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BILLITON AUSTRALIA

THE METALS DIVISION OF  
THE SHELL COMPANY OF AUSTRALIA LIMITED

E.L. 90/87 - BACK PEAK

Exploration Progress Report for the 12 Month Period  
Ending 29th January 1989

**OPEN FILE**

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SUMMARY

Exploration carried out during the initial 12 month tenure of licence 90/87 has included regional stream sediment sampling, auger soil sampling, geological mapping and diamond drilling.

Previously defined soil geochemical and EM 37 geophysical anomalies have been re-assessed and conclusions from this work are not positive. The best coincident response has been diamond drilled but has not intersected economic mineralization.

Further work is recommended at a grass roots level within the Cambrian Back Peak Beds and at the Cambrian granite-Ordovician contact.

## 1. INTRODUCTION

This report details exploration completed and results achieved by Billiton Australia within exploration licence 90/87 during the 12 month period ending 29th January 1989. This is the first year of tenure of the licence and thus this report represents the initial report by the company. The licence was acquired by a successful tender to the Mines Department although the original application area was reduced to the current holding due to a competitor bid.

## 2. LOCATION & ACCESS

The licence is situated immediately north of the Cradle Mountain Lake St. Clair National Park, approximately 55 kms south west of Devonport (Fig. 1).

The Cradle Mountain Road passes to the east of the tenement while the new Cradle Link Road transects the extreme northern portion of the tenement. Access to the prospect areas is via a 4WD track from the Cradle Link Road that trends south west along the eastern edge of the tenement to within 2kms of Back Peak. Several old bombardier tracks still exist but as they traverse open button grass plains, access is difficult except in dry conditions. To the north west of the PreCambrian plateau, topography changes dramatically to steeply incised creeks and valleys with thick rainforest cover. Access by foot along several walking tracks or down creeks is possible although slow.

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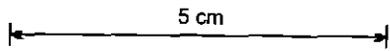
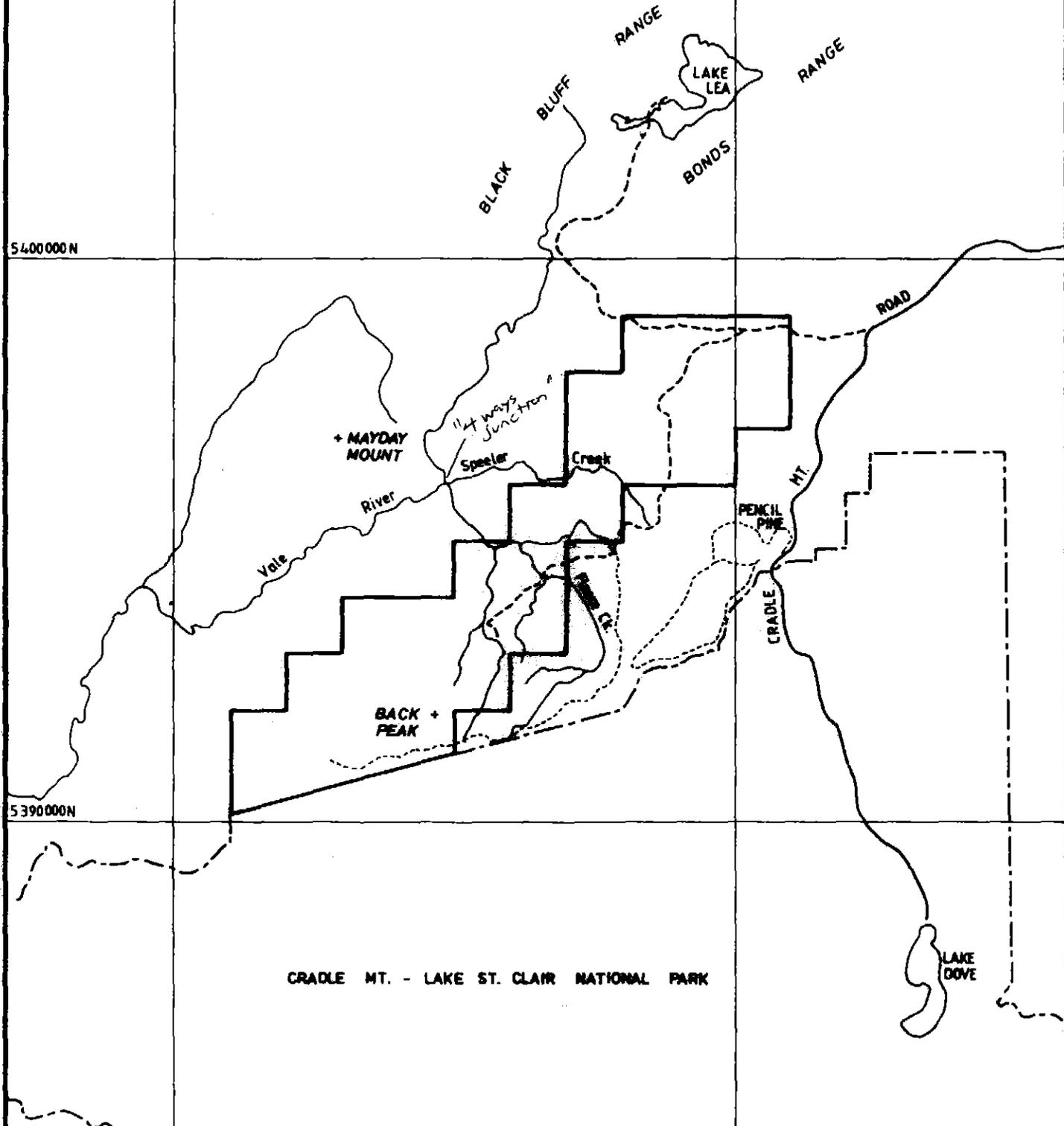
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CRADLE MT. - LAKE ST. CLAIR NATIONAL PARK



**Environment Australia**  
The National Government of the Environment of Australia Limited

Project			
<b>BACK PEAK</b>			
Title			
<b>E.L. 90/87</b>			
<b>LOCATION AND ACCESS</b>			
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### 3. LAND TENURE

Exploration licence 90/87, of 28km<sup>2</sup>, was granted to The Shell Company of Australia until 29th January 1989. The area consists of 26.8 sq km Crown Land and 0.4 sq km Private Property and a total area of 18.5 sq km of the Reynolds Falls Australian Heritage Act Interim Listing falls within the tenement.

### 4. PREVIOUS EXPLORATION

Four generations of explorers have carried out work within the Back Peak licence area since 1969. Exploration has however been sporadic with little to no work between 1976-77 and 1981-83.

Paringa commenced exploration in 1969 on Carter's Prospect, a small Pb-Ag fissure vein working within the Pre Cambrian quartzites. Grid cutting and subsequent B horizon soil sampling outlined a 5.5km long Pb anomaly; additional stream sediment sampling also supported this anomalism. In 1972, a Dighem survey outlined four surficial responses that were later identified by ground EM and magnetics to be due to ground water in clay zones beneath Tertiary basalt cover.

Management of the licence changed hands and in 1975, Cominco conducted four lines of dipole-dipole IP over previously identified Pb geochemical anomalies at Carters. The resultant geophysical anomalies were recommended for drilling but not until

1978 did any further exploration continue. Costeaining of these anomalies indicated that the responses were due to disseminated sulphides.

During 1979, Geopeko entered into a joint venture with Aberfoyle (ex Cominco) and commenced management by carrying out a regional stream sediment sampling programme. Numerous anomalous responses were recorded, the best of which were designated Prover 1, 2 and 3. Grid establishment and subsequent soil sampling defined strongly anomalous geochemistry.

viz Prover 1 (Heap of Rocks) - 900m x 100m anomaly of 500-  
2000ppm Pb

Prover 3 (Speeler Creek) - stream sediment peak 2200ppm Pb,  
430ppm Zn.

In 1980, a Dighem survey was flown and four weak EM responses were recorded. Follow up Turam EM did little to upgrade the anomalies (Prover 5-8) nor did geochemical sampling.

Exploration subsequent to this survey was limited to one diamond drill hole sited to test the Prover 1 soil geochemical anomaly. Minor disseminated galena, sphalerite was intersected within a cherty lithic crystal tuff and assays peaked at 19 metres @ 0.17% Pb, 0.17% Zn.

Cyprus Minerals entered into a joint venture with both Geopeko and Aberfoyle in late 1984. Previous grids at Prover 1 (Heap of Rocks), Prover 2 (Carters) and Prover 3 (Speeler Creek) were re-established and/or extended and a ground EM 37 survey conducted over these areas. (Total 7 EM loops). Detailed geochemical sampling and mapping was carried out but failed to confirm the consistency of anomalous base metal values that had been previously identified by Paringa and Geopeko.

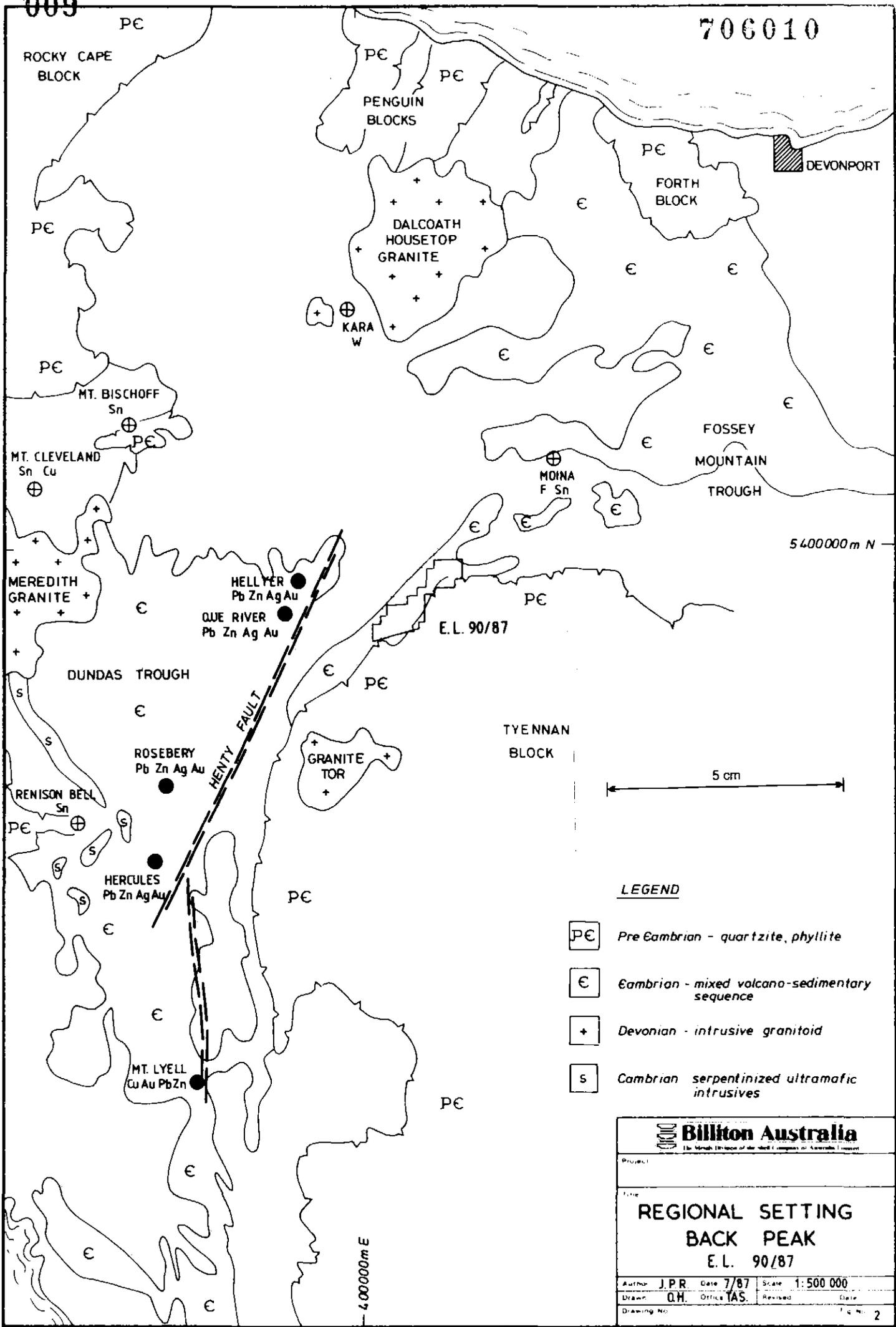
The results of the EM 37 did not provide any well defined bedrock conductors but four weak responses were identified (two at Speeler Creek; one at Carters; one at Heap of Rocks). One drill hole in 1986 tested an EM anomaly at Speeler Creek where Tertiary basalt covered the up dip source projection. Weak disseminated Pb Zn mineralization was intersected in altered pyroclastics with a best intersection of 0.6m @ 0.26% Pb, 2.5 g/t Ag (3m fillet assay). Gold values peaked at 0.11ppm.

