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EXPLORATION LICENCE 23/79

WYNYARD, TASMANIA

REPORT FOR THE YEAR ENDED 1ST DECEMBER, 1983.

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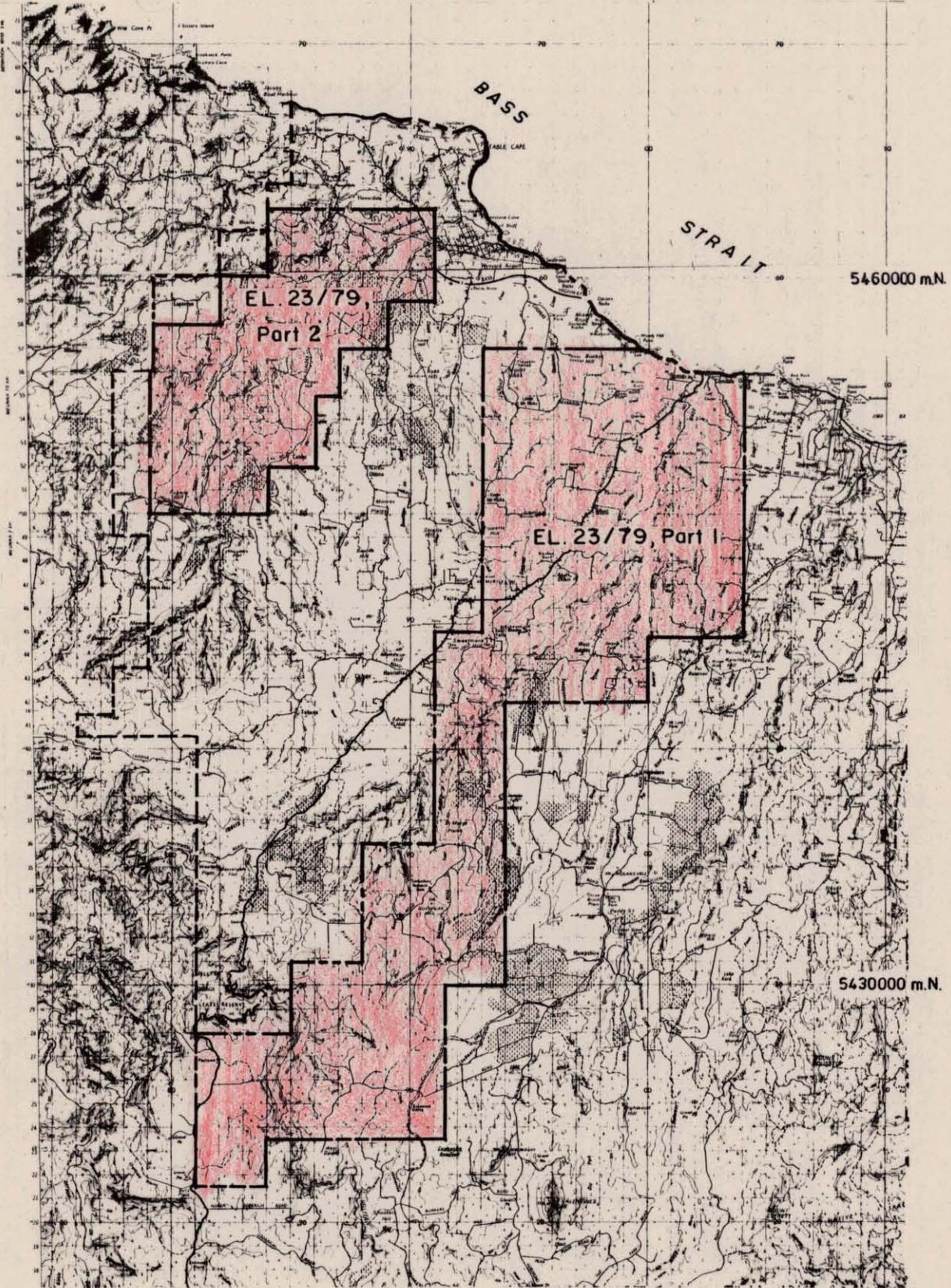
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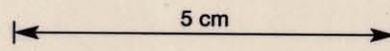
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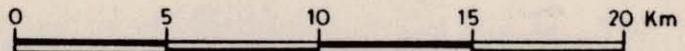
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Scale 1:250,000



This map photo copied from reduction of
1:100,000 Sheets : Table Cape, Hellyer

Centre
Melbourne

THE BROKEN HILL PROPRIETARY CO. LTD.
E.L.23/79, WYNYARD, TAS.
LOCATION MAP.

Project N^o.

Date 24-2-82
10-8-79

Drawing N^o
A4-1995

EXPLORATION LICENCE 23/79WYNYARD, TASMANIAREPORT FOR THE YEAR ENDED 1ST DECEMBER, 19831. GENERAL

Exploration Licence 23/79 of 715 square kilometres was granted to The Broken Hill Proprietary Company Limited on 14th December, 1979. The Licence area was reduced to 372 square kilometres at the end of the report period and the current expiry date is 1st December, 1984.

2. EXPLORATION PHILOSOPHY

The principal target is a massive sulphide hosted tin deposit of the Renison type. Such deposits may occur in Cambrian or Precambrian sediments, which in the licence area are often overlain by an extensive cover of Permian sediments, Jurassic dolerite and Tertiary basalt.

3. SUMMARY OF PREVIOUS WORK

Prior to the period under review the following work was carried out:

1. Literature survey and review of data.
2. Preliminary photogeological study and interpretation of Landsat image.
3. Reconnaissance geological mapping at 1:50,000 scale, with continuous updating as exploration proceeded.
4. Forty-seven line kilometres of test Dighem II airborne EM.
5. High-resolution aeromagnetic survey covering the total licence area, with eastwest lines spaced at 250 metres and a mean sensor terrain clearance of 90 metres.

6. Stream sediment and pan-concentrate geochemical sampling over areas of basement exposure.
7. Orientation water sampling programme.
8. Rock chip sampling - basement outcrop and float.
9. Interpretation of aeromagnetic data. Selection of anomalies for drill testing.

4. GEOLOGY

Within the licence area extensive flows of Tertiary basalt and Permian sediments overlie a basement consisting largely of Precambrian and Cambrian rocks which form a major structural extension of sequences in the Mt. Bischoff, Cleveland area to the south west.

The oldest rocks present are the Precambrian Keith Metamorphics which occur in a belt 8-15 km wide trending north east from Savage River to Wynyard. Rocks in this belt include pelitic schist, quartzite and minor amphibolite. Younger Precambrian rocks of the Burnie Quartzite and Slate Formation flank the Keith Metamorphics in the lower Cam River. Dolomite has not been recorded in the Precambrian rocks of the Wynyard area.

Cambrian sediments are exposed in a large window in Tertiary basalt, in the Hellyer River upstream from the Murchison Highway crossing. Rocks in the area include red-brown lithicwacke, red shale and pyrite bearing chert.

Ordovician sediments have not been located within the area. They flank a major anticline at Companion Hill to the east of the southern portion of the licence area.

Permian sediments, up to 300 metres thick, consist of a basal tillite unit, siltstone with thin oil shale and coal horizons, and sandstone.

Jurassic dolerite is exposed in the central part of the licence area where it invades both tillite and siltstone.

Tertiary rocks include basalt of highly variable thickness (locally believed to be up to 350 metres), as well as marine sediments, lacustrine clays, sands and gravels up to 60 m in thickness.

5. DRILLING PROGRAMME

5.1 General

Two targets were selected for drilling from the airborne magnetic survey and structural trends of the region. The main aims in this preliminary drilling programme were to locate the source of the magnetic anomalies and, secondly, to determine the thickness of Tertiary basalt cover and gain stratigraphic information on the basement lithologies.

The two boreholes were drilled using a Warman 250 Scout supplied by Overland Drilling Co. Total metreage was 460 m and statistics are presented below:

TABLE 1
DRILLING STATISTICS (METRES)

	TOTAL DEPTH	TOTAL PERCUSSION	TOTAL DIAMOND DRILL	BASALT THICKNESS
WY 1	147.0	79.0	68.0	147.0
WY 2	313.0	90.0	223.0	277.4
	460.0	169.0	291.0	

Graphic logs are presented in Figures 2 and 3 and descriptive logs in Appendix 1.

5.2 Borehole WY 1

This was basically a stratigraphic hole located on a prominent magnetic belt which appears to be an easterly continuation of a belt of Cambrian basic rocks and sediments interpreted as Crimson Creek equivalents. The site was chosen to intersect a magnetic anomaly of suitable size to be possibly reflecting an underlying pyrrhotitic body.

Outcrop over the area is sparse and of basalt throughout. Access to the site is by a four-wheel drive track north from Basils Road. No major problems were encountered during the course of the drilling and an adequate water supply was within pumping distance.

The source of the magnetic anomaly is attributed to a lower section of basalt underlying a major interflow unit (35m) of Tertiary sediments. Once the interpreted source depth had been exceeded it was decided to stop the hole as other interpretations indicated a probable very thick basalt cover in this area.

The Tertiary sequence is composed of a light tan mudstone with fine disseminated flakes of sericite and abundant layers of wood matter and fossil plants.

An attempt was made to calculate the number and thickness of basalt flows in core underlying the sediments. An estimated thirteen flows have been recognised with an average thickness of 2.46 metres. (See Appendix 2)

5.3 Borehole WY 2

This hole was positioned over a very sharp magnetic anomaly lying on the southwest extension of a major northeast trending fault. It is also coincident with a discrete topographic high which rises approximately 80 metres above the surrounding plain. Basalt outcrops on this knoll.

The great thickness (277.4 m) of basalt encountered in this hole negates any possible correlation of the topographic high with the underlying pre-Tertiary land surface. The fairly shallow-depth aeromagnetic anomaly is directly reflecting a small hill of relatively magnetic basalt. (See Figure 6)

An estimated fifty four separate lava flows of varying thicknesses, together with numerous periods of erosion and deposition, suggest this area may have been a basin during the Tertiary. Disseminated coarse pyrite is prevalent in the basalts.

The base of the Tertiary is marked by a sequence of silcrete and clay. Minor pyrite was also found in this unit.

The uppermost six metres of Cambrian basement consists of argillaceous iron stained chert which has been extensively veined (quartz, carbonate), fractured and brecciated. This overlies red-brown shales which are likely correlates of the Crimson Creek formation south of the licence area.

Sampling:

Sediments underlying the basalt in borehole WY 2 were chip sampled and analysed for copper, lead, zinc, silver, arsenic, tin and tungsten. Results are fairly uniform for each rock type and no anomalous values occur (Appendix 3)

6. GEOPHYSICS

Since analysis of the aeromagnetic data was the principal technique used to identify drilling targets, magnetic susceptibility measurements were carried out on core samples to quantify their magnetization. Measurements of susceptibility were taken every metre and the results are plotted in Figure 7. The Tertiary basalts and basalt derived sediments show moderate to high susceptibility consistent with the airborne magnetic anomalies which they produce.

7. GEOCHEMISTRY

7.1 General

During the 1982-83 summer field season thirty-two stream sediment and fifty-nine pan concentrate samples were collected from the Hellyer, Cam, Flowerdale, Inglis and Seabrook drainages. These rivers were selected as they directly drain areas of known Cambrian and Precambrian outcrop.

Initially both stream sediment and pan concentrate samples were collected from each site but it became obvious that the pan concentrate results were giving a greater indication of anomalous areas and the stream sediment sampling was discontinued. Some geological mapping complimented this sampling but in the latter half of the programme sampling was carried out by non-technical personnel. In some areas extensions were noted to the known Precambrian outcrop areas.

Several rocks chip samples were collected from quarries in the Cam and Guide river areas and from the stream beds themselves.

The following Table summarizes samples collected during the report period.

TABLE 2

SAMPLE SERIES - 1983

			No. of samples
Stream Sediment		-20# field/-80# lab	32
	T64/70-160		
Pan Concentrate		Denoted by a P suffix, eg. T64/160P	59
Rock Chip	T64/500-517		18
Petrology	T64/900-903		4
	WY 2-1		1
Core Chip	BE 5032-5041		
	WY 2		10
Previous Sampling Mentioned in Report			
Stream Sediment	HEL 1-16	-80#	
	WYN 51-69		

7.2 Procedures

All stream sediment samples were sieved to minus 20 mesh in the field and further sieved to minus 80 mesh in the laboratory. Analyses were carried out by Analabs for copper, lead, zinc, tin, and tungsten.

Pan concentrate samples were initially taken from the same site and panned until heavy minerals could be distinguished. These were weighed at the laboratory to allow more direct comparison between the results and analysed for tin and tungsten only.

At all samples sites orange flagging tape was left to mark the position and a sample description card filled out to record local details. An example of this is included at the end of Appendix 5. All stream and pan concentrate sample sites are shown in Figures 8 and 9 while analytical results are given in Appendices 4 (rock chips) and 5 (stream sediment and pan concentrate samples).

Rock chip samples were crushed at the laboratory and analysed as for drill core. Several of these rock samples were also sent to Central Mineralogical Services for petrological descriptions. (Appendix 4).

7.3 RESULTS

Pan concentrates:

Two singularly anomalous pan concentrate results for sample numbers 81P (1200 ppm tin) and 128P (1050 ppm tin) are immediately obvious. These drain Tertiary gravels and Tertiary basalt respectively and together with 144P (387 ppm Sn) may warrant further follow up work. The Seabrook Creek area is uniformly high in tin values (50-200 ppm) whereas the Hellyer, Cam and Flowerdale drainages are uniformly low. (5 ppm Sn)

There are various possible sources for the tin being detected in the anomalous drainage systems, viz Tertiary sediments, Permian tillite and Basement exposures. A report is attached as Appendix 6 which examines the results in some detail. It is considered probable that most of the tin is being derived from Tertiary sediments. If this is true large parts of the area sampled will thus be naturally contaminated and this greatly curtails effective anomaly recognition within the prospective Precambrian and Cambrian sediments.

Rock chips:

Two quarries with Precambrian exposure were located at pan concentrate sample sites 100P and 118P. Both contained pyritic black shales and heavily veined sandstones and quartzites. Two rockchip samples gave relatively high Tin values (55,190 ppm) but follow-up sampling failed to duplicate the earlier results.

Several samples of pyrite rich veins and pods in quartzite float from the Cam River at site 124P were also analysed. These returned high arsenic values (450;700 ppm) but are probably pebbles washed out of the Permian tillites.

