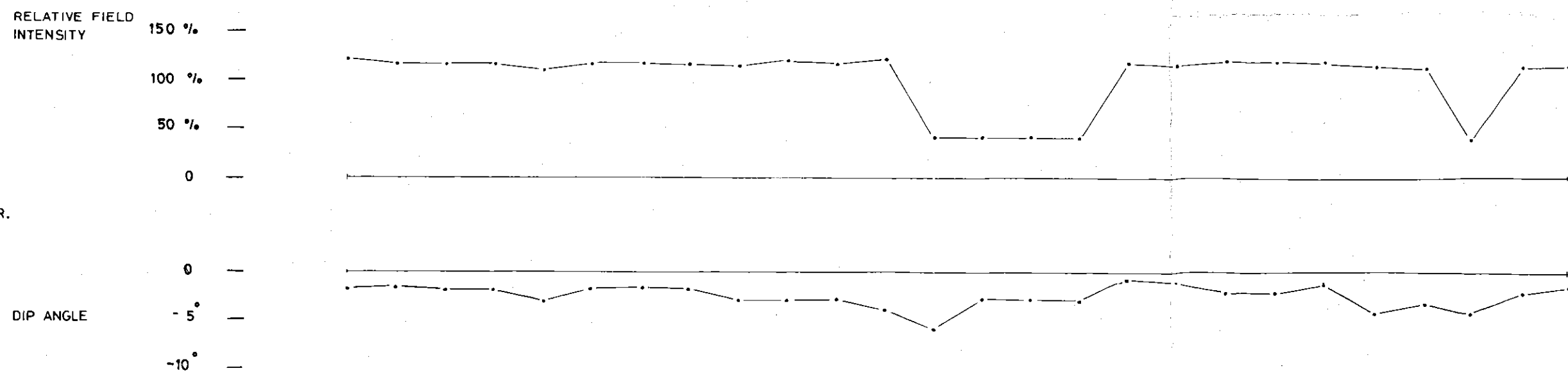
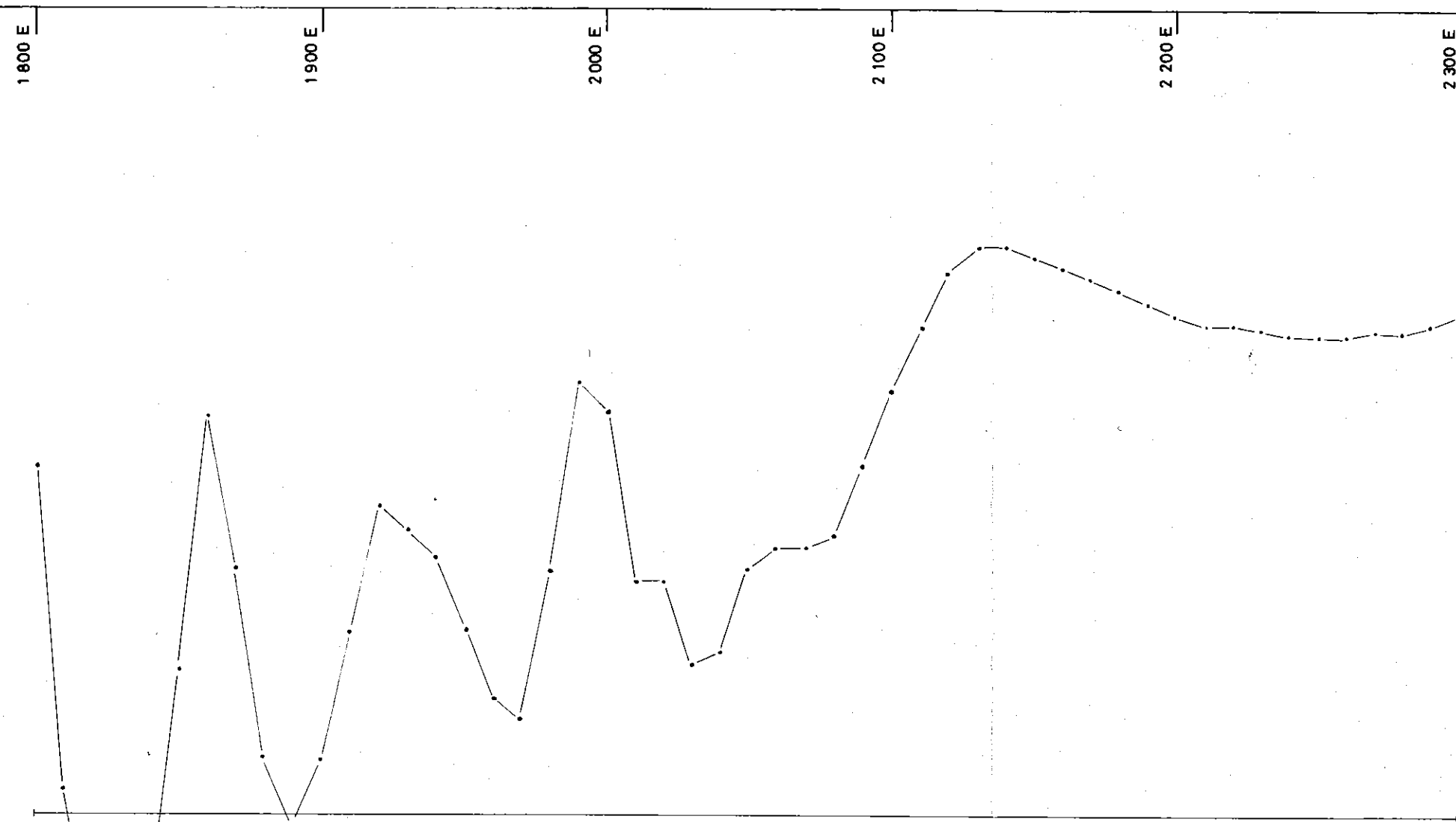
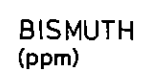
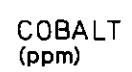
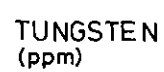
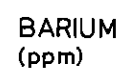
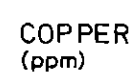
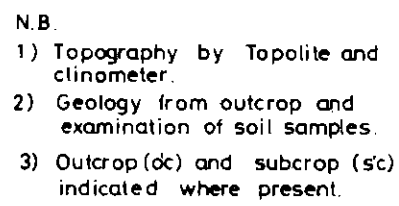
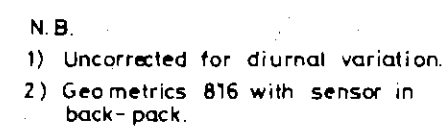


Soil Sample No's & Depths (m)

• 3757 (0.5)	• 3756 (0.8)	• 3755 (0.7)	• 3754 (0.7)	• 3753 (0.8)	• 3752 (0.4)	• 3751 (0.4)	• 3750 (0.7)	• 3749 (0.6)	• 3748 (0.4)	• 3747 (0.7)	• 3746 (0.7)	• 3745 (0.6)	• 3744 (0.9)	• 3743 (0.7)	• 3742 (0.8)	• 3741 (0.7)	• 3740 (1.0)	• 3739 (0.8)	• 3738 (0.8)	• 3737 (0.7)	• 3736 (0.8)	• 3735 (0.9)	• 3734 (0.4)	• 3733 (0.6)	• 3732 (0.9)

Soil Sampling Results



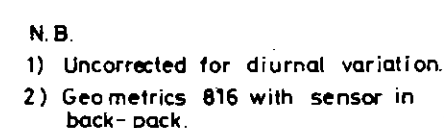


716368

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
ROMULUS WEST: ANOMALY 2
LINE 400 N
1800E-2300 E 2490

FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/INP01/012
DATE 12-1-82	AUTHOR D. SPEIJERS
DRAWN H. L. H.	OFFICE DEVONPORT.



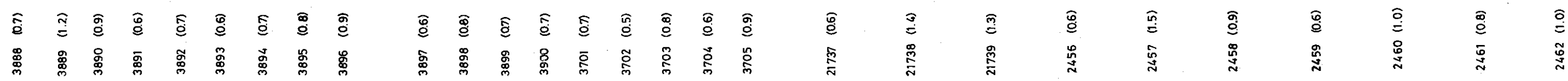
NOTE:
Fluctuations in amplitude of V.L.F.
transmission occurred during survey.

N.B.
READINGS TAKEN USING
N.W. CAPE TRANSMITTER.

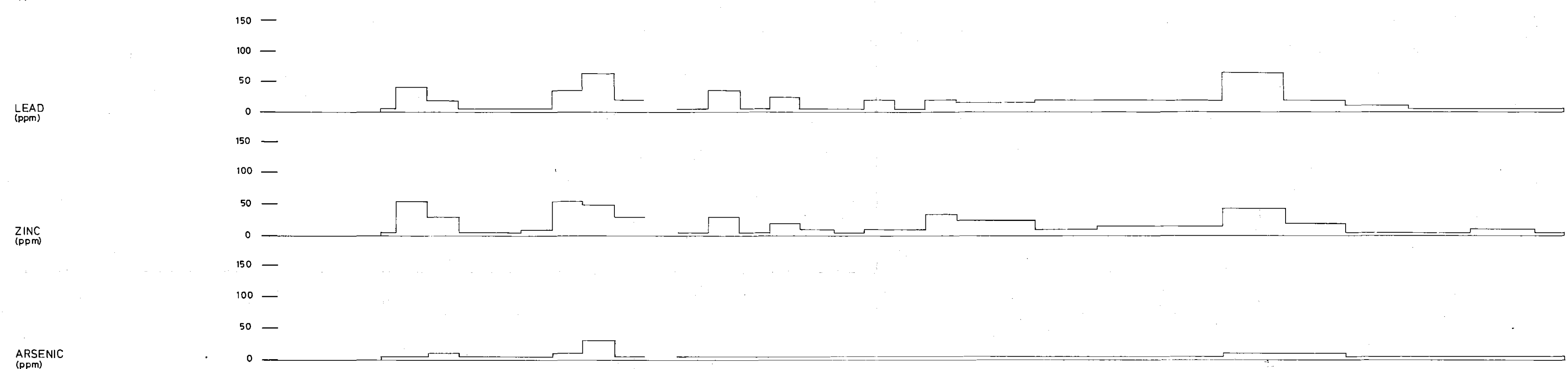
DIP ANGLE

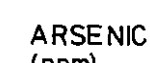
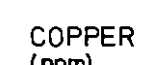
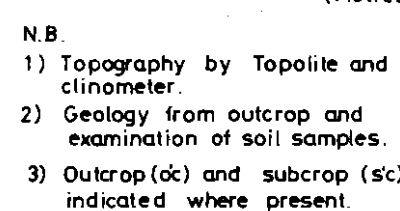
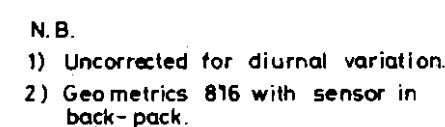


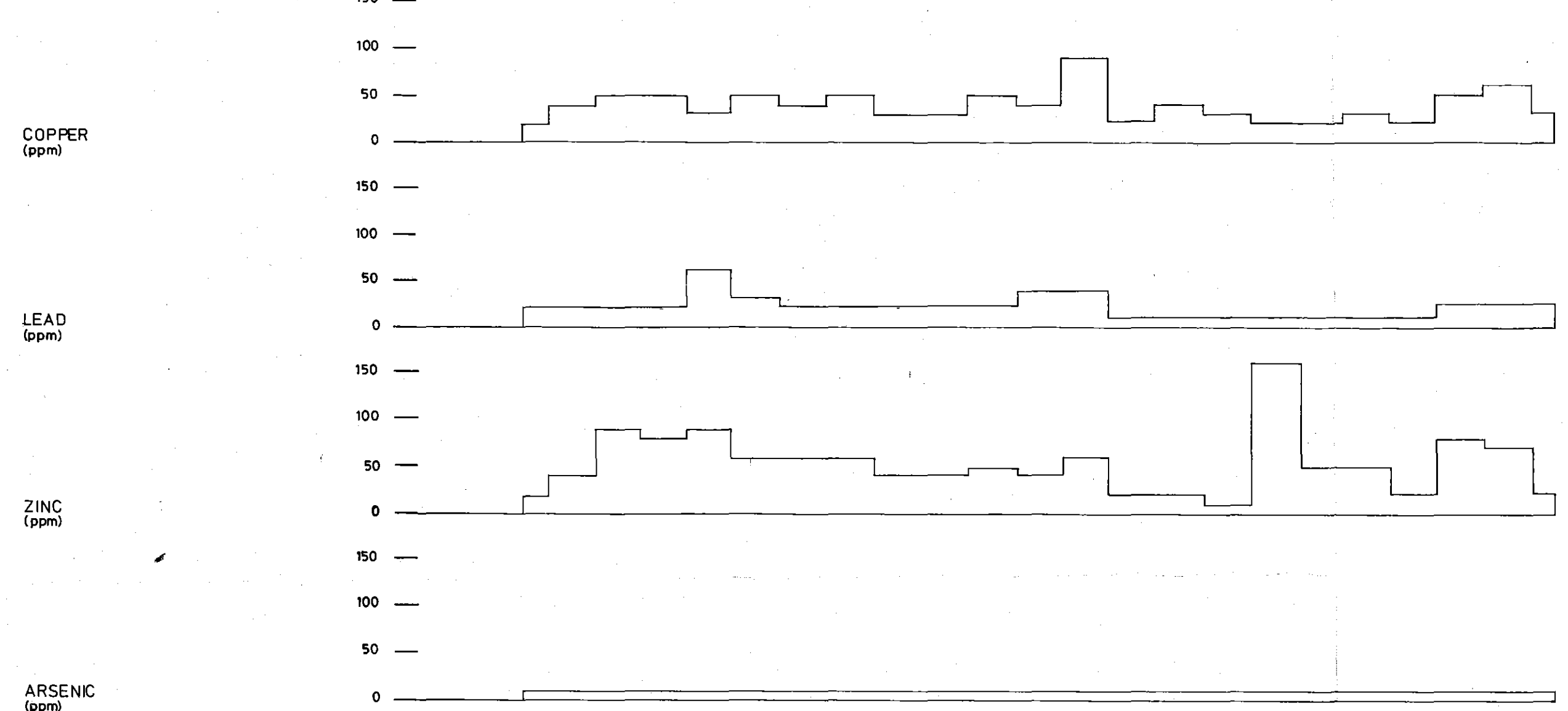
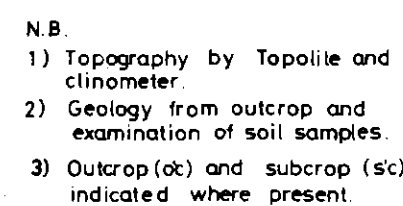
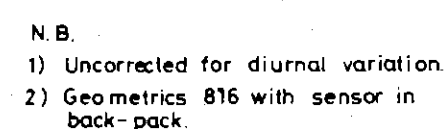
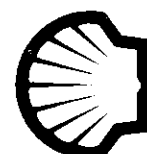
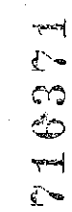
- 1) Topography by Topolite and clinometer.
- 2) Geology from outcrop and examination of soil samples.
- 3) Outcrop (oc) and subcrop (sc) indicated where present.



COPPER
(ppm)

[illegible]

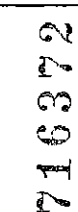
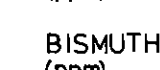
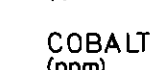
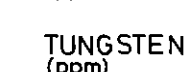
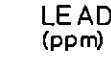
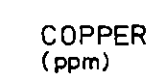
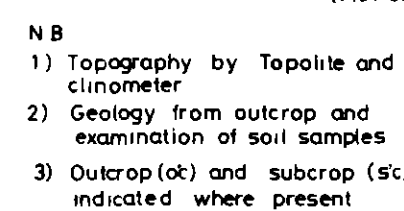
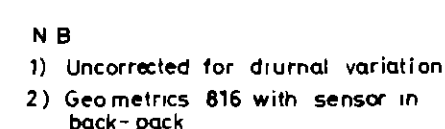


[illegible]

The Shell Company of Australia Limited
METALS DIVISION
52-1225
(N01 212)

E.L. 2178 GRANITE TOR
ROMULUS WEST: RAY'S PROSPECT
LINE 2400 N
900E - 1360E 2493

FIG No.	REPORT No.
ENCL No	DRG No. D/NP01/015 A
DATE	AUTHOR D SPEIJERS
DRAWN H I H	OFFICE DEVONPORT



The Shell Company of Australia Limited

METALS DIVISION

E.L. 2/78 GRANITE TOR

ROMULUS WEST : ANOMALY 1

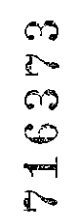
LINE 2400N
1310E - 1810E

1340 E - 1640 L
2494

Scale 1 2000 Horizontal

FIG No	REPORT No
ENCL No	DBG No
	D/NP01/015 B

DATE	12 - 1 - 82	AUTHOR	D SPEIJERS



The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
ROMULUS WEST: ANOMALY 1
LINE 2000 N
1340E-1840E

2495

Scale 1 2000 Horizontal

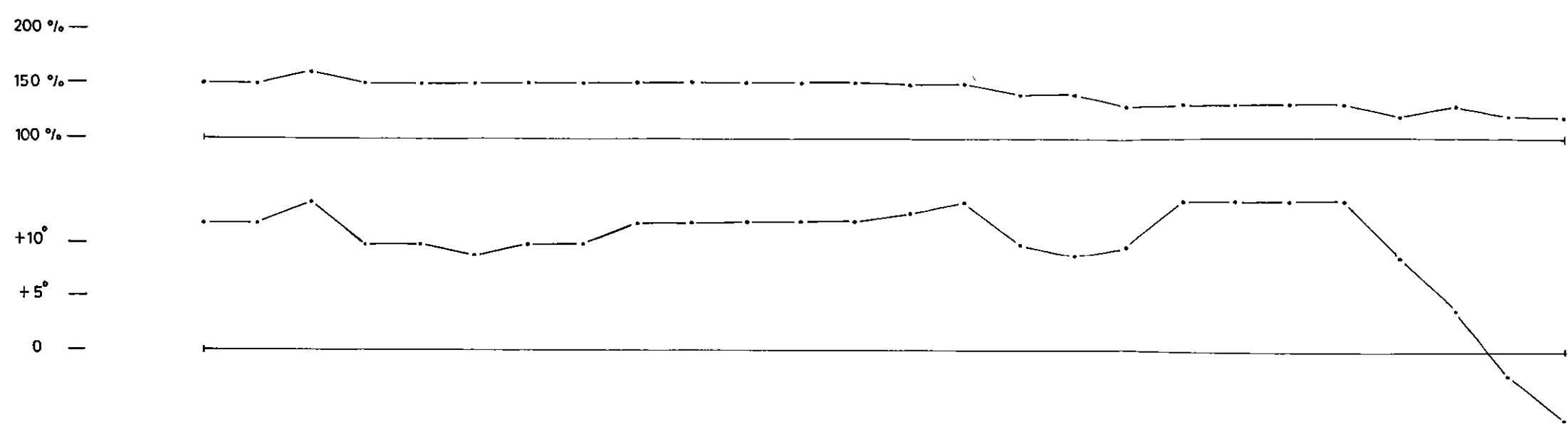
FIG No	REPORT No

ENCL No	DRG No
DATE	AUTHOR
13-1-82	D SPEIJERS

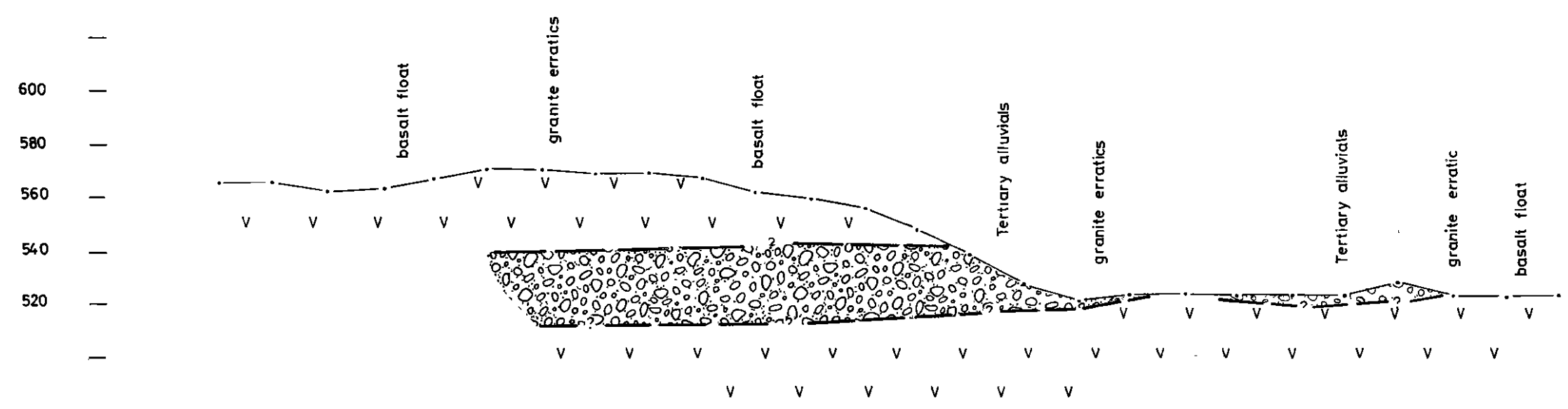
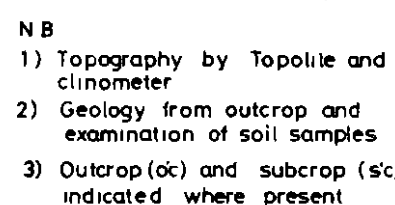
DRAWN	H L H.	OFFICE	DEVONPORT

N B

- 1) Uncorrected for diurnal variation
- 2) Geometrics 816 with sensor in back-pack

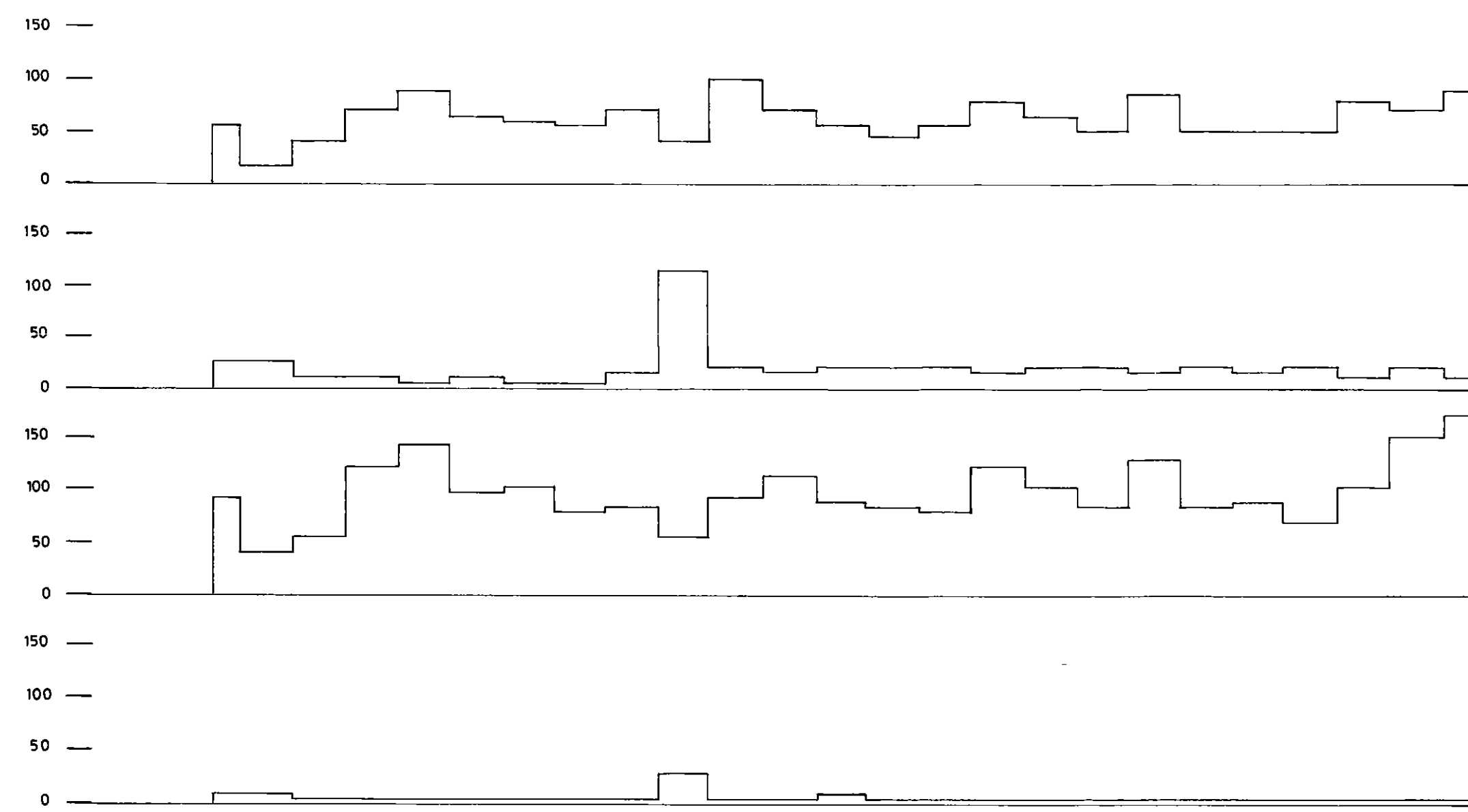


(Metres A S L)



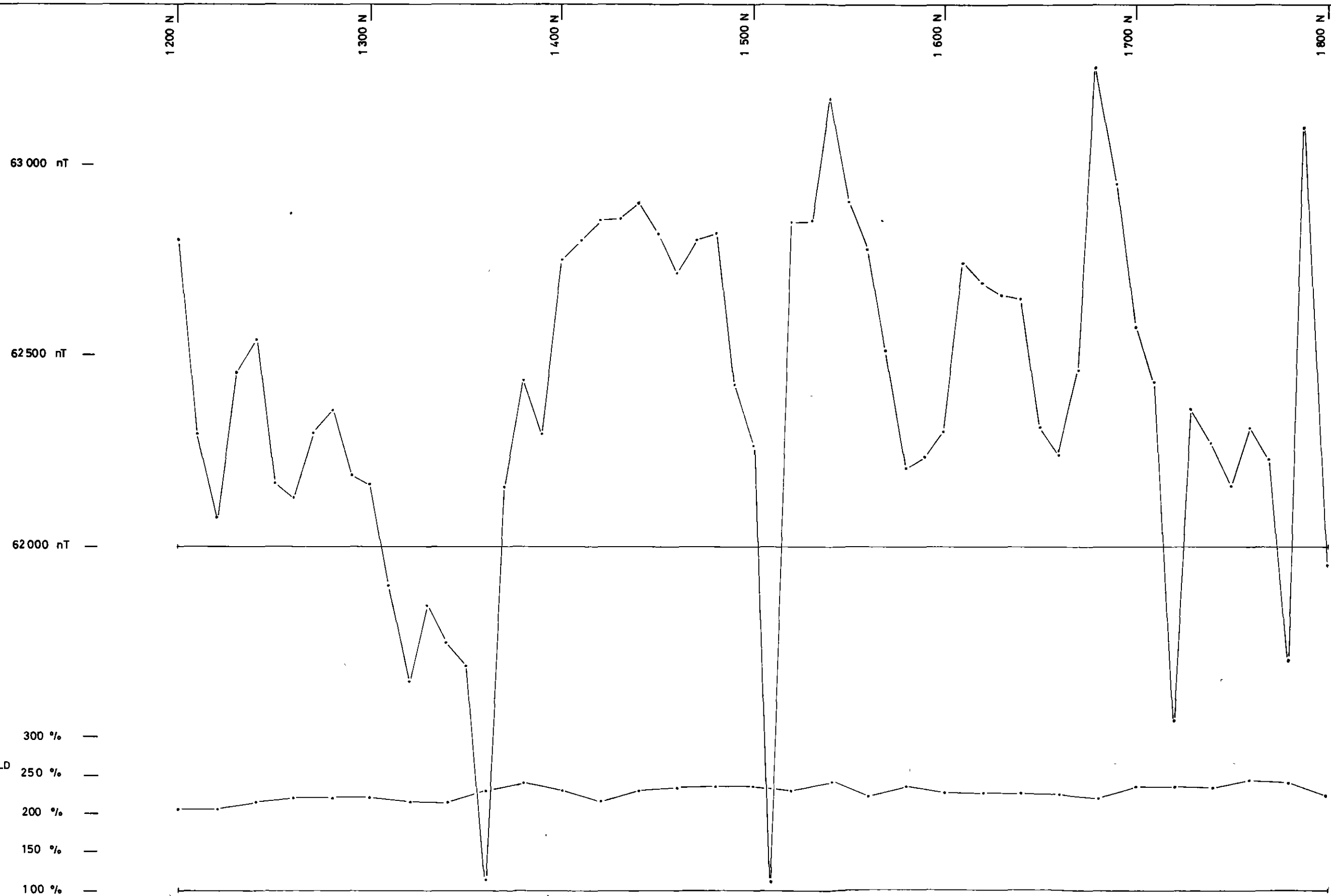
3103	(0.7)
3104	(0.7)
3105	(0.6)
3106	(0.6)
3107	(1.7)
3108	(1.1)
3109	(1.0)
3110	(0.0)
3111	(1.0)
3112	(0.4)
3113	(1.7)
3114	(1.9)
3115	(1.1)
3116	(1.0)
3117	(0.8)
3118	(1.1)
3119	(0.6)
3120	(1.0)
3121	(0.9)
3122	(0.7)
3123	(1.5)
3124	(2.0)
3125	(1.6)
3126	(0.5)
3127	(0.5)

COPPER
(ppm)

[illegible]

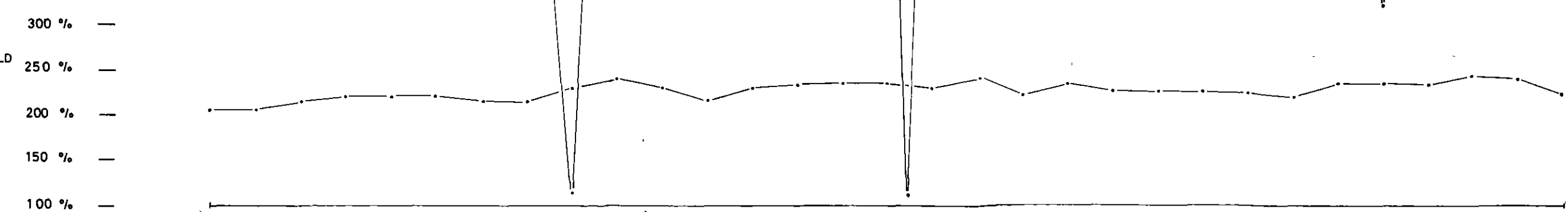
Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F.

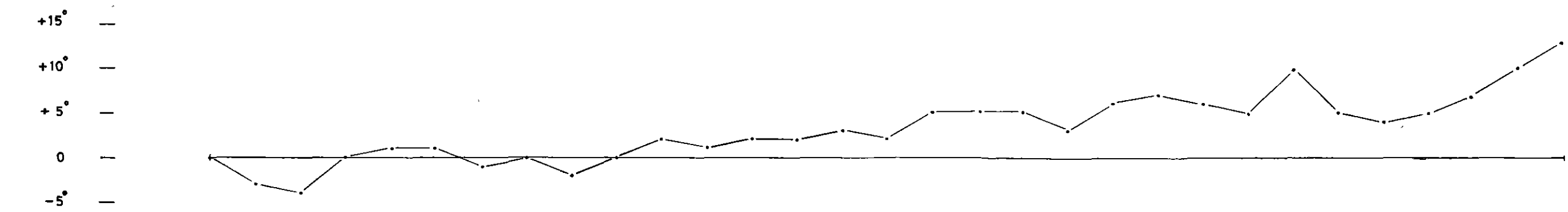
RELATIVE FIELD INTENSITY



N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

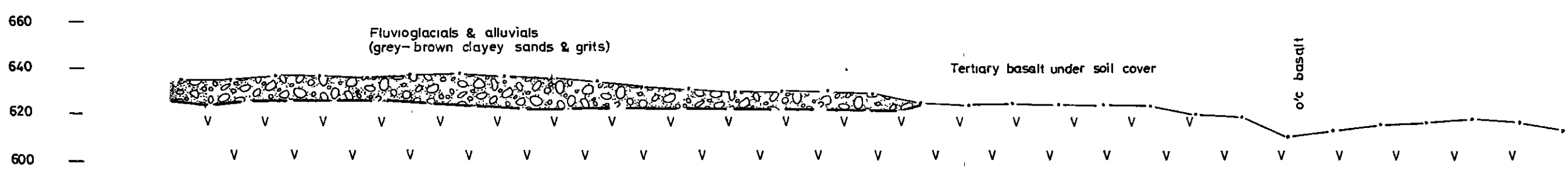
DIP ANGLE



Topography & Geology

N B
1) Topography by Topolite and clinometer.
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present

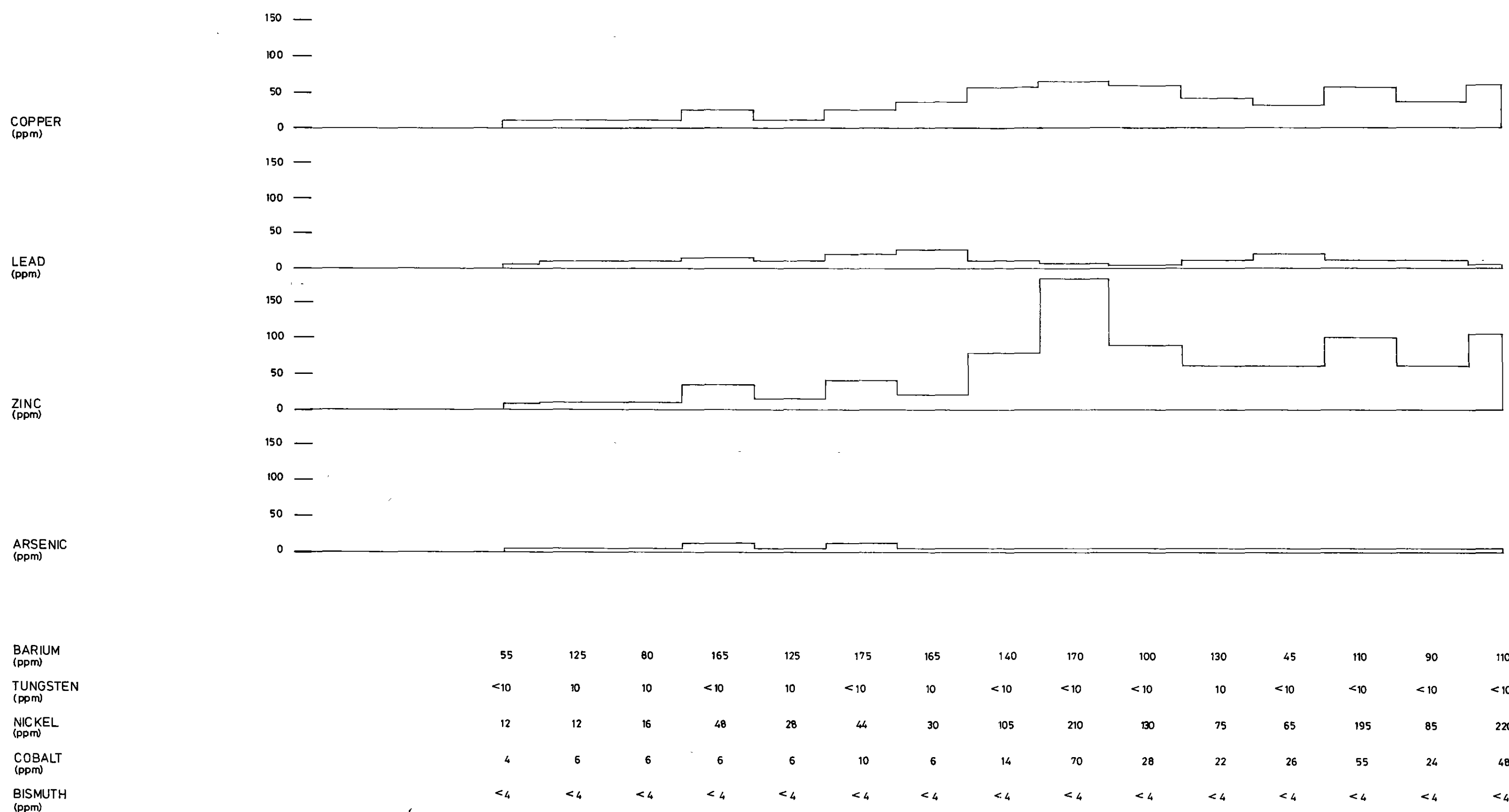
(Metres A S L)

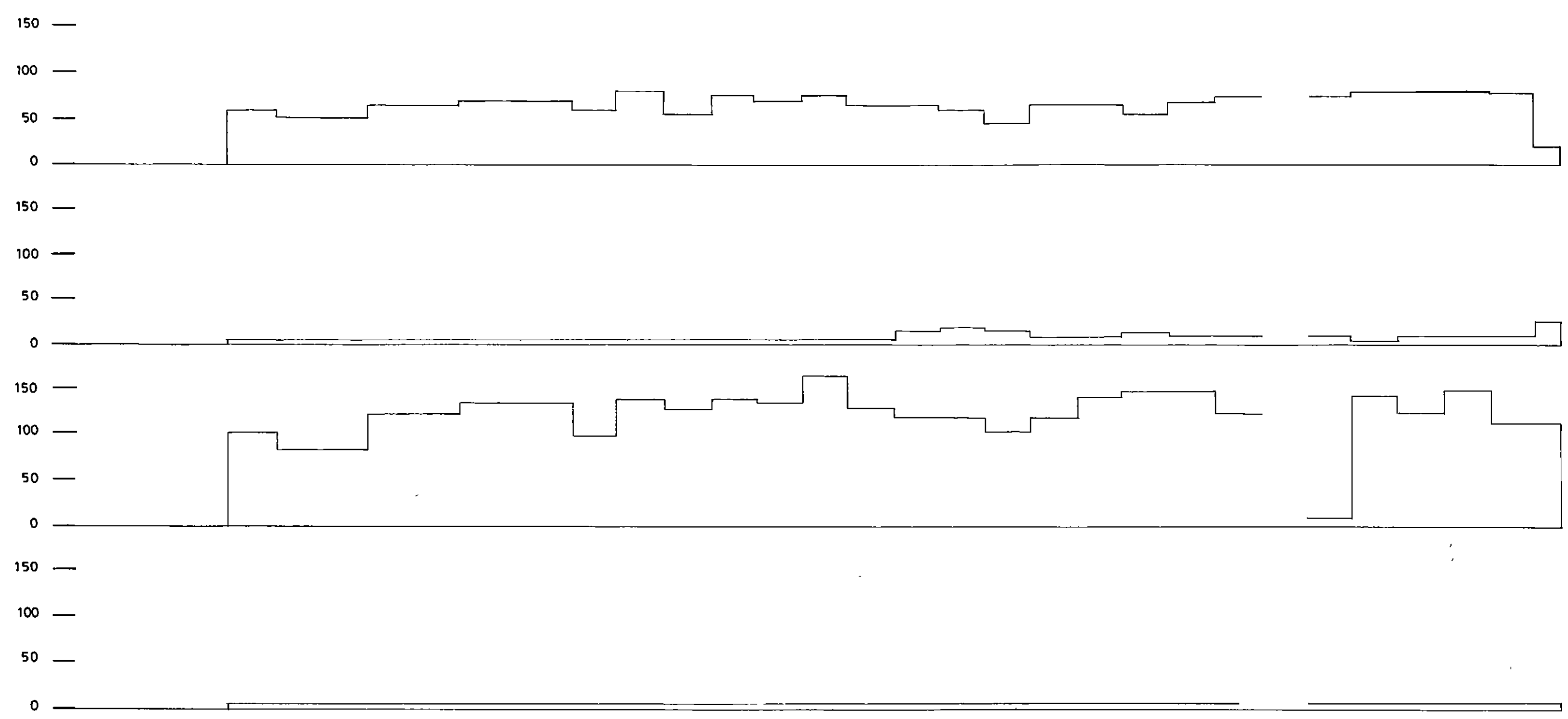
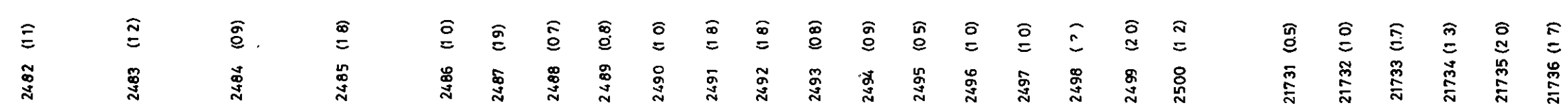
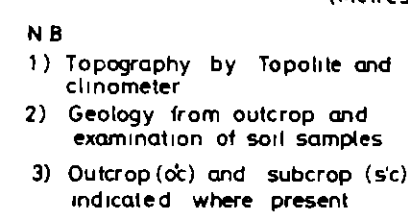
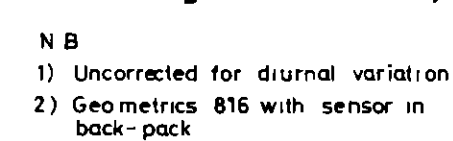


Soil Sample No's & Depths (m)

• 2468 (0.3)	• 2469 (1.0)	• 2470 (0.7)	• 2471 (0.8)	• 2472 (0.6)	• 2473 (0.7)	• 2474 (1.0)	• 2475 (1.8)	• 2476 (1.8)	• 2477 (0.6)	• 2478 (0.9)	• 2479 (0.7)	• 2480 (0.8)	• 2481 (0.9)	• 2482 (1.1)

Soil Sampling Results





BARIUM (ppm)	110	145	135	185		240	145	125	115	135	170	250	95	115	120	170	150	135	220	135		105	135	90	80	60	150
TUNGSTEN (ppm)	10	< 10	< 10	< 10		< 10	< 10	< 10	< 10	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10	< 10	10	15
NICKEL (ppm)	220	155	210	230		160	240	190	210	195	230	205	200	170	150	160	190	170	230	220		230	220	230	210	200	38
COBALT (ppm)	48	46	50	50		30	60	50	50	50	60	48	60	40	32	48	50	46	50	44		60	70	70	40	50	< 4
BISMUTH (ppm)	< 4	< 4	< 4	< 4		< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4		< 4	< 4	< 4	< 4	< 4	< 4



The Shell Company of Australia Limited

METALS DIVISION
82-1825
(NOV 22)

E1 2/78 GRANITE TOP

E.L. 2776 GRANITE TON
DOMILLIS WEST: ANOMALY 1

LINE 197.0 F

LINE 1040 L
1900N-- 2100N
2497

1600N - Z400N

[illegible]

Scale 1 2000 Horizontal

REPORT No	TEST No

ENCL No	DRG No	D/NP017018

DATE	13-1-82	AUTHOR	D SPEIJERS
		RECEIVED	RECEIVED

DRAWN	H L H	OFFICE	DEVONPORT

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

V. L. F.

RELATIVE FIELD INTENSITY

N B
READINGS TAKEN USING NW CAPE TRANSMITTER.

