



DAILY GEOLOGICAL REPORT

WELL: Shenandoah #1 **REPORT No.:** 23 **DAYS FROM SPUD:** 23 **DATE:** 23/08/07
PEL: EP 98 **00:00 DEPTH:** 404mKB **LAST 24hr DEPTH:** 328mKB **24 hr Progress:** 76m
LOCATION: Beetaloo Basin **RIG:** Century Rig 7 **KB:** (Final Survey) 232.55m **13^{3/8}" Csg:** 323.15m
GEOLOGIST: J Hulse **GL:** (Final Survey) 226.75m **PTD:** 2,900m

NEARBY WELLS: Balmain #1 (Twin)

06:00 Depth/Operation: 420mKB / POOH to run cement squeeze into Bukalara Sandstone.
Operations 00:00 to 06:00: Drill ahead in Hayfield Mudstone.
Previous 24 Hours Operations: Drill out shoe track, perform LOT, drill ahead with rotary air until 360m when water production was too high, drill ahead with air/water.

Formation Tops	Actual Depths (m)			Prognosed Depths (m)			Diff to Prog. H/L	Thickness (m)
	MDKB	TVD	TVDSS	MDKB	TVD	TVDSS		
Undifferentiated Tertiary	5.8	5.8	+227	5.8	5.8	+227	-	45.7
Jinduckin Formation	51.5	51.5	+181.3	54.8	54.8	+178	+3.3	32.7
Tindall Limestone	84.2	84.2	+148.6	83.8	83.8	+149	-0.4	178.8
Antrim Volcanics	263.0	263.0	-30.5	265.3	265.3	-32.5	-2.0	85.0
Bukalara Sandstone	348.0	348.0	-115.5	348.3	348.3	-115.5	0.0	58.0
Hayfield Mudstone	406.0	406.0	-173.5	406.3	406.3	-173.5	0.0	
Hayfield Sand				782.2	782.2	-549.4		
Jamison Sandstone				856.3	856.3	-623.5		
Kyalla Formation				940.8	940.8	-708		
Moroak Sandstone				1551.8	1551.8	-1319		
Velkerri Formation				1641.8	1641.8	-1409		
Bessie Creek Sandstone				2481.8	2481.8	-2249		
Total Depth				2900.0	2900.0	-2667.2		

Remarks: Bukalara Sandstone porosity estimated as high as 20-30%, produced large volumes of clear fresh water when drilled with air, no hydrocarbon gases or cuttings hydrocarbon indications observed. Loose quartz grain cavings masked boundary with Hayfield Mudstone but ROP break was distinct and correlates to Balmain-1.

Interval (m) ROP (min/m)	Lithology Description	Gas/Background Breakdown C1/C2/C3/C4/C5
Formation: ANTRIM VOLCANICS		
328-348mKB 6.9min/m	Volcanics (100%): Dark green grey – reddish grey brown, common – abundant red ?zeolite alteration, angular, hard, blocky, common brecciated, minor black phenocrysts, coarsely crystalline, minor tholeiitic texture, minor secondary brown – yellow brown calcite, trace secondary siliceous mineralisation. Trace fractured clear quartz in lower interval.	Nil
Fluorescence	Nil	
Gas Flaring	Nil	
Formation: BUKALARA SANDSTONE		
348-406mKB	Sandstone (100%): Light translucent grey, fine – very coarse, predominantly coarse, moderately – well sorted, clear – cloudy quartzose, loose, trace – minor aggregates with calcite or pyritised matrix, moderate – very high sphericity, rounded – sub rounded, lower interval tending finer and less well sorted, good to excellent inferred porosity, no hydrocarbon shows, trace – minor dull – moderate pale yellow calcite mineral fluorescence in some samples, no solvent natural or crush cut.	Nil
Fluorescence	Nil	
Gas Flaring	Nil	



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06:00 SUMMARY

Formation: HAYFIELD MUDSTONE

Continuation: HAYFIELD MUDSTONE		
406 – 410mKB	Mudstone: Pale green – pale grey, firm, sub platy, common – abundant disseminated pyrite, samples have high volumes of loose rounded quartz as above, presumed to be caving.	Nil
410 – 420mKB	Mudstone grading to Siltstone: Pale green, medium red brown, sub platy, firm, minor micromicaceous, minor disseminated pyrite, banded. Common loose rounded quartz – caving.	
Fluorescence	Nil	
Gas Flaring	Nil	