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BILLITON AUSTRALIA

EXPLORATION LICENCE 1/62

RELINQUISHMENT REPORT

EL 1/62

LETTER
14. 12. '88
REFERS

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SUMMARY

No detailed exploration has been carried out in 1988 on the two prospect areas that are to be relinquished.

EZ Company had previously explored the northern area using geophysics and diamond drilling. Several old prospectors pits and workings were investigated.

Exploration by Billiton concentrated on assessing the Henty Fault Zone for gold bearing sulphides. A single diamond drill hole (RED 87-11) failed to intersect mineralization. No further exploration is warranted.

The South Stitt area covers 4km strike length of the Henty Fault. The area has been geologically mapped, auger and rock chip sampled, and had a ground magnetic and IP survey completed. The lack of geochemical response, and apparent lack of definitive geophysical anomalies, has downgraded the area. No further exploration is recommended.

CONCLUSIONS & RECOMMENDATIONS

The northern area (Farrell-Mackintosh), although in close proximity to the Farrell lodes, does not appear to carry any significant gold values. The proximity to substantial cultural features, roads, dams, HEC workshops etc, has precluded a detailed geophysical survey. Previous drilling by EZ, plus the hole drilled by Billiton, has indicated barren Farrell slates. The prospectivity of the area has been significantly down graded.

South Stitt is a logistically difficult area to explore, but sufficient exploration has been completed to indicate low prospectivity of the Henty Fault Zone for gold bearing sulphides.

It is recommended that these two areas be relinquished.

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1.0 INTRODUCTION

Part of Exploration Licence 1/62 was renewed in January 1988, to enable the tenement holders to continue exploration on the Henty Fault for gold mineralization. An area of 3km² from the now-expired EL 4/73 was also renewed and incorporated into EL 1/62 (Fig. 1). The tenement consists of two parts, the northern part extending from the Sterling River northwards to the Mackintosh Dam, and the southern part covering 4km of the Henty Fault at South Stitt.

This report describes all the exploration completed on two parts of the licence that are being relinquished. A separate report describes exploration on 9km² of the licence that is being renewed.

The two parts being relinquished are:

- all of the South Stitt area
- that part of the northern area north of 5378000N (Farrell-Mackintosh).

2.0 EXPLORATION COMPLETED

2.1 Farrell-Mackintosh

This prospect refers to the area from north of 5378000N to the EL 1/62 boundary, a strike distance of 5km. Access is possible via the sealed Mackintosh Dam road, east of the Henty Fault, and HEC tracks, west of the fault, although Lake Mackintosh drains into Lake Rosebery and transgresses the HFZ.

2.1.1 Local Geology (Figs. 2,3,4)

The Henty Fault approximately follows the course of the Mackintosh River and is flanked to the west by glacial covered and poorly exposed feldspar phyric dacitic andesitic lavas (Mt. Black Volcanics). East of the fault a structurally disturbed sequence of fine tuffaceous sediments and contorted graphitic (?)shales occurs, and abuts the topographic high Owen Conglomerate. The glacial cover limits exposure of these units to creek beds and road cuttings.

Exposure of the Mt. Black Volcanics is limited to road cuts and creeks due to thin glacial and Owen scree cover. The volcanics are dominated by feldspar phyric lavas of dacitic-andesitic composition but there is a definite zone of silicification near the HFZ that has altered the lavas. Fine tuff-

aceous or pumiceous interbeds are also an integral part of the sequence west of the HFZ.

Deformation within the volcaniclastic-sediment sequence east of the HFZ (Farrell Sequence) is quite intense. Commonly a fine tuffaceous volcaniclastic crops out immediately east of the fault and is often sericitized and carbonatised. Further east variably graphitic shales are crenulated and strongly fissile. Numerous E-W cross faults are apparent and these have offset the HFZ and the Farrell Sequence in a North-Block -West sense. Strong quartz veining occurs at these offset positions but sulphide mineralization is typically not present.

2.1.2 Work Completed

Previous work carried out in the vicinity of the HFZ has been limited to:

1) UTEM surveying by Billiton during 1986. This work focussed on the Mt. Black Volcanic sequence west of the HFZ and did not cover the fault position itself.

2) Site excavations and diamond drilling by the HEC at Mackintosh Dam. The HFZ passes through the western edge of the dam near the spillway into Tullabardine Creek.

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3) Diamond drilling of 3 holes (MP 86, 87, TP 135) by EZ Co. in 1951 and 1968 to test SP anomalies within the Farrell Slates.

4) Prospectors pits and workings:

a) immediately north of the Farrell Mine Lease. These are unnamed but consist of several small adits and one shaft (depth unknown) located east of the HFZ.

b) Farrell Blocks. Located on the shore of Lake Rosebery and immediately east of the HFZ.

c) Metropolitan. Not located accurately but reportedly at the unconformable contact of the Farrell Slates with the Ordovician Owen Conglomerate.

Exploration carried out during Billiton's tenure has focussed on examination of the area proximal to the HFZ position with particular reference to the characteristics of mineralization observed at Lakeside and Sterling Valley. This work is summarized below:

1. Geological mapping 0.5 man months.
2. Rock chip sampling 59 samples.
3. Drill core re-assaying 112 samples.
4. Diamond drilling 250 metres.

2.1.3 Results

Detailed geological mapping has been carried out to identify the position of the HFZ and to enable recognition of altered volcanics or volcaniclastics. Rock chip sampling of altered rocks did not reveal any anomalous levels of gold (Figs. 2,3, 4) despite the often pervasive sericitization and quartz veining observed in samples close to the fault. There is now reasonable control on the position of the HFZ from Farrell to Mackintosh Dam and it is apparent that the fault position has been transposed by a series of EW displacements. West of the fault, massive silicified dacitic to andesitic lavas are observed and quartz vein stockworking is common proximal to the contact with the Farrell Slates. Rare pyritic mineralization has been recorded at this position, but anomalous geochemistry was not present. Immediately east of the HFZ a thin (up to 40 metre) persistent unit exists, characterized by strong sericite alteration overprinting a fine grained tuffaceous sheared epiclastic. North of the HEC work shops, a thick black graphitic shale overlies this unit; although at Mackintosh Dam, arenaceous epiclastics are inferred from HEC drill logs interbedded with the black shales. Assaying of HEC core has not been undertaken but is recommended on selected portions where drill logs indicate favourable alteration.

The Farrell Blocks workings consist of several small (5m) adits that have been located on quartz filled shears within black shales. The workings are minor and anomalous gold geochemistry has not been recorded.

Immediately south of the HEC workshops, three drill holes (MP 86, 87, TP 135) put down by EZ Co. have been examined and the core reassayed (Fig.5). No anomalous gold geochemistry was returned from this fire assaying but it should be noted that neither hole intersected the HFZ position. It is apparent in this area that the fault position has been transposed up to 200 metres to the west by a series of EW cross faults. This offset is accompanied by in-thrusting of several slices of feldspar phyric volcanics within the Farrell Slates and abundant milky quartz veining is evident. Several small diggings have exploited these fissures but the extent is very limited. Rock chip sampling has not revealed any anomalous gold geochemistry despite reasonable exposure in several creeks.

One diamond drill hole has been completed in the vicinity of this structural offset to test the sequence at depth for any alteration, and the development of gold mineralization. The degree of sericite-carbonate alteration and quartz vein stock-working within the volcanics and volcaniclastics together with the favourable structural setting, provided a prime target for the remobilization of gold mineralization into structural traps, and the hole was essentially a geological

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test of this interpretation. A summary of the drill hole is presented below (Appendix 1, Figs. 6,7)

Drill hole No. : RED 87-11
Collar Co-ords. : 538033mN 386038mE
Azimuth : 132° Mag
Inclination : -50°
Total Depth : 250.1m

Summary Log:

0 -	9 m	Glacial scree
9 -	27.5m	Feldspar phyric dacitic-andesitic lava.
27.5 -	36.1m	Sheared dacitic lava.
36.1 -	39.1m	Sheared feldspathic dacitic volcani-clastic.
39.1 -	52.1m	Pink massive dacitic lava.
52.1 -	60.9m	Dacitic-andesitic lava.
60.9 -	66.3m	Fine pumiceous silicified volcani-clastic.
66.3 -	81.5m	Massive dacitic lava.
81.5 -	94.3m	Sheared dacitic lava.
94.3 -	94.9m	Finely bedded sericitic volcani-clastic.
94.9 -	99.0m	Siliceous dacitic lava.
99.0 -	106.2m	Intensely altered (carbonatised and sericitized) dacitic-andesitic lava
106.2 -	118.4m	Chloritized and carbonatized fine arenaceous volcaniclastic.
118.4 -	146.6m	Variably bedded fine arenaceous volcaniclastic with graphitic laminae.
146.6 -	223.2m	Variably bedded fine arenaceous volcaniclastic with graphitic laminae.
223.2 -	225.7m	Layered epiclastic breccia.
225.7 -	250.1m	Well bedded arenaceous volcaniclastic.
EOH		

Sulphide mineralization is limited to trace disseminations of pyrite throughout the volcaniclastics and one quartz-sphalerite veinlet at 221 metres. Half-core sampling was done from 9.0 to 161.0m, but no anomalous base or precious metals values are present.

2.1.4 Conclusions & Recommendations

Detailed surface mapping and rock chip sampling has defined the position of the HFZ and surrounding lithologies have been mapped from available exposures. Rock chip sampling has not revealed any anomalous gold geochemistry despite the strong alteration and quartz veining observed in many samples. One diamond drill hole has tested a structurally disturbed area north of Farrell and strong carbonate-sericite-chlorite alteration has been observed in lavas and volcaniclastics east of the HFZ.

A further 2km strike of the HFZ remains untested from RED 87-11 to the Mackintosh Dam. Lithologies observed adjacent to the HFZ within the Farrell Sequence are dominantly black graphitic shales and fine tuffaceous sediments but the degree of alteration is of economic importance. Exposure is very limited by cultural features and natural topography, which also impedes the use of detailed geophysics to define drilling targets.

Although potential exists for the development of remobilised stratabound gold-bearing sulphide deposits, the lack of geochemical response, or the development of major alteration zones, downgrades the area.

No further exploration is recommended.

2.2 SOUTH STITT

2.2.1 Introduction

The South Stitt area covers a 4km length of the Henty Fault Zone to the west of Mt. Murchison (Fig. 1). The prospectivity of the area stems principally from the possibility for stratiform gold and/or massive sulphides within volcaniclastic sediments adjacent to the fault zone. This is based on the stratiform gold occurrence at GoldField's Henty Prospect 4km south of the South Stitt area.

Exploration in the South Stitt area has been hampered by the poor access and extensive cover of glacial moraine and Owen Conglomerate scree, which limits the effectiveness of geological mapping and geochemical sampling. From 1978-80 EZ gridded the area on 500m line spacing and carried out ground surveys including alternating lines of dipole-dipole and pole-dipole IP. From 1983-85 Getty Oil Development (in JV with EZ), undertook a major programme of systematic exploration commencing with an airborne DIGHEM survey. This work culminated in the helicopter-supported drilling of two diamond drillholes in mid 1985 (SS1 and SS2 totalling 357m). These holes were directed at geophysical anomalies adjacent to the Henty Fault Zone.

Although no mineralization was intersected they did highlight the presence of cherts, disseminated pyrite and hydrothermal alteration in volcaniclastic sediments east of the fault.

Shell commenced work at South Stitt in January 1986. The area initially was geologically mapped in as much detail as possible. Rock chip samples were taken during this work. Subsequently, all the geophysical results were evaluated in the context of the geological framework.

2.2.2 Geology

Geological mapping was completed at 1:5,000 scale (Fig. 8). Three rock samples were submitted for petrological examination (see Appendix 2).

The South Stitt area straddles the Henty Fault Zone which divides two sequences of volcanics of very different character. The area is extensively covered by thick glacial moraine and Owen Conglomerate scree. The prospective volcano-sedimentary sequence east of the Henty Fault Zone, facies equivalent of the Farrell Slates to the north, is only seen on the southern part of the grid and in drillhole SS1.

This drillhole intersected steeply east-dipping pyritic and carbonaceous Farrell Slates, intercalated with quartz-porphyritic rhyolitic lava, siliceous fine volcaniclastic

sediments and cherts. These rocks are moderately hydrothermally altered and weakly pyritic. On the southern-most grid line 68500mN there are similar silicified, pyritic, volcaniclastic sediments and cherts immediately east of the Henty Fault Zone.

The IP detected the carbonaceous and pyritic Farrell Slates intersected by SS1 (the IP anomaly was the reason the hole was drilled). The IP results suggest that a substantial unit of Farrell Slates exists north of a cross-fault near the northern-most line 71000mN, and that south of this fault the Farrell Slates are absent except for an isolated lens which was drilled by SS1. (Fig. 9).

East of the prospective sequence and beneath the Owen Conglomerate, there is a thick unit of volcanomict breccia-conglomerate which is clearly a Jukes Breccia/Dora Conglomerate equivalent. It is characterised by abundant angular to rounded clasts of acid volcanics, tuffs and sediments, in a coarse sandy matrix containing volcanic quartz and feldspar crystals. The unit also commonly contains rounded pebbles and cobbles of Precambrian quartzite, which increase in abundance eastwards towards the contact with the Owen Conglomerate.

The breccia-conglomerate is weakly sericitised and has a strong near-vertical schistosity. Within this unit in the upper Sterling River there are undeformed bedded sandstone, siltstone and shale lenses which dip steeply east - paralleling the attitude of the prospective volcano-sedimentary sequence immediately to the west. Mapping by McNaughty of Getty in 1984 indicates the Owen Conglomerate also dips steeply east.

The exact contact relationships between the volcanomict breccia-conglomerate and the adjacent rock units is not known, but it is clearly a unit transitional between the volcanics and the Owen. This indicates an east facing for at least the breccia-conglomerate and the Owen.

West of the Henty Fault Zone the volcanic sequence is dominated by felsic lavas and welded ignimbrites. In a zone extending up to 1km west of the fault, these volcanics are intercalated with volcaniclastic sediments and mafic volcanic flows and dykes, which increase in abundance towards the fault. Alteration of this sequence is generally weak,and dominantly chloritisation. Very minor disseminated pyrite and chalcopyrite occurs in the sediments, while the mafic volcanics contain magnetite and hematite but no sulphides.

The Henty Fault Zone is cut by several strong NW-trending cross faults within the South Stitt area (Fig. 8). One of these cross structures intersects the Henty Fault Zone in the upper Sterling River valley immediately north of drillholes SS1 and SS2. Another cuts through the prospective eastern volcano-sedimentary sequence where it is exposed on the southern part of the grid. A third structure apparently cuts off the thick sequence of Farrell Slates seen in the Sterling Valley to the north of the South Stitt area. Whether these structures have had any influence on the mineralization of the rocks adjacent to the Henty Fault Zone is a matter of conjecture.

During 1987 detailed geological mapping and auger sampling was carried out in the southern portion of the area.

The mapping was hampered by extensive glacial cover although the presence of altered pyritic cherty sediments provided some encouragement (Fig. 10). Assay results from the 140 auger samples were disappointing and a maximum of only 0.04 ppm Au was returned (Appendix 3).

2.2.3 Rock Sampling Results

During the geological mapping, 61 selected rock samples showing signs of mineralization and/or alteration were collected and submitted for analysis (Fig. 10). Full results are listed in Appendix 4.

The precious, basemetal and arsenic values were all of a low tenor. Maximum values were 2160ppm Cu (a chloritic siltstone containing visible chalcopyrite from west of the Henty Fault Zone), 550ppm Pb, 2000ppm Zn and 78ppm As.

The highest gold value of 0.5g/t Au came from a 200mm wide band of quartz containing minor pyrite and chalcopyrite, within volcaniclastic sediments west of the Henty Fault Zone. This band is conformable with the attitude of the enclosing rocks and it is uncertain whether it is a quartz vein or a recrystallised chert horizon. This sample also gave the only significant silver value - 11g/t Ag.

Elsewhere, only traces of gold were detected (next best value 0.08g/t Au). It should be noted that the best result of the bulk leach gold stream sediment sampling programme (5.3ppb), came from a site in the upper Sterling River immediately downstream from where the Henty Fault Zone is intersected by a cross-fault.

2.2.4 Geophysics

A compilation of ground and airborne geophysical survey results over the South Stitt area is shown on Figures 11, 12, 13. Of particular importance is any assistance given by geophysics in locating the Henty Fault Zone. However, in this area the Farrell Slates are not markedly carbonaceous in comparison to their

composition in the Sterling Valley area to the north (judging from the lack of IP response). Since there is no obvious conductor immediately east of the Fault, IP/Resistivity and VLF are of little use for tracing the Fault. Aeromagnetic data suggest a weakly magnetic unit exists in the volcanics west of the fault, from which a NW-SE fault can be identified just north of DDH's SS1 and SS2. This is confirmed by geological mapping.