8. FUTURE PROGRAMME

The Exploration Licence has been renewed over a reduced area of 372 square kilometres, this being made up of two separated portions. The south-eastern and larger portion (Area 1) is closest to the prospective Meredith Granite - Housetop Granite alignment. Remaining aeromagnetic anomalies of interest will be modelled and if warranted tested by gridding and ground EM geophysical surveys. Any further drilling will be dependent on results.

The second block of ground (Area 2) covers three aeromagnetic anomalies within the Arthur Lineament, with broadly coincident anomalous tin values in pan concentrate samples. The geophysical anomalies are probably due either to basalt cover or to deep ultramafic sources. However, these areas will be re-examined using a combination of geological mapping and further pan concentrate sampling. A decision will then be made as to whether ground geophysics is warranted.

9. EXPENDITURE

The expenditure debited to Exploration Licence 23/79 during the year ended 1st December, 1983 was:

Wages and Salaries	19,878
Field Support	3,626
Drilling	8,612
Vehicles	1,374
Surveying	157
Equipment	429
Sample Analysis	2,826
Tenement Fees	4,666
Capital Purchases	6,148
Services	3,708
Administration and Overheads	5,142
	<hr/>
	\$56,566
	<hr/>

Total expenditure to December 1983 on Exploration Licence 23/79 is \$160,880.

This report is submitted to the Mines Department as required by Schedule A of Exploration Licence 23/79.

01A

RL 540m

50

Basalt, grey, medium grainsize, zeolites common.

79.0

Mudstone, light brown, abundant plant matter

100

TERTIARY

113.83

Basalt, grey, medium grainsize, approximately 13 flows, average flow thickness 2.5 metres.

TD 147 metres

Vertical scale 1:500

5 cm

Fig. 2

Centre
HOBART

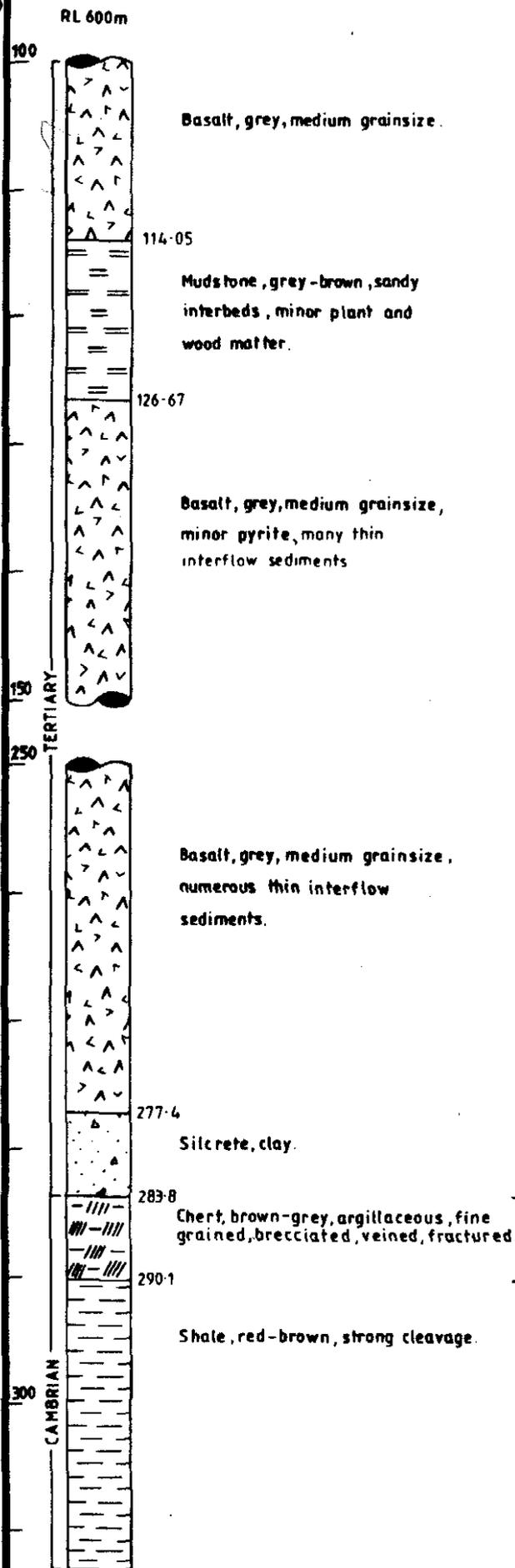
THE BROKEN HILL PROPRIETARY CO. LTD.
DRILL HOLE WY1 (ANOMALY A)
GRAPHIC LOG

Project No.
T640

Drawing No.

Date
16-5-83

015



Sample No	Interval	Cu	Pb	Zn	Ag	As	Sn	W
BE 5032	277.4 - 280.1	25	-	15	-	50	5	-
BE 5033	280.1 - 282.5	40	5	30	-	-	7	-
BE 5034	282.5 - 283.8	95	25	190	-	50	10	25
BE 5035	283.8 - 287.9	95	-	50	-	-	3	-
BE 5036	287.9 - 290.1	95	-	45	-	-	3	-
BE 5037	290.1 - 294.3	50	25	165	-	-	9	-
BE 5038	294.3 - 297.1	25	15	155	-	-	9	-
BE 5039	297.1 - 302.2	65	35	145	-	-	10	-
BE 5040	302.2 - 307.0	20	30	135	-	-	9	-
BE 5041	307.0 - 313.0	25	20	120	-	-	3	-

Vertical scale 1:500

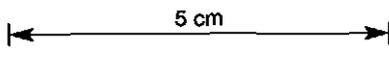


Fig. 3

APPENDIX 1

DRILL LOGS

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DRILL LOG HEADER SHEET.

Project:	TIN, TASMANIA	Hole No:	WY.1.
Prospect:	WYNYARD T640	Total depth:	147.0m
Local Grid co-ords.	3895000	Bearing:	
AMG co-ords	CQ 895 268 5426200	Depression	VERTICAL
Drilling Co:	OVERLAND DRILLING Co.	R.L. Collar:	
Drill type:	WARMAN 250	Commenced:	5/1/83
Driller:	W. EVERSOFEN	Completed:	8/1/83
	B. LOVELL	Logged by:	S.P. KERBER
		Sampled by:	S.P. KERBER

Hole Size		From	To	Total
Non-core	HQ	0	79.0	79.0
Core	BQ	79.0	147.0	68.0
Casing				
Casing left.				15

Core storage:	SCAMANDER
No. of trays.	6 CORE / CHIP
Sample storage	
Geochem. Lab.	
Analytical reports	
Min. and Pet Lab.	
Min and Pet report	

Hole Survey Data: Susceptibility - 2m intervals.

Summary Log: TERTIARY 0 - 79.0 Basalt
 79.0 - 113.83 Mudstone
 113.83 - 147.0 Basalt
 E.O.H. 147.0m

Comments:

Project WYNVARD T640

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Sheet 1 of 1

Core size	DRILLING			DESCRIPTIVE			LOG			INTERSECTION ANGLE LCA			Box No	
	From m	To	Inter- sected	Recov- ered	% Recovery	From m	To	LITHOLOGY	MINERALISATION	Sample No	Bedding	Veins		Other LCA's
NEW CORING						0	2.0	SOIL brown, grey basalt chips.						
						2.0	79.0	BASALT 2.0-18.0 Basalt, grey, high clay content 18.0-79.0 Basalt, grey, abundant reolite						
	79.0	81.0	0.02	0.02	1.0	79.0	113.83	MUDSTONE light brown, fine, siltstone laminated, abundant plant material.			0°			1
	81.0	84.0	3.0	0.82	27.3									
	84.0	86.6	2.6	-	-									
	86.6	90.0	3.4	0.68	20.0									
	90.0	93.0	3.0	1.26	42.0									
	93.0	96.0	3.0	2.54	84.7									
	96.0	99.0	3.0	1.25	41.7									
	99.0	102.1	3.1	1.71	55.1									
102.1	105.1	3.0	2.87	95.7									2	
105.1	111.5	6.39	-	-										
CORING	111.5	114.5	3.0	2.92	97.3	113.83	147.0	BASALT light grey, medium grained. 113.83-114.46 Basalt, amygdaloidal, sun vugs, sparse and reolite 114.46-117.9 Basalt, dense, minor reolite black clay in some amygdalae				23°		
	114.5	115.5	1.0	1.0	100							65°		
	115.5	117.5	2.0	2.0	100									
	117.5	120.0	2.0	2.0	100			117.9-118.97 Basalt, vesicular, sun vugs, reolite common					3	
B/G								118.97-120.03 Basalt, dense						
	120.0	122.8	2.8	2.62	93.6			120.03-123.57 Basalt, vesicular				70°		
	122.8	125.8	3.0	2.9	96			123.57-124.7 Basalt, very altered, black clay matrix abundant, white fragments of basalt, sands, silts and serpentine. Fracture filling.						
								124.7-125.8 Basalt, very weathered.						
	125.8	128.9	3.1	3.1	100			125.8-128.0 Basalt, dense, fresh, small iron clay filled amygdalae. 128.0-128.62 Basalt, vesicular, abundant reolite, coarse grained				0°	4	
	128.9	131.9	3.0	3.0	100			128.62-129.02 Basalt, denser, reolite 129.02-130.25 Basalt, vesicular, reolite and amygdalae						
	131.9	134.9	3.0	3.0	100			130.25-132.86 Basalt, very dense, coarse grained. 132.86-134.25 Basalt, vesicular, reolite amygdalae				0°		
	134.9	137.9	3.0	3.0	100			134.25-137.25 Basalt, very dense, small reolite show a flow 75° to rock.					5	
	137.9	138.9	1.0	0.89	89			137.25-137.6 Basalt, amygdaloidal, sun vugs, reolite fillings.						
	138.9	142.0	3.1	3.1	100			137.6-140.1 Basalt, dense.						

Project WYNYARD T640

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Drillhole No. WY. 1

Sheet 2 of 2

019

Core size	DRILLING					DESCRIPTIVE		LOG			INTERSECTION ANGLE LCA			Box No	
	From m	To m	Inter- sected m	Recov- ered m	% Recovery	From m	To m	LITHOLOGY	MINERALISATION	Sample No	Bedding	Veins	Other fract.		Petrology etc.
B G CORE								140.1-141.45 Basalt, vesicular and amygdaloidal. Abundant relictos							
								141.45-141.8 Basalt, dense							
								141.8-142.0 Basalt, weathered. Altered to green clay.							
	142.0	144.9	2.9	2.9	100			142.0-143.23 Basalt, dense loose grained							6
								143.23-144.5 Basalt, amygdaloidal, relictos, minor clay.							
								144.5-145.76 Basalt, dense medium grained					0°		
	144.9	147.0	2.1	2.0	95.2			145.76-147.0 Basalt, vesicular and amygdaloidal.							
								E.O.H. 147.0m.							

469020

Project WYNYARD T640

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Drillhole No WY.2

Sheet 1 of 5

021

Core Size	DRILLING			Inter- sected m	Recovery %	From		LITHOLOGY	MINERALISATION	Sample No	INTERSECTION ANGLE LCA			Box No	
	From	To	To			From	To				Bedding	Veins	Other Contact Fracture		Petrology etc.
NOM CORING						0	6.0	SOIL brown clay and weathered basalt chips.							
						6.0	8.0	CLAY white, puggy with coarse grey basalt chips.							
						8.0	14.0	CLAY light grey brown with small, round basalt							
						14.0	26.0	CLAY grey with fresh grey basalt chips.							
						26.0	90.0	BASALT grey chips, minor scudite.							
CORING						90.0	114.05	BASALT grey medium grained.							
		90.0	93.3	3.3	3.0	90.9		90.0-90.8 Basalt, amygdaloidal scudite and scudite filling vugs.						1	
								90.8-92.88 Basalt, dense abundant 2mm olivine phenocrysts.							
		93.3	96.4	3.1	3.1	100		92.88-95.48 Basalt, amygdaloidal, abundant scudites							
		96.4	99.5	3.1	2.75	95.2		95.48-98.35 Basalt, dense 2mm amygdaloids filled by green clay.						2	
		99.5	102.5	3.0	2.91	97		98.35-100.5 Basalt, amygdaloidal scudites abundant.							
		102.5	103.8	1.3	1.3	100		100.5-104.6 Basalt, dense minor iron oxide stains.							
		103.8	105.5	1.7	1.7	100		104.6-105.3 Basalt, amygdaloidal scudites, minor serpentine.							3
		105.5	108.5	3.0	3.0	100		105.3-108.08 Basalt, dense, serpentine on fracture faces.							
		108.5	111.5	3.0	2.98	99.3		108.08-109.04 Basalt, amygdaloidal minor scudites, mostly serpentine black clay mineral.							
								109.04-109.94 Basalt, dense.							
								109.94-111.0 Basalt, amygdaloidal, clay fillings.							
		111.5	114.5	3.0	2.8	93.3		111.0-113.3 Basalt, dense, scudite replacement.							4
								113.3-113.8 Sand, grey, coarse grained, silty, fracture fill, basalt fragments.							
								113.8-114.05 Basalt, dense.							
NOM CORING						114.05	126.67	MUDSTONE grey brown, fine grained, sandy beds.							
								118.05-114.25 Sand, silt, medium grained, minor plank and wood fragments.							
		114.5	117.5	3.0	2.0	66.6		114.25-118.59 Sand, silty, white, fine grained, unconsolidated, wood fragments, scudite.							
		117.5	117.7	0.2	0.2	100		118.59-120.5 Silt, light brown, very fine no wood fragments.							
		117.7	120.5	2.8	2.64	94.3		120.5-126.67 Mudstone, light brown, abundant scudite flakes.							5
NOM CORING		120.5	123.5	3.0	3.05	100									
		123.5	126.5	3.0	2.8	93.3									
		126.5	126.67	0.17	0.17	100		126.67-127.4 BASALT grey, medium grained, numerous thin sections of interflow sediments.							
	126.5	128.6	2.1	2.1	100		126.67-127.2 Basalt, dark grey-green, medium grained, contact with mudstone 63°							6	
							2mm rounded vesicles, 35cm mudstone, sand layer.								63°
							127.2-127.7 Basalt, grey-green, 1m sandy beds.								

