RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP4	**DRILLED BY**	Fred Ortner
PROJECT	White Spur	**NORTHING**	5361675
PROSPECT		**EASTING**	376476
DESIGNED BY	M Vicary	**RL**	577
LOGGED BY	R Allen	**INCLINATION**	-60
COMMENCED	26-02-1997	**AZIMUTH**	090
FINISHED	24-04-1997	**EOH**	400.30

PURPOSE

To test the White Spur Formation - Central Volcanic Sequence contact about 400m north of a possible growth fault. The hole was collared near the collar of WSP103.

SURVEY DATA

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
0	-60	090	180	-53	098	303	-50.5	100
30	-60.2	093	210	-52.5	098	330	-50	104
72	-60	097	240	-51.2	101	360	-49	106
150	-54	095	270	-51	101	400	-47.5	107

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 104	Hole cased with PVC
NQ	104 - EOH	DHEM Survey performed

SUMMARY

Summary Log		
0 - 107		Greywacke (Cyg)
107 - 142		Black siltstone (Cyss)
142 - 148.7		Volcaniclastic sandstone & siltstone (Cym)
148.7 - 223.5		Quartz feldspar xtl rich graded massflow (Cyx)
223.5 - 241.2		Interbedded black siltstone & v/c sst (Cym/Cya/Cyss)
241.2 - 307.4		Graded dacitic massflow breccia with sulphide clasts (Cymfs)
307.4 - 344.05		Black siltstone (Cyss)
344.05 - 348.8		Fine to medium grained v/c sst (Cys?/Cya?)
348.8 - 400.3		Feldspar phyric pumice breccia (Ccv)

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DRILL HOLE No WSP4 (SUMMARY)

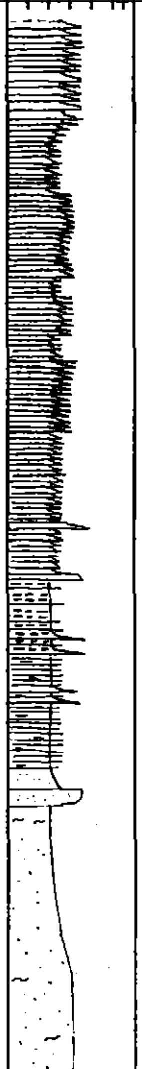
SHEET 1 **OF** 2

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	:
LOGGED BY	: ROD ALLEN

Columns: HOLE DEPTH | SAMPLE No (PREFIX) | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (FORMATION, ROCK, ALTERATION)

Graphic log grain-size scale: 1/16 1/4 1 4 16 32



Depth	Geology notes	Formation	Rock
0–107	0-107 Interbedded greywacke and lithicwacke	Єyg	GWAC
107–142	107-142 Black Siltstone	Єyrs	SILT; SILT-VDFF
142–148.7	142-148.7 Volcaniclastic sandstone + siltstone	Єyn	VDFA VDSM
148.7–223.5	148.7-223.5 Quartz feldspar crystal rich graded massflow	Єyx	VDF-VRSA; VRSM; VR>X

Hole depth scale: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200

SCALE 1:1000

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP4

SHEET 2 **OF** 2

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	:
LOGGED BY	: ROD ALLEN

Columns: HOLE DEPTH | SAMPLE No (PREFIX) | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (FORMATION, ROCK, ALTERATION)

Depth	Geology notes	Formation	Rock	Alteration
200–223.5		Єyx	VR>X; VRLC	
223.5–241.2	223.5-241.2 Interbedded black siltstone and volcaniclastic sandstone	Єyss; Єyn/Єyss	SILT; SILT VDFA VDFM	VDFM-VDFA
241.2–307.4	241.2-307.4 Graded dacitic massflow breccia with sulphide clasts	Єymfs	VDFA; VDCA; VDLC	
307.4–344.05	307.4-344.05 Black Siltstone	Єyss; Єyn?/Єys?	SILT	VDFA-VDFM
344.05–348.8	344.05-348.8 fine to medium grained volcaniclastic sandstone		SILT VDFM	
348.8–400.3	348.8-400.3 feldspar phyric pumice breccia.	Єvc	VDFM	Ser-chl-qtz; Alb-chl

Hole depth scale: 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400

REMARKS EOH = 400.3

427075

GRAPHIC LOG

Volcanic Resources Ltd

Project Mt Read Volcanics, Tasmania.
Location White Spur

Drill hole no. WSP 4
Location no.