Existing IP work is rather sparse with 500 metre line-spacing and 100 metre dipole or pole-dipole. Any weakly pyritic alteration zone of strike-extent less than 400 metres and thickness less than 25 metres would probably be undetectable using the existing survey parameters.

The weak IP anomalies that do occur on the grid can be explained by sediment bands in volcanics that appear to have no economic significance, judging from the low associated geochemistry.

The grid at the southern end of the South Stitt area was covered by a ground magnetic and and IP survey.

The grid was surveyed with a G-856 magnetometer at 100m line-spacing and 10m station spacing from 67900N to 69000N. The grid lies over the Henty Fault Zone in an area with minimum glacial cover.

With the IP survey, and prior to termination due to bad weather, 7 lines were covered at 100m line-spacing over the northern part of the grid. The contractor was Scintrex who used an IPR-10 receiver and portable lightweight 250 watt transmitter, for a dipole-dipole array with a=40 metres. The low power transmitter was required because of the difficult access to the grid. Unfortunately this resulted in noisy readings that were hard to acquire. The noise probably arose either from the nearby HEC power line or magnetic storms which were prevalent during the survey.

The ground magnetic data are shown in stacked profile form on Fig. 14. The Henty Fault as mapped geologically is expressed in the northern part of the grid as a magnetic gradient (ie fault). A strong anomaly (500nT) occurs in the central part of the gris east of the Fault, but its cause is not known due to the magnetic Cambrian granite(s) which run parallel to and east of the Henty Fault from Farrell to South Stitt (from the aeromagnetics).

The IP results (Figs. 15-21) indicate a shallow resistivity low over the mapped and postulated positions of the Henty Fault. This is presumably due to a paleochannel along the Fault line. West of the Fault, chargeabilities are low, indicating a lack of sulphides. An isolated high occurs at 68900N, 1760E but is probably a noisy value. East of the fault, chargeabilities increase to the east indicating a low level of disseminated sulphides in the

Farrell sediments, and perhaps Owen Conglomerate. A consistent high resistivity over low resistivity occurs east of the Fault. The reason for this is unclear, but the false resistivity low may well be due to severe topographic effects. Slopes approach 30° on the eastern side of the grid. Previous (EZ) 100 metre dipole-dipole lines 69000N and 685000N did not indicate any anomalies of interest at depth.

Lines 68300N, 68400N and 68000N were all conducted in very poor weather conditions, with the result that data quality has been severely affected (by EM coupling?) especially at the closest n-spacing. In some cases this is seen as negative chargeability values. Further possible evidence is the decrease in resistivity with increasing n-spacing although this also occurs on the eastern ends of the northern lines.

Despite the unreliable and noisy data, there does appear to be anomalous chargeability and somewhat lower resistivities adjacent to and east of the Henty Fault on lines 68300N and 68000N. This is indicative of disseminated sulphides in the Farrell sequence which may be related to economic mineralization.

Continuing bad weather in the survey area meant that not all the grid lines could be surveyed. Future work could involve shallow drilling on the southern IP lines in order to investigate the possible presence of mineralization.

2.2.5 Discussion

Exploration at South Stitt has been considerably hampered by the extensive cover of glacial moraine and scree. Some encouraging geological features have been identified to indicate further searching for stratiform gold and/or massive sulphide deposits along the Henty Fault Zone may be justified, particularly in the southern part of the South Stitt area.

The prospective volcano-sedimentary sequence east of the fault has been shown at South Stitt to contain siliceous volcaniclastic sediments including some cherts, which are hydrothermally altered and pyritic (albeit weakly). These are all imprtant features of GoldField's Henty Prospect, 4km further south, where the stratiform gold body is hosted by an altered and sulphidic sequence of cherts and cherty volcaniclastic sediments.

A disappointing aspect of the results at South Stitt is the lack of anomalous precious and basemetal values in the prospective unit. However, the prospective sequence remains largely unseen and untested by the work to date.

2.2.6 Conclusions & Recommendations

Geological mapping has indicated potentially favourable lithologies east of the Henty Fault for the development of "Henty-style" gold mineralization.

The lack of good geochemical response is a mitigating factor, with no evidence of elevated base or precious metal values.

The ground geophysical surveys have failed to produce any anomalies of sufficient quality to justify a logistically expensive drilling programme.

It is concluded that there is insufficient justification for any further exploration by the Joint Venture partners in this area.

The area is recommended for relinquishment.

APPENDIX 1

Drill Log, RED 87-11

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

HEADING SHEET

COLLAR INFORMATION	DATA TYPE	COLLAR CO-ORDINATES EASTING	NORTHING	ELEVATION	COLLAR SURVEY AZIMUTH	DIP	HOLE NAME	TOTAL DEPTH	HOLE TYPE	DESC CODE	REMARKS
		386038	5360330		132	50	RED87-11	250·1			

PROJECT	HENTY FAULT ZONE
LOGGED BY	J. RANDELL
CONTRACTOR	F. ORTNER
CREW	
CORE STORAGE — NO OF TRAYS	LOCATION
M & P LAB	
HOLE NAME	RED87-11
TOTAL DEPTH	250·1m
RIG	MINDRILL
DATE STARTED 17/1/87 FINISHED	2/2/87
SAMPLE STORAGE	DIPORT
ASSAY LAB	COMLABS

DESC.	SIZE	FROM	TO	TOTAL	REMARKS
NON CORE		0	9	9	
CORE	HQ	9	36	27	Sht. perc. to bottom
	HQ	36	250·1	214·1	of hole.
	BQ				
CASING	HW	0	9		
CASING LEFT	3"	0	9		(S) steel (P) plastic

SURVEY INFORMATION

DISTANCE FROM COLLAR TO TOP	TO BOTTOM	AZIMUTH	DIP	REMARKS
0		132	50	
49		130	45	
100		122	35	
160		122	33	
199		120	29	
250		118	22	

PLOTTING KEY

SYMBOL DES CODE	G/LOG	INTERVAL FROM	TO	SYMBOL DES CODE	G/LOG	INTERVAL FROM	TO

ASSAY INFORMATION

DISTANCE FROM COLLAR TO TOP	TO BOTTOM	Au	Cu	Pb	Zn	Ag	As	Ba	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG
HQ 9·0	11·0	<0·01	<2	17	7	<1	2	290						
11·0	13·0	<0·01	<2	24	4	<1	<2	240						
13·0	15·0	<0·01	<2	17	3	<1	9	195						
15·0	16·5	<0·01	<2	9	2	<1	<2	200						
16·5	17·5	<0·01	<2	117	6	<1	5	260						
17·5	18·8	<0·01	<2	19	6	<1	3	260						
18·8	21·0	<0·01	<2	20	3	<1	4	260						
21·0	23·4	<0·01	<2	22	2	<1	<2	210						
23·4	24·6	<0·01	<2	10	6	<1	7	270						
24·6	26·0	<0·01	<2	13	7	<1	3	270						
26·0	27·5	<0·01	<2	10	7	<1	8	330						
27·5	29·5	<0·01	<2	19	5	<1	<2	380						
29·5	31·5	<0·01	2	20	2	<1	10	320						
31·5	33·5	<0·01	<2	13	<2	<1	<2	360						
33·5	35·0	<0·01	<2	19	<2	<1	4	330						
35·0	36·1	<0·01	<2	14	2	<1	<2	410						

DESCRIPTIVE LOG

9-27.5 // FELDSPAR PHYRIC DACITIC-ANDESITIC LAVA

Pinkish grey with numerous thin quartz veinlets. Moderately broken + weathered.

13.2-16.5 Pink silicified, strongly quartz veined

16.5-18.8 Fine green chlorite wisps, vague foliation 45° LCA. Trace fine pyrite

18.8-23.4 Pinkish massive partially silicified dacite with thin quartz veinlets often contorted.

23.4-24.6 Green feldspathic andesite, strongly broken thick white quartz veins, trace pyrite blebs.

24.6-27.5 Pink massive medium feldspar phyric dacite, rare fine py blebs. Minor fine chlorite-carbonate veinlets. Strongly broken at bottom.

27.5-36.1 // GREY PINK FOLIATED TO SHEARED DACITIC ?LAVA

Strongly broken to 29.0. Moderate fine foliation 40° LCA. Minor silicified patches and gouge zones. 28.8-29.1. Smeared chlorite wisps. Increasing contorted carbonate veining 30.8-33.7.

DRILLING OBJECTIVES / SUMMARY: Test Henty Fault position where later structural offsets have recorded in slicing of dacitic-andesitic lavas into Forest Sleek sequence (blackshale, fine turbiditic sediments)

REPORT REFERENCE:

SHEET 1 OF

69-029

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT	HENTY FAULT ZONE	HOLE NAME	REV 87-11
LOGGED BY	J. RANDELL	TOTAL DEPTH	250.1 m.

ASSAY INFORMATION

DISTANCE FROM COLLAR TO TOP	TO BOTTOM	Au	Cu	Pb	Zn	Ag	As	Ba	SAMPLE No	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
NR 36.1	37.5	<0.01	<2	26	<2	<1	<2	410							Increasing silicification towards 34.0, moderate well developed foliation 45°LCA.
37.5	39.1	<0.01	4	24	3	<1	<2	420							36.1 – 39.1 // FOLIATED FELDSPATHIC DACITIC ?VOLCANICLASTIC
39.1	41.0	<0.01	3	15	3	<1	8	360							
41.0	43.0	<0.01	2	17	4	<1	6	330							Minor thin quartz veinlets. Foliation 55° LCA. Trace fine pyrite blebs.
43.0	45.0	<0.01	<2	15	2	<1	2	360							Bottom contact sharp + chloritic 45° LCA.
45.0	47.0	<0.01	2	16	2	<1	<2	330							
47.0	49.0	<0.01	2	12	2	<1	5	300							
49.0	51.0	<0.01	<2	18	3	<1	8	340							
51.0	52.4	<0.01	<2	13	2	<1	2	390							
52.4	54.0	<0.01	4	12	3	<1	2	300							39.1 – 52.1 // PINK MASSIVE DACITIC LAVA
54.0	56.0	<0.01	2	14	4	<1	<2	250							
56.0	58.0	<0.01	<2	20	4	<1	<2	220							Moderate foliation defined by fine chlorite wisps 45°LCA and sericite grains. Thin quartz carbonate veinlets.
58.0	59.5	<0.01	9	22	2	<1	<2	290							
59.5	60.9	<0.01	7	24	2	<1	<2	270							
60.9	63.0	<0.01	<2	11	2	<1	<2	380							50.1 – 50.6 Diffuse contacts. Chlorite wisps, siliceous sericite ? gr. volcaniclastic 40°LCA.
63.0	65.0	<0.01	<2	19	7	<1	<2	410							
65.0	66.3	<0.01	<2	24	3	<1	2	350							52.1 – 60.9 // GREEN DACITIC - ANDESITIC LAVA
66.3	68.0	<0.01	2	20	4	<1	<2	380							
68.0	70.0	<0.01	<2	22	5	<1	3	350							Abundant quartz carbonate veining from 52.4. Strong silicification from 54.5.
70.0	72.0	<0.01	<2	9	3	<1	2	360							56.1 – 56.7. 90° white quartz ± silicified andesite, contact diffuse.
72.0	74.0	<0.01	<2	18	6	<1	<2	330							
74.0	76.0	<0.01	2	22	6	<1	6	330							57.0 – 57.5. Moderate foliation defined by chlorite - sericite wisps, some pumiceous.
76.0	78.0	<0.01	<2	7	3	<1	3	360							
78.0	80.0	<0.01	<2	13	6	<1	<2	320							60.9 – 66.3 // FINE PUMICEOUS SILICIFIED VOLCANICLASTIC
80.0	81.5	<0.01	<2	13	12	<1	2	330							
81.5	83.0	<0.01	2	17	8	<1	<2	290							Moderately layered (55°LCA) chlorite, some sericite speckling. Weak to moderate carbonate veining.
83.0	84.1	<0.01	<2	24	5	<1	2	240							
84.1	86.0	<0.01	2	13	3	<1	2	320							66.3 – 81.5 // MASSIVE DACITIC LAVA
86.0	88.0	<0.01	<2	15	6	<1	<2	290							
88.0	90.0	<0.01	<2	14	7	<1	<2	320							Pinkish weakly foliated with fine sericite dusting and irregular quartz - carbonate veinlets. 76 – 77. Moderately chloritic + chlorite wisps.
90.0	92.0	<0.01	<2	32	5	<1	<2	320							
92.0	94.3	<0.01	2	17	4	<1	3	270							81.5 – 94.3 // SHEARED DACITIC LAVA
															Pale green strongly quartz - carbonate veined, some breccia zones, chlorite wisps defining foliation.
															82.1 – 82.4. Quartz carbonate vein irregular contacts.
															83.5 – 84.1. " " " " "
															84.1 – 84.7. Moderately chloritic
															84.7 – 94.3. Pink massive, thin quartz carbonate veinlets, more chloritic at bottom, also brecciated.

SHEET 2 OF 2

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT	HENTY FAULT ZONE	HOLE NAME	RED 87-11
LOGGED BY	J. RANDELL	TOTAL DEPTH	250.1m

ASSAY INFORMATION

DISTANCE FROM COLLAR TO TOP	TO BOTTOM	Au	Cu	Pb	Zn	Ag	As	Ba	SAMPLE NO	CORE ANGLE	ROCK TYPE	FOAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
94·3	94·9	<0·01	3	30	50	<1	<2	310							94·3 - 94·9 // FINELY BEDDED SERICITIC VOLCANICLASTIC
94·9	97·0	<0·01	2	50	15	<1	2	350							
97·0	99·0	<0·01	<2	14	16	<1	4	310							
99·0	101·0	<0·01	<2	15	9	<1	<2	420							Upper contact 50°
101·0	103·0	<0·01	<2	15	8	<1	3	390							Lower contact 75°
103·0	105·0	<0·01	<2	15	11	<1	<2	390							Pale to deep green fine grained well bedded ash tuff, minor chlorite quartz porphyroblasts with strongly chloritic bands. Some irregular carbonate veining
105·0	106·2	<0·01	<2	34	62	<1	<2	340							
106·2	108·0	<0·01	<2	34	40	<1	<2	310							
108·0	109·4	<0·01	<2	18	26	<1	<2	350							
109·4	111·0	<0·01	<2	24	11	<1	<2	386							
111·0	112·0	<0·01	2	24	8	<1	<2	370							94·9 - 99·0 // SILICEOUS DACITIC LAVA
112·0	114·0	<0·01	<2	14	18	<1	2	340							
114·0	116·6	<0·01	<2	30	24	<1	<2	290							Pink to red with strong development of anastomosing sericitic veinlets, well defined foliation 75° LCA. Minor quartz veining, Some fine quartz porphyroblasts.
116·6	118·4	<0·01	<2	56	56	<1	<2	260							
118·4	120·0	<0·01	<2	24	38	<1	5	260							
120·0	122·0	<0·01	<2	17	30	<1	<2	330							96·6 - 97·2. Strong chlorik development.
122·0	124·0	<0·01	<2	24	14	<1	<2	320							97·2 - 98·2. Fine grained pale green sericitic ash finely bedded. No grading obvious.
124·0	126·0	<0·01	4	28	10	<1	2	300							
126·0	128·0	<0·01	4	16	32	<1	<2	310							
128·0	130·0	<0·01	4	24	50	<1	3	300							
130·0	132·0	<0·01	3	20	20	<1	3	310							99·0 - 106·2 // CARBONATISED AND SERICITIZED FELDSPAR PHYRIC DACITIC/ANDESITIC LAVA
132·0	134·0	<0·01	2	30	22	<1	<2	320							
134·0	136·0	<0·01	<2	19	16	<1	<2	350							Gradual change from unit above. Increase alteration, strongly broken core, small washed shear zones.
136·0	138·0	<0·01	<2	18	26	<1	<2	330							
138·0	140·0	<0·01	<2	16	15	<1	3	310							Sharp lower contact 45-50° LCA.
140·0	142·0	<0·01	<2	22	24	<1	<2	300							106·2 - 118·4 // CHLORITIZED AND CARBONATIZED FINE ARENACEOUS VOLCANICLASTIC
142·0	144·0	<0·01	<2	18	13	<1	5	300							
144·0	145·5	<0·01	<2	20	17	<1	<2	260							
145·5	146·6	<0·01	2	24	30	<1	<2	260							Sericite flecking in andesitic matrix.
															109·4 - 112·0. Patchy chloritization pervasive carbonate alteration, strong quartz veining.
															111·0 - 111·4. Apple green previous shears. (45° LCA)
															112·0 - 116·6. Pervasive chloritization + sericitic anastomosing defining moderate foliation 75° LCA.
															116·6 - 118·4. Strong carbonate alteration + quartz carbonate veining. Fine dissem py. 2%.
															118·4 - 146·6 // CHLORITIZED AND PATCHILY CARBONATIZED DACITIC LAVA
															Feldspar porphyritic, moderately foliated, sericitic
															139 - 146. Strong layering defined by intensely sericitized + carbonatized volcanics. Foliation at 50° LCA.