V. L. F.

DIP ANGLE

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (ok) and Subcrop (sc) indicated where present

Soil Sample No's & Depths (m)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

BARIUM (ppm)

TUNGSTEN (ppm)

NICKEL (ppm)

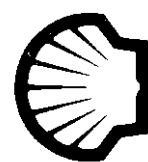
COBALT (ppm)

BISMUTH (ppm)

2467 (0.5)
2466 (0.8)
2465 (0.9)
2464 (2.0)
2463 (0.6)

150 100 350 410 40
<10 <10 10 10 <10
18 6 44 65 6
6 6 6 10 6
<4 <4 <4 <4 <4

716376



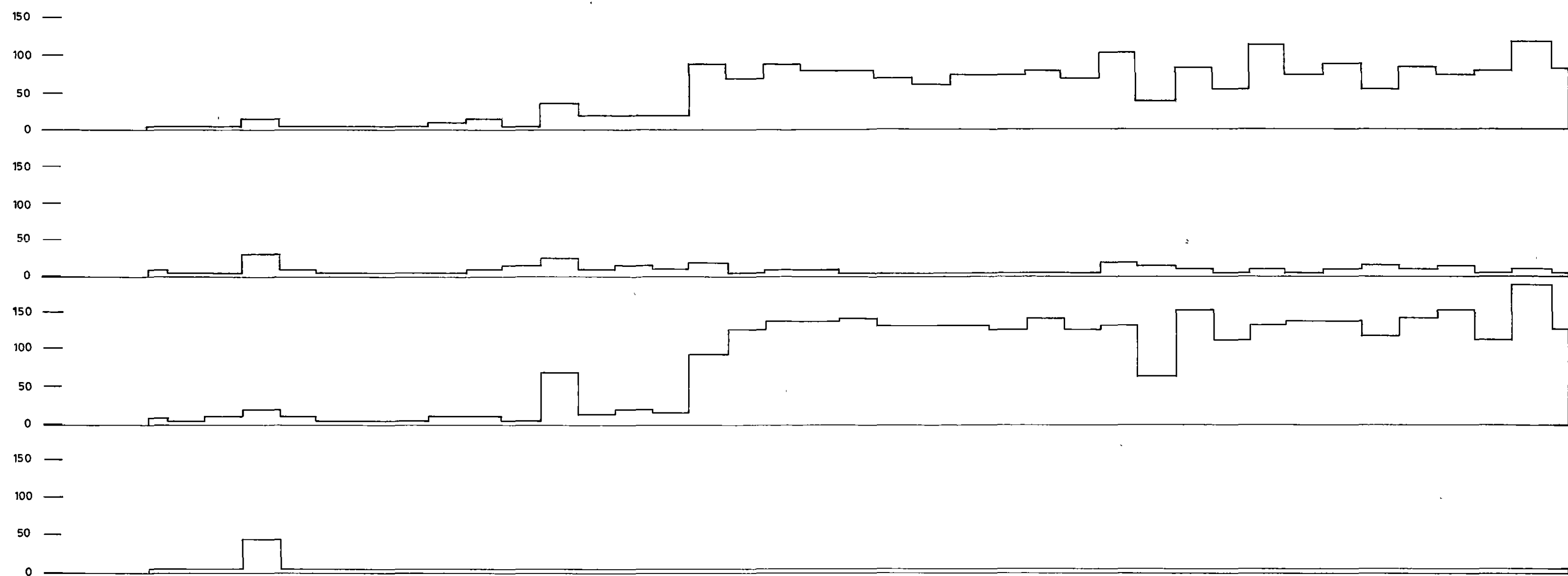
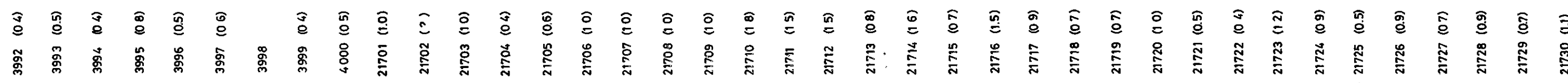
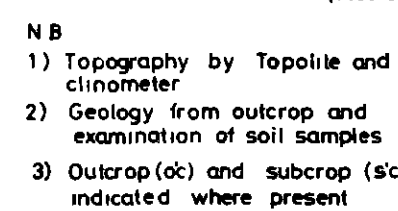
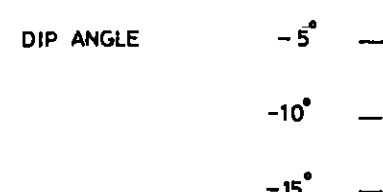
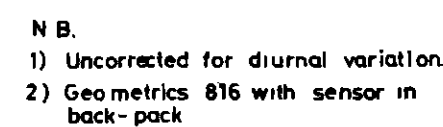
The Shell Company of Australia Limited
METALS DIVISION

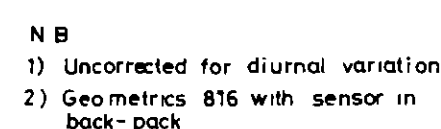
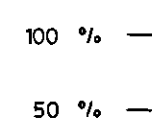
E.L. 2/78 GRANITE TOR
ROMULUS WEST: ANOMALY 1
LINE 1 200 N
1840 - 2000 E 2498

FIG No	REPORT No
ENCL No	DRG No D/MP01/019
DATE 13-1-82	AUTHOR D SREJERS
DRAWN H L H	OFFICE DEVONPORT

Scale 1:2000 Horizontal

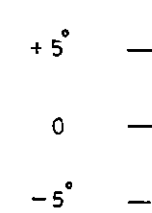
Vertical

[illegible]

RELATIVE FIELD
INTENSITY

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

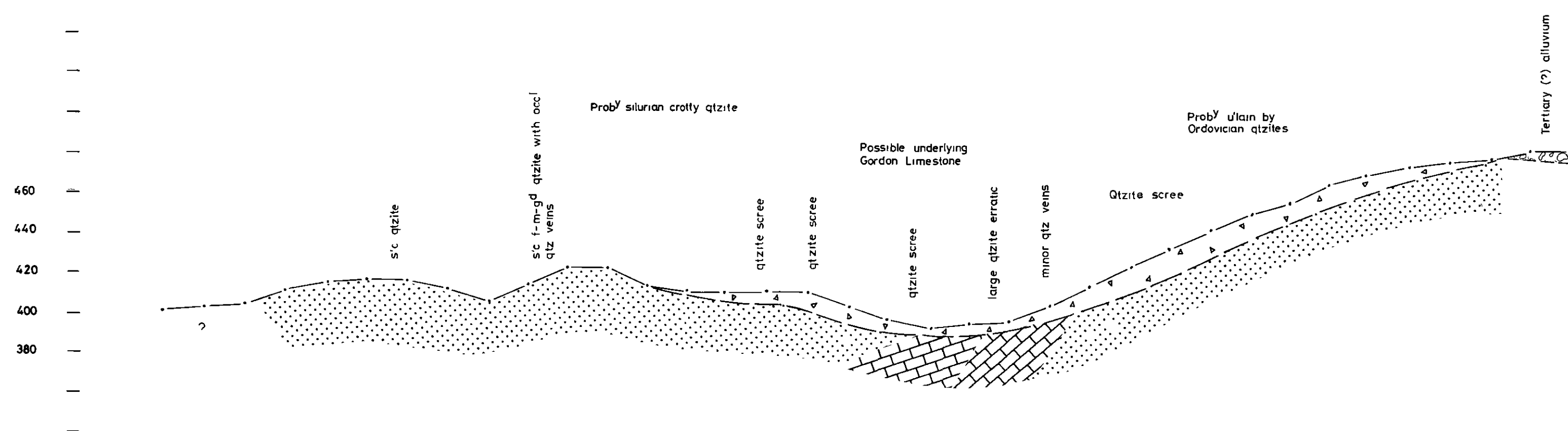
DIP ANGLE



(Metres A S L)

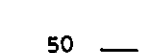
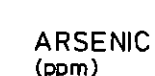
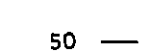
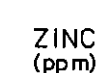
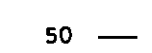
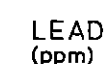
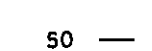
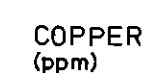
N B

- 1) Topography by Topolite and clinometer
- 2) Geology from outcrop and examination of soil samples
- 3) Outcrop (o/c) and subcrop (s/c) indicated where present



• 3913 (07)
• 3914 (04)
• 3915 (03)
• 3916 (02)
• 3917 (03)
• 3918 (03)
• 3919 (04)
• 3920 (04)
• 3921
• 3922
• 3923
• 3924 (03)
• 3925 (06)
• 3926 (04)
• 3927 (04)
• 3928 (10)
• 3929 (06)
• 3930 (04)
• 3931 (04)
• 3932 (07)
• 3933 (04)
• 3934 (03)
• 3935 (03)
• 3936 (11)
• 3937 (09)
• 3938 (07)
• 3939 (09)
• 3940 (10)
• 3941 (09)
• 3942 (04)
• 3943 (07)
• 3944 (05)
• 3945 (07)
• 3946 (08)
• 3947 (05)
• 3948 (09)

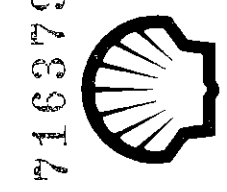
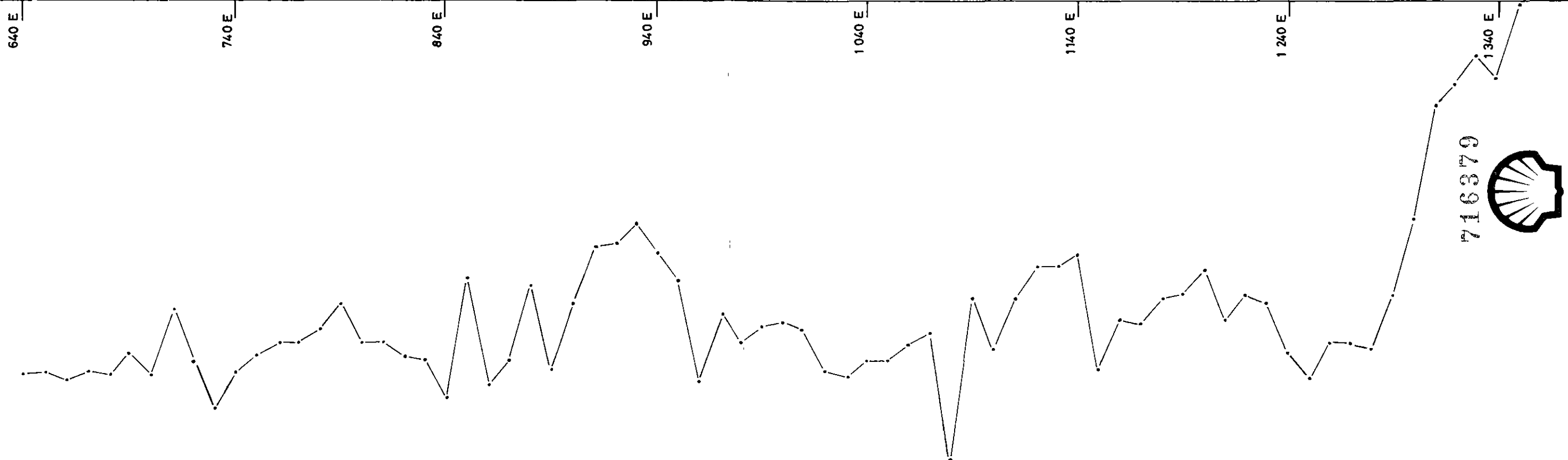
150 —

[illegible]

Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

63000 nT —
62500 nT —
62000 nT —



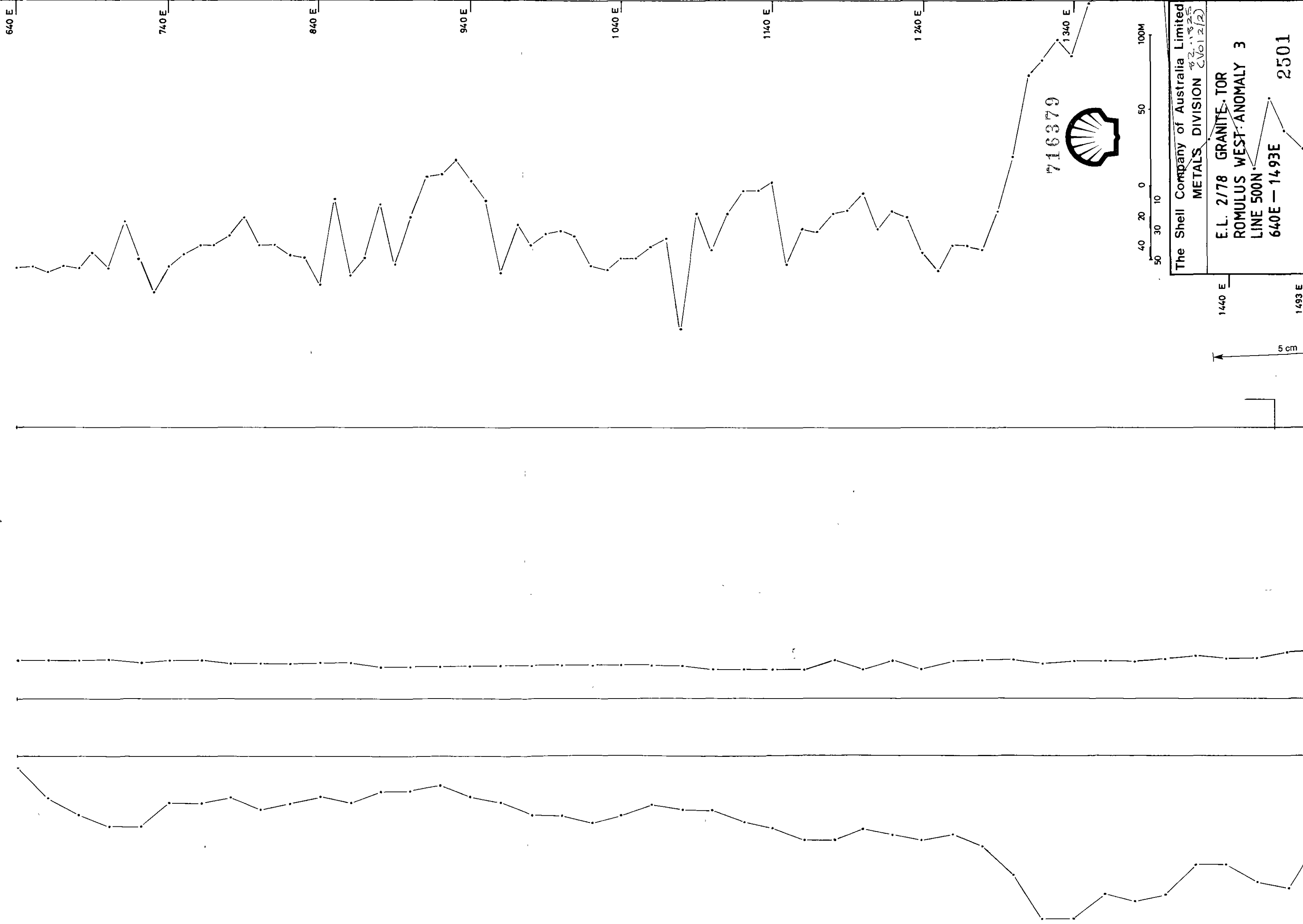
The Shell Company of Australia Limited
METALS DIVISION
E.L. 2/78 GRANITE-TOR
ROMULUS WEST-ANOMALY 3
LINE 500N
640E - 1493E
2501

FIG No	REPORT No
ENCL No	DRG No D/NP01/022
DATE 14-1-82	AUTHOR D SPEIJERS
DRAWN H.L.H.	OFFICE DEVONPORT

V.L.F.

N.B.
READINGS TAKEN USING
NW CAPE TRANSMITTER.

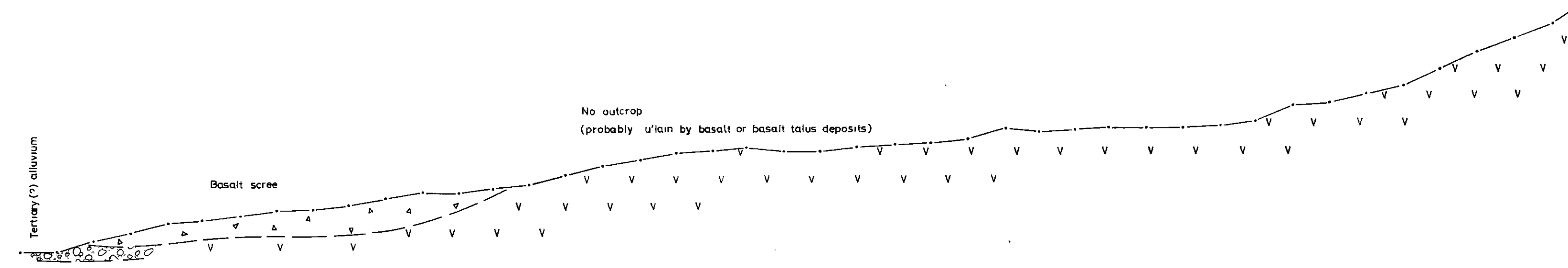
RELATIVE FIELD
INTENSITY 150 % —
100 % —
50 % —
0 —
0 —
5° —
10° —
15° —



Topography & Geology

N.B.
1) Topography by Topolite and
clinometer
2) Geology from outcrop and
examination of soil samples
3) Outcrop (oc) and subcrop (sc)
indicated where present

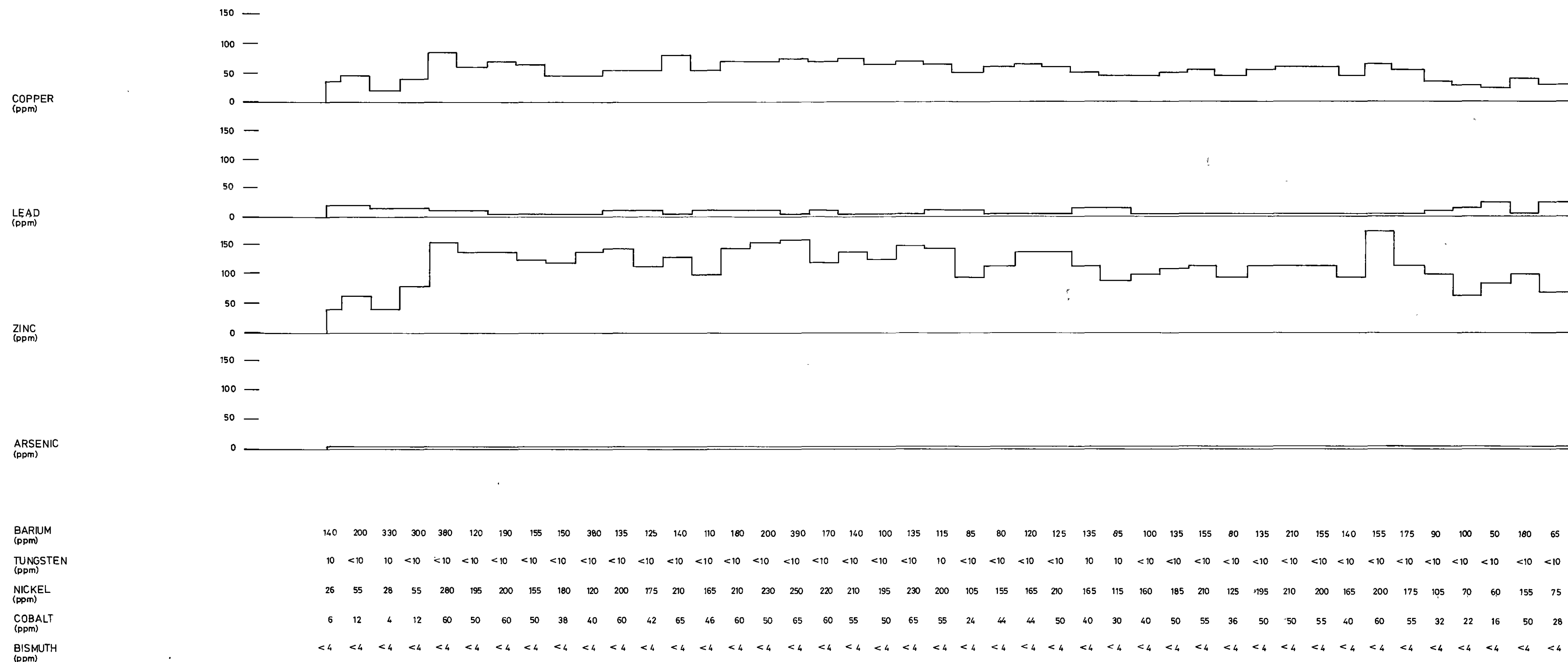
(Metres A.S.L.)
620 —
600 —
580 —
560 —
540 —
520 —
500 —
480 —

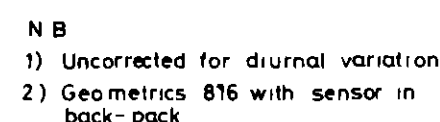


Soil Sample No's & Depths (m)

• 3948 (0.3)
• 3949 (0.7)
• 3950 (0.8)
• 3951 (0.7)
• 3952 (0.7)
• 3953 (1.0)
• 3954 (1.0)
• 3955 (1.0)
• 3956 (0.8)
• 3957 (1.0)
• 3958 (0.6)
• 3959 (1.0)
• 3960 (1.2)
• 3961 (0.8)
• 3962 (1.2)
• 3963 (2.3)
• 3964 (3.0)
• 3965 (2.0)
• 3966 (2.1)
• 3967 (1.5)
• 3968 (2.6)
• 3969 (1.4)
• 3970 (0.7)
• 3971
• 3972 (0.8)
• 3973 (1.3)
• 3974 (1.6)
• 3975 (0.5)
• 3976 (0.7)
• 3977 (1.4)
• 3978 (1.4)
• 3979 (0.8)
• 3980 (0.9)
• 3981 (1.8)
• 3982 (1.3)
• 3983
• 3984 (1.5)
• 3985 (1.3)
• 3986 (0.8)
• 3987 (0.7)
• 3988 (0.3)
• 3989 (1.3)
• 3990 (0.3)
• 3991 (0.7)

Soil Sampling Results





N B

- 1) Uncorrected for diurnal variation
- 2) Geometrics 816 with sensor in back-pack

V. L. F.

RELATIVE FIELD INTENSITY 150 % —

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

DIP ANGLE 0 —

Topography & Geology

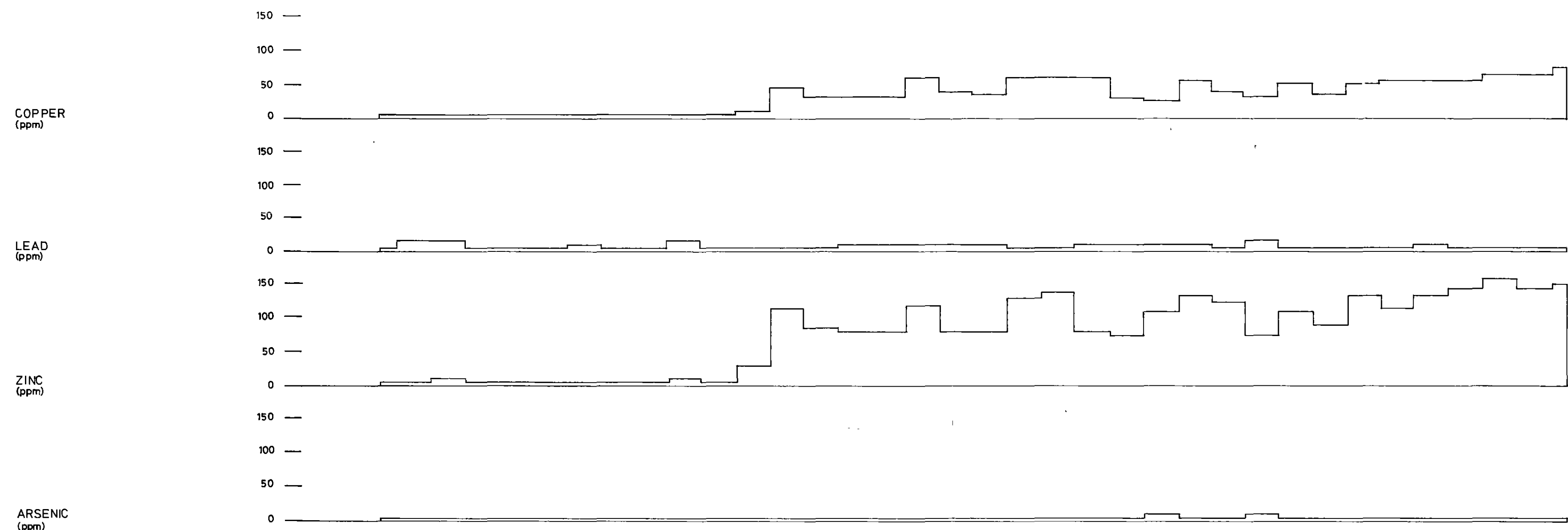
(Metres A S L)

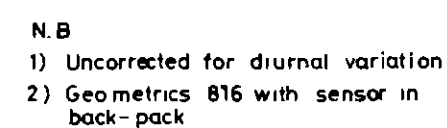
N B

- 1) Topography by Topolite and clinometer
- 2) Geology from outcrop and examination of soil samples
- 3) Outcrop (oc) and subcrop (sc) indicated where present

Soil Sample No's & Depths (m)

Soil Sampling Results

[illegible]



N.B

- 1) Uncorrected for diurnal variation
- 2) Geometrics 816 with sensor in back-pack



N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

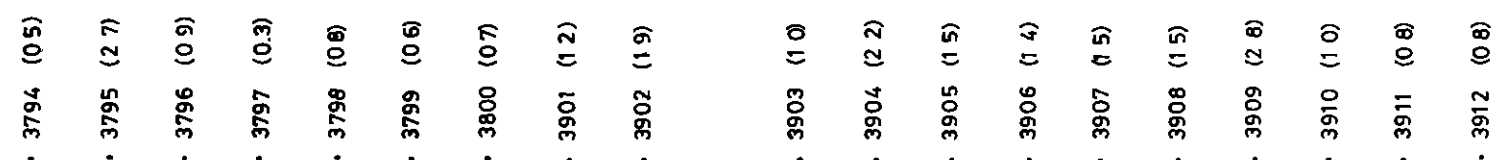


DIP ANGLE

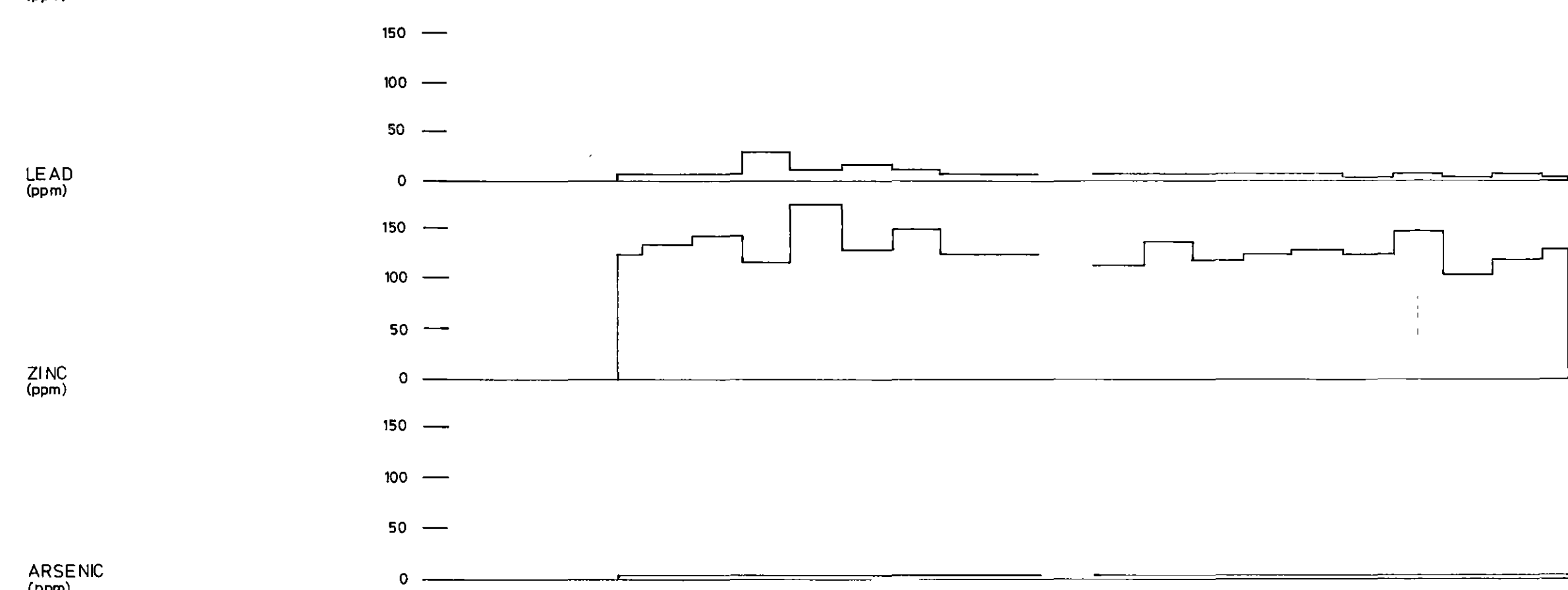
(Metres A S L) 540 —

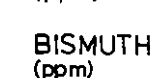
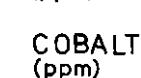
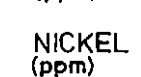
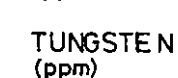
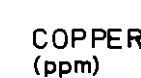
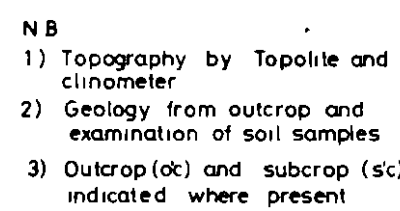
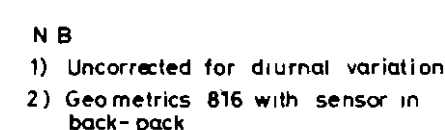
N B

- 1) Topography by Topolite and clinometer
- 2) Geology from outcrop and examination of soil samples
- 3) Outcrop (oc) and subcrop (sc) indicated where present



COPPER
(ppm)

[illegible]



28912



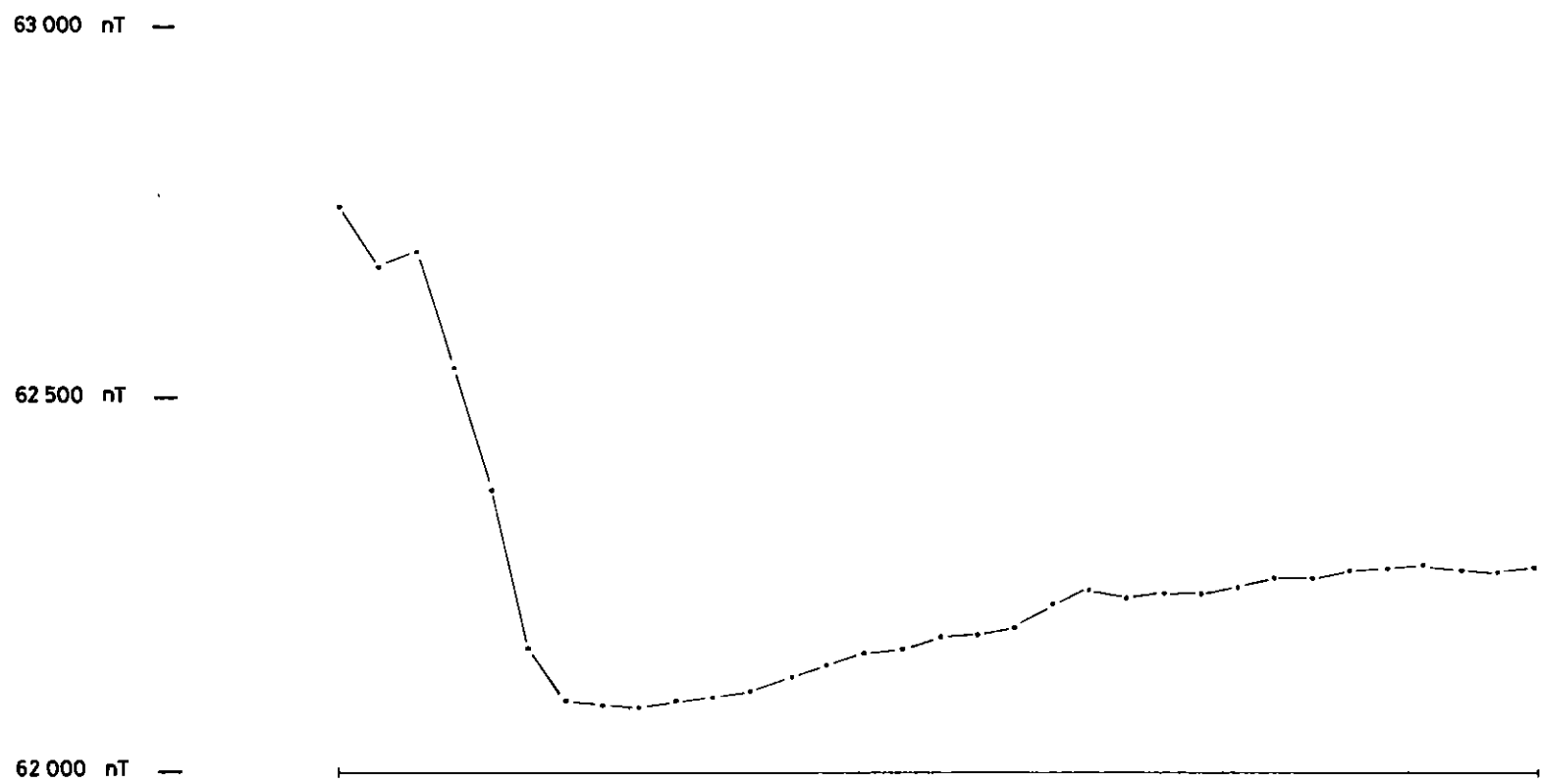
The Shell Company of Australia Limited
METALS DIVISION
82-1825
(02-212)

E.L. 2/78 GRANITE TOR
MURCHISON: ANOMALY 12
LINE 2250N
130W - 190E 2504

Scale		1 2000 Horizontal
FIG No	REPORT No	
ENCL No	DRG No	D/NP01/025
DATE	AUTHOR	D SPEIJERS
DRAWN	OFFICE	DEVONPORT
	H.L.H.	

Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



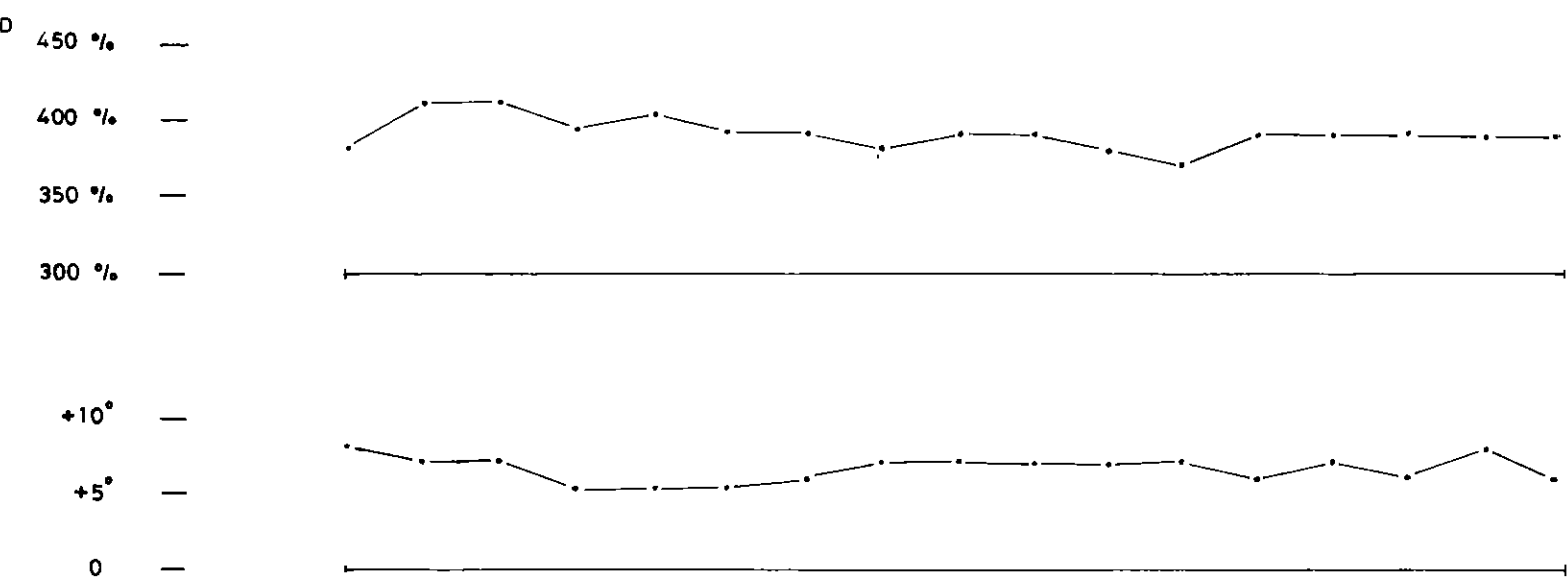
V.L.F.

RELATIVE FIELD INTENSITY

N.B.
READINGS TAKEN USING NW CAPE TRANSMITTER.

V.L.F.