Co-ords | RL | Scale 1:200 | Page 1 of 8

Azim | Incl | Diam | Logged by Rod Allen | Date 19.4.97

m	Structure	Log with grainsize (mud 0.5 2 8 32 max mm)	Samples / TS results / Chemistry	Rock / facies description	Alteration

Start ~ 3.5m

grey, feld > lithic-qtz sandst turbidites >> grey siltst

Sandstone beds average 1–1.5m thick

Bed bases 1–2mm grainsize

strong brown weathering

continued coarsening- and thickening upward cycle

grey weak ser–carb trace pyrh

gb

gb

gb

5 cm

GRAPHIC LOG
Volcanic Resources Ltd

Project Location: Mt Read Volcanics, Tas. — White Spur
Drill hole no. / Location no.: WSP 1
Co-ords
RL
Scale 1:200
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Azim | Incl | Diam | Logged by: Rod Allen
Date: 19.4.97

m	Structure	Log with grainsize (mud 0.5 2 8 32 max mm)	Samples / TS results / Chemistry	Rock / facies description	Alteration

50
60
70
80
90
100

gb
So 67°
gb
gb

5 cm

average 2 sandst beds per metre.

slight fining-upward

To top of drill hole this unit has superb coarsening- and thickening up cycle = prograding sandst turbidite lobe

Medium bedded, grey siltst & grey f-cg sandst turbidites > pale grey lime-siltst (2-5cm) and black mudst.

Sandst feld ± lithic rich with 10-15% small black mud grains. Appears more reworked "greywacke" type sandst than below 107m, but is still 'mica-poor' and q-crystal-bearing. Probably reworked felsic ± intermediate volcanic provenance

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GRAPHIC LOG
Volcanic Resources Ltd