##### 5. GEOLOGICAL SETTING

The licence area covers the irregularly faulted contact of PreCambrian quartzites and pelitic schists with Mid Cambrian acid volcanoclastics and Late Cambrian rhyodacitic intrusives. The Que-Hellyer Volcanic Complex is situated 14kms to the west and the sequence east of this volcanic centre is termed part of the Tyndal Group (Fig. 2).

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**LEGEND**

- PE Pre Cambrian - quartzite, phyllite
- E Cambrian - mixed volcano-sedimentary sequence
- + Devonian - intrusive granitoid
- S Cambrian serpentinized ultramafic intrusives

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<b>REGIONAL SETTING BACK PEAK E.L. 90/87</b>			
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There is an arbitrary transition between the named Dundas Trough and Fossey Mountain Trough but in essence this transition reflects a change in volcanic development from a predominant lava/epiclastic province to a more distal epiclastic/sediment province with minor lava development.

The application area covers approximately 15% Pre Cambrian basement, 5% Ordovician cover, 5% Tertiary basalt cover and 75% Cambrian volcanoclastics and intrusives. (see Fig. 3).

PreCambrian basement consists of laminated quartzites, silty to sandy sediments and carbonaceous schists. These dip steeply west and strikes vary from 025° Mag in the central east portion of the area to 078° Mag in the north east portion. Strong deformation textures have been imposed on these meta-sediments and greenschist facies metamorphic assemblages are evident. Numerous NNW trending faults have transected the Pre Cambrian-Cambrian boundary giving rise to EBN displacements of the PreCambrian.

To the west, Cambrian volcanoclastics, and intrusives unconformably overlie the PreCambrian basement. In detail this sequence (150-1500m wide) consists of acid quartz crystal tuff, cherty siltstones and siliceous vitric ash deposits. Limited textural evidence suggests that most of the sequence is subaqueous. Dips vary but are generally steep to the north west while strikes mimic the PreCambrian basement rocks.

Overlying these volcanoclastics is a texturally uniform massive quartz-feldspar-biotite porphyry that is at least two kilometres wide and extends the length of the property. This unit is most probably a Cambrian syn volcanic granitic intrusive and regionally can be traced from east of Rosebery to south east of Moina, a distance of 60 kilometres.

Ordovician conglomeratic sands unconformably overlie the Cambrian succession and crop out as erosion resistant ridges and hills. Tertiary flood basalts cover the most north-easterly portion of the licence although outcrop is often subdued.

#### 6. EXPLORATION COMPLETED

Exploration during the current term has focused on assessing previous work and verifying interpreted geochemical-geophysical anomalies. A topographic base plan (Fig. 4) has been drafted onto which results of a stream sediment survey (40 bulk cyanide leach and -80# samples) have been compiled.

Mapping of the Carters, Heap of Rocks and Speeler Creek prospects has been carried out and repeat auger soil sampling (30 samples) has been completed at previously identified soil anomalies at Carters and Heap of Rocks. A brief geophysical interpretation of previous EM 37 results has also been completed.

One diamond drill hole (166 metres) has tested a combined EM 37/soil geochemical anomaly at Speeler Creek prospect.

## 7. EXPLORATION RESULTS

### 7.1. Stream Sediment Survey

A total of 20 sites were selected from which a 5-6kg -5mm sample and 1-2kg -2mm sample (later dried and sieved to -80#) were collected. Sample density was chosen to effectively cover the entire licence viz 1 sample per 1-2 sq km. Samples were later despatched to Comlabs for analysis of Au (cyanide leach extraction), Au (fire assay), Cu Zn Ag (AAS), Pb As Ba (XRF). Results of this work are presented in Figure 5 and Appendix 1.

A basic statistical treatment of the results indicated a large number of anomalous values for various elements although coincident elemental anomalism occurs in only one sample.

<u>Site</u>	<u>Strongly Anomalous</u> (>97.5% of pop <sup>a</sup> )	<u>Weakly Anomalous</u> (>67% of pop <sup>a</sup> )
55/7	0.14ppm Au	22ppm As 610ppm Ba
55/4	240 ppm Zn	22ppm As
55/5	230 ppm Zn	580ppm Ba
55/8	400 ppm Pb 720ppm Ba	155ppm Zn 24ppm As
55/10	72 ppm As	
55/12	38 ppm As	

55/13	36ppm As		
55/20	48ppm As		
55/2	710ppm As	165ppm Zn	
55/3	660ppm Ba		
55/6	660ppm Ba	175ppm Zn	
55/17	0.9ppb Au	560ppm Ba	
55/11		230ppm Pb	28ppm As
55/15		28ppm As	

Threshold values are considered to be as follows:

Au (BCL)	0.7 ppb
Au (FA)	0.03ppm
Cu	35 ppm
Zn	136 ppm
Ag	1 ppm
Pb	208 ppm
As	21 ppm
Ba	485 ppm

A correlation has been made between the anomalous sites and known geology viz

<u>Anomaly</u>	<u>Location</u>	<u>Local Setting</u>	<u>Follow up</u>
55/7	Heap of Rocks	Known prospect. Geochem. anomalous volcanoclastics, drilled previously by Peko.	Field Inspect.
55/4	Tumbling Ck.	Draining contact between volcanoclastics & granite.	No
55/5	Tumbling Ck.	" " " "	No
55/8	Heap of Rocks	At margin of volcanoclastics with Cambrian granite.	Field Inspect.
55/10	Fleece Creek	Draining a known prospect at Carters.	No
55/12	Speeler Creek	Known prospect. Tertiary basalt cover.	No
55/13	Etchells Ck.	Draining Speeler Creek prospect.	No
55/20	Speeler Creek	Known prospect.	No
55/2	Nth Mt Remus	Draining Cambrian granite and volcanics. Poor geochem. sign.	No
55/3	Nth Mt Remus	" " " "	No
55/6	Tumbling Creek	Cambrian granite. Possibly detecting dispersion as seen in 55/4, 55/5.	No

55/17	Iris River	Draining Speeler Ck prospect in area of Tertiary basalt cover.	Field Inspect
55/11	Fleece Creek	At or within PreCambrian sediments at Carters Prospect. Along strike from 55/7, 55/8.	Field Inspect
55/15	Nth Iris River	Tertiary basalt cover on button grass plain.	,No

In summary, it is apparent that no new prospects have been generated by the stream sediment survey but the geochemically anomalous nature of the Heap of Rocks - Carters area has been reaffirmed.

The anomalous BCL Au result at Iris River is of some interest and requires additional sampling to follow upstream. Weak gold anomalism at the Speeler Creek prospect is known already and drilling by Cyprus did not enhance the prospectivity of the area. Nevertheless the result is anomalous and additional inspection was warranted.

Field inspection of anomalies 55/7, 55/8, 55/11 indicated that the streams drain the faulted contact of PreCambrian shales and quartzites with fine grained siliceous vitric ashes of Cambrian age. Weak pyritic mineralization is present within these basal Cambrian lithologies and it is considered that the Pb, As, Ba, Au anomalies are reflecting this mineralization.

Anomaly 55/17 occurs in an area along strike from known weak mineralization at Speeler and Etchell Creeks as indicated in Cyprus drill hole MT 86-1. Further discussion of this area is presented in section 7.4.

## 7.2 Heap of Rocks

This prospect is situated immediately to the south west of Carters workings and covers a 300-400 metre wide zone of Cambrian quartz crystal and crystal lithic tuffs, cherts and acid intrusives. (see Fig.6). A 900 metre strike by 150 metre wide zone of anomalous soil geochemistry occurs within the central portion of this sequence and is characterized by the +500ppm Pb and +500ppm Zn isopleth. (Peak values 2900ppm Pb, 1950ppm Zn). There is some evidence to suggest that this zone of geochemical anomalism occurs at or near the contact of acid porphyritic intrusives and chloritic crystal tuff with rhyolitic vitric tuff to the northwest. Diamond drill hole DDH P1 (Geopeko) has tested this geochemical zone in the north on line 10,000E and intersected weak disseminated and blebby galena-sphalerite within a sequence of lithic crystal tuff. An intercept of 19m @ 0.17% Pb, 0.17% Zn was recorded from within this zone. Note that an exposure of stratiform lenses of pyrite, sphalerite, galena (9975E 10220N) has been observed in a costean, 25 metres south of the drill hole. Best assays of 0.58% Pb, 0.5% Zn, 11ppm Ag were returned from these samples.

Cyprus Minerals have identified a weak shallow EM 37 response on line 9800E to the southwest of the main geochemical anomaly. (EM Anomaly 5). Source depth estimates range from 50-100 metres and there is a possibility that this position corresponds to an interpreted offset in the sequence. Spot geochemical anomalies (750ppm Pb, 685ppm Zn, 0.27ppm Au) are directly associated with this anomaly position and there is a suggestion of strike continuity to the south. Repeat soil sampling by Cyprus failed to reproduce some of the earlier Paringa-Geopeko assays, a fact probably attributable to the incorrect sampling horizon i.e. A or B horizon. Repeat sampling by Billiton on line 9800N (Fig. 7, Appendix 2) did confirm the original anomaly positions of Geopeko but the magnitude of the anomalies was reduced at least two fold. Detailed geological mapping indicates the presence of pyritic silicified tuff that is geochemically anomalous (limited rock chip sampling peak values of 910ppm Pb, 180ppm Zn, 1400ppm Ba) within a 50 metre wide zone of fine volcanoclastics.