469022

Project WYNYARD T640

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Drillhole No WY.2

Sheet 2 of 5

DRILLING								DESCRIPTIVE		LOG		INTERSECTION ANGLE LCA					
Core Size	From m	To	Inter- sected m	Recov- ered m	% Recovery	From m	To	LITHOLOGY	MINERALISATION	Sample No	Bedding	Veins	Other	Petrology etc	Box No		
	128.6	130.9	2.3	2.3	100			127.7-128.05 Mudstone, light grey, sandy in part. 128.05-128.82 Sand, light brown, coarse grained, unconsolidated, clay fragments, minor wood, very fragmented at basalt contact. 128.82-129.18 Basalt, dark grey, green, dense. 129.18-130.2 Mudstone, light brown, quartz sand, coarse grained. 130.2-130.6 Basalt, dense, 1/2 mm vesicles.									
	130.9	134.0	3.1	2.9	93.5			130.6-131.78 Mudstone, sandy 131.78-132.13 Sand, silty, fine grained, abundant sericite 132.13-132.77 Sand, coarse grained 132.77-133.22 Basalt, dense, green phenocrysts of pyroxene / olivine, calcite veining 133.22-133.62 Sand, grey, coarse grained 133.62-133.97 Basalt, calcite veining, dense. 133.97-134.42 Sand, grey, very coarse. 134.42-135.6 Basalt, dense, calcite on fracture faces, 1-2mm phenocrysts of olivine.									
CORING	134.0	137.1	3.1	3.0	96.8			135.6-136.23 Sand, grey, very coarse 136.23-142.7 Silt, grey, wood layers common 0° to core. 142.7-143.28 Silt, silty, black, carbonaceous.									
	137.1	140.2	3.1	2.92	94.2			143.28-147.6 Basalt, calcite amygdaloides dense 73° flow, dense.									
	140.2	143.3	3.1	3.1	100			147.6-148.5 Shale, black, carbonaceous.									
	143.3	144.4	1.1	1.1	100			148.5-150.0 Basalt, amygdaloidal, iddingsite, weathered.									
	144.4	146.2	1.8	1.7	94.4			150.0-152.72 Basalt, vesicular, elongated and flow 37° to core. 152.72-155.62 Basalt, dense, zoolites abundant.									
	146.2	148.0	1.8	1.45	80.5			155.62-156.9 Basalt, vesicular, vugs rounded.									
	148.0	150.5	2.5	1.98	79.2			156.9-157.6 Basalt, slightly dense									
	150.5	153.5	3.0	3.0	100			157.6-158.7 Basalt, vesicular.									
	153.5	156.5	3.0	3.0	100			158.7-160.42 Basalt, dense									
N Q	156.5	159.5	3.0	3.0	100			160.42-161.2 Basalt, vesicular 161.2-161.4 Basalt, dense 161.4-161.6 Basalt, vesicular									
	159.5	161.6	2.1	2.1	100			161.6-162.0 Basalt, amygdaloidal, clayey. 162.0-164.3 Basalt, vesicular, weathered.									
	161.6	162.0	0.4	0.27	67.5			164.3-164.5 Basalt, dense									
	162.0	164.0	2.0	2.0	100			164.5-164.93 Basalt, very dense, calcite, chalcocony veins.									
	164.0	167.1	3.1	3.1	100			164.93-165.48 Basalt, vesicular, vugs flow at 30° to core.									

022

469023

Project WYNYARD T640

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole No. WY. 2.

Sheet 3 of 5

023

DRILLING								DESCRIPTIVE		LOG	INTERSECTION ANGLE LCA				
Core Size	From	To	Inter- sected	Recov- ered	% Recovery	From	To	LITHOLOGY	MINERALISATION	Sample No.	Bedding	Veins	Other Lenses/Fract.	Petrology etc.	Box No.
								BASALT							
								165.48-166.63 Basalt, dense							
								166.63-167.1 Basalt, vesicular							
	167.1	170.2	3.1	3.1	100			167.1-168.7 Basalt, weathered, clayey							
								168.7-169.53 Basalt, dense							
	170.2	173.3	3.1	3.05	98.3			169.53-173.18 Basalt, vesicular, zeolite common							12
	173.3	176.4	3.1	3.1	100			173.18-177.65 Basalt, dense, coarse grained, vesicles, flow defined by cleav 45° to core.							
	176.4	179.4	3.0	3.0	100			177.65-179.4 Basalt, vesicular, clayey							13
CORING	179.4	182.4	3.0	2.65	88.3			179.4-182.45 Basalt, dense, very fine grained, calcite veining				62°			
	182.4	184.7	2.3	2.25	97.8			181.45-182.9 Basalt, becoming vesicular gradually							
								182.9-184.1 Basalt, dense							
	184.7	187.6	2.9	2.9	100			184.1-185.2 Basalt, vesicular							
								185.2-185.62 Basalt, clayey, weathered, in-fill fragments.							
								185.62-186.92 Silt, sandy, white, fine grained							14
NQ								186.92-186.92 Basalt / Sand vertical contact.							
								186.92-186.92 Basalt, dense							
								186.92-187.14 Infill, fracture fill, clay, basalt fragments, coarse sands							
	187.6	189.5	2.9	1.85	63.7			187.14-187.8 Basalt, weathered							
	189.5	192.5	3.0	3.0	100			187.8-192.42 Basalt, dense					24°		15
	192.5	195.5	3.0	3.0	100			192.43-192.62 Basalt, amygdaloidal, zeolite and calcite							
								192.62-193.92 Basalt, dense							
	195.5	198.0	2.5	2.5	100			193.92-197.38 Basalt, amygdaloidal, 1/2 cm approx. calcite, zeolite 73° flow							
								197.38-197.76 Basalt, clayey, chlorite alteration							
	198.0	201.0	3.0	3.0	100			197.76-198.58 Basalt, dense, iddingsite / howlite replacing plagioclase							16
								198.58-198.73 Basalt, amygdaloidal, clayey, chlorite replacement							
	201.0	202.2	1.2	1.2	100			198.73-202.2 Basalt, dense, iddingsite replacing olivine							
CORING	202.2	203.2	1.0	0.98	98			202.2-202.55 Basalt, amygdaloidal, calcite / zeolite							
	203.2	204.5	1.3	1.2	92.3			202.55-204.2 Basalt, dense							
	204.5	205.6	1.1	1.0	90.9			204.3-207.68 Basalt, weathered, sandy beds, grey-green clay							
	205.6	205.8	1.2	0.14	70										
BQ	205.8	207.5	1.7	1.7	100										17
	207.5	209.9	2.4	2.0	83.3			207.68-222.8 Basalt, dense, few amygdalae, zeolite, green clay							
	209.9	213.0	3.1	2.9	93.5										
	213.0	215.6	2.6	2.0	76.9										
	215.6	218.6	3.0	3.0	100										18

469024

Project WYNYARD T640

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole No. WY 2.

Sheet 4 of 5

Core size	DRILLING					From m	To m	DESCRIPTIVE LITHOLOGY	LOG	INTERSECTION ANGLE LCA				Petrology etc.	Box #
	From m	To	Inter- sected m	Recovery %	% Recovery					Sample #	Bedding	Veins	Dip LONG		
	218.6	221.7	3.1	3.1	100			BASALT							
	221.7	224.1	2.4	2.4	100			223.8-224.9 Basalt, crystalloid clayey	Py. in amygdaloids and fractures						
	224.1	224.5	1.4	1.36	97.1										
	224.5	225.5	1.0	1.0	100			224.9-225.4 Basalt, dense							
	225.5	227.5	2.0	1.93	96			225.4-226.7 Basalt, coarse grained, dense 226.72-227.92 Sandstone, grey	Py. veining Py. fracture faces.	90°		2°	71°		
	227.5	228.0	0.5	0.5	100			227.92-228.55 Basalt, dense, coarse pyrite	Py. disseminated, abundant.						19
	228.0	230.8	2.8	2.8	100			228.55-229.0 Siltstone, grey to white, veining abundant, unweir basal contact.				70°			
	230.8	232.7	1.9	1.9	100			229.0-230.28 Basalt, dense 230.28-232.04 Siltstone, white, quartz and feldspar pebbles lower down, clayey	Py. dissem and on fractures.			26°			
	232.7	232.8	0.1	0.1	100			232.04-232.57 Basalt, dense, iron vesicles, malite and calcite in vugs.							
	232.8	234.3	1.5	1.5	100			232.57-232.76 Siltstone, white, some angular fragments, clayey					77°		
								232.76-233.24 Basalt, dense 233.24-233.5 Infill, fragmented siltstone and basalt.							
								233.5-234.1 Basalt, dense							
	234.3	236.5	2.2	2.2	100			234.1-235.37 Siltstone, pebbly in part 235.37-236.24 Basalt, dense, iron malite, fresh phenocrysts.	py. disseminated, coarse			27°	2°	40°	
ING	236.5	239.5	3.0	3.0	100			236.24-239.2 Siltstone, siltstone, lost 10cm fragmented and pebbly				0°			20
I	239.5	241.0	1.1	1.05	95.5			239.2-241.0 Basalt, dense, clayey	py. on fractures, abundant.						
R	241.0	241.8	0.4	0.3	75			241.0-242.78 Siltstone, grey							
C	241.8	243.5	1.7	1.7	100			242.78-244.7 Basalt, dense, black, coarse grained, clay filled fractures					33°		
O	243.5	245.4	1.9	1.9	100										
	245.4	246.2	0.8	0.72	90										
	246.2	246.6	0.4	0.4	100										21
B	246.6	248.0	1.4	0.7	50			246.7-247.4 Basalt, weathered, clayey							
B	248.0	248.5	0.5	0.47	94			247.4-247.4 Basalt, clayey, fractured, dense.	Py. very coarse abundant.						
	248.5	250.0	1.5	1.5	100										
	250.0	251.0	2.2	2.0	90.9										
	251.0	252.9	0.7	0.7	100										
	252.9	255.5	2.6	2.55	98										
	255.5	256.3	0.8	0.8	100										22
	256.3	258.5	2.2	2.18	99										
	258.5	260.1	1.6	1.58	98.7										
	260.1	261.8	1.7	1.72	100										
	261.8	263.6	1.8	1.65	91.7										

024

469025

Project WYNYARD T640

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole No. WY.2

Sheet 5 of 5

DRILLING							DESCRIPTIVE				LOG			INTERSECTION ANGLE LCA				Box No
Core Size	From m	To m	Inter-Recorded m	Recovery %	% Recovered	From m	To m	LITHOLOGY	MINERALISATION	Sample No	Bedding	Veins	Other CONTACT FRACT	Petrology etc	Box No			
	263.6	266.2	2.6	2.61	100										23			
	266.2	266.7	0.5	0.5	100													
	266.7	268.1	1.4	1.4	100													
	268.1	270.0	1.9	1.84	96.8													
	270.0	272.0	2.0	2.0	100													
	272.0	273.3	1.3	1.3	100													
	273.3	275.4	2.1	2.1	100										24			
	275.4	275.9	0.5	0.5	100													
	275.9	277.3	1.4	1.4	100													
	277.3	279.1	1.8	1.0	55.6	277.4	283.8	TERTIARY SILURETE / CLAY.										
	279.1	280.1	1.0	1.0	100			277.4-280.15 Silcrete, white heavily veined.		RE 5032		58°						
	280.1	280.6	0.5	0.25	50			280.15-282.5 Silcrete / chert dark grey.	py	RE 5033								
	280.6	281.5	0.9	0.25	27.7													
	281.5	282.0	0.5	0.35	70													
R	282.0	282.5	0.5	0.3	60													
I	282.5	284.0	1.5	1.5	100			282.5-283.8 Clay, blue-grey, pebbles 1-2mm, silcrete, chert.		RE 5034					25			
N																		
R						283.8	290.1	CHERT										
O	284.0	285.2	1.2	0.5	41.6			283.8-290.1 Chert, grey-white banding, microfaulting, numerous veins, brecciated.		RE 5035								
U	285.2	286.4	1.2	1.1	91.7			quartz veins, stonework, iron staining.										
	286.4	287.9	1.5	1.45	96.7													
	287.9	288.5	0.6	0.4	66.6					RE 5036								
B	288.5	289.2	0.7	0.7	100										WY.2-288.1m Argillaceous chert.			
R	289.2	289.8	0.6	0.6	100													
	289.8	290.2	0.4	0.4	100	290.1	313.0	SHALE										
	290.2	293.3	3.1	3.1	100			290.1-294.3 Shale, red-brown.		RE 5037	70°		37° 70'					
	293.3	296.0	2.7	2.7	100			294.3-297.2 Shale, pale green.		RE 5038								
	296.0	297.5	1.5	1.5	100			297.2-313.0 Shale, red-brown.		RE 5039								
	297.5	299.1	1.6	1.55	96.8													
	299.1	302.2	3.1	3.1	100													
	302.2	304.3	2.1	2.0	95.2					RE 5040								
	304.3	305.0	0.7	0.6	85.7													
	305.0	306.0	1.0	1.0	100													
	306.0	307.0	1.0	0.85	85													
	307.0	308.7	1.7	1.06	62.4			E.O.H. 313.0m		RE 5041								
	308.7	310.1	1.4	1.35	96.4													

APPENDIX 2

BASALT FLOW THICKNESS (WY1 AND WY2)

027

469028

ESTIMATED TERTIARY BASALT FLOW THICKNESS

BOREHOLE WY1

<u>From</u>	<u>To</u>	<u>Thickness</u>
113.83	117.90	4.07 •
117.90	120.03	2.13 •
120.03	123.57	3.54 •
124.70	128.0	3.3 •
128.0	129.02	1.02 ×
129.02	132.86	3.84 •
132.86	137.90	5.04 •
137.90	139.25	1.35 ×
139.25	140.1	0.85 ×
140.1	141.8	1.70 ×
141.8	143.28	1.48 ×
143.28	145.76	2.48 •
145.76	147.0	1.24 ×
		<hr/>
		32.04