Project: Mt Read Volcanics, Tasmania
Location: White Spur
Drill hole no. / Location no.: WSP 4
Co-ords
RL
Scale 1:200
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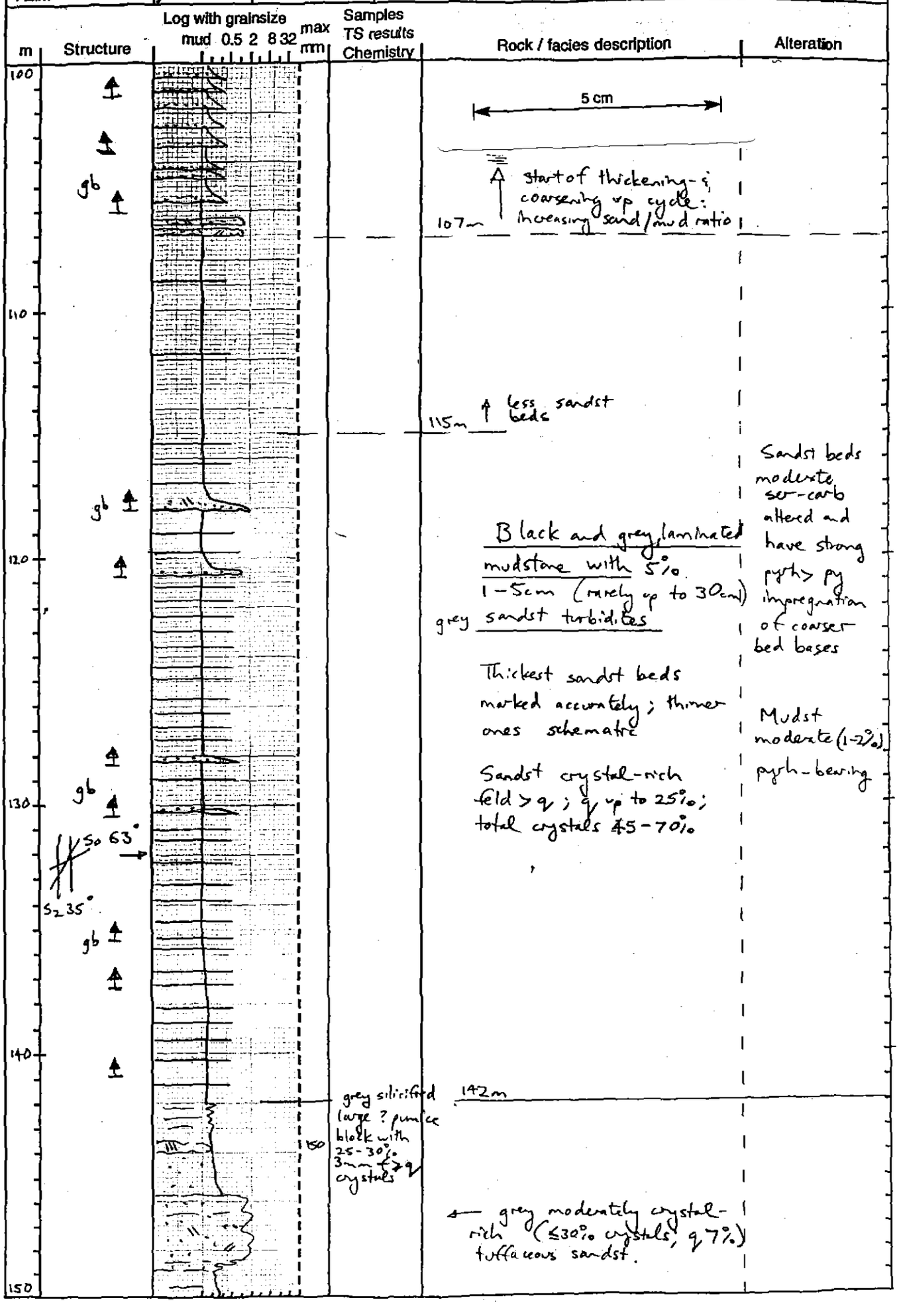
Azim | Incl | Diam | Logged by Rod Allen | Date 19.4.97



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GRAPHIC LOG
Volcanic Resources Ltd

Project Mt Road Volcanics, Tasmania
Location White Spur

✓ Drill hole no. WSP 4
Location no.

Co-ords | RL | Scale 1:200 | Page 4 of 8

Azim | Incl | Diam | Logged by Rod Allen | Date 19.4.97

m	Structure	Log with grainsize (mud 0.5 2 8 32 max mm)	Samples / TS results / Chemistry	Rock / facies description	Alteration
150				5 cm	
			150 sericitic pumice clast		
160				pumice fiamme oriented parallel to S_1 and are chl or ser altered with 30–40% f>q (q 15%) average 2–2.5mm phenocrysts. Qtz commonly as big or bigger than feld?	
170					as below
180				This unit similar to: (1) Hercules hanging wall q-phyric crystal-rich mass flow in 610 p/t & Heres South holes (2) Base of white Spur Fm at west Heres and Sth of Sth Heres (Red 87-9) (3) Rosebery HW units 2a & 4	
190				Abundance of q-f porphyry pumice & lithics most similar to Rosebery unit 2a.	
200			190 Green ser-chl-altered 40% 3mm f>q porphyry ?pumice clast Qtz bigger than feld & up to 7mm	decreasing crystal % increasing pumice matrix and fiamme	

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GRAPHIC LOG
Volcanic Resources Ltd

Project Mt Read Volcanics, Tasmania
Location White Spur

Drill hole no. WSP 4
Location no.