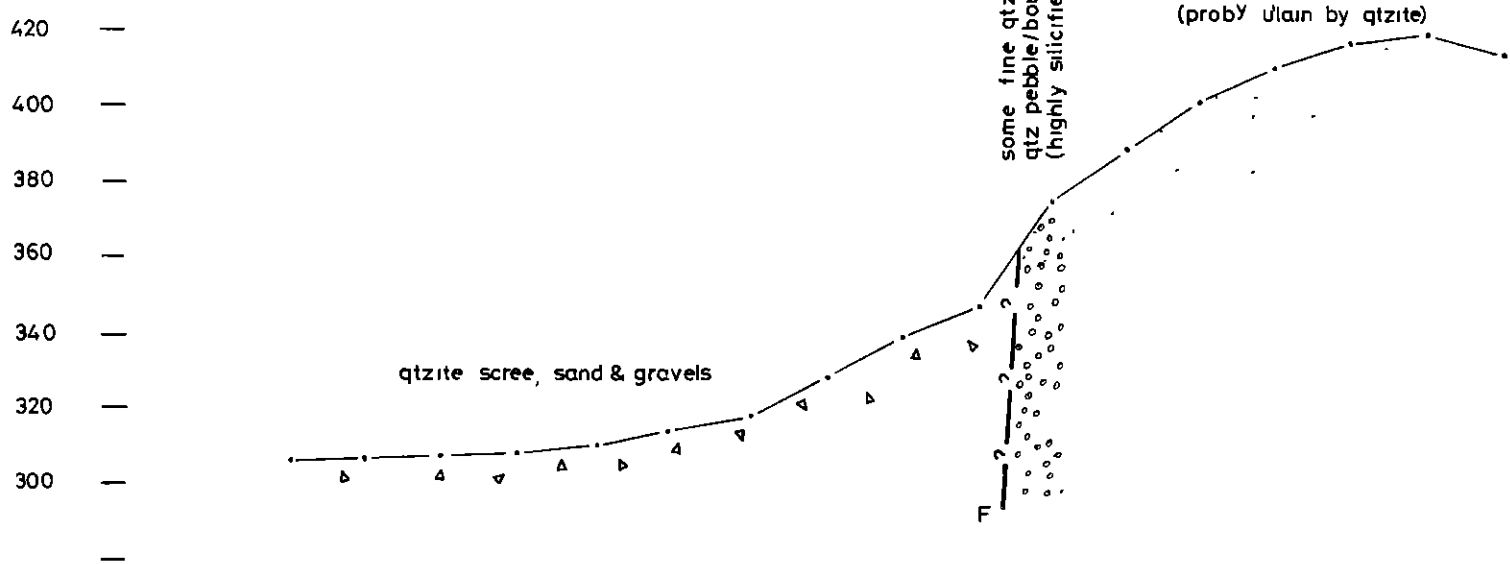
DIP ANGLE



Topography & Geology

N.B.
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present

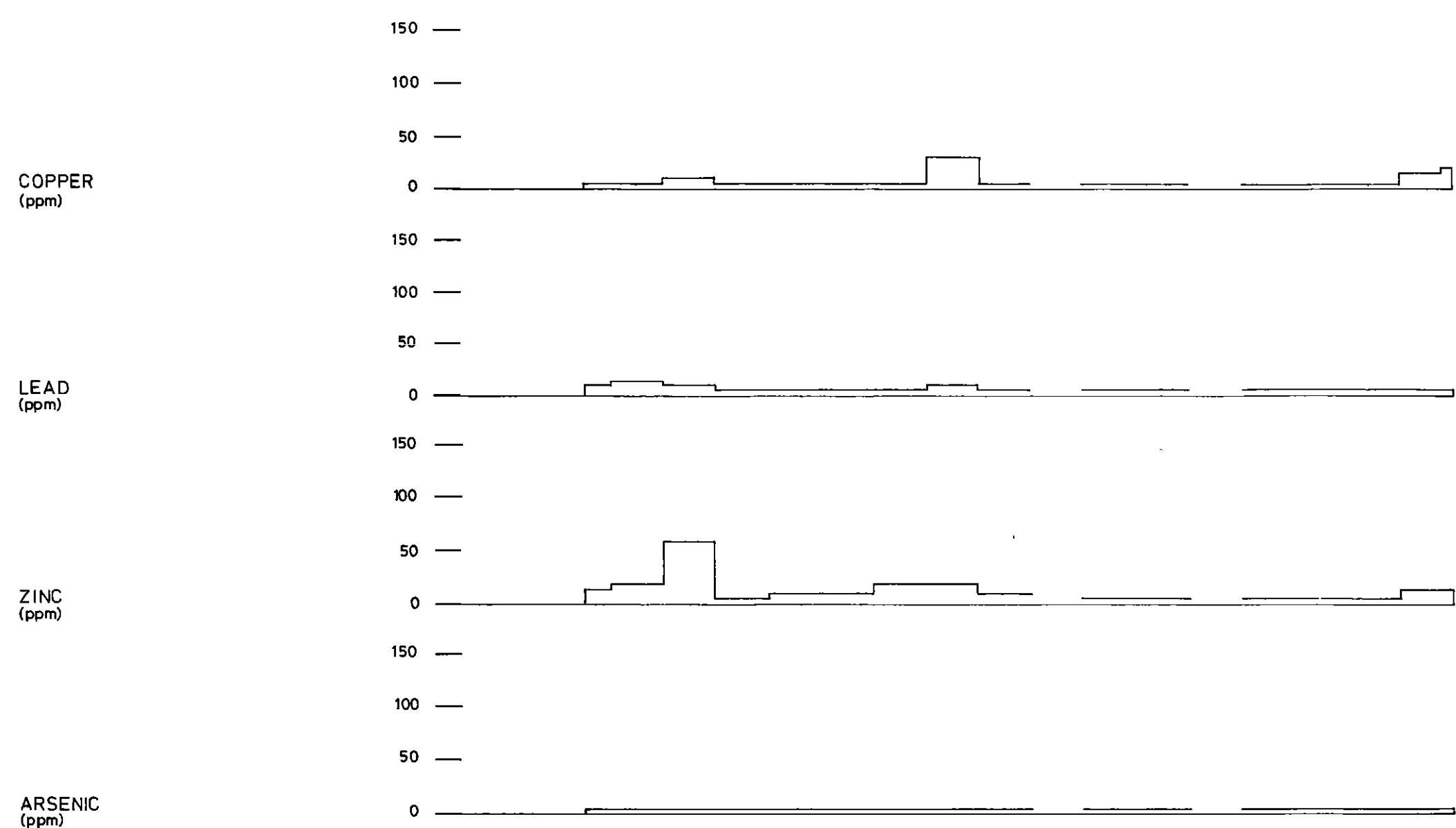
(Metres A.S.L.)



Soil Sample No's & Depths (m)

• 3195	(.7)	• 3196	(0.7)	• 3197	(0.4)	• 3198	(0.7)	• 3199	(0.6)	• 3200	(0.4)	• 3201	(0.5)	• 3202	(0.6)	• 3203	(0.6)	• 3204	(0.7)	• 3205	(0.5)	• 3206	(0.6)	• 3207	(.7)	• 3208	(0.8)	• 3209	(1.0)	• 3210	(1.0)	• 3211	(1.0)

Soil Sampling Results



BARIUM (ppm)	125	90	45	45	70	110	155	45	40	20	25	20	30	15	15	
TUNGSTEN (ppm)	<10	10	<10	<10	<10	<10	10	<10	10	<10	<10	10	<10	10	<10	
NICKEL (ppm)	4	12	6	<4	<4	<4	<4	14	<4	12	<4	6	6	<4	10	6
COBALT (ppm)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
BISMUTH (ppm)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

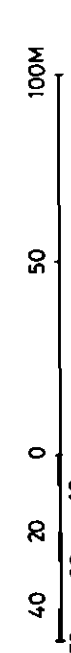
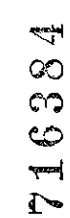
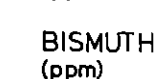
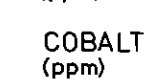
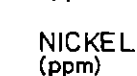
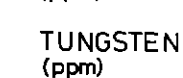
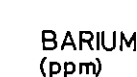
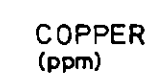
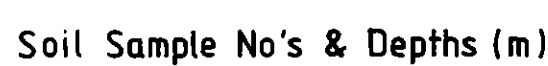
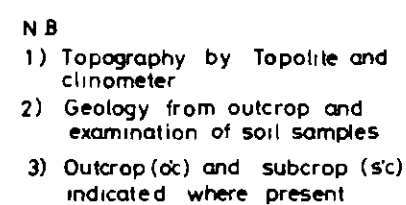
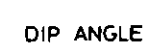
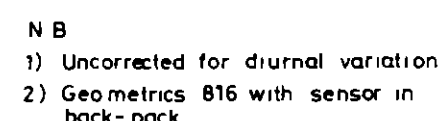
716383



The Shell Company of Australia Limited
METALS DIVISION
2/12/82

E.L. 2/78 GRANITE TOR
MURCHISON: ANOMALY 12
LINE 2150N
130W-190E 2505

FIG No	REPORT No
ENCL No	DRG No
DATE	AUTHOR
DRAWN	OFFICE



The Shell Company of Australia Limited
METALS DIVISION
82-1825
CVD 1212

E.L. 2/78 GRANITE TOR
MURCHISON: ANOMALY 12
LINE 2050 N
130W-190E 2506

2506

Scale 1 2000 Horizontal

FIG No	REPORT No

ENCL No	DRG No
	D / NP01 / 027

DATE	15-1-82	AUTHOR	D SPEIJERS

DRAWN	H L H	OFFICE	DEVONPORT

Total Magnetic Intensity
N.B.
1) Uncorrected for diurnal variation
2) Geometrics 818 with sensor in
"solar" peak

63 000 nT

62 500 nT

V.L.F.
RELATIVE FIELD
INTENSITY

N.B.
READINGS TAKEN USING
N.W. CAPE TRANSMITTER.

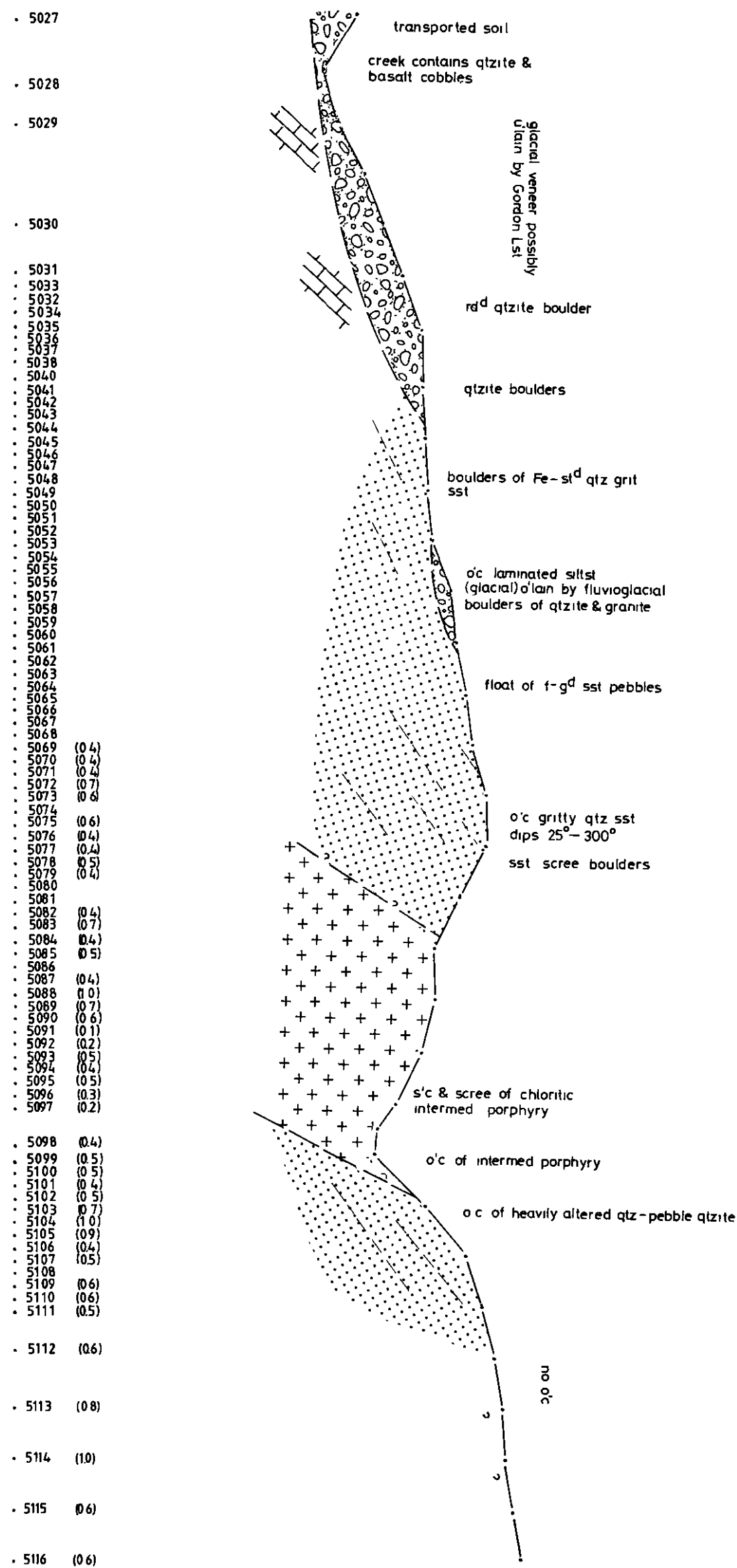
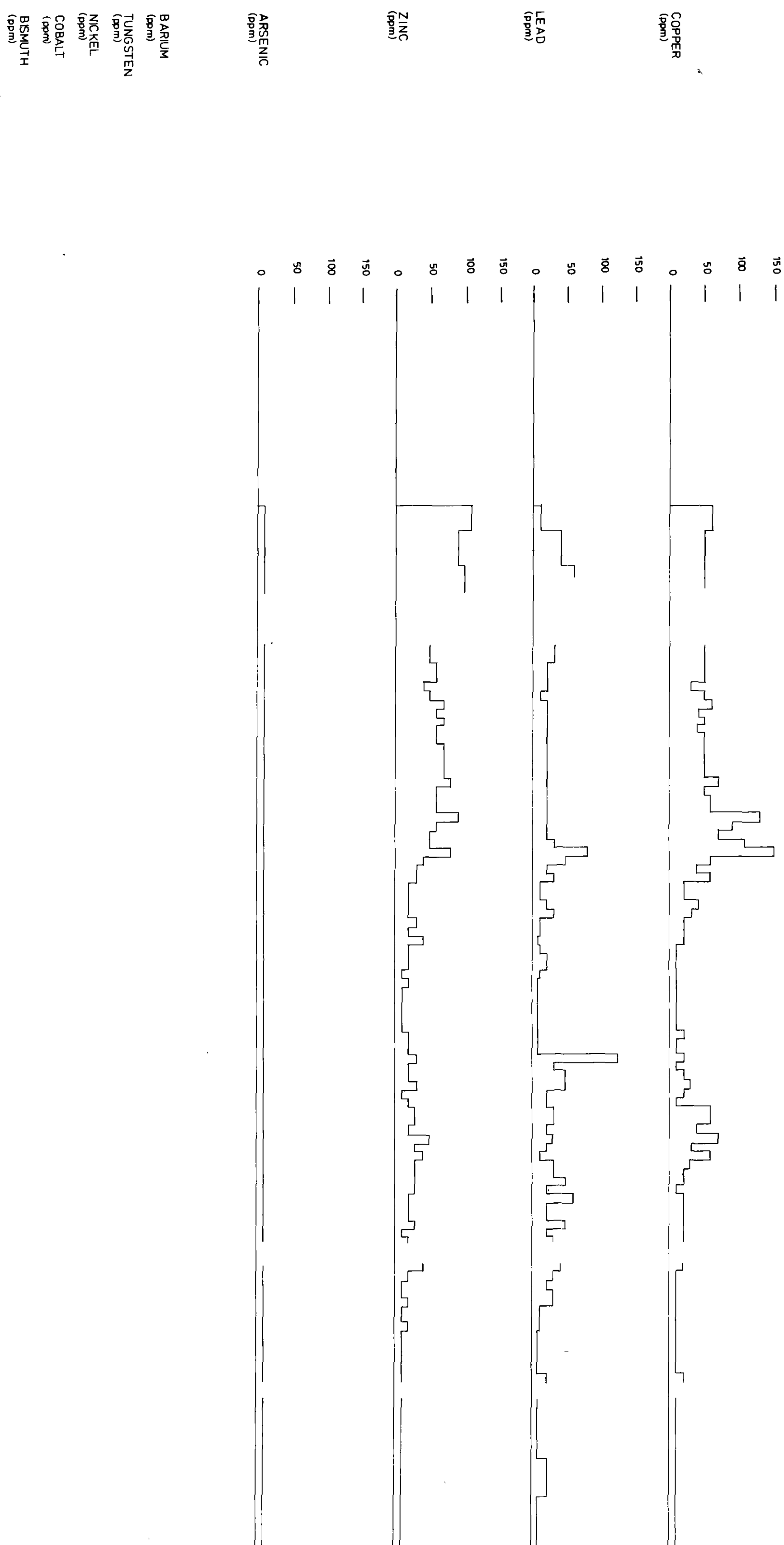
V.L.F.
DIP ANGLE

Topography & Geology

(Metres A.S.L.)
N.B.
1) Topography by Topolite and
2) Geology from outcrop and
3) Examination of soil samples
indicated where present.

Soil Sample No's & Depths (m)

Soil Sampling Results



40 20 0 50 100M
50 30 10

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
ROMULUS WEST-RAY'S PROSPECT
LINE 2550 N
895E - 1495E 2507

Scale 1 2000 Horizontal

FIG No	REPORT No
ENCL No	DRG No D/NP01/028
DATE 4-5-82	AUTHOR D SPEIJERS
DRAWN M L H	OFFICE DEVONPORT

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

V.L.F.

RELATIVE FIELD INTENSITY

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

DIP ANGLE

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (ck) and subcrop (sc) indicated where present

(Metres A S L.)

Soil Sample No's & Depths (m)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

BARIUM (ppm)

TUNGSTEN (ppm)

NICKEL (ppm)

COBALT (ppm)

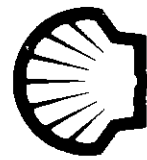
BISMUTH (ppm)

• 21771 (0.7)
• 21770 (0.5)
• 21768 (0.4)
• 21768 (0.7)
• 21767 (1.0)
• 21766 (2.0)
• 21765 (1.4)
• 21764 (1.5)

• 21762 (0.6)
• 21761 (0.8)
• 21760 (0.9)
• 21759 (0.7)
• 21758 (1.0)
• 21757 (0.1)
• 21756 (0.3)

15	10	15	85	590	250	250	85	<10	10	10	15	10	25	15
15	10	10	20	15	30	20	10	10	<10	10	<10	10	<10	<10
4	<4	8	10	24	38	55	24	6	8	6	4	<4	8	4
<4	<4	<4	<4	<4	<4	10	<4	<4	<4	<4	<4	<4	<4	<4
<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

716386



The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
ROMULUS WEST-RAY'S PROSPECT
LINE 1175 E
2400N-2850N

2508

FIG No	REPORT No
ENCL No	DRG No
DATE	AUTHOR
DRAWN	OFFICE

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

V.L.F.

RELATIVE FIELD INTENSITY
Japan transmitter
NW Cape transmitter

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

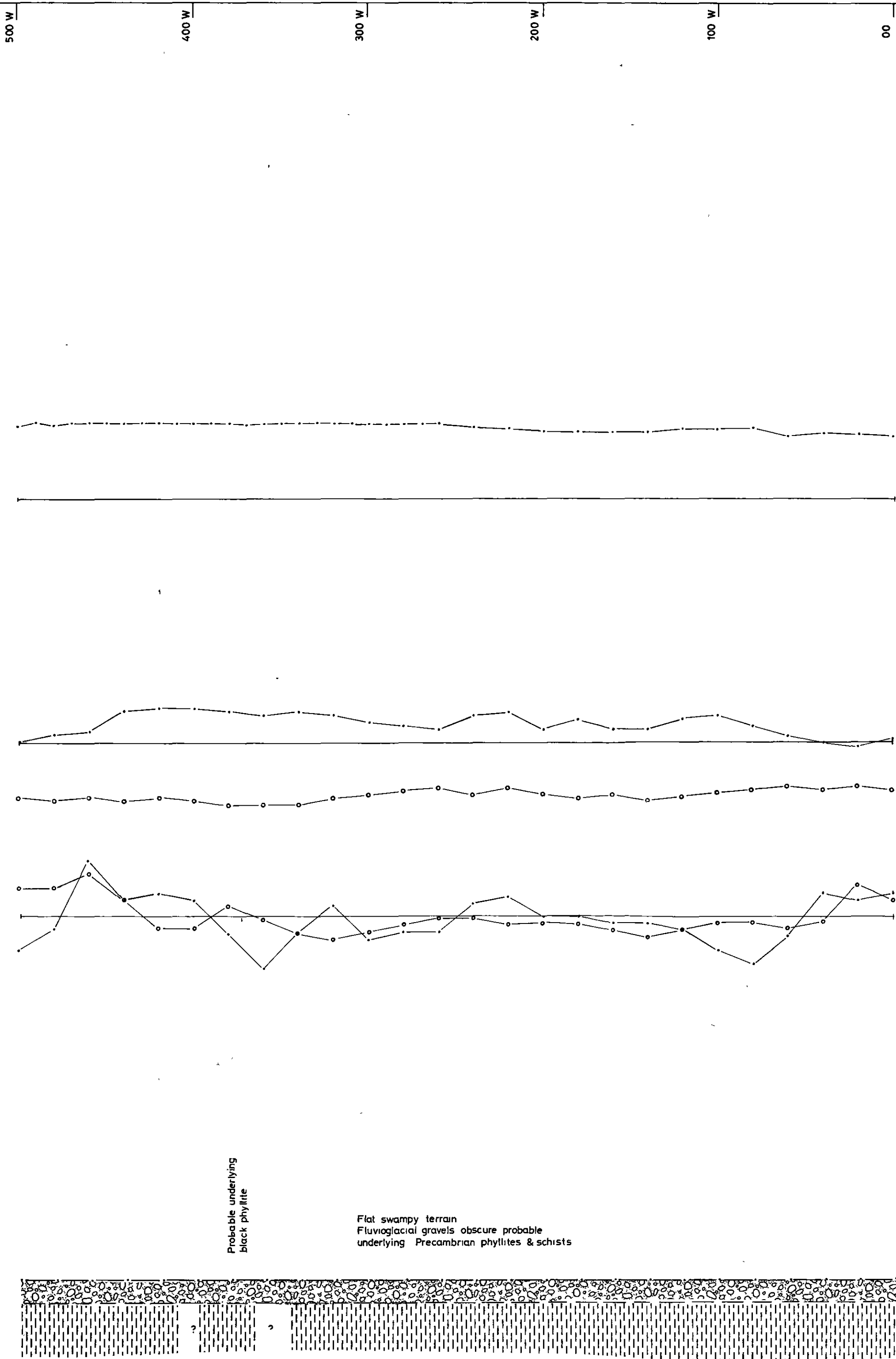
V.L.F.

DIP ANGLE

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present

Soil Sample No's & Depths (m)



716387



The Shell Company of Australia Limited		METALS DIVISION		E.L. 2/78 GRANITE TOR		ALEXANDRA HILLS ANOMALY 8		2503	
500 W		400 W		300 W		200 W		100 W	
63 000 nT		62 500 nT		62 000 nT					
40		30		20		10		0	
50		40		30		20		10	
100M		50		0		50		100M	
Scale 1:2000 Horizontal		FIG No		REPORT No		ENCL No		DRG No	
		DATE		15-1-82		AUTHOR		D SPEIERS	
		DRAWN		M L H		OFFICE		DEVONPORT	

5 cm



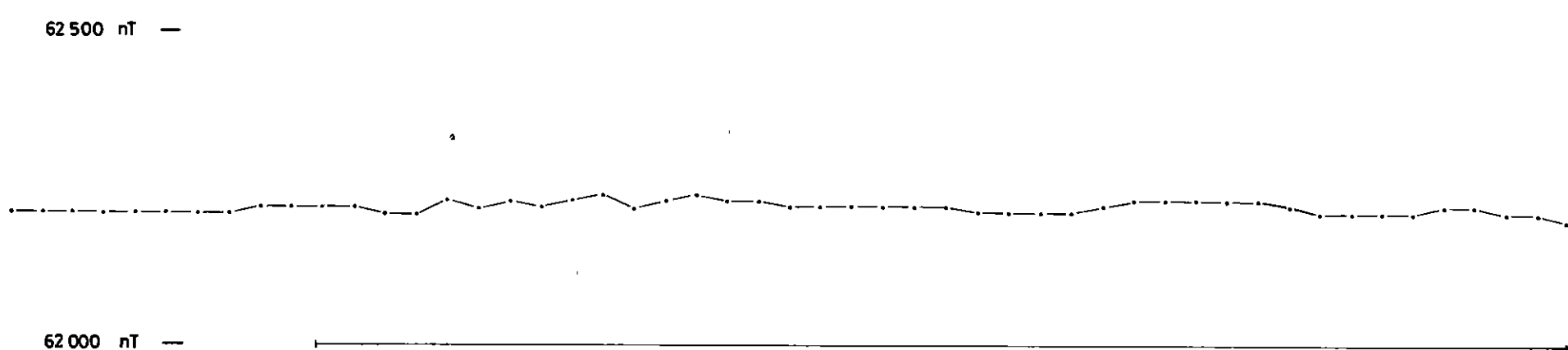
716388



The Shell Company of Australia Limited		METALS DIVISION		E.L. 2/78	
E.L. 2/78		GRANITE TOR		2510	
ALEXANDRA HILLS		ANOMALY 8			
LINE 100 N		400 W - 00			
FIG No		REPORT No		Scale 1:2000 Horizontal	
ENCL No		DRG No D/NP01/031			
DATE 15-1-82		AUTHOR D. SPEIJERS			
DRAWN H. L. H.		OFFICE DEVONPORT			

Total Magnetic Intensity

- N.B.
- 1) Uncorrected for diurnal variation
 - 2) Geometrics 816 with sensor in back-pack

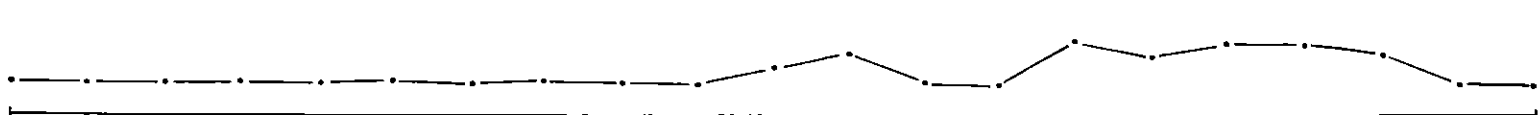


V.L.F.

RELATIVE FIELD INTENSITY

250 %

- N.B.
- READINGS TAKEN USING NW CAPE TRANSMITTER.



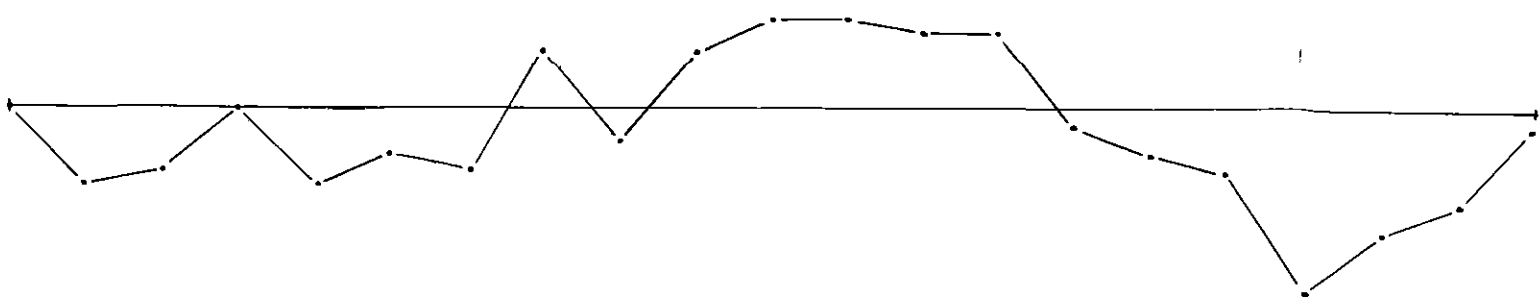
V.L.F.

DIP ANGLE

+5°

0

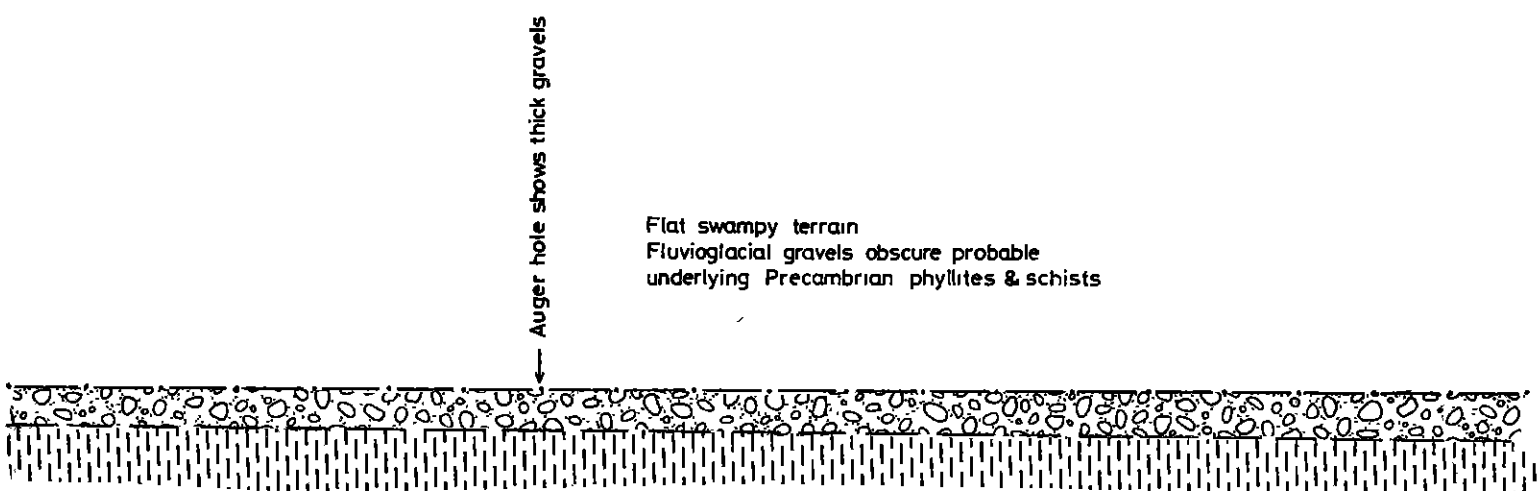
-5°



Topography & Geology

(Metres A.S.L.)

- N.B.
- 1) Topography by Topolite and clinometer
 - 2) Geology from outcrop and examination of soil samples
 - 3) Outcrop(ok) and subcrop(sc) indicated where present

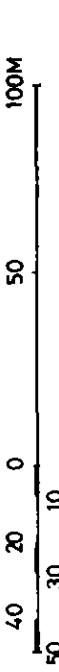


N.B. No slope measurements taken

Soil Sample No's & Depths (m)

500 W 400 W 300 W 200 W 100 W 00

716389



The Shell Company of Australia Limited
METALS DIVISION

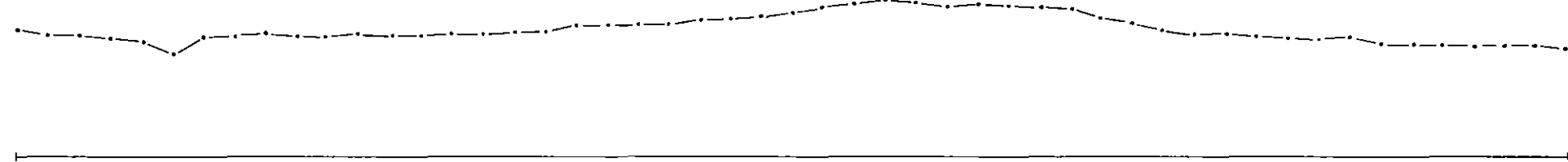
E.L. 2/78 GRANITE TOR		2511	
ALEXANDRA HILLS: ANOMALY 8			
LINE 00N			
500W - 00			
Scale 1:2000 Horizontal			
FIG No	REPORT No		
ENCL No	DRG No Q/NP01/032		
DATE 15-1-82	AUTHOR D SPEIERS		
DRAWN H L H	OFFICE DEVONPORT		

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

62 500 nT

62 000 nT



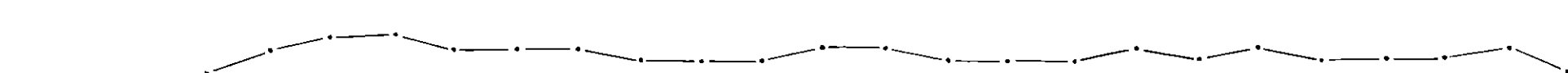
V.L.F.

RELATIVE FIELD INTENSITY

250 %

200 %

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.



V.L.F.

DIP ANGLE

+5°

0

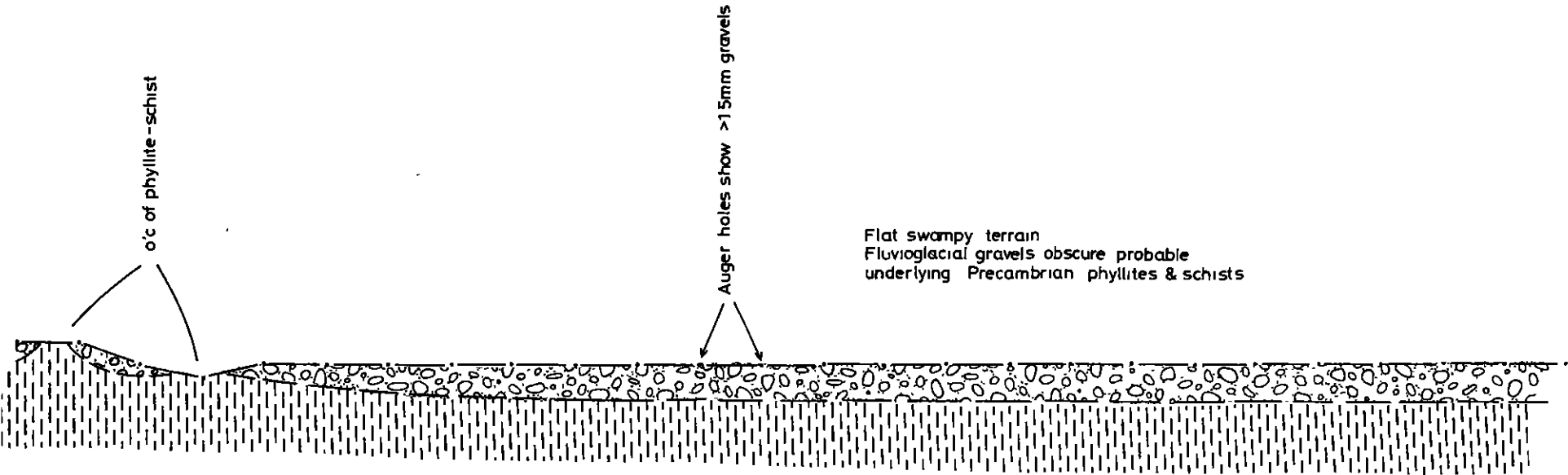
-5°



Topography & Geology

(Metres A S L)

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present



N B No slope measurements taken

Soil Sample No's & Depths (m)

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

62500 nT

62000 nT

V.L.F.

RELATIVE FIELD INTENSITY

100 %

50 %

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

DIP ANGLE

+10°

+5°

0

-5°

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (c) and subcrop (sc) indicated where present

(Metres A S L)

260

240

Grey phyllite

Grey phyllite

Flat swampy terrain
Fluvoglacial gravels obscure probable
underlying Precambrian phyllites & schists

N B No slope measurements taken

Soil Sample No's & Depths (m)

716390



50 40 30 20 10 0 50 100M

The Shell Company of Australia Limited
METALS DIVISION (CNO 212)

E.L. 2/78 GRANITE TOR
ALEXANDRA HILLS: ANOMALY 8
LINE 100 S
500W-80W 2512

FIG No	REPORT No	Scale	1 2000 Horizontal
ENCL No	DRG No	D/NP01/033	
DATE	15-1-82	AUTHOR	D SPEIJERS
DRAWN	H L H	OFFICE	DEVONPORT

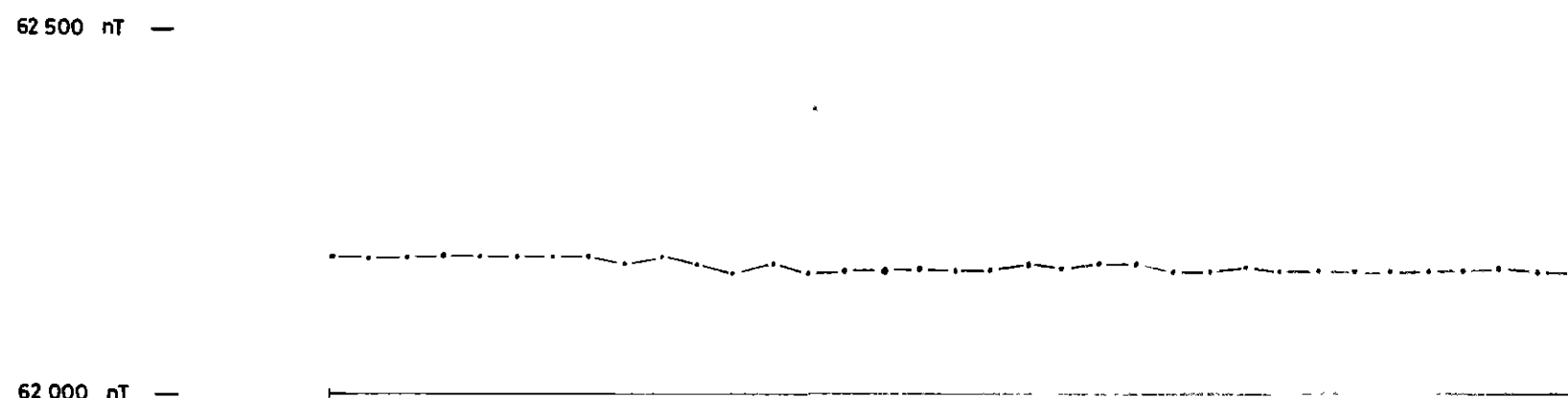
716391



The Shell Company of Australia Limited METALS DIVISION		E.L. 2/78 GRANITE TOR ALEXANDRA HILLS ANOMALY H LINE 200 S: 600W-260W	
Scale 1:2000 Horizontal		2513	
FIG No	REPORT No	DRG No	D/NPOT/034
ENCL No		AUTHOR	D SPEJERS
DATE	18-1-82	OFFICE	DEVONPORT
DRAWN	N.L.H.		

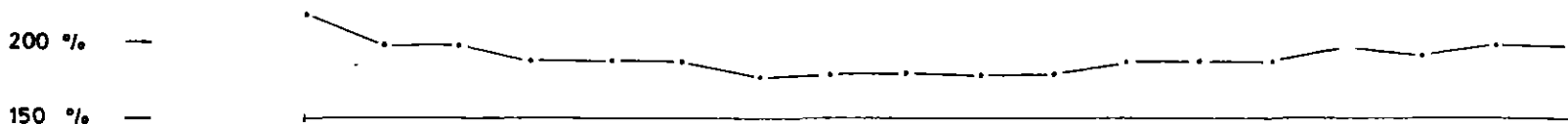
Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation.
2) Geometrics 816 with sensor in back-pack



V.L.F.