Total number of flows below 113.83 metres - 13

Approximate average thickness of flows - 2.46m

028

469029

BOREHOLE WY2

	<u>From</u>	<u>To</u>	<u>Thickness</u>
54	90.0	92.88	2.88
53	92.88	98.35	5.47
52	98.35	103.70	5.25
51	103.70	104.60	0.90
50	104.60	108.08	3.48
49	108.08	109.02	0.94
48	109.94	112.6	2.66
47	112.80	113.3	0.50
46	113.60	114.05	0.45
45	126.67	126.80	0.13 x
44	127.20	127.70	0.50 x
43	128.82	129.18	0.36 x
42	130.3	130.6	0.30 x
41	132.77	133.22	0.45 x
40	133.62	133.97	0.35 x
39	134.43	135.6	1.17 Analysis 830776-Q
38	143.38	147.6	4.30
37	148.5	148.6	0.10 x
36	148.68	150.0	1.32
35	150.0	155.62	5.62
34	155.62	157.6	1.98
33	157.6	160.42	2.82
32	160.42	161.4	0.98 x
31	161.4	162.0	0.6 x
30	162.0	164.93	2.93
29	164.93	166.63	1.7
28	166.63	167.1	0.47 x
27	167.1	169.53	2.43
26	169.53	177.65	8.12 Analysis 830764-Q
25	177.65	182.05	4.4
24	182.05	184.1	2.05
23	184.1	185.2	1.1
22	186.12	186.92	0.8 x
21	187.14	192.43	5.29
20	192.43	193.92	1.49
19	193.92	197.38	3.46
18	197.38	198.58	1.2
17	198.58	198.85	0.27 x
16	198.85	202.2	3.35
15	202.2	204.3	2.1
14	204.3	204.6	0.3 x
13	204.68	205.2	0.52 x
12	205.28	223.8	18.52 Analysis 830765-R
11	223.8	225.4	1.6
10	225.4	226.93	1.53
9	227.92	228.55	0.63 x
8	229.0	230.28	1.28
7	232.04	232.37	0.33 x
6	233.16	233.26	0.1
5	233.5	234.1 ?	0.6 x
4	235.37	236.34	0.97 x
3	239.2	241.0	1.8
2	242.78	246.7	3.92
1	246.7	277.4	30.7 - Analysis 830766-R

Total number of flows - 54

Average flow thickness - 2.73m

029

APPENDIX 3

DRILLCORE - SAMPLE RESULTS

AND PETROLOGY

030

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469031

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

BE 14.4 08 1878 23.3.88 806517 1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Hg	Hs	Sn	W		
1	5032	25	X	15	X	50	5	X		
2	5033	40	5	30	X	X	7	X		
3	5034	95	25	190	X	50	10	X		
4	5035	95	X	50	X	X	3	X		
5	5036	95	X	45	X	X	3	X		
6	5037	50	25	165	X	X	9	X		
7	5038	25	15	155	X	X	9	X		
8	5039	65	35	145	X	X	10	X		
9	5040	20	30	135	X	X	9	X		
10	5041	25	20	120	X	X	3	X		

031

MRL NO. FIELD NO. PS/PTS/TS	ROCK TYPE STAIN HAND SPECIMEN	MINERALOGY	FABRIC & TEXTURE	COMMENTS
MRL 14572 WY 2/1 288.1m TS	Argillaceous, iron-stained chert Stain: Alizarin (-) H/S: Brecciated extensively veined and fractured dark brown and bluish-grey rock. Cherty-looking bluish material generally appears to be veining and replacing the brown, but this is uncertain.	(D) Quartz; (M) Illite/sericite, Carbonate, Opagues; (T) Muscovite.	Extremely fine-grained (largely submicro- scopic) siliceous rock, almost isotropic. Mottled with brown (?iron oxide stain), peppered with v. fine opaques and illite/ sericite. Occasional small muscovite plates Stockwork of quartz veins carrying opaques and ?siderite. Numerous reticulated very fine (<5um wide) cracks in chert, appear to be shrinkage cracks, may imply chert was originally de- posited as a gel (?opal).	No tourmaline detected.

Summary of X-ray Diffraction Analysis

SAMPLE	DOMINANT(1)	ACCESSORY	TRACE
MRL 14572	Quartz.	Illite/sericite.	?Chlorite, ?Smectite.

MRL 14572 (WY 2/1 288.1m)

This rock mainly consists of extremely fine-grained submicroscopic quartz with a minor clay component. It was called an argillaceous chert and is rather featureless apart from a mottled iron-oxide staining, very fine ?shrinkage cracks and a stockwork of ?siderite and opaque bearing quartz veins. No tourmaline was detected.

W.H. Ringenbergs
W.H. Ringenbergs
Petrologist

469032

APPENDIX 4

ROCK CHIPS - SAMPLE RESULTS, PETROLOGY

AND SAMPLE DESCRIPTION SHEETS

033

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469034

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1797

25.1.83

6611

1 of 2

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Hg				
1	T64-500		29	10	17	6.1				
2	T64-501		54	7	20	X				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER 

03A

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469035

ANALYTICAL DATA

SAMPLE PREFIX
REPORT NUMBER
REPORT DATE
CLIENT ORDER No.
PAGE

14.4 08 1797B
28.1.88
6611
1 OF 1

TUBE No.	SAMPLE No.	Hg	Sn	W						
1	T64-500	40	55	X						
2	T64-501	20	190	X						
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	2	3	10						
24	DIGESTION									
25	METHOD	401	402	401						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

AUTHORISED OFFICER

035

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469036

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

14.4 08 1814 15.2.83 6614 1 OF 2

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Hg	As	Sn	W	
1	T64-502		30	140	145	X	X	3	X	
2	T64-503		25	105	125	X	X	3	X	
3	T64-504		25	15	55	X	X	X	X	
4	T64-505		25	25	45	X	50	4	X	
	T64-506		15	10	25	X	X	X	X	
6	T64-507		10	10	25	X	X	4	X	
7	T64-508		15	X	20	X	X	X	X	
8	T64-509		55	10	20	X	X	7	X	
9	T64-510		10	5	15	X	X	6	X	
10	T64-511		30	10	20	X	X	3	X	
11	T64-512		15	10	35	X	X	X	X	
12	T64-513		20	55	5	X	X	4	X	
13	T64-514		15	15	25	X	450	X	X	
14	T64-515		10	5	25	X	X	3	X	
15	T64-516		15	15	50	X	700	6	X	
16	T64-517		10	X	40	X	X	3	X	
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER

REPORT CMS 83/2/14Samples MRL 14.423 - MRL 14.434

Twelve samples were received for thin-section preparation and petrological description; carbonate stain tests were carried out on the offcuts where necessary, and thin-sections were examined under both stereobinocular and petrological microscopes. Each sample is briefly described in the accompanying table.

Summary

Samples T64/900-902 are weakly metamorphosed clastic sediments; it is inferred that they contained significant amounts of feldspars, and hence have been classified as meta-arkoses. They are generally pyritic and carbonaceous, suggesting deposition under reducing conditions. T64/903 is an incipiently metamorphosed orthoquartzite thought to be related to the other three rocks. No Sn minerals were detected, but unless the levels were relatively high, detection would be pure chance; crushing of the rocks and concentration would be necessary to track down any Sn sources. Logically, the quartz veins could be potential sources, but they seem to be virtually monomineralic.

Samples WA 1-1 to 5 and 1-8 are igneous rocks ranging from olivine basalt to andesites and microdiorites; the andesites and microdiorites are certainly genetically related, but the olivine basalt is believed to be unrelated or only distantly so; it is a typical Tertiary basalt.

WA 1-6 and 7 are chemical sediments composed of pelletal chert and fine dolomite (with minor clastic components) in varying proportions.

H.W. Fander, M. Sc.

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
T 64/900 (T.S. 45260)	<u>Meta-Arkose(?)</u> . A few larger quartz, chert grains in fine-sand-sized quartz, fibrous sericite after ?feldspar; leucoxic films throughout.	Good preferred orientation, almost schistose. Medium-grained.	Detrital zircon, tourmaline, leucocene. Some chert was dolomitic. Chalcedony veins.	Rock was originally a fine arkose or argillaceous siltstone/fine sandstone. Mildly metamorphosed only.
T 64/901	<u>Meta-Arkose(?)</u> . Stretched, stressed grains of quartz and chert, aggregates of fibrous sericite; interstitial pyrite, carbonaceous films, and sericite.	Strong preferred orientation, relict clastic textures. Medium-grained.	Many quartz veins, mostly barren; some carry fine sulphides.	Pyrite probably syngenetic. No Sn minerals recognised, but more detailed investigation required.
T 64/902	<u>Meta-Arkose(?)</u> . Stressed, partly recrystallized quartz grains, chert grains and sericite aggregates; many subparallel carbonaceous films.	Good preferred orientation. Medium-grained, well-sorted.	Small pyrite grains throughout. Carbon veins/layers. Quartz veins.	Fine ?pyrrhotite and ?chalcopyrite also occurs. Closely resembles 900, 901. Mildly metamorphosed.
T 64/903	<u>Stressed Orthoquartzite</u> . Framework grains dominantly stressed quartz, with minor chert; quartz cement, thin intergranular sericite films.	Well-sorted, weakly bedded, medium-sand size. All stressed.	Quartz veins, pre-dating stress. A few shale fragments. Carbon films, rare oxidised pyrite.	Probably related to the meta-arkoses. No indication of Sn minerals in rock (e.g. detrital cassiterite) or in veins.
WA 1-1	<u>Porphyritic Olivine Basalt</u> . Large phenocrysts of altered olivine, smaller labradorite and augite phenocrysts; groundmass of labradorite, pyroxene, dark glass, magnetite.	Subparallel alignment of phenocrysts and groundmass crystals.	Isolated small chlorite-filled amygdalae. Some olivine preserved.	Featureless, typical Tertiary basalt. Altered olivine is now bowlingite-iddingsite (soft, black).
WA 1-2	<u>Magnetite-Andesite</u> . Scattered andesine phenocrysts, groundmass of small andesine laths, interstitial magnetite and devitrified glass.	Random fabric, no flow-features. Crystals in three distinct size ranges.	Small chlorite pseudomorphs after ferromagnesian minerals. Quartz and carbonate veins.	White phenocrysts are andesine. Fabric suggests intrusive rock, rapidly cooled (quench textures).
WA 1-3	<u>Ferruginised Andesite</u> . Clusters of andesine phenocrysts in fine groundmass of andesine, magnetite, glass; bands of fine hematite impregnating rock.	Random fabric with a few phenocrysts. Quench textures in groundmass.	Scattered chloritised ferromagnesian minerals, including ?olivine.	Hematitic banding is post-magmatic and may be a type of "Liesegang Ring" effect. Rock correlates with WA 1-2.
WA 1-4	<u>Microdiorite</u> . Mostly stubby andesine crystals with interstitial magnetite, chloritised ferromagnesian minerals, secondary carbonate; a few andesine phenocrysts.	Uniform, random fabric. Medium-grained, weakly porphyritic.	Conspicuous carbonate-hematite-chlorite veins. Relict augite.	Probably a coarser-grained equivalent of WA 1-2/1-3. Minor intrusive; deuterically altered.

469039

038

REGION: PROJECT NO.: T640 PROSPECT: WYNYARD GRID CO-ORDS: LOCAL A.M.G.

DESCRIPTION	Sample Type	Rock Type	Soil/Sediment Size Fraction	BURNIE 1:50,000	
T64/500	Rock Chip	Black shale, pyritic	from quarry	985496	Outcrop
501	"	Sandstone black wiss	" stream	"	"
502	"	Black shale, pyritic	from stream	994436	"
503	"	"	" Quarry	995436	"
504	"	Vein of haematite / silica	"	"	"
505	"	"	pyrite on fractures in sandstone from Quarry	"	"

ANALYSIS Laboratory ANALABS Batch No Date Analyzed

Element	check							
	Cu	Pb	Zn	Ag	As	Sn	W	Sn
500	29	10	17	0.1	40	55	-	80
501	54	7	20	-	20	190	-	200
502	30	140	145	-	-	3	-	
503	25	105	125	-	-	3	-	
504	25	15	55	-	-	-	-	
505	25	25	45	-	50	4	-	

REMARKS: 500 same rock as 509. Re-analysed
501 " " " 506.

Project No: A4-
 THE BROCKEN HILL REPOSITORY CO. LTD.
 GENERAL SAMPLE DESCRIPTION
 Date:

Logged or Sampled by: S. Kerber Date:

REGION: PROJECT NO.: T640 PROSPECT: WYNYARD GRID CO-ORDS: LOCAL A.M.G.

DESCRIPTION	Sample Type	Rock Type	Soil/Sediment Size Fraction		
T64/506	Rock CHIP	Sandstone	med. to coarse grained, black wiring.	Repeat of 502	985496 O.C.
507	"	"	Phyllite: light tan, black wiring.	"	O.C.
508	"	"	Shale: pyritic, black with qz/calcite veins.	"	O.C.
509	"	"	Shale? siliceous, black, pyritic, wired.	Repeat of 502	O.C.
510	"	"	Sandstone siliceous. black isolated mineral.	"	O.C.
511	"	"	Shale: grey black pyritic, siliceous. calcite veins.	"	O.C.

ANALYSIS Laboratory ANALABS Batch No Date Analysed

Element	Cu	Pb	Zn	Ag	As	Sn	W	check	Sn						
506	15	10	25	-	-	-	-		4						
507	10	10	25	-	-	4	-								
508	15	-	20	-	-	-	-								
509	55	10	20	-	-	7	-		7						
510	10	5	15	-	-	6	-								
511	30	10	20	-	-	3	-								

REMARKS: 506 and 509 re-analysed.

Project No:
 Drawing No: AA-
 THE BROKER WILL REPRESENTARY CO. LTD.
 GENERAL SAMPLE DESCRIPTION
 Date:
 Cont:

Logged or Sampled by: S.P. KERBER Date:

REGION: PROJECT NO.: T640 PROSPECT: LYNARD GRID CO-ORDS: LOCAL A.M.G.

DESCRIPTION	Sample Type	Rock Type	Soil/Sediment Size Fraction	YOLLA 1:50,000	
T64/ 512 - Rock Chip: Sandstone, grey siliceous, adjacent to pyrite band.				946434	float
513 - " " : Pyrite vein, 8" wide, fine grained.				"	"
514 - " " : Pyrite pods in sandstone pebbles, rounded.				945434	"
515 - " " : Sandstone siliceous, veined black mineral.				946434	oc.
516 - " " : " veined pyritic, qtz, and barite.				945434	float
517 - " " : " " " " " "				"	"

ANALYSIS Laboratory ANALABS. Batch No. Date Analyzed

Element	Cu	Pb	Zn	Ag	As	Sr	W										
512	15	10	35	-	-	-	-										
513	20	55	5	-	-	4	-										
514	15	15	25	-	450	-	-										
515	10	5	25	-	-	3	-										
516	15	15	60	-	700	6	-										
517	10	-	40	-	-	3	-										

REMARKS:

Logged or Sampled by: S.P. KERBER. Date:

Project No:
 Drawing No: A4-
 THE BROCKEN HILL PROPRIETARY CO. LTD.
 GENERAL SAMPLE DESCRIPTION
 Cont'd:
 Date:

041

469042

APPENDIX 5

STREAM SEDIMENT AND PAN-CONCENTRATE

SAMPLE RESULTS

042

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469043

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1740

29.12.82

006627

1 OF

2

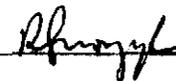
TUBE No.	SAMPLE No.		Cu	Pb	Zn				
1	T64/70		17	2	60				
2	T64/72		15	7	118				
3	T64/74		22	6	118				
4	T64/76		40	3	200				
5	T64/78		37	6	144				
6	T64/79		10	4	52				
7	T64/80		10	2	48				
8									
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Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED
OFFICER

043

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469044

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1740 B

4.1.88

006627

3 OF 3

TUBE No.	SAMPLE No.	Sn	W						
1	T64/70	4	X						
2	T64/72	X	X						
3	T64/74	15	X						
4	T64/76	6	X						
5	T64/78	7	X						
6	T64/79	X	X						
7	T64/80	7	X						
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	10						
24	DIGESTION								
25	METHOD	402	401						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

AUTHORISED OFFICER

Alph...

