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DRILL HOLE RECORD

Location Que River Area | Property Mackintosh EL 2/70 | District Tasmania, Australia. | Bearing (M) 91°58' | Hole No QR 46

Commenced 28.5.1975 | Completed 22.6.1975 | % Recovery 99 | Grid bearing (M) 8.75 | Date 24.6.1975

Objective To test P - Q lens at RL 300 beneath QR's 2 and 7. | Core size NQ to 219, BQ to 611.2 m E.O.H. | Logged C.H. YOUNG

Co-ordinates 7404.1N 4770.7E | Dip 64° 16' | Alt./R.L. 694.46

SURVEY DATA				GRAPH DERIVED DATA			CALCULATED CO-ORDINATES			REMARKS
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE	DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE	
0	65	90	Clinometer and Tube Compass	0	-64.25	92.5	7404.1	4770.7	694.5	
0	64°16'	91°58'	Theodolite	25	-65	91.5	7405.4	4781.3	671.9	
24	65	98	Eastman	50	-65.5	90.5	7406.8	4791.7	649.2	
54	65	94.5	Single Shot	75	-65.6	90	7408.3	4802.0	626.5	
80	62.5	94.5	Camera	100	-64	88.5	7410.1	4812.5	603.8	
107	62	92.5	" "	125	-62.5	89	7412.1	4823.6	581.5	
140	62	93	" "	150	-62	89.5	7414.0	4835.0	559.4	
175	61.5	95	" "	175	-61.5	90	7415.9	4846.8	537.4	
202	61	94.5	" "	200	-61	90	7417.7	4858.7	515.5	
230	60	96	" "	225	-60	90	7419.6	4870.8	493.8	
252	59	94.5	" "	250	-60.5	90	7421.5	4883.1	472.1	
282	58.5	95.5	" "	275	-59	91	7423.3	4895.5	450.5	
312	54	98	" "	300	-52	92.5	7425.0	4909.6	429.9	
338	52	100	" "	325	-55	94.5	7426.3	4924.4	409.8	
378	50	105	" "	350	-53	96.5	7427.2	4939.1	389.6	
408	48	102	" "	375	-51	97.5	7427.7	4954.5	369.9	
438	43.5	102.5	" "	400	-48.5	97	7428.1	4970.6	350.8	
469	39	105.5	" "	425	-45	97.5	7428.5	4987.7	332.6	
496	34	104.5	" "	450	-42	99	7428.7	5005.8	315.4	452.7 - 490.85 m Pyritic pyroclastic unit containing irregular veins and bands of massive and semi-massive pyrite with Cpy and minor Sph and Gn. May correlate with N lens.
526	29	106	" "	475	-38	100	7428.4	5025.0	299.3	
554	22	108.5	" "	500	-33.5	100.5	7427.9	5045.2	284.7	
584	21.5	121.5	" "	525	-29	101.5	7427.0	5066.6	271.8	
611	16	106	" "	550	-25.5	103	7426.2	5089.3	260.3	
				575	-22.5	103	7424.5	5112.0	250.2	
				611.2	-16	106	7421.1	5145.8	238.4	611.2 m Hole abandoned as a result of caving above broken rod string.

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DIAMOND DRILL LOG

Hole N° QR 46 Page N° 1.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	5								
	10	No Core.							
	15								
	18.3	DP							
2.0	20	Deeply weathered and oxidised, partly kaolinised, light brown-rusty orange in colour to 39.0 m. There are occasional partly weathered kernels, grey-green in colour.	BROKEN CORE						Pyrite rare as fine discrete euhedral crystals.
0.4									
2.0		Lithic feldspar hornblende crystal tuff agglomerate. Fragments are irregular in outline although elongated (stretched), up to 6 cm in length. Carbonate aggregates up to 3 mm. replace feldspar phenocrysts and small dark green chloritic patches are thought to replace							
N/Q 0.5									
	25								