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SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT	HENRY FAULT ZONE	HOLE NAME	RED 87-11
LOGGED BY	J. RANDELL	TOTAL DEPTH	250.1m

ASSAY INFORMATION

DISTANCE FROM COLLAR TO TOP	DISTANCE FROM COLLAR TO BOTTOM	Au	Cu	Pb	Zn	Ag	As	Ba
146.6	148.0	<0.01	5	32	42	<1	4	195
148.0	150.0	<0.01	3	32	64	<1	5	190
150.0	152.0	<0.01	5	68	58	<1	18	210
152.0	154.0	<0.01	3	56	62	<1	7	210
154.0	156.0	<0.01	16	52	74	<1	5	210
156.0	157.9	<0.01	8	180	170	<1	17	210
157.9	159.0	<0.01	11	340	125	<1	2	250
159.0	161.0	<0.01	11	410	84	<1	<2	230
161.0	162.2							
162.2	164.0							
164.0	166.0							
166.0	168.0							
168.0	170.0							
170.0	172.0							
172.0	174.0							
174.0	176.0							
176.0	178.0							
178.0	180.0							
180.0	182.0							
182.0	184.5							
184.5	186.0							
186.0	188.1							
188.1	189.7							
189.7	192.0							
192.0	194.0							
194.0	196.0							
196.0	198.0							
198.0	200.0							
200.0	202.0							
202.0	204.0							
204.0	206.0							
206.0	208.0							
208.0	210.0							
210.0	212.0							
212.0	214.5							
214.5	216.0							
216.0	217.1							
217.1	219.0							
219.0	221.0							
221.0	223.2							

SAMPLE NO	CORE ANGLE	ROCK TYPE	CHAMB	DESC CODE	GRAPHIC LOG

DESCRIPTIVE LOG

146.0-146.6. Contorted crenulated, quartz veined.
Lower contact. Clay pug zone 15cm thick.

146.6-223.2 // VARIABLY BEDDED FINE ARENACEOUS VOLCANICLASTIC WITH MODERATE GRAPHITIC INCLUSION

Chloritized crenulated (40-50° LCA). Trace fine disseminated pyrite. Strongly broken core to 152m. Variable grain size from fine SST to fine sand. Moderate quartz vein injection.

157.9-162.2. Intense brecciation of quartz volcaniclastic and graphitic silt. in chloritic matrix. Strongly broken core.

162.2-184.5. Fine + uniform bedding (60-75° LCA) mildly crenulated with fine graphitic layers. Some feldspar porphyroblasts.

173.0-175.0. Small elongate shale lenses up to 1.5cm long.

181.0. Thin elongate pale green ash lenses, well bedded. 70° LCA.

184.5-186.0. Strong thick quartz-carbonate banding (50% of core), varying to 25cm thick. Regular contacts @ 65° LCA. Moderate pyrite. Minor epidote and chlorite.

188.1-189.7. Finer grained poorly bedded more graphitic.

189.7-195.2. Coarser grain size and irregular banding, more graphitic less well defined bedding 60-70° LCA. Significant fine quartz veining.

195.2-209.5. Finely and regularly bedded, fine sand size, minor silty graphitic laminae. Irregular quartz veinlets. Fine pyrite blebs.

209.5-214.5. Grey fine arenite with thin black graphitic wisps. Regular fine bedding. Thin quartz veinlets. Moderately fissile.

214.5-217.1. Numerous thin pale green ash lenses. Disturbed bedding 55-60° LCA. Thin contorted quartz veinlets.

217.1-223.2. Fine bedding poorly defined, several small 3-4cm. breccia zones. Some irregular coarse carbonate veining. Weak disseminated pyrite + thin graphitic wisps. One veinlet quartz-sphalerite blebs.

SHEET 4 OF

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT	HEAVY FAULT ZONE	HOLE NAME	RED 87-11
LOGGED BY	J. RANDELL.	TOTAL DEPTH	250.1m

DISTANCE FROM COLLAR TO TOP	TO BOTTOM
223.2	224.5
224.5	225.7
225.7	228.1
228.1	230.6
230.6	232.0
232.0	234.0
234.0	236.0
236.0	238.0
238.0	240.0
240.0	242.0
242.0	244.0
244.0	246.0
246.0	248.0
248.0	250.1

ASSAY INFORMATION

SAMPLE NO | CORE ANGLE | ROCK TYPE | CHAIN | DESC CODE | GRAPHIC LOG

DESCRIPTIVE LOG

223.2-225.7 // EPICLASTIC BRECCIA

Sharp contacts: upper 65°, lower 50°.
Well defined but discontinuous bedding.
Pale green elongate ash fragments, fine graphitic laminae in fine sandy matrix. Numerous gelatinised feldspar clasts. Thin irregular carbonate quartz veinlets.

225.7-250.1 // WELL BEDDED ARENACEOUS VOLCANICLASTIC

Very fine bedding (55° LCA) regular thin laminae, slight dark banding.
228.1-230.6. More contorted, ash lens inclusion, graphitic, bedding 60-70°.
230.6-239. Numerous elongate wispy black shale lenses usually <1cm long.
Some large elongate shale fragments >4cm long. Regular bedding.
239-246.9. Regular laminae, kink to bding 60°.
Fine carbonate-quartz veinlets.
246.9-250.1. Grey thin graphitic laminae.

E.O.H.

APPENDIX 2

Petrological Descriptions: Rock Chip Samples

Geochempet Services

PETROLOGICAL and GEOCHEMICAL CONSULTANTS

REGISTERED IN QUEENSLAND

Principal : A.S. Joyce B.Sc.(Hons), Ph.D.
200 Chapel Hill Road
Chapel Hill, Qld. 4069

Telephone: (07) 375 5258
A/H 378 6467

PETROLOGICAL REPORT ON SIX SAMPLES

FROM THE MOUNT READ VOLCANICS, TASMANIA

prepared for

BILLITON AUSTRALIA

Ref : G. Purvis

Stan Joyce

A. S. Joyce, B.Sc.(Hons), Ph.D.

29th April, 1986.

SUMMARY COMMENTS

A. South Stitt Area

Both of the samples 8963 and 8964 have finely crystalline igneous textures consistent with lava and both are thought to have originated as mafic andesite. Textural differences suggest that they belong to two different flows. One has been heavily epidotized and chloritized and the other has been mainly chloritized.

The sample 8966 is texturally quite different and regarded as chloritized andesitic crystal tuff. There are no recognisably epiclastic features.

B. Drill Hole 71R

The three samples 12908, 12910 and 12909 all display well preserved textures consistent with unwelded vitric crystal tuff, deposited probably by airfall processes. They lack evidence of epiclastic sorting or rounding. The original rocks were andesitic but they have been sericitized, albitized, foliated and veined.

Sample Number : 8963

Identification : Mafic meta-andesite

Description :

The sample is a lightly weathered hand specimen of greenish grey, fine-grained rock. On the sawn surfaces part of the sample displays many small yellowish grey, altered phenocrysts, less than 1mm in size.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample displays porphyritic, hypidiomorphic volcanic textures, modified by incipient foliation and moderate mineralogical alteration. Phenocrysts were about 0.4 to 0.7mm in size and the groundmass is dominated by laths of plagioclase about 0.1 to 0.3mm long.

The phenocrysts are tabular, twinned, poorly zoned grains of plagioclase : the low refractive indices and optically positive sign are consistent with albite. In part of the section the phenocrysts have been heavily epidotized (the yellowish grey specks noticed in hand specimen).

The groundmass features twinned laths of sodic plagioclase, interstitial chlorite, streaks of a very fine epidote group mineral and many subhedral to euhedral grains of apparently primary magnetite (mainly 0.02 to 0.1mm). A few magnetic grains occur as microphenocrysts (0.2mm) partly rimmed by sphene.

There are a few lenses of strained quartz, probably representing amygdales, about 0.3mm in size.

An approximate mode is :

40-45%	plagioclase
25-30%	epidote group minerals (epidote or clinozoisite)
20-25%	chlorite
6-8%	magnetite and traces of secondary sphene
0.3-0.5%	quartz amygdales

Comments and Interpretations :

This sample has well preserved porphyritic igneous textures consistent with andesite or basalt lava, but its mineral assemblage has been modified by regional metamorphic processes to the greenschist assemblage albite-epidote-chlorite; apparently primary magnetite persists.

Because the plagioclase has had its composition albitized by metamorphism, the normal distinction between andesite and basalt (based on the arbitrary composition An_{50}) cannot be made. The alternative approach, based on basalt having a mafic index in excess of 35 is also complicated by the question of how much epidote represents former mafic minerals and how much reflects the calcic component of plagioclase.

I suspect that the original mafic index was about 30 and that the rock was a mafic andesite. I would expect to see some suggestion of former pyroxene or olivine phenocrysts if the rock originated as basalt.

Sample Number : 8964

Identification : Mafic meta-andesite

Description :

The sample is a water-worn and lightly weathered hand specimen of fine-grained, mildly foliated, greenish grey rock.

A staining test revealed no K-feldspar.

In thin section the sample displays a fairly even-grained hypidiomorphic, crystalline volcanic texture, modified by low grade metamorphism and incipient foliation. There are a few 1mm phenocrysts of plagioclase rendered inconspicuous by fracturing associated with the metamorphic foliation.

Plagioclase is prominent as twinned, laths-shaped to tabular grains, now fractured and with optical properties consistent with albite or oligoclase : primary grainsizes were about 0.2 to 0.5mm. Equant subhedral to anhedral grains of inferred ilmenite or titaniferous magnetite, about 0.1 to 0.3mm in size, have been pseudomorphed by leucoxene. The rest of the rock consists of patches, lenses and streaks of chlorite, accompanied by very minor, fine epidote group minerals.

There are a few deformed, discontinuous, fracture-controlled veins carrying chlorite, quartz and irregular pores.

An approximate mode is :

40-45%	plagioclase
50-55%	chlorite
3-4%	epidote group minerals
3-4%	leucoxene
0.2-0.3%	veins of chlorite and quartz with some weathering pores

Comments and Interpretations :

This sample has remnant textures consistent with sparsely porphyritic andesiteor basalt lava, but there has been significant textural and mineralogical adjustment attributable to greenschist facies metamorphism. The rock is broadly similar, but not identical to sample 8963.

It could be argued that the high abundance of chlorite is consistent with a formerly basic rock, but I favour interpreteation as a formerly mafic andesite because of the lack of any indications that the rock carried olivine or pyroxene phenocrysts.

Sample Number : 8966

Identification : Mildly foliated, chloritized andesitic crystal tuff with veinlets of albite

Description :

The sample is a lightly weathered hand specimen of faintly foliated greenish grey rock with many indistinct feldspar phenoclasts.

A cobaltinitrite staining test revealed a 5mm patch of fine K-feldspar.

In thin section the sample displays many phenoclasts about 0.2 to 2mm in size and a few volcaniclithic clasts, up to 3mm, set in a mildly foliated chloritic matrix.

The phenoclasts are mainly tabular, lightly sericitized and chloritized, subhedral grains of plagioclase. Mafic phenoclasts are generally less than about 1mm and pseudomorphed by chlorite and sphene. There are also many leucoxene and sphene pseudomorphs of former ilmenite or titaniferous magnetite grains about 0.1 to 0.4mm in size. The lithic clasts are of andesitic type with feldspar laths about 0.2mm long and subordinate chlorite and sphene. Thematrix between the clasts consists of anhedral, untwinned feldspar (about 0.02mm grainsize), mildly foliated chlorite and specks of sphene.

The patch of K-feldspar is of replacement style with associated poorly twinned, fine albite. The rock is also cut by a few irregular, thin fissure veins of poorly twinned albite. Such veins are mainly about 0.1 to 0.4mm wide. There are a few disseminated, subhedral grains of partly oxidized pyrite.

An approximate mode is :

35-40%	plagioclase phenoclasts, lightly sericitized and chloritized
3-4%	chlorite-sphene pseudomorphs of mafic phenoclasts
1-2%	sphene-leucoxene pseudomorphs of titaniferous oxides
0.2-0.3%	lithic clasts of chloritized andesite
30-40%	matrix plagioclase
10-15%	matrix chlorite
0.3-0.4%	matrix sphene
0.2-0.3%	replacement orthoclase
2-3%	veins of albite
tr	disseminated, partly oxidized pyrite

Comments and Interpretations :

This sample is interpreted to represent andesitic crystal tuff. It is unsorted and may have been deposited on land or into water but it does not seem to have been reworked. The rock is distinctly chloritized, mildly foliated and cut by albite veins. There are traces of disseminated pyrite.

The rock is texturally quite different from 8964.

APPENDIX 3

South Stitt: Auger Sampling Assay Results

697038

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COMLABS SERVICES PTY. LTD.

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

NATA REGISTERED No. 1526

OUR REF. COM870400

YOUR REF. 11537/LJ50/JGP/038

Mr. J.G. Purvis
The Shell Co. of Aust. Ltd.
30 Mersey Main Rd
Spreyton
DEVONPORT
TAS 7310

March 13, 1987

Dear Sir

RE: JOB COM870400

Enclosed are the assays for the samples delivered to our laboratory on March 2, 1987

Yours Sincerely,
COMLABS SERVICES PTY LTD

per :

c.c.: Shell - Tasmania No. of copies : 1

Report Length 4 pages

COMLABS SERVICES PTY. LTD.

697039

ANALYTICAL REPORT JOB COM870400

O/N : 11537/LJ50/JGP/038

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
68600N 381600E	7	20	28	<1	8	4	0.02
68600N 381620E	14	32	65	1	9	<4	0.02
68600N 381640E	16	38	180	1	5	<4	0.02
68600N 381660E	8	36	65	1	10	<4	<0.01
68600N 381680E	24	32	125	1	4	8	0.01
68500N 381500E	26	24	230	1	4	<4	0.02
68500N 381520E	8	30	46	1	9	6	<0.01
68500N 381540E	8	24	75	1	8	8	0.01
68500N 381560E	10	16	155	1	38	<4	0.01
68500N 381580E	7	18	44	1	5	<4	<0.01
68500N 381600E	6	26	36	1	10	8	<0.01
68500N 381640E	3	32	26	1	12	<4	<0.01
68500N 381720E	2	10	135	<1	6	8	<0.01
68500N 381740E	2	8	65	<1	5	10	0.01
68500N 381760E	16	40	60	1	32	<4	0.01
68500N 381780E	3	18	24	5	12	<4	<0.01
68000N 381200E	7	<4	8	1	3	4	<0.01
68000N 381220E	3	4	2	<1	4	<4	<0.01
68000N 381240E	<2	8	34	1	6	<4	<0.01
68000N 381260E	3	10	110	1	4	<4	<0.01
68000N 381280E	4	12	75	1	6	<4	<0.01
68000N 381300E	70	18	85	2	5	<4	<0.01
68000N 381320E	60	26	70	1	10	6	<0.01
68100N 381260E	4	12	6	1	4	6	<0.01
68100N 381280E	3	6	3	<1	6	6	0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

COMLABS SERVICES PTY. LTD.