A brief geophysical assessment of the EM 37 results by Billiton's geophysicist is included below.

- (a) Line 9500E @ 10150N, weak, (fairly deep?) anomaly - near contact of tuff with porphyry and weak Zn geochem. May extend 100m north.

- (b) Line 9800E @ 10250N. This anomaly is suspect (as noise) since there is only a response on Z not X component. Not worth drilling as such, although vaguely coincident Zn geochem. in the tuffs. Better at 9900E/10350N, although weak and shallow (no geochem).

NB Peko's hole P1 (to test geochem anomaly?) had no associated EM anomaly (Line 10,000E/10250N).

- (c) There are other (weak) anomalies to the north-east that are probably associated with the porphyry contact.

### 7.3 Carters

The Carter's grid has been cut surrounding the old Carter's Prospect or Fleece Creek/Fury Plains workings. Here visible galena crops out as irregular veins and disseminations within a mappable shear and hosted by PreCambrian quartzites. The mineralization has apparently not been drilled. There is some confusion as to the actual location of the workings with respect to both the licence area and an adjacent mining lease (ML 38M/78). Available information indicates that the workings occur within the licence area and 200-300 metres west of the mining lease, not within it. Accurate photo location work will be required to resolve this anomaly.

The gridded area incompletely covers the basal volcanoclastic sequence and includes approximately 50% of the PreCambrian quartzites (see Fig. 8). The intrusive porphyry above the volcanoclastics has been incompletely mapped but does confine the volcanoclastic sequence to a width of approximately 300 metres.

Extensive soil sampling has defined three zones of anomalous Pb Zn geochemistry: (1) a large 600m x 100m anomaly defined by the +300ppm Pb and +150ppm Zn isopleth and associated with fine acid volcanoclastics + pyrite + silica; (2) an incompletely defined 300m x 50m wide Pb Zn anomaly that is associated predominantly with PreCambrian quartzites at Carters Prospect and near the Cambrian unconformity. The anomaly is defined better by the +200ppm Zn isopleth while the +200ppm Pb isopleth is more restricted. A peak value of 1300ppm Pb occurs just east of Carters Prospect; (3) an open ended 400m x 40m wide linear Pb Zn anomaly that is clearly defined by the +1000ppm Pb isopleth and has a peak value of 3500ppm Pb. This anomaly may be a continuation of anomaly (1) and appears to show a strong stratigraphic correlation.

Two EM 37 anomalies have been recorded within the Carter's grid but both are weak and shallow (<100m depth) responses. EM Anomaly 3 is located at 10350E 10330N and is enclosed by Pb Zn geochemical anomaly (1). Limited geological mapping suggests an association with pyritic silicified volcanoclastics up dip from the interpreted position of the

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EM source. EM Anomaly 4 is located near Carters Prospect at 9750E 9875N and is coincident with geochemical Pb Zn anomaly (2). The anomaly position appears to coincide with a faulted offset of the PreCambrian/Cambrian unconformity where disseminated pyrite-sphalerite-galena has been mapped.

Repeat auger soil sampling on lines 9750E and 10350E (Figs. 9, 10) did not reproduce the earlier Geopeko results presumably again due to the incorrect soil horizon being sampled. This factor coupled with the relatively poor EM 37 anomalies has downgraded the prospectivity of this area. A brief geophysical interpretation of the Carter's EM anomalies is present below:

Line 9750E @ 9900N weak-mod, shallow anomaly possible also on 9850E @ 9850N.

A curious strong and narrow response, probably noise, occurs near the prospect on 9950E @ 9950N. The response does not look geologically caused but is coincident with Pb + Zn. (It is not good drill target).

The EM 37 anomalies from loop 7, north of Carter Prospect, are all weak and not worth testing on EM basis alone.

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#### 7.4 Speeler Creek

The gridded area occurs in the north-east portion of the property and encroaches onto the Tertiary basalt cover. The host volcanoclastics appear to be very thick in the area (up to 800m) and previous work had recorded anomalous stream sediment values up to 2200ppm Pb, 430ppm Zn. Ground EM surveying by Cyprus Minerals (see Fig. 11) resulted in the definition of one ?bedrock anomaly (EM Anomaly 1) that was later drilled (DDH MT 86-1). This hole intersected coarse volcanic breccias and fine cherty volcanoclastics beneath shallow Tertiary basalt cover but only weak base metal mineralization was recorded (0.6m @ 0.26% Pb from a 3m fillet sample). The EM source was attributed to a complex fault zone within the coarse volcanoclastics but down hole EM failed to produce an anomaly.

Further to the south-west, at grid co-ordinates 10800E 9775N, a weak shallow (<100m) EM 37 anomaly has been recorded (EM Anomaly 2). Strong Pb Zn Au geochemistry is associated with this anomaly position with the best definition from the +300ppm Pb, +200ppm Zn isopleths. Maximum coincident values are 2200ppm Pb, 820ppm Zn, 0.35ppm Au from one sample that occurs at the EM Anomaly 2 position. In addition, anomalous gold in soil values of 0.25-0.35ppm occur in a 50m wide zone over the anomaly position. Detailed geological mapping indicates that the anomalies are contained within a sequence of pyritic fine to coarse grained acid volcanoclastics.

A brief geophysical interpretation has been completed and comments regarding the EM 37 results are summarized below:

Line 10900E @ 9875N, weak-moderate conductor, source may be quite deep, in strike extends from 10800E to 11000E.

Note, further east along strike this anomaly changes character and looks like a contact with a flat layer (eg basalt). (EM 37 data is poorly scaled so hard to see responses). But there is coincident geochemistry (Pb/Zn very close to EM 37 anomaly although sampling hardly covered EM anomaly (due to button grass?). This anomaly was recommended for drilling in Cyprus report 486 (6/86) as PDH-2.

This response however is less strong than that drilled by MT 86-1 which only intersected minor py + a fault.

A decision to diamond drill EM Anomaly 2 was made in view of the coincidence of the strong base metal + Au soil geochemistry and the moderate EM conductor (Fig. 12). The target position 10800E 9770N was chosen in preference to the geophysically recommended position 10900E 9875N in view of this coincidence.

Diamond drill hole BPD 88-1 was collared on 3-11-88 and completed on 3-12-88 at a depth of 166 metres. A full descriptive log is presented in Appendix 3 while Fig. 13 shows a cross section of lithologies intersected. A summary

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of this hole is as follows:

Hole No - BPD 88-1  
 Collar Co-ords. - 10800E 9875N  
 Inclination - -50°  
 Azimuth - 132° Mag

Summary Log - 0 - 71m Feldspar ± quartz pyritic sericitic  
 volcanoclastic. Trace disseminated  
 pyrite throughout except 31-32m.  
 Here massive pyrite clasts were  
 intersected.

71 - 90m Coarse porphyritic silicified  
 chloritic epiclastic.

90 - 100m Sericitic silicified vitric ash.  
 Trace pyrite throughout.

100 - 107m Coarse porphyritic silicified  
 chloritic epiclastic.

107-113.5m Silicified epiclastic breccia.

113.5 - 130m Feldspar pyritic volcanoclastic.

130 - 141m Fault Zone.

141 - 155m Feldspar pyritic volcanoclastic.

155 - 166m Mixed cherty siltstone, silicified  
 ash and pumiceous volcanoclastic  
 with minor pyrite, sphalerite,  
 galena.

EOH

Selective sampling of the core has been carried out but  
 assays have not been returned. It is envisaged however that  
 the trace pyritic and base metal mineralization intersected  
 in core has caused the surface geochemical anomaly.  
 Enrichment of this anomaly is assumed to have occurred by  
 hydromorphic dispersion within the peaty bog that occurs in  
 much of the area.

Down hole EM surveying has not been carried out to date but it is anticipated that the source of the EM 37 anomaly will be attributed to the intense fault zone intersected within the drill hole. No other possible source seems likely from observations of the core.

#### 8. CONCLUSIONS & RECOMMENDATIONS

The combined bulk cyanide leach and -80# stream sediment sample results have confirmed the geochemical anomalism of the Carters and Heap of Rocks prospects and in addition, gold anomalism at the Speeler Creek - Etchells Creek area. In the former case, Pb Zn anomalism reflects weak pyritic alteration within Cambrian silicified vitric ash. At Speeler and Etchell Creeks, weak Au and strong Pb Zn anomalism is known from previous drilling and it is considered that the anomalous BCL geochemistry has reflected this occurrence.

At the Heap of Rocks Prospect, surface geochemical anomalism recorded by Geopeko was not repeated by Billiton to the same magnitude, a fact attributed to the phenomenon of hydromorphic dispersion. Weak EM 37 anomalism outlined by a Cyprus Minerals survey is considered to be of little significance and no recommendation to drill test these anomalies has been made.

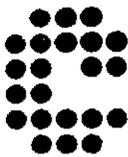
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Similarly, at Carters Prospect examination of surface geochemical and geophysical anomalies outlined by previous explorers Geopeko and Cyprus has not upgraded the drill status of these targets and no positive recommendation can be made.

The Speeler Creek coincident soil geochemical and EM 37 anomaly has been tested by diamond drill hole BPD 88-1 without intersecting any obvious economic mineralization. Surface geochemical anomalism is attributed to trace pyritic and base metal mineralization within a mixed sequence of epiclastics and sediments while an intense fault zone may provide the source for the EM 37 response.

Further work is recommended at two locations outside of the known prospect areas: firstly, the Cambrian epiclastic sequence (now referred to as the Back Peak Beds) south of Heap of Rocks and north east of Speeler Creek and secondly, the intrusive granitoid - Ordovician contact where exploration on a neighbouring licence has indicated the presence of extensive auriferous hematitic siliceous breccias. Reconnaissance mapping and sampling is suggested as a first pass exploration approach.

APPENDIX 1  
STREAM SEDIMENT SAMPLE RESULTS



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OUR REF Mr. Jeff Randell  
 Billiton Australia Ltd  
 YOUR REF 30 Mersey Main Rd  
 Spreyton  
 DEVONPORT  
 TAS 7310 Australia

*File*  
 1) LD53  
 2) LD53  
 3) LD55

JOB NUMBER: COM8AD0302

Your Reference: 11622/LD53/JPR

Date Received: 3-FEB-1988 Turnaround 21 days  
 Date Relayed: 24-FEB-1988  
 Date Reported: 24-FEB-1988

Number of Samples: 84

Report Comprising: Cover Sheet  
 Pages 1 to 4

*BCL Stream Seds.*

Comments:

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for

Harry Fishman  
 Deputy Managing Director.  
 CLASSIC COMLABS LTD  
 (Please address any enquiries to Mr. Trevor Francis)

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as supplied.