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DIAMOND DRILL LOG

Hole N° QR 46 Page N° 2.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		hornblende, in a fine grained chloritic groundmass. The matrix is fine grained carbonate rich and of similar composition to the fragments. Foliation 30° to core axis. Fractures 30° - 70° to core axis.							Pyrite rare as above.
3.0	30								
	30.5								
3.0		Fault zone Deeply weathered and kaolinised. Pug and broken core.	BROKEN CORE						
1.8	35								
3.0		Below the fault zone the fragmental nature of the rock is not obvious, it has the appearance of a porphyritic lava.							
3.0	40								
3.0									
3.0	45								
	45.8								
3.0		Below 45.8 m the rock is dark green in colour and relatively fresh. Carbonate aggregates are elongate in the direction of foliation at 30° to core axis.							
	48.3								
3.0		Fault zone Deeply weathered, sheared and broken, 40° to core axis.							
	49.9								
	50								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 3.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Dark green lithic feldspar hornblende crystal tuff agglomerate as above. Fragment outlines are generally obscure. Foliation 30° to core axis. Tension fractures (not abundant) are filled with quartz (often chalcedonic silica) carbonate and rarely sericite.							Pyrite rare as above.
3.0	55	56.8 - 58.3 m Buff-brown in colour, alteration about fault.	BROKEN CORE						
3.0									
3.0	60								
3.0									
3.0	65	Below 67 m the fragmental nature of the rock is more obvious.							
3.0									
3.0	70	72 - 73.5 m Brown-buff in colour, alteration?							
3.0									
	75								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 4.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive ≥60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		75.0 m Solution cavities and small quartz veins.							Pyrite rare as above.
3.0	76.7		BROKEN CORE						
		Fault zone Partly weathered and broken.							
	78.5								
3.0		78.5 - 84.3 m The rock is heavily carbonated, recemented breccia and fracture zone.	c						
	80								
3.0									
		Below 84.3 m fragments are angular to sub-rounded up to 10 cm.							
	85								
3.0									
3.0									
	90								
	90.5								
3.0		Fault zone Deeply weathered rusty brown in colour. Pug and broken core. Recemented breccia and quartz veins.	BROKEN CORE						
3.0									
	95								
	96.0								
3.0		Below 96 m lithic fragments now include buff coloured dacitic lava characterised by sericite aggregates after feldspar phenocrysts in a fine grained siliceous groundmass.							
	100								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 5.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive ≥60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		DP as above.							Pyrite rare as above.
3.0		The rock is often massive with the appearance of a porphyritic lava. Fragments may be the result of auto-brecciation. Pink-buff colouration is not uncommon.							
	105	The rock is hard, reasonably competent lengths up to 80 cm are unbroken.							
3.0		Fractures at 5°, 20° and 60° to core axis, often chlorite lined.							
		Fine carbonate/chlorite stringers average width 3 mm have been noted below 110 m.							
2.0									
	110								
1.0									
3.0									
3.0	115								
3.0									
	120								
3.0									
3.0	125								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 6.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive ≥60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		DP as above. Relatively massive lava? down to 135.5 m.							Pyrite rare as above.
3.0									
3.0	130								
3.0									
	135								
	135.5								
3.0		The rock is now fragmental, tuff-agglomerate. Pink sub-rounded dacitic lava and green chloritised lithic fragments in a "gritty" matrix.							
3.0	140								
3.0									
	145								
3.0	145.6								
		"White spotted" green lithic tuff agglomerate. Pink - buff coloured fragments are no longer common. Lithic fragments are irregular in outline, chloritic and contain carbonate aggregates to 5 mm after feldspar phenocrysts and small green chlorite flecks after hornblende? Rounded carbonate aggregates may be amygdules.							
3.0									
	150								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 7.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive ≥60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		The matrix is generally siliceous and is texturally and compositionally similar to the fragments.							Pyrite rare as above.
3.0	155	153.5 - 155.5 m Pink dacitic lava fragments generally less than 1 cm are common.							
3.0		Below 155.5 m the rock is uniformly silicified lithic feldspar hornblende crystal tuff agglomerate. Grey-green in colour with fragments and matrix of similar texture and composition, fragment outlines are often obscure. Rounded carbonate aggregates, amydgules? are common.							
3.0	160								
3.0									
3.0	165								
3.0		169.3 m Massive chlorite over 3 cm associated with vein quartz.							
3.0	170								
3.0									
	175								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 8.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		The rock is competent and largely unbroken. Fractures at 10°, 20° and 30° to core axis.							Pyrite rare as above.
3.0									
	180								
3.0									
3.0									
	185								
3.0									
3.0									
	190								
3.0									
3.0									
	195								
3.0									
3.0									
	200								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 9.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
									Pyrite rare as above.
3.0									
	205								
3.0		Below 206.7 m occasional buff coloured, irregular to sub-rounded fragments to 6 cm of dacitic lava.							
3.0									
	210								
3.0			BROKEN CORE						
	213.2								
3.0		Fault zone Broken and fractured core some fractures parallel to core axis.							
	215								
	215.9								
2.3			BROKEN CORE						
	220								
2.1		Below 221 m the rock is generally competent and unbroken.	BROKEN CORE						
3.0		224.5 m quartz-carbonate vein with accessory epidote.	c qc						
	225								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 10.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Green lithic feldspar hornblende crystal tuff agglomerate as above.							Pyrite rare as above.
		Fragment outlines are very irregular- generally obscure.							
3.0	230								
3.0									
3.0	235								
3.0		Below 238.4 m quartz veins commonly have accessory pale green epidote.							
	240								
3.0									
		243 - 245.2 m Alteration associated with quartz veining has imparted a pink colouration to carbonate aggregates.							
3.0	245								
3.0									
	250								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 11.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive ≥60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		DP As above, very uniform.							Pyrite rare as above.
3.0									
	255								
3.0									
3.0									
	260	260.5 - 275 m Fragments tend to be smaller, generally less than 3 cm.							
0.6			c						
2.4									
	265								
3.0		266.8 - 281.5 m The rock is darker green in colour under the influence of increased chlorite alteration.							
3.0		Fractures, sub-parallel, 25°, 30° and 60° to core axis, often chlorite lined.							
	270		c						
3.0									
3.0									
	275								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 12.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive ≥60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		DP as above.							Pyrite rare as above.
3.0									
3.0	280		F						
		Below 281.5 m the rock is pale green in colour due to increased carbonate alteration and or decreased chlorite.							
3.0		Fragments are irregular to sub-rounded occasionally to 6 cm.							
	285								
3.0									
3.0		289.2 m Pale green epidote associated with minor quartz-carbonate vein.	c						
	290		c						
			c						
3.0									
			c						
	295								
3.0									
3.0									
	300								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 13.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault F, Vein c carbonate q quartz