ANALYTICAL REPORT JOB COM870400

O/N : 11537/LJ50/JGP/038

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
68100N 381300E	3	8	2	<1	3	<4	<0.01
68100N 381320E	4	6	5	<1	4	4	<0.01
68100N 381340E	4	6	22	<1	6	6	<0.01
68100N 381360E	5	4	10	<1	6	<4	<0.01
68100N 381380E	2	<4	4	<1	8	8	0.02
68100N 381400E	3	16	40	<1	10	4	<0.01
68100N 381460E	4	10	20	<1	8	4	<0.01
68100N 381480E	3	8	20	1	12	<4	<0.01
68100N 381500E	4	12	18	2	8	<4	<0.01
68100N 381520E	3	12	22	1	8	8	<0.01
68100N 381620E	3	6	18	<1	7	<4	<0.01
68100N 381640E	2	20	16	<1	16	20	0.01
68100N 381660E	2	16	24	<1	14	<4	<0.01
68100N 381680E	2	6	9	<1	7	<4	<0.01
68100N 381700E	<2	10	16	<1	10	<4	<0.01
68100N 381740E	<2	6	22	<1	16	12	<0.01
68200N 381340E	<2	6	5	1	5	10	<0.01
68200N 381360E	3	6	<2	<1	7	4	<0.01
68200N 381380E	<2	<4	5	<1	5	6	<0.01
68200N 381400E	3	6	3	<1	8	6	<0.01
68200N 381460E	2	8	12	<1	9	8	<0.01
68200N 381480E	3	14	14	<1	8	8	0.01
68200N 381500E	2	8	14	<1	9	<4	<0.01
68200N 381540E	3	8	16	<1	6	6	0.02
68200N 381560E	2	6	14	1	7	4	0.03
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

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ANALYTICAL REPORT JOB COM870400

O/N : 11537/LJ50/JGP/038

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
68200N 381640E	<2	8	65	<1	6	<4	0.01
68200N 381660E	2	8	22	1	14	6	<0.01
68200N 381680E	4	16	18	1	12	4	<0.01
68200N 381700E	2	8	14	<1	6	4	<0.01
68200N 381720E	2	18	48	<1	14	<4	<0.01
68200N 381740E	2	14	20	1	14	<4	<0.01
68200N 381760E	2	24	42	<1	12	<4	0.02
68300N 381660E	4	30	40	<1	28	4	0.01
68300N 381680E	3	22	70	1	6	6	0.02
68300N 381700E	2	22	20	1	20	8	0.03
68300N 381720E	6	16	24	<1	7	<4	0.01
68300N 381740E	10	18	65	<1	7	8	0.02
68300N 381760E	5	18	28	<1	7	<4	<0.01
68300N 381600E	7	44	48	1	50	6	0.02
68300N 381580E	7	55	48	1	50	<4	0.02
68300N 381560E	4	20	20	<1	10	4	0.01
68300N 381540E	5	16	22	<1	10	<4	<0.01
68300N 381520E	5	18	28	<1	12	<4	<0.01
68300N 381420E	12	18	46	<1	4	<4	0.01
68300N 381400E	22	12	26	<1	8	4	<0.01
68300N 381380E	6	6	8	<1	4	8	<0.01
68400N 381440E	4	4	14	<1	7	<4	<0.01
68400N 381460E	2	6	9	<1	4	<4	<0.01
68400N 381480E	4	8	16	1	8	10	<0.01
68400N 381500E	4	6	20	<1	7	<4	<0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

ANALYTICAL REPORT JOB COM870400

O/N : 11537/LJ50/JGP/038

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
68400N 381520E	2	14	100	1	5	4	0.02
68400N 381580E	4	16	26	<1	7	8	<0.01
68400N 381600E	4	22	34	<1	12	<4	<0.01
68400N 381620E	4	32	50	<1	18	<4	<0.01
68400N 381640E	4	26	46	<1	12	4	0.01
68400N 381660E	6	24	70	<1	12	<4	<0.01
68400N 381680E	7	30	80	<1	12	<4	<0.01
68400N 381700E	2	6	14	<1	3	<4	<0.01
68400N 381720E	3	12	165	<1	5	4	<0.01
68400N 381740E	7	10	125	<1	6	<4	<0.01
68400N 381760E	3	16	18	<1	7	6	<0.01
68400N 381780E	8	14	20	<1	8	<4	<0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

42

697043

COMLABS SERVICES PTY. LTD.

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

NATA REGISTERED No. 1526

OUR REF: COM870213

YOUR REF: 11535/LJ50/JGP/037

Mr. Gerald Purvis
The Shell Co. of Aust. Ltd.
30 Mersey Main Rd
Spreyton
DEVONPORT
TAS 7310

February 16, 1987

Dear Gerald

RE: JOB COM870213

Enclosed are the assays for the samples delivered to our laboratory on February 5, 1987

Yours Sincerely,
COMLABS SERVICES PTY LTD

per :

South Shell
Rocks & Soils
Rosebery East.

c.c.: Shell - Tasmania No. of copies : 1

Report Length 3 pages

COMLABS SERVICES PTY. LTD.

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ANALYTICAL REPORT JOB COM870213

O/N : 11535/LJ50/JGP/037

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
14201	12	<4	125	<1	5	8	<0.01
14202	140	6	60	<1	24	16	0.02
14204	12	24	165	<1	5	4	<0.01
14205	3450	14	16	<1	2	6	<0.01
14206	26	<4	26	<1	4	12	<0.01
14207	34	<4	100	<1	6	14	0.01
14208	20	6	120	<1	10	4	<0.01
14209	12	4	50	<1	7	14	<0.01
14210	46	8	12	<1	125	6	0.01
14211	8	<4	32	<1	18	12	<0.01
14212	4	4	22	<1	6	6	<0.01
14213	8	<4	4	<1	3	6	0.02
14214	7	10	55	<1	6	8	<0.01
14215	60	420	55	<1	110	14	0.02
14216	5	12	14	<1	8	8	<0.01
14217	38	44	120	<1	3	<4	<0.01
14218	4	16	20	<1	9	6	<0.01
14219	4	6	125	<1	6	<4	<0.01
14220	36	34	85	<1	3	<4	<0.01
14221	10	20	46	<1	6	4	<0.01
14222	6	10	50	<1	12	<4	<0.01
14223	7	16	36	<1	22	6	<0.01
14224	6	6	7	<1	5	6	<0.01
14225	5	12	44	<1	16	<4	0.01
14226	7	6	32	<1	7	4	0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

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ANALYTICAL REPORT JOB COM870213

O/N : 11535/LJ50/JGP/037

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
14227	110	26	68	<1	6	4	<0.01
14228	12	6	34	<1	7	14	<0.01
14229	16	14	40	<1	5	4	<0.01
14230	10	6	8	<1	5	16	<0.01
69000N 381600E	7	12	110	<1	8	<4	<0.01
69000N 381620E	5	4	155	<1	8	<4	<0.01
69000N 381640E	9	8	24	<1	10	10	<0.01
69000N 381660E	6	4	12	<1	6	12	<0.01
69000N 381680E	18	18	110	<1	12	10	<0.01
69000N 381700E	14	14	75	<1	9	<4	<0.01
69000N 381720E	10	6	34	<1	7	4	<0.01
69000N 381780E	10	8	30	<1	9	8	<0.01
69000N 381800E	10	6	32	<1	7	<4	<0.01
68900N 381660E	16	14	40	<1	12	10	<0.01
68900N 381700E	22	28	90	<1	8	12	<0.01
68900N 381720E	12	14	40	<1	7	<4	<0.01
68900N 381740E	18	18	95	<1	12	12	0.02
68900N 381760E	30	24	130	<1	8	4	<0.01
68900N 381780E	16	18	105	<1	10	6	<0.01
68800N 381640E	8	4	36	<1	5	6	<0.01
68800N 381660E	6	6	26	<1	6	8	<0.01
68800N 381680E	28	40	90	<1	18	10	<0.01
68800N 381700E	24	48	60	<1	28	6	<0.01
68800N 381720E	14	14	50	<1	10	<4	<0.01
68700N 381640E	6	<4	22	<1	10	16	<0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

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697046

ANALYTICAL REPORT JOB COM870213

O/N : 11535/EJ50/JGP/037

SAMPLE	Cu	Pb	Zn	Ag	As	Bi	Au
68700N 381660E	10	6	40	<1	5	6	<0.01
68700N 381680E	2	<4	105	<1	5	6	0.04
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	XRF1	XRF1	FAS1

APPENDIX 4

South Stitt: Rock Chip Sampling Assay Results

SAMPLE RECORD

METALS DIVISION

MPLE TYPE: ROCK CHIPS | LOCATION / PROJECT: SOUTH STITT | SAMPLER: J.G. PURVIS | DATE: MARCH 1986 | MAP / PHOTO REF:

SSAY LAB: AMDEL | SAMPLE DESPATCH ORDER NO: 08326/001, 11501, | ASSAY REPORT NOS: AC 3375/86, AC 3819/86

SAMPLE STORAGE: DEVONPORT, TAS

SAMPLE No.	LOCATION (AMG) NORTH	EAST	INTER'L (m)	ANALYSES Au	Au (Rpt)	Cu	Pb	Zn	Ag	Ba	As	Sn				DESCRIPTION
8927	370750	381935	Grab	Tr*		35	40	86	<1	55	7					ofc. qtz-chlorite veins in ignimbrite.
28	370750	381935	"	Tr		23	48	460	<1	550	7					Sub ofc. Basic dyke ± limonite stains.
29	371000	382350	"	Tr		31	22	66	<1	410	10					ofc. Silicified felsic volc ± qtz-carb veins
8930	371000	382380	"	Tr		80	38	45	<1	1040	8					ofc. Silicified felsic volc ± trace py + hem.
31	370250	381940	"	Tr		7	68	120	<1	630	16					ofc. Cherty or silicified fi gr volc sediment.
32	370250	382140	"	ND		11	46	200	<1	90	26					ofc. Lithic volc breccia ± minor limonite on fracs
33	370250	382385	"	Tr		4	550	92	<1	890	78					Sub ofc. Silic + felsic volc ± qtz veins.
34	370250	382755	"	ND		5	14	52	<1	190	8					Float. Sericitic xyl tuff ± limonite boxworks.
8935	370250	382755	"	Tr		4	18	115	<1	140	5					Float. Sericitic xyl tuff-shale ± limonite stains.
8937	370320	382705	3m chip	Tr		98	240	265	<1	780	42					ofc. Chloritic felsic volc ± wk limonite stains.
38	370468	382660	Grab	0.08		22	315	175	<1	190	60					ofc. Weakly silicified felsic volcaniclastic.
39	370493	382655	Grab	Tr		19	82	500	<1	260	27					ofc. Chloritic volc siltst ± minor dissem py.
8940	370500	383060	"	0.06		5	26	27	<1	460	11					ofc. Volc breccio-conglomerate ± minor limonite
41	370500	383040	"	Tr		6	74	39	<1	490	50					Sub ofc. Volc breccio-conq ± limonite stains.
42	370500	382695	"	Tr		7	6	345	<1	110	8					Sub ofc. Chloritic volc breccia ± trace py.
43	370500	381980	"	Tr		9	50	100	<1	720	6					ofc. Felsic volcaniclastic ± trace py.
44	370250	382020	"	Tr		10	145	58	<1	580	43					Float. Silicified felsic volc ± minor py.
45	370250	382045	"	Tr		8	180	70	<1	180	58					ofc. Felsic volc ± py xyls to 7mm + qtz veins
46	370250	382165	"	ND		9	78	125	<1	110	18					ofc. Felsic volc ± 2-3% sooty py in lenses.
47	370890	381990	"	Tr		50	56	5	<1	20	20					ofc. Limonitic qtz vein 0.3m wide.
8948	369500	381570	"	ND		45	54	110	<1	1300	10	< 4				Sub ofc. Sl silicified rhyodacitic intrusive ± qtz veins.
8956	370500	382655	"	ND		60	110	410	2	1100						ofc. Felsic epiclastic ± 5% py + 2% hem.
57	370520	382655	"	ND		130	18	370	<1	160						ofc. Chloritic felsic volc ± minor cp + py.
58	370528	382655	"	0.50		860	280	66	11	130						ofc. Qtz vein or chert band 0.2m Minor cp-py-hem
59	370540	382650	"	Tr		165	10	2000	<1	170						ofc. Basalt ± 1% dissem py > cp.
8960	370575	382655	"	0.07		2160	10	210	1	150						ofc. Chloritic volc siltst ± 1% cp, minor py.
61	370620	382665	"	ND		25	74	215	<1	320						ofc. Volc sst. Abundant limonite + Mn stains
8962	370855	382755	"	Tr		13	34	13	<1	20						ofc. 0.4m qtz vein ± minor limonite stains
8974	368500	381765	"	Tr		18	32	64	<1	690						Sub ofc. Silic sericitic volcaniclastic ± limonite
75	368500	381760	"	Tr		14	6	64	<1	450						Sub ofc. Cherty tuffaceous sediment ± rare py
76	368500	381750	"	Tr		10	6	50	<1	770						sub ofc. Silic volcaniclastic ± minor dissem py
8977	368500	381745	"	Tr		11	<4	66	<1	480						ofc. Felsic silic tuff ± 1% coarse gr py.

REMARKS: SOUTH STITT is part of MT BLACK EL 1/62, TASMANIA.

* Tr = trace (< 0.04 ppm Au) ND = Not detected

8969

SAMPLE RECORD

METALS DIVISION

MPLE TYPE: ROCK CHIPS | LOCATION / PROJECT: SOUTH STITT | SAMPLER: J.G. PURVIS | DATE: MARCH 1986 | MAP / PHOTO REF:

SSAY LAB: AMDEL | SAMPLE DESPATCH ORDER Nº: 11501, 11502, D8328, | ASSAY REPORT Nos: AC 3819/86, AC 3523/86

SAMPLE STORAGE: DEVONPORT, TAS.

SAMPLE No.	LOCATION (AMG) NORTH	EAST	INTER'L (m)	ANALYSES Au	Au (Rpt)	Cu	Pb	Zn	Ag	Ba	As	Sn	DESCRIPTION
8978	368500	381715	Grab	Tr		9	4	62	<1	620			blk. 1m wide silic (flinty) tuff-siltst
79	368500	381705	"	Tr		125	6	49	<1	550			Float. Intensely silic (chalcedonic?) volc ± 1% py.
8980	368500	381595	"	Tr		86	4	82	<1	310			blk. Sericite-kaolinite schist ± minor limonite
81	368500	381565	"	Tr		18	<4	120	<1	210			blk. Qtz-py vein ± chlorite-qtz veins.
82	368500	381420	"	Tr		110	18	72	<1	510			Float. Qtz-py, mafic volc ± magnetite + rare py
83	368500	381585	"	Tr		80	54	86	<1	420			Float. Tuff-shale + siltst ± 1% bedded py.
84	369000	381615	"	0.07		16	8	195	<1	490			blk. Chloritic felsic volcaniclastic ± sl limonite stains
8985	369000	381610	"	Tr	Tr	16	22	295	<1	540			blk. Volc siltst + sst ± minor limonite stains
8995A	369500	381520	"	Tr		16	32	88	<1	770			Float. Wk silicified felsic volc ± 1-2% py.
96	369500	381350	"	ND	Tr	15	6	135	<1	580			Float. Chloritic felsic volc ± limonite stains
97	369400	382490	"	Tr		8	<5	42	<1	310			Sub blk. Qtz xyl-lithic grit ± limonite staining
98	370000	382045	"	Tr		29	<5	235	<1	90			Float. Volc sst or weath. basalt. Limonite stains
8999	370000	382055	"	Tr		10	<5	195	<1	440			Float. Chloritic lithic breccia ± limonite stains.
9000	371000	383245	"	Tr		45	30	425	<1	650			blk. Tuffaceous sediments ± rare limonite stains.
7908	370000	382800	"	Tr	Tr	11	20	64	<1	530			Float. xyl-lithic grit ± minor limonite stains
09	370000	382845	"	ND		25	98	185	<1	360			blk. Breccio-conglomerate ± limonite boxworks.
7910	369980	382895	"	Tr		4	<5	45	<1	270			blk. Orange, soft limonite encrustation
11	369980	382895	"	Tr		12	10	50	<1	640			blk. Volc breccio-cong ± minor limonite boxworks
12	370010	382890	"	Tr		9	<5	30	<1	140			blk. Soft gossanous limonite - Mn encrustation
13	370050	382900	"	Tr		12	6	185	<1	550			blk. Volc sst + siltst ± minor py + limonite
14	370060	382880	"	ND	Tr	11	12	94	<1	790			blk. Volc breccio-conglomerate ± limonite stains
15	370085	382850	"	Tr		7	90	36	<1	410			blk. Soft, gossanous limonite encrustation
16	370200	382775	"	Tr		7	<5	135	<1	210			blk. Qtz-sericite schist ± much limonite staining
17	370205	382775	"	Tr		82	48	46	<1	180			blk. Bleached qtz-sericite schist ± 2% py.
18	371000	383485	"	Tr		8	6	18	<1	580			blk. Strongly schistose + bleached felsic volc.
19	371000	383500	"	Tr		21	<5	62	<1	580			blk. Tuff-siltst + shale ± limonite boxworks.
7920	371000	383500	"	Tr	Tr	28	140	74	<1	780			blk. Qtz-sericite schist after tuff-shale ± limonite
21	371000	383545	"	Tr		10	10	13	<1	380			blk. Leached, bleached schistose volc breccio-cong.
7922	371000	383590	"	Tr		12	<5	32	<1	510			blk. Qtz-sericite schist ± v. minor limonite boxworks
-80 MESH STREAM SEDIMENT SAMPLE:													
8936	370250	382755		ND		5	150	33	<1	160	37	10	Upper Sterling River. Good boulder trap

REMARKS: SOUTH STITT IS PART OF MT BLACK EL 1/62, TASMANIA.

6969

8225

5382000N
386000E

5382510N
388000E

RIVER

5381000 N
385000 E

386000E

387000E

5381000N
388000E

MACKINTOSH

80 000 N

5379000 N
387000 E

386 200E

Tuliah

FARRELL N.L.

5378580N
386000E

5378000 N
384 000 E

385000E

△ MT SALE

E.L. 1/62
PART 1: EXTENSION

5375000 N
384 000 E

5375000 N
386 000 E

25 000 N

5374000 N
383 000 E

5374 000N
386 000E

Part of Sterling Valley
J.V. Area

Rosebery

MURCHISON

5372000 N
382000 E

383000E

E.L. 1/62
PART 2: EXTENSION

5371000N

384 000E

△ MT. MURCHISON

5370000N
382000 E

5370000N

383 000E

381000E

5368000N
381800E

5367850N

ROSEBERY

Hercules

MT
READ

Roads, Tracks

HEC power lines

E.L. Boundary

697050

5 cm

8225

88 2899

Billiton Australia

TASMANIA
ROSEBERY EAST J.V.

