BHP EXPLORATION [redacted] DRILL HEADER SHEET SHEET 1 OF 3 HOLE No. C01.

CV 1

PROJECT

PROJECT	QUEENSTOWN B/METAL
JOB NUMBER	B57
1 250,000 SHEET	(QUEENSTOWN)
GRID NAME	COMSTOCK VALLEY
LOGGED BY	ANDY WILDE
DATE LOGGED	WHILE DRILLING
PREVIOUSLY LOGGED REFERENCE	–
CODE REFERENCE SHEET NAME	} BHP 1989
CODE REFERENCE SHEET DATE	

HOLE INFORMATION

COLLAR COORDINATES (ESTIMATED)

EASTING	384850mE
NORTHING	5345175m N
REDUCED LEVEL	350m

REDRILL/WEDGE / HOLE No. /

SURVEY DATA

DEPTH	AZIMUTH	DIP
0m	192°M	60
30	– *	60.25
60	– *	60
90	171°M	60
142	171°M	58.5
172	169°M	58
202	168°M	57.5
232	154°M	56.5
262	168°M	56.0
292	170°M	56.0
316	171°M	53.0

INSIDE CASING

HOLE SUMMARY

TOTAL DEPTH	316.0m.
DEPTH TO WATER	NOT RECORDED
DEPTH TO BASE OF TOTAL OXIDATION (CLAY ZONE)	NO CLAY ZONE
DEPTH TO BASE OF PARTIAL OXIDATION (WEATHERED BEDROCK)	~145m - PUG ZONES IN LIMESTONE

	TYPE	FROM	TO
GEOPHYSICAL LOG	SIROTEM	0	316
ENGINEERING LOG	–	–	–
PHOTOGRAPHIC LOG	–	–	–

SUMMARY LOG

FROM	TO	LITHOLOGY etc.
0	117.5m	GLACIAL SHALEY CLAY WITH BOULDER BEDS
117.5	316.0m	GORDON LIMESTONE

DRILLING INFORMATION

DRILLING CONTRACTOR	DIAMOND DRILLING TASMANIA
RIG TYPE	LONGYEAR 38
DATE COMMENCED	JAN 16 1990
DATE COMPLETED	FEB. 9 1990
MATERIAL LEFT IN HOLE	0-316m 30mm ID PVC CLASS 6 PIPE.

METHOD/SIZE	FROM	TO	COMMENTS
HW CASING ADVCR	0	11	
HQ CAS. ADVCR/ W.L.	11	80.5	DRILLED HQ CORE, THEN REAMED.
NQ WL	80.5	134	
BQ WL	134	316	

ANALYSES

SAMPLE NUMBERS FROM	SAMPLE NUMBERS TO	LABORATORY	DATE DESPATCHED	ELEMENTS	METHOD
DC 3	DC 12	} ANALABS	11.2.90	{ Cu, Pb, Zn, Ag	AAS
DC 15	DC 32			Ba, As	XRF
				Au	F/A.

SAMPLE INTERVAL / SAMPLING METHOD: 1/2 CORE AT 1m INTERVALS / 10-20cm LENGTHS AT 1m INTERVAL

COMMENTS: TO TEST COMBINED UTEM/SIROTEM/TURAM CONDUCTOR AT A DOWNHOLE DEPTH OF APPROXIMATELY 255m.

PROBLEMS ENCOUNTERED DRILLING GLACIALS VIZ. CAVING & EXCESSIVE WEAR OF REAMER SHELLS DUE TO QUARTZITE PEBBLE FRAGMENTS. CEMENT USED TO PREVENT CAVING.

CV-1 SUMMARY LOG

0 - 117.5m GLACIAL SEDIMENTS

This zone is characterised by poor recovery due to the abundance of poorly consolidated clays and sands. Several intervals in which the only material recovered were fragments of Owen Conglomerate (Denison Group) boulders, and rare dolerite, probably represent discrete boulder beds of a few metres thickness. Beneath 72m recovery was better, and a pale green-grey shale is the main rock type, with Owen Conglomerate boulders present between 79.5 - 83.0m and 112.3 - 117.5m. The shale parting is at 75^{o} to the core axis, and bedding is also defined by darker-coloured (?organic-rich) layers. Fine mica is present throughout.

117.5 - 316.0m GORDON LIMESTONE

From 117.5 to approximately 168m the limestone consists of a medium-grey, wispy layered dolomitic arenite. Wispy layering is due to the presence of darker ?organic-rich material. Graphite-filled stylolites are ubuiquitous and are most abundant (over 10 per metre) between 152 and 160m. In the interval 117.5 - 145m there are numerous thin, pug-filled fractures which contribute to poor recovery. The pug is dark, carbonaceous clay similar to that observed at outcrop in the Linda Valley. Some arenaceous intervals are porous and sponge-like due to removal of carbonate cement. Bioturbation is suggested by irregular contacts between sandy and rare muddy layers, and rare occurrence of fossil burrows.

From 196m body fossil fragments are more common, usually in layers to 20cm. From 175m the limestone has a higher argillaceous ("shale") component, which is dark grey to black, reflecting high volumes of carbonaceous material, possibly graphite. These muddy layers are interlayered with paler micritic (calcitic) limestone on a scale of centimetres to metres. As with the proceeding unit, there is evidence of bioturbation.

The interval between 179.0 and 192m is strongly pyritic, reflecting a large increase in the volume of veins. Pyrite constitutes as much as 7% by volume of the rock, usually restricted largely to the veins. Pyrite is the main constituent of the veins, which are up to 30cm thick but carbonate lesser quartz and rare grains of pink sphalerite were also noted. Veins are discordant to bedding, and often enclose fragments of the host-rock which appear more or less in situ (hydraulic breccia). Clearly there has been a significant through put of hydrothermal fluid.