Mineralization : Trace 1-5% Common 5-15% Abundant 15-60% Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		DP as above.							Pyrite rare as above.
3.0	305								
3.0									
3.0	310	309.5 - 317 m Pale green to buff in colour.							
3.0									
3.0	315								
3.0		Below 317 m the rock uniformly grey-green in colour, fragments up to 10 cm are irregular to sub-rounded.							
3.0	320								
3.0									
	325								

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DIAMOND DRILL LOG

Hole N° QR 46 Page N° 14.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		DP as above.							Pyrite rare as above.
3.0	330								
3.0									
3.0	335	Fractures commonly at 60° to core axis.							
3.0									
3.0	340	339.4 m 20 cm bleached alteration zone (quartz vein?).						339.4	20 cm Galena 1% as very fine disseminations associated with secondary silicification.
3.0									
3.0	345								
3.0									
3.0	350								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 15.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5% Common 5-15% Abundant 15-60% Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	355	DP as above. 349.7 - 353 m The rock appears to be slightly porous, alteration has turned carbonate pink. Fractures 30° - 70° to core axis, often lined with carbonate.	BROKEN CORE						Pyrite rare as above.
3.0									
3.0	360								
3.0									
3.0	365								
3.0									
3.0	370								
3.0									
	375								

DIAMOND DRILL LOG

Hole N° QR 46 Page N° 16.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1 - 5%, Common 5 - 15%, Abundant 15 60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		DP as above.							Pyrite rare asabove.
		375 m Bedding or foliation at 30° to core axis.							
3.0									
	380								
3.0									
3.0									
	385								
3.0									
3.0									
	390	Below 390 m, carbonate to 4 mm commonly lines fractures at 40° - 60° to core axis.							
3.0									
3.0									
	395								
3.0									
	400								