044

469045

ANALABS

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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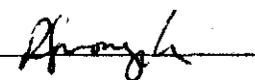
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1 OF 1

TUBE No.	SAMPLE No.	Wt(g)	Sn	W					
1	T64-71P	74.22	6	X					
2	T64-73P	83.77	8	X					
3	T64-75P	49.23	75	X					
4	T64-77P	36.11	8	X					
5	T64-81P	22.96	1200	20					
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22	Densities method 404								
23	DETECTION	.01	8	10					
24	DIGESTION								
25	METHOD		402	401					

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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045

469046

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1796

25.1.88

6618

1 OF 2

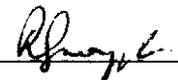
TUBE No.	SAMPLE No.		Cu	Pb	Zn					
1	T64-83		56	24	161					
2	T64-85		31	32	220					
3	T64-87		33	20	102					
4	T64-89		8	19	29					
5	T64-90		9	18	40					
6	T64-91		18	22	76					
7	T64-93		20	14	98					
8	T64-95		45	19	65					
9	T64-97		23	52	69					
10	T64-99		34	22	110					
11	T64-101		14	26	41					
12	T64-103		20	17	90					
13	T64-105		11	21	34					
14	T64-107		25	12	77					
15	T64-109		28	25	93					
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED
OFFICER

046

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469047

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

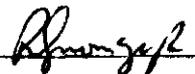
PAGE

			14.4 08 1796B	28.1.83	6610	1 OF 1	
TUBE No.	SAMPLE No.	Sr	W				
1	T64-83	10	X				
2	T64-85	10	X				
3	T64-87	8	X				
4	T64-89	9	X				
5	T64-90	9	X				
6	T64-91	15	X				
7	T64-93	4	X				
8	T64-95	10	X				
9	T64-97	30	X				
10	T64-99	X	X				
11	T64-101	7	X				
12	T64-103	6	X				
13	T64-105	5	X				
14	T64-107	X	X				
15	T64-109	7	X				
16							
17							
18							
19							
20							
21							
22							
23	DETECTION	3	10				
24	DIGESTION						
25	METHOD	402	401				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



047

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469048

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1795

28.1.88

6609

1 OF 1

TUBE No.	SAMPLE No.	Sn	W	wt(g)						
1	T64-82P	20	X	18.07						
2	T64-84P	80	X	29.63						
3	T64-86P	95	X	20.05						
4	T64-88P	150	X	32.05						
5	T64-92P	8	X	50.20						
6	T64-94P	60	10	38.98						
7	T64-96P	190	X	31.21						
8	T64-98P	15	X	99.31						
9	T64-100P	10	X	30.85						
10	T64-102P	3	X	32.18						
11	T64-104P	40	X	31.61						
12	T64-106P	7	X	49.91						
13	T64-108P	360	10	21.45						
14	T64-110P	300	X	51.07						
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	3	10							
24	DIGESTION									
25	METHOD	402	401							

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER

Almoyt

048

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469049

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1913

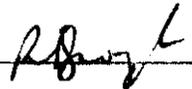
15.2.83

6613

1 OF 2

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Sn	W			
1	T64-111		40	12	128	6	X			
2	T64-113		19	10	113	8	X			
3	T64-115		47	5	155	X	X			
4	T64-117		30	9	125	4	X			
5	T64-119		25	8	113	5	X			
6	T64-121		35	5	123	6	X			
7	T64-122		51	7	123	4	X			
8	T64-123		24	4	122	6	X			
9	T64-125		33	3	154	3	X			
10	T64-127		32	14	137	5	X			
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
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23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER 

049

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469050

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

14.4 08 1812

15.2.83

6612

1 OF 1

TUBE No.	SAMPLE No.	Wt.(g)	Sn	W						
1	T64-112P	46.43	170	X						
2	T64-114P	60.83	150	X						
3	T64-116P	47.99	10	X						
4	T64-118P	47.99	15	X						
5	T64-120P	36.67	20	X						
6	T64-124P	43.24	7	X						
7	T64-126P	39.82	20	X						
8	T64-128P	33.65	1050	X						
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		3	10						
24	DIGESTION									
25	METHOD		402	401						

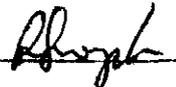
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER



050

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469051

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

TUBE No.		SAMPLE No.	Wt (gms)	Sn	Ni					1 OF 1
1	129P	60.89	45	X						
2	130P	68.03	8	X						
3	131P	71.56	2	X						
4	132P	75.80	5	X						
5	133P	75.00	X	X						
6	134P	70.02	X	X						
7	135P	66.24	4	X						
8	136P	67.71	8	X						
9	137P	73.83	150	X						
10	138P	67.09	120	X						
11	139P	68.15	80	X						
12	140P	71.00	10	X						
13	141P	69.89	100	X						
14	142P	75.48	110	X						
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECT		X	10						
24	DIGEST									
25	METHOD		400	400						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER *Almoyl*

051

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

469052

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

TUBE No.		SAMPLE No.	Wt (gms)	Wt (mg)	Wt (µg)								
164			14.1 00 1901		6.4.85		006620		1 OF		1		
1	143P	70.68	13	14									
2	144P	58.64	387	X									
3	145P	94.66	5	X									
4	146P	94.78	X	X									
5	147P	68.17	X	X									
6	148P	61.79	X	X									
7	149P	105.28	X	23									
8	150P	67.76	X	X									
9	151P	95.63	X	X									
10	152P	183.05	X	X									
11	153P	72.19	X	X									
12	154P	69.74	X	X									
13	155P	62.94	X	X									
14	156P	31.68	X	X									
15	157P	66.27	X	15									
16	158P	79.65	X	X									
17	159P	77.92	X	X									
18	160P	70.26	5	X									
19													
20													
21													
22													
23	DETECTION		X	10									
24	DIGESTION												
25	METHOD		402	401									

Results in ppm unless otherwise specified

- T = element present; but concentration too low to measure
- X = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER

P. Dymally

052

469053

SITE FLAGGED <input checked="" type="checkbox"/>		INTEREST NIL <input type="checkbox"/> SOME <input type="checkbox"/> DEFINITE <input type="checkbox"/>		
SAMPLE TYPE S.S. / P.C.		MAP/PHOTO NAME BURNIE 1:50,000	GRID REFERENCE 036504	
		SAMPLE No. T64/Y2 T64/Y3P		
NATURE OF RIVER Flat, narrow. Rocky. Sheep Sth bank.		WATER Flowing. 8" deep.	VEGETATION Ti-Tree Blackberries ferns	
Amount	PEBBLES			SITE
	Size	Lithology	Shape	
		B ₂ BASALT QTZITE		Outcrop causing gravel traps in stream centre.
			Rounding	Bottom
			Packing	Gravel.
			Silt %	Bedrock
			GOOD	QUARTZITE BASALT upstream.
			HIGH	Assessment
				Good.

FIELD COMMENTS

Bedding 78°S
Strike 100°
Veins 90°, 45°

TENEMENT DETAILS

Coarse rounded heavy minerals, olivine grains,
fine grained sst/Qtzite, numerous milky Qtz
veins.

COOFE CORREX.

Example of site description card filled out at each stream sample site

053

469054

APPENDIX 6

REPORT - WYNYARD TIN STREAM GEOCHEMISTRY

054

BHP

469055

The Broken Hill Proprietary Company Limited

SYDNEY OFFICE

MEMO TO: A. CLARKE
EXPLORATION, HOBART.

OUR REF: GW:LR
DATE: 15 August, 1983

YOUR REF:
FILE:
DATE:

SUBJECT:

SYD-102 D19F1

WYNYARD TIN STREAM GEOCHEMISTRY

1. Introduction

Assay results for 32 sieved and 59 pan concentrate samples from drainages in Wynyard EL (Tasmania) together with locations and geology were received from S.Kerber for review.

2. Methods of Investigation and Results

The samples were initially subdivided on the basis of rock type (tables 1 and 2), but these individual rock type populations are too small to analyse statistically.

None of the sieved samples appear anomalous in Cu, Pb or Zn. Tin is very low with the possible exception of samples no.97 (30 ppm). A statistical summary is presented below for the sieved samples :-

	Cu	Pb	Zn	Sn	W	no. of samples
Tertiary sediments	9,2*	11,17	39,19	8,2	<10	2
Tertiary basalts	31,13	14,10	137,49	6,5	<10	10
Permian tillite	31,8	14,11	114,19	6,1	<10	3
Precambrian	26,11	15,12	92,36	8,7	<10	15

* arithmetic mean, standard deviation.

Some pan concentrate samples are clearly anomalous in Sn. None contain analytically significant levels of W. The Sn values were recast using the formula :-

$$\frac{\text{ppm Sn in concentrate} \times \text{weight of concentrate (gms)}}{\text{}} = \text{ppm Sn}$$

This approximates the Sn content of a 7500 gm load of starting material (heaped medium sized pan load). A cumulative frequency distribution was plotted for all recast values irrespective of rock type association. This is reasonable given the very low background levels of Sn in all rock types (tables 1 and 2). A broad inflexion in the cumulative frequency curve occurs at about 0.3ppm (70th percentile), and is taken to separate the anomalous and the background populations. For map presentation the values have been subdivided as follows:-

	ppm Sn	lower percentile
Strongly anomalous	> 3	96
Moderately anomalous	1-3	85
Weakly anomalous	0.3-1	70
Background	< 0.3	

There are two strongly anomalous samples - one in Tertiary sediments near Somerset on the coast, the other on Tertiary basalt in the south of the EL in a stream draining into the upper reaches of the Cam River. Moderate and weak anomalies cluster in two areas in the north of the EL - one group on the Inglis River, the other on the Cam River and Seabrook Creek. The given geology shows that anomalous values could be derived from Tertiary sediments, Permian tillite and/or Precambrian sediments. It is unlikely that the basalt is a source of tin.

3. Conclusions

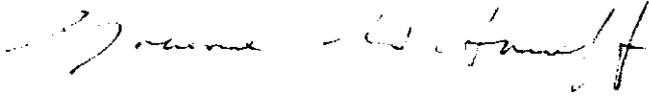
The difficulty in interpreting the geochemistry is that the anomalous drainages cut more than one rock type, hence the real Sn source is ambiguous. My own feeling is that the Sn is derived mainly from the Tertiary sediments and if this is true then the whole area may be naturally contaminated, greatly curtailing effective anomaly recognition within the Precambrian or Cambrian

056

469057

sediments which are extensively blanketed by the Tertiary sediments.

Where anomalies are located over Precambrian or Cambrian sediments, careful mapping and upstream sampling will be required to eliminate possible sources of natural contamination (i.e. Tertiary sediments and/or Permian tillite). The majority of anomalous drainages defined so far will need to be followed up in this way if a geochemical prospecting method is to be pursued.



G. WATMUFF
SENIOR GEOCHEMIST
SYDNEY OFFICE.

057

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (-80#) WYNYARD TASMANIA

SAMPLE NUM	ROCK TYPE	STREAM ORD	Cu(ppm)	Pb(ppm)	Zn(ppm)	Sn(ppm)	W(ppm)
70	2.00	1.00	17.00	2.00	60.00	4.00	5.00
72	4.00	1.00	15.00	7.00	118.00	1.50	5.00
74	4.00	2.00	22.00	6.00	113.00	15.00	5.00
76	4.00	2.00	40.00	3.00	200.00	5.00	5.00
78	2.00	2.00	37.00	6.00	144.00	7.00	5.00
79	4.00	1.00	10.00	4.00	52.00	1.50	5.00
80	5.00	2.00	10.00	2.00	48.00	7.00	5.00
83	4.00	1.00	56.00	24.00	161.00	10.00	5.00
85	4.00	1.00	31.00	32.00	220.00	10.00	5.00
87	4.00	1.00	33.00	20.00	102.00	9.00	5.00
89	5.00	1.00	8.00	19.00	59.00	9.00	5.00
90	6.00	1.00	9.00	18.00	40.00	9.00	5.00
91	2.00	3.00	16.00	22.00	76.00	15.00	5.00
93	2.00	3.00	20.00	14.00	98.00	4.00	5.00
95	2.00	2.00	45.00	19.00	55.00	10.00	5.00
97	2.00	3.00	23.00	52.00	69.00	30.00	5.00
99	4.00	2.00	34.00	22.00	110.00	1.50	5.00
101	2.00	1.00	14.00	26.00	41.00	7.00	5.00
103	2.00	4.00	20.00	17.00	90.00	2.00	5.00
105	2.00	1.00	11.00	21.00	34.00	5.00	5.00
107	2.00	3.00	25.00	12.00	77.00	1.50	5.00
109	1.00	3.00	26.00	35.00	93.00	7.00	5.00
111	1.00	2.00	40.00	12.00	103.00	6.00	5.00
113	2.00	2.00	19.00	10.00	113.00	8.00	5.00
115	2.00	1.00	47.00	5.00	155.00	1.50	5.00
117	2.00	2.00	30.00	9.00	125.00	4.00	5.00
119	2.00	1.00	25.00	8.00	113.00	5.00	5.00
121	2.00	2.00	35.00	5.00	123.00	6.00	5.00
122	3.00	1.00	51.00	7.00	123.00	4.00	5.00
123	1.00	4.00	24.00	4.00	122.00	6.00	5.00
125	4.00	2.00	33.00	8.00	154.00	5.00	5.00
127	4.00	2.00	32.00	14.00	137.00	5.00	5.00

