

**COMPILED FOR**

**SANTOS LIMITED**  
*(A.B.N. 80 007 550 923)*

**GALLOWAY 1**

**BASIC DATA REPORT**

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**GALLOWAY 1**  
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## **LOCATION MAP**



**GENERAL DATA CARD**

WELL: GALLOWAY 1	WELL CATEGORY: EXPLORATION WELL INTENT: OIL	SPUD: 04:30 29/07/06 TD REACHED: 15:30 20/08/06			
		RIG RELEASED: 14:30 24/08/06 CMPLT: P&A			
SURFACE: LAT: 38° 05' 08.78" S LONG: 147° 33' 44.10" E (GDA94) (549307mE 5784520mN)		RIG: Ensign 32			
TARGET: LAT: 38° 05' 31.88" S LONG: 147° 34' 38.81" E (GDA94) (550635mE 5783799mN)		STATUS: PLUGGED & ABANDONED			
SEISMIC STATION: Line GNX05_03, SP 1690		REMARKS: TARGET SANDS WERE WET. NO HYDROCARBONS ENCOUNTERED.			
ELEVATION GND: 2.70 m RT: 8.58 m					
PERMIT / LICENCE: VIC / P39(V)					
TD: 2315 m (Logger Extrap.), 2315 m (Driller)					
PBTD: Well Plugged & Abandoned		HOLE SIZE	CSG SIZE	SHOE DEPTH	TYPE
TYPE STRUCTURE: ANTICLINE		26" H/O	20"	60m	
TYPE COMPLETION: Nil		17.5"	13.375"	317m	54.5# J55 BTC
ZONE(S): -		12.25"	9.625"	1598m	47# N80 BTC L80
		8.5"	NIL	NIL	

TYPE OF LOG	SUITE / RUN	FROM (m)	TO (m)	REPEAT SECTION	TIME SINCE LAST CIRCULATION	BHT
<b>MWD:</b> (12.25" phase in 2 runs) GR-Dir	1-2	320	1606		N/A	-
<b>MWD:</b> (8.5" phase in 4 runs) GR-Dir-Resistivity- Density-Neutron	3-6	1606	2315		N/A	73°C
<b>MWD:</b> GEOTAP Pressure Survey	7	2126	2282		N/A	61°C

No Production tests were conducted at Galloway 1.

## **SECTION 1: WELL HISTORY**

## 1.1 INTRODUCTION

Galloway 1 is proposed as a Gippsland Basin oil exploration wildcat well in the offshore VIC/P39(V) Licence, Victoria. The proposed well location is onshore approximately 45 km east of Sale, 40 km north-east of the Longford oil & gas processing facilities and 13.5 km north-west of the Seahorse Oil Field. The nearest wells are East Reeve 1 (2.8 km W) and East Seacombe 1 (4.0 km WNW). The proposed top reservoir location is approximately 1.2km from the Victorian coastline with a target depth of approximately -1155mSS. The well will be drilled as an extended reach well from onshore targeting the crest of the offshore anticlinal structure.

The primary target of the Galloway 1 well is the Eocene Latrobe Group coarse clastics and a secondary target in the mid N. asperus sands which are interbedded with shales and coals. The Latrobe anticlinal play is well established in the Gippsland Basin with the Latrobe Group reservoirs hosting significant volumes of hydrocarbon reserves.

The prospect is mapped at the top Latrobe horizon on the 2005 offshore 2D seismic data. The Galloway prospect is mapped as an elongate (roughly E-W trending) anticlinal structure in both two-way-time and depth. The TWT map exhibits a structural closure 9.6km<sup>2</sup> and a depth closure of between 2.7 to 3.6 km<sup>2</sup> (depending on the velocity model used). The anticlinal structure is offshore, although a small possible extension of the structure can be mapped in the adjacent onshore area. East Reeve 1 defines the down-dip limit of the structure.

The critical risk to the Galloway prospect is hydrocarbon charge. Hydrocarbons cannot charge the Galloway structure using the common model of a source kitchen in the central area of the basin. Rather an alternate model has been derived to explain oil charge into the Seahorse, West Seahorse and Wirrah Oil fields and inboard to the Galloway structure. Expulsion is proposed from a potential small source kitchen in the trough north of the Seahorse, West Seahorse & Wirrah Fields. The Latrobe Group and Golden Beach Formation within this trough are interpreted to be within the present day oil generation window with expulsion from coals within these formations. Hydrocarbon migration can then be modelled to charge the existing oil fields and the structures at Galloway & Angus.

If successful the well will be cased and suspended. It has been acknowledged that any discovered oil may be biodegraded and/or water-washed. Formation testing, either via a cased hole test or wireline sampling (MDT), is required to confirm the quality of any discovered oil.

The key objectives of the Galloway 1 well are to:

- Discover a new hydrocarbon resource within the primary Latrobe coarse clastics reservoir, and
- Prove up a commercial volume of hydrocarbons.

The critical risks to success at Galloway 1 are:

- Oil source rock generative history, and
- Potential oil alteration by bio-organisms.

Success at Galloway 1 will significantly downgrade the hydrocarbon charge risk at the nearby Angus prospect, located some 6.5 km south west of Galloway.



**1.2 GENERAL DATA**

Well Name:	Galloway 1		
Well Classification:	Oil Exploration Well		
Interest Holders:	Santos Group	37.50%	
	Nexus Energy. Ltd.	37.50%	
	Tap Oil Ltd	25.00%	
Block / License:	VIC/P 39 (V) Victoria		
Operator:	Santos Limited.		
Surveyed Location:	Surface:	Latitude:	38° 05' 08.78" South (GDA94)
		Longitude:	147° 33' 44.10" East (GDA 94)
		Easting:	549 307 m (MGA 94)
		Northing:	5 784 520 m (MGA 94)
	Objective:	Easting:	550 651 m (MGA 94)
		Northing:	5 783 795 m (MGA 94)
	TD:	Easting:	550 669 m (MGA 94)
		Northing:	5 783 791 m (MGA 94)
Surveyed Elevation:	Ground Level:	2.7 m	
	Rotary Table:	8.6 m	
	(Australian Height Datum)		
Seismic Location:	Shotpoint 1690, Line gnx05_03		
Date Drilling Commenced:	04:30 Hours, 29 <sup>th</sup> July 2006.		
Date Drilling Completed:	15:30 Hours 20 <sup>th</sup> August 2006.		
Date Rig Released:	14:30 Hours 24 <sup>th</sup> August 2006.		
Contractor:	Ensign Drilling		
Drilling Rig:	Rig 32 (see Section 15 for Rig Specifications)		
Total Depth:	Driller's Depth:	2,315 m MDRT	
		1,356 m TVD Subsea	
	Logger (extrapolated):	2,315 m MDRT	
		1,356 m TVD Subsea	
Status:	Plugged and Abandoned.		

### 1.3 **DRILLING SUMMARY**

#### (a) **Drilling Summary** (All Depths Driller's RT)

Unless otherwise specified, depths are driller's depths measured from the rotary table (RT).

The conductor hole was pre-drilled by a Drilltec rig from surface to 100m. The 20" conductor was run in hole but was unable to pass 60m where it was eventually cemented.

Ensign Rig 32 was then mobilised onto the lease and Galloway 1 was spudded at 04:30 hrs on 29/07/06. Bit 1, a 17.5" TCI bit was used to open the 9.625" pilot hole from 65m to 100m and to drill the 17.5" surface hole from 100m to 120m. The drillstring was pulled to surface and a directional BHA was run in hole to drill from 120m to 320m and the inclination was built to 24° at a rate of 4.5°/30m. A string of 13.375" surface casing (54.5 ppf J-55, BTC) was run and cemented with the shoe set at 317m.

The BOPs were installed & pressure tested and a 12.25" directional assembly consisting of a motor and MWD (GR & surveys) was run in hole with Bit 3 (TCI). After drilling out the cement, casing shoe track and 3m of new hole to 323m, a Leak-off test was conducted resulting in an EMW of 20.0 ppg. Drilling of the 12.25" directional hole continued with surveys to 636m, building inclination to 72° as per the directional plan. The drill string was pulled to surface and Bit 4 (PDC) was run in hole and used to drill the 12.25" tangent section from 636m to 1606m where a wiper trip was performed prior to running a string of 9.625" casing which was cemented with the shoe at 1602m (D).

Two bit runs (Bit 5 & Bit 6) were required to drill out the 9.625" casing shoe which was located at 1598m (L) with MWD logs. A Leak-off Test was performed giving an EMW=16.7 ppg. A PDC Bit 7 was run in hole with a Geopilot directional assembly and TRIPLE COMBO MWD (Gamma Ray, Resistivity, Neutron Porosity, Density and Surveys) and used to drill from 1606m to 1660m where the Top Drive required repairs. The drillstring was pulled to surface and MWD memory data was downloaded. Following repairs, drilling of the 8.5" directional hole continued from 1660m to 1681m where a balled PDC bit was changed for a Mill Tooth rock bit. Drilling continued from 1681m to 1833m where the Top Drive again required repairs. Drilling continued to 2074m where the bit was pulled back into the casing shoe to further repair the Top Drive. Following repairs, drilling continued from 1833m to a total depth of 2315m which was reached at 15:30 hrs on 20/08/06. The bit was pulled to surface and the directional tools and MWD were laid out. A Geotap Pressure tool was run in hole to acquire pressures.

Following logging, open ended drill string was run in hole and abandonment plugs were set as per program. Galloway 1 was plugged and abandoned with the rig being released 26.42 days after spud at 14:30 hours on the 24<sup>th</sup> of August 2006. Hole size and casing details are summarised in Table 1 below and more comprehensive summaries are appended to this report (Appendix 10: Drilling Data – Final Well Report).

**TABLE 1: CASING, HOLE AND CEMENT DETAILS**

HOLE SIZE	DEPTH	CASING SIZE	CASING DEPTH	NO JOINTS	CASING TYPE	CEMENT
26"	100m (D)	20"	60m (D)	-	Conductor	N/R
17 ½"	320m (D)	13 3/8"	317m (D)	29	54.5# J55 BTC	<u>Lead:</u> 423 sx G class, 318 gal Econolite, 2 gal NF-6. <u>Tail:</u> 437 sx G class, 2 gal NF-6.
12 ¼"	1606m (D)	9 5/8"	1598m (D)	128	47# L80 BTC	<u>Lead:</u> 1665 sx HTB, 1000 gal Gascon 469, 0.3% Gasstop, 0.1% HR5, 0.25% NR-6. <u>Tail:</u> 179 sx HTB, 20.3% Halad 344, 500 lb CFR-3, 3 gal NF-6.

**TABLE 1A: ABANDONMENT PLUG DETAILS**

PLUG NO		TOP (m)	BOTTOM (m)	HEIGHT (m)
Plug 1	Lower Latrobe (N.asperus)	2196	2315	119
Plug 2	Isolate the Upper Latrobe Fm	2078	2196	118
Plug 3	Isolate the Lakes Entrance Fm	1833	1894	61
Plug 4	Casing shoe plug	1432	1627	195
Plug 5	Seal off the casing at surface	51	72	21

**TABLE 2: SUMMARY OF MUD SYSTEMS**

HOLE SECTION	17 ½"	12 ¼"	8 ½"
Interval (ft)	100m-320m	320'-1606m'	1606m-2315m
Mud Type	Spud Mud	6% KCl/PHPA/Poly/Glycol	6% KCl/PHPA/Poly/Glycol
Mud Weight (ppg)	8.8 – 9.1	9.1 – 9.7	9.25 – 10.6
Funnel Viscosity (sec/qt)	45 – 85	47 – 62	53 – 65
PV (cps)	8 - 15	10 – 26	11 – 26
YP (lb/100ft <sup>2</sup> )	18– 52	21– 50	17– 43
pH	9.0 – 10.0	8.5-9.5	9.0 – 9.5
API Fluid Loss	17.0 – 8.5	3.8 – 6.0	4.9 – 6.0
Chlorides (ppm)	4,000 – 7,000	25,000 – 9,000	29,000 – 41,000
KCl (%)	0 – 1	5 – 6	6

**(b) Lost Time**

The drilling of Galloway 1 (spud to rig release) took a total of 26.42 days. The total time including rig move and rig up was 45 days, of which 167.5 hours was recorded as non productive/lost time representing 15.5% of the total operational time.

**TABLE 3: SUMMARY OF NON-PRODUCTIVE TIME INCIDENTS IN GALLOWAY 1**

OPERATION	TIME LOST	% OF LOST TIME
Weld support brackets to conductor to hold 13-3/8" csg central.	0.5	0.3
Modify bit breaker & perform Tap-root investigation into hand injury.	2.0	1.2
Change out tong hanging line sheaves	2.0	1.2
Replace/repair damaged 4-1/2" elevators.	2.0	1.2
Work on mud pump #4 pop-off valve	1.0	0.6
Repair leaking wash pipe	1.0	0.6
Work tight hole & 12-1/4" Geo-Pilot BHA hung up at shoe on trip out	7.0	4.2
Top Drive mud saver valve leaking	1.5	0.9
Difficulty drilling out W/ford reamer/guide shoe	18.0	10.7
Problems getting through shoe-track.	2.5	1.5
Top drive hydraulic motor & shuttle valve problems	54.0	32.2
Work bit back to bottom (excessive torque & drag)	1.5	0.9
Troubleshoot Sperry height recorder	2.0	1.2
Bit trip due to balled 8-1/2" bit	18.5	11.0
2nd Bit trip due to balled 8-1/2" bit	25	14.9
No 4 pump failure	0.5	0.3
POOH to shoe to repair top drive mud saver sub actuator valve	6.0	3.6
Repair TDU control line, hydraulic motor and unloader valve	15.5	9.3
Wait on orders to P&A well.	1.0	0.6
Wait on delivery of additional cement for P&A	6.0	3.6
<b>TOTAL</b>	<b>167.5</b>	<b>100.0</b>

(c) **Rig Water Supply**

The drilling make up water was chemically analysed with the results outlined in Table 4 below. The full water analysis can be found in Appendix 7.

