

## Trefoil-2

Date : 08 Nov 2009

Geology Report Number : 26

( associated DDR # 39 )

### Well Details

Depth MDBRT:	2629.0m	Rig:	Kan Tan IV	Date:	08 Nov 2009
Depth TVDBRT:	2629.0m	Progress:	0.0m	Report Start:	0000
Depth TVDSS:	2603.0m	RTE agl:		Report End:	2400
Hole Size:	8.500in	GLE amsl:	0 (m)	Days On Location:	38.38
Hole Size Carbide:		Last Csg Size:	9.625in	Days since Spud:	33.67
Water Depth (MSL)	69.0m	Last Csg Shoe:	2520.0m		
RT-ASL(MSL)	26.0m	F.I.T. / L.O.T.:	11.00ppg /		

### Operations Summary

24hr Summary:	Ran in hole with 216 mm (8-1/2") LWD drilling assembly. Drilled ahead in 216 mm (8 1/2") hole section.
Forward Plan:	Drill ahead in 216 mm (8 1/2") hole section to core point 1.

### General Comments

00:00 TO 24:00 Hrs ON 08 Nov 2009

<b>Operational Comments</b>	Geoservices: 2 Data engineers, 2 mudloggers, 2 sample catchers on board. Gas equipment calibrated 5 Nov 09. Data lost from 2523 - 2543 mMDRT due computer malfunction. Sperry: 3 MWD engineers on board. Back up tool string ready to go. ALD failed at 2523 mMDRT. Geolograph failure, no data between 2600 - 2629 mMDRT. Wiped missing section. Apparent total tool failure at 2627 mMDRT.
<b>Operational Comments</b>	FEWD sensor distances from bit: Vibration 0.00 m Gamma (DGR) 2.81 m Resistivity (EWR-P4) 5.16 m Directional (PCD) 10.02 m Density (ALD) 14.82 m Porosity (CTN) 18.62 m Sonic (BAT) 23.37 m Caliper (ACAL) 31.20 m

### WBM Data

Mud Type: KCI POLYMER	Flowline Temp:	Cl: 41000mg/l	Low Gravity Solids:	Viscosity	46sec/qt
Sample From: 2	MWD Circ Temp:	Hard/Ca: 375mg/l	High Gravity Solids:	PV	13cp
Time: 21:30	Glycol CP Temp:	MBT: 11	Solids (corrected):	YP	26lb/100ft²
Weight: 9.35ppg	Glycol:	PM: 0.1	H2O: 93%	Gels 10s	11
ECD TD:	Nitrates:	PF: 0.15	Oil:	Gels 10m	15
ECD Shoe:	Sulphites:	MF: 1.95	Sand: .25 %	Fann 003	11
ECD Cuttings:	API FL: 5.0cc/30min	pH: 9	Barite:	Fann 006	14
KCI Equiv: 9%	API Cake: 1/32nd"	PHPA Excess:		Fann 100	27
				Fann 200	35
				Fann 300	39
				Fann 600	52

### Shakers, Volumes and Losses Data

Engineer : Mike Lawrance / Fergus Spencer

Available	2225.7bbl	Losses	112.0bbl	Equip.	Descr.	Mesh Size	Hours
Active	715.0bbl	Downhole		Shaker 1	Brandt VSM 300	20 top/50 bottom	8
Mixing		Surf+ Equip	64.0bbl	Shaker 2	Brandt VSM 300	20 top/50 bottom	16
Hole	576.7bbl	Dumped		Shaker 3	Brandt VSM 300	20 top/50 bottom	16
Slug		De-Gasser		Shaker 4	Brandt VSM 300	20 top/50 bottom	
Reserve	934.0bbl	De-Sander					
Kill		De-Silter					
		Centrifuge Evaporation	48.0bbl				

Comment

### Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD (m)	Pick Criteria
	MDBRT (m)	TVDSS (m)	MDBRT (m)	TVDSS (m)	+ / - TVD (m)		
Torquay Group	95.00	69.00	95.00	69.00	0.00	823.00	Sea floor
Lower Miocene	904.00	878.00	918.00	892.00	-14.00	244.00	GR increase
Seismic Marker							
Upper Angahook	1168.00	1142.00	1162.00	1136.00	6.00	169.00	GR decrease, res increase
Angahook Volcanics Equiv	1323.00	1297.00	1331.00	1305.00	-8.00	238.00	GR decrease, res increase
Lower Angahook	1564.00	1538.00	1569.00	1543.00	-5.00	281.00	GR decrease, res increase
Demons Bluff	1839.00	1813.00	1850.00	1824.00	-11.00	255.00	Res increase
Eastern View Coal Measures	2092.00	2066.00	2105.00	2079.00	-13.00	0.00	Res decrease