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DIAMOND DRILL LOG

Hole No QR 46 Page No 17.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		D.P. as above.	BROKEN CORE		Pyrite rare as above.
3.0		402 - 407.5 m Sub-rounded to rounded fragments of buff porphyritic lava to 10 cm are conspicuous.			
3.0	405				
3.0		409 - 410 m Blue grey fine feldspar crystal tuff bands (up to 3 cm) at 20° - 30° to core axis.			
3.0	410				
3.0					
3.0	415				
	415.1			415.1	
3.0		DTL? Brown-buff feldspar crystal tuff-lava. (Porphyritic lava?) Green sericite-chlorite aggregates to 3 mm, some euhedral, after feldspar in a brown-buff coloured siliceous matrix.			Pyrite 1% as disseminations and aggregates of fine subhedral to euhedral crystals.
	417.3				
3.0		D.P. Green coarse lithic feldspar hornblende crystal tuff similar to the tuff agglomerate described above. In general fragments are less than 3 cm.			
	420				
3.0					
3.05					
	425				

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DIAMOND DRILL LOG

Hole N° QR 46 Page N° 18.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.05	430	D.P. as above.	c						Pyrite 1% as above.
3.05		Below 432 m the rock is weakly sheared at 30° - 40° to core axis, fragment outlines are obscure.	c						
3.05	435								
3.05	440	Below 441 m the rock becomes increasingly sheared and carbonated.	F c						
3.05	443.3	DTL? Sheared at 50° - 60° to core axis and heavily carbonated over 1 m.	c c c					443.3	Pyrite 3%-5% as disseminations of euhedral crystals to 1 mm and as irregular veins and aggregates.
3.05	445	Grey-buff carbonated <u>feldspar crystal tuff</u> (lava?). Pale green sericite aggregates stretched by shearing to 3 mm (some euhedral outlines have been noted) represent feldspar. Olive green streakes of sericite after altered fragments? are randomnly distributed. The matrix or groundmass? is carbonated buff-grey in colour and is siliceous.						447.1	5 cm Pyrite 40%.
3.05	450	Small aggregates of green illite-hydromuscovite have been noted. Below 447.4 m the rock is partly disrupted, fragmental? or brecciated.							

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DIAMOND DRILL LOG

Hole N° QR 46 Page N° 19.

Feature : Bedding, Foliation, Fragment - size & shape 0%, Shearing, Fault F, Vein c carbonate q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
	450.5	PyP Fault Contact			Pyrite 3%-5% as above.
3.05		Fault zone Pug, breccia, sheared and broken core 50° to core axis.			
	452.7	Grey sericitised carbonated coarse lithic tuff.		452.7	Pyrite 5%-10%, 40% where indicated as disseminations aggregates irregular veins and nettworks of fine subhedral to euhedral crystals to 4 mm.
3.05	455	Down to 462 m the rock is sheared at 40° to core axis and generally disrupted. Fragment outlines are obscure. Fragments of feldspar crystal tuff, where pale green sericite replaces feldspar have been noted. (Porphyritic lava?).			
3.05		The matrix is fine grained and siliceous partly sericitised and carbonated.		458.7	Py 30%, Cpy 30%, recrystallised Gn 10%, grey Sph 5% as a vein or band at 50° to core axis.
	460			459.2	Py 10%-20%.
				460.2	Py 60% euhedral crystals up to 5 mm rare Sph, Gn.
3.05				460.6	Py 50% as aggregates and veins subhedral to euhedral crystals to 3 mm.
		Below 462 m the rock is less sheared and disrupted, fragments are irregular to sub-rounded to 4 cm, consisting mainly of dacitic lava as described above, fine grey tuff and recrystallised chert have been noted.		461.5	Py 5%-10%, 40% where indicated, as above.
3.05	465	The matrix is light grey and siliceous.			
		There is a fragment alignment or bedding at 40° to core axis.			
3.05				468.7	Py 60% as disseminations, irregular veins and aggregates trace Sph, Gn.
		469.7 m Fault, 30 cm of sheared and carbonate striated core.		469.8	Py 5%-10% as disseminations irregular veins and aggregates.
3.05	470				
	471.6	The rock is no longer obviously fragmental. Carbonated locally chloritic lithic feldspar crystal tuff or lava?		471.6	Py 3%-5% as above.
3.05		Feldspar is represented by green chlorite-sericite aggregates to 3 mm. Irregular patches of chlorite to 1 cm may represent lithic fragments.		474.7	15 cm Py 10%, Sph 5%, Gn 3% in a chlorite rich band.
	475				