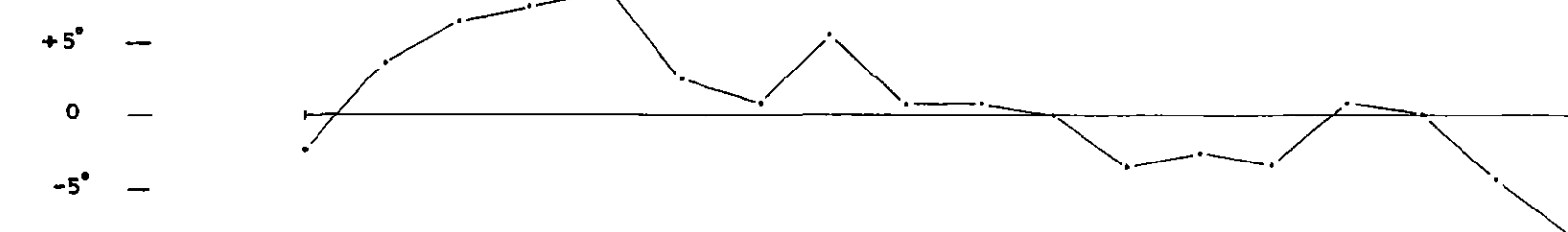
RELATIVE FIELD INTENSITY



N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

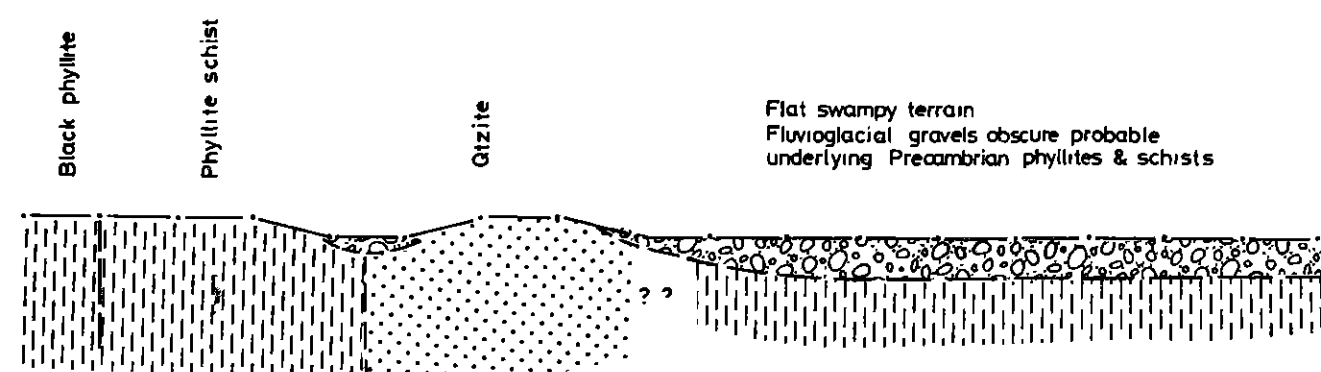
DIP ANGLE



Topography & Geology

N B
1) Topography by Topolite and clinometer.
2) Geology from outcrop and examination of soil samples.
3) Outcrop (oc) and subcrop (sc) indicated where present

(Metres A S L)

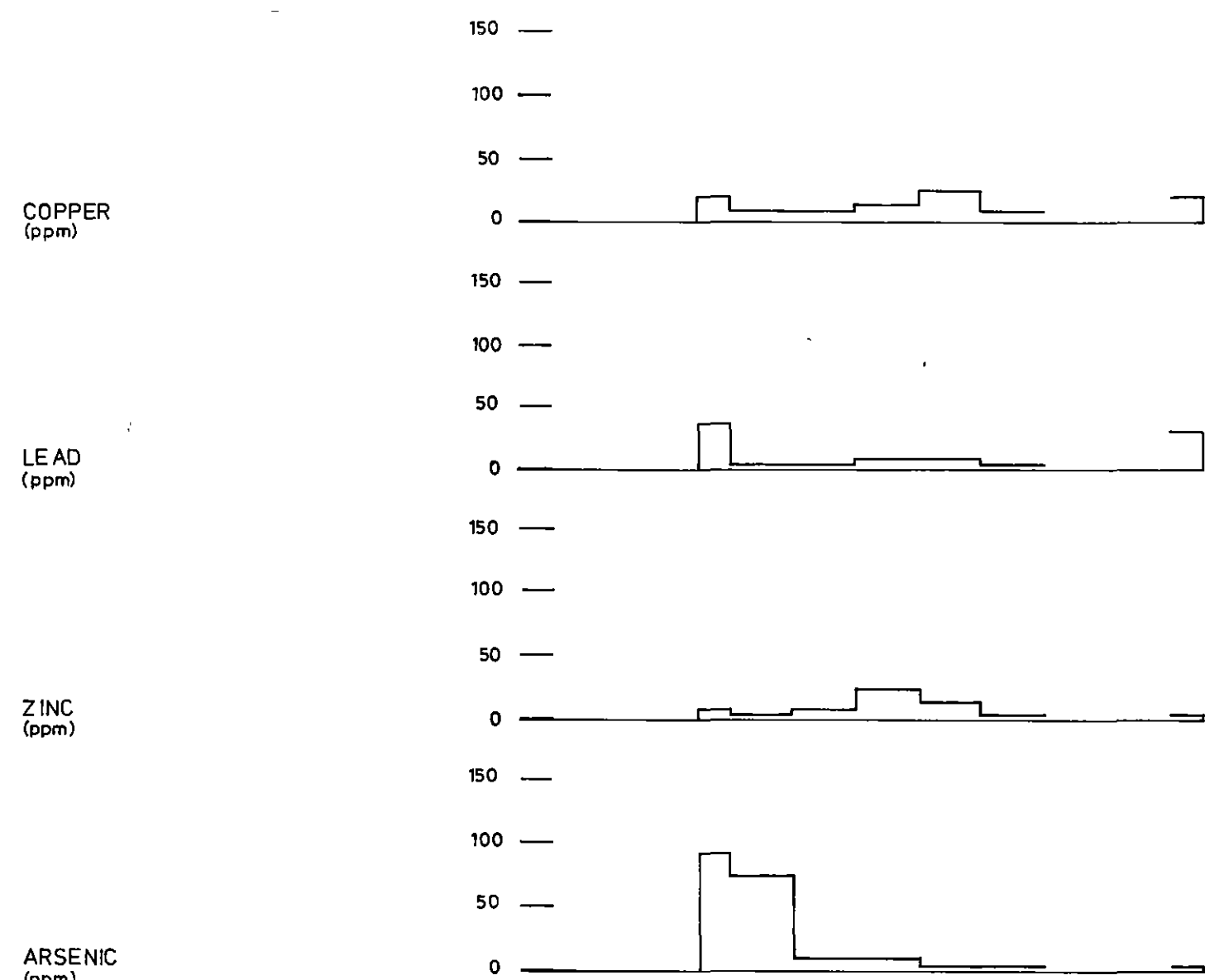


N B No slope measurements taken

Soil Sample No's & Depths (m)

• 3258
• 3257
• 3256
• 3255
• 3254
• 3253
• 3252
• 3251
• 3250

Soil Sampling Results



BARIUM (ppm)	220	150	340	450	470	120	125
TUNGSTEN (ppm)	<10	15	10	10	10	15	10
NICKEL (ppm)	8	<4	4	8	8	4	8
COBALT (ppm)	<4	<4	<4	<4	<4	<4	<4
BISMUTH (ppm)	4	4	12	8	8	8	4

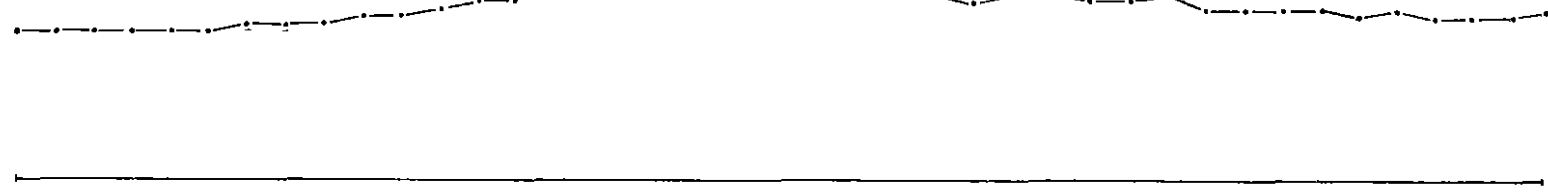
200 S 100 S 00 100 N 200 N

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

62 500 nT

62 000 nT



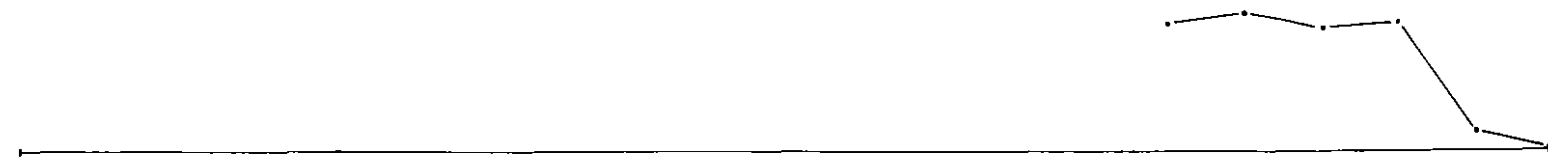
V.L.F.

RELATIVE FIELD INTENSITY

150 %

100 %

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.



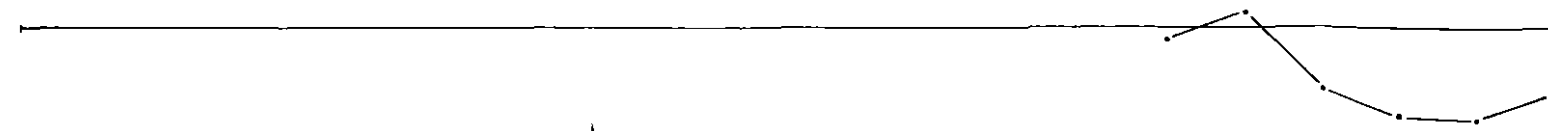
V.L.F.

DIP ANGLE

+5°

0

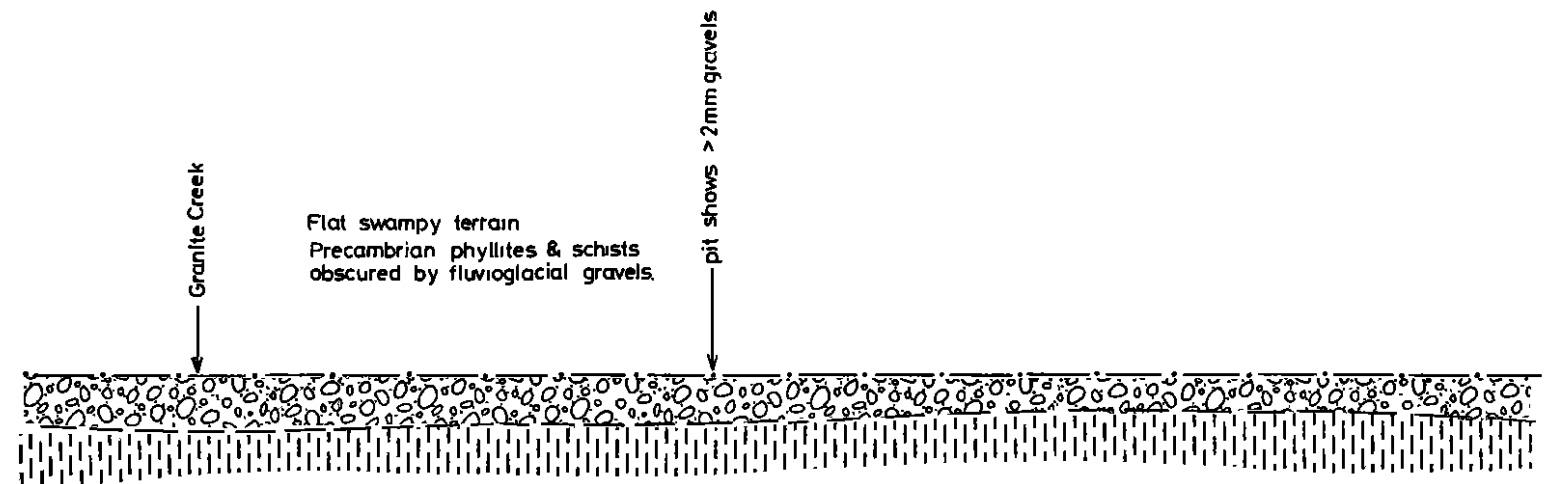
-5°



Topography & Geology

(Metres A S L)

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (ok) and subcrop (sc) indicated where present



N B No slope measurements taken

Soil Sample No's & Depths (m)

716392



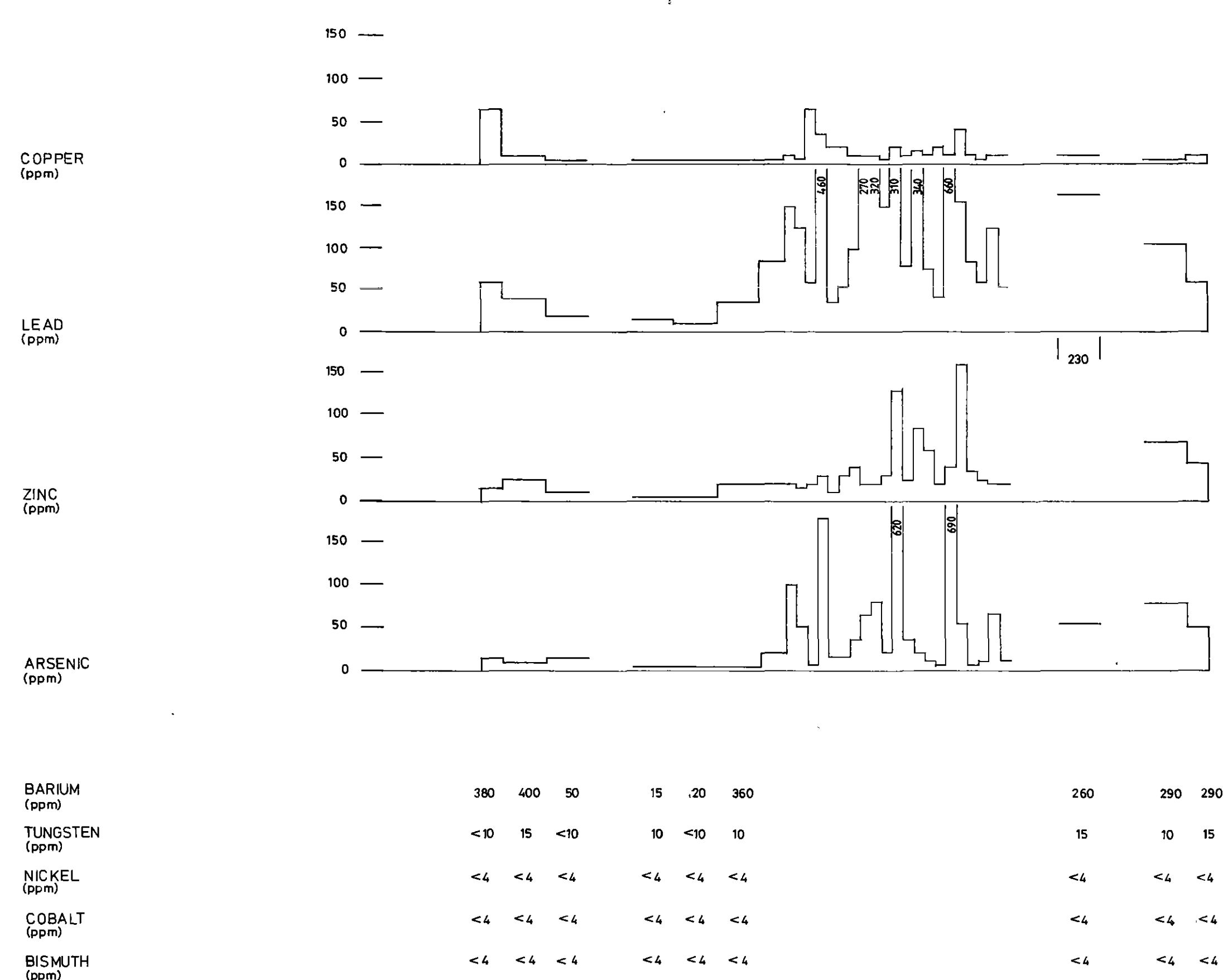
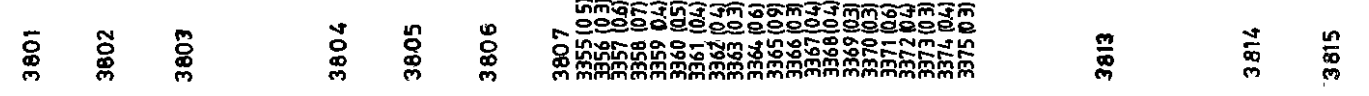
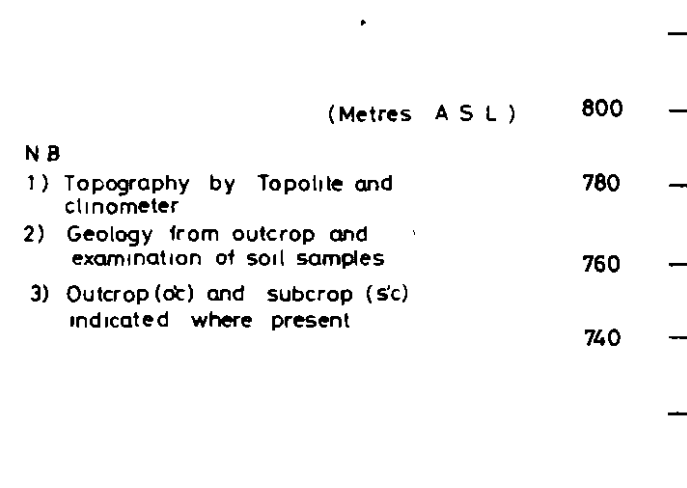
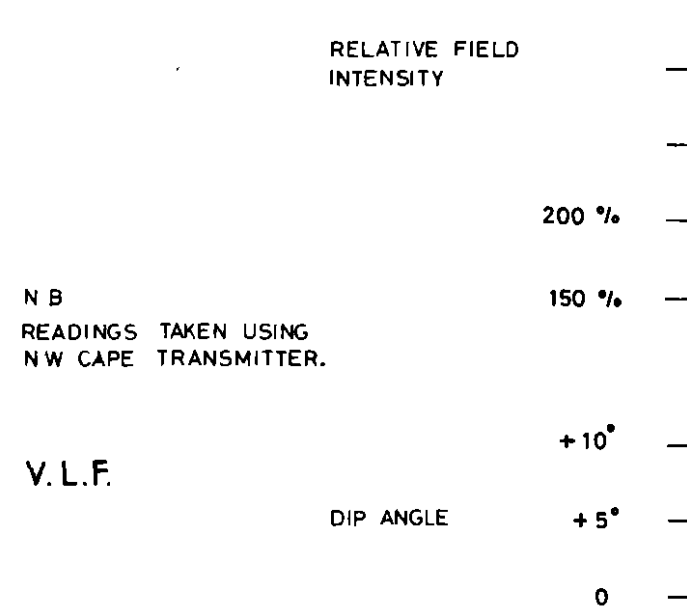
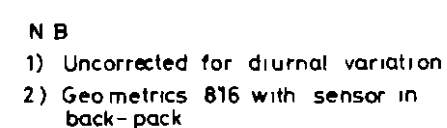
50 40 30 20 10 0 50 100M

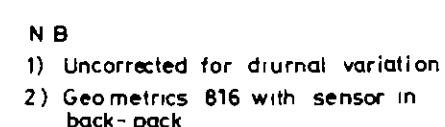
The Shell Company of Australia Limited
METALS DIVISION 52-15233

E.L. 2/78 GRANITE TOR
ALEXANDRA HILLS
ANOMALY 8
LINE 260W : 200S-200N
2514

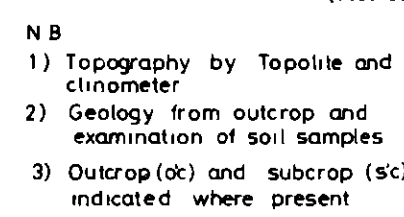
Scale 1:2000 Horizontal
FIG No REPORT No
ENCL No DRG No D/NP01/035
DATE 18-1-82 AUTHOR D SPEJERS
DRAWN M.L.H. OFFICE DEVONPORT

5 cm





(Metres A S L)



• 3822

• 3823

• 3824

• 3825

• 3826

• 3827

• 3828

• 3829

• 3830

• 3831

• 3832

• 3833

• 3834

• 3835

• 3836

• 3837

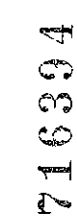
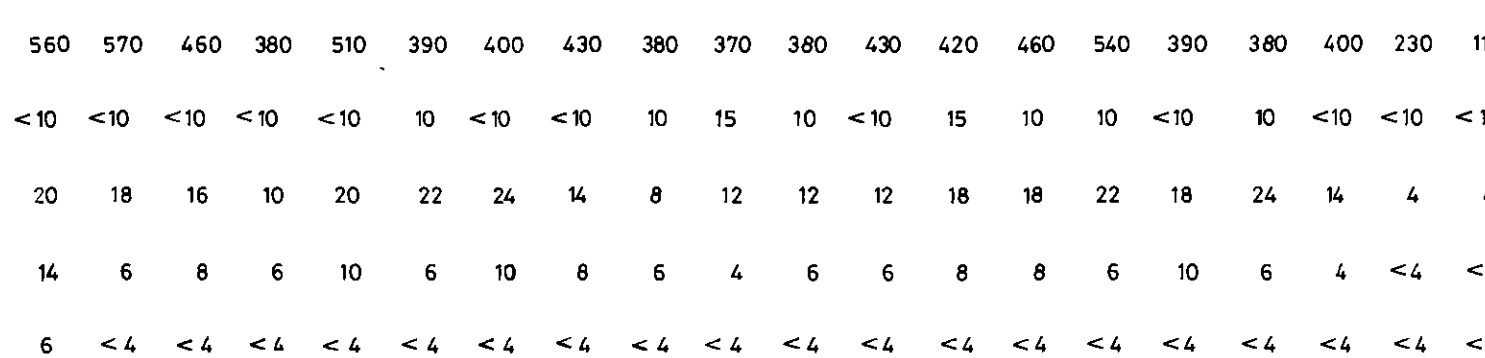
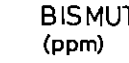
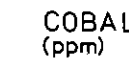
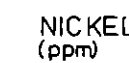
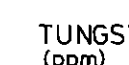
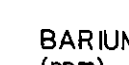
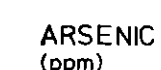
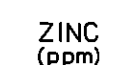
• 3838

• 3839

• 3840

3841

COPPE
(ppm)



The Shell Company of Australia Limited
METALS DIVISION 82-1825

E.E.L. 2/78 GRANITE TOR
ROMULUS EAST: ANOMALY 5
LINE 200 S
140E - 240W 2516

Scale		1 2000 Horizontal	
FIG No		REPORT No	
ENCL No		DRG No	D/NP01/037
DATE		AUTHOR	D SPEIJERS
DRAWN	H L H	OFFICE	DEVONPORT



E.L. 2/78 GRANITE TOR
ROMULUS EAST: ANOMALY 5
LINE 100 S

Scale 1 2000 Horizontal

FIG No	REPORT No
ENCL No	DRG No D/NP01/038
DATE	AUTHOR D SPEIJERS
DRAWN H. L. H	OFFICE DEVONPORT

N B

- 1) Uncorrected for diurnal variation
- 2) Geometrics 816 with sensor in back-pack



RELATIVE FIELD INTENSITY

250 % —

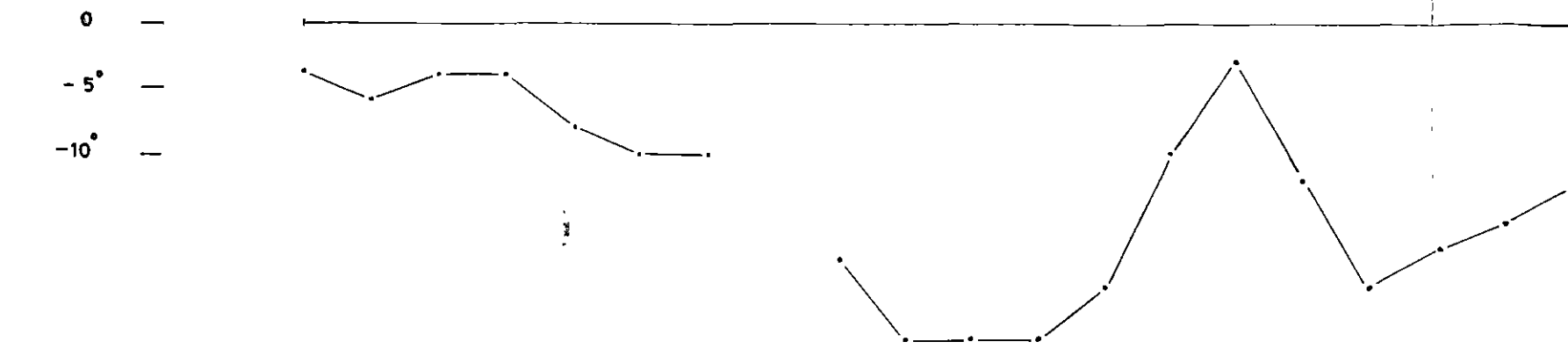
200 % —

150 % —

100 % —

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

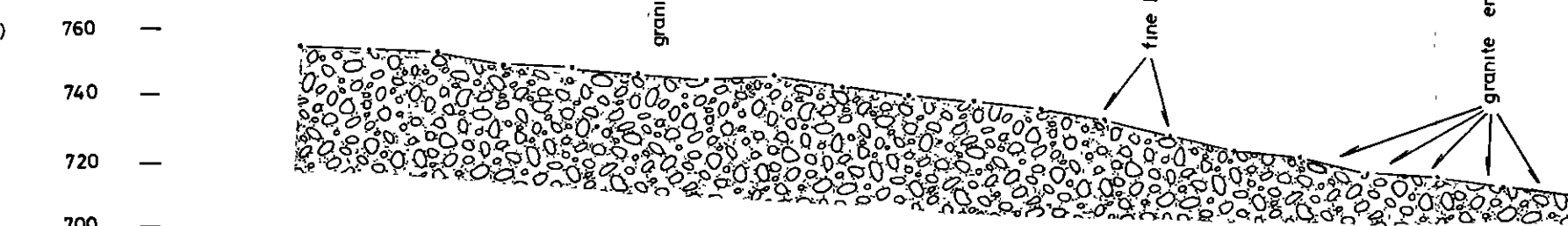
DIP ANGLE - 5° —
 -10° —



(Metres A S L)

N B

- 1) Topography by Topolite and clinometer
- 2) Geology from outcrop and examination of soil samples
- 3) Outcrop (oc) and subcrop (sc) indicated where present



• 3842

• 3843

• 3844

• 3845

• 3846

• 3847

• 3848

• 3849

• 3850

• 3851

• 3852

• 3853

• 3854

• 3855

• 3856

• 3857

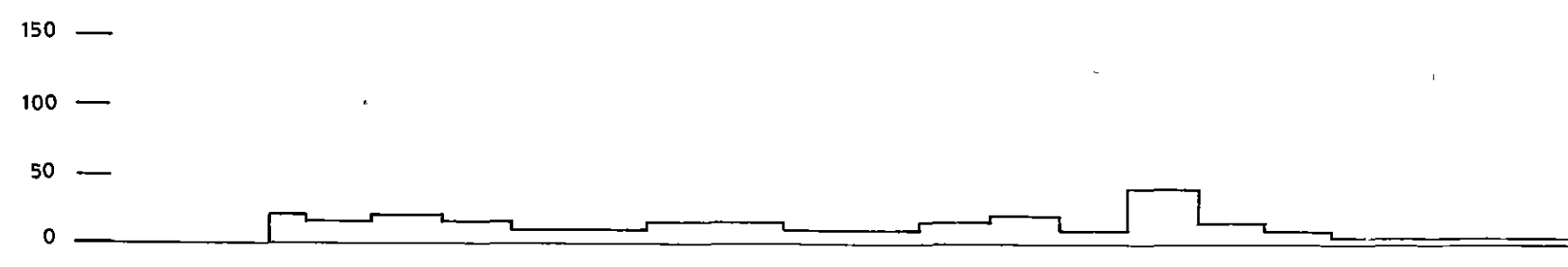
• 3858

• 3859

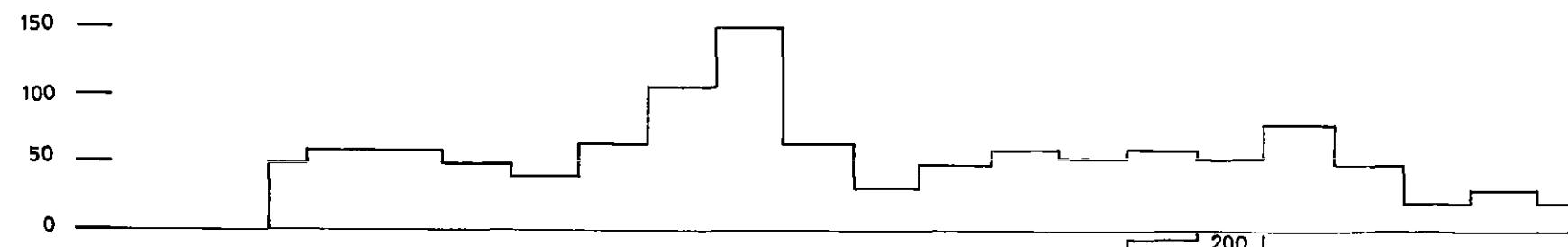
• 3860

• 3861

COPPER
(ppm)



LEAD
(ppm)



ZINC
(ppm)

ARSENIC
(ppm)[illegible]

00 N 100 S 200 S 300 S 400 S 00 100 W

716396



The Shell Company of Australia Limited
METALS DIVISION
E.L. 2/78 GRANITE TOR
ROMULUS EAST: ANOMALY 5
LINE 00W : 00N - 400S
LINE 100S : 00E - 100W 2518

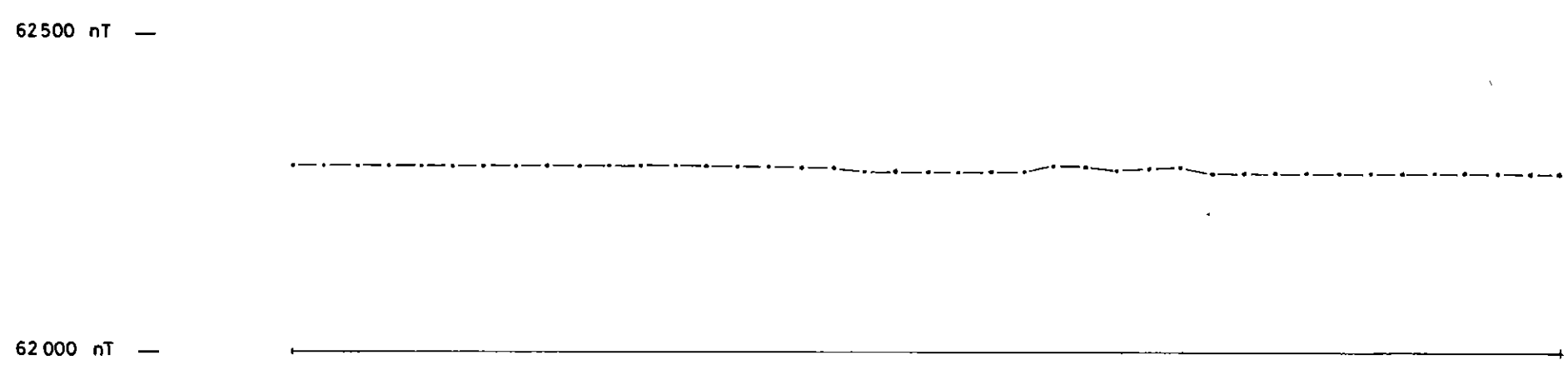
FIG. No.	REPORT No.
ENCL. No.	DRG. No. D/ANP01/039
DATE	18-1-82
DRAWN	H. L. H.
AUTHOR	D. BREIJERS
OFFICE	DEVONPORT

LINE 00W

LINE 100S

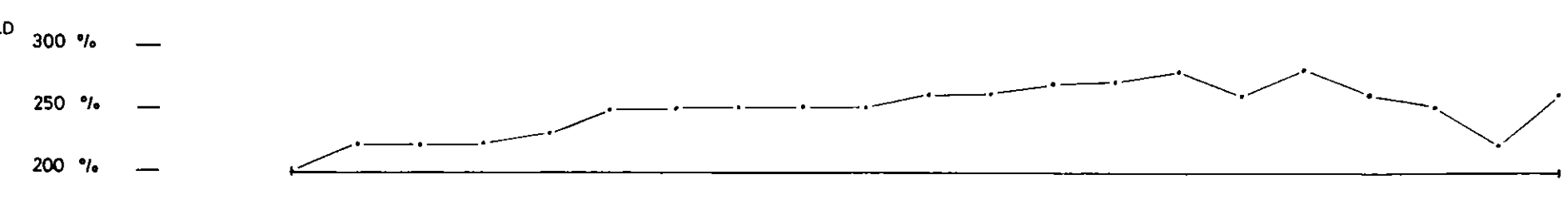
Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



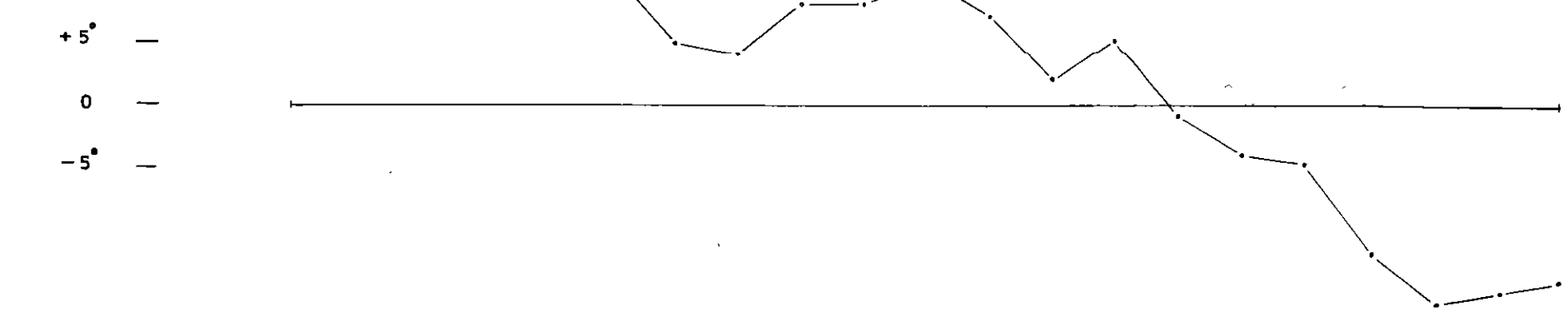
V.L.F.

RELATIVE FIELD INTENSITY



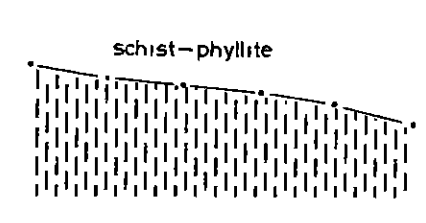
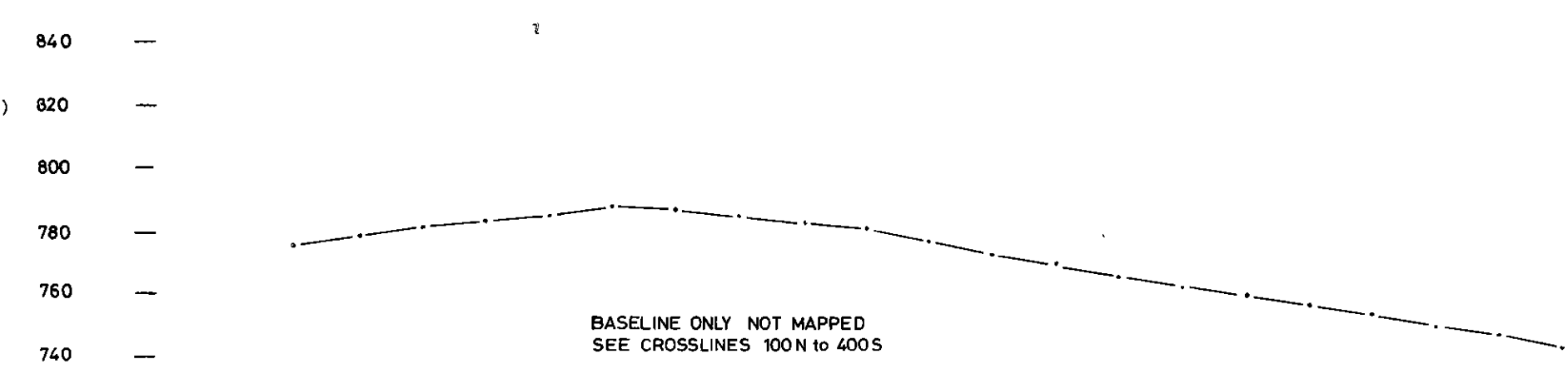
N.B.
READINGS TAKEN USING NW CAPE TRANSMITTER.

DIP ANGLE



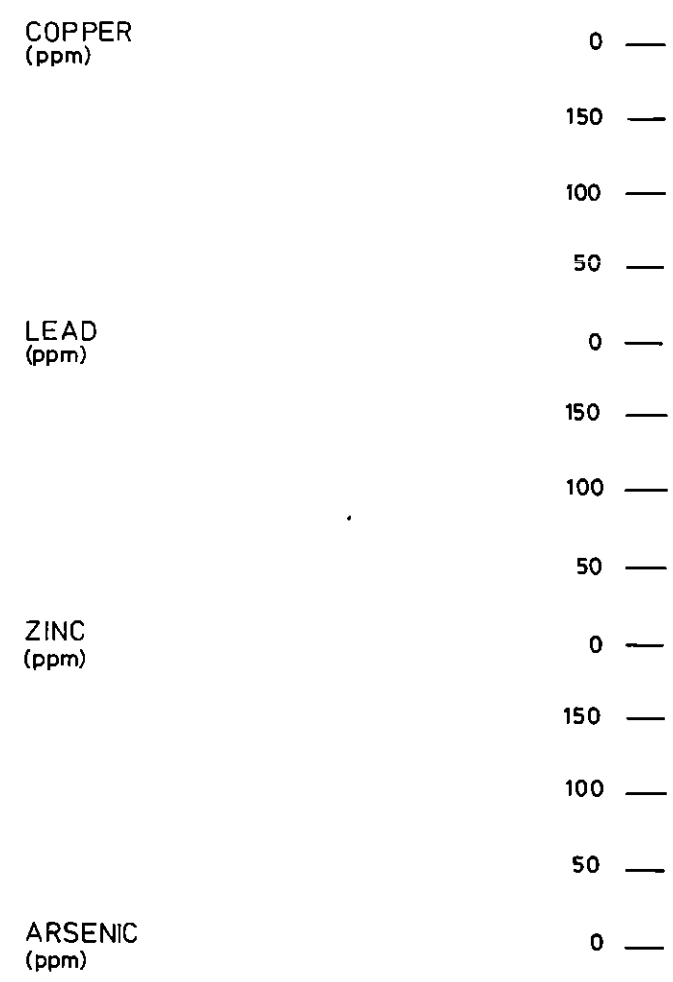
Topography & Geology

N.B.
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (o) and subcrop (s) indicated where present

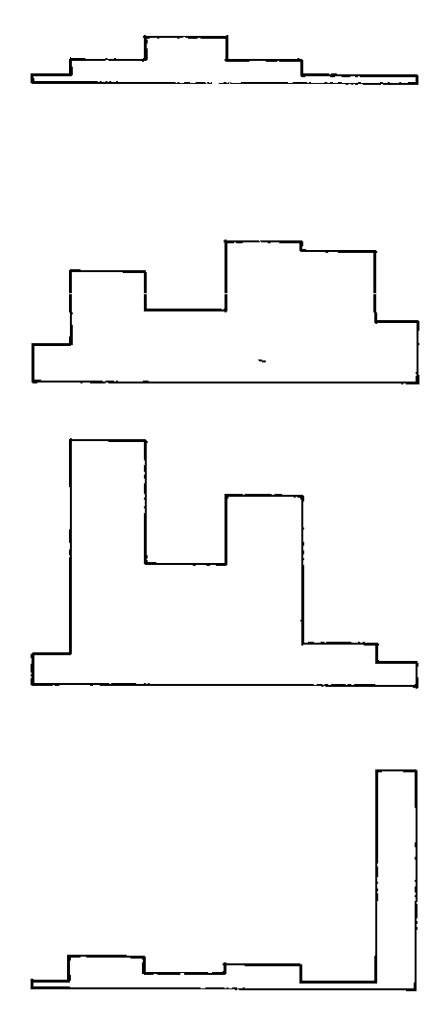


Soil Sample No's & Depths (m)

Soil Sampling Results



• 3816
• 3817
• 3818
• 3819
• 3820
• 3821



BARIUM (ppm)
TUNGSTEN (ppm)
NICKEL (ppm)
COBALT (ppm)
BISMUTH (ppm)

420 500 470 410 320 260
10 15 <10 <10 <10 <10
4 16 12 8 4 4
<4 10 8 6 <4 <4
<4 <4 <4 <4 <4 <4

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F

RELATIVE FIELD INTENSITY

N B
READINGS TAKEN USING NW CAPE TRANSMITTER.