**TABLE 4: DRILLING MAKE-UP WATER USED FOR GALLOWAY 1**

SOURCE	KRUSICS QUARRY	SEACOMBE LAKE	
DEPTHS USED	Surface to 600m	600m to T.D.	
RESISTIVITY	67	0.53	M.Ohm @ 25°C
CHLORIDES	22	7000	mg/L
COMBINED Ca + Mg	6	640	mg/L
pH	6.8	7.3	-
Total Cations + Anions	99	13000	mg/L
HARDNESS (CaCO3)	17	2400	mg/L
Total Dissolved Solids	99	12000	mg/L

**(d) Mudlogging Services**

Geoservices Overseas S.A provided Mudlogging services for Galloway 1. Samples were collected, washed and described at 10m intervals from 60m to 2070m, and then at 3m intervals from 2070m to TD (2315m D). All samples were checked for oil shows under an ultraviolet fluorescence. During drilling operations ditch gas levels were monitored using a Geoservices FID Total Gas Analyser and chromatographic analysis was performed using a Baseline FID Gas Chromatograph. Total gas was monitored in gas units (1 unit = 200ppm methane equivalent in air) and the Chromatograph was calibrated to measure ppm (parts per million) concentrations of the alkane gases methane, ethane, propane and butane. Other parameters monitored included rate of penetration, mud pit levels, and pump strokes. Trip tank levels were monitored on all trips into and out of the hole. Standpipe pressure and rotary torque were also monitored.

**(e) Testing**

No open hole testing was conducted in Galloway 1.

**(f) Coring**

No full hole or sidewall cores were cut in Galloway 1.

**(g) Electric Logging**

No wireline logging was programmed for Galloway 1. LWD tools were run in both the 12 ¼" and 8 ½" hole sections, with the Geotap LWD pressure tool being run at TD. No lost time was attributed to LWD operations.

LWD operations are summarised in Table 5 below. Detailed reports are presented in Appendix 3 of this report.

**TABLE 5: SUMMARY OF MWD OPERATIONS IN GALLOWAY 1**

LOG	SUITE / RUN	INTERVAL (m)	BHT/TIME	REMARKS
<b>12.25" phase in 2 runs</b>				
GR-Dir	1 / 1-2	320m – 1606	N/A	
<b>8.5" phase in 4 runs</b>	2 / 3-6	1606m – 2315	73°C	
GEOTAP Pressure Survey	2 / 7	2126m – 2282	61°C	

**(h) Geothermal Gradient**

The maximum expected bottom hole temperature at Galloway 1 (1388 mSS TVD) of 200° F was estimated from offset well data. No actual BHT or geothermal gradient has been calculated as only LWD logs were acquired.

(i) **Hole Deviation**

Galloway 1 was designed as a highly deviated extended reach horizontal well with a trajectory designed to intersect the offset objective horizons at approximately 10° inclination. A target tolerance of a 50m/100m ellipse was defined at the objective horizon.

All objective targets were intersected within tolerance. The final offset at TD has been calculated by the minimum curvature method to be 1545m to an azimuth of 118.18°. Survey results are summarised in Appendix 9 (Deviation Data) and on the Composite Log (Enclosure 1) and Mud Log (Enclosure 2).

(j) **Velocity Survey**

No velocity survey was conducted.

## **SECTION 2: LITHOLOGICAL DESCRIPTIONS**

## **SECTION 2.1: CUTTINGS DESCRIPTIONS**



## 2.1 GALLOWAY 1 - LITHOLOGICAL DESCRIPTIONS

(Depths are referenced to Drillers' depth)

65-100m	SANDSTONE: Clear to translucent, off white, minor pale yellow, rare red to orange, trace smoky quartz, medium grained to occasional pebble sized, dominantly coarse grained to very coarse grained loose quartz and minor transported lithic fragments, subrounded to dominantly subangular, occasional angular, trace dispersive clay matrix, generally unconsolidated, fair to good inferred porosity, no hydrocarbon fluorescence.
100-143m	SANDSTONE: (100%) Pale grey, pale yellow, clear to translucent, off white, fine to coarse grained, dominantly medium grained, poorly sorted, subangular to angular, occasional subrounded, trace weak siliceous cement, trace dispersive clay matrix, trace fossil fragments, generally loose, fair to good inferred porosity, no hydrocarbon fluorescence.
143-190m	COQUINA INTERBEDDED WITH MARL AND SANDSTONE COQUINA: (50-70%) Off white, pale yellow, pale brown, cream, abundant fossil fragments, locally loosely cemented with calcite, occasional fossil casts with Calcareous Claystone, common fragments of bi-valves, brachiopods, echinoid spines, sponges, bryozoa, Turritella fragments. MARL: (10-40%) Light grey, light green grey, silty in part, grading to Calcareous Claystone in part, abundant fossil fragments, occasional dark green glauconite grains, dispersive, soft, amorphous to occasional subblocky. SANDSTONE: (10-40%) Clear to translucent, fine to coarse grained, dominantly medium grained, poorly sorted, dominantly subangular to occasional subrounded, trace argillaceous matrix, generally loose, fair inferred porosity, no hydrocarbon fluorescence.
190-235m	INTERBEDDED COQUINA, MARL AND SANDSTONE COQUINA: (30-40%) Off white, pale yellow, pale brown, cream, abundant fossil fragments, locally loosely cemented with calcite, occasional fossil casts with Calcareous Claystone, common fragments of bi-valves, cephalopods, brachiopods, echinoid spines, sponges, bryozoa, Turritella fragments. MARL: (30-40%) Light green grey, light grey, very calcareous and argillaceous grading to Calcareous Claystone in part, common fossil fragments, trace dark green glauconite grains, trace dispersed fine to medium quartz sand, dispersive, soft, amorphous to occasional subblocky. SANDSTONE: (10-20%) Clear to translucent, fine to coarse grained, dominantly medium grained, poorly sorted, dominantly subangular to occasional subrounded, trace argillaceous matrix, generally loose, fair inferred porosity, no hydrocarbon fluorescence.

235-280m	<p>MASSIVE LIMESTONE (CALCARENITE) INTERBEDDED WITH MARL</p> <p>CALCARENITE: (30-90) Light to medium grey, minor brown grey, medium to coarse grained, trace glauconite, argillaceous in part, common fossil fragments, moderately hard to hard, subblocky.</p> <p>MARL: (10-30) Light green grey, light grey, arenaceous in part, argillaceous in part, trace glauconite, trace fine to medium grained quartz grains, common fossil fragments, dispersive, soft, amorphous.</p> <p>SANDSTONE: (0-10%) Clear to translucent, fine to dominantly medium grained, moderately poorly sorted, dominantly subangular to occasional subrounded, trace argillaceous matrix, generally loose, fair inferred porosity, no hydrocarbon fluorescence.</p>
280-320m	<p>MASSIVE LIMESTONE (CALCARENITE)</p> <p>CALCARENITE: (100%) Light to medium grey, light-medium brown, dominantly medium grained, minor coarse grained, slightly argillaceous, common fossil fragments, trace dark grey lithic fragments, trace glauconite, local strong calcite cement, occasional loose quartz grains, loose in part, moderately hard to hard, subblocky.</p>
320-354m	<p>CALCARENITE INTERBEDDED WITH MINOR CALCAREOUS CLAYSTONE</p> <p>CALCARENITE (90-100%): Light to medium grey, light brown grey, cream, fine to medium, minor coarse grained, subangular, argillaceous in part, common calcite cemented, common fossil fragments of bryozoa, bi-valve shell fragments, sponges, echinoid spine fragments, trace loose quartz grains, trace glauconite, moderately hard to hard.</p> <p>CALCAREOUS CLAYSTONE (0-10%): Medium grey brown, light brown in part, arenaceous, silty grading to Calcareous Siltstone in part, moderately hard to hard, subblocky to subfissile.</p>
354m-387m	<p>CALCARENITE (100%): Light to medium grey brown, light brown grey, cream, fine to medium grained, minor coarse grained, subangular, common calcite cemented, argillaceous in part, common fossil fragments of bryozoa and echinoid spines, minor bi-valve and other shell fragments, trace lithic fragments, hard to very hard.</p>
387-440m	<p>CALCARENITE INTERBEDDED WITH CALCILUTITE</p> <p>CALCARENITE: (70-100%) Light to medium grey brown, light brown grey, cream, fine to medium grained, minor coarse grained, subangular, common calcite cemented, argillaceous in part, decreasing fossil fragments of bryozoa and echinoid spines, minor bi-valve fragments, trace lithic fragments, hard to very hard, friable in part.</p> <p>CALCILUTITE: Light brown, light brown grey, argillaceous, soft to firm, dispersive, amorphous.</p>

440-510m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (80-100%) Light to medium grey brown, pale grey, off-white, cream, fine to dominantly medium grained, rare coarse grained, subangular, locally common clear calcite cemented, argillaceous in part, decreasing fossil fragments of bryozoa and echinoid spines (trace) , minor bi-valve fragments, trace glauconite, moderately hard to hard, friable in part.</p> <p>CALCILUTITE: (0-20%) Light brown, light to medium grey, light brown grey, argillaceous, trace loose quartz grains, trace dark brown lithic fragments, soft to firm, dispersive.</p>
510-580m	<p>CALCARENITE INTERBEDDED WITH MINOR CALCILUTITE</p> <p>CALCARENITE: (90-100%) Pale grey, light brown, off white, cream, dominantly fine to medium grained, minor coarse grained, trace echinoid spine &amp; bryozoa fragments, trace shell fragments, trace lithic fragments, moderately hard to hard.</p> <p>CALCILUTITE: (0-10%) Light brown, light to medium grey, light brown grey, argillaceous, trace loose quartz grains, trace dark brown lithic fragments, soft to firm, dispersive.</p>
580-636m	<p>CALCARENITE INTERBEDDED WITH MINOR CALCILUTITE</p> <p>CALCARENITE: (60-90%) Pale grey, light brown, off white, cream, dominantly fine to medium grained, trace echinoid spine &amp; bryozoa fragments, trace shell fragments, trace lithic fragments, moderately hard to hard.</p> <p>CALCILUTITE: (10-40%) Light brown, light to medium grey, light brown grey, argillaceous, trace loose quartz grains, trace dark brown lithic fragments, soft to firm, dispersive.</p>
636-690m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (70-90%) Pale grey, light brown, off white, cream, dominantly fine to medium grained, trace echinoid spine &amp; bryozoa fragments, trace shell fragments, trace lithic fragments, trace glauconite, moderately hard to hard, grading to Calcilutite in part.</p> <p>CALCILUTITE: (10-30%) Light brown, light to medium grey, light brown grey, argillaceous, trace dark brown lithic fragments, soft to firm, dispersive.</p>
690-750m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (70-90%) Light grey, light brown grey, off white, fine to medium, trace glauconite, trace fossil fragments, trace dark grey lithic fragments, moderately hard to hard, minor friable, grading to Calcilutite in part.</p> <p>CALCILUTITE: (10-30%) Light grey, off white, argillaceous, trace dark lithic fragments, soft to firm.</p>
750-830m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (50-80%) Light grey, light brown grey, off white, dominantly fine, grading to Calcilutite in part, trace dark lithic fragments, trace glauconite, moderately hard to hard, minor friable.</p> <p>CALCILUTITE: (20-50%) Off white, light grey, argillaceous, trace dark lithic fragments, soft, dispersive.</p>

830-926m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (50-60%) Light grey, off white, light brown grey, dominantly fine, grading to Calcilutite in part, trace dark lithic fragments, rare glauconite grains, trace fossil fragments, moderately hard to hard.</p> <p>CALCILUTITE: (40-50%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.</p>
926-985m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (40-50%) Light grey, off white, light brown grey, dominantly fine, grading to Calcilutite in part, trace dark lithic fragments, trace rare glauconite grains, trace fossil fragments, moderately hard to hard.</p> <p>CALCILUTITE: (50-60%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.</p>
985-1120m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (10-40%) Light grey, off white, light brown grey, dominantly fine to occasional very fine grained, grading to Calcilutite in part, trace dark lithic fragments, rare glauconite grains, trace fossil fragments of bryozoa, echinoid spine fragments, occasional forams, moderately hard to hard.</p> <p>CALCILUTITE: (60-90%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.</p>
1120-1187m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (30-50%) Light grey, off white, light brown grey, dominantly fine, occasional very fine grained, grading to Calcilutite in part, trace clear calcite cement, trace dark lithic fragments, rare glauconite grains, trace fossil fragments of bryozoa, echinoid spine fragments, rare forams, moderately hard to hard.</p> <p>CALCILUTITE: (50-70%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.</p>
1187-1260m	<p>INTERBEDDED CALCARENITE AND CALCILUTITE</p> <p>CALCARENITE: (30-50%) Off white, off white, light brown to brown grey, dominantly fine to occasional medium grained, grading to Calcilutite in part, trace opaque calcite cement, trace dark lithic fragments, rare glauconite grains, trace fossil fragments of shells fragments, bryozoa, echinoid spine fragments, rare forams, moderately hard to hard.</p> <p>CALCILUTITE: (50-70%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace light brown grey lithic fragments, trace glauconite, dominantly soft to firm, dispersive.</p>

