

Culverin-1

Date:	29-12-2005	Last Casing:	340 mm (13 3/8") @ 1511.14 mMDRT
Report Number:	10	Leak Off Test:	1.89 sg EMW @ 1528.0 mMDRT
Report Period:	24hrs to 24:00	Current hole size:	311 mm (12 1/4")
Depth @ 2400 Hrs:	3385.0 mMDRT	Mud Weight:	1.22 sg
Last Depth:	3277.0 mMDRT	ECD:	1.22 sg
Progress:	108 m	Mud Type:	KCl-NaCl-Polymer
TD Lithology:	80% Claystone 15% Siltstone	Mud Chlorides:	81,500 ppm
Water Depth:	585.0 m	Mud Fluid Loss:	4.0 cc
RT Elevation:	21.5 m	Bit Type:	PDC (Reed-Hycalog)

OPERATIONS SUMMARY

24 HOUR SUMMARY	Drilled ahead from 3277.0 mMDRT to 3385.0 mMDRT. Top of 70.3 Ma Sand picked at 3335.0 mMDRT on LWD logs.
00:00 - 24:00:	
06:00 Update	Drilling ahead at 3396.0 mMDRT in the Latrobe Group below the 70.3 Ma Sand.
NEXT 24 HOURS:	Drill ahead 311 mm (12 1/4") hole.

GEOLOGICAL SUMMARY

- LITHOLOGIC DESCRIPTION:**

Interval mMDRT	Description
3275 - 3296 ROP 2.1 – 30 m/hr Ave 8.2 m/hr	<p>Sandstone with minor Siltstone and Claystone</p> <p>SANDSTONE (60-80%): clear to translucent, off-white, loose to friable aggregates, fine to very coarse, dominantly medium to coarse, poorly sorted, sub-rounded to angular, trace to 50% white argillaceous matrix, trace chlorite, trace lithic grains, fair to good inferred porosity, no fluorescence.</p> <p>SILTSTONE (10-20%): light brownish grey, brownish grey, very soft to friable, sub fissile in part, very argillaceous to arenaceous, common carbonaceous specks and flakes, gradational to Argillaceous Siltstone.</p> <p>CLAYSTONE (10-20%): light olive grey, light brownish grey, trace yellowish brown, very soft, amorphous, slightly calcareous, rare very fine disseminated pyrite.</p>
3296 – 3335 ROP 2.54 – 24.69 m/hr Ave 7.85 m/hr	<p>Claystone with interbedded Siltstone and very minor Sandstone with trace Coal/Carbonaceous Claystone</p> <p>SANDSTONE (5-20%): off-white, soft aggregates, occasional loose grains, very fine, moderately well sorted, sub-angular to rounded, 80% white argillaceous matrix, poor inferred porosity, no fluorescence.</p> <p>SILTSTONE (10-60%): light brownish grey to brownish grey, very soft to soft, sub-blocky to amorphous, abundant carbonaceous specks and laminae, very argillaceous, disseminated pyrite in part.</p>

	<p>CLAYSTONE (35-85%): light brown to very light greyish brown, pale grey, very soft, amorphous, carbonaceous specks in part, silty in part, trace very fine disseminated pyrite.</p> <p>COAL (Trace-5%): black to dark brown, soft to very hard and splintery, grading into carbonaceous claystone, pyrite cemented in part (3m thick coal/carbonaceous claystone at 3324.0 mMDRT based on LWD logs).</p>
3335 – 3343 ROP 1.93 – 14.7 m/hr Ave 9.39 m/hr	<p>Massive Sandstone</p> <p>SANDSTONE (100%): clear to translucent, occasionally off white and pink, loose, occasionally cemented into small aggregates with silica cement (quartz overgrowths?), fine to very-coarse, occasionally granular, mainly medium grained, very poorly sorted, sub angular to angular, very good inferred porosity, trace pyrite, trace carbonaceous fragments (possibly cavings?), no fluorescence, thin (1.0 m thick) very hard/brittle cemented cap at the top of the massive sandstone at 3335.0 mMDRT identified from LWD logs.</p>
3343 – 3385 ROP 0.8 – 25 m/hr Ave 6.4 m/hr	<p>Claystone and Siltstone with minor Sandstone and trace Coal/Carbonaceous Claystone</p> <p>SANDSTONE (5-30%): clear to translucent, loose, very fine to fine, mainly fine grained, well sorted, sub angular to angular, white argillaceous matrix washing out in part, fair - good inferred porosity, trace pyrite, trace carbonaceous fragments (possibly cavings?), no fluorescence.</p> <p>SILTSTONE (0-70%): light brownish grey to brownish grey, very soft to soft, sub-blocky to amorphous, abundant carbonaceous specks and laminae, very argillaceous, disseminated pyrite in part. Also in 3385m sample, trace SILTSTONE dark grey, brownish black, silicified, very hard, sub blocky, occasionally completely replaced with silica, banded in part.</p> <p>CLAYSTONE (Trace-90%): light brown to very light greyish brown, pale grey, very soft, amorphous, carbonaceous specks in part, silty in part, trace very fine disseminated pyrite.</p> <p>COAL (Trace-5%): black to dark brown, soft to very hard and splintery, sub vitreous to vitreous, grading into Carbonaceous Claystone, pyrite cemented in part (thin coals/carbonaceous claystones identified at 3344.0 and 3352.0 mMDRT from LWD logs), traces of very hard pyritised fragments in part at 3380.0 mMDRT.</p>