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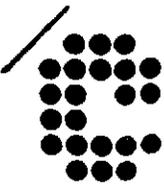
Job: COM8AD0302

O/N: 11622/LD53/JPR

ANALYTICAL REPORT

SAMPLE	Au
LD55-3C 07	0.2
LD55-3C 7A	L.N.R.
LD55-3C 08	<0.1
LD55-3C 09	0.6
LD55-3C 10	0.3
LD55-3C 11	0.4
LD55-3C 12	N.A.
LD55-3C 13	N.A.
LD55-3C 14	N.A.
LD55-3C 15	0.4
LD55-3C 16	0.5
LD55-3C 17	0.9
LD55-3C 18	0.2
LD55-3C 19	0.2
LD55-3C 20	0.5

UNITS           ppb  
SCHEME         AAS5D



028

706029 *file*

# COMLABS SYSTEMS & DESIGNS PTY. LTD.

305 South Road, Mile End South, South Australia 5031 Telephone (08) 43 5722 Telex I ABCOM AA89323 Facsimile No (08) 234 0321



NATA REGISTERED No 1526

Mr. David Hall  
Billiton Australia Ltd  
30 Mersey Main Rd  
Spreyton  
DEVONPORT  
TAS 7310 Australia

OUR REF

YOUR REF

*D LD53*  
*E LD52*  
*B LD55*

JOB NUMBER: 8AD0557  
Your Reference: 11623/LD55/JPR

Date Received: 24-FEB-1988 Turnaround 9 days  
Date Relayed: 4-MAR-1988  
Date Reported: 4-MAR-1988

Number of Samples: 109

Report Comprising: Cover Sheet  
Pages 1 to 11

Comments:

*\* BCL Stream Seds*  
*\* -80# " "*

Report Dist'n: Carbon Copies(CC), Electronic Media(EM), Magnetic Media(MM)				
Type	Recipient	Location	Date	Copies
CC	Shell	Devonport	4-MAR-88	1

Approved Signature:

for

*[Signature]*  
Harry Fishman  
Deputy Managing Director.  
CLASSIC COMLABS LTD  
(Please address any enquiries to Mr. Trevor Francis)

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as supplied.

# CLASSIC COMLABS LTD

Analytical Laboratories (Inc. in W.A.)



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Job: 8AD0557

O/N: 11623/LD55/JPR

029

## ANALYTICAL REPORT

SAMPLE	AU
LD55-3C 1	0.4
LD55-3C 2	<0.1
LD55-3C 3	0.6
LD55-3C 4	0.1
LD55-3C 5	0.1
LD55-3C 6	0.1
LD55-3C 12	<0.1
LD55-3C 13	<0.1
LD55-3C 14	0.1
UNITS	ppb
SCHEME	AAS50



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Job: 8AD0557

O/N: 11623/LD55/JPR

## ANALYTICAL REPORT

SAMPLE	Au Avg	Au Dp1	Au Dp2	Au Dp3	Cu	Zn	Ag
LD55-3S 1	0.05	--	--	--	24	140	1
LD55-3S 2	0.02	--	--	--	10	165	<1
LD55-3S 3	<0.01	--	--	--	12	115	<1
LD55-3S 4	<0.01	--	--	--	11	240	<1
LD55-3S 5	0.02	<0.01	0.03	--	8	230	<1
LD55-3S 6	0.02	--	--	--	11	175	1
LD55-3S 7	0.14	--	--	--	3	22	<1
LD55-3S 7A	0.01	--	--	--	3	94	<1
LD55-3S 8	0.02	--	--	--	6	155	<1
LD55-3S 9	<0.01	--	--	--	7	48	<1
LD55-3S 10	<0.01	--	--	--	8	42	<1
LD55-3S 11	0.01	--	--	--	10	54	<1
LD55-3S 12	<0.01	--	--	--	5	16	<1
LD55-3S 13	<0.01	--	--	--	6	52	<1
LD55-3S 14	<0.01	--	--	--	4	7	<1
LD55-3S 15	<0.01	<0.01	<0.01	--	6	42	<1
LD55-3S 16	0.01	--	--	--	12	100	<1
LD55-3S 17	0.03	--	--	--	8	100	<1
LD55-3S 18	<0.01	--	--	--	11	66	<1
LD55-3S 19	<0.01	--	--	--	15	42	<1
LD55-3S 20	<0.01	--	--	--	14	17	<1

 UNITS  
 SCHEME

 ppm  
 FAS1

 ppm  
 FAS1

 ppm  
 FAS1

 ppm  
 FAS1

 ppm  
 AAS1

 ppm  
 AAS1

 ppm  
 AAS3



## ANALYTICAL REPORT

031

SAMPLE	Pb	As	Ba
LD55-3S 1	130	3	560
LD55-3S 2	105	4	710
LD55-3S 3	22	9	660
LD55-3S 4	195	22	480
LD55-3S 5	105	10	580
LD55-3S 6	58	3	660
LD55-3S 7	78	22	170
LD55-3S 7A	135	11	610
LD55-3S 8	400	24	720
LD55-3S 9	68	8	340
LD55-3S 10	78	72	380
LD55-3S 11	230	28	390
LD55-3S 12	30	38	200
LD55-3S 13	105	36	340
LD55-3S 14	10	14	180
LD55-3S 15	86	28	230
LD55-3S 16	145	11	590
LD55-3S 17	150	12	560
LD55-3S 18	17	3	230
LD55-3S 19	195	10	230
LD55-3S 20	28	48	210

UNITS  
SCHEME

ppm  
XRF1

ppm  
XRF1

ppm  
XRF1

APPENDIX 2

SOIL AUGER RESULTS



**033**  
**CLASSIC COMLABS LTD**  
 Analytical Laboratories (INC. IN WA.)



706034  
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305 South Road, Mile End South, South Australia, 5031  
 Telephone: (08) 43 5722 Fax: (08) 234 0321 Telex: LABCOM AA89323

LD55  
 843

Mr. David Hall  
 Billiton Australia Ltd  
 30 Mersey Main Rd  
 Spreyton  
 DEVONPORT  
 TAS 7310 Australia

JOB NUMBER: 8AD1492  
 Your Reference: 11628/LD55/JPR  
 Date Received: 4-MAY-1988 Turnaround 14 days  
 Date Relayed: 18-MAY-1988  
 Date Reported: 17-MAY-1988  
 Number of Samples: 35  
 Report Comprising: Cover Sheet  
 Pages 1 to 4

Comments:

Report Dist'n: Carbon Copies(CC), Electronic Media(EM), Magnetic Media(MM)  
 Type Recipient Location Date Copies

Approved Signature:

for

Harry Fishman  
 Deputy Managing Director.  
 CLASSIC COMLABS LTD

(Please address any enquiries to Mr. Trevor Francis)

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as supplied.



Job: 8AD1492

O/N: 11628/LD55/JPR

034

## ANALYTICAL REPORT

SAMPLE	Au Avg	Au Dp1	Au Dp2	Au Dp3	Cu	Zn	Ag
9750E 9825N	0.03	--	--	--	24	22	<1
9750E 9850N	0.03	--	--	--	28	80	2
9750E 9875N	0.03	0.03	0.02	--	13	56	<1
9750E 9900N	0.01	--	--	--	17	310	<1
9750E 9925N	0.03	--	--	--	9	100	1
9750E 9950N	0.03	--	--	--	10	54	<1
9750E 10050N	<0.01	--	--	--	6	46	<1
9750E 10075N	0.02	--	--	--	16	22	1
9750E 10100N	<0.01	--	--	--	7	16	<1
9750E 10125N	<0.01	--	--	--	9	40	<1
9750E 10150N	0.04	--	--	--	7	14	<1
10350E 10250N	0.03	--	--	--	12	56	<1
10350E 10275N	0.04	0.03	0.04	--	17	170	<1
10350E 10300N	0.01	--	--	--	14	130	<1
10350E 10325N	0.02	--	--	--	5	46	<1
10350E 10350N	0.02	--	--	--	7	34	<1
10350E 10375N	0.03	0.04	0.02	--	8	88	<1
10350E 10400N	0.02	--	--	--	11	145	1
9800E 10023N	0.03	--	--	--	12	92	<1
9800E 10049N	<0.01	--	--	--	6	68	<1
9800E 10075N	0.03	--	--	--	14	105	<1
9800E 10100N	0.03	--	--	--	10	150	<1
9800E 10125N	0.05	--	--	--	7	480	<1
9800E 10150N	<0.01	--	--	--	14	145	<1
9800E 10175N	0.01	<0.01	--	--	7	390	1
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	FA1	FA1	FA1	FA1	AAS1	AAS1	AAS2



Job: 8AD1492  
O/N: 11628/LD55/JPR

035

ANALYTICAL REPORT

SAMPLE	Au Avg	Au Dp1	Au Dp2	Au Dp3	Cu	Zn	Ag
9800E 10200N	0.01	--	--	--	8	830	<1
9800E 10225N	0.02	--	--	--	5	370	<1
9800E 10250N	0.02	--	--	--	8	330	<1
9800E 10275N	<0.01	--	--	--	7	200	<1
9800E 10300N	<0.01	--	--	--	7	300	<1
9800E 10325N	L.N.R.	--	--	--	L.N.R.	L.N.R.	L.N.R.
9800E 10350N	L.N.R.	--	--	--	L.N.R.	L.N.R.	L.N.R.
9800E 10375N	L.N.R.	--	--	--	L.N.R.	L.N.R.	L.N.R.
9800E 10400N	L.N.R.	--	--	--	L.N.R.	L.N.R.	L.N.R.
9750E 9900N ROCK	0.01	--	--	--	10	110	<1
UNITS	ppm						
SCHEME	FA1	FA1	FA1	FA1	AAS1	AAS1	AAS2

↑  
They were not listed.  
↓



Job: 8AD1492  
O/N: 11628/LD55/JPR

036

ANALYTICAL REPORT

SAMPLE	Pb	As	Ba
9750E 9825N	180	20	820
9750E 9850N	150	18	740
9750E 9875N	390	42	370
9750E 9900N	710	18	430
9750E 9925N	70	26	780
9750E 9950N	94	13	330
9750E 10050N	130	11	440
9750E 10075N	58	8	330
9750E 10100N	22	5	430
9750E 10125N	185	5	450
9750E 10150N	80	3	210
10350E 10250N	195	26	410
10350E 10275N	340	26	590
10350E 10300N	330	18	380
10350E 10325N	300	12	630
10350E 10350N	32	<2	450
10350E 10375N	58	4	610
10350E 10400N	135	9	540
9800E 10023N	540	4	290
9800E 10049N	440	<2	260
9800E 10075N	370	11	370
9800E 10100N	280	9	250
9800E 10125N	590	22	580
9800E 10150N	100	10	470
9800E 10175N	280	18	690

UNITS	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1



Job: 8AD1492

O/N: 11628/LD55/JPR

037

ANALYTICAL REPORT

SAMPLE	Pb	As	Ba
9800E 10200N	330	70	970
9800E 10225N	280	19	780
9800E 10250N	540	60	630
9800E 10275N	230	16	400
9800E 10300N	370	24	460
9800E 10325N	L.N.R.	L.N.R.	L.N.R.
9800E 10350N	L.N.R.	L.N.R.	L.N.R.
9800E 10375N	L.N.R.	L.N.R.	L.N.R.
9800E 10400N	L.N.R.	L.N.R.	L.N.R.
9750E 9900N ROCK	210	5	390
UNITS	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1