Feature : Bedding, Foliation, Fragment - size & shape 0%, Shearing, Fault F, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.05		PyP as above. Carbonate-pyrite filled fractures occasionally give a pseudo coarse fragmental appearance. The matrix is grey to buff siliceous and carbonated.							Pyrite 3%-5% as above.
3.05									
	480	The rock is now more obviously fragmental, partly sericitised lithic tuff agglomerate. Lithic fragments irregular to sub-rounded to 5 cm are varied; buff dacitic lava, green chloritised andesite? with conspicuous white carbonate aggregates, fine grey tuff and chert. The matrix is grey-siliceous and contains ultrafine pyrite.							
3.05									
3.05	485								
	486	Fault zone Pug, quartz veins, sheared and broken core at 60° to core axis.							
	487	Below the fault the rock is grey-buff feldspar crystal tuff as above 480 m.						487.7	Py 40% locally 60% as disseminations and veins of fine crystals, trace Cpy.
3.05	488.9	Fault zone Pug, sheared and broken core, partly sutured by pyrite. 40° to core axis.						488.8	5 cm Py 50%, Cpy 20%, Gn 5% trace Sph.
	490								
	490.85	Fault contact.						490.85	Py <1% as fine discrete euhedral crystals.
3.05		DTL Green-buff carbonated lithic feldspar crystal tuff agglomerate. A varied unit, green coloured zones (due to chlorite alteration) are similar in appearance to DP including fragments to 4 cm with white carbonate aggregates after feldspar? The buff coloured rock may be autobrecciated not fragmental? Feldspar appears to be represented by pink (albitised) aggregates to 3 mm in a buff, carbonated siliceous matrix.							
3.05	495								
	496.8	PyPl Fault zone Minor pug, mainly sheared and broken core at 35° to core axis. Within the fault zone the rock has the appearance of PyP, grey in colour and contains more pyrite than the DTL described above.						496.8	Pyrite 1%-2% as disseminations and aggregates of fine subhedral to euhedral crystals.
N/C	500								

Commonwealth

DIAMOND DRILL LOG

Hole N° QR 46 Page N° 21.

Feature : Bedding, Foliation, Fragment - size & shape 0%, Shearing, Fault F, Vein c carbonate q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
N/C		Fault zone as above.			Pyrite 1%-2% as above.
		The rock may represent sheared and pyritised DTL.			
1.15		Carbonated below 501.6 m.			
	503.1			503.1	Py < 1% as fine discrete euhedral crystals.
3.05		Green DTL as above.			
	504	PyP Grey coarse lithic tuff. Mixed fragment types as below 480 m.		504.0	Py 3%-5% as disseminations and aggregates.
	505			505.0	Py 3% as disseminations and aggregates of fine subhedral to euhedral crystals.
	505.45	Grey-green feldspar crystal tuff band.			
		Fault zone Pug, sheared and broken core.			
3.05					
	507.4	The rock below the fault zone is sheared and disrupted somewhat similar to DTL.			
		Pale green chlorite-sericite aggregates after feldspar in a grey siliceous matrix.			
3.05	510				
	512.2	Fault zone Pug, sheared and broken			
3.05	512.9	core 50° to core axis.			
		DTL Fault Contact.			
		Green partly chloritic feldspar crystal lithic tuff lava. Feldspar crystals are represented by elongate pale green chlorite-sericite aggregates to 3 mm.			
	515				
2.3	515.5	Fault zone Sheared and broken core, partly recemented with carbonate, 20° to core axis.			
	516.7	Small < 5 mm irregular carbonate-chlorite rich aggregates are thought to represent lithic fragments.		517.6	Pyrite 1%-2% as disseminations, irregular veins and aggregates.
3.1	518.3	Fault zone Minor pug, mainly fractured and broken core. 30° - 50° to core axis.			
	520				
	520.4	The groundmass (matrix) is fine grained pale green and siliceous. Occasional ovoid carbonate aggregates may be amygdules.			
3.1		Weak foliation 40° to core axis.			
		Fractures 30° - 50° to core axis.			
3.1	525				