1260-1330m	<p><b>INTERBEDDED CALCILUTITE AND CALCARENITE</b></p> <p><b>CALCILUTITE:</b> (80-100%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace light brown grey lithic fragments, trace glauconite, dominantly soft to firm, dispersive.</p> <p><b>CALCARENITE:</b> (0-20%) Off white, light brown to brown grey, dominantly fine grained, occasional loose medium grains, grading to Calcilutite in part, trace dark brown lithic fragments, rare glauconite grains, trace fossil fragments of shells fragments, bryozoa, echinoid spine fragments, rare forams, moderately hard to hard.</p>
1330-1410m	<p><b>CALCILUTITE INTERBEDDED WITH MINOR CALCARENITE</b></p> <p><b>CALCILUTITE:</b> (80-90%) Pale grey, light to medium brown grey, argillaceous, minor fossil fragments, trace off white lithic fragments, soft, dispersive.</p> <p><b>CALCARENITE:</b> (10-20%) Off white, light brown to brown grey, dominantly fine grained, occasional loose medium grains, grading to Calcilutite in part, trace dark brown lithic fragments, rare glauconite grains, trace fossil fragments of shells fragments, bryozoa, echinoid spine fragments, rare forams, moderately hard to hard.</p>
1410-1480m	<p><b>CALCILUTITE INTERBEDDED WITH MARL AND MINOR CALCARENITE</b></p> <p><b>CALCILUTITE:</b> (50-60%) Pale brown, pale brown grey, trace off white, argillaceous grading to Marl in part, trace dark grey lithic fragments, soft to firm.</p> <p><b>MARL:</b> (20-30%) Light to medium grey, argillaceous with occasional light grey argillaceous micro-laminations, soft to dominantly firm, occasional moderately hard, subblocky.</p> <p><b>CALCARENITE:</b> (10-20%) Light grey, off white, pale grey brown, fine to very fine grained, grading to Calcilutite in part, trace dark grey lithic fragments, trace fossil fragments, moderately hard to friable in part.</p>
1480-1563m	<p><b>CALCILUTITE INTERBEDDED WITH MARL AND MINOR CALCARENITE</b></p> <p><b>CALCILUTITE:</b> (40-50%) Pale brown, pale brown grey, trace off white, argillaceous grading to Marl in part, trace dark lithic fragments, soft to firm.</p> <p><b>MARL:</b> (20-40%) Grey brown, medium grey, light green grey, occasional light grey argillaceous micro-laminations, soft to dominantly firm, occasional moderately hard, subblocky.</p> <p><b>CALCARENITE:</b> (0-10%) Light grey, off white, pale grey brown, fine to very fine grained, grading to Calcilutite in part, trace dark grey lithic fragments, trace fossil fragments, moderately hard to friable in part.</p>
1563-1606m	<p><b>INTERBEDDED MARL AND CALCILUTITE</b></p> <p><b>MARL:</b> (30-50%) Grey brown, medium grey, light green grey, occasional light grey argillaceous micro-laminations, soft to dominantly firm, occasional moderately hard, rare pyrite, subblocky.</p> <p><b>CALCILUTITE:</b> (50-70%) Pale brown, pale brown grey, trace off white, argillaceous grading to Marl in part, trace dark lithic fragments, soft to firm.</p>

1640-1660m	<p>INTERBEDDED MARL AND CALCILUTITE</p> <p>MARL: (90%) Medium to dark grey, light to medium green grey, trace off white lithic fragments, trace fossil fragments, firm to moderately hard, subblocky.</p> <p>CALCILUTITE: (10%) Light grey, off white, argillaceous, trace light brown lithic fragments, rare fossil fragments, dominantly moderately hard, minor hard.</p>
1660-1680m	<p>INTERBEDDED MARL AND CALCAREOUS CLAYSTONE</p> <p>MARL: (90%) Light to medium grey, minor dark grey, minor medium green grey, trace off white lithic fragments, trace fossil fragments, firm to moderately hard, soft in part, argillaceous, subblocky.</p> <p>CALCAREOUS CLAYSTONE: (10%) Light to medium grey to green grey, occasional dark grey, argillaceous, trace fossil fragments, firm to moderately hard, subblocky.</p>
1680-1713m	<p>INTERBEDDED MARL, CALCAREOUS CLAYSTONE AND MINOR CALCILUTITE</p> <p>MARL: (70-90%) Light to medium grey, occasional medium green grey, slightly arenaceous in part, minor off white lithic fragments, trace fossil fragments, firm to moderately hard, subblocky.</p> <p>CALCAREOUS CLAYSTONE: (20-40%) Light to medium grey, occasional dark grey, argillaceous, trace fossil fragments, soft to dominantly firm, minor moderately hard, subblocky.</p> <p>CALCILUTITE: (10%) Light grey, occasional medium grey, slightly arenaceous in part, soft to moderately hard, occasional hard, subblocky.</p>
1713-1772m	<p>INTERBEDDED MARL, CALCAREOUS CLAYSTONE AND MINOR CALCILUTITE</p> <p>MARL: (60-70%) Light grey, medium grey, light to medium green grey, slightly arenaceous, silty, trace glauconite, trace fossil fragments, soft to moderately hard, subblocky.</p> <p>CALCAREOUS CLAYSTONE: (20-30%) Medium to dark grey, argillaceous, arenaceous in part, trace lithic fragments, trace glauconite, firm to occasional moderately hard, subblocky.</p> <p>CALCILUTITE: (0-10%) Light to occasional medium grey, slightly arenaceous, trace fossil fragments, from to moderately hard, subblocky.</p> <p>Note: Samples contaminated with BARACARB mud additive (sized CaCO<sub>3</sub>)</p>
1772-1834m	<p>INTERBEDDED CALCAREOUS CLAYSTONE AND MARL</p> <p>CALCAREOUS CLAYSTONE: (30-70%) Medium to dark grey, pale brown grey, trace disseminated, pyrite, firm to moderately hard, subblocky to occasional subfissile.</p> <p>MARL: (30-70%) Light to medium grey, dominantly argillaceous grading to Calcareous Claystone in part, minor arenaceous, trace lithic fragments, trace glauconite, trace fossil fragments, firm to moderately hard, subblocky.</p>

1834-1865m	<p>INTERBEDDED CALCAREOUS CLAYSTONE AND MARL</p> <p>CALCAREOUS CLAYSTONE: (60-70%) Medium to dark grey, trace disseminated, pyrite, firm to moderately hard, subblocky to occasional subfissile.</p> <p>MARL: (30-40%) Pale brown grey, light to dominantly medium grey, dominantly argillaceous grading to Calcareous Claystone in part, minor arenaceous, trace lithic fragments, trace pyrite, trace fossil fragments, firm to moderately hard, subblocky.</p>
1865-1880m	<p>INTERBEDDED CALCAREOUS CLAYSTONE AND MARL</p> <p>CALCAREOUS CLAYSTONE: (60-70%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part.</p> <p>MARL: (30-40%) Pale brown grey, medium grey, argillaceous, rare pyrite, minor dark grey off white lithic fragments, firm to soft in part, subblocky to subfissile in part.</p>
1880-1890m	<p>INTERBEDDED CALCAREOUS CLAYSTONE, MARL AND SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: (40%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part.</p> <p>MARL: (30%) Pale brown grey, argillaceous, minor off white lithic fragments, firm to soft in part, subblocky to subfissile in part.</p> <p>CALCAREOUS SILTSTONE: (30%) Light to medium grey, occasional dark grey, trace dark grey lithic fragments, firm to moderately hard, argillaceous in part, subblocky to subfissile.</p>
1890-1910m	<p>CALCAREOUS SILTSTONE INTERBEDDED WITH CLAYSTONE</p> <p>CALCAREOUS SILTSTONE: (60-80%) Light to medium grey, occasional dark grey, trace dark grey lithic fragments, firm to moderately hard, argillaceous in part, subblocky to subfissile.</p> <p>CALCAREOUS CLAYSTONE: (20-40%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part.</p>
1910-1949m	<p>INTERBEDDED CALCAREOUS CLAYSTONE AND SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: (20-50%) Light to medium grey, minor dark grey, grading to Siltstone in part, trace lithic fragments, trace forams, trace fossil fragments, trace pyrite, soft to moderately hard, subblocky.</p> <p>CALCAREOUS SILTSTONE: (50-80%) Medium brown, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.</p>
1949-1974m	<p>INTERBEDDED CALCAREOUS CLAYSTONE AND SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: (50-90%) Light to medium grey, grading to Siltstone in part, trace lithic fragments, trace forams, trace bryozoa fossil fragments, rare nodular pyrite, soft to firm, occasional moderately hard, subblocky.</p> <p>CALCAREOUS SILTSTONE: (10-50%) Medium brown, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.</p>

1974-1990m	<p>MASSIVE CALCAREOUS CLAYSTONE INTERBEDDED WITH MINOR SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: (90-100%) Dominantly light to occasional medium grey, trace lithic fragments, trace forams, trace bryozoa fossil fragments, rare nodular pyrite, soft to firm, occasional moderately hard, subblocky.</p> <p>CALCAREOUS SILTSTONE: (0-10%) Medium grey, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.</p>
1990-2020m	<p>CALCAREOUS CLAYSTONE INTERBEDDED WITH TRACE SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: (90-100%) Dominantly light to occasional medium grey, trace lithic fragments, trace forams, trace bryozoa fossil fragments, rare nodular pyrite, rare carbonaceous specks, soft to firm, occasional moderately hard, subblocky.</p> <p>CALCAREOUS SILTSTONE: (0-10%) Medium grey, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.</p>
2020-2050m	<p>INTERBEDDED CALCAREOUS CLAYSTONE AND SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: (40-60%) Medium brown grey, light to medium grey, trace lithic fragments, trace glauconite, trace fossil fragments, rare carbonaceous specks, soft to firm, subblocky.</p> <p>CALCAREOUS SILTSTONE: (40-60%) Medium grey to medium brown grey, trace lithic fragments, firm to moderately hard, subblocky to subfissile.</p>
2050-2110m	<p>INTERBEDDED CALCAREOUS SILTSTONE AND CLAYSTONE</p> <p>CALCAREOUS SILTSTONE: Light to medium grey, occasional light green to light green grey, common to locally abundant forams, common glauconite grains, trace lithic fragments, trace pyrite, firm to moderately hard, subblocky.</p> <p>CALCAREOUS CLAYSTONE: Light grey, light brown grey, trace fossil fragments, trace glauconite, soft to firm, subblocky.</p>
2110-2124.5m	<p>MASSIVE CALCAREOUS CLAYSTONE INTERBEDDED WITH CALCAREOUS SILTSTONE</p> <p>CALCAREOUS CLAYSTONE: Light to medium grey, green grey, light brown in part, minor medium to dark brown, common glauconite grains, trace fossil fragments, trace pyrite, soft to moderately hard, subblocky.</p> <p>CALCAREOUS SILTSTONE: Light to medium grey, occasional light green grey, trace lithic fragments, trace glauconite grains, trace pyrite, firm to moderately hard, subblocky.</p>



2124.5-2139m	<p><b>SANDSTONE WITH THIN CLAYSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, light grey in part, dominantly medium to very coarse grained, occasional very fine to fine grained aggregates, trace moderately strong siliceous cement, minor off white argillaceous matrix, trace pyrite, trace glauconite grains, trace fossil fragments, common loose clear quartz grains, moderately hard to hard to occasional hard aggregates, poor visual porosity in aggregates, fair to generally good inferred porosity, fluorescence as below.</p> <p>2129-2133m: Trace to 5%, dull brown yellow patchy fluorescence, trace pale yellow crush cut, thick ring residue.</p> <p>2133-2139m: Trace to rare fluorescence as above.</p> <p><b>CLAYSTONE:</b> Light to medium grey, brown grey, minor light to medium brown, trace pyrite, firm to moderately hard, occasional hard, subblocky.</p>
2139-2154m	<p><b>SANDSTONE WITH THIN CLAYSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, light grey in part, medium to very coarse grained, moderately poorly sorted, subangular, trace pyrite, trace glauconite grains, common loose clear quartz grains, generally loose and clean, minor moderately hard aggregates, fair to generally good inferred porosity, trace fluorescence as below.</p> <p>2148-2151m: Trace dull yellow patchy fluorescence, trace pale yellow crush cut, thick film residue.</p> <p><b>CLAYSTONE:</b> Light to medium grey, brown grey, minor light to medium brown, trace pyrite, firm to moderately hard, occasional hard, subblocky.</p>
2154-2173m	<p><b>SANDSTONE WITH THIN CLAYSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, opaque, light grey in part, fine to very coarse grained, poorly sorted, subrounded to dominantly subangular, common angular, trace glauconite grains, common loose clear quartz grains, generally loose and clean, generally good inferred porosity, no hydrocarbon fluorescence.</p> <p><b>CLAYSTONE:</b> Light to medium grey, brown grey, minor light brown, trace carbonaceous specks, trace pyrite, firm to moderately hard, occasional hard, subblocky.</p>
2173-2196m	<p><b>SANDSTONE INTERBEDDED WITH CLAYSTONE</b></p> <p><b>SANDSTONE:</b> Clear to translucent, off white, light grey, minor brown, fine to coarse grained, poorly sorted, subangular to subrounded in part, trace to locally common dolomitic cement, trace pyrite, generally loose, common hard aggregates, poor visual porosity, good inferred porosity, no hydrocarbon fluorescence, common mineral fluorescence.</p> <p><b>CLAYSTONE:</b> Light grey, medium grey, trace micro-carbonaceous specks, trace off white lithic fragments, firm, subblocky.</p>