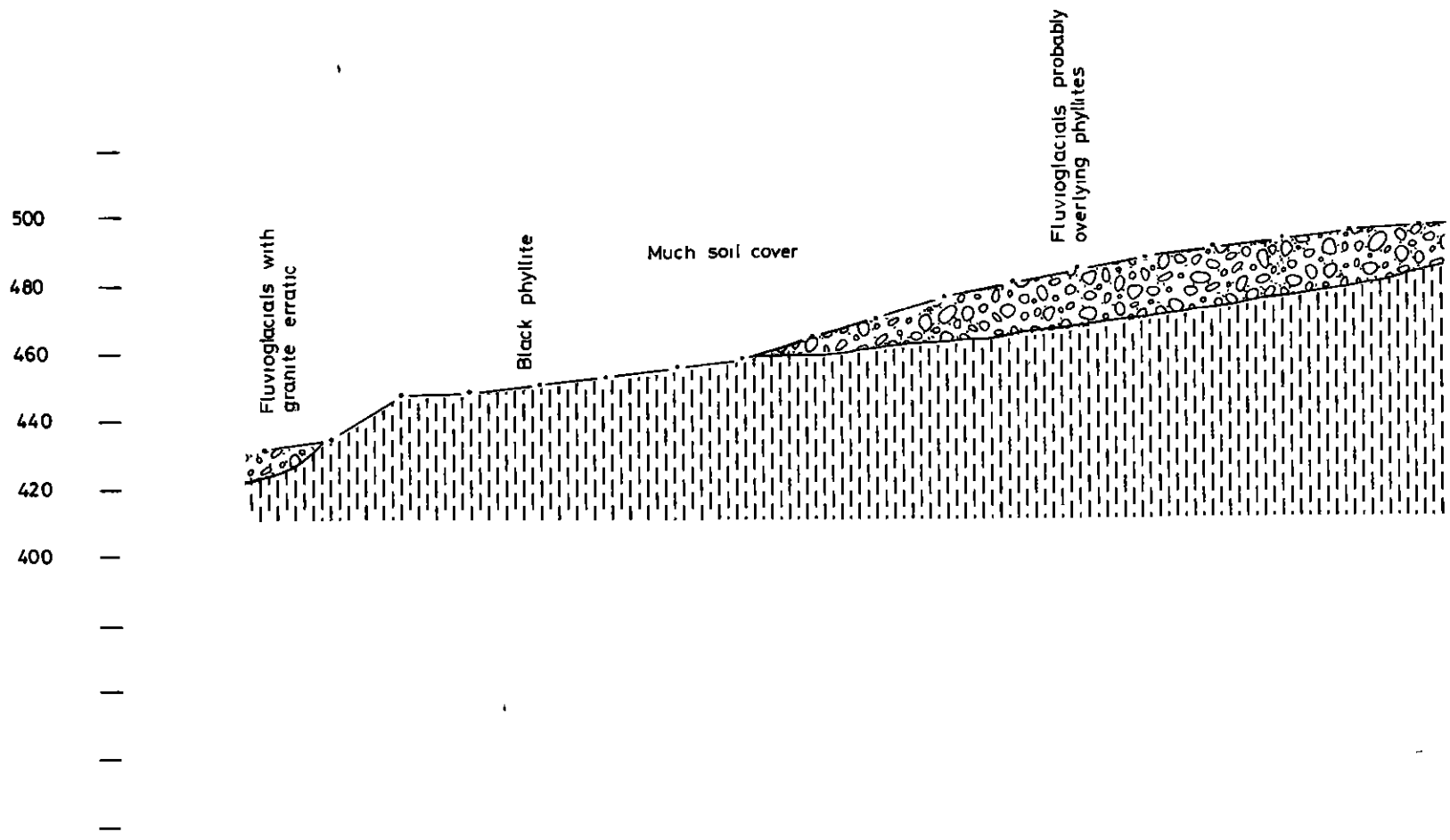
V.L.F

DIP ANGLE

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop(s) and subcrop (sc) indicated where present

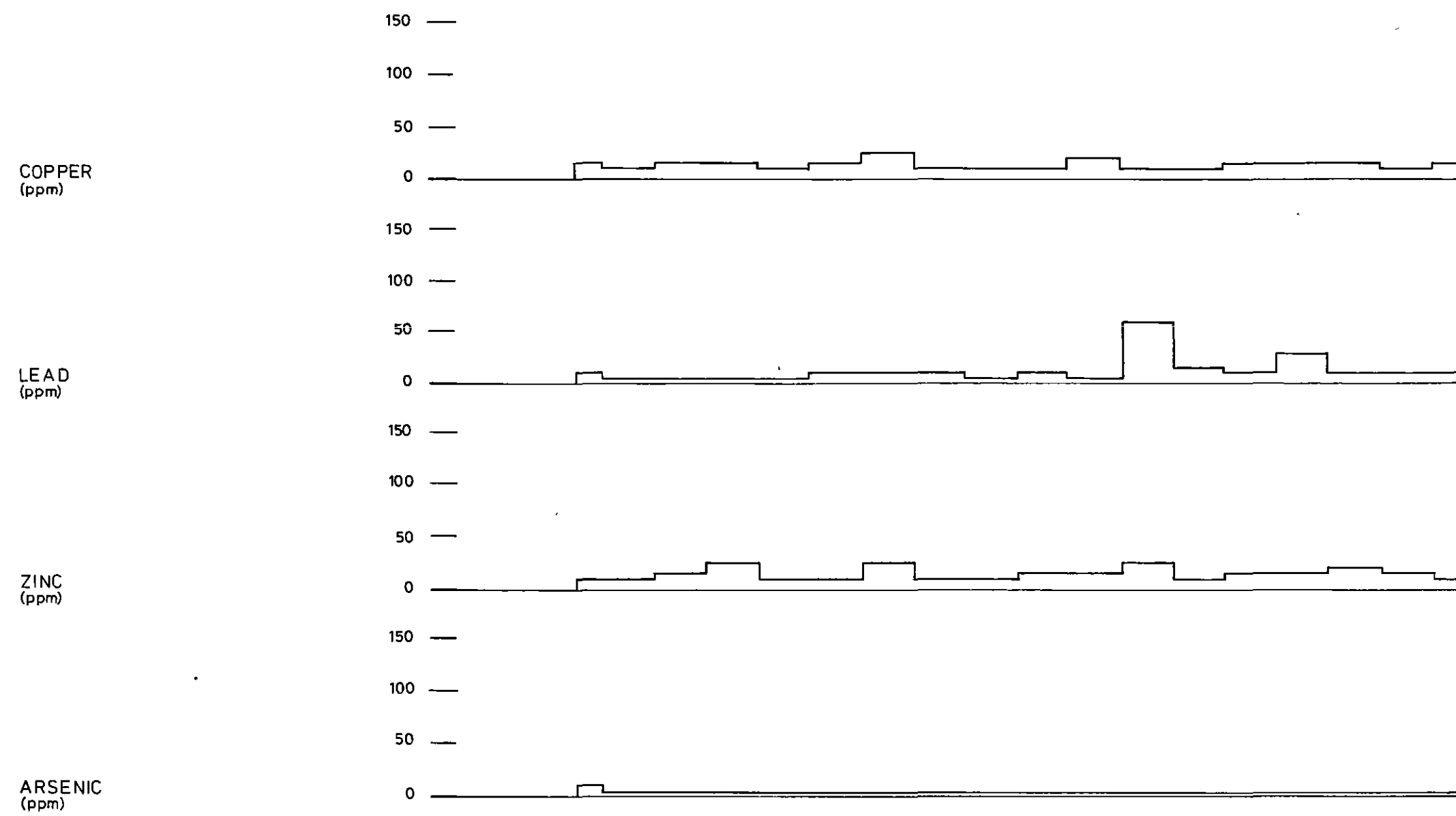
(Metres A S L)



Soil Sample No's & Depths (m)

3434	3435	3436 (0.3)	3437	3438 (0.3)	3439	3440	3441	3442	3443	3444	3445	3446	3447	3448	3449	3450	3451

Soil Sampling Results



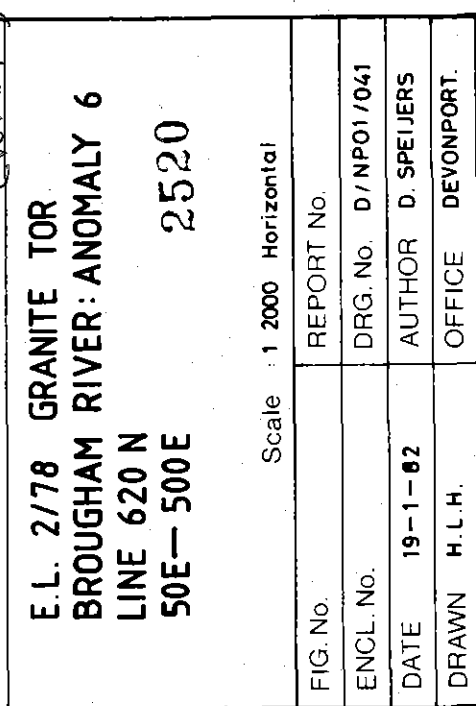
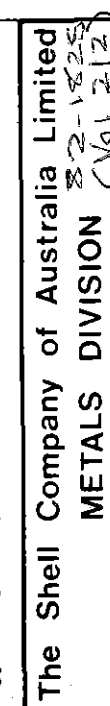
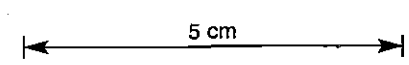
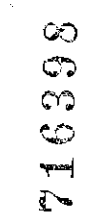
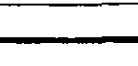
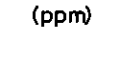
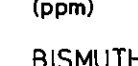
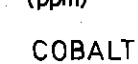
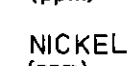
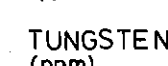
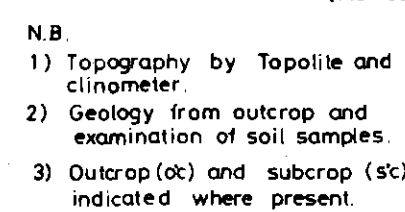
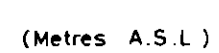
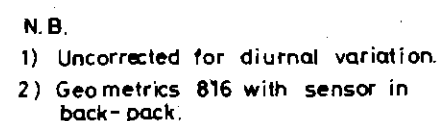
BARIUM (ppm)	75	270	85	240	280	175	145	240	220	270	200	240	260	160	340	260	210	95
TUNGSTEN (ppm)	10	10	10	10	<10	15	<10	10	10	<10	15	10	<10	15	15	10	10	15
NICKEL (ppm)	12	14	4	4	6	6	10	4	<4	12	4	10	14	6	12	8	6	10
COBALT (ppm)	4	<4	6	6	4	4	4	4	<4	4	4	4	<4	<4	4	6	6	6
BISMUTH (ppm)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

716397



5 cm

The Shell Company of Australia Limited	
METALS DIVISION	
E.L. 2/78 GRANITE TOR	
BROUGHAM RIVER: ANOMALY 6	
LINE 720N	
120E-470E	
2519	
Scale 1:2000 Horizontal	
FIG No	REPORT No
ENCL No	DRG No D/MP01/040
DATE 18-1-82	AUTHOR D SPEIJERS
DRAWN H L H	OFFICE DEVONPORT



LINE 520 N

LINE 300 E

716399



100M
50
0
50
100

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANTE TOR
BROUGHAM RIVER - ANOMALY 6
LINE 520 N : 120E - 470E
LINE 300 E : 520N - 720N 2521

FIG No
ENCL No
DATE
DRAWN
REPORT No
DRG No
AUTHOR
OFFICE
DEPARTMENT

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

62500 nT

62000 nT

V.L.F.

RELATIVE FIELD INTENSITY

N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

DIP ANGLE

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (dc) and subcrop (sc) indicated where present

(Metres A.S.L.)

500

480

460

440

420

Grey - Black phyllite

Much soil cover

phyllites
soil covered

Soil Sample No's & Depths (m)

• 3416 (0.3)
• 3417
• 3418
• 3419
• 3420 (0.2)
• 3421 (0.3)
• 3422 (0.3)
• 3423
• 3424 (0.3)
• 3425 (0.3)
• 3426 (0.8)
• 3427 (0.3)
• 3428 (0.3)
• 3429 (0.7)
• 3430 (0.5)
• 3431 (0.5)
• 3432 (0.6)
• 3433

Soil Sampling Results

COPPER
(ppm)

LEAD
(ppm)

ZINC
(ppm)

ARSENIC
(ppm)

BARIUM
(ppm)

TUNGSTEN
(ppm)

NICKEL
(ppm)

COBALT
(ppm)

BISMUTH
(ppm)

• 3401 (1.0)
• 3402
• 3403
• 3404
• 3405 (0.5)
• 3406 (0.2)
• 3407 (0.2)
• 3408 (0.2)

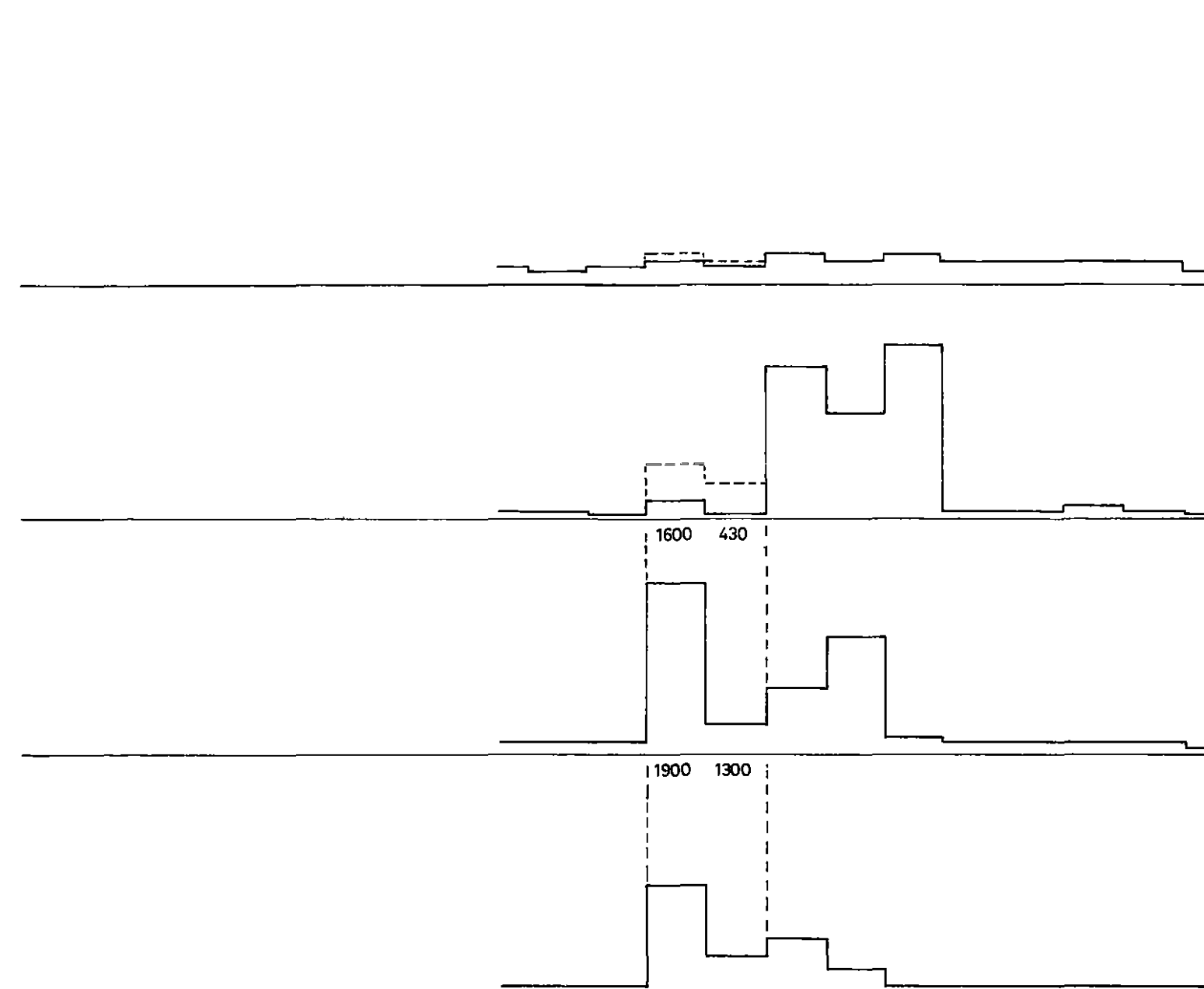
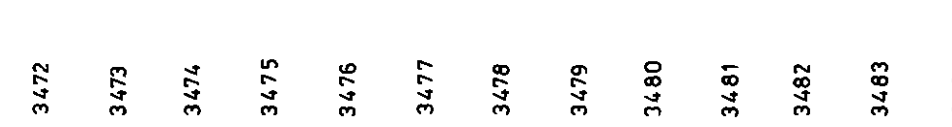
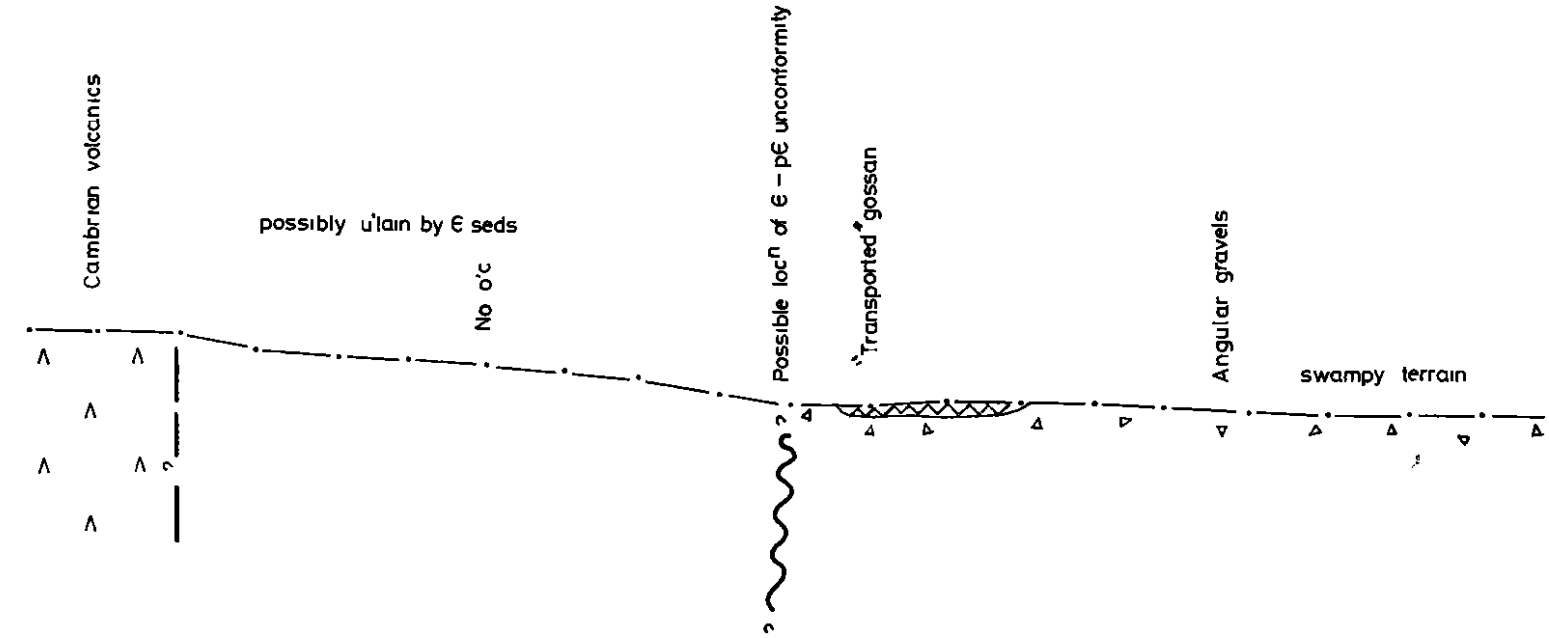
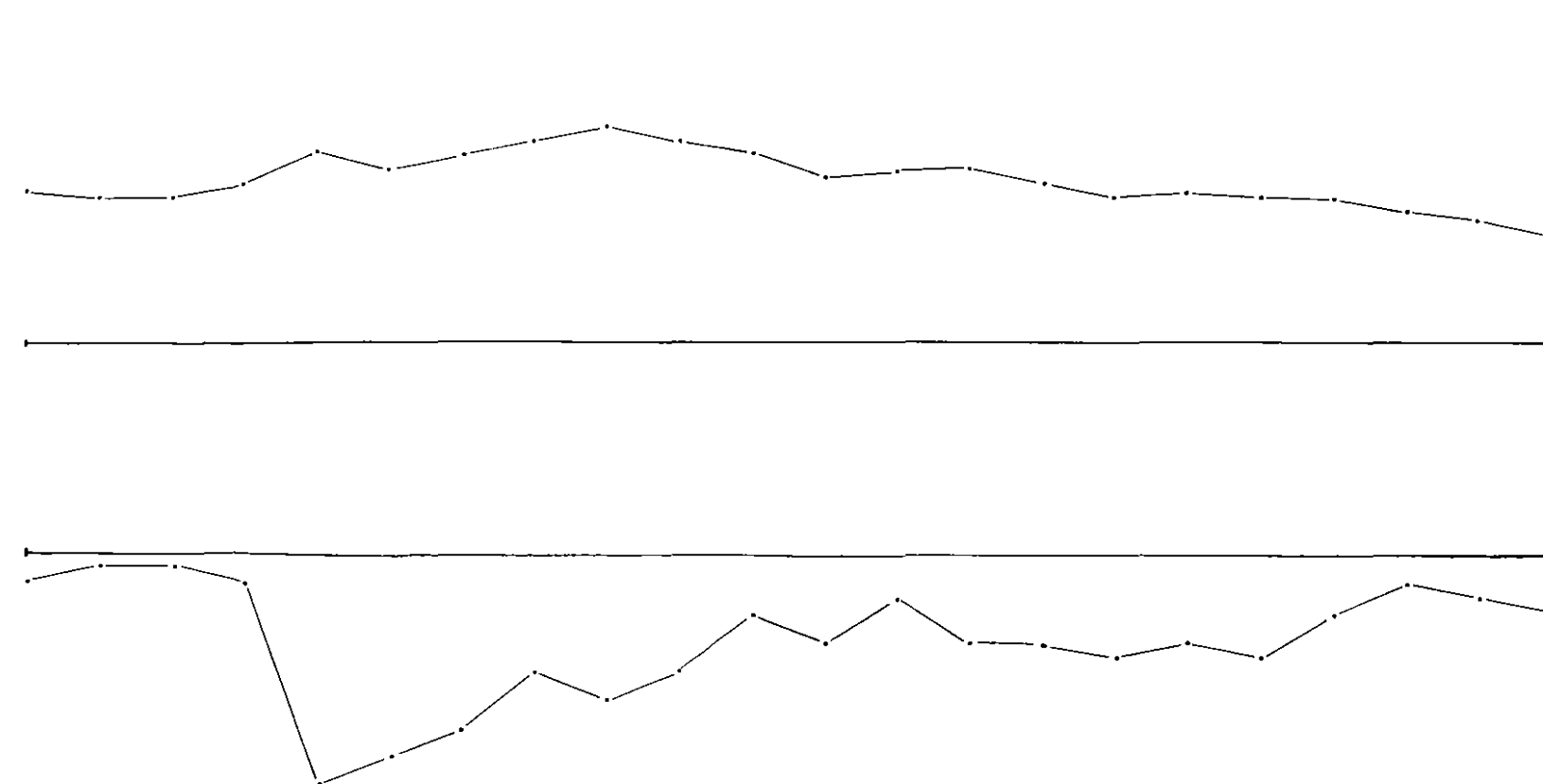
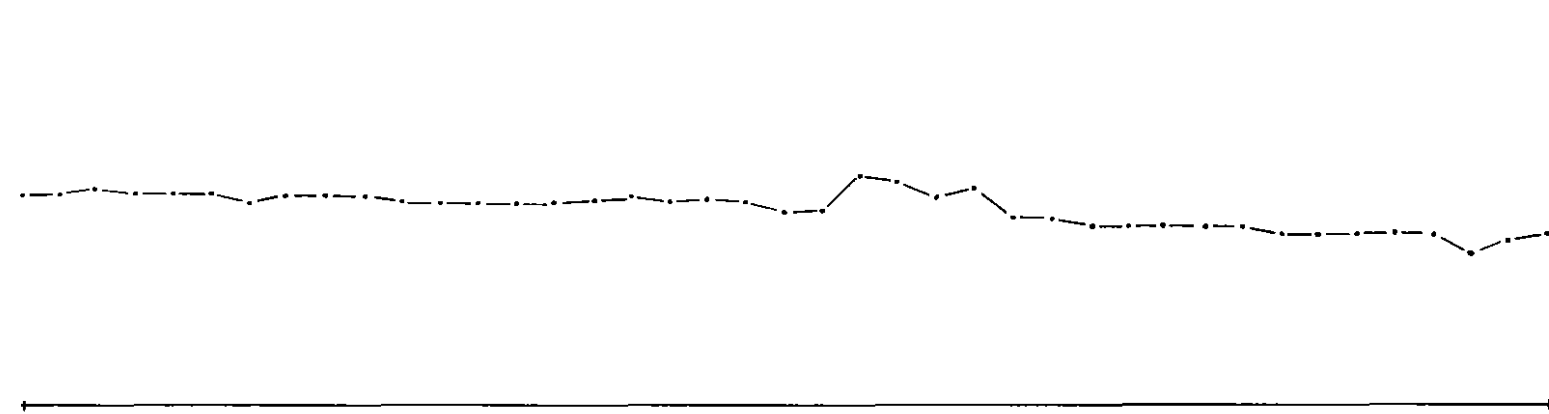
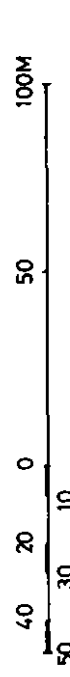
420 300 210 240 260 310 270 135

10 10 10 15 15 15 10 <10

22 14 55 10 12 10 10 16

8 4 10 4 6 <4 4 <4

<4 <4 <4 <4 <4 <4 <4 <4

[illegible]

Total Magnetic Intensity

N B
1 Uncorrected for diurnal variation
2 Geometrics 816 with sensor in back-pack

V.L.F.

N B
Readings taken using
N.W. Cape transmitter

RELATIVE FIELD
INTENSITY

DIP ANGLE

Max - Min

Coil separation ± 150 M
In phase
Out phase

Topography & Geology
(Metres ASL)

N B
1 Topography by Topolite &
Clinometer
2 Geology from o/c & examination
of soil samples
3 Outcrop (o/c) & subcrop (s/c)
indicated where present

Soil Sample No's & Depths (M)

Soil Sampling Results

Analyses in ppm

COPPER

LEAD

ZINC

ARSENIC

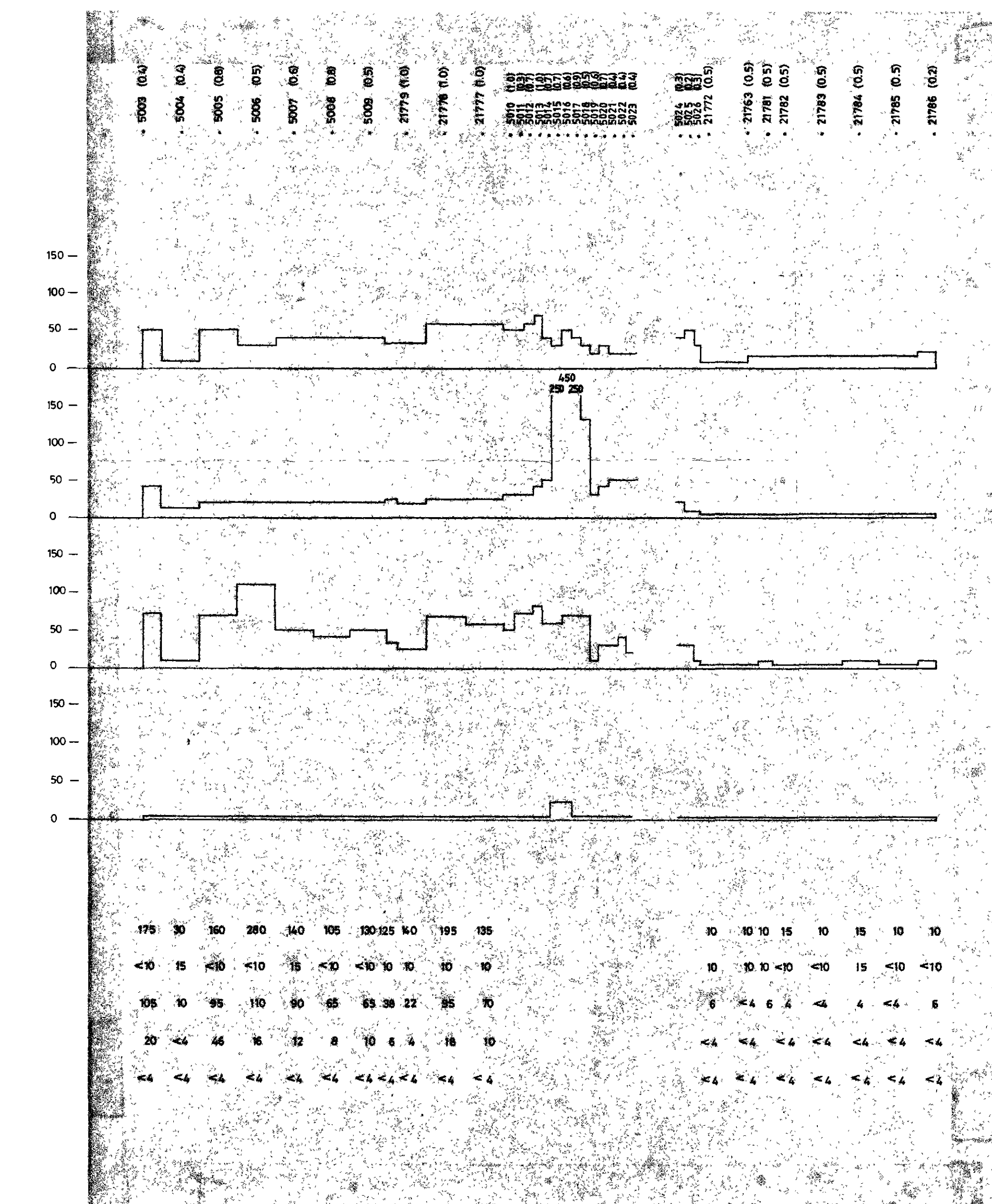
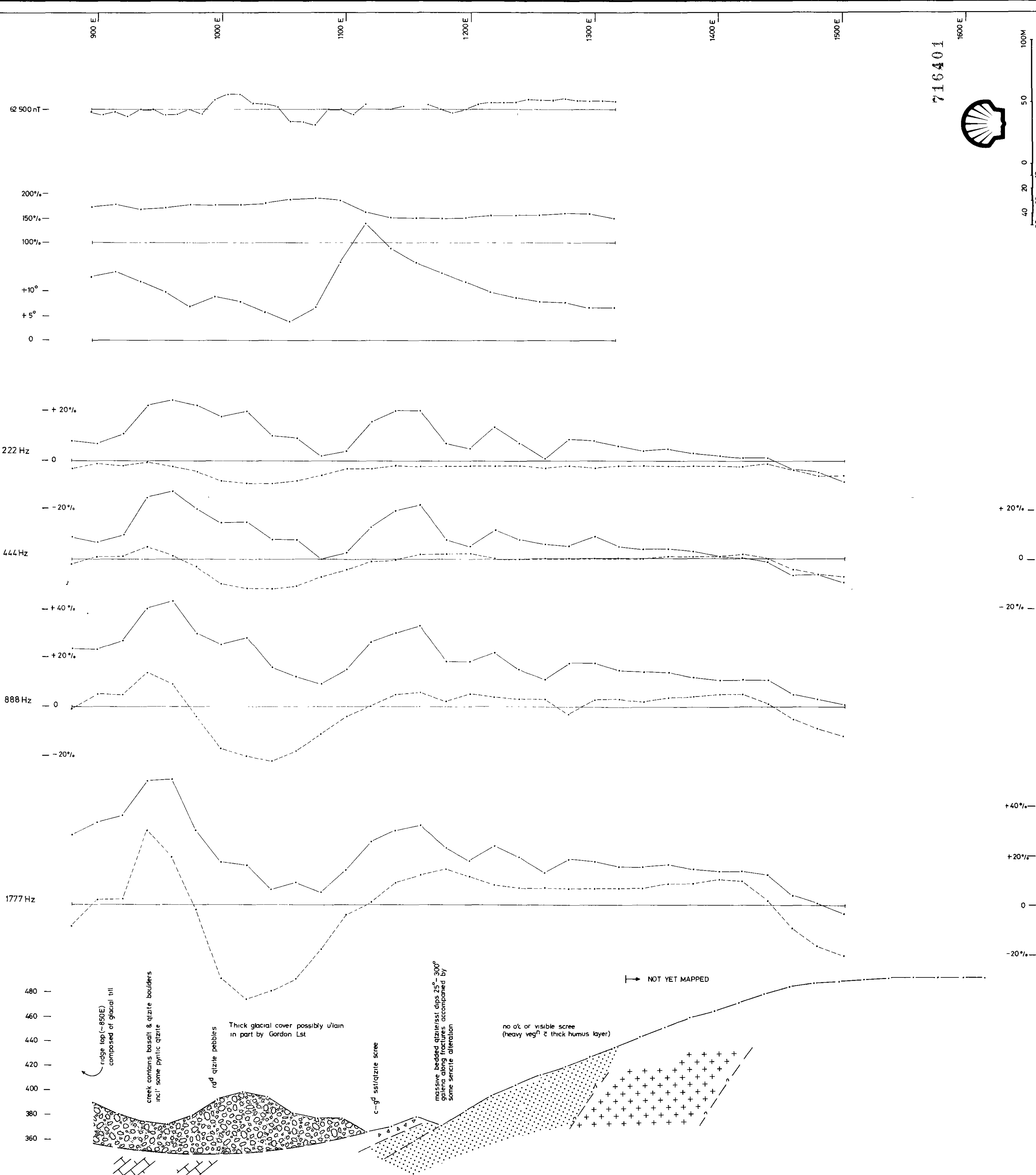
BARIUM

TUNGSTEN

NICKEL

COBALT

BISMUTH



The Shell Company of Australia Limited
METALS DIVISION
E L 2/78 GRANITE TOR
ROMULUS WEST
RAY'S PROSPECT
LINE 2700N - 895E - 1625E
2523

SCALE	1:2000 Horizontal	DATE	30-6-82
AUTHOR	D. SPEIJERS	DRAWN	H.L.S.
OFFICE	DEVONPORT	REP. No.	
ENCL. No.		DRG. No.	D/NP01044

716402



40 20 0 50 100M
50 30 10

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METALS DIVISION

E.L. 2/78 GRANITE TOR
ROMULUS EAST: ANOMALY 5

LINES: 100 S
100 N
50 S
50 N

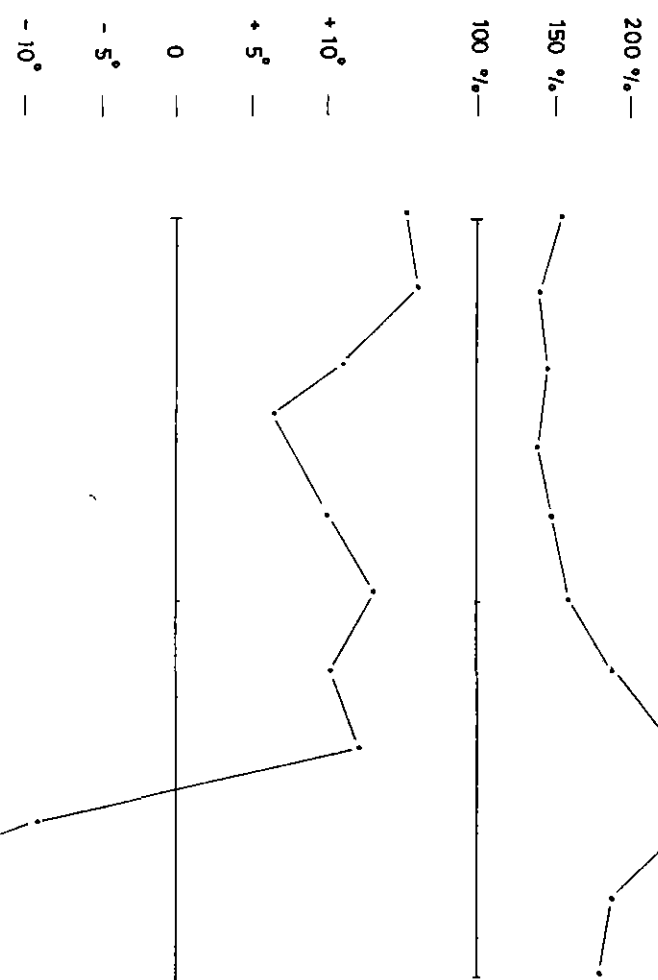
2524

Scale 1:2000

FIG No	REPORT No
ENCL No	DRG No D/NP01050
DATE 19-3-82	AUTHOR D. SPEIJERS
DRAWN H. L. H.	OFFICE DEVONPORT

LINE 100 S

00 100W 200W



N.B. Readings taken using NW Cape transmitter

DIP ANGLE

+15°
+10°
+5°
0°
-5°
-10°

V.L.F.

V.L.F.

RELATIVE FIELD INTENSITY

200 %
150 %
100 %

Topography & Geology

(Metres A.S.L.)

N.B. 1) Topography by Topolite and
2) Geology from outcrop and
3) Outcrop (c) and subcrop (s) indicated where present

NOT MAPPED SEE LINE 00N

NOT MAPPED SEE LINE 00N

Soil Sample Nos & Depths (m)

3301 (0.3)
3302 (0.3)
3303 (0.3)
3304 (0.3)
3305 (0.3)
3306 (0.3)
3307 (0.3)
3308 (0.3)
3309 (0.3)
3310 (0.3)
3311 (0.3)
3312 (0.3)
3313 (0.3)
3314 (0.3)
3315 (0.3)
3316 (0.3)
3317 (0.3)
3318 (0.3)
3319 (0.3)
3320 (0.3)
3321 (0.3)
3322 (0.3)
3323 (0.3)
3324 (0.3)
3325 (0.3)
3326 (0.3)
3327 (0.3)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

LINE 50 N

00 100W 200W

NOT MAPPED SEE LINE 00N

LINE 50 S

00 100W 200W

NOT MAPPED SEE LINE 00N

Topography & Geology

N.B. 1) Topography by Topolite and
2) Geology from outcrop and
3) Outcrop (c) and subcrop (s) indicated where present

(Metres A.S.L.)

Soil Sample Nos & Depths (m)

3328 (0.2)
3329 (0.4)
3330 (0.4)
3331 (0.3)
3332 (0.3)
3333 (0.3)
3334 (0.3)
3335 (0.3)
3336 (0.3)
3337 (0.3)
3338 (0.3)
3339 (0.3)
3340 (0.3)
3341 (0.3)
3342 (0.3)
3343 (0.3)
3344 (0.3)
3345 (0.3)
3346 (0.3)
3347 (0.3)
3348 (0.3)
3349 (0.3)
3350 (0.3)
3351 (0.3)
3352 (0.7)
3353 (0.4)
3354 (0.4)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

716403

40 20 0 50 100M
50 30 10The Shell Company of Australia Limited
METALS DIVISIONE.L. 2/78 GRANITE TOR
VICTORIA PEAK: ANOMALY 10
LINE 500 N
700E-900E

2525

Scale 1:2000 Horizontal

FIG No	REPORT No
ENCL No	DRG No D/NP01/051
DATE 16-4-82	AUTHOR D SPEIJERS
DRAWN H L H	OFFICE DEVONPORT

5 cm

62500 nT



Total Magnetic Intensity
N.B.
1) Uncorrected for diurnal variation
2) Geometrics 815 with sensor in
back-pack

62000 nT



V.L.F.