Dominco

DIAMOND DRILL LOG

Hole N° QR 46 Page N° 22.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
		DTL as above.			Pyrite 1%-2% as above.
	527.5				
3.1	528.0	Fault zone Sheared at 30° to core axis			
				529.3	Pyrite 3%-5% as disseminations and irregular veins.
	530				
2.0					
		531.8 - 532.7 m Fragmental, sub-rounded fragments to 3 cm of dacitic lava, pale green sericitised trachyte? and grey chert.		531.7	Pyrite 1%-2% as above.
1.0					
3.05					
	535				
	535.4	Fault zone Sheared at 70° to C.A.			
	535.7				
3.05					
		538.1 - 538.8 m Fragmental as above.		538.1	Py 3%-5% as disseminat-
		538.8 - 562.8 m The rock is relatively fine grained, irregular to "shredded" fragments of pale green sericitised and carbonated lava? up to 3 cm are randomly distributed.		538.8	ions and irregular veins Py 1%-2% as above.
	540				
3.05					
3.05					
	545				
3.05					
3.05					
	550				

Cominco

DIAMOND DRILL LOG

Hole No QR 46 Page No 23.

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein, c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
		DTL as above.			Pyrite 1%-2% as above.
3.05	555				
3.05					
3.0	560				
3.0		Below 562.8 m the rock is uniformly fine grained (rare lithic fragments to 2 cm). Bedding or flow banding at various core angles.		562.8	Pyrite <1% as minor secondary veinlets.
3.0	565				
3.0					
3.0	570				
3.0					
3.0	575				

Dominion

DIAMOND DRILL LOG

Hole N° QR 46 Page N° 24.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		DTL as above.			Pyrite <1% as above.
				577.2	10 cm pyrite 30% as disseminations and irregular veins.
3.0	580			579.8	5 cm pyrite 10% as above. Pyrite 1%-2% as discrete euhedral crystals and small irregular veins.
3.0					
	585				
3.0	586.3	DTL? This rock appears to be a mixture of types PyP and DTL (petrology QR 15 28 m suggest the rock is a weakly flow banded porphyritic dacite and could be classified with the DTL group).		586.3	Pyrite 5%, 10% where indicated as disseminations, aggregates and irregular veins.
3.0	590	Grey-green-buff lithic feldspar crystal tuff-lava. The rock is partly fragmental with irregular fragments up to 3 cm of porphyritic tuff-lava. The fragmental nature may be a result of autobrecciation or fracturing where pyrite stringers can give a pseudo fragmental appearance.			
2.8	595	Feldspar crystals are represented by aggregates of pale green sericite to 3 mm, (Occasionally green illite-hydromuscovite). The groundmass consists of quartz and very fine sericite. 595.8 - 596.1 m and 596.5 - 596.8 m Grey fragmental PyP units. 588.5 and 592 m pink carbonate veins, rhodochrosite. Foliation - flow banding? 60° to core axis.	BROKEN CORE		
3.1					
	600				

DIAMOND DRILL LOG

Hole No QR 46 Page No 25.

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
		DTL as above.			Pyrite 5% as above.
3.05	601	PyP Sheared and disrupted down to 604 m light grey sericitised and carbonated, locally chloritic lithic tuff.		601	Pyrite 5%-10% as disseminations, fine irregular veins and aggregates of subhedral to euhedral crystals.
3.0		Lithic fragments, where not obscured by shearing and sericitisation are up to 2 cm, have irregular outlines and appear to consist of dacitic lava.			
	605	The matrix is light grey, fine grained and siliceous.		604.8	Pyrite 5%-10% as above 20% where indicated with associated sphalerite and galena aggregates, trace overall.
3.0		Foliation 60° - 70° to core axis.			
	608	Gradational Contact.			
		Grey to buff vitric feldspar crystal tuff.		608.75	5 cm secondary Cpy 2% Py 20% and carbonate.
				609	20 cm Cpy 2% Py 20%.
3.0	610	Feldspar crystals are randomly distributed and are represented by irregular sericite aggregates to 3 mm.		609.5	Py 3%-5% as disseminations and aggregates of fine subhedral to euhedral crystals.
	611.2	E.O.H. Grey irregular quartz aggregates are thought to represent devitrified shards, hence vitric.			
		The matrix is fine grained and siliceous.			
		Foliation 60° to core axis.			
	615				
		Hole abandoned at 611.2 m as a result of caving above broken rod string.			
		Daughter hole QR46W taken off wedge set at ~~456 m~~. 422.4 m (Bottom)			