2196-2242m	<p>SANDSTONE INTERBEDDED WITH COAL, SILTSTONE AND CLAYSTONE</p> <p>SANDSTONE: Clear to translucent, light grey, opaque, fine to coarse grained, minor very coarse grained, poorly sorted, subangular to subrounded, occasional angular, occasional moderately strong siliceous cement, trace moderately strong calcareous cement, trace light grey argillaceous matrix, dominantly loose, minor moderately hard to hard aggregates, poor visual porosity, fair to good inferred porosity, no hydrocarbon fluorescence.</p> <p>COAL: Very dark brown to brown black, dull, minor sub-vitreous, silty, argillaceous in part, grading to Carbonaceous Siltstone in part, subblocky to subfissile, uneven fracture.</p> <p>SILTSTONE: Brown, brown grey, argillaceous, minor arenaceous, common off white lithic fragments, calcareous, trace carbonaceous specks, slightly micro-micaceous, subblocky.</p> <p>CLAYSTONE: Light to medium green grey, light to medium brown grey, trace glauconite, trace off white lithic fragments, firm to hard in part, subblocky to subfissile.</p>
2261-2272m	<p>SANDSTONE: Clear to translucent, white, off white, minor light brown, fine to coarse grained, dominantly medium grained, moderately sorted, subangular to subrounded, trace pyrite, generally loose, good inferred porosity, mineral fluorescence only.</p>
2281-2294m	<p>SANDSTONE: Clear to translucent, fine to coarse grained, common to dominantly medium grained, generally poorly sorted, trace pyrite, trace fossil fragments, trace glauconite, generally loose and clean, good inferred porosity, mineral fluorescence only.</p>
2242-2261m	<p>INTERBEDDED SANDSTONE, COAL AND CARBONACEOUS SILTSTONE</p> <p>SANDSTONE: Clear to translucent, light grey, opaque, fine to medium grained, occasional coarse grained, moderately poorly sorted, subangular to subrounded, occasional moderately strong siliceous cement, trace light grey argillaceous matrix, generally loose and clean, good inferred porosity, no hydrocarbon fluorescence.</p> <p>COAL: Very dark brown to brown black, black, dull, minor sub-vitreous, silty, argillaceous in part, grading to Carbonaceous Siltstone in part, subblocky to subfissile, hard, brittle in part, uneven fracture.</p> <p>CARBONACEOUS SILTSTONE: Dark to medium brown, medium brown grey, very carbonaceous in part grading to Silty Coal, argillaceous in part, grading to Silty Claystone, trace off white dolomite fragments, firm to hard in part, subblocky to subfissile.</p>

2261-2281m	<p>SANDSTONE INTERBEDDED WITH CLAYSTONE AND MINOR COAL</p> <p>SANDSTONE: Clear to translucent, white, off white, minor light brown, fine to coarse grained, dominantly medium grained, moderately sorted, subangular to subrounded, trace pyrite, generally loose, good inferred porosity, mineral fluorescence only.</p> <p>CLAYSTONE: Light to medium grey, trace carbonaceous specks, trace lithic fragments, trace dolomite fragments, firm to occasional moderately hard, subblocky to subfissile.</p> <p>COAL: Dark brown, brown black, dull, earthy in part, hard, brittle, silty in part, subfissile, subblocky in part, uneven fracture.</p>
2281-2315m	<p>INTERBEDDED SANDSTONE AND CARBONACEOUS SILTSTONE</p> <p>SANDSTONE: Clear to translucent, fine to coarse grained, common to dominantly medium grained, generally poorly sorted, trace pyrite, trace fossil fragments, trace glauconite, generally loose and clean, good inferred porosity, mineral fluorescence only.</p> <p>CARBONACEOUS SILTSTONE: Dark to medium brown, medium brown grey, very carbonaceous in part grading to Silty Coal, argillaceous in part, grading to Silty Claystone, trace off white dolomite fragments, firm to hard in part, subblocky to subfissile.</p>

**TOTAL DEPTH DRILLER : 2315m (Driller)**

**TOTAL DEPTH LOGGER : 2315m (MWD); No wireline logs.**

## **SECTION 2.2: CATALOGUE OF WELLSITE SAMPLES**

## **SAMPLE MANIFEST**

<b>WELL:</b>	<b>GALLOWAY 1</b>
<b>RIG:</b>	<b>ENSIGN #32</b>
<b>SHIP TO:</b>	<b>SANTOS REGIONAL DISTRIBUTION CENTRE. CORE LIBRARY, LOT 44, OCEAN STEAMERS ROAD PORT ADELAIDE 5015.</b>
<b>TOTAL :</b>	<b>23 BOXES</b>

**To: SANTOS REGIONAL DISTRIBUTION CENTRE.**

<b>Box Nos</b>	<b>Depth</b>	<b>Interval</b>
<b>1 of 3</b>	60m-1590m	10m
<b>2 of 3</b>	1600m-2214m	10m-3m
<b>3 of 3</b>	2217m-2315m(TD)	3m
<b>1 of 1</b>	60m-2315m(TD)	<b>SAMPLEX TRAYS</b>

**SANTOS TOTAL BOXES: 7 (SAMPLES IN DUPLICATE)**

**To: NEXIS C/o SANTOS REGIONAL DISTRIBUTION CENTRE.**

<b>Box Nos</b>	<b>Depth</b>	<b>Interval</b>
<b>1 of 3</b>	60m-1590m	10m
<b>2 of 3</b>	1600m-2214m	10m-3m
<b>3 of 3</b>	2217m-2315m(TD)	3m

**NEXUS TOTAL BOXES: 3**

**To: TAP OIL C/o SANTOS REGIONAL DISTRIBUTION CENTER.**

<b>Box Nos</b>	<b>Depth</b>	<b>Interval</b>
<b>1 of 3</b>	60m-1590m	10m
<b>2 of 3</b>	1600m-2214m	10m-3m
<b>3 of 3</b>	2217m-2315m(TD)	3m

**TAP OIL TOTAL BOXES: 3**

**To: DPI VIC, C/o SANTOS REGIONAL DISTRIBUTION CENTRE.**

<b>Box Nos</b>	<b>Depth</b>	<b>Interval</b>
<b>1 of 5</b>	60m-800m	10m
<b>2 of 5</b>	810m-1350m	10m
<b>3 of 5</b>	1360m-1830m	10m-3m
<b>4 of 5</b>	1840m-2142m	3m
<b>5 of 5</b>	2145m-2315m(TD)	3m

**DPI VIC TOTAL BOXES: 5**

**To: AGSO, SANTOS REGIONAL DISTRIBUTION CENTRE.**

<b>Box Nos</b>	<b>Depth</b>	<b>Interval</b>
<b>1 of 5</b>	60m-800m	10m
<b>2 of 5</b>	810m-1350m	10m
<b>3 of 5</b>	1360m-1830m	10m-3m
<b>4 of 5</b>	1840m-2142m	3m
<b>5 of 5</b>	2145m-2315m	3m

**AGSO TOTAL BOXES: 5**

### **SECTION 3.1: WIRELINE LOGGING REPORTS**

Wireline Logs were not run on Galloway 1.

## **SECTION 3.2: LWD END OF WELL REPORT (Sperry Sun)**

**HALLIBURTON**  
**Sperry Drilling Services**

**LWD End of Well Report**  
**for**  
**Santos Ltd**

**Galloway-1**

**Rig: Ensign Rig32**

**Field: Exploration**

**Country: Australia**

**Job No: AU-FE-0004392520**

**Date: 22 AUG 2006**



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2. Operational Overview
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6. Service Interrupt Report

**General Information**

Company:	SANTOS Ltd.
Rig:	Ensign Rig 32
Well:	Galloway-1
Field:	Exploration
Lease Name:	VIC P39V
State:	VIC
County:	
Country:	Australia
API Number:	
Sperry-Sun Job Number:	AU-FE-0004392520
Job start date:	25-Jul-06
Job end date:	22-Aug-06
North reference:	Grid
Declination:	12.796 deg
Dip angle:	-68.709 deg
Total magnetic field:	59934 nT
Date of magnetic data:	28 July, 2006
Wellhead coordinates N:	38 deg. 5 min 8.75 sec South
Wellhead coordinates E:	147 deg. 33 min 44.11 sec East
Vertical section direction:	118.50 deg
Unit Number:	182
MWD Engineers:	A. Rule, S. Christiansen, L. O'Donnell, J. Miller Grinter M. Lee, O. Ningelgen, S. Rodger
Company Representatives:	B. Marriott, T. Reid
Company Geologist:	R. Subramanian

## Operational Overview

Sperry Drilling Services (Halliburton) was contracted by Santos Ltd to provide Logging While Drilling (LWD) services for the drilling of the exploration well Galloway-1 by the drilling rig Ensign 32.

### 17½" Hole Section

The 17½" hole Section was drilled in one bit run from 60.0 to 320.0 mMDRT. A Directional While Drilling tool (DWD) was used to survey the hole from 120.0 to 320.0 mMDRT.

### 12¼" Hole Section

The 12¼" Hole Section was drilled in two bit runs from 320.0 to 1606.0 mMDRT. The first run was drilled with a Sperry mud motor and the second with a Sperry GeoPilot rotary steerable tool. The hole was logged with a Dual Gamma Ray Sensor (DGR) for formation evaluation, Pressure While Drilling (PWD) for drilling efficiency and a Directional Module (DM) for directional control.

### 8½" Hole Section

A clean up run was performed prior to picking up MWD tools and drilled from 1606.0 to 1620.0 mMDRT.

The 8½" hole section was drilled in four bit runs from 1620.0 to well TD at 2315.0 mMDRT with a Sperry GeoPilot rotary steerable tool. These runs utilised a Four Phase Electromagnetic Wave Resistivity Sensor (EWR-P4), Azimuthal Litho Density sensor (ALD), Compensated Thermal Neutron Porosity sensor (CTN), and Dual Gamma Ray Sensor (DGR) for formation evaluation, however the ALD tool was not configured for azimuthal sampling. A Pressure While Drilling sensor (PWD) was utilised for drilling efficiency and a Directional Module (DM) for directional control.

Sperry Drilling Services GeoTap tool (FTWD) was utilised after drilling to TD to take formation pressure tests to identify possible hydrocarbon bearing reservoirs. Eleven samples were taken in total and no new formation was drilled or logged.

## Summary of MWD runs

[illegible]

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 100	Run Start	: 29-Jul-06 20:05	BRT Hrs	: 15.00 hr	Circ. Hrs	: 6.50 hr
Rig Bit No	: 2	Run End	: 30-Jul-06 11:05	Hole Size	: 17.500 in	Oper. Hrs	: 15.00 hr

## DRILLING DATA

Start Depth	: 120.00 m	Footage	: 200.00 m	Avg RPM	: 66 rpm	Avg ROP	: 84.60 m/hr
End Depth	: 320.00 m	Avg Flow Rate	: 645.00 gpm	Avg WOB	: 7.7 klb	Avg SPP	: 1315 psig

## MUD DATA

Mud Type	: Fresh Water Gel						
Weight	: 1.103 sg	Viscosity	: 48.00 spqt	PV	: 12 cP	YP	: 24 lhf2
Chlorides	: 4968.00 ppm	Max Temp.	: 31.40 degC	% Solids	: 2.60 %	% Sand	: 1.00 %
pH	: 10.00 pH	Fluid Loss	: 10 mptm	% Oil	: N/A	O:W	: N/A

## MWD PERFORMANCE

Tool OD	: 8.00 in	Type	: DWD	Min. Inc.	: 0.22 deg	Min. Inc. Depth	: 68.730 m
Final Az.	: 118.68 deg	Max Op. Press.	: 1785 psig	Max Inc.	: 23.23 deg	Max Inc. Depth	: 303.700 m
MWD Real-time %		: 99 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
9 x HWDP 4.50 in OD / 2.75 in ID	86.05	535.07			
Drill Collar 6.50 in OD / 2.81 in ID	9.42	252.76	HOC 8.06 in OD / 1.92 in ID * Positive Pulser - SN : 8288 * TM - SN : 10688073	3.08	
Jar 6.50 in OD / 2.75 in ID	9.95	221.85			
Drill Collar 6.50 in OD / 2.81 in ID	9.05	189.21			
X-Over Sub 8.00 in OD / 2.81 in ID	0.80	159.51	Sub 8.00 in OD / 1.92 in ID * DM Sonde - SN : 85268	2.77	15.82
3 x 8" Drill Collar 8.00 in OD / 2.88 in ID	27.61	156.89			
MWD	5.85	66.31			
X-Over Sub 9.50 in OD / 2.81 in ID	0.79	47.11			
Integral Blade 9.50 in OD / 3.00 in ID	2.59	44.52			
Float Sub 9.44 in OD / 2.81 in ID	0.83	36.02			
Mud Motor 9.63 in OD / 6.14 in ID	9.68	33.30			
Reed T11C 17.50 in OD / 2.00 in ID	0.47	1.54			

## COMMENTS

Drill out 20" casing shoe at 60m.  
Kicked off at 130.0 m and drilled to 320.0 mMDRT.  
Toggled to 0.5 hz to improve detection. POOH and run casing.

