

APPENDIX 6a

NCT002 – Lithology Logs

(See Digital File EL20/2003_200505_09_Appendix6a.pdf)

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_AMG	384.690
			Northing_AMG	5322.150
			Elevation (m)	345
			Azimuth_Mag	235
			Dip	-60°

PROJECT: QUEENSTOWN - MT DARWIN
 PROSPECT: LINE 15
 DATE: May - June 2004
 LOGGED BY: I. J. TEDDER

EL 20/2003

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG		
				PREFIX	%					STRUCT	ALT	mm							
					1	3	1	3	5			0.06	0.5	2	8			32	64
2	0	20																	
4	0	20																	
6	0	0																	
8	10	0																	
9	10	0																	
10	0	60							F/										
12	50	50							F/										
14	10	60							F/										
16	50	60																	
18	30	70							F/										
20	0	90							F/										
22	0	90							F/										
24	10	0							F/										
26	0	40							F/										
28	0	30							F/										
30	0	20							F/										
32	0	30							F/										
34	0	10							F/										
36	0	10							F/										
38	0	40							F/										
40	0	60							F/										
42	0	10							F/										
44	0	10							F/										
46	0	0							F/										

9-40.3
 Strongly fractured and faulted sandy volcanoclastic with sparse angular lithic clasts up to 6-7 cm. Polymineralic - includes granite clasts. Predom a feldspathic - qtz - lithic grit.
 Alteration: Albitisation of feldspars + weak sericite.
 7.3 Grey granite? clast.
 Generally 1-3% qtz phenocrysts in matrix.
 10.1 clasts in crush zone.
 13.4 clay in crush zone.
 15.6 Pink por granite clast.
 18.2 crush zone - and at 19.0
 Oxidation down to 28m.
 Pale grey to med grey colour below 23m.
 Fractures related to fault at 26.4 very steep to core axis.
 27.7-28 clay on fault zone.
 31.3 small crush zone ± 5cm
 33.1 small crush zone ± 2cm

G.P.B.
 VS PEX

REMARKS

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting AMG	
			Northing AMG	
			Elevation (m)	
			Azimuth Mag	
			Dip	

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HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG		
				PREFIX	%					STRUCT	ALT	mm							
					.1	.3	1	3	5			0.05	0.5	2	8			32	64
122	30	60															119.9-121 Clay + crush fault zone. 121.9-122.2 Fractured rock Gritty, pebbly volcanoclastic sandst. Continues to 145.7		
124	100	70																	
126	40	0																	125.4-130.5 Major fault zone - about 2.5 m of core lost. Crushed zones, clay gouge and fractured silt.
128	60	0																	
	40	0																	
130	100	0																	
	50	0																	
132	90																		
	100																		
134	90																		
	50																		
136	100																		
	100																		
138	100																		
	90																		
140	30																		
	40																		
142	90																		
	50																		
144	30																		
	20																		
146	0																		
	50																		
148	0																		
	30																		
150	90	20																	
	0																		
152	20																		
	80	10																	
154	70	40																	
	80	30																	
156	90	0																	
	80	20																	
158	50	0																	
	40																		
160	80																		

REMARKS

VS LX

U B

VS BX

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_AMG	
			Northing_AMG	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

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HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO	PREFIX	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
					%	.1	.3	1	3	5	STRUCT			
162		90											160.7-193.8 Polymitic open frame work pebbly-gritty volcaniastic with generally sandy matrix. Variation due to density + size of clasts and minor changes in alt. - Down chl alt. minor sericite Dark grey green colour, mod strong lamination	VS
		100												
164		90											167.3 ± 2cm qtz-cb-ch vein	VS
		90												
166		20												
		100												
168		90												
		20												
170		30												
		80												
172		40											Slightly higher density of pebbles-grit	
		100												
174		60												
		40												
176	90	10												
		30												
178		70												
		50												
180		30												
	70	20											181.05 ± 3cm cb-qtz vein	
182		40											181.7 ± 4cm qtz-chl vein	
		60												
184		80											183.1 ± 1cm qtz-cb vein	
	60	10												
186		100											185-186.5 zone of more intense ser alt - fewer clasts evident. Alt is still weak to moderate. Rock is mid cream green-grey.	
		70												
188		60												
		100												
190		100												
		20											191.0 cb vein	
192		90												
		70												
194		90											193.8-201.1 Polymitic pebbly volcaniastic - almost closed frame-work. Unit ends on a sericite-py mineralised zone.	VS
		50												
196		40												
		50												
198		70											~197-198 paler rocks start - less chl, more ser alt (weak mod)	
		80											198.55-198.65 Intense ser-py altered clast?	
200		90												

REMARKS

Survey Depth	Azimuth	Dip	Hole Co-ordinates
			Easting_AMG
			Northing_AMG
			Elevation (m)
			Azimuth_Mag
			Dip