E.L. 1/62
LOCATION PLAN

Author D B H | Date 11/88 | Scale 1:50 000
Drawn | Office A H O | Revised | Date
Drawing No LJ50/ | Fig No 1

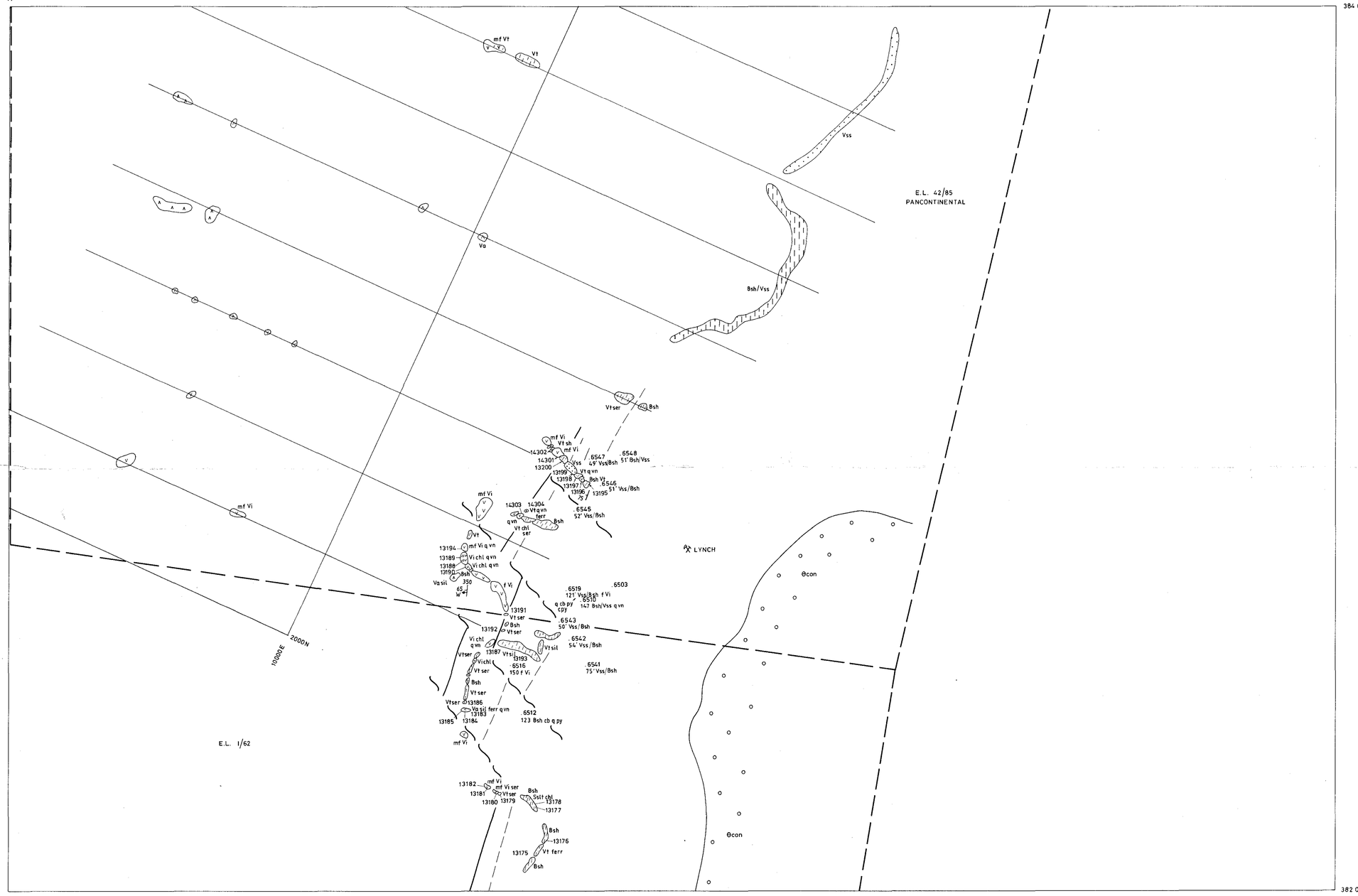
8226

386 000 E

389 000 E

384 000 N

382 000 N



LEGEND

ORDOVICIAN	Θcon	Owen Conglomerate	– mixed and undifferentiated sands, pebbles, boulders of predominantly Tyennan origin.
	Bsh	Farrell Slate	– grey fissile pyritic often crenulated and variably graphitic shales.
	Vt		– fine grained tuffaceous volcaniclastics, strongly sericitized often silicified and quartz veined.
CAMBRIAN	Vss		– dirty poorly bedded arenaceous volcaniclastic.
	Vi	Mt Black Volcanics	– feldspar phyric andesitic lavas.
	Va		– siliceous acid lavas.

mf Vi	–	medium feldspar porphyritic intermediate volcanic lava.
q vn	–	quartz veining
Sslt	–	siltstone
ser	–	sericite
cb	–	carbonate
sil	–	silicified

Bedding strike / dip + facing

Old working

1986 BCL Survey (Bulk Cyanide Leach)

1987 BCL Survey (Bulk Cyanide Leach)

ROCK CHIP SAMPLING

	Cu	Zn	Ag	Au	Ba	Pb	As
13175	9	32	< 1	< 0·01	260	10	14
13176	12	8	< 1	< 0·01	200	22	22
13177	16	16	< 1	< 0·01	350	6	22
13178	10	34	< 1	< 0·01	160	28	16
13179	4	3	< 1	< 0·01	530	< 4	10
13180	3	14	< 1	< 0·01	430	4	6
13181	3	18	< 1	< 0·01	510	14	5
13182	14	14	< 1	< 0·01	330	< 4	7
13183	6	8	< 1	< 0·01	250	10	12
13184	3	4	< 1	< 0·01	450	8	7
13185	2	14	< 1	< 0·01	280	6	9
13186	4	34	< 1	< 0·01	350	44	46
13187	5	40	< 1	< 0·01	190	4	18
13188	6	30	< 1	< 0·01	360	10	16
13189	9	18	< 1	< 0·01	770	8	20
13190	14	80	1	< 0·01	520	690	200
13191	4	30	< 1	< 0·01	220	34	34
13192	14	34	< 1	< 0·01	330	20	42
13193	18	1400	< 1	< 0·01	170	300	28
13194	2	36	< 1	< 0·01	980	26	30
13195	10	65	< 1	< 0·01	450	28	26
13196	6	28	< 1	< 0·01	400	18	12
13197	6	10	< 1	< 0·01	250	< 4	9
13198	10	34	< 1	< 0·01	430	12	14
13199	10	55	< 1	0·02	290	22	9
13200	10	38	< 1	< 0·01	135	16	7
14301	7	8	< 1	< 0·01	330	6	8
14302	< 2	12	< 1	< 0·01	440	18	12
14303	7	24	< 1	< 0·01	310	6	10
14304	7	110	< 1	< 0·01	370	40	65
	AAS			F.A.	XRF (ppm)		

5 cm

697051

8226

88 2899

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

Project: HENTY FAULT ZONE

Title: GEOLOGICAL BASE

SHEET 1

Author J.P.R.	Dept.	Scale 1:5000	
Drawn O.H.	Date 11/87	Revised	Date
Checked	Date	S'ceded	Date
Sheet No.	FIG. No. 2	Drawing No. D/LJ 50/029	

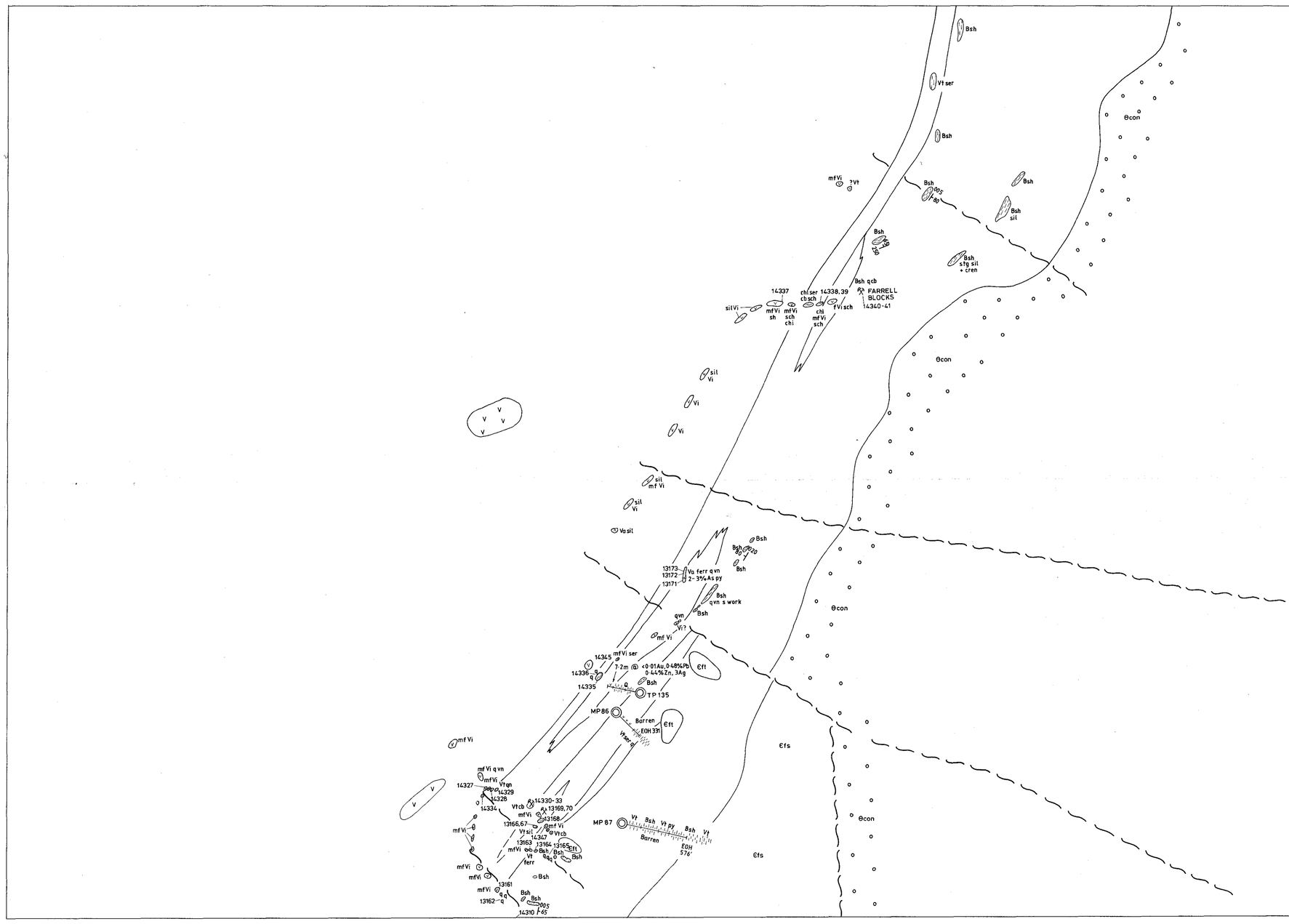
8227

385 000 E

388 000 E

382 000 N

380 000 N



LEGEND

ORDOVICIAN	Θcon	Owen Conglomerate	– mixed and undifferentiated sands, pebbles, boulders of predominantly Tyenna origin.
	Bsh	Farrell Slates	– grey fissile pyritic often crenulated and variably graphitic shales.
	Vt		– fine grained tuffaceous volcaniclastics strongly sericitized often silicified and quartz veined.
CAMBRIAN	Vss		– dirty poorly bedded arenaceous volcaniclastic.
	Vi	Mt Black Volcanics	– feldspar phyric andesitic lavas.
	Va		– siliceous acid lavas.

mfVi – medium feldspar porphyritic intermediate volcanic lava
qvn – quartz veining
Sslt – siltstone
ser – sericite
cb – carbonate
sil – silicified

Bedding strike / dip + facing

Old working

1986 BCL Survey (Bulk Cyanide Leach)

1987 BCL Survey (Bulk Cyanide Leach)

ROCK CHIP SAMPLING

	Cu	Zn	Ag	Au	Ba	Pb	As
13161	10	34	<1	<0·01	320	12	100
13162	9	4	<1	<0·01	15	8	24
13163	30	18	<1	<0·01	175	8	16
13164	20	190	<1	<0·01	290	100	20
13165	7	< 2	<1	<0·01	40	< 4	8
13166	24	44	<1	<0·01	185	48	26
13167	7	14	<1	<0·01	130	4	12
13168	5	26	<1	<0·01	125	< 4	10
13169	5	20	<1	<0·01	125	14	14
13170	6	28	<1	<0·01	175	18	8
13171	4	6	<1	<0·01	320	< 4	10
13172	5	10	<1	<0·01	390	8	12
13173	5	24	<1	<0·01	360	6	12
13174	70	600	<1	<0·01	135	470	32
14328	4	12	<1	<0·01	380	80	<2
14329	6	12	1	<0·01	360	42	5
14330	16	20	1	<0·01	280	18	5
14331	18	28	1	0·01	200	32	<2
14332	40	40	1	<0·01	220	14	3
14333	9	230	2	<0·01	230	1050	9
14334	2	7	<1	<0·01	370	10	4
14335	7	2	<1	<0·01	310	< 4	< 2
14336	7	2	<1	<0·01	60	4	< 2
14337	3	14	<1	<0·01	300	44	6
14338	4	16	1	0·02	710	4	4
14339	5	46	1	<0·01	350	16	6
14340	38	50	1	0·02	310	55	65
14341	55	165	1	<0·01	110	140	38
14345	5	4	<1	<0·01	340	8	5
	AAS			F.A.	XRF (ppm)		

5 cm

697052

8227

88-2899

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

Project: HENTY FAULT ZONE

Title: GEOLOGICAL BASE

SHEET 2

Author J.P.R.	Dept.	Scale 1:5000	
Drawn O.H.	Date 11/87	Revised	Date
Checked	Date	S'ceded	Date
Sheet No. FIG. No. 3		Drawing No. D/LJ 50/030	

8228

384 000 E

387 000 E

380 000 N

MACKINTOSH Cu + Ag
- adit no access

Barite Lode

D.D.H 3N

D.D.H 2N

TP 134

TP 133

D.D.H 1N

*Not sampled or Located
No Au, Sn, W
Zn to 0·18%
Pb to 0·11%
Barite?

mf Vi

<0·1 Au
16

2 zones 8' 3'
0·5 g/t Au
tr Au

2·1m @ 2% Pb
0·1% Zn
44 Ag
no Au

NORTH MACKINTOSH
2 lodes, steep W dip
14321-22

1 Level
990' RL
NEW NORTH MT FARRELL

1F

15 0·2 Au

Plan proj. of Ore Limits (Lode 65-80°W)
Ave. width 5'
Pitch 75° S

Adit
14320

SOUTH MACKINTOSH
Adit
1020' RL

0·3 Au
12

3·3 Au (BCL)
3·15% Pb
0·19% Zn
150 Ag
580 As
70 W
Dump
14308, 09

FARRELL J.V. LEASE BOUNDARY

Plan proj. of Ore Limits
3 Lodes
60° W Dip
70° S Pitch

4 Level
960 RL

8·4m @ 0·37 g/t Au
0·26% Cu
3g/t Ag

2 Lode

3 Lode

NORTH MT FARRELL NEW SHAFT
14305-07

3F

11 0·2 Au

10 0·2 Au

mf Vi
0·5 Au
9

MT FARRELL NORTH
1038' RL

MT FARRELL SOUTH

135 65° 165'
125 65° 220'
115 69° 210'
105 65° 258'
9 69° 200'
8 65° 220'
7 60° 210'
6 60° 210'

Q

Bsh

Vt

Vss

Vi

Va

LEGEND

ORDOVICIAN	Bcon	Owen Conglomerate	– mixed and undifferentiated sands, pebbles, boulders of predominantly Tyennan origin.
	Bsh		– grey fissile pyritic often crenulated and variably graphitic shales.
	Vt	Farrell Slates	– fine grained tuffaceous volcaniclastics, strongly sericitized often silicified and quartz veined.
CAMBRIAN	Vss		– dirty poorly bedded arenaceous volcaniclastic.
	Vi		– feldspar phyric andesitic lavas.
	Va	Mt Black Volcanics	– silaceous acid lavas.

mf Vi – medium feldspar porphyritic intermediate volcanic lava
qvn – quartz veining
Sslt – siltstone
ser – sericite
cb – carbonate
sil – silicified