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 200	Run Start	: 02-Aug-06 15:31	BRT Hrs	: 28.30 hr	Circ. Hrs	: 17.20 hr
Rig Bit No	: 3	Run End	: 03-Aug-06 19:49	Hole Size	: 12.250 in	Oper. Hrs	: 28.30 hr

## DRILLING DATA

Start Depth	: 320.00 m	Footage	: 316.00 m	Avg RPM	: 70 rpm	Avg ROP	: 45.30 m/hr
End Depth	: 636.00 m	Avg Flow Rate	: 701.00 gpm	Avg WOB	: 14.2 klb	Avg SPP	: 1489 psig

## MUD DATA

Mud Type	: Polymer						
Weight	: 1.09 sg	Viscosity	: 45.00 spqt	PV	: 12 cP	YP	: 14.00 lhf2
Chlorides	: 25307.00 ppm	Max Temp.	: 51.00 degC	% Solids	: 3.40 %	% Sand	: 0.75 %
pH	: 10.00 pH	Fluid Loss	: 5.6 mptm	% Oil	: N/A	O:W	: 0:100

## MWD PERFORMANCE

Tool OD	: 8.00 in	Type	: Dir-FE	Min. Inc.	: 22.40 deg	Min. Inc. Depth	: 325.110 m
Final Az.	: 121.24 deg	Max Op. Press.	: 2037 psig	Max Inc.	: 70.37 deg	Max Inc. Depth	: 622.250 m
MWD Real-time %		: 99 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
9 x HWDP 4.50 in OD / 2.75 in ID	86.05	543.34	HOC 8.00 in OD / 1.92 in ID SN : 10603354 * TM - SN : 10688073 * Positive Pulser - SN : 10681244	3.08	21.15
Drill Collar 6.50 in OD / 2.81 in ID	9.42	261.02			64.47
Jar 6.50 in OD / 2.75 in ID	9.95	230.12	8" HCIM Collar 8.00 in OD / 1.92 in ID * HCIM Insert - SN : 078516	1.42	
Drill Collar 6.50 in OD / 2.81 in ID	9.05	197.47			
X-Over Sub 8.00 in OD / 2.81 in ID	0.80	167.78	PWD Collar 8.00 in OD / 1.92 in ID * PWD Insert - SN : 1844674407370955	1.35	17.21
3 x 8" Drill Collar 8.00 in OD / 2.88 in ID	27.61	165.16			
MWD	11.21	74.57	8" DGR Collar 8.00 in OD / 1.92 in ID * DDS Insert - SN : 177739 * DGR Insert - SN : 177739	2.59	0.00
Integral Blade 9.50 in OD / 3.00 in ID	1.89	37.80			16.34
Float Sub 8.00 in OD / 2.81 in ID	0.65	31.59			
Mud Motor 8.00 in OD / 5.25 in ID	8.16	29.46	8" DM Collar 8.00 in OD / 1.92 in ID * DM Sonde - SN : 85268	2.77	12.99
Reed T11C 12.25 in OD / 2.00 in ID	0.82	2.69			

## COMMENTS

Drilled out of shoe.  
Built angle with mud motor to 636.0 mMDRT.  
POOH to pickup the 9600 GeoPilot.

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 300	Run Start	: 04-Aug-06 00:48	BRT Hrs	: 63.61 hr	Circ. Hrs	: 40.70 hr
Rig Bit No	: 4	Run End	: 06-Aug-06 16:25	Hole Size	: 12.250 in	Oper. Hrs	: 63.61 hr

## DRILLING DATA

Start Depth	: 636.00 m	Footage	: 970.00 m	Avg RPM	: 120 rpm	Avg ROP	: 43.90 m/hr
End Depth	: 1606.00 m	Avg Flow Rate	: 770.00 gpm	Avg WOB	: 7.0 klb	Avg SPP	: 2500 psig

## MUD DATA

Mud Type	: Polymer						
Weight	: 1.13 sg	Viscosity	: 58.00 spqt	PV	: 22 cP	YP	: 40.00 lhf2
Chlorides	: 34742.00 ppm	Max Temp.	: 67.00 degC	% Solids	: 4.60 %	% Sand	: 1.00 %
pH	: 9.00 pH	Fluid Loss	: 6 mptm	% Oil	: N/A	O:W	: 0:100

## MWD PERFORMANCE

Tool OD	: 8.00 in	Type	: Dir-FE	Min. Inc.	: 70.35 deg	Min. Inc. Depth	: 712.750 m
Final Az.	: 117.39 deg	Max Op. Press.	: 1881 psig	Max Inc.	: 73.81 deg	Max Inc. Depth	: 799.620 m
MWD Real-time %		: 100 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
		574.21			
4-1/2" X 2-3/4" HWDP #41 - NC46(IF) 4.50 in OD / 2.75 in ID	57.17		HOC 8.00 in OD / 1.92 in ID * Positive Pulser - SN : 10681244 * TM - SN : 10688073	3.08	
Jar 8.00 in OD / 2.75 in ID	9.95	386.65			
		354.00			50.23
4-1/2" X 2-3/4" HWDP #41 - NC46(IF) 4.50 in OD / 2.75 in ID	86.05		8" HCIM Collar 8.00 in OD / 1.92 in ID * HCIM Insert - SN : 078516	1.42	
X-Over Sub 8.00 in OD / 3.00 in ID	0.80	71.69			
Float Sub 8.00 in OD / 2.81 in ID	0.65	69.06			
3-Point String Reamer 8.00 in OD / 3.00 in ID	2.01	66.93			
		60.33			
MWD	8.44		PWD Collar 8.00 in OD / 1.92 in ID * PWD Insert - SN : 1844674407370955	1.35	12.86
		32.64			
Flex Collar 9.50 in OD / 3.50 in ID	2.81				
		23.43			0.00
Geo-Pilot 9600 9.50 in OD / 4.00 in ID	6.61		8" DGR Collar 8.00 in OD / 1.92 in ID * DDS Insert - SN : 177739 * DGR Insert - SN : 177739	2.59	11.99
REED HYC RSX516S 8.50 in OD	0.53	1.74			

## COMMENTS

Drilled to section TD at 1606.0 mMDRTwith GeoPilot.  
All recorded data recovered at surface.  
POOH to run casing.

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 400	Run Start	: 11-Aug-06 14:51	BRT Hrs	: 33.32 hr	Circ. Hrs	: 15.13 hr
Rig Bit No	: 7	Run End	: 13-Aug-06 00:11	Hole Size	: 8.500 in	Oper. Hrs	: 33.32 hr

## DRILLING DATA

Start Depth	: 1620.00 m	Footage	: 40.00 m	Avg RPM	: 100 rpm	Avg ROP	: 12.26 m/hr
End Depth	: 1660.00 m	Avg Flow Rate	: 580.00 gpm	Avg WOB	: 9.0 klb	Avg SPP	: 1815 psig

## MUD DATA

Mud Type	: Polymer	Viscosity	: 53.00 spqt	PV	: 12 cP	YP	: 21.00 lbf/2
Weight	: 1.150 sg	Max Temp.	: 47.00 degC	% Solids	: 6.50 %	% Sand	: 0.10 %
Chlorides	: 30062.00 ppm	Fluid Loss	: 6 mptm	% Oil	: N/A	O:W	: 0:100
pH	: 9.50 pH						

## MWD PERFORMANCE

Tool OD	: 6.75 in	Type	: Dir-FE-Nukes	Min. Inc.	: 69.84 deg	Min. Inc. Depth	: 1647.790 m
Final Az.	: 118.53 deg	Max Op. Press.	: 1342 psig	Max Inc.	: 71.72 deg	Max Inc. Depth	: 1620.160 m
MWD Real-time %		: 99 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
		605.58	HOS 6.75 in OD / 1.92 in ID * Positive Pulser - SN : 8288 * TM - SN : 10688073	3.05	
Heavy Weight 4.50 in OD / 2.75 in ID	57.17		6-3/4" CTN Collar 6.75 in OD / 1.92 in ID * CTN Insert - SN : 10603697 * ACAL Insert - SN : 10603697	4.23	26.16 25.10
		418.01			
Jar 6.50 in OD / 2.75 in ID	9.95		6-3/4" ALD Collar 6.75 in OD / 1.92 in ID * ALD Insert - SN : 96941	4.37	22.10
		385.37			
Heavy Weight 4.50 in OD / 2.75 in ID	86.05		6-3/4" HCIM Collar 6.75 in OD / 1.92 in ID * HCIM Insert - SN : 145273	1.46	
		103.05			
X-Over Sub 6.50 in OD / 3.00 in ID	0.35		PWD Collar 6.75 in OD / 1.92 in ID * PWD Insert - SN : 205578	1.35	16.31
Float Sub 6.44 in OD / 2.75 in ID	0.63	101.90			
		99.84	6-3/4" EWR-P4 Collar 6.75 in OD / 1.92 in ID * EWR-P4 Insert - SN : 226818	3.69	13.78
MWD	22.95				
		24.54	6-3/4" DGR Collar 6.75 in OD / 1.92 in ID * DDS Insert - SN : 176027 * DGR Insert - SN : 176027	1.99	11.42
Geo-Pilot 7600 6.75 in OD / 1.63 in ID	7.08				
		1.31	Non Mag Flex Collar 6.75 in OD / 1.92 in ID * DM Sonde - SN : 85268	2.81	8.95
REED HYC RSX616M B19 8.50 in OD / 2.00 in ID	0.40				

## COMMENTS

Wiped previously drilled interval from 1595.0 to 1620.0 mMDRT, then drilled from 1620.0 to 1660.0 mMDRT.  
Pulled out of hole due to top drive problems.  
All recorded data recovered on surface.  
Changed out CTN/ALD due to suspect CTN sensor (see failure report).



## Bitrun Summary

## RUN TIME DATA

MWD Run	: 500	Run Start	: 13-Aug-06 21:30	BRT Hrs	: 28.57 hr	Circ. Hrs	: 13.68 hr
Rig Bit No	: 8	Run End	: 15-Aug-06 02:05	Hole Size	: 8.500 in	Oper. Hrs	: 28.57 hr

## DRILLING DATA

Start Depth	: 1660.00 m	Footage	: 20.00 m	Avg RPM	: 120 rpm	Avg ROP	: 6.11 m/hr
End Depth	: 1680.00 m	Avg Flow Rate	: 554.00 gpm	Avg WOB	: 20.0 klb	Avg SPP	: 2024 psig

## MUD DATA

Mud Type	: Polymer	Viscosity	: 55.00 spqt	PV	: 16 cP	YP	: 24.00 lbf/2
Weight	: 1.17 sg	Max Temp.	: 52.00 degC	% Solids	: 6.60 %	% Sand	: 0.30 %
Chlorides	: 30062.00 ppm	Fluid Loss	: 6 mptm	% Oil	: N/A	O:W	: 0:100
pH	: 9.50 pH						

## MWD PERFORMANCE

Tool OD	: 6.75 in	Type	: Dir-FE-Nukes	Min. Inc.	: N/A	Min. Inc. Depth	: N/A
Final Az.	: N/A	Max Op. Press.	: 1529 psig	Max Inc.	: N/A	Max Inc. Depth	: N/A
MWD Real-time %		: 98 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
		607.51	HOS 6.75 in OD / 1.92 in ID * Positive Pulser - SN : 8288 * TM - SN : 10688073	3.05	
Heavy Weight 4.50 in OD / 2.75 in ID	57.17		6-3/4" CTN Collar 6.75 in OD / 1.92 in ID * CTN Insert - SN : 10603696 * ACAL Insert	4.73	26.75
		419.95			
Jar 6.50 in OD / 2.75 in ID	9.95		6-3/4" ALD Collar 6.75 in OD / 1.92 in ID * ALD Insert - SN : 174401	4.45	22.69
		387.30			
Heavy Weight 4.50 in OD / 2.75 in ID	86.05		6-3/4" HCIM Collar 6.75 in OD / 1.92 in ID * HCIM Insert - SN : 145273	1.46	
		104.99	PWD Collar 6.75 in OD / 1.92 in ID * PWD Insert - SN : 205578	1.35	16.32
X-Over Sub 6.50 in OD / 3.00 in ID	0.35				
Float Sub 6.44 in OD / 2.75 in ID	0.63	103.84			
		101.77	6-3/4" EWR-P4 Collar 6.75 in OD / 1.92 in ID * EWR-P4 Insert - SN : 226818	3.69	13.79
MWD	23.53				
		24.57	6-3/4" DGR Collar 6.75 in OD / 1.92 in ID * DDS Insert - SN : 176027 * DGR Insert - SN : 176027	1.99	11.43
Geo-Pilot 7600 6.75 in OD / 1.63 in ID	7.08				
		1.35	Non Mag Flex Collar 6.75 in OD / 1.92 in ID * DM Sonde - SN : 85268	2.81	8.96
REED HYC RSX616M B19 8.50 in OD / 2.00 in ID	0.41				

## COMMENTS

Drilled from 1660.0 to 1680.0 mMDRT.  
No surveys were taken during the run and POOH to inspect bit and change jets.  
All recorded data recovered at surface.