RELATIVE FIELD
INTENSITY

200 %

150 %

100 %

N.B.
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

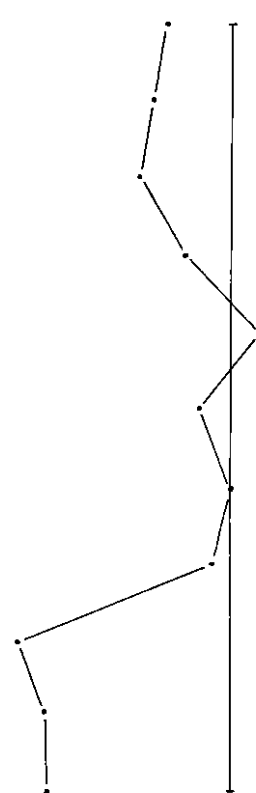
DIP ANGLE

+5°

0°

-5°

-10°



Topography & Geology

420

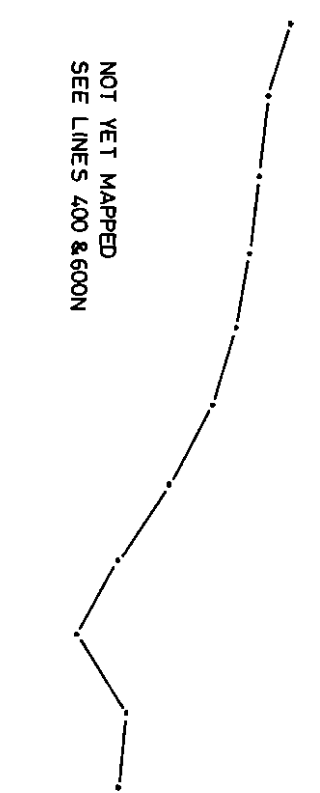
400

380

360

340

NOT YET MAPPED
SEE LINES 400 & 600N



Soil Sample No's & Depths (m)

36266 (0.0)
36267 (0.0)
36268 (0.0)
36269 (0.0)
36270 (0.0)
36271 (0.0)
36272 (0.0)
36273 (0.0)
36274 (0.0)
36275 (0.0)
36276 (0.0)
36277 (0.0)
36278 (0.0)
36279 (0.0)
36280 (0.0)
36281 (0.0)
36282 (0.0)
36283 (0.0)
36284 (0.0)
36285 (0.0)

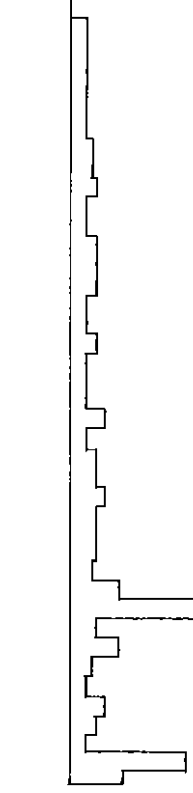
Soil Sampling Results

150

100

50

0

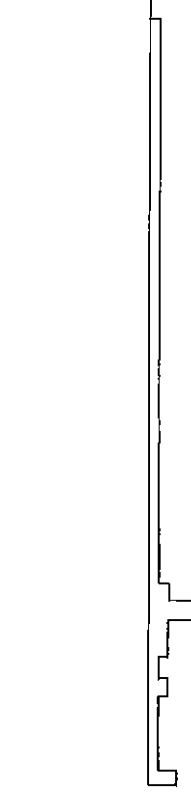
COPPER
(ppm)

150

100

50

0

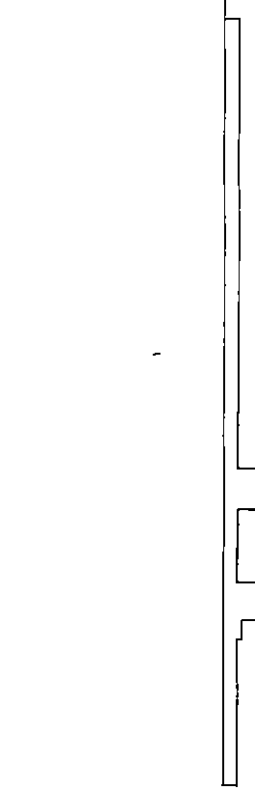
LEAD
(ppm)

150

100

50

0

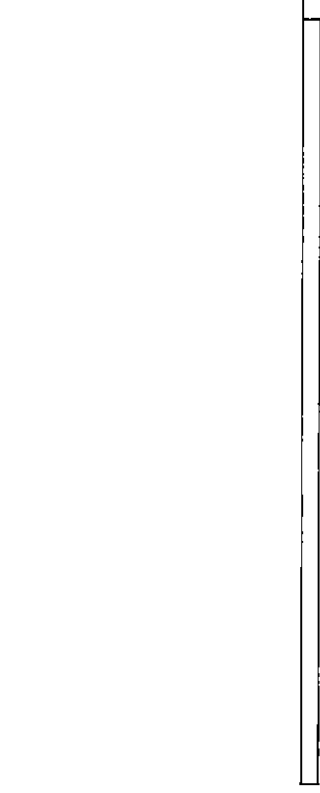
ZINC
(ppm)

150

100

50

0

ARSENIC
(ppm)

1000 E
900 E
800 E
700 E
600 E
1000 E
900 E
800 E

LINE 200N

Soil Sample Nos & Depths (m)

3542 (0.4)
3541 (0.4)
3540 (0.4)
3539 (0.3)
3538 (0.4)
3537 (0.3)
3536 (0.4)
3535 (0.2)
3534 (0.3)
3533
3532
3531
3530 (0.3)
3529 (0.3)
3528 (0.2)
3527 (0.3)
3526 (0.3)
3525 (0.4)
3524 (0.3)
3523 (0.4)
3522 (0.3)
3521 (0.3)
3520 (0.3)
3519 (0.4)
3518 (0.3)
3517 (0.4)
3516 (0.3)
3515 (0.4)
3514 (0.3)
3513 (0.4)
3512 (0.3)
3511 (0.4)
3510 (0.3)
3509 (0.3)
3508 (0.3)
3507 (0.3)
3506 (0.3)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

LINE 600 N

Soil Sample Nos & Depths (m)

3606 (0.9)
3605 (0.9)
3604 (0.5)
3603 (0.5)
3602 (0.5)
3601 (0.5)
3600 (0.5)
3599 (0.5)
3598 (0.4)
3597 (0.3)
3596 (0.3)
3595 (0.5)
3594 (0.2)
3593 (0.4)
3592 (0.1)
3591 (0.1)
3590 (0.2)
3589 (0.1)
3588 (0.3)
3587 (0.2)
3586 (0.5)
3585 (0.3)
3584 (0.5)
3583 (0.3)
3582 (0.5)
3581 (0.3)
3580 (0.2)
3579 (0.3)
3578 (0.4)
3577 (0.3)
3576 (0.2)
3575 (0.5)
3574 (0.2)
3573 (0.3)
3572 (0.3)
3571 (0.3)
3570 (0.3)
3569 (0.4)
3568 (0.3)
3567 (0.5)
3566 (0.2)
3565 (0.3)
3564 (0.4)
3563 (0.3)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

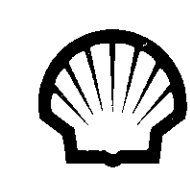
ZINC (ppm)

ARSENIC (ppm)

LINE 400 N

3606 (0.9)
3605 (0.9)
3604 (0.5)
3603 (0.5)
3602 (0.5)
3601 (0.5)
3600 (0.5)
3599 (0.5)
3598 (0.4)
3597 (0.3)
3596 (0.3)
3595 (0.5)
3594 (0.2)
3593 (0.4)
3592 (0.1)
3591 (0.1)
3590 (0.2)
3589 (0.1)
3588 (0.3)
3587 (0.2)
3586 (0.5)
3585 (0.3)
3584 (0.5)
3583 (0.3)
3582 (0.5)
3581 (0.3)
3580 (0.2)
3579 (0.3)
3578 (0.4)
3577 (0.3)
3576 (0.2)
3575 (0.5)
3574 (0.2)
3573 (0.3)
3572 (0.3)
3571 (0.3)
3570 (0.3)
3569 (0.4)
3568 (0.3)
3567 (0.5)
3566 (0.2)
3565 (0.3)
3564 (0.4)
3563 (0.3)

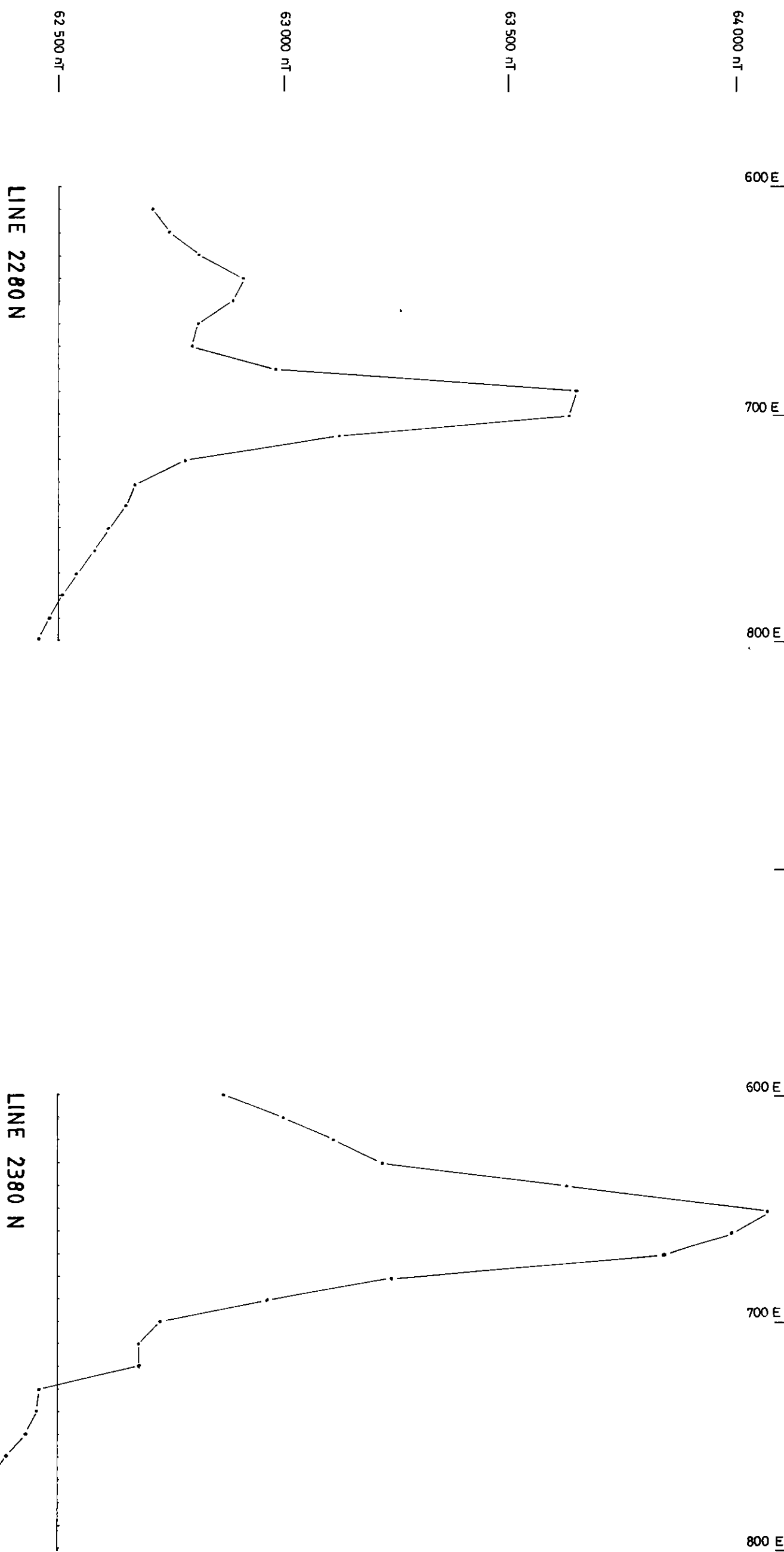
716404



40 20 0 50 100M
50 30 10

The Shell Company of Australia Limited	
METALS DIVISION	
E.L. 2/78 GRANITE TOR	
VICTORIA PEAK : ANOMALY 10	
LINES 200,400, & 600 N	
RESAMPLING AT 5M. INTERVALS	
2526	
Scale 1 2000	
FIG No	REPORT No
ENCL No	DRG No D/NP01/052
DATE 19-4-82	AUTHOR D SPEIJERS
DRAWN H L H	OFFICE DEVONPORT

Total Magnetic Intensity
N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in
back-pack



V.L.F.
RELATIVE FIELD
INTENSITY

N.B.
READINGS TAKEN USING
N.W. CAPE TRANSMITTER.

V.L.F.
DIP ANGLE

Topography & Geology

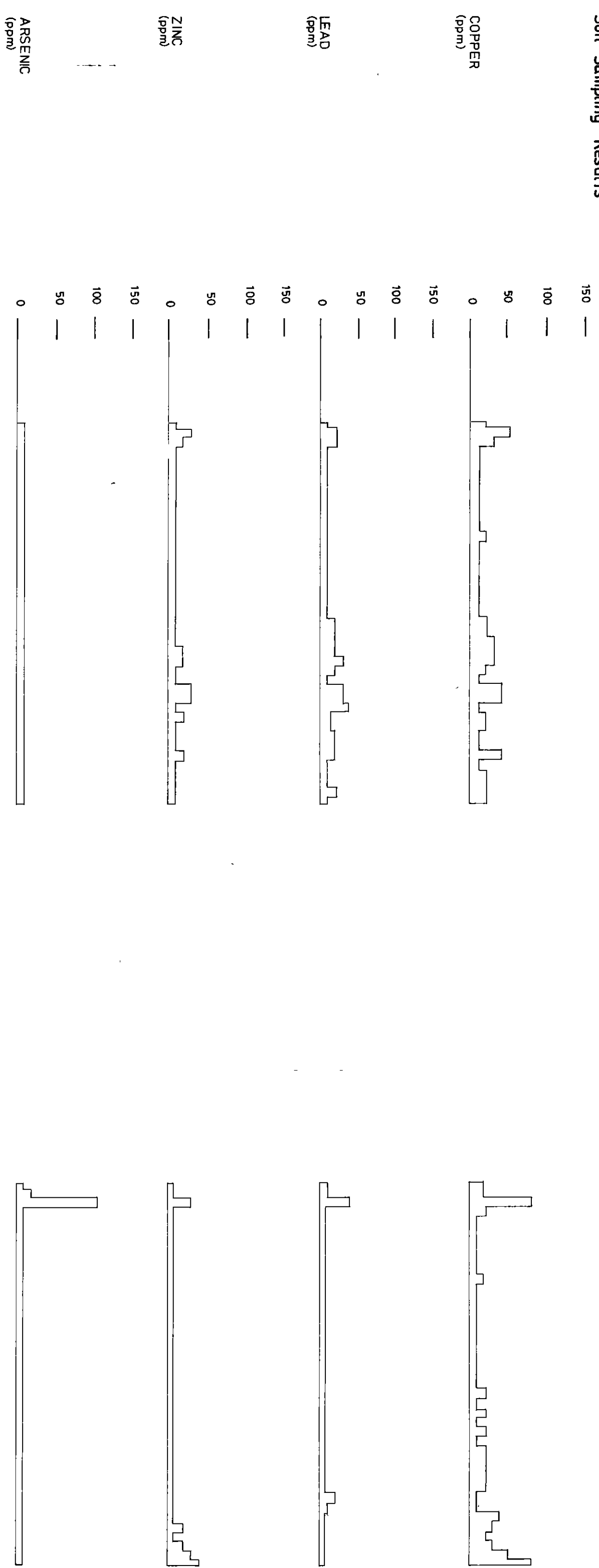
(Metres A.S.L.)
N.B.
1) Topography by Topographic
Clinometer
2) Geology from outcrop and
3) Geology from soil samples
4) Geology from aerial photo (S.C.)
5) Indicated where present

Soil Sample Nos & Depths (m)

4585 (0.2)
4586 (0.2)
4587 (0.2)
4588 (0.2)
4589 (0.2)
4590 (0.2)
4591 (0.2)
4592 (0.2)
4593 (0.2)
4594 (0.2)
4595 (0.2)
4596 (0.2)
4597 (0.2)
4598 (0.2)
4599 (0.2)
4600 (0.2)
4601 (0.2)
4602 (0.2)
4603 (0.2)
4604 (0.2)
4605 (0.2)
4606 (0.2)
4607 (0.2)
4608 (0.2)
4609 (0.2)
4610 (0.2)
4611 (0.2)
4612 (0.2)
4613 (0.2)
4614 (0.2)
4615 (0.2)
4616 (0.2)
4617 (0.2)
4618 (0.2)
4619 (0.2)
4620 (0.2)
4621 (0.2)
4622 (0.2)
4623 (0.2)
4624 (0.2)
4625 (0.2)

4544 (0.2)
4545 (0.2)
4546 (0.2)
4547 (0.2)
4548 (0.2)
4549 (0.2)
4550 (0.2)
4551 (0.2)
4552 (0.2)
4553 (0.2)
4554 (0.2)
4555 (0.2)
4556 (0.2)
4557 (0.2)
4558 (0.2)
4559 (0.2)
4560 (0.2)
4561 (0.2)
4562 (0.2)
4563 (0.2)
4564 (0.2)
4565 (0.2)
4566 (0.2)
4567 (0.2)
4568 (0.2)
4569 (0.2)
4570 (0.2)
4571 (0.2)
4572 (0.2)
4573 (0.2)
4574 (0.2)
4575 (0.2)
4576 (0.2)
4577 (0.2)
4578 (0.2)
4579 (0.2)
4580 (0.2)
4581 (0.2)
4582 (0.2)
4583 (0.2)
4584 (0.2)

Soil Sampling Results



716405



40 20 0 50 100M
50 30 10

The Shell Company of Australia Limited
METALS DIVISION

E.L. 2/78 GRANITE TOR
MURCHISON: ANOMALY 11
LINES 2280 & 2380 N
600E - 800E 2527

Scale 1:2000 Horizontal

FIG No	REPORT No
ENCL No	DRG No D/NP01/053
DATE 21-4-82	AUTHOR D SPEIJERS
DRAWN H.L.H.	OFFICE DEVONPORT

50 E
100 E
170 E

50 E
100 E
170 E

716406



The Shell Company of Australia Limited METALS DIVISION	
E.L. 2/78 GRANITE TOR BROUGHAM RIVER ANOMALY 6 LINES 570, 670 & 620 N 50E - 170E 2528	
Scale 1 2000 Horizontal	
FIG No	REPORT No
ENCL No	DRG No D/NP01/054
DATE 21-4-82	AUTHOR D SPEIJERS
DRAWN H L H	OFFICE DEVONPORT

LINE 570 N

LINE 670 N

Topography & Geology
(Metres A.S.L.)
N.B.
1) Topography by Topolite and
2) Geology from outcrop and
3) Examination of soil samples
4) Dip angles from soil samples (50)
indicated where present

Not mapped see
line 620 N

Soil Sample Nos & Depths (m)

4626
4627
4628
4629
4630
4631
4632
4633
4634
4635
4636
4637
4638
4639
4640
4641
4642
4643
4644
4645
4646
4647
4648
4649
4650

4651 (0.4)
4652 (0.5)
4653 (0.5)
4654 (0.3)
4655 (0.3)
4656 (0.2)
4657 (0.2)
4658 (0.3)
4659 (0.3)
4660 (0.3)
4661 (0.3)
4662 (0.4)
4663 (0.2)
4664 (0.4)
4665 (0.4)
4666 (0.4)
4667 (0.2)
4668 (0.4)
4669 (0.4)
4670 (0.5)
4671 (0.4)
4672 (0.4)
4673 (0.4)
4674 (0.4)
4675 (0.4)

Soil Sampling Results

COPPER (ppm)
150
100
50
0

2000

LEAD (ppm)
150
100
50
0

2000

ZINC (ppm)
150
100
50
0

2000

ARSENIC (ppm)
150
100
50
0

2000

V.L.F.

RELATIVE FIELD
INTENSITY

LINE 620 N

N.B.
READINGS TAKEN USING
NW CAPE TRANSMITTER

DIP ANGLE

+5°
0
-5°
-10°

Topography & Geology

Fluorapatite
Black phyllite

Soil Sample Nos & Depths (m)

4676 (0.9)
4677 (0.9)
4678 (0.9)
4679 (0.8)
4680 (0.7)
4681 (0.5)
4682 (0.5)
4683 (0.5)
4684 (0.5)
4685 (0.4)
4686 (0.2)
4687 (0.2)
4688 (0.2)
4689 (0.5)
4690 (0.5)
4691 (0.4)
4692 (0.4)
4693 (0.5)
4694 (0.4)
4695 (0.4)
4696 (0.4)
4697 (0.4)
4698 (0.4)
4699 (0.4)
4700 (0.4)

Soil Sampling Results

COPPER (ppm)
150
100
50
0

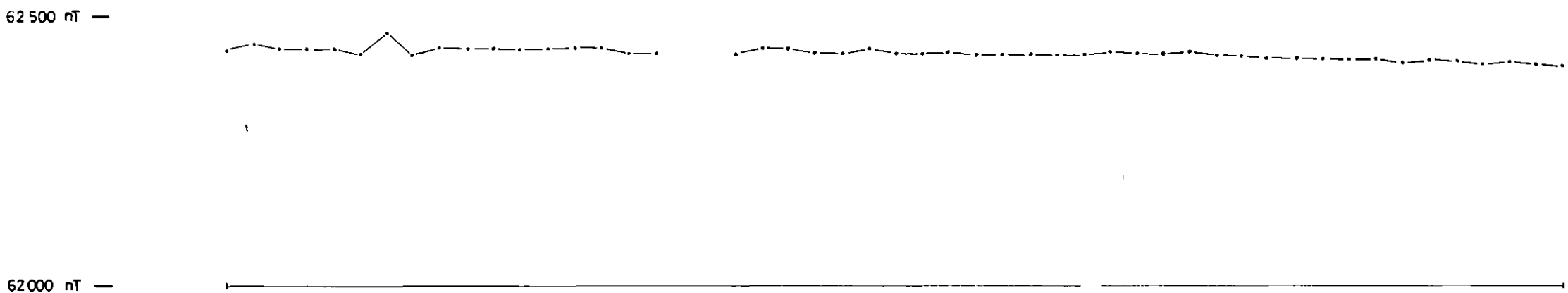
LEAD (ppm)
150
100
50
0

ZINC (ppm)
150
100
50
0

ARSENIC (ppm)
150
100
50
0

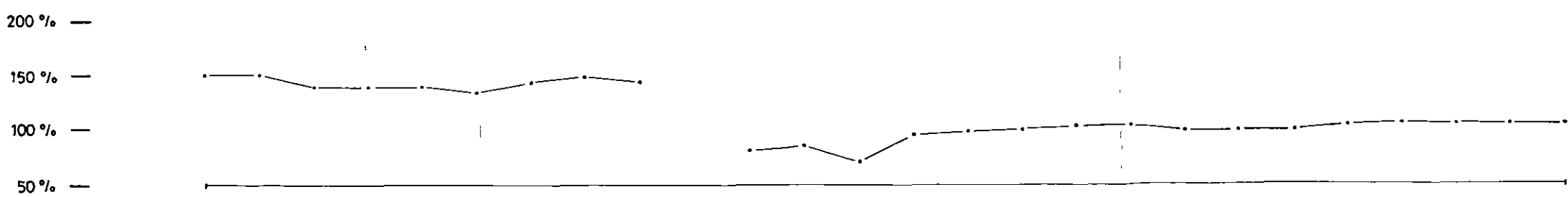
Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation.
2) Geometrics 816 with sensor in back-pack



V.L.F.

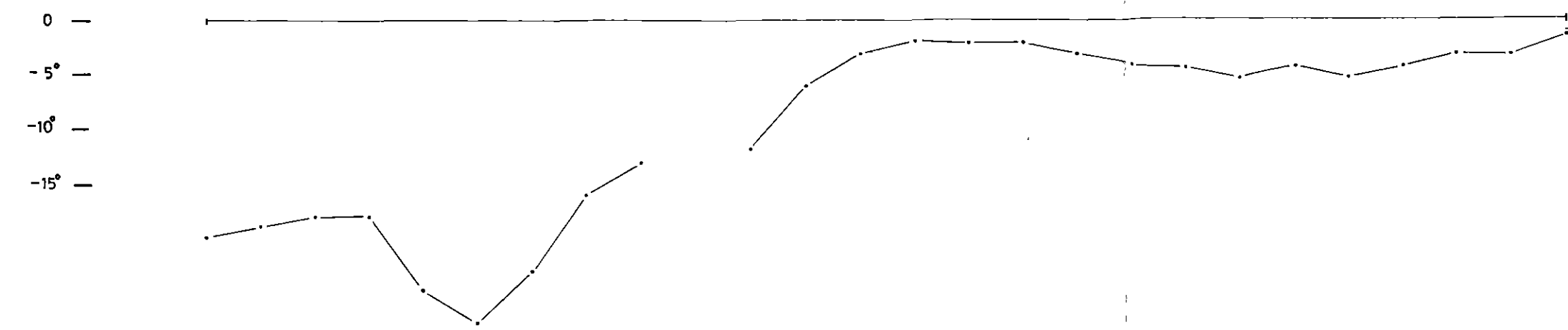
RELATIVE FIELD INTENSITY



N B
READINGS TAKEN USING NW CAPE TRANSMITTER.

V.L.F.

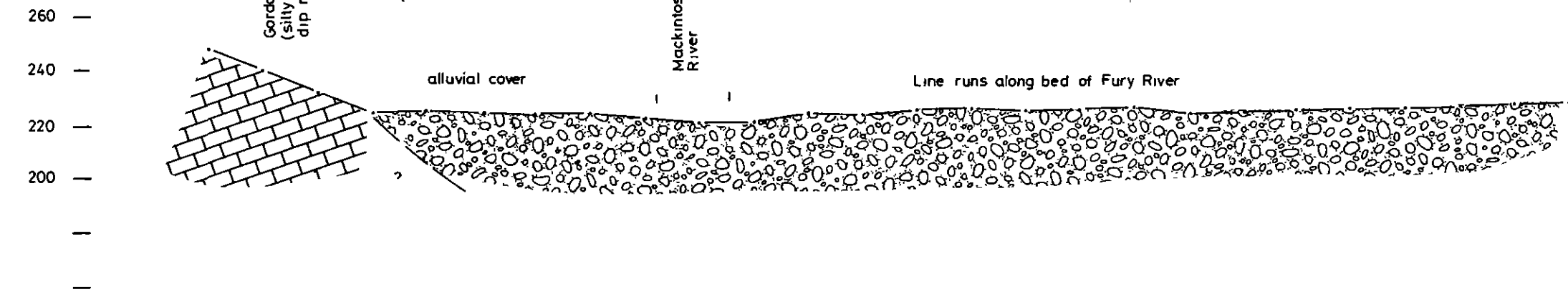
DIP ANGLE



Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (ok) and subcrop (sic) indicated where present

(Metres A S L)



Soil Sample No's & Depths (m)

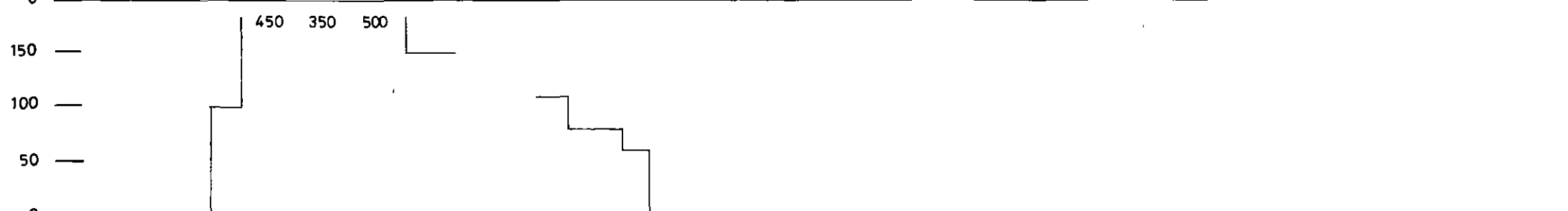
• 4729 (0.2)
• 4730 (0.5)
• 4731 (0.4)
• 4732 (0.6)
• 4733 (0.7)
• 4734 (0.7)
• 4735 (0.9)
• 4736 (1.0)

Soil Sampling Results

COPPER (ppm)



LEAD (ppm)



ZINC (ppm)



ARSENIC (ppm)



BARUM (ppm)

85 155 110 185 180 240 165 210

TUNGSTEN (ppm)

<10 <10 <10 <10 <10 <10 15 <10

NICKEL (ppm)

24 44 16 36 20 16 18 16

COBALT (ppm)

8 10 8 20 8 6 10 10

BISMUTH (ppm)

<4 <4 4 4 8 6 <4 <4

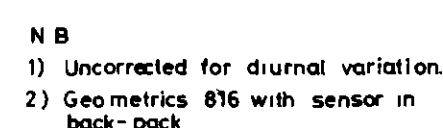
716407



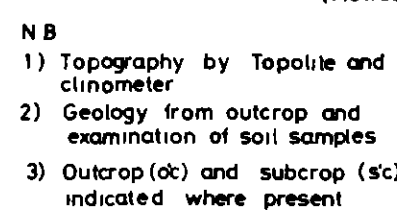
50 40 30 20 10 0 50 100M

5 cm

The Shell Company of Australia Limited	
METALS DIVISION	CNSL 212
E.L. 2/78 GRANITE TOR	
FURY FLATS - ANOMALY 14	
LINE 400N	
300E - 800E	
2529	
Scale 1:2000 Horizontal	
FIG No	REPORT No
ENCL No	DRG No. D/MP01/055
DATE 22-4-82	AUTHOR D SPEJERS
DRAWN H.L.H	OFFICE DEVONPORT

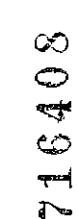
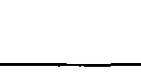
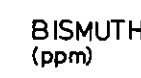
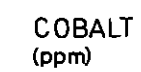
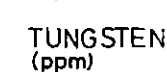
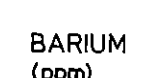
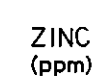


(Metres A S L)



4.701 (0.8)
4.702 (0.5)
4.703 (1.0)
4.704 (0.9)
4.705 (0.3)
4.706 (0.2)
4.707 (0.4)
4.708 (0.3)
4.709 (0.6)
4.710 (0.4)
4.711 (0.5)
4.712 (0.9)
4.713 (0.5)
4.714 (1.0)
4.715 (1.0)
4.716 (1.0)
4.717 (1.0)
4.718 (0.6)
4.719 (0.8)
4.720 (0.5)

COPPER
(ppm)



The Shell Company of Australia Limited
METALS DIVISION
32-18225
C/61 2/2

E.E.L. 2/78 GRANITE TOR
FURY FLATS: ANOMALY 14
LINE 400E
340N-700N 2530

Scale 1 2000 Horizontal

REPORT No.

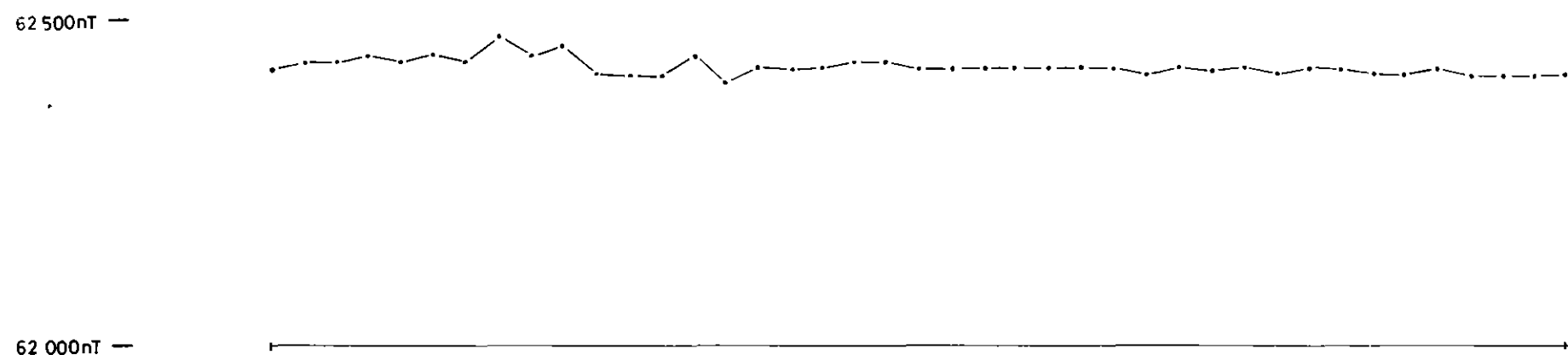
ORG No D/NP01/056

AUTHOR D SPEIJERS

OFFICE DEVONPORT

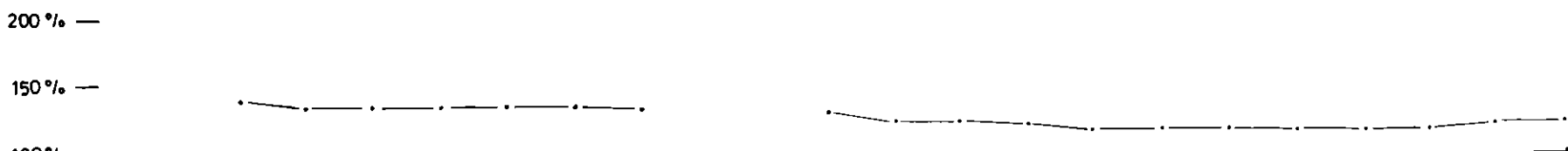
Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F

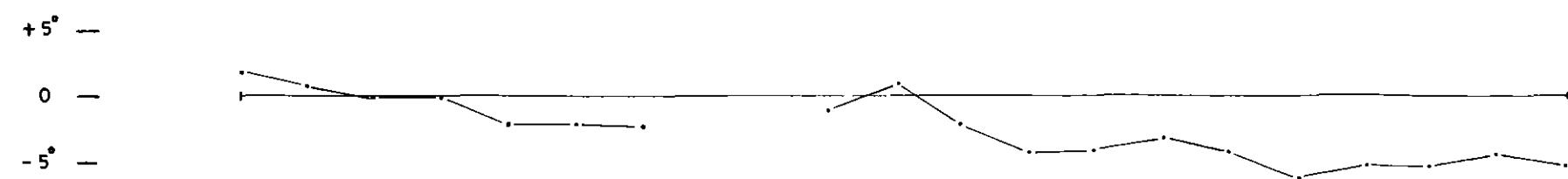
RELATIVE FIELD INTENSITY



N.B.
READINGS TAKEN USING NW CAPE TRANSMITTER.

V.L.F.

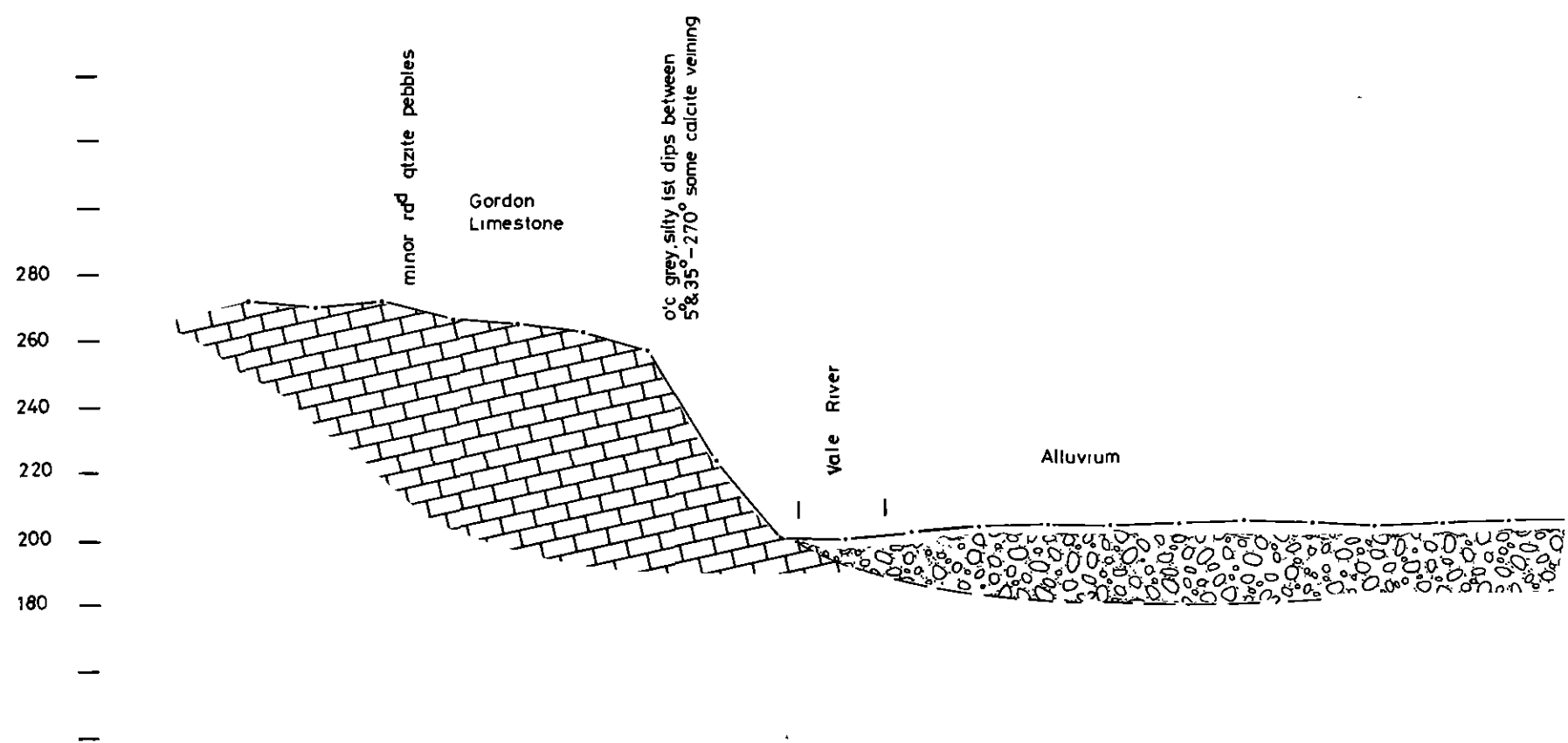
DIP ANGLE



Topography & Geology

N.B.
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present

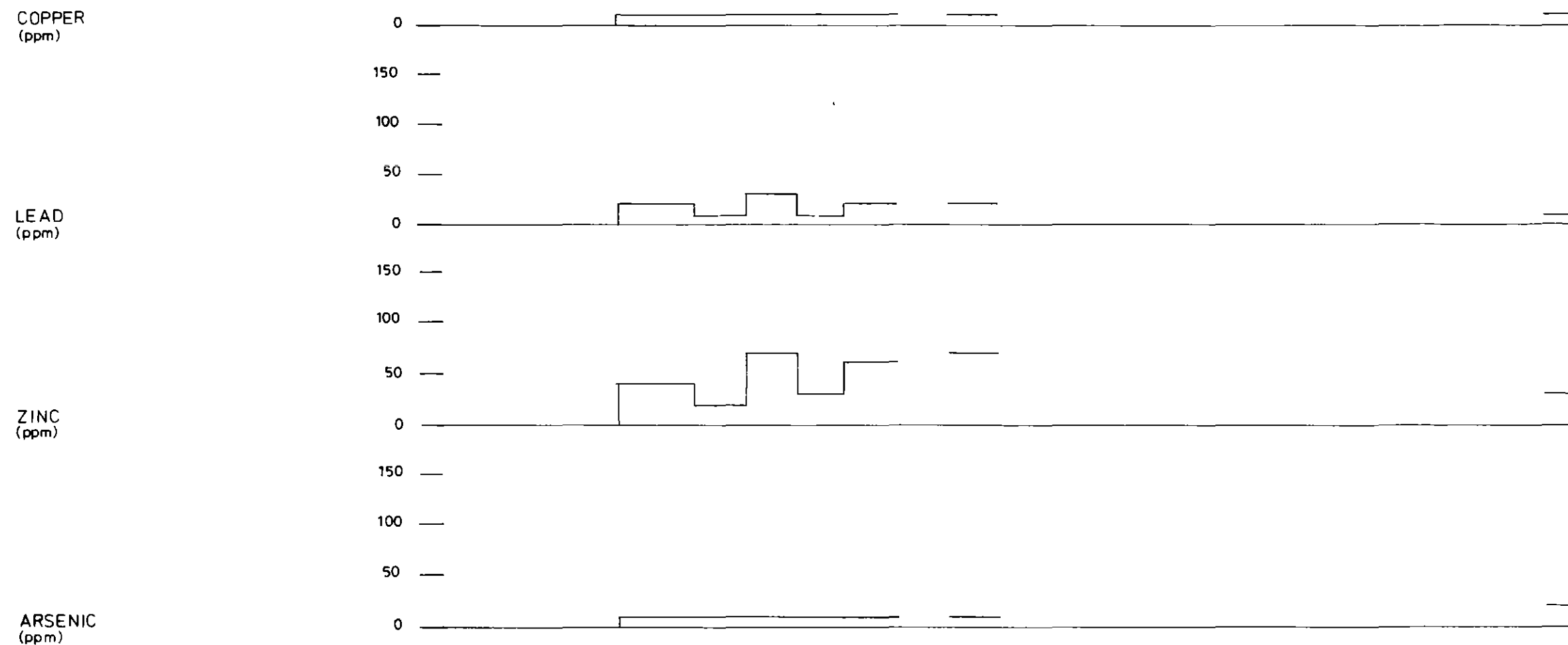
(Metres A.S.L.)