Bedding strike/dip + facing

Old working

1986 BCL Survey (Bulk Cyanide Leach)

1987 BCL Survey (Bulk Cyanide Leach)

ROCK CHIP SAMPLING

	Cu	Zn	Ag	Au	Pb	As	Ba
14305	2	190	1	<0·01	580	4	590
14306	5	135	<1	<0·01	330	6	460
14307	7	180	<1	<0·01	140	7	430
14308	10	50	<1	<0·01	110	18	210
14309	185	3400	115	0·04	3·4%	3900	110
14320	28	2800	3	<0·01	540	130	240
14321	520	2·1%	280	<0·01	2·95%	55	270
14322	210	2·0%	220	<0·01	2·25%	170	210
13159	32	55	<1	<0·01	26	20	270
13160	28	46	1	0·04	1100	85	190
	AAS			F.A.	XRF		

378 000 N

5 cm

697053

88-2899 1

8228

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

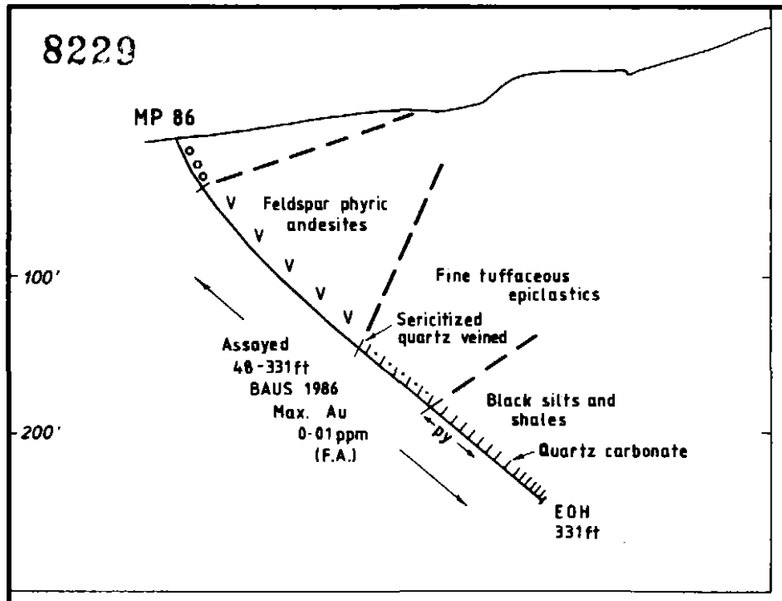
Project: HENTY FAULT ZONE

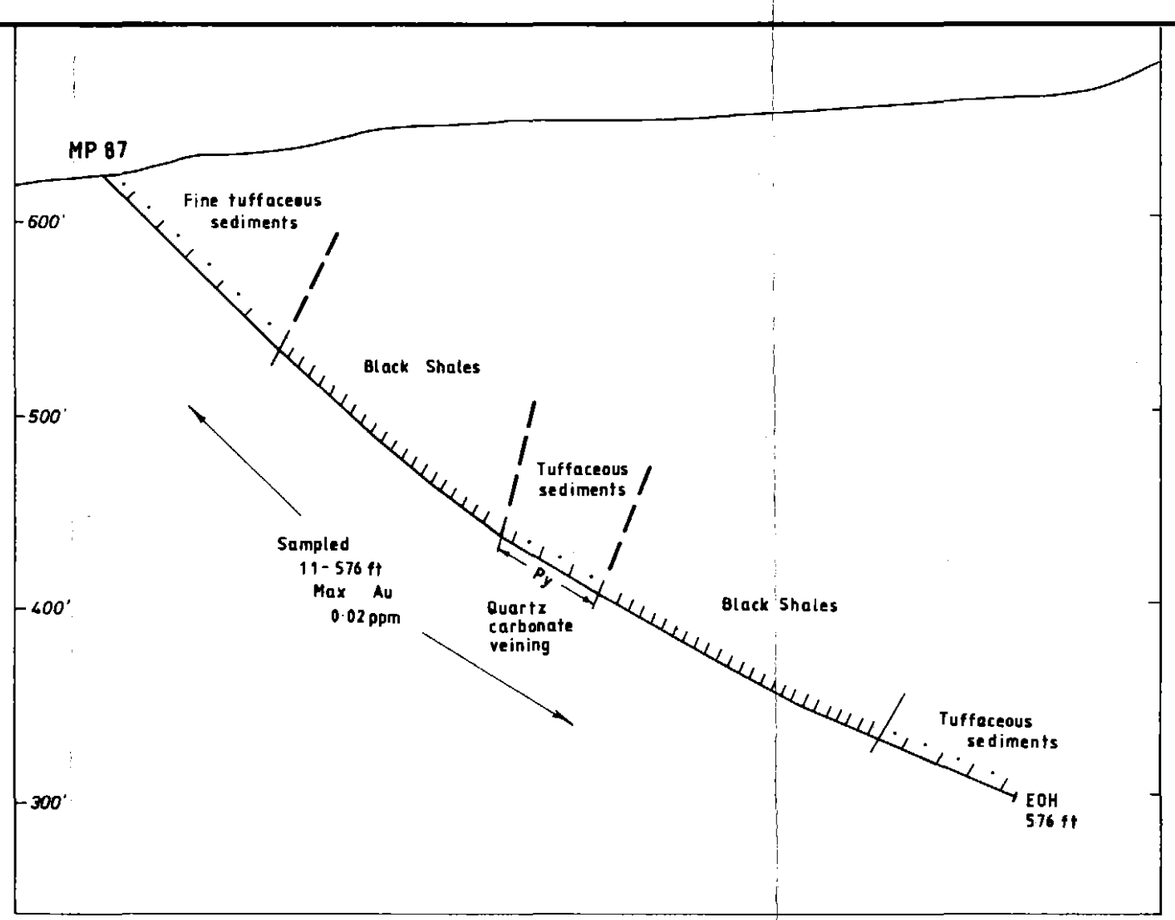
Title: GEOLOGICAL BASE

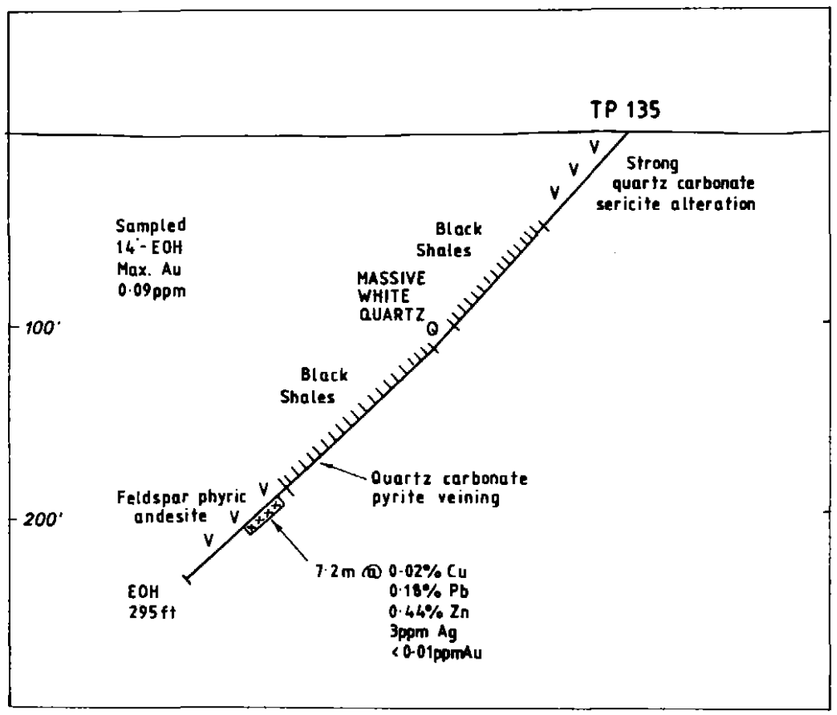
SHEET 3

Author J.P.R.	Dept. TAS	Scale 1:5000	
Drawn O.H.	Date 10/87	Revised	Date
Checked	Date	S'ceded	Date
Sheet No. FIG. No. 4		Drawing No. D/LJ 50/023	

8229







5 cm

8229

88-2899

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

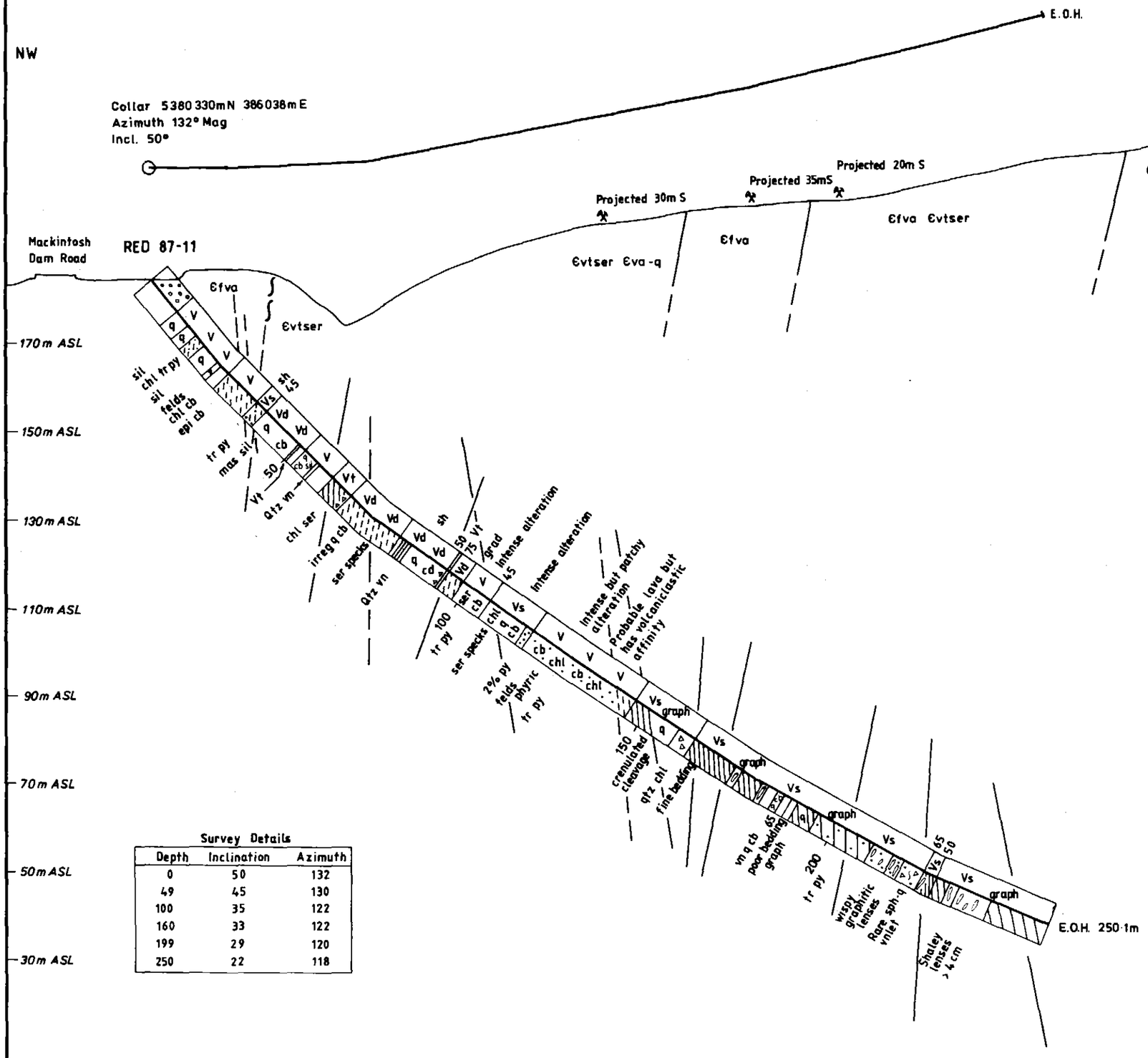
Project: HENTY FAULT ZONE

Title: MACKINTOSH PROSPECT DIAMOND DRILL SECTIONS MP 86, MP 87, TP 135

Author J. P. R.	Date 11/87	Scale 1:1000	
Drawn O.H.	Office TAS	Revised	Date
Drawing No. D/LJ 50/036			Fig. No. 5

697054

S230



Survey Details

Depth	Inclination	Azimuth
0	50	132
49	45	130
100	35	122
160	33	122
199	29	120
250	22	118

LEGEND

V — DACITIC-ANDESITIC LAVA
Feldspar-phyric, often carbonate + quartz veined often sheared, stretched out feldspar porphyroblasts. Variable silicification and carbonate alteration. Va Andesitic; Vd dacitic.

Vs — ARENACEOUS VOLCANICLASTIC (EPICLASTIC)
Often difficult to distinguish from sheared lava most convincing where finely and uniformly bedded. Variable grain size but typically fine sand size. Graphitic interlayers very common. Also shale lenses (⬭) and ash lenses (▱)

Vt — PUMICEOUS VOLCANICLASTIC (EPICLASTIC)
Finely layered often chloritic, sericite spotting.

Δ Δ	breccia zone
graph	graphitic
sh	sheared
cb	carbonatization
qtz	quartz
py	pyrite
sil	silicification
mas	massive
ser	sericitic
grad	gradational contact
———	Bedding
– – –	Foliation

5 cm

8230

697055

88-2899

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

Project: HENTY FAULT ZONE

Title: MACKINTOSH AREA
DIAMOND DRILL SECTION
RED 87-11

Author J.P.R.	Date 12/87	Scale 1:1000	
Drawn O.H.	Office TAS	Revised	Date
Drawing No. D/LJ 50/039			Fig. No. 6

8231

N
AMG

HEC YARDS

Bsh
Bsh q vn
Vi q vn
Vi sil
f Vi ser fol
mf Vi ser
TO HEC WORKSHOP
mf Vi
14335, 36
Vt ser
HENTY FAULT
MACKINTOSH DAM ROAD
Bsh
7·2m - 0·18% Pb 0·44% Zn
TP 135
MP 86
f Vi
Vt ser
Bsh
380 400 N
RED 87-11
TULLAN
mf Vi q vn
mf Vi q vn
Vt ser
f Vser
Vt ser
14329
14327
80
Vt chl py
14328
Vt ser chl
mf Vi
sh Vi
Vt ser cb q vning
14334
380 300 N
Creek accurately surveyed
14343
sh Vi sil q vn
f V sch
f Vi
f V q vn
f V sil q vn
f V sil
f V sil
Creek accurately surveyed
380 200 N
14344
f V q vn
mf Vi
f Vi
Vt ser
Vt q vn ser
mf Vi
mf Vi
mf Vi
Vt ser
f Vi
mf Vi sil
380 100 N
f Vi
mf Vi q vn
13161
13162
Bsh
Bsh / Vt ser
386 000 E
386 100 E
386 200 E
386 300 E
Vt ser also 14333
q vn (14331)
chl cb f Vi (14330, 32)
mf Vi
13169, 70
f Vi sil chl
chl ff Vi
14346
Vt cb ser py?
f Vi q vn
14347
13168
Vt sil q vn
f Vi
Vt ser
Vt
mf Vi
13166, 67
f Vi q vn
14348
Vt ser cb
Vt ser cb
13163
mf Vi
Bsh
13164
13165
q q q q q
Bsh
Bsh
Bsh

LEGEND

V V — DACITIC - ANDESITIC LAVA
- feldspar phyric (f), fine (f) to medium grained (m).
- often silicified, may be carbonated or sericitized.

SILTY - FINE ARENACEOUS VOLCANICLASTIC
Finely bedded, often sericitized and carbonated with a well developed cleavage. Graphitic interbeds common.

BLACK GRAPHITIC SHALE
Finely bedded, variable graphite content. Strongly fissile, sometimes crenulated.

13164 — Rock chip sample at outcrop

q vn	quartz veining
chl	chloritization
cb	carbonization
ser	sericitization
sil	silicification

697056

5 cm

8231

88-2899

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

Project	ROSEBERY EAST J.V.		
Title	MACKINTOSH AREA DETAILED MAPPING RED 87-11		
Author	J.P.R.	Dept. TAS	Scale 1:1000
Drawn	O.H.	Date 12/87	Revised Date
Checked		Date	S'ceded Date
Sheet No.	FIG No 7		Drawing No. D/LJ 50/040

8231

8234

RECENT, QUATERNARY — Glacial moraine and scree

UPPER CAMBRIAN — Owen Conglomerate. Massive quartz and quartzite pebble conglomerate

MIDDLE CAMBRIAN — Volcanomict breccio-conglomerate and quartz-crystal-lithic tuff. Intercalations of volcanic sandstone, siltstone and shale

MT. READ VOLCANICS

West of the Henty Fault Zone

LOWER CAMBRIAN

- Feldsparphyric (dacitic) lava and ignimbrite. Subvolcanic felsic intrusive
- Basalt — flows and dykes
- Chloritic volcanic sandstone, siltstone and shale. Volcanic lithic breccia. Feldspar and quartz-crystal tuff.

East of the Henty Fault Zone

- Siliceous volcanic sandstone, siltstone and chert. Quartz and feldspar-crystal - lithic breccia. Crystal tuff. Carbonaceous tuff-shale.
- Quartz-porphyritic rhyolite lava.