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 600	Run Start	: 15-Aug-06 04:48	BRT Hrs	: 33.88 hr	Circ. Hrs	: 23.76 hr
Rig Bit No	: 8RR	Run End	: 16-Aug-06 14:41	Hole Size	: 8.500 in	Oper. Hrs	: 33.88 hr

## DRILLING DATA

Start Depth	: 1680.00 m	Footage	: 201.00 m	Avg RPM	: 120 rpm	Avg ROP	: 13.64 m/hr
End Depth	: 1881.00 m	Avg Flow Rate	: 600.00 gpm	Avg WOB	: 15.0 klb	Avg SPP	: 2560 psig

## MUD DATA

Mud Type	: Polymer	Viscosity	: 51.00 spqt	PV	: 21 cP	YP	: 29.00 lbf/2
Weight	: 1.25 sg	Max Temp.	: 67.00 degC	% Solids	: 8.60 %	% Sand	: 0.20 %
Chlorides	: 36602.00 ppm	Fluid Loss	: 9 mptm	% Oil	: N/A	O:W	: 0:100
pH	: 9.00 pH						

## MWD PERFORMANCE

Tool OD	: 6.75 in	Type	: Dir-FE-Nukes	Min. Inc.	: 47.98 deg	Min. Inc. Depth	: 1851.050 m
Final Az.	: 115.64 deg	Max Op. Press.	: 1721 psig	Max Inc.	: 67.72 deg	Max Inc. Depth	: 1677.350 m
MWD Real-time %	: 99 %	MWD Recorded %	: 100 %				

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
Heavy Weight 4.50 in OD / 2.75 in ID	57.17	607.51	HOS 6.75 in OD / 1.92 in ID * Positive Pulser - SN : 8288 * TM - SN : 10688073	3.05	
			6-3/4" CTN Collar 6.75 in OD / 1.92 in ID * CTN Insert - SN : 10603696 * ACAL Insert	4.73	26.75
Jar 6.50 in OD / 2.75 in ID	9.95	419.95	6-3/4" ALD Collar 6.75 in OD / 1.92 in ID * ALD Insert - SN : 174401	4.45	22.69
Heavy Weight 4.50 in OD / 2.75 in ID	86.05	387.30	6-3/4" HCIM Collar 6.75 in OD / 1.92 in ID * HCIM Insert - SN : 145273	1.46	
X-Over Sub 6.50 in OD / 3.00 in ID	0.35	104.99	PWD Collar 6.75 in OD / 1.92 in ID * PWD Insert - SN : 205578	1.35	16.32
Float Sub 6.44 in OD / 2.75 in ID	0.63	103.84			
MWD	23.53	101.77	6-3/4" EWR-P4 Collar 6.75 in OD / 1.92 in ID * EWR-P4 Insert - SN : 226818	3.69	13.79
Geo-Pilot 7600 6.75 in OD / 1.63 in ID	7.08	24.57	6-3/4" DGR Collar 6.75 in OD / 1.92 in ID * DDS Insert - SN : 176027 * DGR Insert - SN : 176027	1.99	11.43
REED HYC RSX616M B19 8.50 in OD / 2.00 in ID	0.41	1.35	Non Mag Flex Collar 6.75 in OD / 1.92 in ID * DM Sonde - SN : 85268	2.81	8.96

## COMMENTS

Continued drilling 8½" hole to 1881.0 mMDRT.  
 POOH for low ROP and high SPP.  
 Changed out bit on surface which had a blocked nozzle and two blocked flutes.  
 All recorded data recovered at surface.

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 700	Run Start	: 16-Aug-06 17:02	BRT Hrs	: 104.49 hr	Circ. Hrs	: 81.41 hr
Rig Bit No	: 9	Run End	: 21-Aug-06 01:32	Hole Size	: 8.500 in	Oper. Hrs	: 104.49 hr

## DRILLING DATA

Start Depth	: 1881.00 m	Footage	: 434.00 m	Avg RPM	: 65 rpm	Avg ROP	: 9.30 m/hr
End Depth	: 2315.00 m	Avg Flow Rate	: 570.00 gpm	Avg WOB	: 22.0 klb	Avg SPP	: 2720 psig

## MUD DATA

Mud Type	: Polymer						
Weight	: 1.260 sg	Viscosity	: 60.00 spqt	PV	: 25 cP	YP	: 36.00 lbf2
Chlorides	: 34742.00 ppm	Max Temp.	: 63.00 degC	% Solids	: 10.30 %	% Sand	: 0.30 %
pH	: 9.00 pH	Fluid Loss	: 9 mptm	% Oil	: N/A	O:W	: 0:100

## MWD PERFORMANCE

Tool OD	: 6.75 in	Type	: Dir-FE-Nukes	Min. Inc.	: 0.92 deg	Min. Inc. Depth	: 2284.100 m
Final Az.	: 92.86 deg	Max Op. Press.	: 2440 psig	Max Inc.	: 44.71 deg	Max Inc. Depth	: 1880.030 m
MWD Real-time %		: 98 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
		608.23	HOS 6.75 in OD / 1.92 in ID * Positive Pulser - SN : 8288 * TM - SN : 10688073	3.05	
Heavy Weight 4.50 in OD / 2.75 in ID	57.17		6-3/4" CTN Collar 6.75 in OD / 1.92 in ID * CTN Insert - SN : 10603696 * ACAL Insert	4.73	26.97
		420.67			
Jar 6.50 in OD / 2.75 in ID	9.95		6-3/4" ALD Collar 6.75 in OD / 1.92 in ID * ALD Insert - SN : 174401	4.45	22.91
		388.02			
Heavy Weight 4.50 in OD / 2.75 in ID	86.05		6-3/4" HCIM Collar 6.75 in OD / 1.92 in ID * HCIM Insert - SN : 145273	1.46	
		105.71			
X-Over Sub 6.50 in OD / 3.00 in ID	0.35		PWD Collar 6.75 in OD / 1.92 in ID * PWD Insert - SN : 205578	1.35	16.54
		104.56			
Float Sub 6.44 in OD / 2.75 in ID	0.63				
		102.49			
MWD	23.53		6-3/4" EWR-P4 Collar 6.75 in OD / 1.92 in ID * EWR-P4 Insert - SN : 226818	3.69	14.01
		25.30			
Geo-Pilot 7600 6.75 in OD / 1.63 in ID	7.08		6-3/4" DGR Collar 6.75 in OD / 1.92 in ID * DDS Insert - SN : 176027 * DGR Insert - SN : 176027	1.99	11.65
		2.07			
Sleeve Stabilizer 8.50 in OD / 2.00 in ID	0.38		Non Mag Flex Collar 6.75 in OD / 1.92 in ID * DM Sonde - SN : 85268	2.81	9.18
		0.82			
REED HYC 117 8.50 in OD / 2.00 in ID	0.25				

## COMMENTS

Drilled from 1881.0 to 2315.0 mMDRT.  
POOH to lay out GeoPilot and pick up GeoTap.  
All recorded data recovered at surface.

## Bitrun Summary

## RUN TIME DATA

MWD Run	: 800	Run Start	: 21-Aug-06 07:54	BRT Hrs	: 23.51 hr	Circ. Hrs	: 11.07 hr
Rig Bit No	: 10	Run End	: 22-Aug-06 07:24	Hole Size	: 8.500 in	Oper. Hrs	: 23.51 hr

## DRILLING DATA

Start Depth	: 3215.00 m	Footage	: N/A	Avg RPM	: 40 rpm	Avg ROP	: N/A
End Depth	: 3215.00 m	Avg Flow Rate	: 570.00 gpm	Avg WOB	: N/A	Avg SPP	: 2720 psig

## MUD DATA

Mud Type	: Polymer						
Weight	: 1.26 sg	Viscosity	: 60.00 spqt	PV	: 25 cP	YP	: 36.00 lhf2
Chlorides	: 34742.00 ppm	Max Temp.	: 73.00 degC	% Solids	: 10.30 %	% Sand	: 0.30 %
pH	: 9.00 pH	Fluid Loss	: 9 mptm	% Oil	: N/A	O:W	: 0:100

## MWD PERFORMANCE

Tool OD	: 6.75 in	Type	: FE-GeoTap	Min. Inc.	: N/A	Min. Inc. Depth	: N/A
Final Az.	: N/A	Max Op. Press.	: 2440 psig	Max Inc.	: N/A	Max Inc. Depth	: N/A
MWD Real-time %		: 99 %		MWD Recorded %		: 100 %	

	Length (m)	Dist From Bit (m)		Length (m)	Dist From Bit (m)
		610.14	<small>BROS 6.75 in OD / 1.92 in ID * Positive Pulse - SN : 8301 * TM - SN : 95148</small>	3.05	
Heavy Weight 4.50 in OD / 2.75 in ID	57.17		FTWD Collar 6.75 in OD / 1.92 in ID * FTWD Insert * PWD-FTWD Insert - SN : 4338996347915063	8.43	23.75
		422.57	6-3/4" CTN Collar 6.75 in OD / 1.92 in ID * CTN Insert - SN : 10603696 * ACAL Insert	4.73	20.53
Jar 6.50 in OD / 2.75 in ID	9.95		6-3/4" ALD Collar 6.75 in OD / 1.92 in ID * ALD Insert - SN : 174401	4.45	15.95
		389.93	6-3/4" HCIM Collar 6.75 in OD / 1.92 in ID * HCIM Insert - SN : 145273	1.46	
Heavy Weight 4.50 in OD / 2.75 in ID	86.05		PWD Collar 6.75 in OD / 1.92 in ID * PWD Insert - SN : 0	1.35	10.10
X-Over Sub 6.50 in OD / 3.00 in ID	0.35	107.61	6-3/4" EWR-P4 Collar 6.75 in OD / 1.92 in ID * EWR-P4 Insert - SN : 226818	3.69	7.57
Float Sub 6.44 in OD / 2.75 in ID	0.63	106.46	6-3/4" DGR Collar 6.75 in OD / 1.92 in ID * DDS Insert - SN : 176027 * DGR Insert - SN : 176027	1.99	5.21
MWD	31.07		6-3/4" DM Collar 6.75 in OD / 1.92 in ID * DM Sonde - SN : 85267	1.92	2.85
		2.46			
Sleeve Stabilizer 8.50 in OD / 2.00 in ID	0.38				
REED HYC 117 8.50 in OD / 2.00 in ID	0.37	1.21			

## COMMENTS

RIH with GeoTap Formation Tester and performed 11 tests.  
No new formation was drilled or logged.  
POOH for P&A.  
All recorded data recovered at surface.

## Directional Survey Data

RT to MSL = 8.6m. Surveys corrected for BHA sag. Final survey projected to TD.

Tie-in

0.000 0.00 0.00 0.000 0.000 N 0.000 E \*\*\*

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
68.730	0.22	154.70	68.730	0.119 S	0.056 E	0.106	0.10
89.740	0.64	277.76	89.739	0.140 S	0.043 W	0.029	1.12
118.310	0.63	112.18	118.309	0.178 S	0.055 W	0.036	1.32
125.390	0.31	210.53	125.389	0.209 S	0.029 W	0.074	3.14
146.550	1.33	135.42	146.547	0.433 S	0.114 E	0.307	1.82
163.200	2.41	112.53	163.188	0.705 S	0.573 E	0.840	2.33
175.900	2.70	134.29	175.875	1.016 S	1.034 E	1.394	2.37
190.200	4.40	115.22	190.148	1.485 S	1.772 E	2.265	4.30
204.730	5.78	113.55	204.620	2.015 S	2.947 E	3.551	2.87
219.700	8.44	111.19	219.474	2.713 S	4.662 E	5.392	5.36
233.580	10.99	113.04	233.154	3.599 S	6.830 E	7.720	5.55
247.700	13.99	113.35	246.938	4.803 S	9.636 E	10.760	6.38
261.590	16.60	112.23	260.335	6.219 S	13.015 E	14.405	5.67
276.520	19.07	117.09	274.547	8.137 S	17.161 E	18.964	5.79
291.260	21.66	120.03	288.365	10.596 S	21.661 E	24.092	5.67
303.700	23.23	118.68	299.862	12.922 S	25.801 E	28.840	3.98
325.211	22.40	120.78	319.690	17.056 S	33.044 E	37.178	1.62
334.100	23.32	120.73	327.881	18.821 S	36.012 E	40.629	3.11
341.630	24.17	120.94	334.774	20.376 S	38.615 E	43.658	3.40
354.390	25.45	121.32	346.356	23.144 S	43.198 E	49.007	3.03
368.840	26.91	120.74	359.323	26.429 S	48.661 E	55.375	3.08
382.560	29.25	120.44	371.427	29.715 S	54.220 E	61.829	5.13
398.500	32.80	120.73	385.085	33.896 S	61.291 E	70.038	6.69
411.790	34.80	121.09	396.128	37.694 S	67.634 E	77.424	4.54
426.360	36.07	120.21	407.999	41.999 S	74.901 E	85.865	2.82
441.550	39.04	119.30	420.040	46.591 S	82.939 E	95.120	5.97
454.180	41.35	119.26	429.687	50.578 S	90.049 E	103.270	5.49
470.210	44.59	118.69	441.414	55.869 S	99.607 E	114.195	6.11
483.690	47.79	118.33	450.745	60.510 S	108.154 E	123.921	7.15
498.440	50.43	118.30	460.400	65.799 S	117.970 E	135.070	5.37
512.240	53.16	117.92	468.934	70.907 S	127.534 E	145.913	5.97
527.620	56.02	117.93	477.844	76.777 S	138.609 E	158.446	5.58
541.360	58.57	119.10	485.268	82.297 S	148.766 E	170.007	5.97
556.000	60.63	119.75	492.676	88.501 S	159.763 E	182.632	4.37
570.640	62.05	120.65	499.697	94.963 S	170.865 E	195.472	3.33
584.890	64.27	121.30	506.131	101.507 S	181.766 E	208.174	4.83
598.880	66.35	122.11	511.974	108.188 S	192.579 E	220.864	4.73
613.580	68.65	121.68	517.599	115.363 S	204.109 E	234.420	4.76
622.250	70.37	121.24	520.634	119.601 S	211.036 E	242.531	6.12
654.810	71.72	121.17	531.210	135.555 S	237.374 E	273.290	1.25
683.790	70.55	121.69	540.581	149.855 S	260.774 E	300.677	1.31
712.750	70.35	122.39	550.271	164.332 S	283.907 E	327.915	0.71
741.720	71.06	123.87	559.844	179.276 S	306.804 E	355.167	1.62
770.660	71.98	125.52	569.018	194.900 S	329.369 E	382.453	1.88
799.620	73.81	126.25	577.536	211.124 S	351.793 E	409.901	2.03
828.550	73.62	125.41	585.648	227.380 S	374.307 E	437.443	0.86
857.490	72.83	124.33	594.001	243.221 S	397.039 E	464.980	1.35