APPENDIX 3

DIAMOND DRILL LOG BPD 88-1

SMLMET SYSTEM  
METRIC  
DECIMAL POINTS AS REQUIRED

The BHPB Company of Australia Limited  
METALS DIVISION  
**DRILL LOG SHEET**  
HEADING SHEET

039

COLLAR INFORMATION	DATA TYPE	COLLAR CO-ORDINATES			COLLAR SURVEY		HOLE NAME	TOTAL DEPTH	HOLE TYPE	DESC CODE	REMARKS
		EASTING	NORTHING	ELEVATION	AZIMUTH	DIP					
		10800	9875		132	50	BPD 88-1	166			

SURVEY INFORMATION	DISTANCE FROM COLLAR		AZIMUTH	DIP	REMARKS
	TO TOP	TO BOTTOM			
					Hole not surveyed

PLOTTING KEY							
SYMBOL		INTERVAL		SYMBOL		INTERVAL	
DR CODE	G/LOG	FROM	TO	DR CODE	G/LOG	FROM	TO

PROJECT	BACK PEAK	HOLE NAME	BPD 88-1		
LOGGED BY	J. RANDELL	TOTAL DEPTH	166m		
CONTRACTOR	F. L. ORTNER	RIG	LY38		
CREW		DATE STARTED	3/4/88		
		FINISHED	3/2/88		
CORE STORAGE		SAMPLE STORAGE			
NO OF TRAYS	28	LOCATION	DI PORT		
M&P LAB		ASSAY LAB	COMLABS		
DESC.	SIZE	FROM	TO	TOTAL	REMARKS
NON CORE					
CORE	HQ	0	2.5	2.5	
	HQ	2.5	166	163.5	
	BO				
CASING					
CASING LEFT	PVC	0	166	166	(S) SPLIT (P) DRIFT

SURVEY INFORMATION	DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG
	TO TOP	TO BOTTOM						
CH	0	2						
	2	4						
	4	6						
	6	8						
	8	10						
	10	12						
	12	14						
	14	16						
	16	18						
	18	20						
	20	22						
	22	24						
	24	26						
	26	28						
CH	28	30						
SP	30	31						
SP	31	32						
CH	32	34						
	34	36						
	36	38						
	38	40						
	40	42						
	42	44						
	44	46						
CH	46	48						
	48	50						

DESCRIPTIVE LOG
0-71.2 // FELDSPAR ± QUARTZ PHYRIC SERICITIC RHYODACITIC VOLCANIC LASTIC.
Fine to medium to coarse grained, vaguely layered 55° LCA. Chloritic permineral clasts, subangular, moderately sericitic. Trace to 1% disseminated pyrite.
Weak waxy quartz veining 3.5-6.6m, abo 25-26m. Can be moderate angle to LCA. Fine quartz phenocrysts, variably silicified.
31-32m. Few clasts massive pyrite up to 3cm long. Other clasts vitric ash + pyritic siliceous rhyolitic clast.
37-38.3 Medium to coarse epiclastic, subrounded to subangular clasts of vitric ash, chloritized pyrite.
PET 44.8m 38.5-40.8. Moderately broken core, of vein at 40.7m. Trace pyrite.
42.5-45.0. Few cm. size vitric ash clasts.
46.0-47.8. Moderately bleached and weathered.
51.8-61.0. Coarser grained, red in foliar light.

SP = SPLIT CH = CHIP

DRILLING OBJECTIVES / SUMMARY Speller Creek Prospect: Coincident EM37 anomaly (target 50-100m vertical depth beneath 9770N) and soil geochemical anomaly (max 225ppm Pb, 0.35ppm Au). Drill hole intersected well disseminated pyrite down dip from surface geochemical anomaly and a fault zone at ~75m vertical depth. EM source presumed to be fault zone. Down hole logging will confirm.

REPORT REFERENCE: \_\_\_\_\_  
SHEET 1 OF 4

706040

SHLMEY SYSTEM  
METRIC  
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited  
METALS DIVISION

DRILL LOG SHEET

CONTINUATION PAGE 1

PROJECT *BACK PEAK* HOLE NAME *BPD 88-1*  
LOGGED BY *J. RANDELL* TOTAL DEPTH *166m*

L.S.	DISTANCE FROM COLLAR		CORRECTION	SAMPLE NO.	CORE ANGLE	ROCK TYPE	DIAM.	DESC. CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	TO TOP	TO BOTTOM								
CH	48	50								<i>585-610 Waxy chlorite permeable clast.</i>
	50	52								<i>613-642 Waxy quartz veined + F-stained.</i>
	52	54								<i>630-712 Fine grained silicified massive vitric ash bearing coarse grains</i>
	54	56								
	56	58								
	58	60								<i>712-90.0 // COARSELY PORPHYRITIC (QUARTZ + FELDSPAR) SILICIFIED CHLORITIC RHYODALCITIC EPICLASTIC.</i>
	60	62								
	62	64								
	64	66								
	66	68								<i>PET Gradational contact. Rare poplite discon.</i>
CH	68	70								<i>75.1m Waxy quartz clasts up to 3cm long, irregular often surrounding vitric ash clasts.</i>
										<i>788-813. Very large clasts sub rounded very fine grained silicified ash.</i>
										<i>gradational lower contact.</i>
										<i>90.1-100.0 // FINE SILICIFIED AND SERICITIC VITRIC ASH.</i>
										<i>Broken core at top to 97m. Some bands of medium grained crystal rich clastics.</i>
										<i>93.5-95.4. Medium grained crystal rich + massive feldspathic volcaniclastic.</i>
										<i>100.0-107.0 // COARSELY PORPHYRITIC SILICIFIED CHLORITIC EPICLASTIC</i>
										<i>100-101.5. Very coarse clasts, rounded and flattened up to 15cm long. Fine grained vitric perthite ash.</i>
										<i>Rare to trace disseminated poplite.</i>
										<i>107.0-113.5 // SILICIFIED COARSE EPICLASTIC BRECCIA.</i>
										<i>Coarse epiclastic with rounded clasts of feldspathic crystal rich volcaniclastic, or perthite epiclastic clasts.</i>
										<i>At 107.8m, vague lensing 65° LCA.</i>
										<i>Fine vitric ash beds with ambiguous lamination on basis of graded beds.</i>
										<i>Some fine grained quartz phenocrysts.</i>

ASSAY INFORMATION

040

706041

HELMET SYSTEM  
METRIC  
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited  
METALS DIVISION

DRILL LOG SHEET

IDENTIFICATION SHEET

PROJECT	BACK PEAK	HOLE NAME	BPD 88-1
LOGGED BY	J. RANDELL	TOTAL DEPTH	166m

DISTANCE FROM COLLAR TO TOP	DISTANCE FROM COLLAR TO BOTTOM	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
130	132							114.3-115.8 Strong quartz carbonate fault breccia.
132	134							
134	136							
136	138							
138	140							
140	141							
155.1	156.5							130.0-141.0 // FAULT ZONE.
156.5	157.7							
157.7	159.0							
159.0	160.8							Intensely broken core, filiform crystal stuff, thin numerous quartz carbonate nodules.
160.8	162.0							
162.0	163.5							
163.5	164.9							141.0-155.1 // MASSIVE FELDSPAR CRYSTAL VOLCANICLASTIC
164.9								
								Fine to medium grained, 141-142.5. Loose bands quartz 75° LCA. 150.6 m. Minor fine ash beds, graded beds indicate up hole facies.
								155.1-157.7 // POORLY LAMINATED BLACK SILTSTONE.
								Upper contact: quartz vein 10cm thick Lower contact: sharp 45° LCA.
								Fine pyritic + ? sphalerite laminae and fine blks, irregular.
								157.7-160.8 // LAMINATED CHERTY SILTSTONE AND VITRIL ASH.
								Lower contact: sharp 50° LCA. Well laminated (45-50° LCA) alternating siltstone, chert and ash laminae.
								Graded beds and pole markings all indicate an up hole facies. Rare blks pyrite.
								160.8-164.9 // PUMICEOUS CRYSTAL VOLCANICLASTIC
								Poorly layered coarse irregular pumice and filiform crystals.

ABBREVIATION

041

706042

SHIMMET SYSTEM  
METRIC  
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited  
METALS DIVISION

DRILL LOG SHEET

PROJECT **BACK PEAK**  
LOGGED BY **J. RANDELL**

HOLE NAME **BPD 88-1**  
TOTAL DEPTH **166m**

RECOVERY CALCULATION

DEPTH (m)	DISTANCE FROM COLLAR		INTERVAL	CORR RECOVD	% RECOVERY	SAMPLE NO	CORR ANGLE	ROCK TYPE	GRADE	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	TO TOP	TO BOTTOM										
0.0	0.0	1.5	1.5	1.5	100							<i>Red quartz carbonaceous + pyrite galena dissemination. Trace down pyrochlore. Some rip up clasts. Irregular bottom contact and some of matrix with underlying sediment.</i>
1.5	1.5	4.0	2.5	2.5	100							
4.0	4.0	7.0	3.0	3.0	100							
7.0	7.0	10.0	3.0	3.0	100							
10.0	10.0	13.0	3.0	3.0	100							
13.0	13.0	16.0	3.0	3.0	100							
16.0	16.0	18.6	2.6	2.6	100							
18.6	18.6	21.7	3.1	3.1	100							
21.7	21.7	24.8	3.1	3.1	100							
24.8	24.8	27.9	3.1	3.1	100							
27.9	27.9	31.0	3.1	3.1	100							
31.0	31.0	34.0	3.0	3.0	100							
34.0	34.0	37.0	3.0	3.0	100							
37.0	37.0	39.1	2.1	2.1	100							
39.1	39.1	41.8	2.7	2.7	100							
41.8	41.8	43.0	1.2	1.2	100							
43.0	43.0	46.0	3.0	3.0	100							
46.0	46.0	46.3	0.3	0.2	67							
46.3	46.3	49.0	2.7	2.7	100							
49.0	49.0	52.0	3.0	3.0	100							
52.0	52.0	55.0	3.0	3.0	100							
55.0	55.0	58.0	3.0	3.0	100							
58.0	58.0	61.0	3.0	3.0	100							
61.0	61.0	64.0	3.0	3.0	100							
64.0	64.0	67.0	3.0	3.0	100							
67.0	67.0	70.0	3.0	3.0	100							
70.0	70.0	73.0	3.0	3.0	100							
73.0	73.0	76.0	3.0	3.0	100							
76.0	76.0	79.0	3.0	3.0	100							
79.0	79.0	82.0	3.0	3.0	100							
82.0	82.0	85.0	3.0	3.0	100							
85.0	85.0	88.0	3.0	3.0	100							
88.0	88.0	91.0	3.0	3.0	100							
91.0	91.0	93.3	2.3	2.3	100							
93.3	93.3	96.4	3.1	3.1	100							
96.4	96.4	99.5	3.1	3.1	100							
99.5	99.5	102.6	3.1	3.1	100							
102.6	102.6	105.7	3.1	3.1	100							
105.7	105.7	108.8	3.1	3.1	100							
108.8	108.8	111.9	3.1	3.1	100							
111.9	111.9	115.0	3.1	3.1	100							
115.0	115.0	118.0	3.0	3.0	100							
118.0	118.0	121.0	3.0	3.0	100							
121.0	121.0	124.0	3.0	3.0	100							
124.0	124.0	127.0	3.0	3.0	100							
127.0	127.0	130.0	3.0	3.0	100							
130.0	130.0	132.1	2.1	2.1	100							
132.1	132.1	134.5	2.4	2.4	100							
134.5	134.5	135.9	1.4	1.0	71							
135.9	135.9	138.7	2.8	2.8	100							

ASSAY INFORMATION

164.9 - 166.0 // MASSIVE SILICIFIED ASH AND CHERT.

