35 218 Ref No. 13590 (308)

TASMANIA DEPARTMENT OF MINES
GEOLOGICAL SURVEY BRANCH

DIAMOND DRILL CORE GEOLOGICAL RECORD

HOLE No. SUB-BASALT DRILLING PROJECT
REF. No. HOLE 5 SHEET No. 1 of 4

INTERVAL From (m)	INTERVAL To (m)	REC. (%)	Core lift	Core loss	Depth (m)	Graphic Log	Min	DESCRIPTION	SPECIMEN Number	SPECIMEN Depth	SPECIMEN Prep'n
					0			0 - 298.3 Basalt sequence with minor fine-grained sedimentary horizons			
								Basalt - Dark coloured, vesicular to massive, often brecciated, sometimes with		6.4m	Amal TS
								oxidised ferruginous horizons at flow tops.		8.8	x RD
					10						
					20						
	Core loss 67m				30			28.4 - 31.5 Unconsolidated organic rich peaty horizon, sandier in upper part		30.7	Poly
					40			Red oxidised zone 38.5 - 40m			
					50					54.6	x RD
					60					60.0	Amal TS
										64.0	x RD
					70			73.5 - 74.4 Brown organic-rich clayey ooze		73.9	Poly
					80					81.4	Amal TS
					90			90.0 - 91.9 Coarse-grained basaltic tuff?			
	Core loss 80m							Sequence below 95m appears to be dominantly aqueous		96.8	Poly
					100						
					110						

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DIAMOND DRILL CORE GEOLOGICAL RECORD

HOLE No. SUB-BASALT DRILLING PROJECT
REF. No. HOLE 5 SHEET No. 2 of 4

INTERVAL From (m)	INTERVAL To (m)	REC. (%)	Core lift	Core loss	Depth (m)	Graphic Log	Min	DESCRIPTION	SPECIMEN Number	SPECIMEN Depth	SPECIMEN Prep'n
					110						
										116.7	Anal TS
					120						
										125.1	XRD
										125.4	Poly
	Core loss 23cm				130						
	Core loss 28cm										
	Core loss 20cm				140						
	Core loss 8cm										
					150						
										159.3	Anal TS
					160						
					170						
										173.3	Anal TS
										178.9	XRD
					180					193.9	XRD
					190						
					200						
					210						
										217.5	Anal TS
					220						

TASMANIA DEPARTMENT OF MINES
GEOLOGICAL SURVEY BRANCH

DIAMOND DRILL CORE GEOLOGICAL RECORD

HOLE No. SUB-BASALT DRILLING PROJECT
REF. No. ADLER SHEET No. 3 of 4

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INTERVAL From (m)	INTERVAL To (m)	REC. (%)	Core lift	Core loss	Depth (m)	Graphic Log	Min	DESCRIPTION	SPECIMEN Number	SPECIMEN Depth	SPECIMEN Prep'n
					220						
					230					237.0	Acet TS
					240					241.6	Poly
					250			249.5 – 298.3 Remarkably even grained sequence of basaltic hyaloclastite breccia consisting of glassy, angular clasts of basalt 2mm – 15 mm in a glassy volcanic matrix occasionally containing large clasts of fine-grained basalt ≤ 100 mm			
					260						
					270						
					280					280.8	Acet TS
					290						
								298.3 – 412.76 Lithicwacke-mudstone sequence correlated with part of Dundas Group. Core extensively broken and very poor recovery to 304m.			
		100		0		Broken Core					
		52	1	38	320			Uniform sequence of thick-bedded maroon to grey green, graded and poorly sorted lithicwacke containing outsize (few mm to 1 cm+) subrounded rip-up clasts of mudstone. Irregular bases, frequently with flame structures, are common.		307.2	TS
		22	2	35							
		100		0							
		100		0	310					315.6	TS
		100		0						316.5	TS
		100		0				Interbedded massive mudstone and laminated sandstone, siltstone and mudstone comprises some 20 to 30 % of the sequence. Dominant mudstone type is pale green or maroon but laminae of dark grey pyritic mudstone occur within the intervals 313.9 to 320.1 m, 321.89 to 322.01 m, 323.7 to 324.38 m, 328.18 to 328.32 m, 329.41 to 329.86 m, 330.12 to 331.86 m, 337.25 to 338.7 m, 355.85 to 355.87 m, 352.85 m to 352.95 m, 357.58 m to 357.7 m and 362.86 to 365.91 m.			
		100		0	320					323.88	TS
		86	0	42						326.25	PT
		94	0	11							
		94	0	29							
					330			Veinlets and occasional veins of white, pink and cream carbonate, sporadically			