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HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG	
				%					STRUCT	ALT	mm							
			PREFIX	.1	.3	1	3	5			0.06	0.5	2	8	32	64		
202	50	100							Py	Py							201.1 - 205.1 Mineralised sealed shear, pale brown colour or bedded by of f.g. py with auger shaped mica (milky grey) clasts - aligned steep to e.a. Traces of sphalerite + rare ep.	VC
204	0	70							Py	Py								
206	50	100															205.1 - 234.0 Polyminetic - gritty/pebbly volcanoclastic with sandy matrix. Similar to unit 160.7 - 193.8.	S
208	100	60							Py	Py							208.1 - 208.9 Intensely alt ser-py (sph) shear breccia or fragmental.	VC
210	90	160																
212	90	90															212.2 - 212.3 Qtz - chl vein	J
214	90	90															214.7 - 214.9 Qtz - chl vein	Cr S
216	80	30															215.1 - 215.2 Qtz - chl vein 215.6 - 215.85 Qtz - chl vein 216.6 ± 3cm " " "	
218	70	70																
220	10	0																
222	80	100							Py	Py							221.7 - 222.2 Qtz - chl veins 6 x ± 2cm. 222.25 - 222.8 Min sealed shear? Py - sil	
224	100	100							Py	Py							223.0 - 224.0 Min sealed shear? larger component of country rock included	VC
226	100	100																
228	100	100																
230	100	100																
232	100	100																
234	100	100																
236	100	100																
238	100	100																
240	100	100																
REMARKS																		
234 - 247.1 Polyminetic gritty - pebbly volcanoclastic with characteristic rare dark feldspar porphyry clasts and feldspar - qtz rich matrix. Still relatively sparse pebble sized clasts. Clasts (Chert/hyalite - porphyry + sig. chl alt volc siltst.) are generally angular. The dark f.p. clasts may be flattened porphyry.																		

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_AMG	
			Northing_AMG	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

PROJECT: <u>QUEENSTOWN - MT DARWIN</u>
PROSPECT: <u>LINE 15</u>
DATE: <u>MAY - JUNE 2004</u>
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EL20/2003

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO PREFIX	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG	
				%					STRUCT	ALT	mm							
				.1	.3	1	3	5			0.06	0.5	2	8	32	64		
242	100	100															3-5% subrounded to subangular qtz, crystals in matrix	
244	100	100																
246	100	100								chl							248.2 } Examples of pumice 248.3 } fragments.	
248	100	100															weak chl alt	
250	100	100								Py-Sil							250.5-251.0 weak sil-py alt - tectonically disrupted.	
252	100	100																
254	90	100															253.4-255.9 slightly coarser more close pack volcanoclastic. Pumice frag rare. 254-255 - some tectonic bre infilled with carbonate. ← 20cm of slightly finer volcanoclastic.	
256	100	100															256.1-266.8 similar to 253.4-255.9.	
258	100	60															Large pumice fragments less common	
260	80	90																
262	60	50																
264	60	90																
266	40	40																
268	40	40															266.8-268.2 Massive qtz-chl vein.	
270	100	100															268.2-270.5 Continuing porphyritic volcanoclastic with sandy-gritty matrix. Similar 205-234, possibly darker grey colour and clasts of more irregular appearance (in size). Occasional chl alt porphyritic pumice fragment (flattened).	
272	90	40								chl								
274	50	90															weak chl alt	
276	90	90																
278	100	100																
280	90																	

PU
B

REMARKS

Survey Depth	Azimuth	Dip	Hole Co-ordinates
			Easting_AMG
			Northing_AMG
			Elevation (m)
			Azimuth_Mag
			Dip

PROJECT: <u>QUEENSTOWN - MT DARWIN</u>
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HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG	
				PREFIX	%					STRUCT	ALT	mm						
					.1	.3	1	3	5			0.06	0.5	2	8			32
282		90																
		100																
		80																
284		80																
		100																
286		100																
		100																
288		80																
		90																
290		100																
		100																
292		100																
		100																
294		100																
		100																
296		100																
		90																
298		100																
		100																
300		100																
		60																
302		90																
		100																
304		100																
		100																
306		50																
		100																
308		100																
		100																
310		100																
		100																
312		90																
		100																
314		100																
		100																
316		100																
		100																
318		100																
		100																
320		100																

282.5 - 296.5 Dark grey-green polymictic volcaniclastic - grit to pebble sized clasts diam, with quartz-feldspar crystal with matrix. Occasional dark flattened pumice fragments. Sandy horizon ± 40 cm d.h. thickness. Alt: moderate chlorite, minor ser.

small qtz-gb vein on small fault marks change of unit at 296.5.

296.5 - 305.35 Upward fining med grey-green polymictic volcaniclastic with dark porphyroblastic pumice clasts and 1% qtz.

305.35 - 307.1 Massive, med grey green feldspar (quartz) porphyry.

307.1 - 311.1 Upward fining med. grey green polymictic volcaniclastic. Some pumice.

