

### Fermat-1

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#### DAILY GEOLOGICAL REPORT

Licence / State:

RT - SEAFLOOR:

Spud Date:

**DGR 25** 

14 December 2008

VIC/P46

76.7m

Date: 7 January 2009

**Report Period:** 06:00 – 06:00 hrs AEDT **Rig:** Seadrill: West Triton

Days From Spud: 24

 Current Hole Size:
 216mm (8.5")
 WATER DEPTH RT:
 38.7 m MSL

 RT:
 38.0 m MSL

 Depth @ 06:00 Hrs EST:
 3585m MDRT
 PTD:
 4000.0 m MDRT

3580.4m TVDRT -3542.4 SS

24 Hr Progress: 135m

06:00 - 06:00 EST

Current Operation: Circulate and condition hole.

AFE Cost (Drill)\$ (Coal&S)\$ Cost To Date:

(P&A)\$

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT/FIT
1	914 mm (36")	119m	762mm (30")		X52	116m	
2	444mm (17.5")	999m	340mm(13.375")	68lb/ft	NT80HE	987m	- / 15.0ppg EMW
3	311mm(12.25")	2807	244mm(9.675")	53.5lb/ft	P110	2800.3m	- / 16.0ppg EMW

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCI:	CI -:	PV/YP:	Rmf
19.00	KCI Polymer	10.6	50	5.2	8.5	6.9%	42k	20/40	-

Bit Data	No.	Make	Туре		Size	Hours	Meters	Condition
Present	6	Security	PDC	SE3653Z	216mm (8.5")	42.4	778	
Last	5	Reed	PDC	RSX616M- A10	311mm (12.25")	19.3	410.5	1 1 LT G X I BU TD

	Surveys	Туре	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	101	MWD	3525.24	6.42	158.39	3521.05	87.47	193.26
Ī	102	MWD	3555.17	6.99	159.59	3550.77	90.38	192.02
Ī	103	MWD	3569.38	7.28	160.29	3564.07	91.88	191.43

Fluid Loss	Interval MDRT	Total or Rate (bbl)	Remarks

#### **OPERATIONS SUMMARY**

#### Previous 24 hrs Operations Summary at 06:00 hrs AEDT

Drilled 216mm (8.5") hole 3450-3585m. Circulated hole clean. POH worked tight spots and backreamed as required to 244mm (9.675") casing shoe at 2800m. Backreamed 3415-3392m, 3081-2948m, 2900-2830m. RIH for wiper trip – stabilisers hung up in casing shoe – reamed through casing shoe. RIH. Washed from 3451-3480m – drillstring took weight. Washed and reamed 3480-3576m. Hole packing off and drillstring torquing up at 3576m. Circulated hole clean.

#### **Anticipated operations:**

Wash and ream to bottom. Condition hole. POH. Run E-logs.



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FORMATION TOPS								
FORMATION	ACTUA	ACTUAL TOP		High / Low High / Low		PROGNOSED TOP		
	(MDmRT)	(mSS)	Prognosis	Normanby-1	(MDmRT)	(mSS)		
Heytesbury Group	76.7	-38.7	0m	10 High	76.7	-38.7		
Nirranda Group	492	-454	49m Low	145 High	443.0	-405.0		
Dilwyn Formation	576	-538	38m Low	152 High	538.0	-500.0		
Pember Mudstone	963	-925	15m Low	255 High	948.0	-910.0		
Pebble Point Formation	1075	-1037	47m Low	227 High	1028.0	-990.0		
Timboon Sandstone	1092	-1054	44m Low	236 High	1048.0	-1010.0		
Paarratte Formation	1245	-1207	22m Low	251 High	1223.0	-1185.0		
Skull Creek Mudstone	1705	-1666	1m Low	258 High	1703.0	-1665.0		
Nullawarre Greensand	1850	-1811	26m Low	232 High	1823.0	-1785.0		
Belfast C & B Mudstone	1905	-1866	26m Low	232 High	1878.0	-1840.0		
Belfast A Mudstone	2160	-2120	5m High	253 High	2163.0	-2125.0		
Flaxman Formation	2873	-2832	68m High	363m Low	2938.0	-2900.0		
Waarre Formation Unit C	3186	-3145	45m High	385m Low	3228.0	-3190.0		
Waarre Formation Unit B					3533.0	-3495.0		
Waarre Formation Unit A					3588.0	-3550.0		
Eumeralla Formation					3988.0	-3950.0		
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Total Depth					4000.0	-3962.0		

## **HYDROCARBON SHOW SUMMARY**

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS
3510-3520	Dolomite: Dull orange mineral fluorescence only	15u

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	3585	87u	5u	
Connection Gas				



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**DGR 25** 

# **GEOLOGICAL SUMMARY**

INTERVAL	LITHOLOGY	GAS (Peak / BG)
ROP (m/hr)  3450-3565  3-35m/hr 25m/hr avg	Siltstone with interbedded and interlaminated Sandstone and Claystone SANDSTONE: (0-30%) Quartzose to Quartz Arenite, clear to translucent, brown grey, very fine to fine, subangular to subround, well sorted, strong dolocalcareous cement, locally moderately strong siliceous cement, occasionally abundant argilaceoous/silty matrix, occasionally trace nodular pyrite, occasionally trace chlorite, trace carbonaceous specks, trace muscovite, friable to moderately hard, poor	15u BG 92:4:3:1:Tr
	porosity, no fluorescence.  SILTSTONE: (20-100%)Dark grey to olive brown, very argillaceous grades to silty claystone in part, trace disseminated pyrite, common carbonaceous material, micromicaceous, common fine grained arenaceous inclusions, slightly chloritic in part, trace lithic fragments, firm to moderately hard, blocky.  CLAYSTONE: (0-70%)Dark grey to grey black, silty in part, micromicaceous, trace carbonaceous specks, silty/arenaceous inclusions, moderately hard, hard in part, blocky to platy.  DOLOMITE: (0-Trace) Dusky yellow brown, cryptocrystalline, trace fine calcareous sand, flinty, hard, blocky, sharp, no porosity, dull orange mineral fluorescence only.	
3565-3585 15-30m/hr 22m/hr avg	Interbedded and interlaminated Siltstone and Sandstone SANDSTONE: (20-60%) Quartzose, clear to translucent, light grey, very fine to fine, subangular to subround, well sorted, moderately strong siliceous cement in part, weak calcareous cement, trace biotite, trace medium milky quartz float, trace fine to medium nodular pyrite, trace lithic fragments, trace biotite in part, rare glauconite, friable to disaggregated, poor porosity, no fluorescence. SILTSTONE: (40-80%) Dark grey to olive black, locally very argillaceous grades to silty claystone in part, common very fine grained arenaceous inclusions, trace carbonaceous material, micromicaceous, trace lithic fragments, moderately hard, blocky.	18u BG 91:4:4:1:Tr

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#### **REMARKS:**

DGR 25 links to DDR 28.

High volume of sloughing cavings over shakers on bottoms up after wiper trip.

### **LWD Offsets from Bit:**

Additional mud parameters:

At 3506m

Rm 0.1049 @ 24.3C Rmf 0.0839 @ 24.3C Rmc 0.1968 @ 24.1C

Barite - 5.6% (82.51lb/bbl)

#### Run 4:

GR: 4.58m Res: 4.53m ECD: 3.82m Survey: 12.62m Sonic: 21.97m Neutron: 29.27m Density: 28.40m Caliper: 27.93m

**Geologists:** Greg Clota/BrianRicketts