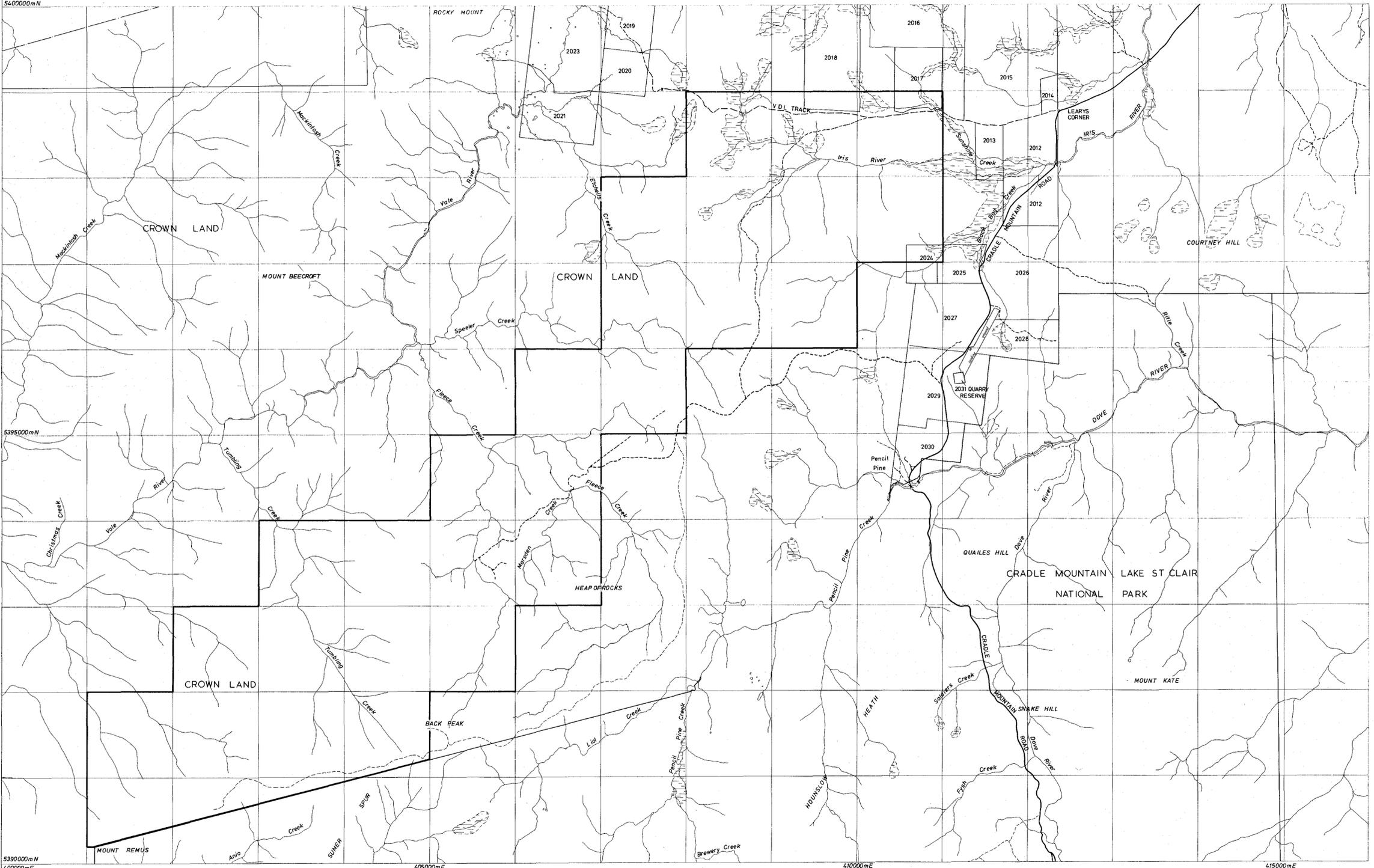
Poorly layered, minor pyrochlore clasts, some cherty bands.

E.O.H. 166m.

042

706043





**LEGEND**

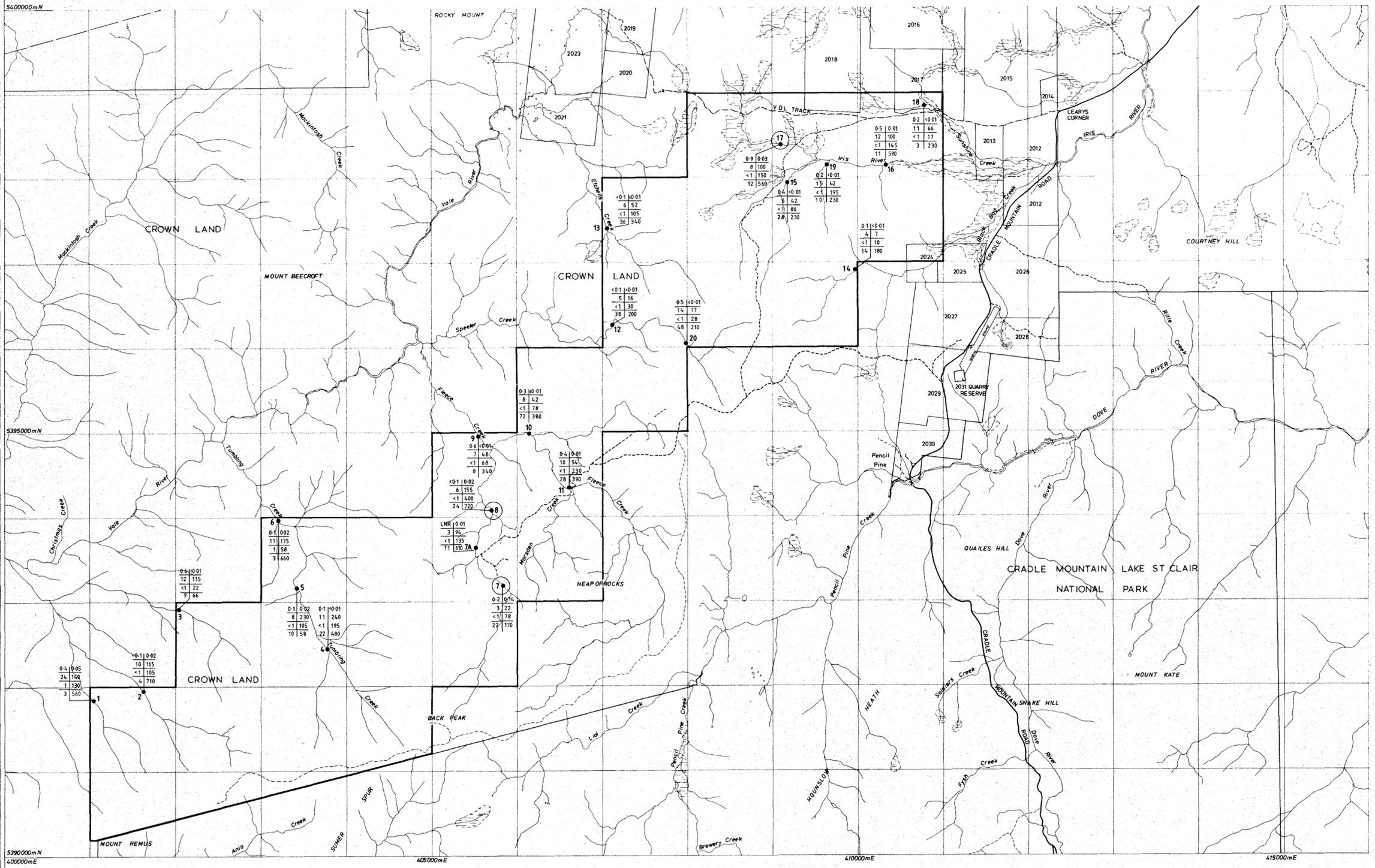
- E.L. Boundary
- Reserve Boundary
- Property Boundary with land number
- Public road
- Gravel road with bridge
- Vehicular track with gate
- Walking track
- Power transmission line
- Wet area
- Creek, river with waterfall

706045

5 cm

**88-2890**

<b>Billiton Australia</b> <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		BACK PEAK	
Title			
TOPOGRAPHIC BASE PLAN			
Author	J.P.R.	Dept.	TAS
Scale	1:25,000		
Drawn	G.H.	Date	4/88
Revised			
Checked	Date	S'ced	Date
Sheet No.	FIG 4	Drawing No.	D / LD 55 / 001



**ANOMALOUS RESULTS**

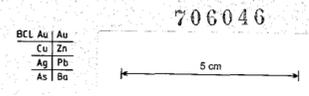
SITE	STRONGLY ANOMALOUS (>97.5% of pop <sup>n</sup> )	WEAKLY ANOMALOUS (>67% of pop <sup>n</sup> )
55/7	0.14 ppm Au	22 ppm As, 610 ppm Ba
55/4	240 ppm Zn	22 ppm As
55/5	230 ppm Zn	580 ppm Ba
55/8	400 ppm Pb, 720 ppm Ba	155 ppm Zn, 24 ppm As
55/10	72 ppm As	
55/12	38 ppm As	
55/13	36 ppm As	
55/20	4.8 ppm As	
55/2	710 ppm Ba	165 ppm Zn
55/3	660 ppm Ba	
55/6	660 ppm Ba	175 ppm Zn
55/17	0.9 ppm Au	560 ppm Ba
55/11		230 ppm Pb, 28 ppm As
55/15		28 ppm As

**THRESHOLD VALUES:**

Au (BCL)	0.7 ppb
Au (FA)	0.03 ppm
Cu	35 ppm
Zn	136 ppm
Ag	1 ppm
Pb	208 ppm
As	21 ppm
Ba	485 ppm

**LEGEND**

- E.L. Boundary
- Reserve Boundary
- Property Boundary with land number
- Public road
- Gravel road with bridge
- Vehicular track with gate
- Walking track
- Power transmission line
- Wet area
- Creek, river with waterfall
- Stream sediment sample BCL -80 μ