▪ **HYDROCARBON FLUORESCENCE:**

INTERVAL (mMDRT)	FLUORESCENCE
	Nil.

▪ **GAS SUMMARY:**

INTERVAL (mMDKB)	Total GAS (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	IC4 (ppm)	NC4 (ppm)	C5 (ppm)
3275 - 3296	0.09	508	72	45	28	25	31
3296 - 3335	0.05	409	72	49	32	35	12
3335 - 3343	0.05	438	100	61	31	31	19
3343 - 3385	0.16	687	143	77	32	46	50

▪ **SURVEYS**

MD	ANGLE	Azi		MD	ANGLE	Azi		
2285.35	4.14	37.21		2887.70	3.86	45.65		
2314.02	4.15	34.69		2916.43	3.87	45.26		
2342.60	4.24	35.48		2944.96	3.83	45.79		
2371.30	4.20	37.23		2973.53	3.73	46.71		
2399.91	4.28	37.06		3002.19	3.72	46.75		
2428.46	4.30	38.32		3059.49	3.72	46.57		
2457.14	4.30	37.54		3088.21	3.81	46.46		
2511.27	4.09	38.40		3116.08	3.75	45.37		
2543.24	4.05	40.48		3145.07	3.74	48.33		
2572.00	4.01	40.97		3173.79	3.67	49.59		
2600.65	3.91	40.54		3202.65	3.71	48.97		
2629.39	3.86	40.58		3231.77	3.53	48.2		
2658.02	3.89	41.3		3260.37	3.66	49.86		
2686.60	3.77	41.46		3346.36	3.65	50.41		
2715.15	3.77	40.42		3375.03	3.69	54.03		
2743.83	3.80	42.10						
2772.65	3.83	43.73						
2801.66	3.84	42.76						
2830.44	3.89	43.81						
2859.14	3.95	44.31						

▪ **WELLSITE GEOLOGISTS:**

Mike Woodmansee

Rob Blackmore

▪ **FORMATION TOPS**

WD = 585.0 m RTE = 21.5 m								
FORMATION	PROGNOSED DEPTHS (m)			ACTUAL DEPTHS (m)				
	MDKB	TVDSS	THICK	MDKB	TVDSS	HI/LO	THICK	DIFF
Sea Floor/ Gippsland Limestone	607	585	-	606.5	585.0	0.0	1899.9	0.0
Lakes Entrance	2582.0	2560.0	325.0	2508.0	2484.9	75.1 H	315.1	-10.0
Latrobe	2907.0	2885.0	30.0	2824.0	2800.0	85.0 H	11.0	-19.0
Base TF Channel	2937.0	2915.0	10.0	2835.0	2811.0	104.0 H	1.0	-8.0
Top 67.5 Ma Sand	2947.0	2925.0	310.0	2836.0	2812.0	113.0 H	8	

Near 68.5 Ma Sand	3257.0	3235.0	285.0	3103.0	3078.5	156.5 H	55	
Near 70.3 Ma Sand	3542.0	3520.0	70.0	3335.0	3310.0	210.0H	8	
Near 74 Ma Sand	Not prog							
TD	3612.0	3590.0						

▪ **COMMENTS:**

Sperry-Sun LWD sensor to bit distances:

Directional = 13.13 m

Gamma-Ray = 15.73 m

Resistivity = 18.04 m

Density = 25.66 m

Porosity = 30.97 m

ACAL = 29.93 m