469058

TABLE 2

FILE NAME : B WYNDSTP DT1

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATES) WYNYARD TASMANIA

SAMPLE NUM	ROCK TYPE	STREAM ORD	Sn (ppm)	Pb (ppm)	Weight (gm)
71	2 00	1 00	6 00	5 00	74.22
73	4 00	1 00	3 00	5 00	83.77
75	4 00	2 00	75 00	5 00	49.23
77	4 00	2 00	3 00	5 00	36.11
81	5 00	2 00	1200 00	20 00	22.96
82	4 00	1 00	20 00	5 00	18.07
84	4 00	1 00	80 00	5 00	29.63
86	4 00	1 00	95 00	5 00	20.05
88	5 00	1 00	150 00	5 00	32.06
92	2 00	3 00	8 00	5 00	50.20
94	2 00	3 00	60 00	10 00	38.98
96	2 00	2 00	190 00	5 00	31.21
98	2 00	3 00	15 00	5 00	99.31
100	4 00	2 00	10 00	5 00	30.85
102	2 00	1 00	3 00	5 00	32.18
104	2 00	4 00	40 00	5 00	31.61
106	2 00	1 00	7 00	5 00	49.91
108	2 00	3 00	360 00	10 00	21.45
110	1 00	3 00	300 00	5 00	51.07
112	1 00	2 00	170 00	5 00	46.48
114	2 00	2 00	150 00	5 00	60.83
116	2 00	1 00	10 00	5 00	47.99
118	2 00	2 00	15 00	5 00	47.93
120	3 00	2 00	20 00	5 00	36.67
124	1 00	4 00	7 00	5 00	43.24
126	4 00	2 00	20 00	5 00	39.82
128	4 00	2 00	1050 00	5 00	33.65
129	6 00	4 00	45 00	5 00	60.89
130	7 00	1 00	8 00	5 00	38.03
131	7 00	1 00	1 50	5 00	15.56
132	7 00	1 00	5 00	5 00	59.80
133	7 00	3 00	1 50	5 00	79.00
134	7 00	1 00	1 50	5 00	70.02
135	7 00	-	3 00	5 00	86.24
136	7 00	2 00	3 00	5 00	57.71
137	1 00	4 00	120 00	5 00	73.81
138	1 00	2 00	170 00	5 00	67.39
139	7 00	1 00	80 00	5 00	28.15
140	7 00	1 00	10 00	5 00	75.02
141	7 00	4 00	100 00	5 00	69.89
142	7 00	1 00	110 00	5 00	75.48
143	1 00	4 00	13 00	14 00	70.65
144	1 00	1 00	387 00	5 00	50.04
145	8 00	2 00	5 00	5 00	74.66
146	8 00	4 00	1 50	5 00	94.78
147	8 00	2 00	0 00	5 00	66.17
148	7 00	4 00	1 50	5 00	61.78
149	7 00	2 00	1 50	23 00	105.28
150	7 00	1 00	1 50	5 00	67.76
151	7 00	2 00	1 50	5 00	95.63
152	7 00	4 00	1 50	5 00	183.05
153	7 00	1 00	1 50	5 00	72.19
154	2 00	2 00	1 50	5 00	89.74
155	2 00	4 00	3 00	5 00	62.94
156	2 00	3 00	1 50	5 00	31.68
157	4 00	2 00	1 50	15 00	66.27
158	4 00	1 00	1 50	5 00	79.65
159	8 00	1 00	1 50	5 00	79.72
160	4 00	4 00	5 00	5 00	70.26

469060

059
FILE NAME B WYNDSTS PTL

FILE DESCRIPTION STREAM SEDIMENT SAMPLES (-80#) PERMIAN TILLITE WYNHARD TASMANIA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Cu(ppm)	Pb(ppm)	Zn(ppm)	Sn(ppm)	W(ppm)
109	1.00		3.00		28.00	25.00	93.00	7.00	5.00
111	1.00		2.00		40.00	12.00	128.00	6.00	5.00
123	1.00		4.00		24.00	4.00	122.00	6.00	5.00

FILE NAME B WYNDSTS PCS

FILE DESCRIPTION STREAM SEDIMENT SAMPLES (-40#) PRECAMBRIAN QUARTZITE SHALE WYNHARD TASMANIA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Cu(ppm)	Pb(ppm)	Zn(ppm)	Sn(ppm)	W(ppm)
76	2.00		1.00		19.00	2.00	60.00	4.00	5.00
78	2.00		2.00		37.00	6.00	144.00	7.00	5.00
71	2.00		3.00		18.00	22.00	76.00	15.00	5.00
93	2.00		1.00		20.00	14.00	93.00	4.00	5.00
95	2.00		2.00		15.00	19.00	65.00	10.00	5.00
97	2.00		3.00		15.00	52.00	69.00	30.00	5.00
101	2.00		1.00		14.00	26.00	41.00	7.00	5.00
103	2.00		4.00		20.00	17.00	90.00	6.00	5.00
105	2.00		1.00		11.00	21.00	34.00	5.00	5.00
107	2.00		3.00		25.00	12.00	37.00	1.50	5.00
113	2.00		2.00		19.00	10.00	113.00	8.00	5.00
115	2.00		1.00		47.00	5.00	155.00	1.50	5.00
117	2.00		2.00		30.00	7.00	105.00	4.00	5.00
119	2.00		1.00		25.00	8.00	113.00	5.00	5.00
121	2.00		2.00		35.00	5.00	123.00	6.00	5.00

FILE NAME B WYNDSTS TB

FILE DESCRIPTION STREAM SEDIMENT SAMPLES (-40#) TERTIARY BASALT WYNHARD TASMANIA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Cu(ppm)	Pb(ppm)	Zn(ppm)	Sn(ppm)	W(ppm)
72	4.00		1.00		15.00	7.00	118.00	1.50	5.00
74	4.00		2.00		22.00	6.00	113.00	15.00	5.00
76	4.00		2.00		40.00	3.00	200.00	6.00	5.00
79	4.00		1.00		10.00	4.00	52.00	1.50	5.00
83	4.00		1.00		56.00	24.00	161.00	10.00	5.00
85	4.00		1.00		31.00	32.00	220.00	10.00	5.00
87	4.00		1.00		33.00	20.00	102.00	8.00	5.00
99	4.00		2.00		34.00	22.00	110.00	1.50	5.00
125	4.00		2.00		12.00	8.00	154.00	3.00	5.00
127	4.00		2.00		22.00	14.00	137.00	5.00	5.00

FILE NAME B WYNDSTS TS

FILE DESCRIPTION STREAM SEDIMENT SAMPLES (-40#) TERTIARY SILT SAND & CONGLOMERATE WYNHARD TA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Cu(ppm)	Pb(ppm)	Zn(ppm)	Sn(ppm)	W(ppm)
86	5.00		2.00		10.00	2.00	48.00	7.00	5.00
89	5.00		1.00		8.00	19.00	17.00	7.00	5.00

FILE NAME : B:WYNDESTP.FTL

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATES) PERMIAN TILLITE WYNHARD TASMANIA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Sn(ppm)	W(ppm)	Weight(gm)
110	1.00		3.00		300.00	5.00	51.07
112	1.00		2.00		170.00	5.00	46.48
124	1.00		4.00		7.00	5.00	43.24
137	1.00		4.00		160.00	5.00	73.81
138	1.00		2.00		170.00	5.00	57.39
143	1.00		4.00		13.00	14.00	70.63
144	1.00		1.00		237.00	5.00	50.04

FILE NAME : B:WYNDSTP.FCS

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATE) PRECAMBRIAN QUARTZITE SHALE WYNHARD TASMANIA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Sn(ppm)	W(ppm)	Weight(gm)
71	2.00		1.00		8.00	5.00	74.22
92	2.00		3.00		3.00	5.00	50.20
94	2.00		3.00		60.00	10.00	33.93
96	2.00		2.00		190.00	5.00	31.21
98	2.00		3.00		15.00	5.00	72.31
100	2.00		1.00		3.00	5.00	32.13
102	2.00		4.00		40.00	5.00	31.61
104	2.00		1.00		7.00	5.00	49.91
108	2.00		3.00		360.00	10.00	21.45
114	2.00		2.00		150.00	5.00	50.63
116	2.00		1.00		10.00	5.00	47.99
118	2.00		2.00		15.00	5.00	47.93
154	2.00		2.00		1.50	5.00	87.74
155	2.00		4.00		3.00	5.00	62.94
156	2.00		3.00		1.50	5.00	31.68

TABLE 2A (cont)

FILE NAME : B WYNDSTP T3

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATE) TERTIARY BASALT WYNYARD TASMANIA

SAMPLE NUM	ROCK TYPE	STREAM ORD	Sn(ppm)	W(ppm)	Weight(gm)
73	4.00	1.00	3.00	5.00	83.77
75	4.00	2.00	75.00	5.00	49.23
77	4.00	2.00	3.00	5.00	36.11
92	4.00	1.00	20.00	5.00	18.07
84	4.00	1.00	80.00	5.00	29.63
86	4.00	1.00	95.00	5.00	20.05
100	4.00	2.00	10.00	5.00	30.85
126	4.00	2.00	20.00	5.00	39.82
128	4.00	2.00	1050.00	5.00	33.65
157	4.00	2.00	1.50	15.00	66.27
158	4.00	1.00	1.50	5.00	79.65
160	4.00	4.00	5.00	5.00	70.26

FILE NAME : B WYNDSTP T5

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATES) TERTIARY SILT SAND & CONGLOMERATE WYNYARD TASMANIA

SAMPLE NUM	ROCK TYPE	STREAM ORD	Sn(ppm)	W(ppm)	Weight(gm)
81	5.00	2.00	1200.00	20.00	22.96
89	5.00	1.00	150.00	5.00	32.06

469062

061

TABLE 2A (cont).

FILE NAME : B WYNDSTP 80K

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATES) PRECAMBRIAN KEITH RIVER METAMORPHICS WYNYARD TASMA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Sn(ppm)	W(ppm)	Weight(gm)
130	7.00		1.00		8.00	5.00	38.03
131	7.00		1.00		1.50	5.00	15.56
132	7.00		1.00		5.00	5.00	59.80
133	7.00		3.00		1.50	5.00	79.00
134	7.00		1.00		1.50	5.00	70.02
135	7.00		-		3.00	5.00	86.24
136	7.00		2.00		3.00	5.00	57.71
139	7.00		1.00		90.00	5.00	28.15
140	7.00		1.00		10.00	5.00	75.02
141	7.00		4.00		100.00	5.00	59.89
142	7.00		1.00		110.00	5.00	75.48
148	7.00		4.00		1.50	5.00	51.78
149	7.00		0.00		1.50	23.00	105.28
150	7.00		1.00		1.50	5.00	67.76
151	7.00		2.00		1.50	5.00	75.53
152	7.00		4.00		1.50	5.00	133.15
153	7.00		1.00		1.50	5.00	70.18

FILE NAME : B WYNDSTP 003

FILE DESCRIPTION : STREAM SEDIMENT SAMPLES (PAN CONCENTRATE) CAMBRIAN GREYWACKE WYNYARD TASMANIA

SAMPLE NUM	ROCK	TYPE	STREAM	ORD	Sn(ppm)	W(ppm)	Weight(gm)
145	3.00		2.00		5.00	5.00	94.66
146	3.00		4.00		1.50	5.00	94.78
147	8.00		2.00		3.00	5.00	66.17
159	8.00		1.00		1.50	5.00	77.92



5460000m N

5450000m N

5440000m N

5430000m N

5420000m N

390000m E

380000m E

400000m E

400000m E

400000m E

400000m E

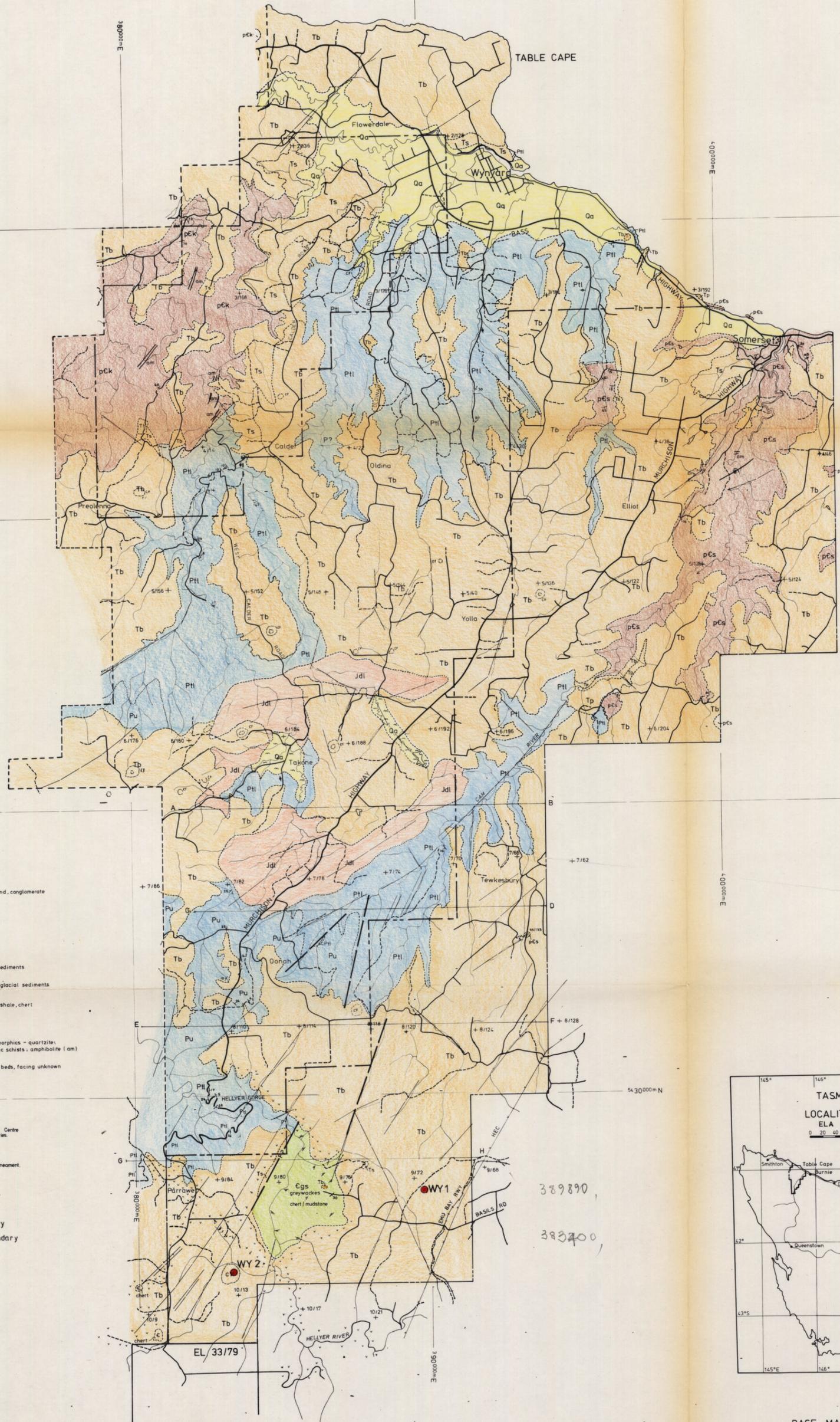
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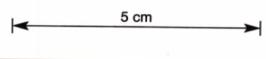