Soil Sample No's & Depths (m)

• 4721 (0.4)
• 4722 (0.5)
• 4723 (0.6)
• 4724 (0.5)
• 4725 (0.3)
• 4726 (0.5)
• 4727 (0.4)
• 4728 (1.0)

Soil Sampling Results



BARIUM (ppm)	175	175	160	200	160	250	190	210
TUNGSTEN (ppm)	<10	<10	<10	<10	<10	<10	<10	10
NICKEL (ppm)	14	14	6	42	16	26	20	8
COBALT (ppm)	4	4	<4	10	<4	10	8	<4
BISMUTH (ppm)	<4	<4	<4	<4	<4	<4	<4	<4

716409



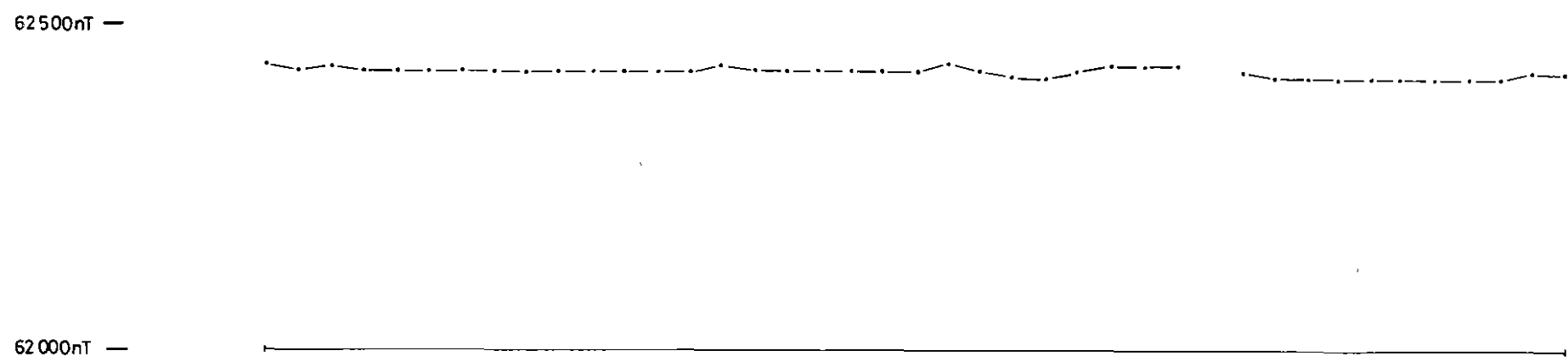
The Shell Company of Australia Limited
METALS DIVISION
E.L. 2/78 GRANITE TOR
FURY FLATS : ANOMALY 14
LINE 550N
400E - 800E

2531

FIG No	REPORT No	Scale	1 2000 Horizontal
ENCL No	DRG No	D/NP01/057	
DATE	23-4-82	AUTHOR	D SPEIJERS
DRAWN	H L H	OFFICE	DEVONPORT

Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F.

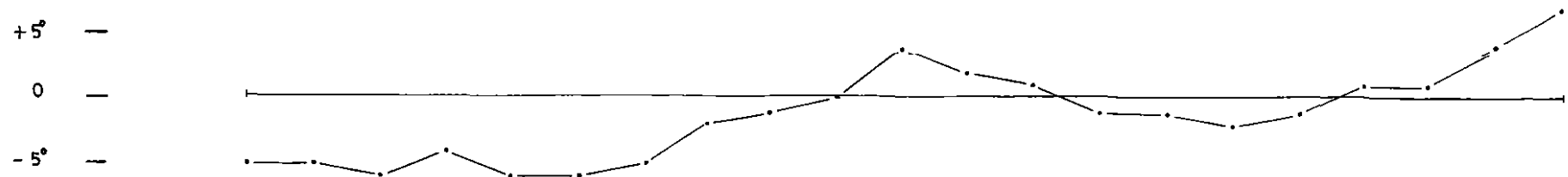
N.B.
READINGS TAKEN USING
NW CAPE TRANSMITTER.

RELATIVE FIELD
INTENSITY



V.L.F.

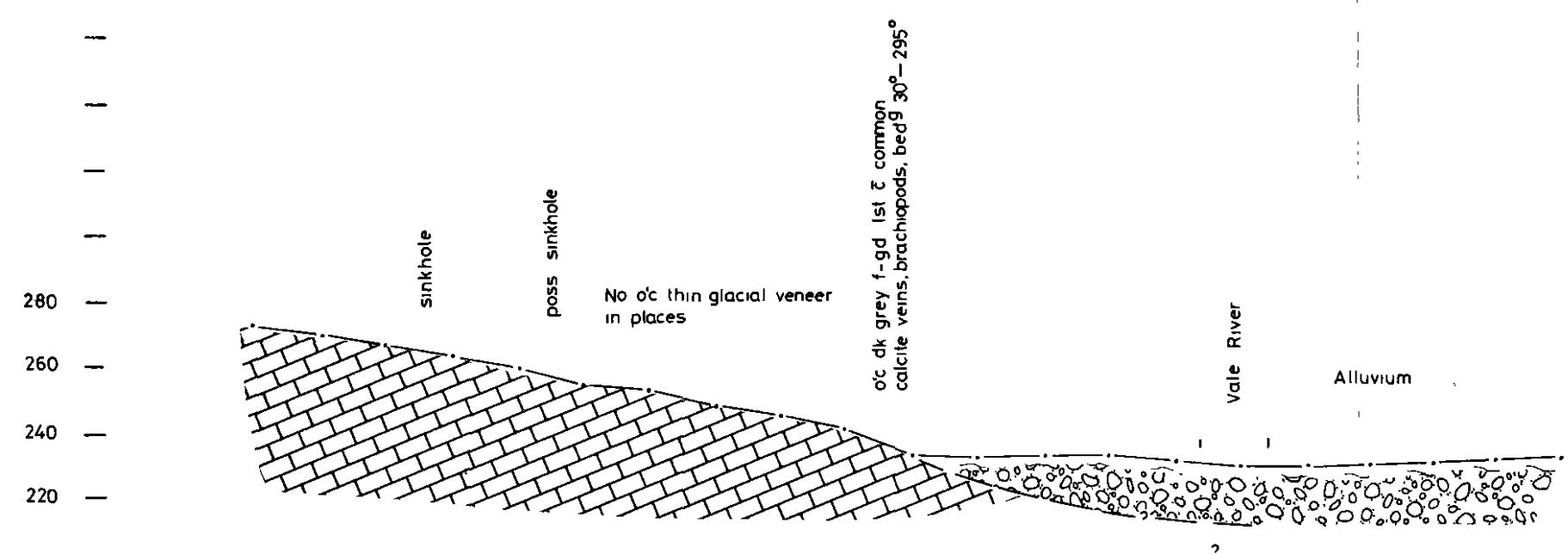
DIP ANGLE



Topography & Geology

N.B.
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (ok) and subcrop (sc) indicated where present

(Metres A.S.L.)



Soil Sample No's & Depths (m)

• 4737 (1.0)
• 4738 (1.0)
• 4739 (0.4)
• 4740 (0.4)
• 4741 (0.4)
• 4742 (0.8)
• 4744 (0.8)
• 4743 (0.4)
• 4745 (0.8)
• 4746 (1.0)
• 4747 (1.0)
• 4748 (1.0)
• 4749 (1.0)
• 4750 (1.0)

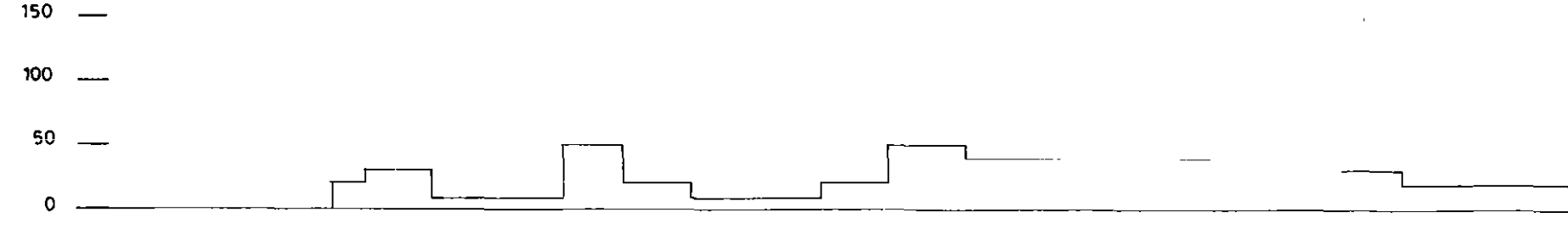
• 4751 (1.0)
• 4752 (0.9)
• 4753 (1.0)
• 4754 (1.0)

Soil Sampling Results

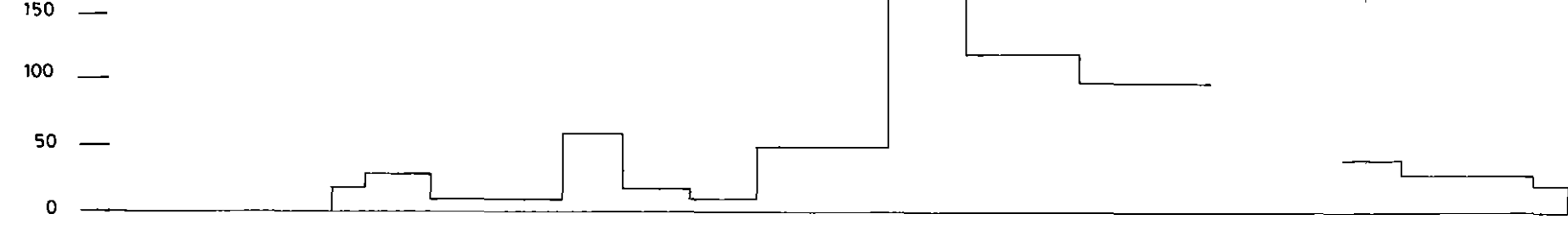
COPPER
(ppm)



LEAD
(ppm)



ZINC
(ppm)



ARSENIC
(ppm)



BARIUM
(ppm)

105 135 35 70 140 55 65 105 100 190 220 250 175 180 270 290 220 270

TUNGSTEN
(ppm)

15 <10 <10 <10 <10 10 <10 <10 <10 <10 <10 <10 <10 10 <10 10 <10

NICKEL
(ppm)

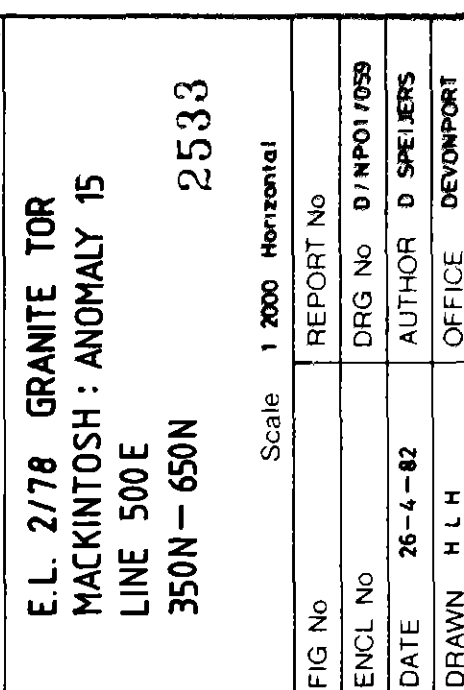
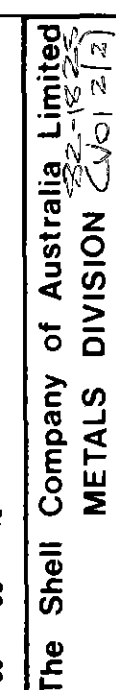
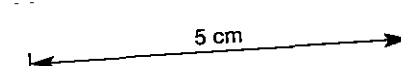
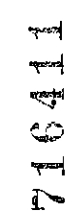
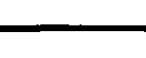
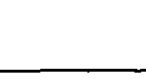
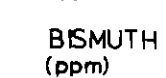
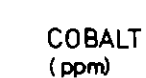
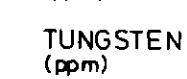
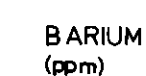
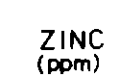
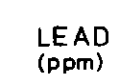
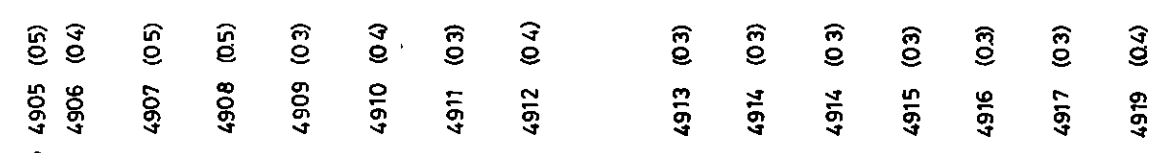
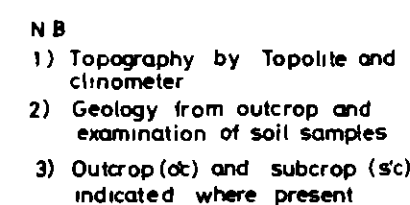
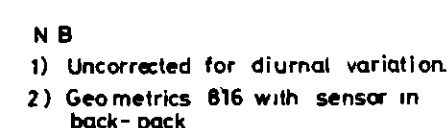
6 10 <4 <4 18 4 <4 18 14 34 28 24 28 24 10 8 8 4

COBALT
(ppm)

<4 <4 <4 <4 <4 <4 <4 8 <4 14 12 16 18 12 4 4 <4 6

BISMUTH
(ppm)

<4 <4 <4 <4 <4 4 <4 <4 <4 6 <4 4 <4 <4 <4 <4 <4 <4



500 E 600 E 700 E 500 E 540 E

LINE 500N LINE 350 N

62 500 nT 62 000 nT

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

500 40 30 20 10 0 50 100M

Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack

V.L.F.

RELATIVE FIELD INTENSITY

N B
READINGS TAKEN USING NW CAPE TRANSMITTER.

V.L.F.

DIP ANGLE

Topography & Geology

N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present

Soil Sample No's & Depths (m)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

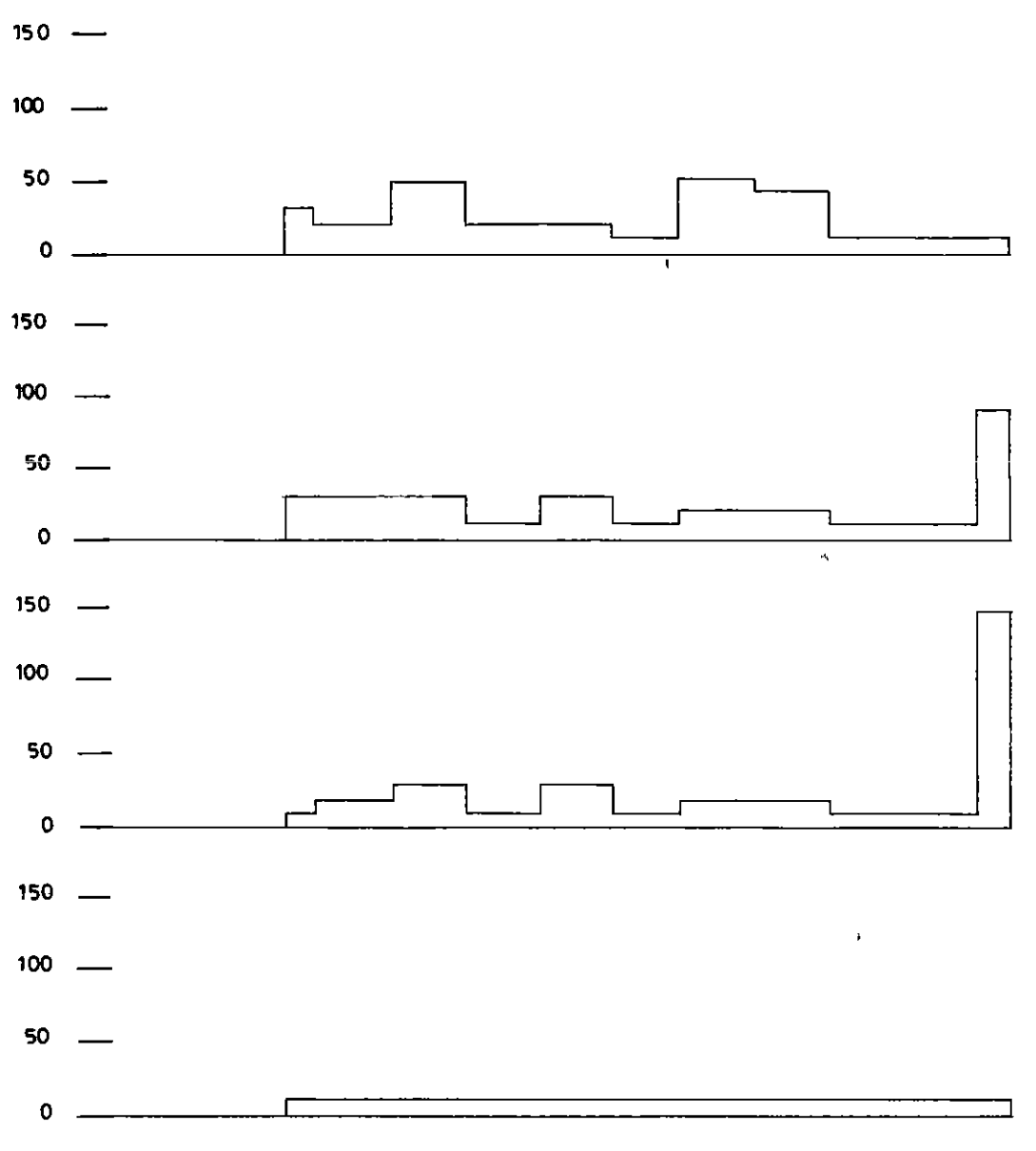
BARIUM (ppm)

TUNGSTEN (ppm)

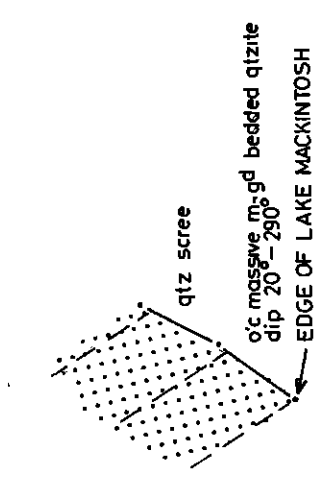
NICKEL (ppm)

COBALT (ppm)

BISMUTH (ppm)



30	90	90	60	195	30	20	25	15	15	195
<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
18	22	34	14	22	<4	12	12	6	6	24
<4	<4	<4	4	<4	<4	<4	<4	<4	<4	<4
<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4



230	390
10	<10
16	24
<4	<4
<4	<4

716412

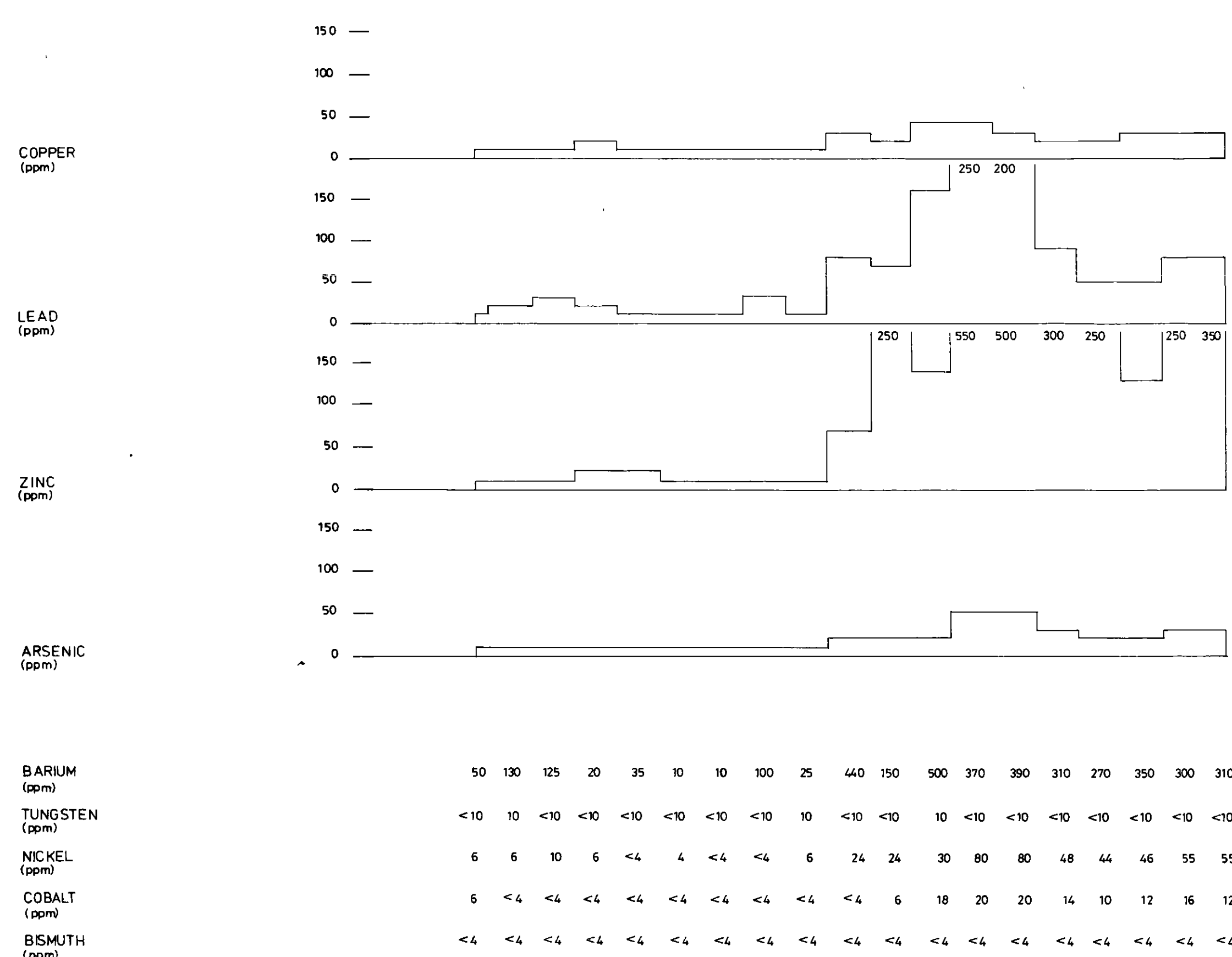
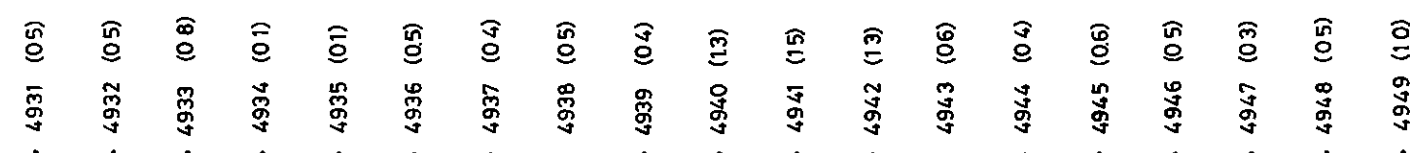
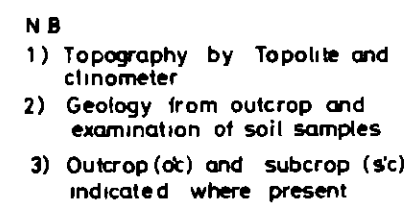
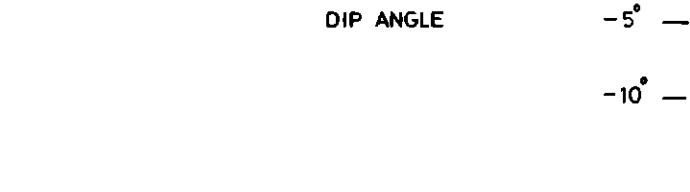
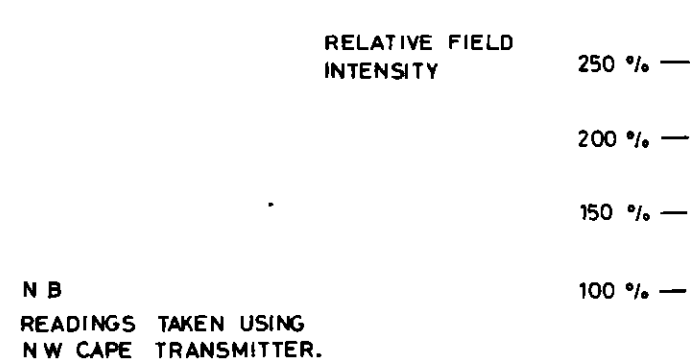
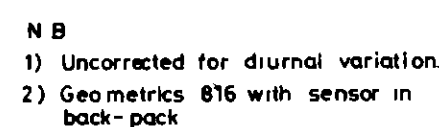


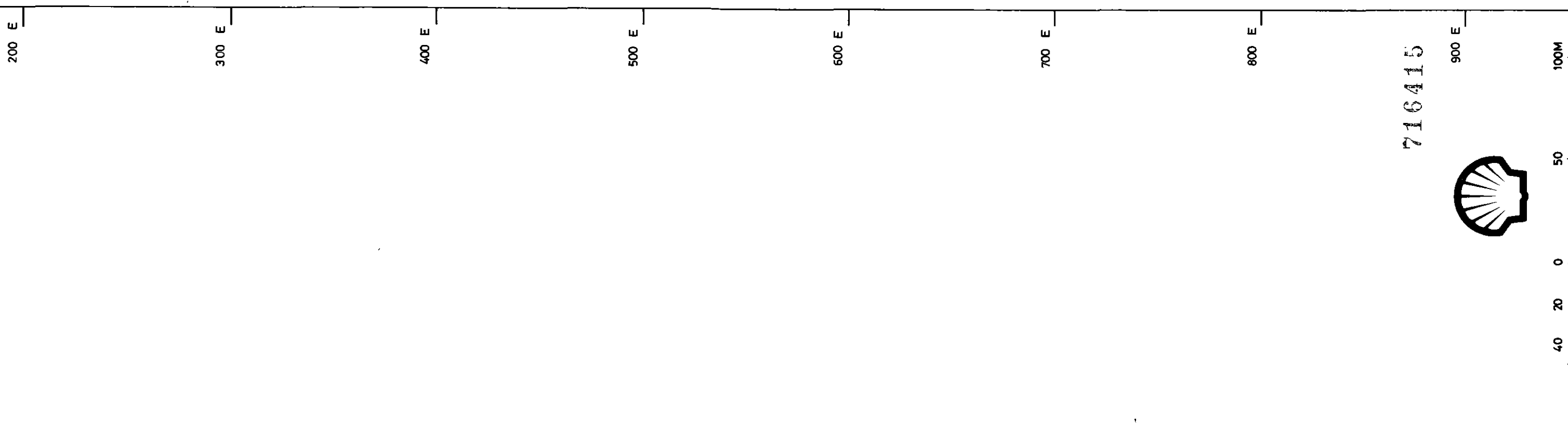
50 100M

The Shell Company of Australia Limited
METALS DIVISION
E.L. 2/78 GRANITE TOR
MACKINTOSH: ANOMALY 15
LINES 500N - 500E - 700E
350N - 500E - 540E 2534

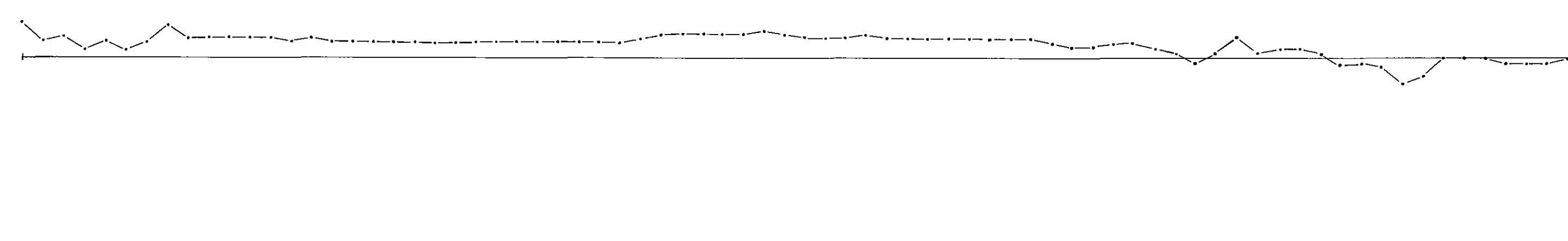
FIG No	REPORT No	Scale	1:2000 Horizontal
ENCL No	DRG No	D/HPO1/060	
DATE	27-4-82	AUTHOR	D SPEIJERS
DRAWN	H L H	OFFICE	DEVONPORT

5 cm

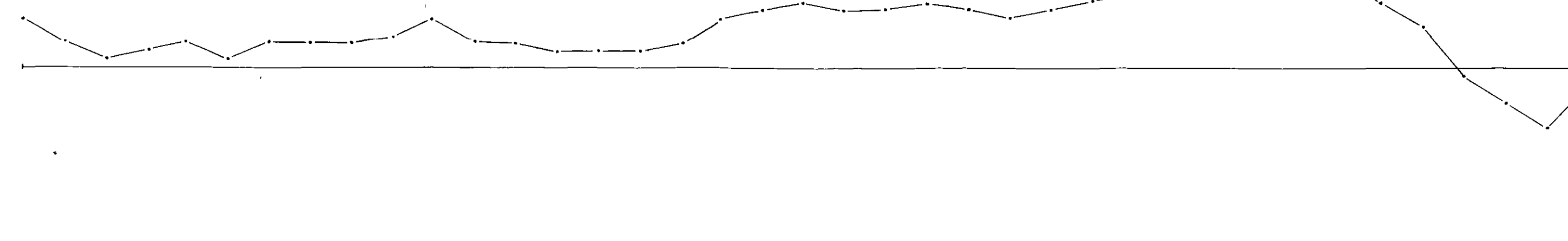




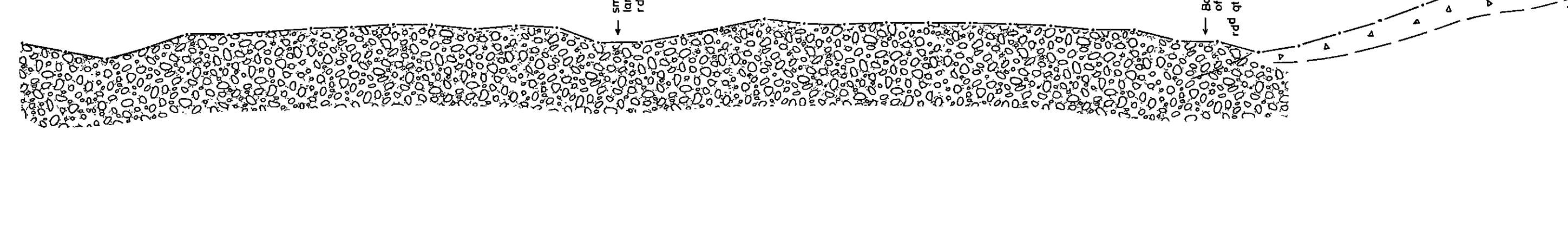
Total Magnetic Intensity
NB
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F.
RELATIVE FIELD INTENSITY
NB
READINGS TAKEN USING NW CAPE TRANSMITTER.



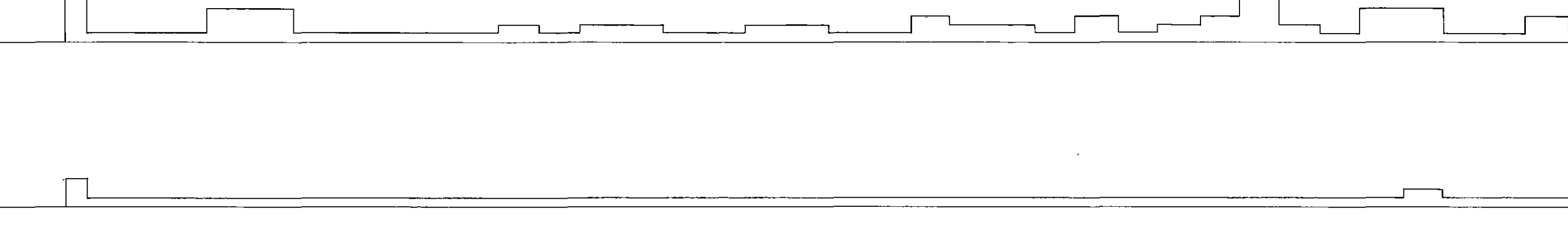
V.L.F.
DIP ANGLE



Topography & Geology
(Metres A.S.L.)
NB
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop(s) and subcrop (s/c) indicated where present



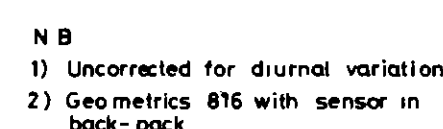
Soil Sample No's & Depths (m)



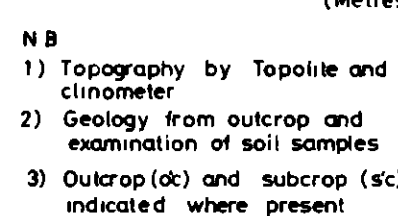
Soil Sampling Results



Soil Sampling Results

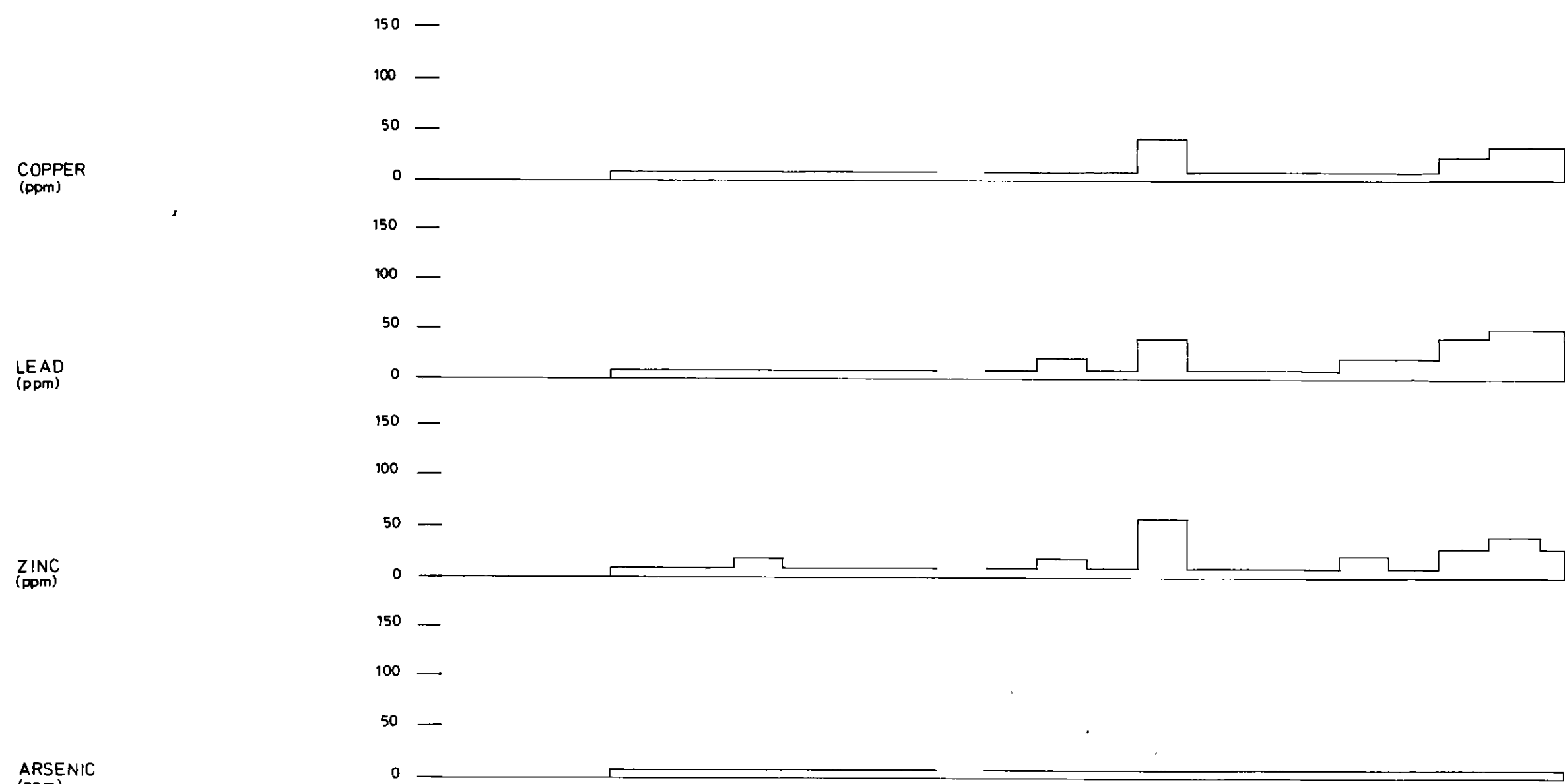


Topography & Geology

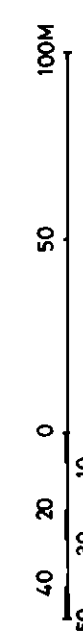


Soil Sample No's & Depths (m)

Soil Sampling Results

[illegible]

216416



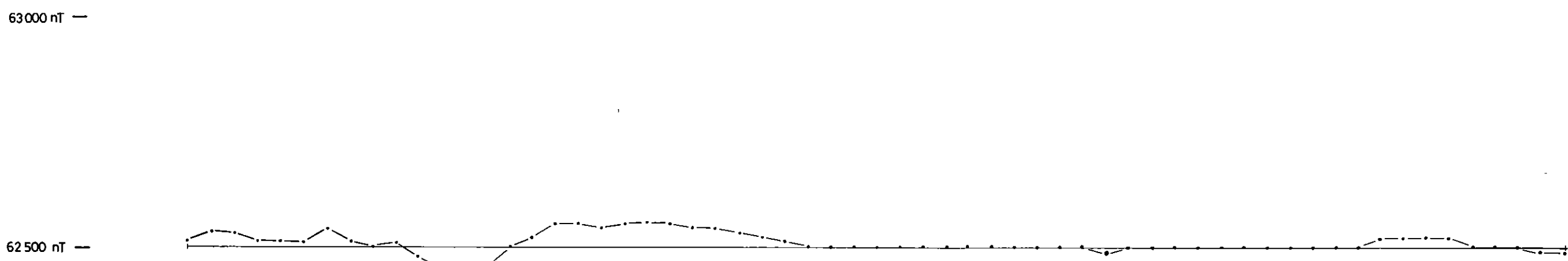
The Shell Company of Australia Limited
METALS DIVISION

LINE 600N 2538
200E - 600E

Scale	1 2000	Horizontal
FIG No	REPORT No	
ENCL No	DRG No D/NP01/064 A	
DATE	29-4-82	
AUTHOR	D SPEIJERS	
OFFICE	DEWIJNDIJK	

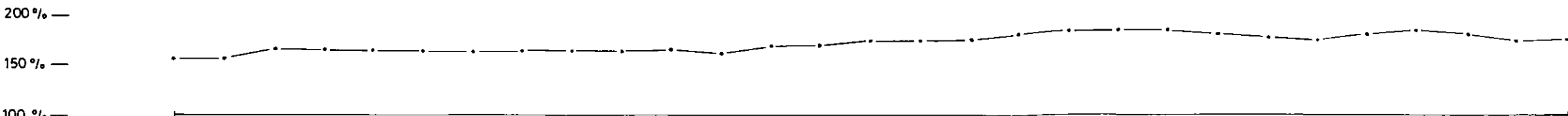
Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F.