### Lithology Summary

Interval MDBRT (m)		ROP (m/hr)	Lithology
From	To		
2523.00 - 2543.00		Min:3 Avg:13 Max:74	SILTSTONE, finely interbedded SANDSTONES. SILTSTONE (70-90%): brownish grey, brownish black, olive grey, soft to firm, subblocky, 5% coarse grained dispersed quartz grains, trace carbonaceous specks and thin laminae, trace lithic fragments, trace micromica and mica flakes. SANDSTONE (10-30%): yellowish grey, very light grey, olive grey, 20% very fine, 50% fine, 30% medium grained, trace coarse grained, clear quartz grains, friable to firm, poor to moderate sorting, subangular to subrounded, subspherical to subelongate, 10% siliceous cement, 10% white clay matrix, trace lithic fragments, trace carbonaceous material, poor inferred visual porosity, no hydrocarbon indications.
		ROP Comments: Slow ROP at start of section until LWD sensors and stabilisers out of casing.	
Interval MDBRT (m)		ROP (m/hr)	Lithology
From	To		
2543.00 - 2587.00		Min:11 Avg:56 Max:103	SILTSTONE, finely interbedded SANDSTONES, thin bed of DOLOMITE. SILTSTONE (70-95%): predominantly brownish black, traces olive grey and brownish grey, soft to firm, blocky to subblocky, 5% loose very coarse quartz grains, 5% carbonaceous specks and laminae, trace lithic fragments, 5% micromica and laminated mica flakes. SANDSTONE (5-30%): very light grey, olive grey, trace yellowish grey, trace light olive grey, 20% very fine, 50% fine, 30% medium grained, clear quartz grains, friable to firm, poor to moderate sorting, subangular to subrounded, subspherical to subelongate, 10% siliceous cement, 10% white clay matrix, trace lithic fragments, trace carbonaceous material, trace pyrite, poor inferred visual porosity, no hydrocarbon indications. DOLOMITE (0-5%): brownish grey, firm to moderately hard, subblocky with conchoidal fracture in part.
Interval MDBRT (m)		ROP (m/hr)	Lithology
From	To		
2587.00 - 2629.00		Min:2 Avg:22 Max:52	SILTSTONE interbedded with SANDSTONE. SILTSTONE (40-95%): brownish grey, brownish black, olive black, olive grey, soft to firm to moderately hard, blocky to subblocky to subfissile, trace carbonaceous material, trace lithic fragments, trace coal, trace micromica. SANDSTONE (5-60%): very light grey to light grey to clear to opaque, olive grey, 20% very fine, 50% fine, 30% medium grained, loose to firm, poorly to moderately sorted, subrounded to subangular, subspherical to spherical to subelongate, trace silica cement, trace calcareous cement, trace pyrite cement, trace lithic fragments, trace carbonaceous material, trace coal, trace nodular pyrite, poor to good inferred visual porosity, no hydrocarbon indications.

### Gas Data

Depth Interval (m)	Gas Type	Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	iC4 (%)	nC4 (%)	C5 (%)	CO2 (%)
2523.00 - 2543.00	Other								
Comment - Computer malfunction prevented accurate gas determination.									
2543.00 - 2633.00	Drilled	0.106	0.0640	0.0044	0.0025	0.0019	0.0006	0.0009	0.000
2556.00 -	Peak	0.206	0.1489	0.0101	0.0045	0.0025	0.0007	0.0010	0.000
2615.00 -	Peak	0.414	0.3107	0.0161	0.0080	0.0037	0.0018	0.0017	0.000

### Survey

MDBRT (m)	Incl. (deg)	Corr. Az (deg)	TVD BRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
2524.75	1.0	97.2	2524.47		0.1			
2557.55	1.1		2557.26		0.2			MWD
2588.20	1.3		2587.91		0.2			MWD

### 06:00 Hrs Update

Time:	06:00 Hrs on 09 Nov 2009
Depth:	2633 mMDRT/2633 mTVDRT
Progress Since Midnight (m):	4
Status @ 0600hrs:	POOH
Formation:	Eastern View Coal Measures
Lithology:	Interbedded SILTSTONES and SANDSTONES.
ROP:	Average ROP: 24.8 m/hr (15.2 - 34.4 m/hr)
Gas:	Ave Background gas - 0.1186%, C1: 0.0421%, C2: 0.0026%, C3: 0.0015%, iC4: 0.0020%, nC4: 0.0007, C5: 0.0014, CO2: 0.0000

### Wellsite Geologist(s)

(Days) - Dennis Archer

(Nights) - Larissa Hansen