## Directional Survey Data

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
886.430	71.86	122.55	602.778	258.418 S	420.049 E	492.453	2.03
915.360	70.94	122.36	612.006	273.132 S	443.185 E	519.806	0.97
944.350	71.53	122.47	621.331	287.846 S	466.357 E	547.191	0.62
973.270	72.75	121.46	630.201	302.417 S	489.709 E	574.666	1.61
1002.250	72.51	119.57	638.854	316.460 S	513.536 E	602.306	1.88
1031.200	72.38	117.86	647.586	329.721 S	537.742 E	629.906	1.69
1060.160	71.85	117.00	656.480	342.418 S	562.203 E	657.461	1.01
1089.080	71.39	116.01	665.599	354.666 S	586.763 E	684.889	1.09
1118.040	71.67	115.22	674.774	366.541 S	611.531 E	712.322	0.83
1147.010	71.72	114.43	683.873	378.088 S	636.494 E	739.769	0.78
1175.950	71.38	114.73	693.032	389.507 S	661.458 E	767.158	0.46
1204.930	71.66	115.31	702.218	401.132 S	686.365 E	794.592	0.64
1233.870	71.80	114.62	711.290	412.730 S	711.278 E	822.021	0.69
1262.800	72.05	114.78	720.266	424.223 S	736.264 E	849.463	0.30
1291.770	72.51	114.84	729.084	435.802 S	761.312 E	877.001	0.48
1320.700	72.00	115.71	737.901	447.566 S	786.228 E	904.511	1.01
1349.570	71.48	115.11	746.947	459.330 S	810.992 E	931.887	0.80
1378.370	70.75	115.43	756.268	470.963 S	835.634 E	959.093	0.82
1407.210	70.63	115.67	765.805	482.702 S	860.189 E	986.274	0.27
1436.050	70.95	116.59	775.295	494.696 S	884.640 E	1013.485	0.96
1464.900	71.22	116.99	784.647	506.997 S	909.002 E	1040.765	0.48
1493.720	71.07	117.29	793.961	519.438 S	933.273 E	1068.031	0.33
1522.570	71.02	117.07	803.332	531.902 S	957.545 E	1095.309	0.22
1551.400	70.95	118.07	812.725	544.517 S	981.707 E	1122.562	0.99
1580.210	71.07	117.93	822.100	557.306 S	1005.760 E	1149.803	0.19
1596.100	71.07	117.39	827.255	564.284 S	1019.073 E	1164.832	0.96
1620.160	71.72	118.44	834.932	574.959 S	1039.222 E	1187.633	1.48
1647.790	69.84	118.53	844.028	587.400 S	1062.153 E	1213.721	2.05
1677.350	67.72	119.25	854.727	600.711 S	1086.278 E	1241.274	2.25
1706.300	64.96	118.42	866.343	613.501 S	1109.503 E	1267.788	2.96
1735.260	61.92	118.32	879.291	625.809 S	1132.292 E	1293.688	3.16
1764.180	58.81	117.25	893.591	637.529 S	1154.525 E	1318.819	3.36
1793.140	55.54	117.44	909.288	648.704 S	1176.139 E	1343.146	3.39
1822.110	51.89	116.24	926.430	659.251 S	1196.969 E	1366.484	3.90
1851.050	47.98	115.64	945.053	668.940 S	1216.881 E	1388.607	4.08
1880.030	44.71	114.61	965.055	677.846 S	1235.860 E	1409.536	3.47
1908.970	41.14	113.88	986.242	685.943 S	1253.827 E	1429.188	3.73
1937.900	37.77	114.06	1008.576	693.410 S	1270.624 E	1447.513	3.50
1966.870	33.71	114.22	1032.085	700.327 S	1286.063 E	1464.382	4.21
1995.760	30.21	114.36	1056.593	706.615 S	1300.000 E	1479.630	3.64
2024.650	26.31	113.76	1082.035	712.195 S	1312.485 E	1493.264	4.06
2053.450	22.08	113.22	1108.298	716.903 S	1323.306 E	1505.021	4.41
2082.290	19.06	112.80	1135.297	720.866 S	1332.631 E	1515.107	3.15
2111.130	15.99	111.66	1162.795	724.157 S	1340.665 E	1523.737	3.22
2139.980	13.10	108.53	1190.718	726.663 S	1347.459 E	1530.904	3.10
2168.790	9.86	104.21	1218.948	728.307 S	1352.949 E	1536.513	3.49
2197.640	6.92	99.24	1247.486	729.192 S	1357.061 E	1540.549	3.14
2226.470	3.33	92.87	1276.197	729.513 S	1359.612 E	1542.944	3.78
2255.270	1.11	90.43	1304.973	729.557 S	1360.727 E	1543.945	2.31
2284.100	0.92	88.16	1333.799	729.552 S	1361.238 E	1544.391	0.21
2303.740	1.19	92.86	1353.436	729.557 S	1361.598 E	1544.710	0.43

**Directional Survey Data**

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
2315.000	1.19	92.86	1364.693	729.569 S	1361.832 E	1544.921	0.01

**CALCULATION BASED ON MINIMUM CURVATURE METHOD**

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT  
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD  
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 118.50 DEGREES(GRID)  
A TOTAL CORRECTION OF 13.14 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2315.00 METRES  
IS 1544.95 METRES ALONG 118.18 DEGREES (GRID)**

## Service Interrupt Report

MWD Run Number	: 400	Time/Date fo Failure	: 12-Aug-06 02:00
Rig Bit Number	: 7	Depth at time fo Failure	: 1598.000 m
MWD Run start time/date	: 11-Aug-06 14:51	Lost Rig Hours	: N/A
MWD Run end time/date	: 13-Aug-06 00:11		

**RIG ACTIVITY**

Drilling new formation in the 8½" hole section.

**DESCRIPTION OF FAILURE**

Erroneous log response from the CTN tool which could not be explained by formation or environmental conditions.

**ACTION TAKEN**

None. Continued drilling until POOH for topdrive repairs. Changed out tool on surface.

**OPERATION IMPACT**

None.

**REASON FOR FAILURE**

Tool was sent to Dampier where it was read and further confidence test performed upon. The Tool passed all confidence tests and all downloads were successful and normal.  
Counts from Near 1 across to Far 3 reflected correct readings. No Fault found. It was then recalibrated as standard procedure.





**SECTION 4: PRODUCTION TEST REPORTS**

No Production Tests were conducted.

## **SECTION 5: DAILY GEOLOGICAL REPORTS**

## DAILY GEOLOGICAL REPORT

DGR 01

<b>Date:</b>	29 July 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days From Spud:</b>	0	<b>GL:</b>	2.7m
<b>(Note:</b> Surface hole & 20" conductor done by another rig)			
<b>Current Hole Size:</b>	17.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	100m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-91.4m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	40m		
<b>Current Operation:</b>	Drilling 17.5" surface hole at 80 m/hr.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
Conductor		60	20"			60m	

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl:	Cl -:	PV/YP:	Rmf:
	KCL	8.85	85	17.0	9.0	-	4000	9 / -	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"			

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue with final stages of rig up. Align Top Drive, unload mud chemicals, hold Emergency Response Drill. Perform final checks on Top Drive System. Perform final pre-spud checks. Rig accepted as fully operational at 18:30hrs on 28/07/06. Hold JHA, pick up 17.5" drilling assembly and run in hole and tag cement at 65m. **Spud well at 04:30hrs on 29/07/06**, drill cement from 65m to 85m. Open 9.625" pilot hole to 17.5" from 85m to 100m at 06:00 hrs.

**Anticipated operations:**

Drill ahead 17.5" hole to approx. 150m. Pull out of hole and pick up directional BHA. Kick-off and drill to casing point of approx 310m, building angle to 24° towards 118°T.

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
65-100m ROP: 0.4-1.1 Ave: 0.8	SANDSTONE: Clear to translucent, off white, minor pale yellow, rare red to orange, trace smoky quartz, medium grained to occasional pebble sized, dominantly coarse grained to very coarse grained loose quartz and minor transported lithic fragments, subrounded to dominantly subangular, occasional angular, trace dispersive clay matrix, generally unconsolidated, fair to good inferred porosity, no hydrocarbon fluorescence.	Nil

## DAILY GEOLOGICAL REPORT

DGR 02

<b>Date:</b>	30 July 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	1	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	17.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	320m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-306m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	220m		
<b>Current Operation:</b>	Circulating hole clean at casing TD, prior to wiper trip to conductor shoe.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
Conductor		60	20"			60m	

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl:	Cl -:	PV/YP:	Rmf:
	KCL	9.2	48	10.0	10.0	-	5000	12 / 18	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	1RR	Red	Rock T11C	17.5:	0.75	72	

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	261.6	16.6	112.2	260.3	14.4	115.5
	MWD	276.5	19.1	117.1	274.5	19.0	115.4
	MWD	291.3	21.7	120.0	288.4	24.1	116.1
	MWD	303.7	23.2	118.7	299.9	28.9	116.6

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Drill 17.5" hole from 100m to 120m. Pump sweeps, spot hi-viscosity pill at bottom and pull out of hole. Make up 17.5" directional BHA (motor with 1.5° bend) and run in hole to 110m, wash to bottom, no fill. Drill 17.5" directional hole from 120m to casing point at 320m, building angle to 24° towards 118.5°T as per plan. Casing point reached at 05:00hrs on 30/07/06. Circulate hole clean prior to wiper trip to conductor shoe.

**Anticipated operations:**

Wiper trip to conductor shoe and back to bottom. Circulate hole clean. Pull out of hole and run 13.375" casing (28 joints with shoe at 317m).

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
100-143m ROP: 0.4-9.5 Ave: 1.1	SANDSTONE: (100%) Pale grey, pale yellow, clear to translucent, off white, fine to coarse grained, dominantly medium grained, poorly sorted, subangular to angular, occasional subrounded, trace weak siliceous cement, trace dispersive clay matrix, trace fossil fragments, generally loose, fair to good inferred porosity, no hydrocarbon fluorescence.	Nil
143-190m ROP: 0.8-3.9 Ave: 1.0	COQUINA INTERBEDDED WITH MARL AND SANDSTONE COQUINA: (50-70%) Off white, pale yellow, pale brown, cream, abundant fossil fragments, locally loosely cemented with calcite, occasional fossil casts with Calcareous Claystone, common fragments of bi-valves, brachiopods, echinoid spines, sponges, bryozoa, Turritella fragments. MARL: (10-40%) Light grey, light green grey, silty in part, grading to Calcareous Claystone in part, abundant fossil fragments, occasional dark green glauconite grains, dispersive, soft, amorphous to occasional subblocky. SANDSTONE: (10-40%) Clear to translucent, fine to coarse grained, dominantly medium grained, poorly sorted, dominantly subangular to occasional subrounded, trace argillaceous matrix, generally loose, fair inferred porosity, no hydrocarbon fluorescence.	Nil

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
190-235m ROP: 1.0-3.5 Ave: 2.0	<p>INTERBEDDED COQUINA, MARL AND SANDSTONE</p> <p>COQUINA: (30-40%) Off white, pale yellow, pale brown, cream, abundant fossil fragments, locally loosely cemented with calcite, occasional fossil casts with Calcareous Claystone, common fragments of bi-valves, cephalopods, brachiopods, echinoid spines, sponges, bryozoa, Turritella fragments.</p> <p>MARL: (30-40%) Light green grey, light grey, very calcareous and argillaceous grading to Calcareous Claystone in part, common fossil fragments, trace dark green glauconite grains, trace dispersed fine to medium quartz sand, dispersive, soft, amorphous to occasional subblocky.</p> <p>SANDSTONE: (10-20%) Clear to translucent, fine to coarse grained, dominantly medium grained, poorly sorted, dominantly subangular to occasional subrounded, trace argillaceous matrix, generally loose, fair inferred porosity, no hydrocarbon fluorescence.</p>	Nil
235-280m ROP: 1.0-3.3 Ave: 2.5	<p>MASSIVE LIMESTONE (CALCARENITE) INTERBEDDED WITH MARL</p> <p>CALCARENITE: (30-90) Light to medium grey, minor brown grey, medium to coarse grained, trace glauconite, argillaceous in part, common fossil fragments, moderately hard to hard, subblocky.</p> <p>MARL: (10-30) Light green grey, light grey, arenaceous in part, argillaceous in part, trace glauconite, trace fine to medium grained quartz grains, common fossil fragments, dispersive, soft, amorphous.</p> <p>SANDSTONE: (0-10%) Clear to translucent, fine to dominantly medium grained, moderately poorly sorted, dominantly subangular to occasional subrounded, trace argillaceous matrix, generally loose, fair inferred porosity, no hydrocarbon fluorescence.</p>	Nil
280-320m ROP: 1.0-2.8 Ave: 2.5	<p>MASSIVE LIMESTONE (CALCARENITE)</p> <p>CALCARENITE: (100%) Light to medium grey, light-medium brown, dominantly medium grained, minor coarse grained, slightly argillaceous, common fossil fragments, trace dark grey lithic fragments, trace glauconite, local strong calcite cement, occasional loose quartz grains, loose in part, moderately hard to hard, subblocky.</p>	Nil