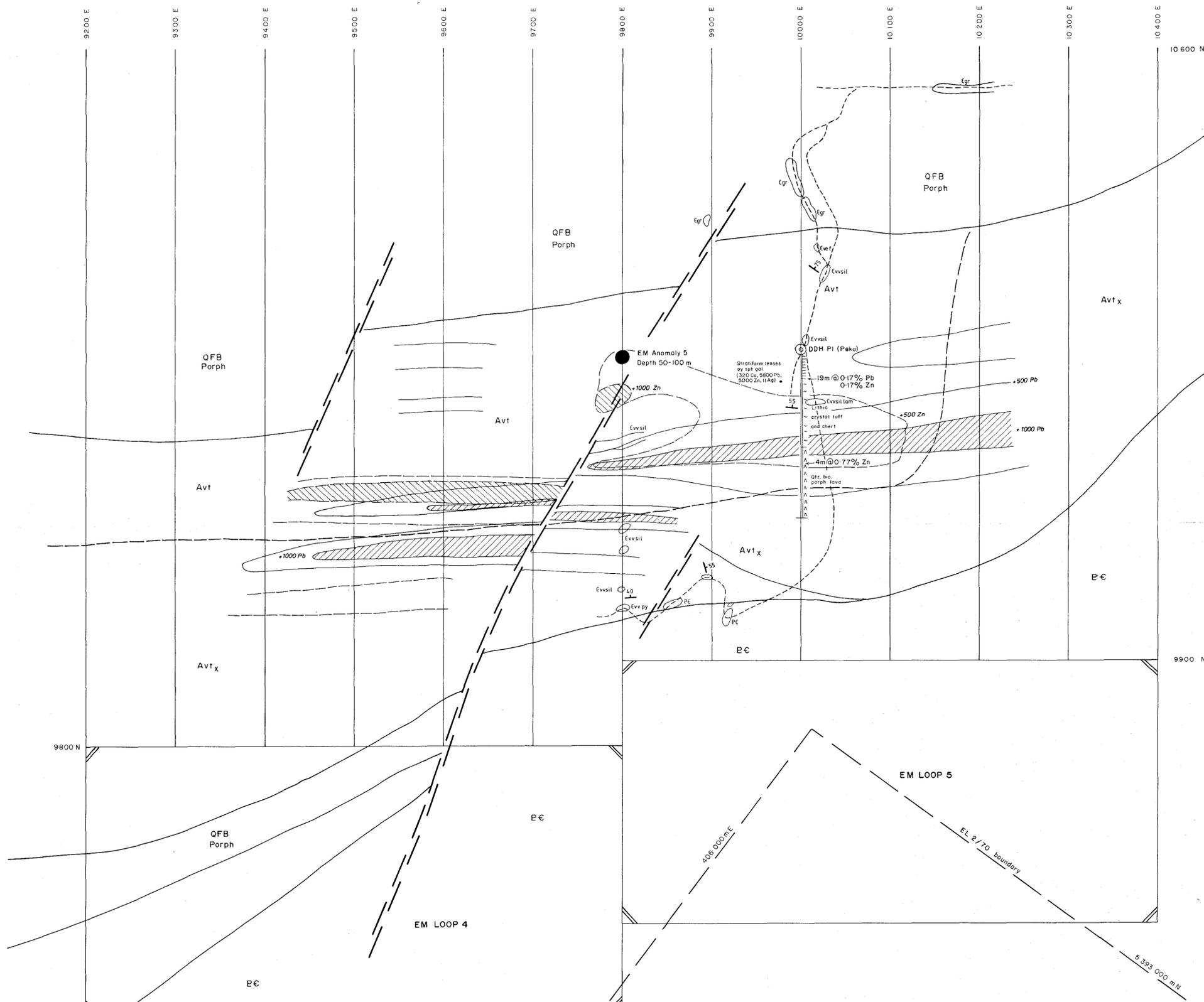
**88-2890**

**Billiton Australia**  
The Metals Division of the Shell Company of Australia Limited

Project: **BACK PEAK**

Title: **STREAM SEDIMENT SAMPLE LOCATION AND RESULTS**

Author	J.P.R.	Dept.	TAS	Scale	1:25,000
Drawn	G.H.	Date	8/88	Revised	Date
Checked	Date	S'ced	Date		
Sheet No.	FIG. 5	Drawing No.	D/LD 55/002		



SEE 'CARTERS GRID' 1:2500

**LEGEND**

- CAMBRIAN**
- Egr Coarse grained quartz-feldspar-biotite granitoid.
  - Cw Fine grained silicified acid volcanoclastic.
  - QFB Quartz feldspar biotite porphyritic intrusive.
  - Avt Rhyolitic vitric tuff.
  - Avt\_x Rhyolitic vitric crystal tuff often chloritic.
- PRECAMBRIAN**
- EC Mixed fine quartzite graphitic shales.
  - sil silicified
  - chl chloritized
  - ser sericitized

5 cm

- EM Transmitter Loop
  - EM 37 Anomaly
- SOIL GEOCHEMISTRY**
- Pb 500 ppm
  - Pb 1000 ppm
  - Zn 500 ppm
  - Zn 1000 ppm

88-2890  
706047

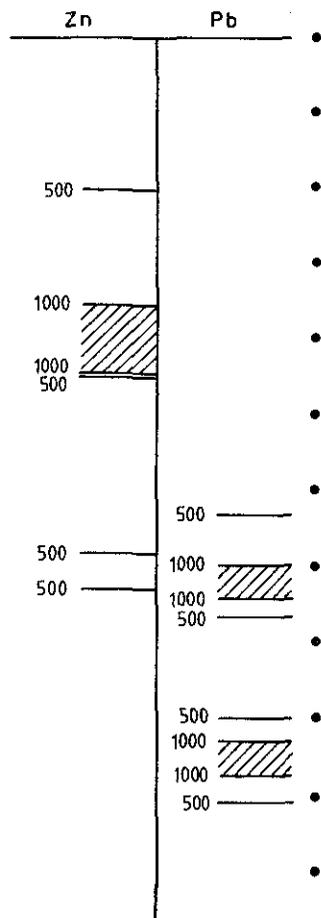
<b>Billiton Australia</b> <small>The Metals Division of the Shell Company of Australia Limited</small>	
Project	BACK PEAK E.L. 90/87
Title <b>HEAP OF ROCKS GRID EXPLORATION SUMMARY</b> <small>(After Cyprus Minerals, 1985)</small>	
Author	JPR Dept. TAS Scale 1:2500
Drawn	AS Date 7/87 Revised GH Date 8/88
Checked	Date S'ceded Date
Sheet No.	FIG. 6 Drawing No. MT 24 / 1174

7997

PEKO RESULTS

BAUS RESULTS

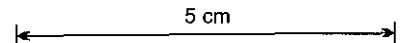
10300 N



	Au	Cu	Zn	Ag	Pb	As	Ba
•	<0.01	7	300	<1	370	24	460
•	<0.01	7	200	<1	230	16	400
•	0.02	8	330	<1	540	60	630
•	0.02	5	370	<1	280	19	780
•	0.01	8	830	<1	330	70	970
•	0.01	7	390	1	280	18	690
•	<0.01	14	145	<1	100	10	470
•	0.05	7	480	<1	590	22	580
•	0.03	10	150	<1	280	9	250
•	0.03	14	105	<1	370	11	370
•	<0.01	6	68	<1	440	<2	260
•	0.03	12	92	<1	540	4	290

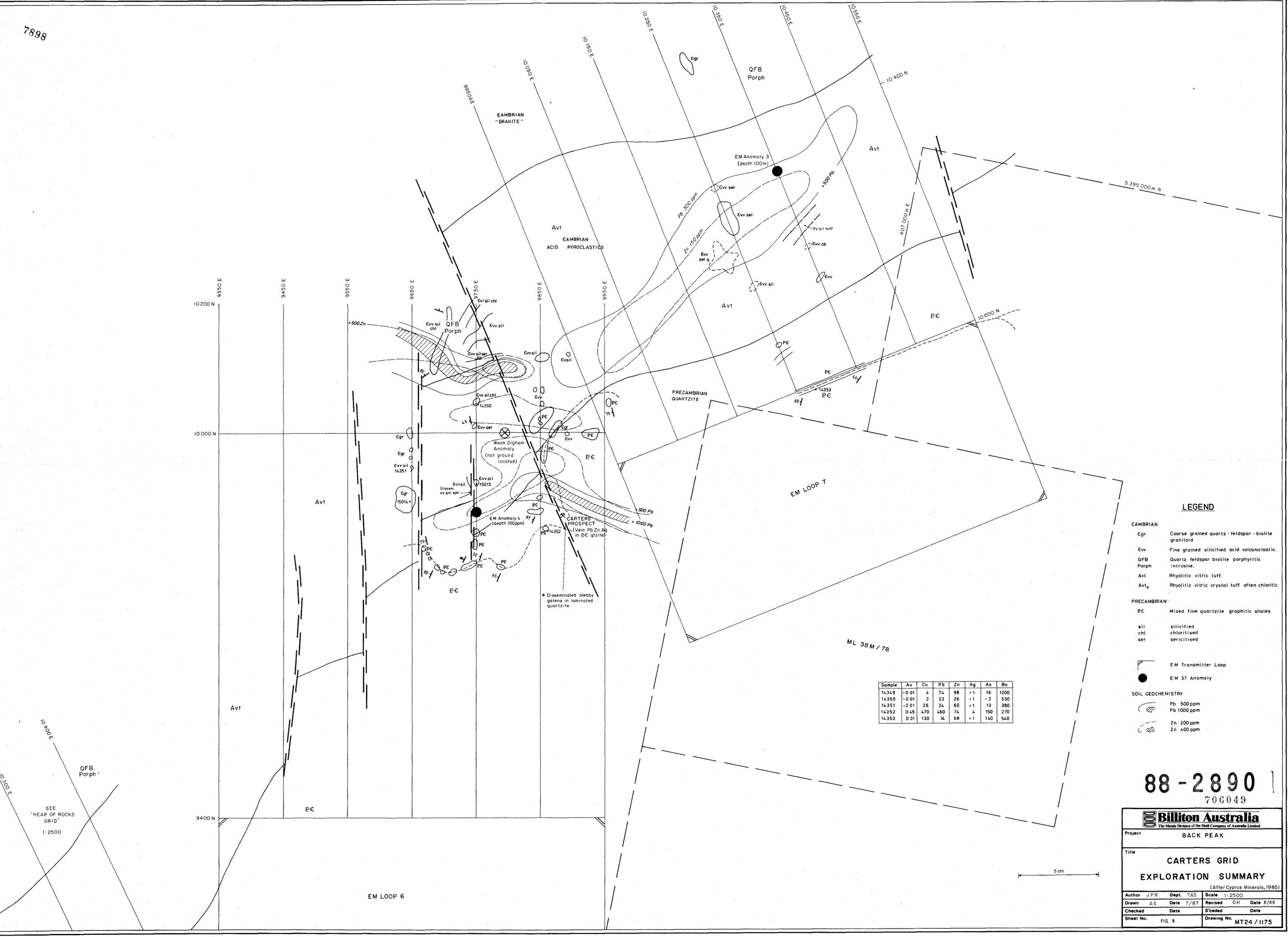
10025 N

706048



88 - 2890

 <b>Billiton Australia</b> <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		BACK PEAK	
Title			
HEAP OF ROCKS REPEAT SOIL AUGER TRAVERSE LINE 9800 N			
Author	JPR	Date	8/88
Scale	1:2500		
Drawn	OH	Office	TAS
Revised			
Date			
Drawing No.			Fig. No. 7



**LEGEND**

**CAMBRIAN**

- Cgr Coarse grained quartz - feldspar - biotite granitoid.
- Evw Fine grained silicified acid volcanlastic.
- QFB Quartz feldspar biotite porphyritic intrusive.
- Avt Rhyolitic vitric tuff.
- Avt<sub>x</sub> Rhyolitic vitric crystal tuff often chloritic.