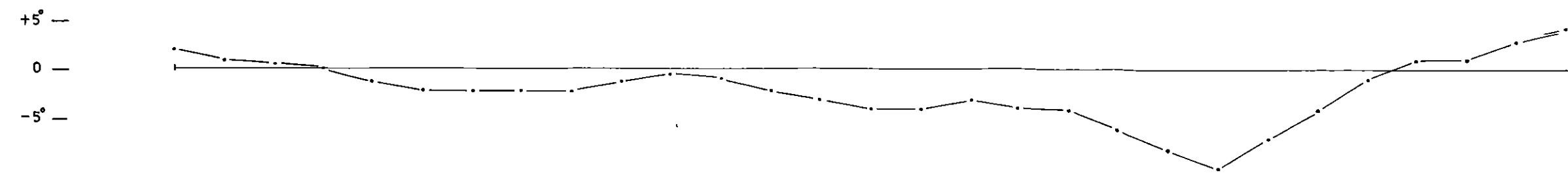
RELATIVE FIELD INTENSITY



N.B.
READINGS TAKEN USING
N.W. CAPE TRANSMITTER.

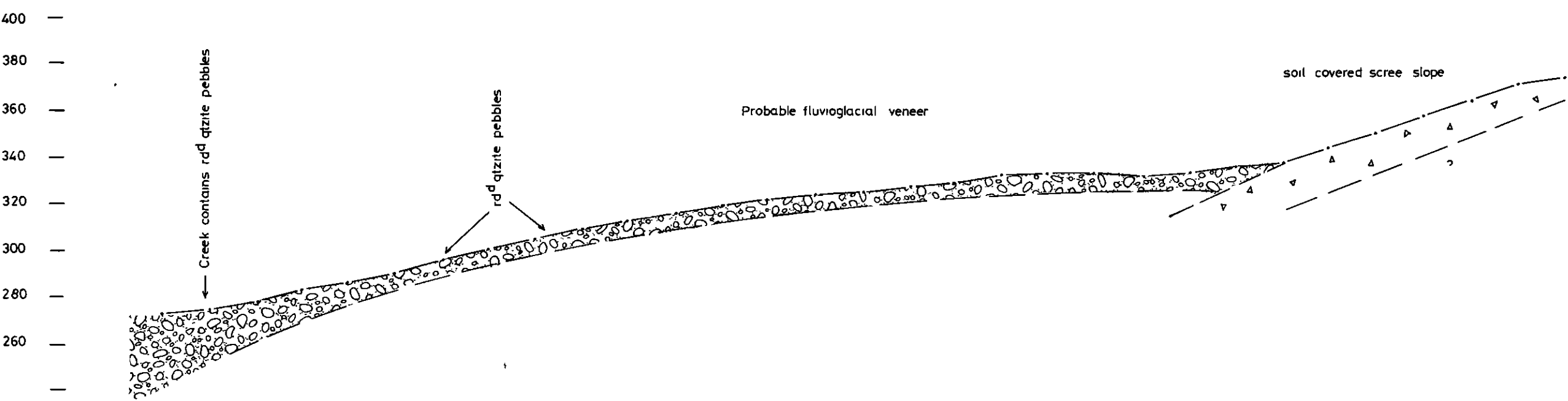
V.L.F.

DIP ANGLE



Topography & Geology

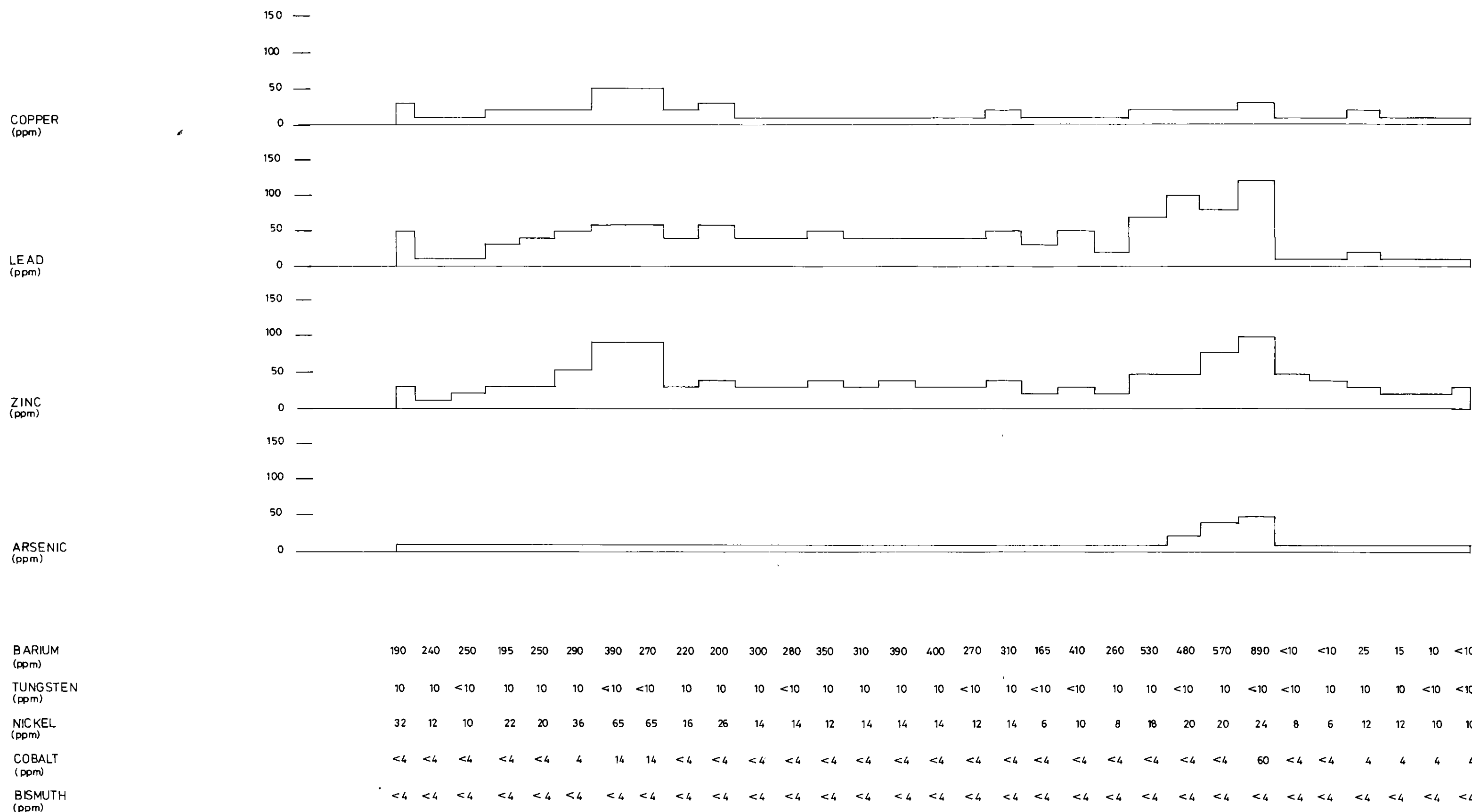
N.B.
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present

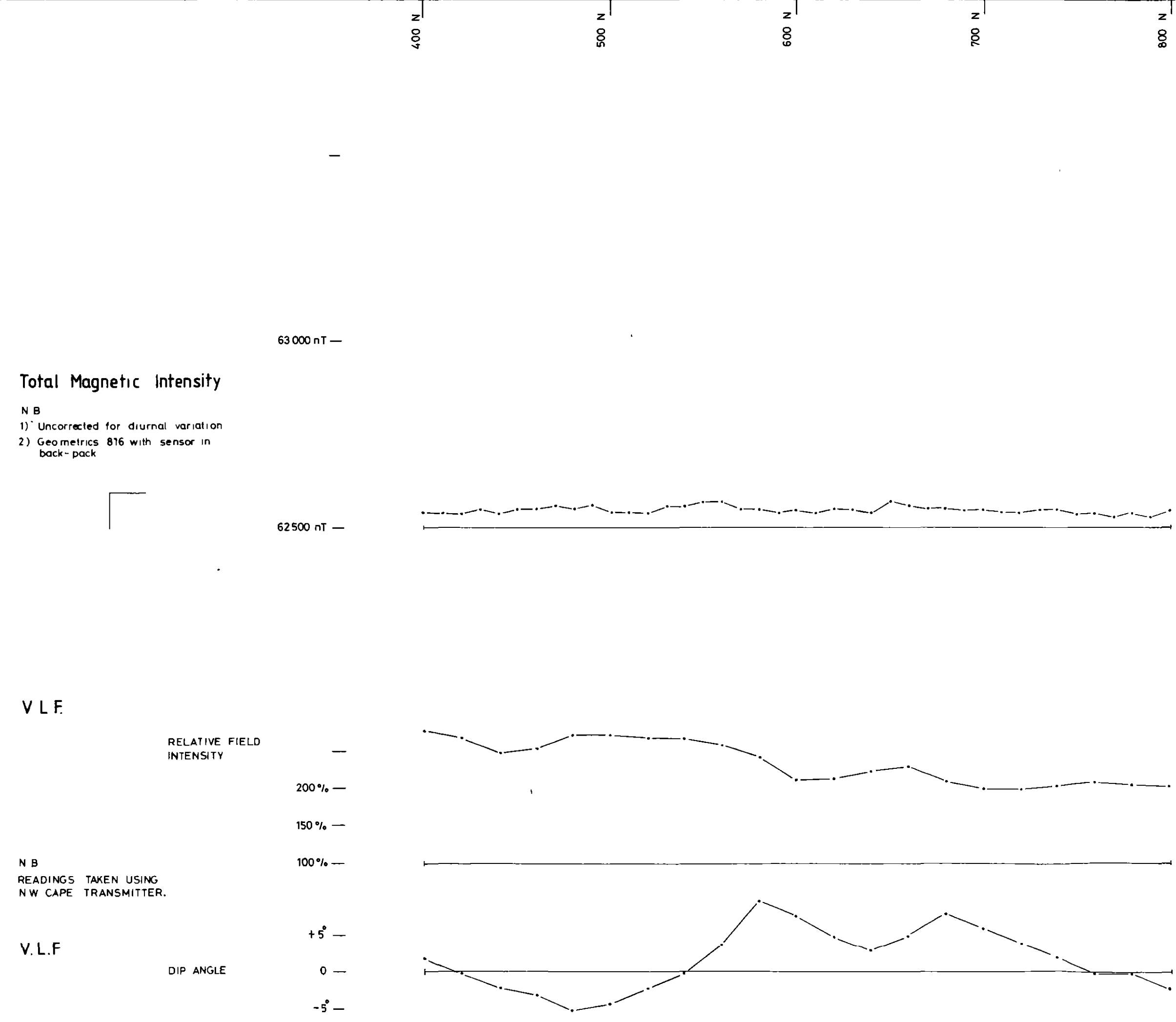


Soil Sample No's & Depths (m)

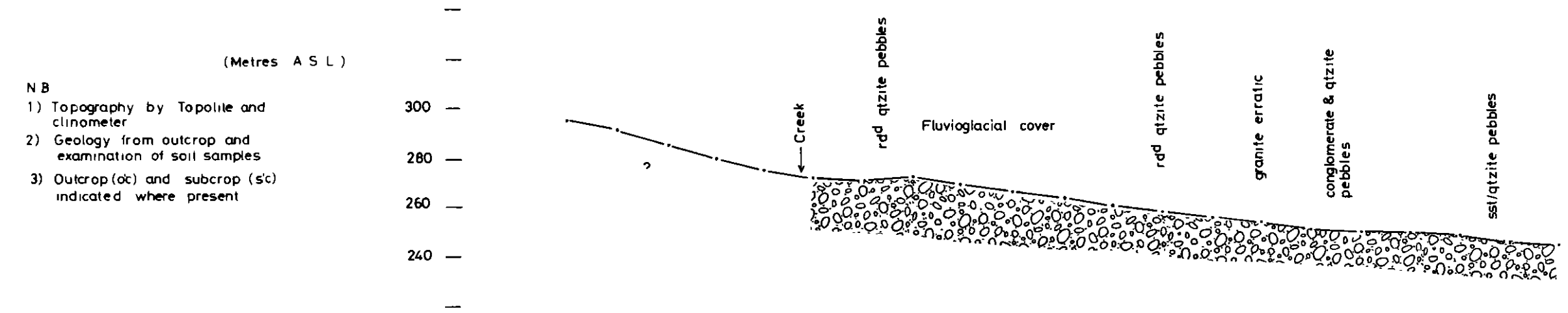
• 4773 (0.5)
• 4774 (0.8)
• 4775 (0.5)
• 4776 (0.8)
• 4777 (0.9)
• 4778 (0.7)
• 4779 (1.0)
• 4780 (0.5)
• 4781 (0.6)
• 4782 (0.6)
• 4783 (0.8)
• 4784 (0.5)
• 4785 (0.8)
• 4786 (0.7)
• 4787 (1.0)
• 4788 (0.9)
• 4789 (0.7)
• 4790 (0.8)
• 4791 (0.8)
• 4792 (0.6)
• 4793 (0.6)
• 4794 (0.6)
• 4795 (1.0)
• 4796 (1.0)
• 4797 (0.5)
• 4798 (0.5)
• 4799 (0.5)
• 4801 (0.3)
• 4802 (0.4)
• 4803 (0.5)
• 4804 (0.5)

Soil Sampling Results



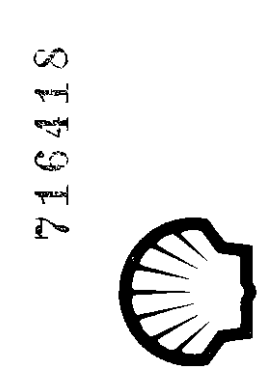
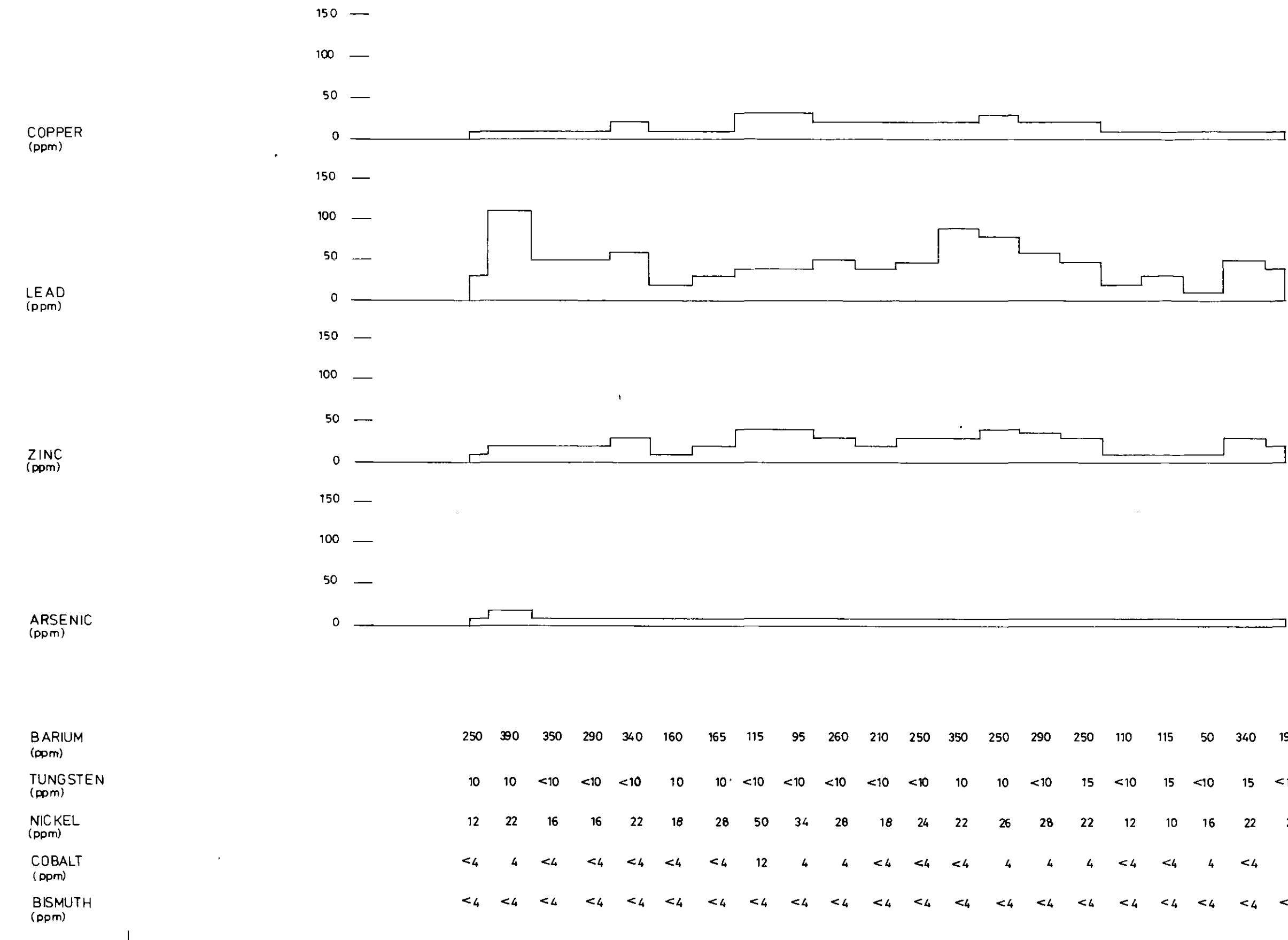


Topography & Geology



Soil Sample No's & Depths (m)

Soil Sampling Results



716418

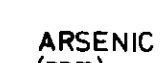
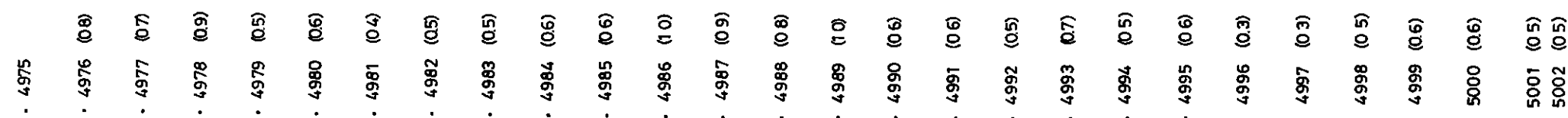
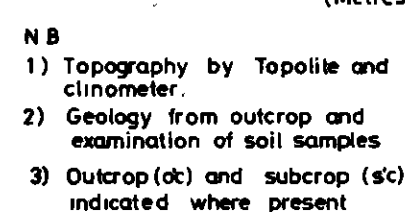
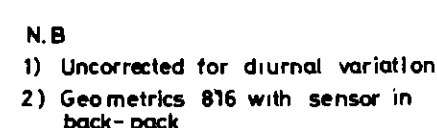
100M
50 40 30 20 10 0 50

5 cm

The Shell Company of Australia Limited
METALS DIVISION 22-1825
E L 2/78 GRANITE TOR
BACKWATER : ANOMALY 13
LINE 200 E
400N - 800N 2540

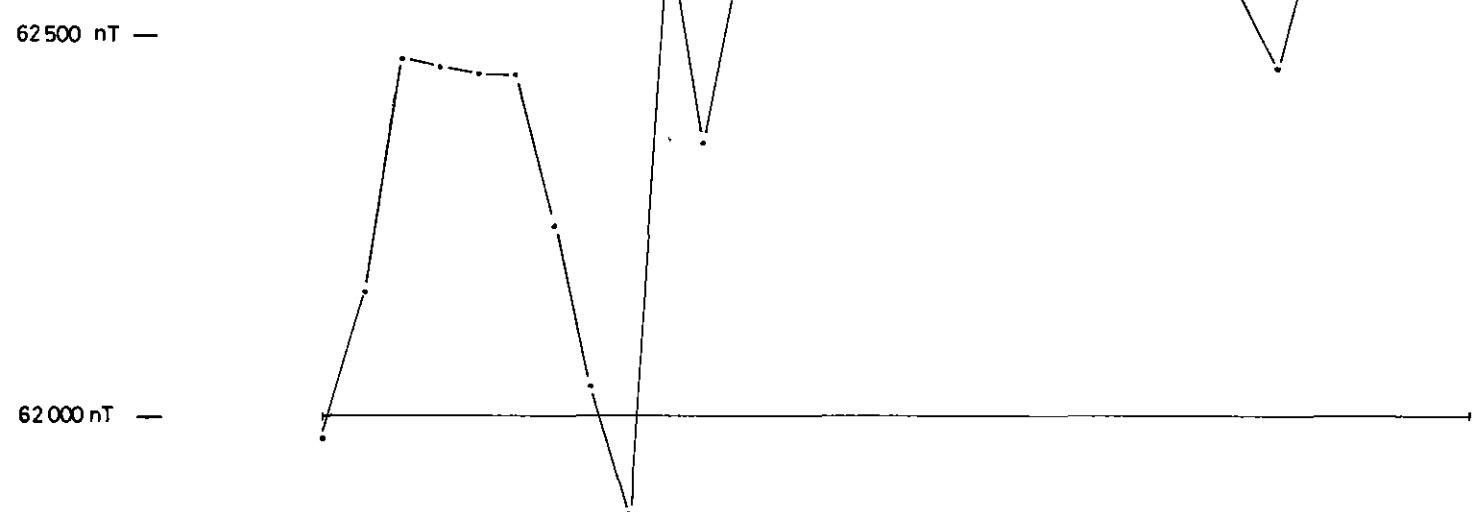
Scale 1:2000 Horizontal

FIG No	REPORT No
ENCL No	DRG No D/NP01/065
DATE 29-4-82	AUTHOR D SPEJERS
DRAWN H L H	OFFICE DEVONPORT



Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F.

RELATIVE FIELD INTENSITY

N.B.
READINGS TAKEN USING
NW CAPE TRANSMITTER.

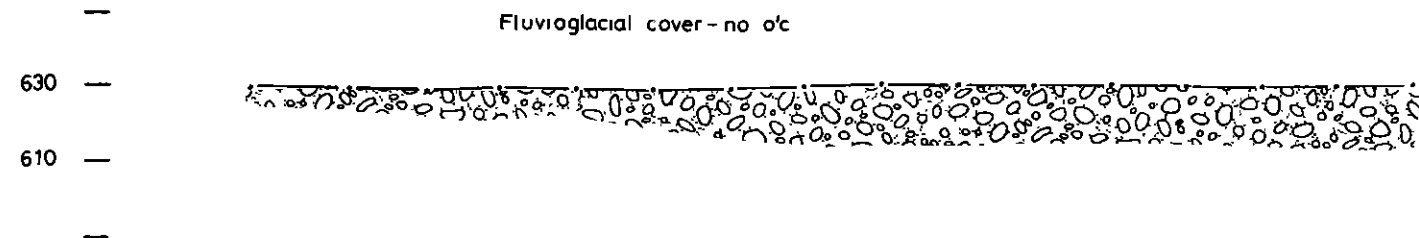
V.L.F.

DIP ANGLE

Topography & Geology

(Metres A.S.L.)

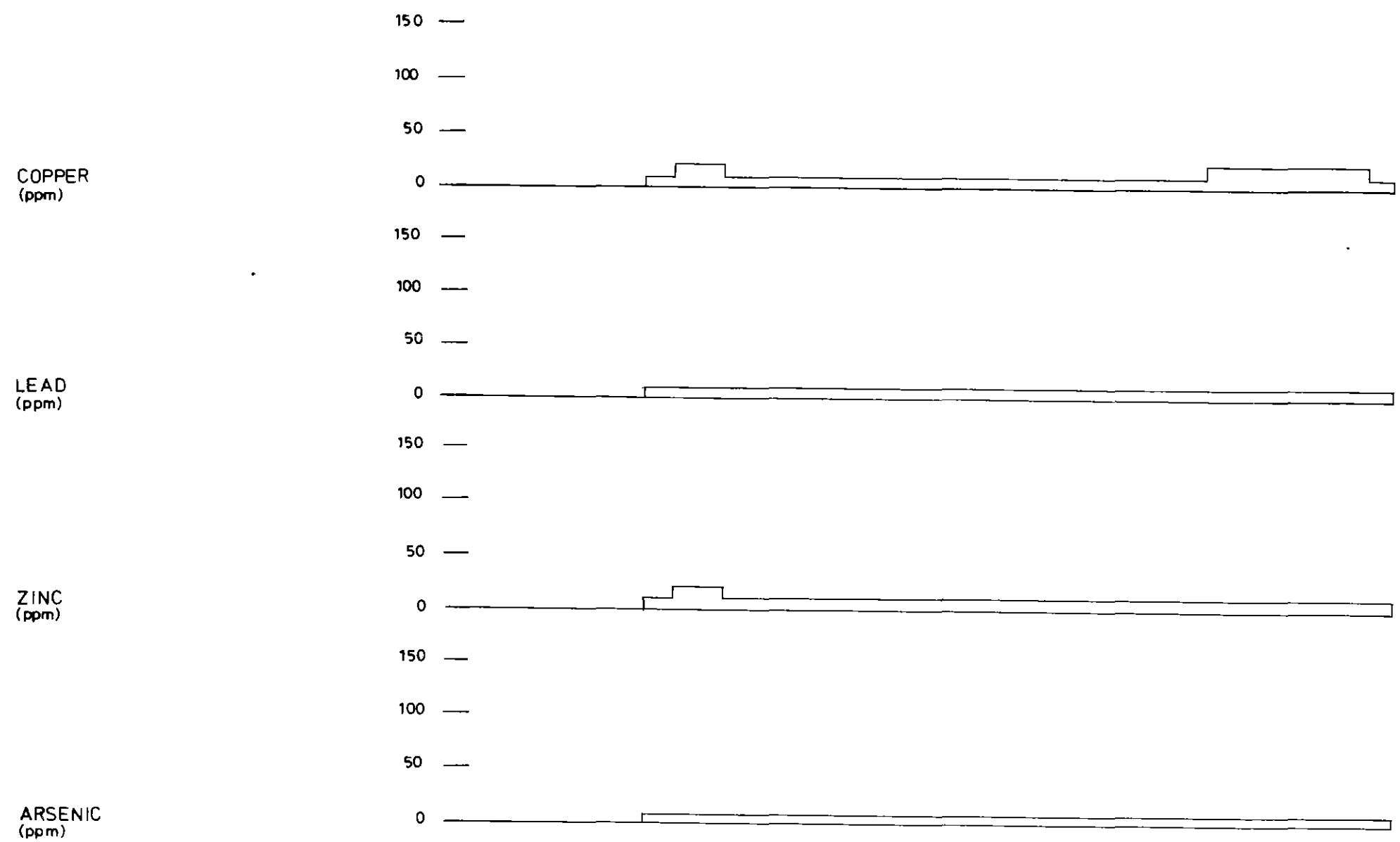
N.B.
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (oc) and subcrop (sc) indicated where present



Soil Sample No's & Depths (m)

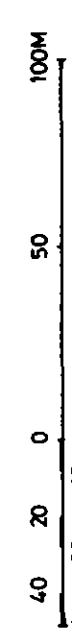
• 5127 (0.3)	• 5128 (0.5)	• 5129 (1.0)	• 5130 (1.0)	• 5131 (0.9)	• 5132 (0.7)	• 5133 (0.7)	• 5134 (0.8)	• 5135 (0.9)	• 5136 (0.6)	• 5137 (0.7)	• 5138 (0.7)	• 5139 (0.8)	• 5140 (1.0)	• 5141 (0.6)

Soil Sampling Results



BARIUM (ppm)	45	290	480	75	85	40	90	45	185	145	105	290	155	230	230
TUNGSTEN (ppm)	15	10	<10	10	<10	10	10	10	<10	<10	10	10	15	20	15
NICKEL (ppm)	<4	28	18	14	8	<4	8	8	22	12	10	14	10	20	12
COBALT (ppm)	8	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
BISMUTH (ppm)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

716420



The Shell Company of Australia Limited	
METALS DIVISION	
E.L. 2/78 GRANITE TOR	
ROMULUS WEST - ANOMALY 19	
LINE 1260 N	
2000 E - 2300 E	
2542	
FIG No	REPORT No
ENCL No	DRG No
DATE	AUTHOR
DRAWN	OFFICE

Total Magnetic Intensity

N.B.
1) Uncorrected for diurnal variation.
2) Geometrics 816 with sensor in back-pack

V.L.F.

RELATIVE FIELD INTENSITY

N.B.
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

DIP ANGLE

Topography & Geology

N.B.
1) Topography by Topolite and clinometer.
2) Geology from outcrop and examination of soil samples.
3) Outcrop (oc) and subcrop (sc) indicated where present

Soil Sample No's & Depths (m)

Soil Sampling Results

COPPER (ppm)

LEAD (ppm)

ZINC (ppm)

ARSENIC (ppm)

BARIUM (ppm)

TUNGSTEN (ppm)

NICKEL (ppm)

COBALT (ppm)

BISMUTH (ppm)

5 cm

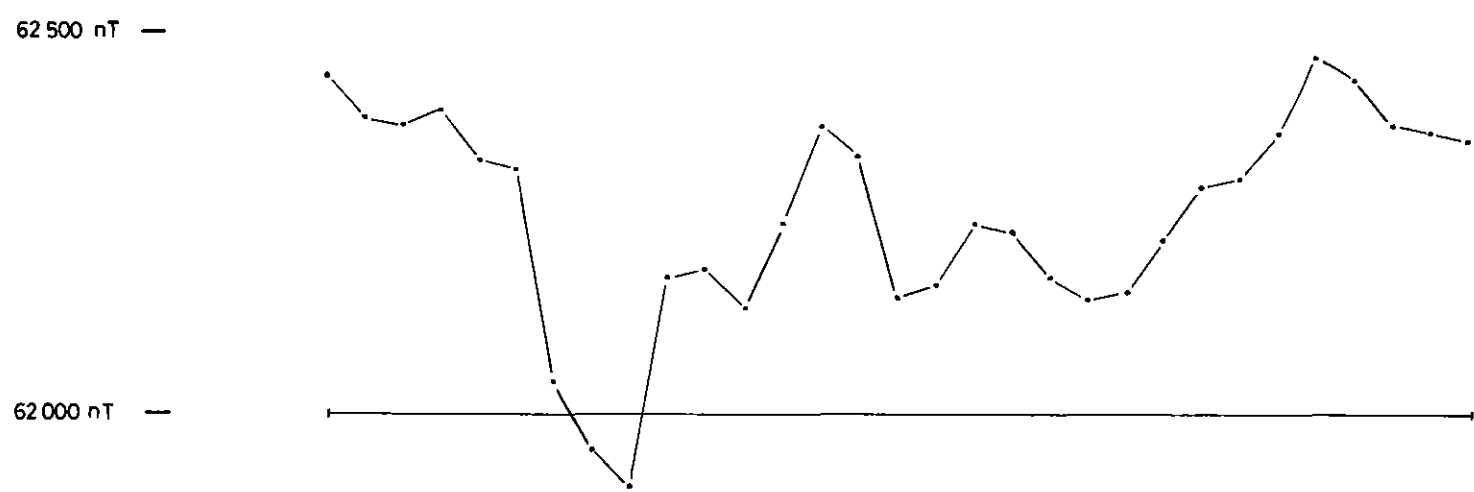
716421



The Shell Company of Australia Limited	
METALS DIVISION	
E.L. 2/78 GRANITE TOR	
ROMULUS WEST : ANOMALY 19	
LINE 1360 N	
1840 E - 2400 E	
2543	
Scale 1:2000 Horizontal	
FIG No	REPORT No
ENCL No	DRG No. D/NP01/066
DATE	5-5-82
DRAWN	H.L.H.
OFFICE DEVONPORT	

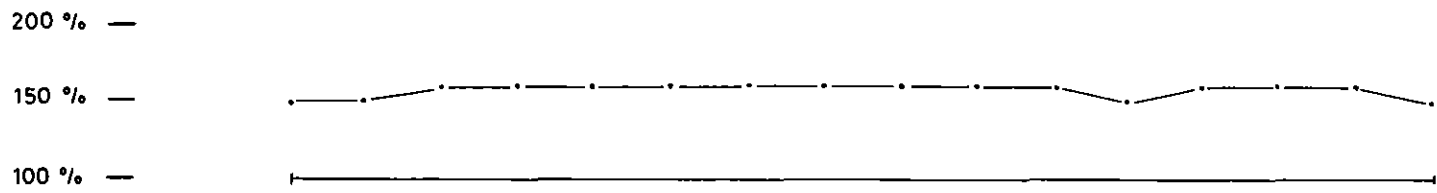
Total Magnetic Intensity

N B
1) Uncorrected for diurnal variation
2) Geometrics 816 with sensor in back-pack



V.L.F.

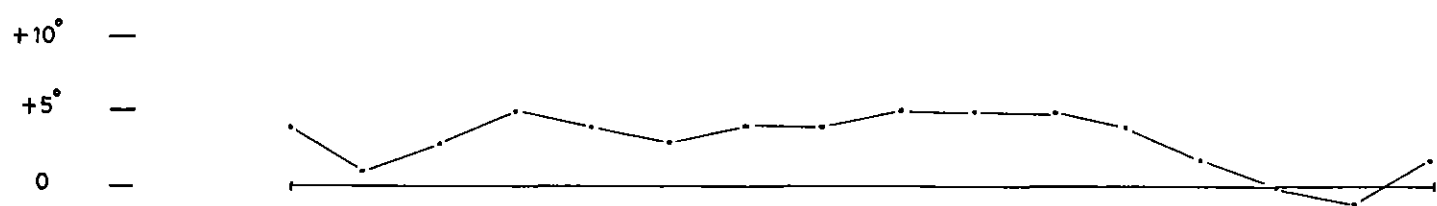
RELATIVE FIELD INTENSITY



N B
READINGS TAKEN USING
NW CAPE TRANSMITTER.

V.L.F.

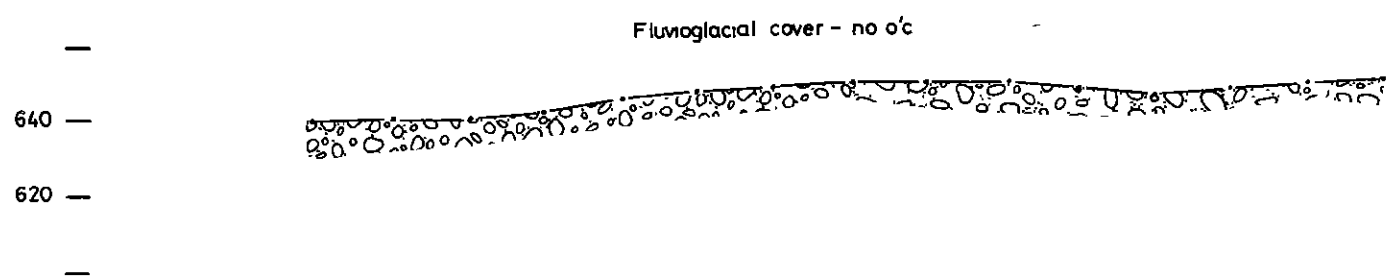
DIP ANGLE



Topography & Geology

(Metres A S L)

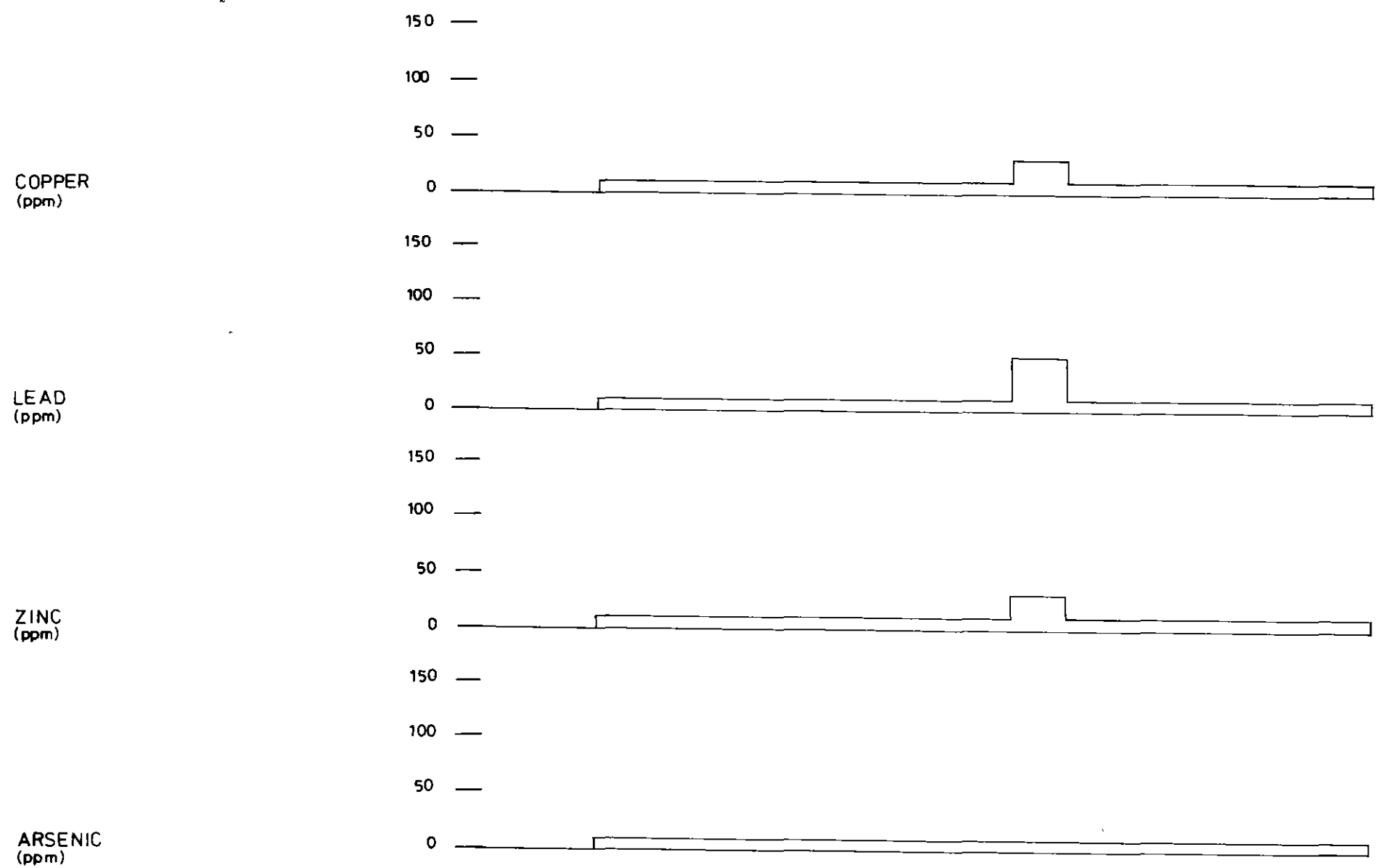
N B
1) Topography by Topolite and clinometer
2) Geology from outcrop and examination of soil samples
3) Outcrop (ok) and subcrop (sc) indicated where present



Soil Sample No's & Depths (m)

• 5170 (0.5)
• 5171 (0.5)
• 5172 (0.4)
• 5173 (0.4)
• 5174 (0.5)
• 5175 (0.4)
• 5176 (0.3)
• 5177 (0.5)
• 5178 (0.3)
• 5179 (0.3)
• 5180 (0.4)
• 5181 (0.3)
• 5182 (0.5)
• 5183 (0.2)
• 5184 (0.3)

Soil Sampling Results



BARIUM (ppm)	120	80	70	95	40	45	30	170	320	105	120	150	55	145	60
TUNGSTEN (ppm)	10	<10	10	10	10	10	10	10	<10	15	10	15	15	<10	15
NICKEL (ppm)	12	10	10	18	14	36	20	6	12	4	6	10	8	12	10
COBALT (ppm)	<4	6	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
BSMUTH (ppm)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

716422



50 40 30 20 10 0 50 100M

The Shell Company of Australia Limited	
METALS DIVISION	
E.L. 2/78 GRANITE TOR	
ROMULUS WEST - ANOMALY 19	
LINE 1460 N	
2000E - 2300E	
2544	
Scale 1:2000 Horizontal	
FIG No	REPORT No
ENCL No	DRG No 0/NP0/069
DATE 6-5-82	AUTHOR D SPEIERS
DRAWN H L H	OFFICE DEVONPORT

5 cm