TASMANIA DEPARTMENT OF MINES
GEOLOGICAL SURVEY BRANCH

DIAMOND DRILL CORE GEOLOGICAL RECORD

HOLE No. SUB BASALT DRILLING PROJECT
REF. No. HOLE 5 SHEET No. 4 of 4

INTERVAL From (m)	INTERVAL To (m)	REC. (%)	Core lift	Core loss	Depth (m)	Graphic Log	Min
		100			330		
		38		1			
		100					
		100			340		
		100					
		100					
		100			350		
		100					
		100					
		100			360		
		100					
		100					
		100			370		
		100					
		100					
		92		0.24			
		100			380		
		100					
		100					
		100			390		
		100					
		100					
		100					
		100			400		
		100					
		100					
		100					
		100			410		
					420		

DESCRIPTION

containing traces of pyrite are common throughout, but are thicker and more numerous within and adjacent to localized zones of deformation.

A number of changes in bedding orientation and sedimentary facing directions occur down the hole (solid bars with arrows in graphical log) and the dominant spaced cleavage (broken lines). In most instances the dominant cleavage (slaty?) surface is subparallel to bedding although cleavages are anastomosing.

Deformation zones are characterised by locally intense cleavage development and tectonic brecciation. Two main types of breccia are developed:

Type 1 (less common; e.g. at 323.88m) consists of sub-equant angular fragments of sandstone, siltstone and vein carbonate from sub-millimetre size to a few tens of mm in a chloritic matrix.

Type 2 (more common. e.g. at 346.1m) consists of broken formation with lens of cleaved and broken laminated sandstone and pelite separated by and rotated across deformed carbonate veinlets. The sandstone lenses are frequently broken up into elongate phacoids in pelite which displays a strong spaced cleavage.

Cleavage is strongly developed within and adjacent to the deformation zones, but is always a spaced anastomosing ("scaley") cleavage, e.g. at 316.5 - 316.6 where the cleavage is defined by foliae of cream sericite in uniform pale grey siltstone. Cleavage surfaces are irregular, in places stepped, commonly pitted and generally display a marked lineation. Mineral growth (chlorite, sericite and rare pyrite) appears to have accompanied cleavage formation. Deformation also appears to have continued after mineral growth - pyrite is smeared out in the cleavage at 316.6m.

Through much of the core cleavage is poorly developed, discrete fractures frequently slickensided and very fine discontinuous carbonate veinlets many of which are subparallel to bedding are typical.

The style of deformation is suggestive of a ~~reverse~~ thrust regime although minor soft-sediment deformation structures might also be present. Mesoscopic folding is rare - seen in one pyritic mudstone bed at 315.8m; fold axial surface is at an angle of 70° to the core axis.

Alteration is not conspicuous - a few specks of galena are present at 384.5m. Traces of sphalerite and galena are very scarce - a few minute grains are present at 346.1m.

SPECIMEN Number	Depth	Prep'n
	340.3	TS
	346.1	PT/Anal
	390.76	TS
	408.8	TS/Anal

Legend to graphic log:
- bedding with facing
- cleavage
- scaley cleavage
- zone of strong deformation
- type 1 breccia
- type 2 breccia