311.1 - 314.0 As for 307.1-311.1 but sorted part at base and generally finer.

312.7 - 314 As for 307.1-311.1

314.0 - 319.9 Similar to last two units but less evident fining upward. Base difficult to define

REMARKS

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_AMG	
			Northing_AMG	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

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HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG
				%					STRUCT	ALT	mm						
				1	3	1	3	5			0.06	0.5	2	8	32		
362	100	100															
364	100	100												463.1-463.85 Qtz-chl vein			
366	100	100												467.1 ±4cm chl-qtz vein			
368	100	100						wh						467.5-467.75 Qtz-chl-ch vein			
370	100	100						chl									
372	100	100															
374	100	100												Minor dark qtz phreatic pumice frags			
376	100	100						cb						375-375.8 Zone of carbonate with volcanic - Sceded shear			
378	100	100															
380	100	100												381 ±10cm qtz-ch vein			
382	100	100												381.3-389 med grey gritty-pebble polyminetic volcanoclastic			
384	100	100															
386	100	100															
388	80	80						wh						388.6+388.7 Qtz-ch-ch vein ±2cm			
390	90	90						chl						389 ±15cm qtz-(chl) vein			
392	100	100												~389-412.45 massive feldspar qtz volcanic. Occasional xenolith.			
394	50	50												390 ±10cm qtz-chl vein			
396	30	30												391.1, 391.3, 391.5 Qtz-ch-chl veins			
398	80	80												393-412.45 coarse 10cm Qtz-chl-ch vein with possible trace of sphalerite			
400	100	100												394.8, 394.9, 395.1 15cm Qtz-chl-chl vein			

REMARKS

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_AMG	
			Northing_AMG	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

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HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG	
				PREFIX	%					STRUCT	ALT	mm						
					.1	.3	1	3	5			0.06	0.15	2	8			32
402	100																	
404	100																	
406	100								wk									
408	90								chl									
410	90																	
412	80																	
414	90																	
416	70																	
418	50																	
420	100																	
422	100																	
424	100																	
426	100																	
428	100																	
430	100																	
432	100																	
434	100																	
436	100																	
438	90																	
440	100																	
REMARKS																		

403-404 - Thin traces of orn sph in thin qtz veins
 407-7 to 408-8 chl-qtz-ch veins with clots of brown sphalerite seem to be normal Devonian veins - chl rich

413-45 - 416.5 Grey fine grained feldspar porphyry. Feldspar larger and altered to albite?

pink 7mm long rhyolitic clast (at 417.05) in qtz porphyry
 416.5 - 423.2 med-pale grey volcanic with some porphyry clasts. Unit does not appear much different from those above & below - few more clasts.

421.6 qtz-chl vein 13cm
 422-422.3 several qtz-chl-ch veins

423.2 - 429.4 med grey fine gran coherent feldspar-quartz porphyry. Rare clast (or xenolith) slight variations in colour possibly mainly due to alteration envelopes around/near qtz veins

Pg on fracture surface only.

DL M

F

DL M

Survey Depth	Azimuth	Dip	Hole Co-ordinates
			Easting_AMG
			Northing_AMG
			Elevation (m)
			Azimuth_Mag
			Dip

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				PREFIX	%	1	3	5	STRUCT	ALT	0.06	0.5	2	8	32		
442	80	100															
444	70	80															
446	80	50															
448	90	90															
450	80	80															
452	100	100															
454	80	100															
456	90	90															
458	90	100															
460	90	90															
462	70	100															
464	70	100															
466	90	60															
468	50	70															
470	50	80															
472	90	90															
474	100	100															
476	80	90															
478	100	100															
480	90																

± 8cm qtz-chl-ch vein at 446.8
 several 1-4cm qtz-chl veins
 ± 35cm qtz-chl vein starts 446.4
 3mm ch-qtz-ch vein at 447.8 has
 greyish-cream + brn sphalerite. other
 veins above dont.
 450.5 2-3mm discontinuous qtz-chl
 veinlet with 3mm blob of red brn
 sphalerite

± 3cm qtz-chl-ch vein at 465.5
 469.7-470 minor fault
 469.4-472 Feldspar porphyry - med
 grey colour. Felds alt to chl - larger F
 inel (± 4mm long) mainly alt on mins.
 472-489.5 Fine grained feldspar-
 qtz porphyry. Rare clast / xenolith.
 suggests it may be clastic. Unit as
 for 423.2 - 469.4

± 4cm chl-qtz vein at 478.6
 several veins - max ± 12cm qtz-chl veins

REMARKS

DC M

DC M

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_AMG	
			Northing_AMG	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

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				%					STRUCT	ALT	mm								
			PREFIX	.1	.3	1	3	5			0.06	0.5	2	8	32	64			
482		90																	
		70																	
484		90																	
		80																	
486		90								wh									DL M
		90								wh									
		100																	
488		80																	
		100																	
EOH 489.5		50/50																	
REMARKS																			