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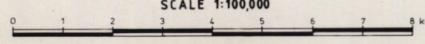
- QUATERNARY
 - Qa alluvium
 - Ts sediments, silt, sand, conglomerate
 - TERTIARY
 - Tp pyroclastics
 - Tb basalt
 - JURASSIC
 - Jdl dolerite
 - PERMIAN
 - Pu undifferentiated sediments
 - PH tillite, associated glacial sediments
 - CAMBRIAN
 - Cgs greywacke, minor shale, chert
 - pCs quartzite, shale
 - PRECAMBRIAN
 - pCk Keith River Metamorphics - quartzite, pelitic, calcic, basic schists, amphibolite (am)
- / / strike and dip of beds, facing unknown
 +9172 Aerial Photograph Centre F54, Hellyer Series
 — Prominent Photo Lineament
 ○ Circular feature
 ● WY1 Drill site
 - - - EL boundary
 - - - old EL boundary

Revisions	
Drawn	R.H.
Checked	J.E.H.
Project No.	1640
Centre	HOBART
Scale	1:100,000
Project Name	EL23/79 WYNYARD, NW TAS
Geology	063
Sheet No.	469064
Company	THE BROKEN HILL PROPRIETARY CO. LTD.
Department	EXPLORATION DEPARTMENT

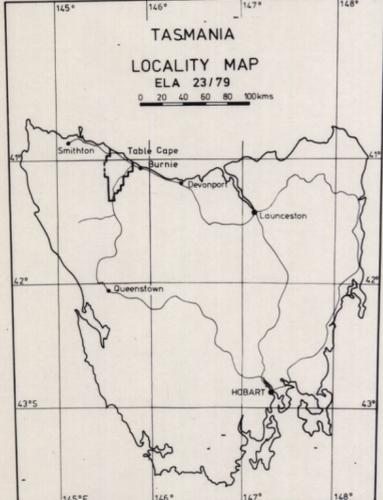
469064



SCALE 1:100,000



Geology - R Hine, R Lockwood, A Djakic with compilation from Tas Mines Dept 1 63,360 Burnie sheet and unpublished maps (Hellyer area) by P. Williams & P. Lennox



BASE MAP KEY

- ROADS
- VEHICULAR TRACKS
- STREAMS

145° 30' E

145° 45' E

EL 23/79

41° 00' S

EL 23/79

41° 15' S

41° 30' S

145° 30' E

145° 45' E

5 cm

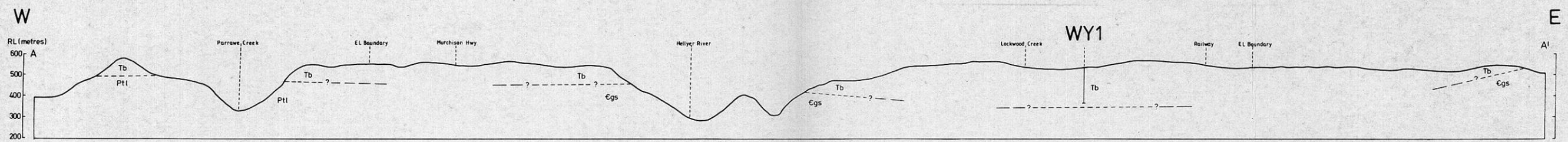
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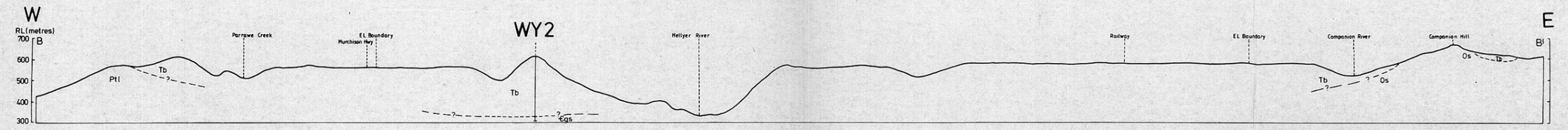
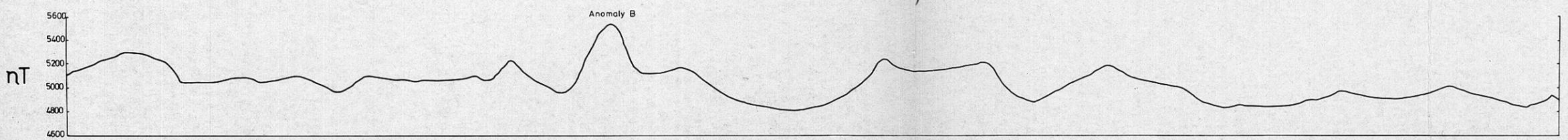
E.L.s 33/79, 23/79 WARATAH, WYNYARD TAS
TOTAL MAGNETIC INTENSITY CONTOURS

<p>REVISIONS BY NUMBER</p> <p>1. Issue of 1979</p> <p>2. Issue of 1980</p> <p>3. Issue of 1981</p> <p>4. Issue of 1982</p> <p>5. Issue of 1983</p> <p>6. Issue of 1984</p> <p>7. Issue of 1985</p> <p>8. Issue of 1986</p> <p>9. Issue of 1987</p> <p>10. Issue of 1988</p> <p>11. Issue of 1989</p> <p>12. Issue of 1990</p> <p>13. Issue of 1991</p> <p>14. Issue of 1992</p> <p>15. Issue of 1993</p> <p>16. Issue of 1994</p> <p>17. Issue of 1995</p> <p>18. Issue of 1996</p> <p>19. Issue of 1997</p> <p>20. Issue of 1998</p> <p>21. Issue of 1999</p> <p>22. Issue of 2000</p> <p>23. Issue of 2001</p> <p>24. Issue of 2002</p> <p>25. Issue of 2003</p> <p>26. Issue of 2004</p> <p>27. Issue of 2005</p> <p>28. Issue of 2006</p> <p>29. Issue of 2007</p> <p>30. Issue of 2008</p> <p>31. Issue of 2009</p> <p>32. Issue of 2010</p> <p>33. Issue of 2011</p> <p>34. Issue of 2012</p> <p>35. Issue of 2013</p> <p>36. Issue of 2014</p> <p>37. Issue of 2015</p> <p>38. Issue of 2016</p> <p>39. Issue of 2017</p> <p>40. Issue of 2018</p> <p>41. Issue of 2019</p> <p>42. Issue of 2020</p> <p>43. Issue of 2021</p> <p>44. Issue of 2022</p> <p>45. Issue of 2023</p> <p>46. Issue of 2024</p> <p>47. Issue of 2025</p>	<p>REVISIONS BY DESCRIPTION</p> <p>1. Issue of 1979</p> <p>2. Issue of 1980</p> <p>3. Issue of 1981</p> <p>4. Issue of 1982</p> <p>5. Issue of 1983</p> <p>6. Issue of 1984</p> <p>7. Issue of 1985</p> <p>8. Issue of 1986</p> <p>9. Issue of 1987</p> <p>10. Issue of 1988</p> <p>11. Issue of 1989</p> <p>12. Issue of 1990</p> <p>13. Issue of 1991</p> <p>14. Issue of 1992</p> <p>15. Issue of 1993</p> <p>16. Issue of 1994</p> <p>17. Issue of 1995</p> <p>18. Issue of 1996</p> <p>19. Issue of 1997</p> <p>20. Issue of 1998</p> <p>21. Issue of 1999</p> <p>22. Issue of 2000</p> <p>23. Issue of 2001</p> <p>24. Issue of 2002</p> <p>25. Issue of 2003</p> <p>26. Issue of 2004</p> <p>27. Issue of 2005</p> <p>28. Issue of 2006</p> <p>29. Issue of 2007</p> <p>30. Issue of 2008</p> <p>31. Issue of 2009</p> <p>32. Issue of 2010</p> <p>33. Issue of 2011</p> <p>34. Issue of 2012</p> <p>35. Issue of 2013</p> <p>36. Issue of 2014</p> <p>37. Issue of 2015</p> <p>38. Issue of 2016</p> <p>39. Issue of 2017</p> <p>40. Issue of 2018</p> <p>41. Issue of 2019</p> <p>42. Issue of 2020</p> <p>43. Issue of 2021</p> <p>44. Issue of 2022</p> <p>45. Issue of 2023</p> <p>46. Issue of 2024</p> <p>47. Issue of 2025</p>
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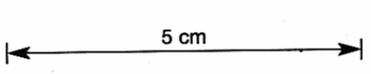


Section A-A (west east through DD.H.WY1)

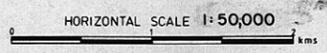


Section B-B (west east through D.D.H.WY2)

QUATERNARY	Oa	alluvium
	Ts	sediments, silt, sand, conglomerate
TERTIARY	Tp	pyroclastics
	Tb	basalt
JURASSIC	Jdl	dolerite
PERMIAN	Pu	undifferentiated sediments
	PtI	tillite, associated glacial sediments
ORDOVICIAN	Os	quartz sandstone
CAMBRIAN	Egs	greywacke, minor shale, chert
PRECAMBRIAN	pCs	quartzite, shale
	pCk	Keith River Metamorphics - quartzite, pelitic, calcic, basic schists, amphibolite (am)



VERTICAL SCALE 1:20,000



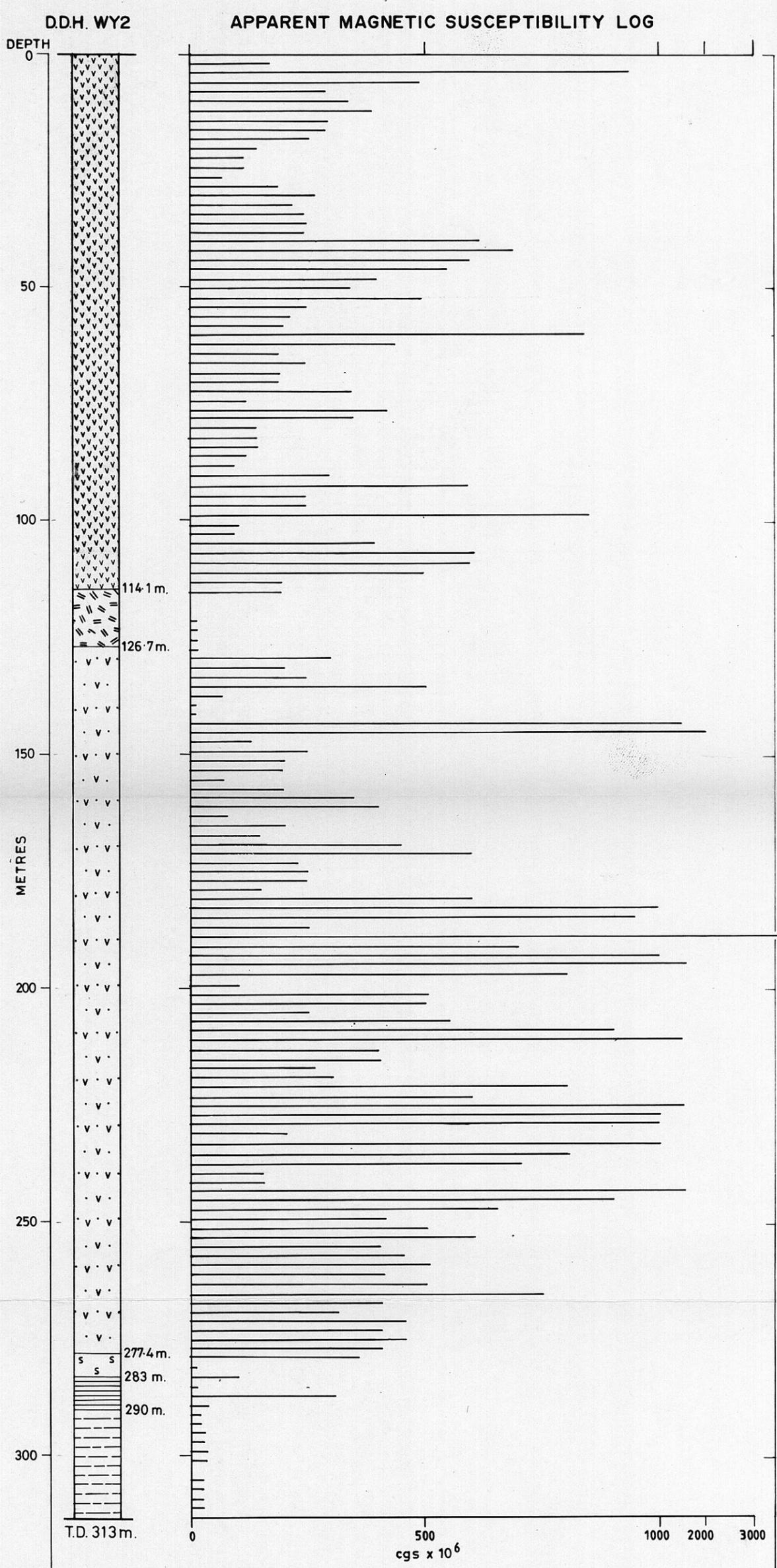
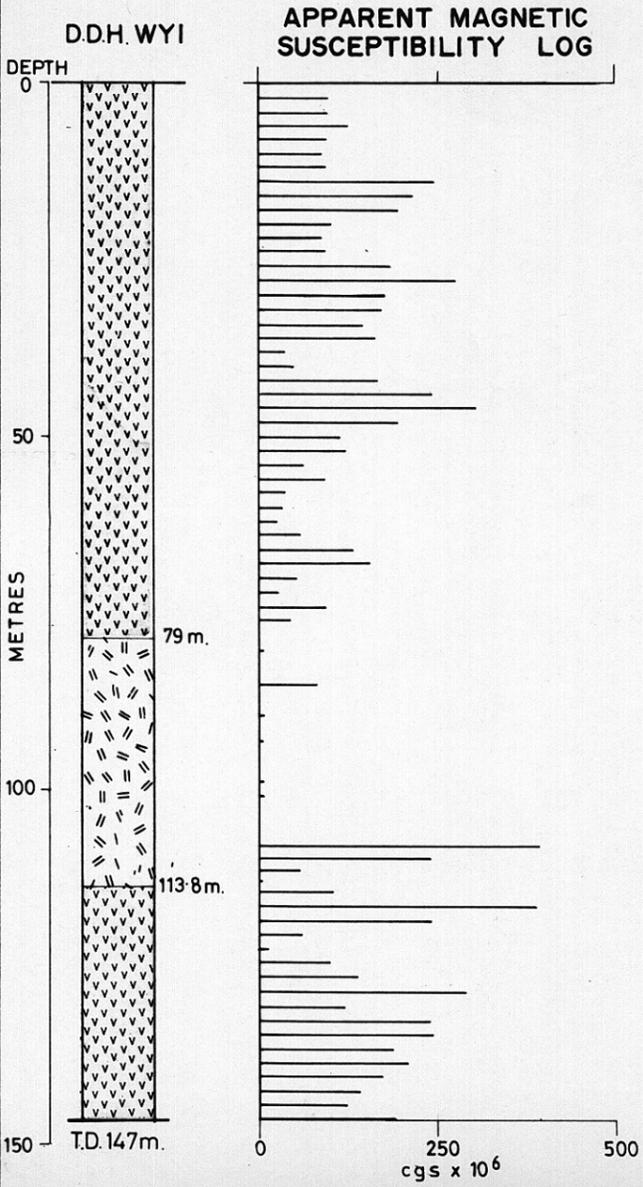
GN