Fault - observed
Fault - inferred
Dyke or vein
Geological contact
Inferred geological contact
Areas of examined outcrop
Bedding
Primary lineation (flow bedding etc)
Schistosity
x 8934 Rock outcrop or float sample
x 8936 Stream sediment sample

silif Silicification
py Pyrite
cp Chalcopyrite
li Limonite

381 500 mE · 382 000 mE · 382 500 mE · 383 000 mE

5 371 500 m N · 71 000 m N · 70 500 m N · 70 250 m N · 70 000 m N · 5 370 000 m N · 69 750 m N · 69 500 m N · 5 369 500 m N · 69 250 m N · 69 000 m N · 5 369 000 m N · 68 500 m N · 5 368 500 m N

E.L. 1/62
E.L. 4/73

Sterling River

Primary lineation in welded dacitic ignimbrite

0.3m qtz vein

Basalt dykes

Basalt dyke or flow

qtz veins with py

fine grained cherty sediment

volcanic lithic breccia

crenulated qtz-sericite schist zone

limonite seeps

2 x 3m granite erratic

10m moraine wall

30m moraine wall

Walking track

Glacial — Moraine — Ridge

welded ignimbrite

Sub-surface geology beneath glacials from drill holes

GODC pit

E.Z pit

HENTY FAULT ZONE

STITT RIVER

1m chert band

Samples → 7921 @ 545 E, 7922 @ 590 E off plan

MT. LYELL GRID LINE 68 N
5100' W · 4000' W · 3000' W · 2000' W
E.L. 1/62
E.L. 9/66

G.N. (AMG) M.N. 12°

100 50 0 100 200 Metres

5 cm

697057

88-2899 1

8231

8234

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

Project	ROSEBERY EAST J.V. TASMANIA
Title	MT BLACK EL 1/62 SOUTH STITT GEOLOGY
Author J.G.P. Dept. D'PORT	Scale 1:5000
Drawn A.S. Date 4/86	Revised Date
Checked J.G.P. Date 5/86	S'ceded Date
Sheet No. FIG. No. 8	Drawing No. LJ 50/1016

8237

WEST

EAST

LEGEND

Alteration Types:

- chlor - chloritisation
- ser - sericitisation
- carb - carbonatisation
- ble - bleaching
- silif - silicification
- alb/pot - albitisation or potassic alteration

Symbols:

- Geological contact
- Shear or fault
- Primary layering or bedding
- Schistosity

SS2 -53°

SS1 -65° 0·5mS

400 E Sample pit small creek 420 E 440 E 460 E small creek 480 E 500 E 520 E 540 E 560 E 580 E 600 E 620 E 640 E 660 E 680 E 700 E EZ Soil pit 720 E 740 E

scree

TUFFACEOUS SILTSTONE

PARTLY-CARBONACEOUS TUFF-SHALES, VOLCANICLASTIC SILTSTONES AND CHERTS
ble, ser

2% py

QUARTZ-PORPHYRITIC RHYOLITE LAVA (?)
silif, alb/pot, ser

5 cm

CHERTY VOLCANICLASTIC SILTSTONES, SANDSTONES, AND PARTLY CARBONACEOUS TUFF-SHALES
ser, silif

2-3% py

3% py

Zones of fault breccia

5% py

E.O.H. 145·6m

VLF EM ANOMALY (In scree)

TUFFACEOUS SHALES & GRITS
ser, chlor, pot

ALTERED VOLCANICS
silif, pot, chlor

HENTY FAULT ZONE (dip inferred)

Minor hem) mag locally 5%

bedded basaltic tuff

CHLORITE SCHIST AFTER BASALTIC VOLCANICS (Predominantly lava)
chlor - carb

E.O.H. 211·4m

MAGNETIC ANOMALY

SS1

600E

SS2

540E

700E

PLAN

MAG. N.

8237

697058

88-2899

Getty | AUSTRALASIA

PART E.L. 1/62 ROSEBERY EAST
SOUTH STITT PROSPECT

DRILLHOLES SS1 & SS2

LINE 70 000mN

Looking North

Author:	G.P.	Scale:	1:1000
Drawn:	T.G.D.S.	Date:	August 1988
Revised:		File No:	Figure No. 9

8235

HENTY FAULT ZONE (inferred position)

Walking track To South Stitt vehicle track

Still River

Baseline

AMG North

Mag. North

12°

RECENT, QUATERNARY

Scree and glacial debris, mainly derived from Owen Conglomerate and Volcanomict Breccio-Conglomerate (Jukes Breccia Equivalent)

LOWER CAMBRIAN

MT READ VOLCANICS

West of Henty Fault Zone

Chloritic volcanic sediments: sandstones, siltstones and shales. Some volcanolithic breccias.

Feldspar-phyric lava. Feldspars albitised

East of Henty Fault Zone

Sericitic and siliceous sediments: mainly silstones and fine sandstones, some shales and cherts. Pyritic in places.

Quartz-phyric rhyolite lava

Geological contact, inferred geological contact

Outcrop mapped by I.F.G and/or J.G.P.

Bedding

Schistosity

x14201 Rock outcrop or float sample

(P) Petrological sample

ch Chert

py Pyrite

cp Chalcopyrite

hm Specular hematite

lim Limonite

5 cm

8235

0 100 200 m

88-2899

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

Project: ROSEBERY EAST J.V.

Title: MT BLACK EL1/62
SOUTH STITT, SOUTHERN FILL-IN GRID
GEOLOGY

Author	I F G	Dept.	TAS	Scale	1:2000
Drawn	A S	Date	2/87	Revised	Date
Checked	J G P	Date	2/87	S'ceded	Date
Sheet No.	FIG. No. 10			Drawing No.	LJ 50 / 1071

69203

GEOLOGY AFTER J.G. PURVIS, 1986

RECENT, QUATERNARY — Glacio - moraine and scree

UPPER CAMBRIAN — Owen Conglomerate: Massive quartz and quartzite pebble conglomerate

MIDDLE CAMBRIAN — Volcaniclastic breccia - conglomerate and quartz - crystal - lithic tuff. Intercalations of volcanic sandstone, siltstone and shale

MT READ VOLCANICS

West of the Henty Fault Zone

Feldsparphyric (dacitic) lava and ignimbrite. Subvolcanic felsic intrusive

Basalt - flows and dykes

LOWER CAMBRIAN — Chloritic volcanic sandstone, siltstone and shale. Volcanic lithic breccia. Feldspar and quartz-crystal tuff

East of the Henty Fault Zone

Siliceous volcanic sandstone, siltstone and chert. Quartz and feldspar-crystal - lithic breccia. Crystal tuff. Carbonaceous tuff - shale

Quartz - porphyritic rhyolite lava

Geological interpretation of Henty Fault position

Dyke or vein — silif Silicification

Geological contact — py Pyrite

Inferred geological contact — cp Chalcopyrite

Areas of examined outcrop — lim Limonite

Bedding

Primary lineation (flow bedding etc)

Schistosity

x 8934 Rock outcrop or float sample

x 8936 Stream sediment sample

Dighem Anomaly

Chargeability contours n = 1

Mag highs (Dighem)

VLF Conductor

72 000 m N — 100m Dipole-Dipole I.P

8236

UTEM T_x LOOP 14
400m x 1100m

72 000N (UTEM)

71 700N (UTEM)

71 500 m N — 100m Pole-Dipole I.P

71 400N (UTEM)

71 000N (UTEM)

71 000 m N — 100m Dipole-Dipole I.P

(no anomalous soil Pb/Zn)

UTEM CONDUCTOR 13b - WEAK

UTEM CONDUCTOR 14b - WEAK

UTEM CONDUCTOR 13a - WEAK

Anomalous Soil Pb/Zn

IP/Res anomaly (EZ Sterling Valley) — E.L. 1/62 LINE 1050N

Decreasing res with depth (no VLF)

Sterling River

Work on UTEM anomaly

qtz veins

Samples 7921 @ 5455; 7922 @ 5905 off plan

100m Pole-Dipole I.P

75 000 m N — 100m Dipole-Dipole I.P

Anomalous Soil Pb/Zn

SS1 SS2

Fault ?

69 750 m N

69 500 m N — 100m Pole-Dipole I.P

HENTY FAULT ZONE

69 250 m N

69 000 m N — 100m Dipole-Dipole I.P

STITT RIVER

chert band

68 500 m N — 100m Pole-Dipole I.P

MT LYELL GRID LINE 68 N

E.L. 1/62
E.L. 9/66

5000 W
4000 W
3000 W
2000 W

G.N. AMG M.N.

12°

100 50 0 100 200 Metres

5 cm

8236

88-2899

Billiton Australia

Project: ROSEBERY EAST J.V. TASMANIA

Title: MT BLACK EL 1/62

SOUTH STITT
GEOPHYSICAL COMPILATION

Author: N.H.	A.H.O.	1:5000	
Drawn: A.S./S.L.P.	Date: 8/86	Revised	Date
Checked	Date	Issued	Date
Sheet No. 11		Drawing No.	LJ50/1037

697060

381 000mE
382 000mE
383 000mE
371 000mN
370 000mN
369 000mN
MEDIUM SCRUB
5 cm
8232
8232
Billiton Australia
The Metals Division of the Shell Company of Australia Limited
Project
ROSEBERY EAST J.V.
TASMANIA
Title
MT BLACK EL 1/62
SOUTH STITT
ENHANCED MAGNETICS
Author
Dept. AHO
Scale 1:5000
Drawn
Date 7/86
Revised
Date
Checked
Date
S'ceded
Date
Sheet No. 12
Drawing No. LJ50/1032

381 000mE

382 000mE

383 000mE

371 000mN

370 000mN

369 000mN

8233

DENSE TIMBER

MEDIUM SCRUB

EL 4/73

EL 1/62

5 cm

8233914

697062

Billiton Australia — The Metals Division of the Shell Company of Australia Limited	
Project	ROSEBERY EAST J.V. TASMANIA
Title	MT BLACK EL 1/62 SOUTH STITT RESISTIVITY
Author	Dept. AHO
Drawn	Date 7/86
Checked	Date
Sheet No.	13
Scale	1:5000
Revised	Date
S'ceded	Date
Drawing No.	LJ50/1031

697063

SHELL COMPANY OF AUSTRALIA

METALS DIVISION

R.O.C.S. - PROTEM

ROSEBERY E JV, TAS
SOUTH STITT
GROUND MAG, TMI
BASE62070, 100nT/CM

SCALE 1 : 5000

FIG No :		LEGEND
DATE :	1987	G-856
AUTHOR :	T.B.	DIURNAL CORRECTION
OFFICE :		
DRAWN :	AHD	

88-2899

8238

5 cm

POSITION OF HENRY FAULT (GEOLOGICAL MAPPING)

NORTHING (M)

69600N
69500N
69400N
69300N
69200N
69100N
69000N
68900N
68900N
68700N
68600N
68500N
68400N
68300N
68200N
68100N
68000N
67900N

381000E
381100E
381200E
381300E
381400E
381500E
381600E
381700E
381800E
381900E
382000E
382100E

EASTING (M)

FIG No 14

88 2899

8239

697064

AIRBORNE GEOPHYSICS
(EM, MAG, etc)

88-2899

8239

GEOLOGY
& TOPOGRAPHY

GROUND MAGNETICS 62100nT / 62050 / 62000

VOLCANICS | SEDIMENTS

HFZ ?

Rivers Valley ▽ Steep slope ↗

1300 1340 1380 1420 1460 1500 1540 1580 1620 1660 1700 1740 1780 1820 1860 1900 1940 1980 382020 E.

APPARENT RESISTIVITY mV/V

n
1
2
3
4
5
6

3980 1461 1106 1000 400 250 196 510 271 1423 1598 1000 650
3196 907 289 258 257 389 382 630 581 111
2400 2173 1600 311 352 335 402 405 767 354 252 762 1800
668 650 379 400 548 533 853 993 650 400 347 250 400 650

APPARENT CHARGEABILITY ms-m

n
1
2
3
4
5
6

7·8 7·8 10·2 7·3 9·7 7·8 14·2 13·2 14·7 H 19·1
8·5 10·4 1·5 4·3 6·6 7·1 9·2 14·1 9·4
8·6 13·2 4·3 3·7 4·9 4·0 10·5 H 4·3 11·7 13·8
7·1 10·5 20 H 20 10 4·1 1·9 5 11·0 10·5 10 1·9 5 10 15·5 15

Contractor : SURTREX
Date : 15/11/87
Timing : 2m s
Transmitter :
Receiver : IPR-10A
Integration time : M3
Array : DIPOLE - DIPOLE
Dipole length : 40m

5 cm

FIG 15

The Shell Company of Australia Limited
METALS DIVISION

ROSEBERY EAST, TAS
SOUTH STITT
I.P./RESISTIVITY SURVEY
LINE 6R900N

SCALE 1:2000	DATE
AUTHOR	DRAWN NH
OFFICE	REF No

8240

697065

AIRBORNE GEOPHYSICS
(EM, MAG, etc)

GROUND MAGNETICS

62200
62150
62100
nT
62050
62000

VOLCANICS

GLACIAL

GEOLOGY
& TOPOGRAPHY

HFZ?

River Valley

Steep Slope

1320 1360 1400 1440 1480 1520 1560 1600 1640 1680 1720 1760 1800 1840 1880 1920 1960 38 2000E

APPARENT RESISTIVITY Ω-m

n

1- 4016 2278 1280 834 197 260 435 450 1503 H 2026 1000 1000 574

2- 4394 4000 2500 1853 1314 794 239 239 613 633 979 830

3- 1933 1600 H 4722 828 539 542 774 724 834 463 391 400 250

4- 1131 1000 676 650 608 460 1000 1553 H 1068 532 188

5-

6-

APPARENT CHARGEABILITY mv/v

n

1- 7.7 5.5 7.6 8.1 6.8 10.1 14.8 17.4 H 16.4 15

2- 7.7 7.2 7.1 7.5 6.6 4.8 6.9 15.1 12.1 13.6

3- 10 10.4 7.4 7.1 3.9 10.9 5.1 7.7 16.8 H 12.3 10.9

4- 9.2 7.5 10 15 15.1 10.4 15 15.5 15.7 13.3

5-

6-

8240

88-2899

Contractor : SCINTREX
Date 16/11/87
Timing : 2 sec
Transmitter :
Receiver : IPR-10A
Integration time : 4 s
Array : 3-POLE-3-POLE
Dipole length : 40m