Co-ords | RL | Scale 1:200 | Page 5 of 8

Azim | Incl | Diam | Logged by Rod Allen | Date 19.4.97

m	Structure	Log with grainsize mud 0.5 2 8 32	max mm	Samples TS results Chemistry	Rock / facies description	Alteration
200			60	? white carb-q altered ?fg rhyolite	Grey, Normal graded, feld-qtz crystal-rich, volcanic sandstone subaqueous mass flow unit Base has very abundant irregular large black mudst rip up clasts, and mud matrix to the volc sandst. Near base 50-60% 2mm average feld > q crystals; q 10-20% and includes large subrounded q crystals up to 6mm. At base is a large clast of feld-phyric pumice breccia from top of CVC and a large q-f porphyry clast. Main lithic clast types are (1) pale pinkish cream 15-30% 2mm f>q porphyry (2) 5% 1-2mm f>q phyric rhyolite.	pale grey weak pervasive q-ser
210			25			
220			1100	black mud rafts		
			1200	25% 2-3mm f-q porphyry	223.5m	
			1210	20-25% 2mm feld-phyric strongly altered pumice bx = top of CVC		v. weak ser
	226.8				grey and black mudstone with thick f>>q crystal rich sandst turbidites in lower half Qtz crystals 3-5% in sandst.	abundant syn to late tectonic q>calcite>chl>arspy>py veins
	minor brittle fault zone 50°					
230	230.3					Weak ser
	bedding 63°				5 cm	
	S_2				237.6m	
					Grey siliceous tuffaceous siltst / vfg sandst probably top of mass flow below	
240	S_2 25°				242.0m	
	framme +S1 35-70°		1100		large sericite framme common at top of unit. 10% 1-2mm average f>q crystals in framme. Qtz 2-4% and smaller than feld.	
	gb					
250						

GRAPHIC LOG — Volcanic Resources Ltd

Project: Mt Read Volcanics, Tasmania
Location: White Spur
Drill hole no. / Location no.: WSP 4
Co-ords | RL | Scale 1:200 | Page 6 of 8
Azim | Incl | Diam | Logged by Rod Allen | Date 18-4-97

m	Structure	Log with grainsize (mud 0.5 2 8 32 max mm)	Samples / TS results / Chemistry	Rock / facies description	Alteration
250				5 cm ⟷	
				Normal graded, polylithic-rich, feld > qtz-phyric pumice breccia subaqueous mass flow unit	
				Lower half v. lithic-rich with pumiceous and moderately crystal-rich matrix (20-30% 1-2mm f>q including 2-5% q)	
260				← 1-2% 0.5-1mm q crystals	
				Top is pumice shred fg sandst.	pervasive weak-moderate silicification >ser
		15		Lithics clast-supported for lower 27m, then matrix-supported above that. Angular to subrounded.	
		100			
270				Lithic clast types in order of abundance:	1-2% pyth> sp as matrix impregnation + mineralized clasts + minor massive sulphide clasts.
				← 2-3% 1mm q crystals (1) pale grey to cream, siliceous 1-5% 1-1.5mm f>q-porphyritic rhyolite lava. Some perlitic (70% of lithics)	
				← 3-5% q 20-30% total crystals (2) 10-15% f>q-porphyritic rhyolite	
			brown-weathering spotty carb altered volc clast	(3) pale grey limestone and lime-matrix volcanic sandst Several clasts fossiliferous	
280		80			
		100	Sp>>q mineralized rhyolite clast	(4) dissem, semi-massive & massive sulphide clasts Pyth > sp	
		300		(5) 15-25% 1.5-2mm feld-porphyritic andesite	
290				Unit Similar to: Hercules Mh hangingwall (4956), Rosebery hangingwall units 2d & 3a. Less crystal-rich than Hercules West basal White Spur unit with sulphide clasts. ? Similar to White Spur basal unit with sulphide clasts at 64 000 N but less crystal-rich base.	
300					

GRAPHIC LOG
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Project Mt Read Volcanics, Tasmania
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Drill hole no. / Location no. WSP 4