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Note: For location of sections see fig 8 & 9

THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT		
EL 23/79 WYNYARD TASMANIA Geological cross sections and Aeromagnetic profiles		
A-A'		B-B'
Drawn: S KERBER	Date: 17-5-83	Centre: HOBART
Traced: A HANSEN	Project No: 1640	Drawing No: A1-
Checked:		



LEGEND

- Basalt
- Mudstone
- Interflow sediments and basalt
- Silcrete
- Chert
- Shale

TERTIARY

CAMBRIAN

Revisions:

Prepared by: M. Horton, D. Isles	Centre: Melbourne
Date: Jan. 84	Project No: T640
Drawn: C. Osborne	Drawing No: A3-1648

E.L. 23/79 - WYNYARD, TAS.
MAGNETIC SUSCEPTIBILITY LOGS
DD.H. WY1 AND DD.H. WY2

066

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EXPLORATION DEPARTMENT

Vertical scale 1:1000
469067
For location see A0.23/79-1 (Hobart)

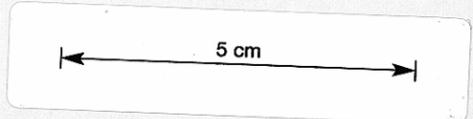
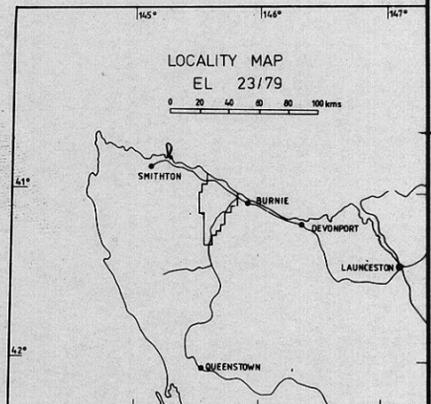
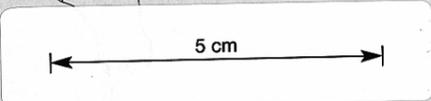
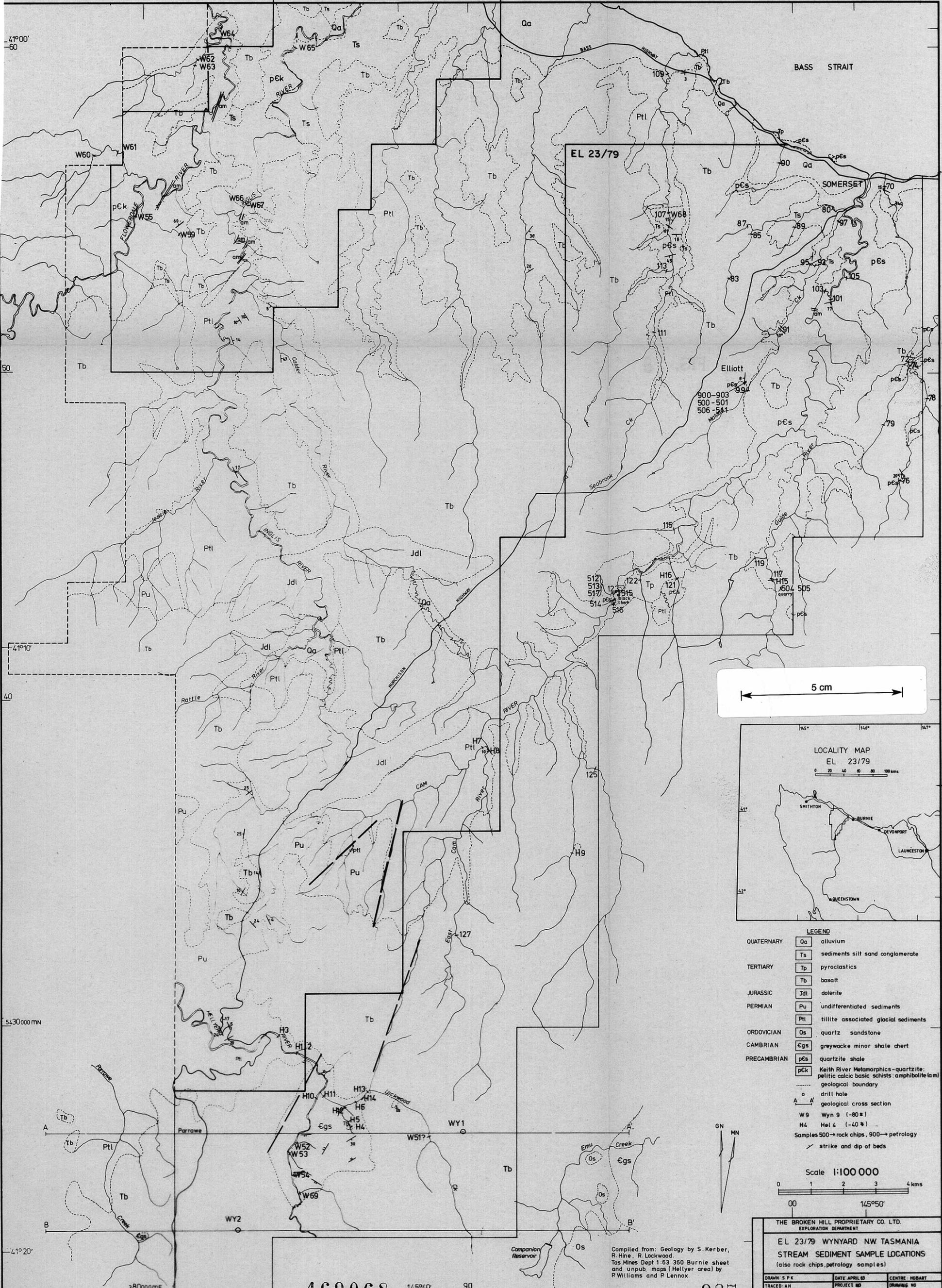


FIG. 7



LEGEND

QUATERNARY	Qa	alluvium
	Ts	sediments silt sand conglomerate
TERTIARY	Tp	pyroclastics
	Tb	basalt
JURASSIC	Jdl	dolerite
PERMIAN	Pu	undifferentiated sediments
	Ptl	tillite associated glacial sediments
ORDOVICIAN	Os	quartz sandstone
CAMBRIAN	Cgs	greywacke minor shale chert
PRECAMBRIAN	pCs	quartzite shale
	pCk	Keith River Metamorphics-quartzite; pelitic calcic basic schists; amphibolite (am)
	○	drill hole
	A-A'	geological cross section
	W9	Wyn 9 (-80°E)
	H4	Hel 4 (-40°E)
	○	Samples 500 → rock chips, 900 → petrology
	↗ ↘	strike and dip of beds

Scale 1:100 000

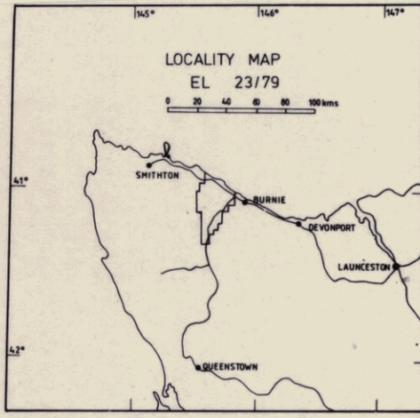
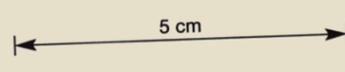
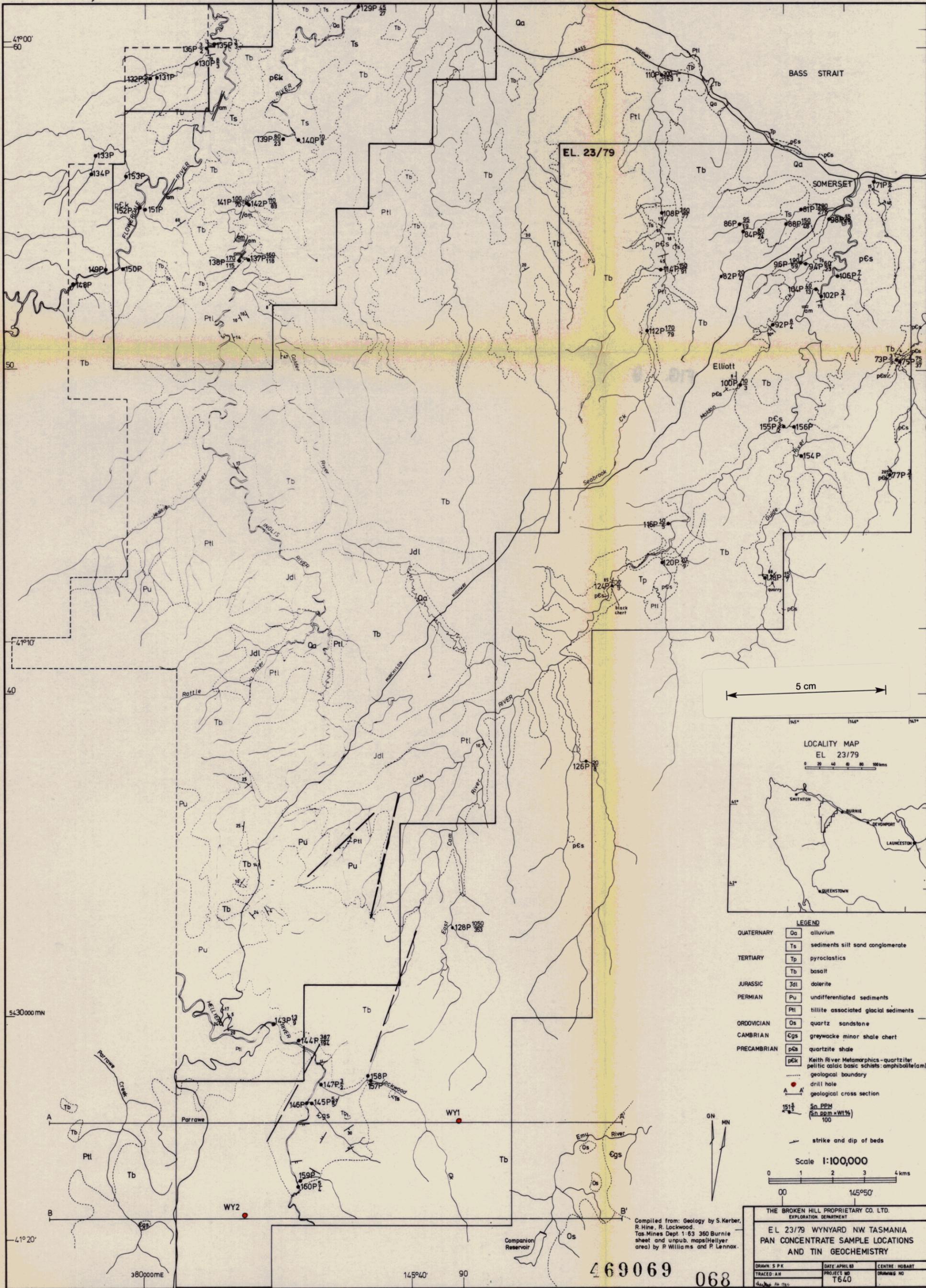
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EXPLORATION DEPARTMENT

**EL 23/79 WYNYARD NW TASMANIA
STREAM SEDIMENT SAMPLE LOCATIONS**
(also rock chips, petrology samples)

DRAWN: S.P.K.	DATE: APRIL 83	CENTRE: HOBART
TRACED: A.H.	PROJECT NO: T640	DRAWING NO:
CHECKED: M.1984		

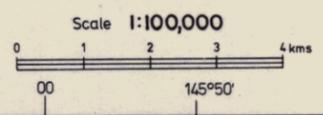
Compiled from: Geology by S. Kerber, R. Hine, R. Lockwood. Tas. Mines Dept 1-63 360 Burnie sheet and unpub. maps (Hellyer area) by P. Williams and P. Lennox.

EL. 23/79



LEGEND

QUATERNARY	Qa	alluvium
	Ts	sediments silt sand conglomerate
TERTIARY	Tp	pyroclastics
	Tb	basalt
JURASSIC	Jdl	dolerite
PERMIAN	Pu	undifferentiated sediments
	Ptl	tillite associated glacial sediments
ORDOVICIAN	Os	quartz sandstone
CAMBRIAN	Egs	greywacke minor shale chert
PRECAMBRIAN	pCs	quartzite shale
	pEk	Keith River Metamorphics - quartzite pelitic calcic basic schists; amphibolite(am)
	(---)	geological boundary
	(●)	drill hole
	(—A—A—)	geological cross section
	(151°)	Sn PPM (Sn ppm × Wt%) / 100
	(—)	strike and dip of beds



Compiled from: Geology by S. Kerber, R. Hine, R. Lockwood, Tas. Mines Dept. 1:63 360 Burnie sheet and unpub. maps (Hellyer area) by R. Williams and P. Lennox.

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

**EL. 23/79 WYNYARD NW TASMANIA
PAN CONCENTRATE SAMPLE LOCATIONS
AND TIN GEOCHEMISTRY**

DRAWN: S.P.K.	DATE: APRIL 83	CENTRE: HOBBART
TRACED: A.H.	PROJECT NO: T640	DRAWING NO:

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