5 cm

FIG 16

The Shell Company of Australia Limited
METALS DIVISION

ROSEBERY EAST, TAS
SOUTH STITT

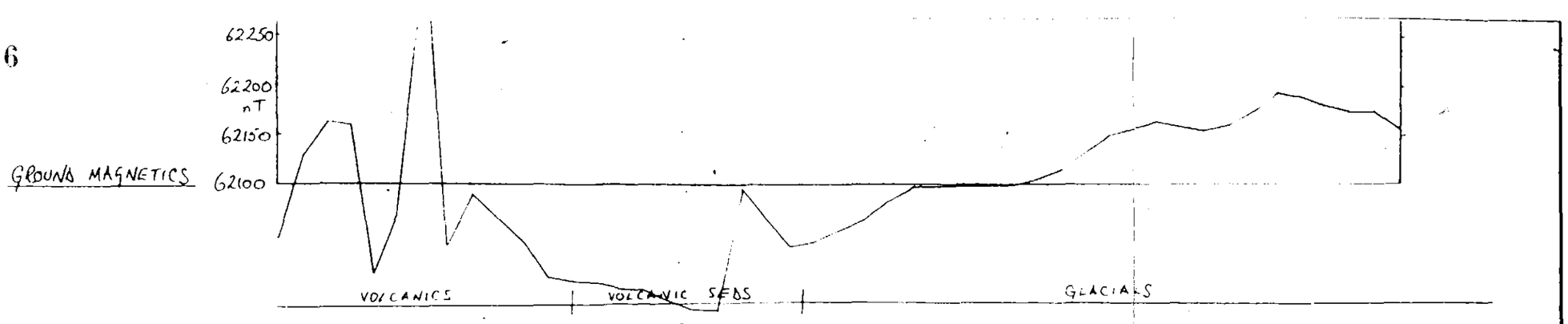
I.P./RESISTIVITY SURVEY

LINE 6800N

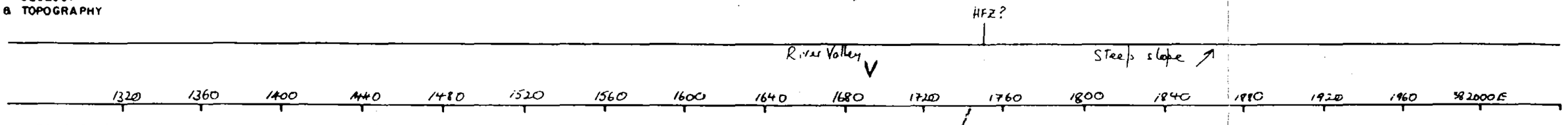
SCALE 1:2000 | DATE
AUTHOR | DRAWN AH

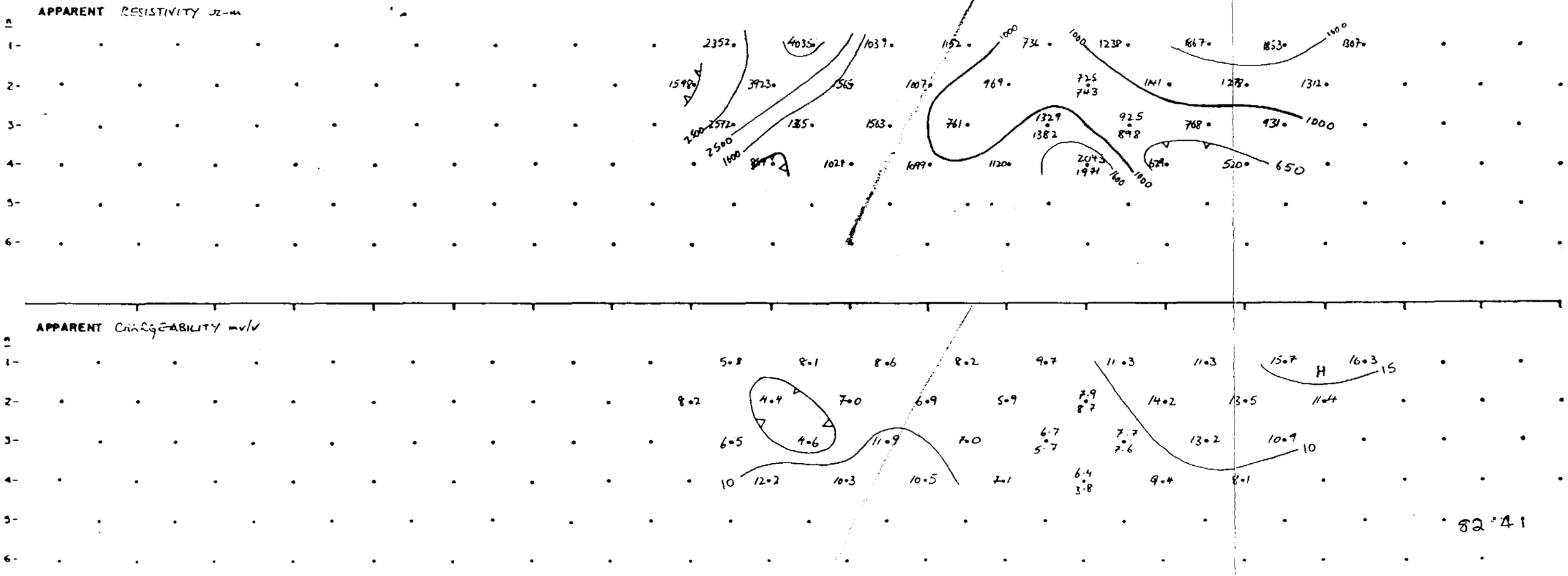
8241 697066

AIRBORNE GEOPHYSICS
(EM, MAG, etc)



GEOLOGY
& TOPOGRAPHY





82-41

88-2899

Contractor : SCINTREX
Date : 17/11/87
Timing : 2ms
Transmitter :
Receiver : IPR-10A
Integration time : M3
Array : DIPOLE-DIPOLE
Dipole length : 40m

5 cm

FIG 17

The Shell Company of Australia Limited
METALS DIVISION

ROSEBERY EAST, TAS
SOUTH STITT
I.P./RESISTIVITY SURVEY
LINE 68700N

SCALE 1:2000	DATE
AUTHOR	DRAWN NH
OFFICE	REP.No

8242

697067

AIRBORNE GEOPHYSICS
(EM, MAG, etc)

GROUND MAGNETICS

62250
62200
nT
62150
62100

VOLCANICS | VOLCANIC SEDS | FARRELL SEDS | GLACIALS

GEOLOGY
& TOPOGRAPHY

HFZ

River Valley

Steep slope

1320 1360 1400 1440 1480 1520 1560 1600 1640 1680 1720 1760 1800 1840 1880 1920 1960 382000E

APPARENT RESISTIVITY n-m

n

1- 1841. 2082. 4063. 1551. 650 555. 784. 1260. 2598. H 5042. 4000 3045.
2- 2463. 659. 4757. 2524. 631. 596 656 744. 1911. 2500 2330.
3- 2249. 2859. 3032. 454. 471 512 1379 1524 H 1874. 1250. 1093. 1000
4- 2500 4027. H 2500 1910. 1600 1000 790. 758. 970 1115 700 1447. 1965. 1600 531.
5-
6-

APPARENT CHARGEABILITY mV/V.

n

1- 12.7 11.3 9.7 10 10.9 6.2 11.3 13.8 11.4 10.5 13.7
2- 8.2 12.8 5.9 8.3 8.4 11.8 8.9 13.2 13.1 10.1 13.
3- 9.7 9.4 6.6 6.5 10.8 10.7 10.0 9.7 9.9 13.3 13.5
4- 7.3 8.4 6.4 8.6 9.5 9.6 6.7 8.5 10 19.0 15
5-
6-

8242

Contractor : SCINTREX
Date : 18/11/87
Timing : 2ms
Transmitter :
Receiver : IPR-10A
Integration time : M_3
Array : DIPOLE - DIPOLE
Dipole length : 40m

5 cm

FIG. 18

The Shell Company of Australia Limited
METALS DIVISION

ROSEBERY EAST, TAS
SOUTH STITT
I.P. / RESISTIVITY SURVEY
LINE 68600N

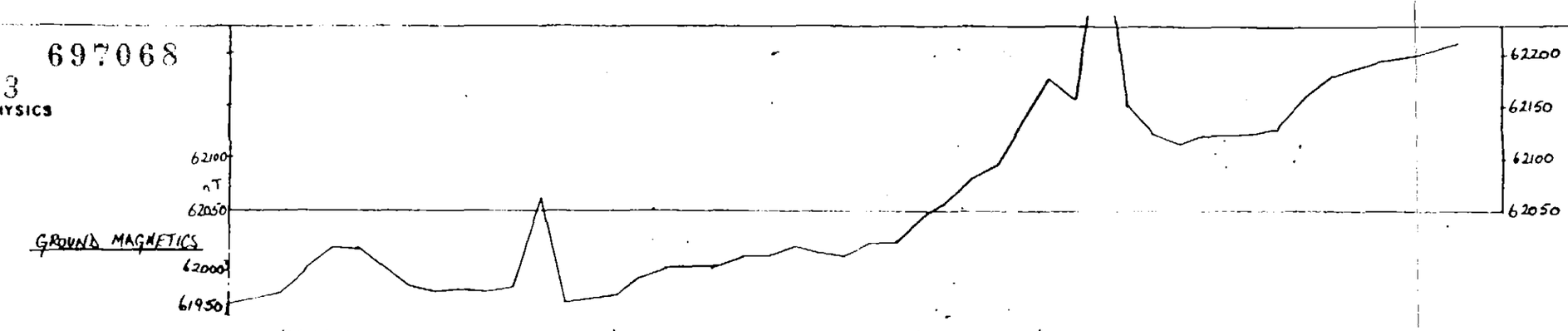
SCALE 1/2000	DATE
AUTHOR	DRAWN NH
OFFICE	REP. No. 63

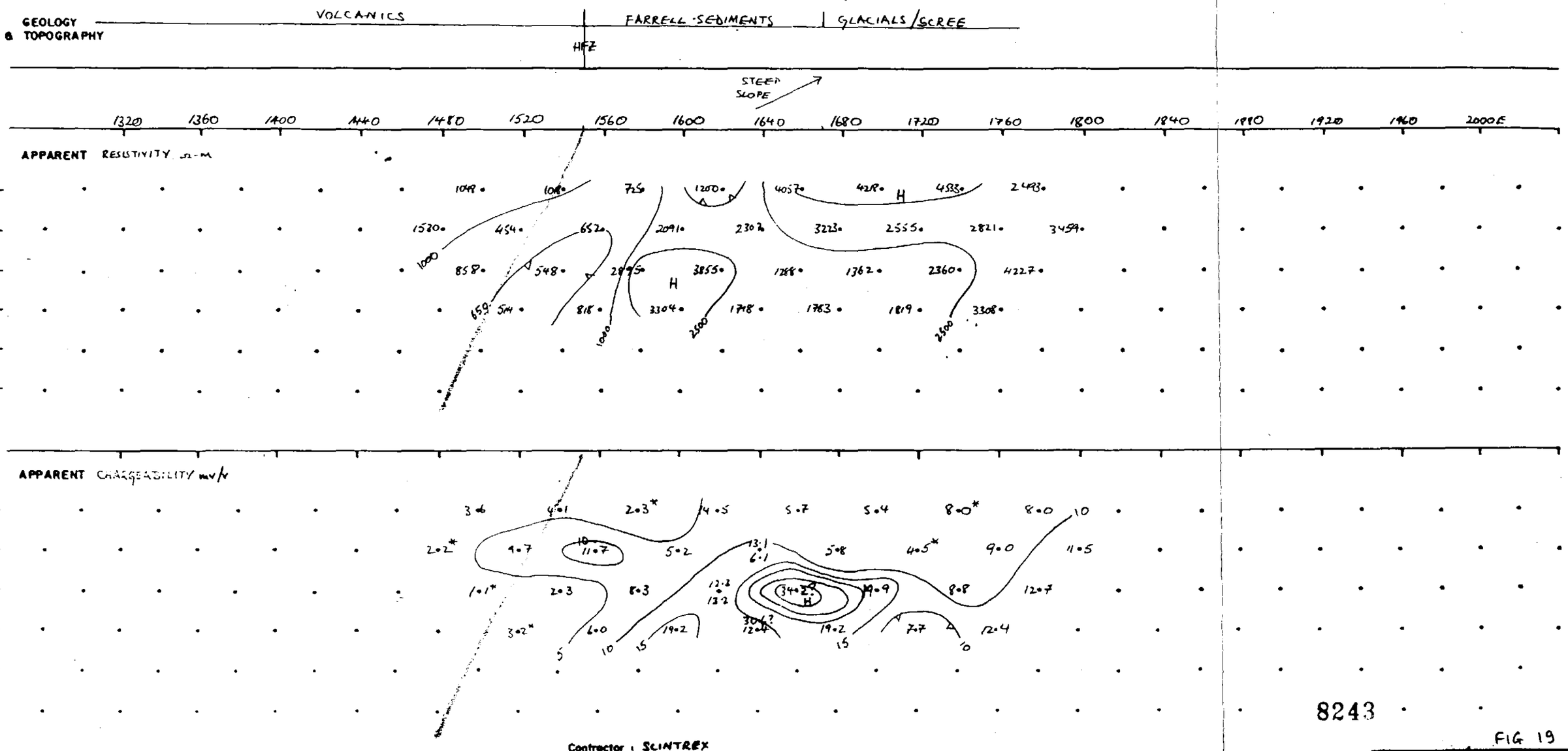
88-2809

697068

8243

AIRBORNE GEOPHYSICS
(EM, MAG, etc)





8243

FIG 19

88-2899

Contractor : SCINTREX
Date : 23/11/87
Timing : 2ms
Transmitter :
Receiver : IPR-10A
Integration time : M_3
Array : DIPOLE-DIPOLE
Dipole length : 40m

5 cm

The Shell Company of Australia Limited
METALS DIVISION

ROSEBERY EAST, TAS
SOUTH STITT
I.P. / RESISTIVITY SURVEY
ANE 68400N

SCALE 1:2000	DATE
AUTHOR	DRAWN
OFFICE	REF.No.

697069

8244

AIRBORNE GEOPHYSICS
(EM, MAG, etc)

62100 nT 62050 62000

62200 GROUND MAGNETICS 62150 nT 62100 62050

88-2839

GEOLOGY & TOPOGRAPHY: VOLCANICS | HFZ | FARRELL SEDS | LAVAS | SEDS | GLACIALS/SCREE

STEEP SLOPE

1320 1360 1400 1440 1480 1520 1560 1600 1640 1680 1720 1760 1800 1840 1880 1920 1960 2000E

APPARENT RESISTIVITY ohm-m

n = 1 2111 1500 2145 2920 H 1996 2282 2513 3952 2607
n = 2 2490 1113 1522 2272 1843 1758 1508 1734 4479 H
n = 3 1760 1769 1600 872 2470 2635 H 2620 1835 1695 1689 3499
n = 4 1837 1846 2506 2322 2413 1936 2500
n = 5
n = 6

APPARENT CHARGEABILITY mV/V

n = 1 4.7 9.0* -0.4* -4.4* -8.3* 1.5* 6.9* 3.8* 12.1*
n = 2 4.3 5 12.1 12.8 10 12.2 12.0 9.2 3.1 12.9 11.1*
n = 3 9.7 H 16.8 9.1 11.2 7.4 11.8 -3.8* 12.6
n = 4 7.6 0.0* 10.7 2.2* 5 9.4* 10
n = 5
n = 6

8244

FIG 20

* INDICATES PROBABLE EM COUPLING (DECREASING $M_1 - M_3 - M_5$)

Contractor : SCINTREX
Date : 28/11/87
Timing : 2ms
Transmitter :
Receiver : IPR-10A
Integration time : M_3
Array : DIPOLE-DIPOLE
Dipole length : 40m

5 cm

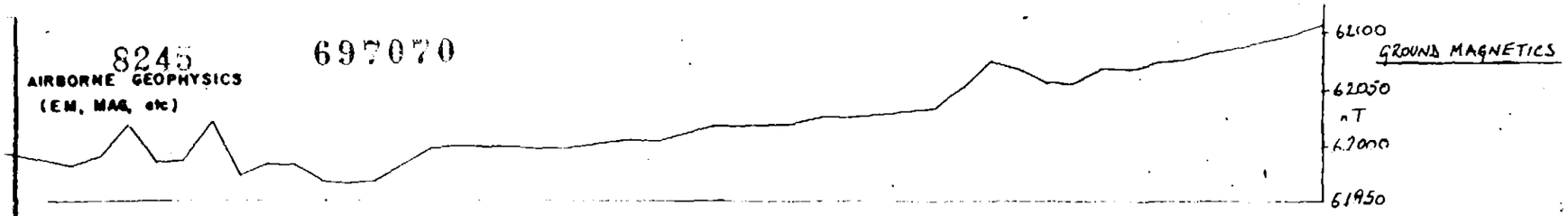
The Shell Company of Australia Limited
METALS DIVISION

ROSEBERY EAST, TAS
SOUTH STITT
I.P./RESISTIVITY SURVEY
ANE 68300N

SCALE 1:2000	DATE
AUTHOR	DRAWN
OFFICE	REP No

8245 697070

AIRBORNE GEOPHYSICS
(EM, MAG, etc)



88 - 2899

GEOLOGY & TOPOGRAPHY — VOLCANICS | FARRELL SEDIMENTS | RHYOLITE LAVAS (W. DISSEMPY) | GLACIALS/SCREE

HFZ

HEC POWER LINE @ (38)085E

STEEP SLOPE

1260 1300 1340 1380 1420 1460 1500 1540 1580 1620 1660 1700 1740 1780 1820 1860 1900 1940 1980 2020 E.

APPARENT RESISTIVITY Ω-m

n=1: 2431 2234 747 2231 3380 3774 2555 7648 2908 2500
n=2: 1780 1809 1924 976 1455 1810 2000 2285 2880 1825
n=3: 1600 1284 1016 2281 1923 765 1155 3826 3737 2073
n=4: 682 1748 2872 H 1038 1100 3132 1960 2500 3808 H 6500 4000 3720 2714
n=5:
n=6:

APPARENT CHARGEABILITY mV/V

n=1: 2·0 3·4* 0·0* 0·1* 1·2* 3·5* 3·6* 7·6* 5·6
n=2: 3·1 4·4 10·1 14·1 15·6 H 10·1* 12·8 14·1 4·8 5·1
n=3: 6·0* 7·1 14·2 9·5 -8·4* 11·0 2·3* 7·5* 8·3 8·3
n=4: 0·0* 12·9 15·0 11·0 -0·4* 1·4* 2·9* 12·3 H 9·1
n=5:
n=6:

8245

NB V. NOISY DATA IN CENTRE & WEST OF ARRAY (WET CONDITIONS).
* INDICATES PROBABLE EM COUPLING (DECREASE $M_1 - M_3 - M_5$)

Contractor : SUNTREX
Date : 29/11/87
Timing : 2ms
Transmitter :
Receiver : IPR-10A
Integration time : M_3 (650-1170 ms)
Array : BIPOLE - BIPOLE
Dipole length : 40m

5 cm

FIG 21

The Shell Company of Australia Limited METALS DIVISION	
ROSEBERY EAST, TAS	
SOUTH STITT	
I.P. / RESISTIVITY SURVEY	
LINE 68000N	
SCALE 1:2000	DATE
AUTHOR	DRAWN NH
OFFICE	REF.No
DRG.No	FIG.No. CC