**PRECAMBRIAN**

- PC Mixed fine quartzite graphitic shales
- sil silicified
- chl chloritised
- ser sericitised

EM Transmitter Loop

EM 37 Anomaly

**SOIL GEOCHEMISTRY**

- Pb 500 ppm
- Pb 1000 ppm
- Zn 200 ppm
- Zn 400 ppm

Sample	Au	Cu	Pb	Zn	Ag	As	Ba
14349	<0.01	4	74	98	<1	16	1200
14350	<0.01	2	22	26	<1	<2	550
14351	<0.01	26	24	60	<1	13	380
14352	0.49	470	460	74	4	150	270
14353	0.01	130	74	68	<1	140	540

**88-2890**  
706049

**Billiton Australia**  
The Metals Division of the Shell Company of Australia Limited

Project: **BACK PEAK**

Title: **CARTERS GRID EXPLORATION SUMMARY**  
(After Cyprus Minerals, 1985)

Author	JPR	Dept.	TAS	Scale	1:2500
Drawn	AS	Date	7/87	Revised	OH Date 8/88
Checked		Date		S'ceded	Date
Sheet No.	FIG. 8	Drawing No.	MT24 / 1175		

5 cm

SEE 'HEAP OF ROCKS GRID' 1:2500

7899

PEKO RESULTS

500 Zn \_\_\_\_\_  
 500 Zn \_\_\_\_\_  
 \_\_\_\_\_ 500 Pb  
 \_\_\_\_\_ 1000 Pb  
 \_\_\_\_\_ 1000 Pb  
 \_\_\_\_\_ 500 Pb

10000 N

500 Zn \_\_\_\_\_  
 500 Zn \_\_\_\_\_  
 500 Zn \_\_\_\_\_  
 500 Zn \_\_\_\_\_

5 cm

9750 E

BAUS RESULTS

Au	Cu	Zn	Ag	Pb	As	Ba
0.04	7	14	<1	80	3	210
<0.02	9	40	<1	185	5	450
<0.01	7	16	<1	22	5	430
0.02	16	22	1	58	8	330
<0.01	6	46	<1	130	11	440

0.03	10	54	<1	94	13	330
0.03	9	100	1	70	26	780
0.01	17	310	<1	710	18	430
0.03	13	56	<1	390	42	370
0.03	28	80	2	150	18	740
0.03	24	22	<1	180	20	820

88 - 2890

706050

 <b>Billiton Australia</b> <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project			
BACK PEAK			
Title			
CARTERS PROSPECT TRAVERSE LINE 9750 E			
Author	Date	Scale	
Drawn	Office	Revised	Date
Drawing No.			Fig. No. 9

7900

10350 E

PEKO RESULTS

BAUS RESULTS

500 Pb ———  
 ——— 500 Zn  
 ——— 500 Zn  
 500 Pb ———

	Au	Cu	Zn	Ag	Pb	As	Ba
0-02	11	145	1	135	9	540	
0-03	8	88	< 1	58	4	610	
0-02	7	34	< 1	32	< 2	450	
0-02	5	46	< 1	300	12	630	
0-01	14	130	< 1	330	18	380	
0-04	17	170	< 1	340	26	590	
0-03	12	56	< 1	195	26	410	

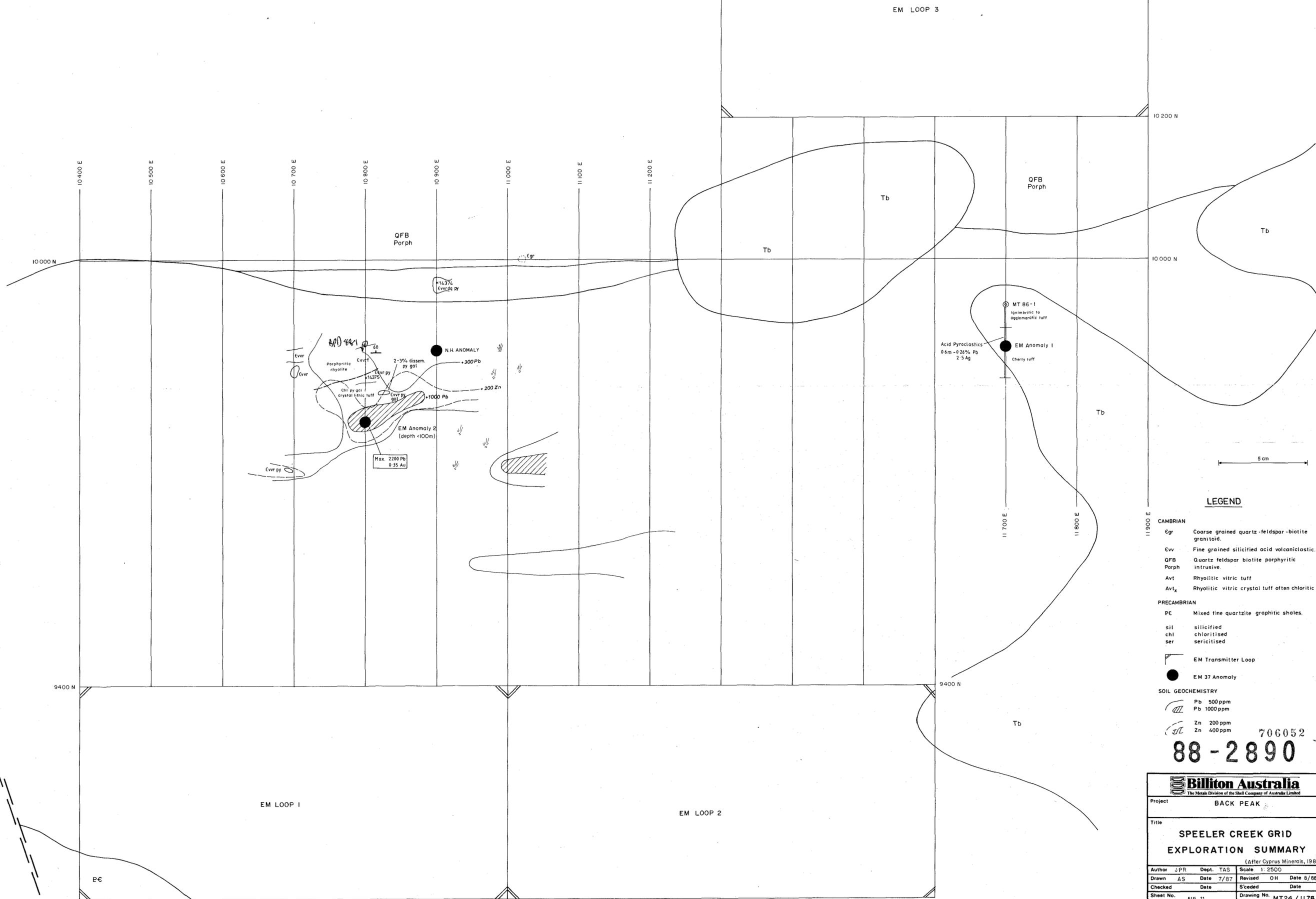
10000 N

5 cm

88 - 2890

706051

 <b>Billiton Australia</b> <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		BACK PEAK	
Title		CARTERS PROSPECT TRAVERSE LINE 10350 E	
Author	J PR	Date	8-88
Scale	1:2500		
Drawn	OH	Office	TAS
Revised		Date	
Drawing No.		Fig. No.	10



**LEGEND**

**CAMBRIAN**

- Egr Coarse grained quartz-feldspar-biotite granitoid.
- Evr Fine grained silicified acid volcanoclastic.
- QFB Quartz feldspar biotite porphyritic intrusive.
- Avt Rhyolitic vitric tuff
- Avt<sub>c</sub> Rhyolitic vitric crystal tuff often chloritic

**PRECAMBRIAN**

- PE Mixed fine quartzite graphitic shales.
- sil silicified
- chl chloritised
- ser sericitised

- EM Transmitter Loop
- EM 37 Anomaly

**SOIL GEOCHEMISTRY**

- Pb 500 ppm
- Pb 1000 ppm
- Zn 200 ppm
- Zn 400 ppm

706052  
**88-2890**

<b>Billiton Australia</b> The Metals Division of the Shell Company of Australia Limited	
Project	BACK PEAK
Title <b>SPEELER CREEK GRID EXPLORATION SUMMARY</b> (After Cyprus Minerals, 1985)	
Author JPR Dept. TAS	Scale 1:2500
Drawn AS Date 7/87	Revised OH Date 6/88
Checked Date	Sceded Date
Sheet No. FIG. 11	Drawing No. MT24 / 1178



10000 N

9950 N

9900 N

9850 N

9800 N

9750 N

9700 N

9650 N

7903

BPD 88-1  
COLLAR 9875N 10800E  
-50° DIP 132° AZIM.

Broad buttongrass + heath plain

410/110	390/68	1060/570	2200/820	1980/370	640/345	510/415	165/76
0.08	0.34	0.32	0.35	0.25	0.25	0.01	0.01

10800E

GEOCHEM. ANOMALY

LEGEND

-  **FELDSPAR PHYRIC SERICITIC VOLCANICLASTIC** *Medium to coarse grained, pumiceous, trace pyrite, minor epiclastic component.*
-  **PORPHYRITIC SILICIFIED EPICLASTIC** *Coarse quartz phenocrysts in rhyodacitic matrix with angular vitric ash clasts.*
-  **SILICIFIED VITRIC ASH** *Fine grained but with minor crystal rich bands.*
-  **EPICLASTIC BRECCIA** *Coarse epiclastic, well rounded clasts of epiclastic detritus.*
-  **SILICIFIED SILTSTONE/ASH** *Poorly laminated, strong volcanic component, graded beds, scour and fill structures.*

CAMBRIAN

-  **Pb/Zn**
-  **Au**

- Evvr** *Cambrian rhyolitic volcaniclastic*
- Evvrdaq** *Cambrian rhyodacitic quartz phyric volcaniclastic*
- Egr** *Cambrian quartz feldspar biotite granitoid*

# 88-2890

706054

 **Billiton Australia**  
The Metals Division of the Shell Company of Australia Limited

Project				BACK PEAK	
Title				SPEELER CREEK DIAMOND DRILL SECTION BPD 88-1	
Author	J PR	Date	12/88	Scale	1:1000
Drawn	OH	Office	TAS	Revised	Date
Drawing No.	D/LD 55/004			Fig. No.	13

5 cm

EM SOURCE