Co-ords | RL | Scale 1:200 | Page 7 of 8

Azim | Incl | Diam | Logged by Rod Allen | Date 18.4.97

m	Structure	Log with grainsize (mud 0.5 2 8 32 max mm)	Samples / TS results / Chemistry	Rock / facies description	Alteration
300			large black mudst rafts 800 1500 300	5 cm	
	58° puggy brittle reactivated 309.2			307.4m Irregular, intermixed stratigraphic contact	
310	brittle–ductile fault with abundant Mn-bearing carb veins. 309.9			← Fault	
				← 5cm sericite bed with scattered feld crystals = ? water settled fallout.	Thin sandy laminae strongly carb-ser-pyrh altered
				laminated black mudst	
320					
330				332.5m	
	gb			dark grey–black mudst with thin (≤ 7cm) feld crystal sandst beds	
	1–2m of abundant parallel carb-q syn-tectonic veinlets overprinted by S_2			Feld crystal beds range from compact grain-supported to very dispersed mud-matrix-supported. Compact beds normal graded Minor (1%) small q crystal grains	moderate–strong ser–carbonate–py–pyrh alteration of sandst beds.
340	gb			← 5x1cm semimassive py replacement of feldcrystal layer. Equivalent to Rosebery–Hercules TSV and hangingwall mudst. 344.05m	
	S_2 29° S_0S_1 54°		4	thin–medium planar stratified, and interstratified feldcrystal > pumice shred sandst and tuffaceous siltst–fg sandst. Equivalent to Rosebery–Hercs TSV	pale to medium grey pervasive, moderate–strong ser-q-carb 2% disseminated py-pyrh-trace sp in coarser beds.
	bedding + contact 50°			348.8m fg grey lithic Sharp, conformable (but probably erosional) contact	
350			5 20		

GRAPHIC LOG

Volcanic Resources Ltd

Project Location	Mt Read Volcanics, Tasmania / White Spur	Drill hole no. / Location no.	WSP4
Co-ords		RL	Scale 1:200
Azim	Incl	Diam	Logged by Rod Allen
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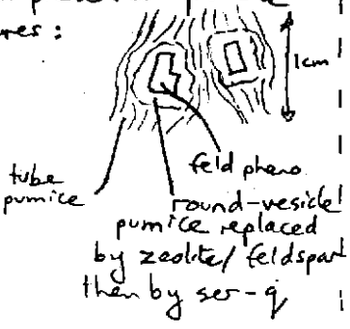
m	Structure	Log with grainsize (mud 0.5 2 8 32 max mm)	Samples / TS results / Chemistry	Rock / facies description	Alteration
350				5 cm	yellowish-grey moderate sericite; 1-2% py blebs + disseminations
				? appears more feld crystal-rich (25-35%) above 356m, partly due to the sericitised feld overgrowths looking like part of the feld phenocrysts	mottled-blotchy to banded 355.8
				Massive to diffuse 2-10cm banded, 20-25% 2mm feldspar-phyric pumice breccia	moderate, mottled to banded, dark green-grey, yellow-grey, and pale grey
360				Relatively crystal-rich. 3% fg disseminated leucoxene. Well preserved pumice textures:	ser-chl and ser-qtz
					1-2% fine disseminated py-pyrrh in feld crystals
					≤ 1% disseminated magnetite < 0.5mm
370		80	medium grey, fg 1% 1-2mm feld-phyric & finely microlithic & leucox-rich dacite/andesite lithic. Crenulate cauliflower margins		
				grey massive fg 1-2% 1mm feld-porphyritic ?dacitic lithic clasts occur all way to top of unit, suggests fine-grained graded top eroded off.	Moderate late tectonic q > chl veins
		10	grey fg leucox-rich ?dacite	(Equivalent to Rosebery-Hercs footwall pumice breccia)	
380				Lithics pink/orange feld-altered below 386m	
				Size of pumice clasts difficult to estimate in this hole	
					386m gradational
		10	brown-orange 15% 1-2mm f-dacite lithic	Distinct flamme rare.	blotchy/mottled pink feld > green chl = strong ?diagenetic alteration.
390					
		20	bright orange, 5% 1-1.5mm f> ferromag porphyritic rhyolite/dacite		Weak late to post tectonic q-chl veining
		20	fg aphyric leucox-rich ?dacite		
		8	bright orange 10% 1-2mm feld-rhyolite/dacite lithic		feld crystals moderate ser altered (cream)
400				End of hole 400.3m	