## DAILY GEOLOGICAL REPORT

DGR 03

<b>Date:</b>	31 July 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	2	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	17.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	320m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-306m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Waiting on cement having run and set 28 joints of 13.375" casing with shoe @ 317m.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.1	68	8.5	9.5	1.0	7000	15 / 34	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	1RR	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	261.6	16.6	112.2	260.3	14.4	115.5
	MWD	276.5	19.1	117.1	274.5	19.0	115.4
	MWD	291.3	21.7	120.0	288.4	24.1	116.1
	MWD	303.7	23.2	118.7	299.9	28.9	116.6

## OPERATIONS SUMMARY

Previous 24 hrs Operations Summary:

Circulate hole clean prior to conducting wiper trip to conductor shoe. Pull out of hole to conductor shoe (hole in good condition), run in hole to bottom, circulate hole clean. Pull out of hole & layout MWD equipment. Hold safety meeting and rig up to run casing. Run in hole with 28 joints of 13.375" casing (54.5 ppf J55 BTC). Circulate casing volume. Rig up Halliburton cementing equipment and surface lines. Pressure test to 4000 psi. Cement casing as per program with 161 bbls of 12.5 ppg Lead slurry and 90 bbls of 15.8 ppg Tail slurry. Displace with 158 bbls of water. Bump plug with 300 psi. Wait on cement from 04:00 hrs.

Anticipated operations:

Wait on cement for total 4 hours till 08:00hrs. Back out landing joint & rig down riser. Nipple up and pressure test BOPS and surface equipment. Make up 12.25" directional BHA, run in hole, tag cement. Drill cement, shoe track and 3m formation. Perform LOT. Drill 12.25" directional hole to ~625m building angle to ~70°.

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 04

<b>Date:</b>	01 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	3	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	17.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	320m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-306m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Pressure testing BOPs.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.1	68	8.5	9.5	1.0	7000	15 / 34	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	1RR	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	261.6	16.6	112.2	260.3	14.4	115.5
	MWD	276.5	19.1	117.1	274.5	19.0	115.4
	MWD	291.3	21.7	120.0	288.4	24.1	116.1
	MWD	303.7	23.2	118.7	299.9	28.9	116.6

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Wait on cement for a total of 5.5 hours till 09:30hrs as surface samples were soft after 4 hours. Layout cement head, back out landing joint & rig down riser. Install Bradenhead. Nipple up BOPS. Install Bell nipple but the angle to the flowline was incorrect. Remove Bell nipple and modify same. Install Koomey lines, kill line and HCR. Pressure test the casing to 200psi low / 1200 psi high to confirm integrity of Bradenhead connection. Install Bell nipple and flowline. Commence pressure testing of BOPs to 200psi low / 1700 psi high at 04:30hrs. Re-torque studs and nuts due to leak between spacer spools in seal area.

**Anticipated operations:**

Complete pressure testing BOPs. Pickup drillpipe and rack back 42 stands in the derrick prior to making up 12.25" directional BHA with motor. Run in hole, tag cement, drill cement, shoe track and 3m formation. Perform LOT. Drill 12.25" directional hole to ~625m building angle to ~70°.

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 05

<b>Date:</b>	02 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	4	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	17.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	320m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-306m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Continue to pick up drillpipe singles and rack back as stands in derrick. (Expect to make up 12.25" directional BHA by 07:00hrs).		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	8.7	90	7.0	9.5	5.0	25000	17 / 21	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	1RR	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-0-I-RR-TD

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	261.6	16.6	112.2	260.3	14.4	115.5
	MWD	276.5	19.1	117.1	274.5	19.0	115.4
	MWD	291.3	21.7	120.0	288.4	24.1	116.1
	MWD	303.7	23.2	118.7	299.9	28.9	116.6

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Complete pressure testing BOPs to 200psi Low / 1700psi High. Run wear bushing. Pressure test surface equipment while Halliburton performed top-up cement job between 13.375" casing and 20" conductor. Hold safety meeting with new incoming crew. Hold Muster Drill and test Emergency Shutdown Systems – all okay. Pickup singles of drillpipe and rack back as stands in the derrick prior to making up 12.25" directional BHA.

**Anticipated operations:**

Continue to pick up drillpipe singles to make a total of 52 stands in derrick. By 07:00hrs expect to make up 12.25" directional BHA with Tricone bit and motor (1.15° bend). Shallow test MWD, run in hole, tag and drill cement, shoe track and 3m formation. Circulate and displace hole to new KCl/PHPA mud. Perform LOT. Drill 12.25" directional hole to ~625m building angle to ~70° to 118.5° azimuth with a build rate of 4.5°/30m.

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 06

<b>Date:</b>	03 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	5	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	458m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-422m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	138m		
<b>Current Operation:</b>	Drilling 12.25" directional hole in the Gippsland Limestone at 40 m/hr		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	8.8	48	8.5	8.5	5.0	26000	10 / 10	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	1RR	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	2	Reed	Rock T11	12.25"	0.17	3.0	

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	398.5	32.8	120.73	385.08	70.04	118.94
	MWD	411.79	34.8	121.09	396.13	77.43	119.13
	MWD	426.36	36.07	120.21	408.00	85.87	119.28
	MWD	441.55	39.04	119.3	420.04	95.13	119.33

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue to pickup drillpipe and make up stands. Perform Top Drive and rig service. Make up 12.25" tricone bit and directional BHA with motor (1.15° bend) and MWD (Surveys & GR). Shallow test MWD. Run in hole to tag cement at 303 m. Simulate Well Control drill with all personnel. Drill out cement, float @ 305m, shoe track and 3m formation to 323m. Displace hole to mud. Conduct Leak-off Test with 8.8 ppg mud and obtain EMW=20.0 ppg. Drill ahead 12.25" directional hole to 458m at 06:00 hrs, building angle.

**Anticipated operations:**

Continue to drill 12.25" directional hole to ~625m building angle to ~70° (118.5° azimuth) with a build rate of 4.5°/30m. Circulate hole clean. Pull out of hole to pick up Geopilot assembly.

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
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320-354m ROP:0.8-3.6 Ave: 3.2	CALCARENITE INTERBEDDED WITH MINOR CALCAREOUS CLAYSTONE CALCARENITE (90-100%): Light to medium grey, light brown grey, cream, fine to medium, minor coarse grained, subangular, argillaceous in part, common calcite cemented, common fossil fragments of bryozoa, bi-valve shell fragments, sponges, echinoid spine fragments, trace loose quartz grains, trace glauconite, moderately hard to hard. CALCAREOUS CLAYSTONE (0-10%): Medium grey brown, light brown in part, arenaceous, silty grading to Calcareous Siltstone in part, moderately hard to hard, subblocky to subfissile.	Trace
354m-387m ROP:2.2-3.7 Ave: 3.0	CALCARENITE (100%): Light to medium grey brown, light brown grey, cream, fine to medium grained, minor coarse grained, subangular, common calcite cemented, argillaceous in part, common fossil fragments of bryozoa and echinoid spines, minor bi-valve and other shell fragments, trace lithic fragments, hard to very hard.	Trace
387-440m ROP: 1.8-3.8 Ave: 3.3	CALCARENITE INTERBEDDED WITH CALCILUTITE CALCARENITE: (70-100%) Light to medium grey brown, light brown grey, cream, fine to medium grained, minor coarse grained, subangular, common calcite cemented, argillaceous in part, decreasing fossil fragments of bryozoa and echinoid spines, minor bi-valve fragments, trace lithic fragments, hard to very hard, friable in part. CALCILUTITE: Light brown, light brown grey, argillaceous, soft to firm, dispersive, amorphous.	Trace



## DAILY GEOLOGICAL REPORT

DGR 07

<b>Date:</b>	04 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	6	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	636m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-516m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	178m		
<b>Current Operation:</b>	Running in hole with Geopilot Rotary Steerable BHA to drill the 12.25" Tangent section		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.1	47	3.8	9.0	5.8	28000	15 / 24	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	Rock T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"			

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	584.89	64.27	121.3	506.13	208.19	119.18
	MWD	598.88	66.35	122.11	511.97	220.89	119.33
	MWD	622.25	70.37	121.24	520.59	242.59	119.54
Projected	MWD	636.52	72.82	120.71	525.10	256.12	119.61

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Drill 12.25" directional hole from 458m to 636m building angle to 72°. Circulate hole clean. Pull out of hole to pick up Geopilot assembly. Layout motor. Hold safety meeting with crew. Make up Geopilot Rotary Steerable Assembly. Sperry-Sun bit breaker not fitting in rig's rotary table and was modified by welder. Continue to make up 12.25" BHA. Shallow test MWD. Pick up 6.5" drilling jars and extra 4.5" HWDPs and run in hole.

**Anticipated operations:**

Run in hole to bottom. Drill 12.25" directional hole, holding angle at ~71 degrees to casing point at ~1600m.

**MWD Sensor to Bit:** GR=13m, Survey=9m

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
440-510m ROP: 2.2-3.4 Ave: 3.0	<b>INTERBEDDED CALCARENITE AND CALCILUTITE</b> <b>CALCARENITE:</b> (80-100%) Light to medium grey brown, pale grey, off-white, cream, fine to dominantly medium grained, rare coarse grained, subangular, locally common clear calcite cemented, argillaceous in part, decreasing fossil fragments of bryozoa and echinoid spines (trace) , minor bi-valve fragments, trace glauconite, moderately hard to hard, friable in part. <b>CALCILUTITE:</b> (0-20%) Light brown, light to medium grey, light brown grey, argillaceous, trace loose quartz grains, trace dark brown lithic fragments, soft to firm, dispersive.	Nil – Trace
510-580m ROP: 1.6-3.9 Ave: 3.3	<b>CALCARENITE INTERBEDDED WITH MINOR CALCILUTITE</b> <b>CALCARENITE:</b> (90-100%) Pale grey, light brown, off white, cream, dominantly fine to medium grained, minor coarse grained, trace echinoid spine & bryozoa fragments, trace shell fragments, trace lithic fragments, moderately hard to hard. <b>CALCILUTITE:</b> (0-10%) Light brown, light to medium grey, light brown grey, argillaceous, trace loose quartz grains, trace dark brown lithic fragments, soft to firm, dispersive.	Nil – Trace
580-636m ROP: 2.6-3.6 Ave: 3.2	<b>CALCARENITE INTERBEDDED WITH MINOR CALCILUTITE</b> <b>CALCARENITE:</b> (60-90%) Pale grey, light brown, off white, cream, dominantly fine to medium grained, trace echinoid spine & bryozoa fragments, trace shell fragments, trace lithic fragments, moderately hard to hard. <b>CALCILUTITE:</b> (10-40%) Light brown, light to medium grey, light brown grey, argillaceous, trace loose quartz grains, trace dark brown lithic fragments, soft to firm, dispersive.	Nil – Trace

## DAILY GEOLOGICAL REPORT

DGR 08

<b>Date:</b>	05 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	7	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1273m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-715m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	637m		
<b>Current Operation:</b>	Drilling 12.25" Tangent section, holding 71° at 30 m/hr.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.1	48	6.5	9.0	5.5	28000	12 / 21	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	Rock T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	6.1	463	In hole

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1147.01	71.72	114.43	683.87	740.32	120.71
	MWD	1175.95	71.38	114.73	693.03	767.62	120.49
	MWD	1204.93	71.66	115.31	702.22	794.99	120.30
	MWD	1233.87	71.80	114.62	711.29	822.35	120.13

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Run in hole with Geopilot assembly to casing shoe. Change out damaged elevators, continue to run in hole and wash last stand to bottom. Drill 12.25" tangent section in the Gippsland Limestone from 636m to 1273m at 06:00 hrs, holding angle at ~71°.

**Anticipated operations:**

Drill 12.25" directional hole, holding angle at ~71 degrees to casing point at ~1606m.

**MWD Sensor to Bit:** GR=13m, Survey=9m

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
636-690m ROP:0.7-3.8 Ave:1.5	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (70-90%) Pale grey, light brown, off white, cream, dominantly fine to medium grained, trace echinoid spine & bryozoa fragments, trace shell fragments, trace lithic fragments, trace glauconite, moderately hard to hard, grading to Calcilutite in part. CALCILUTITE: (10-30%) Light brown, light to medium grey, light brown grey, argillaceous, trace dark brown lithic fragments, soft to firm, dispersive.	Nil
690-750m ROP:0.8-2.6 Ave: 2.0	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (70-90%) Light grey, light brown grey, off white, fine to medium, trace glauconite, trace fossil fragments, trace dark grey lithic fragments, moderately hard to hard, minor friable, grading to Calcilutite in part. CALCILUTITE: (10-30%) Light grey, off white, argillaceous, trace dark lithic fragments, soft to firm.	Nil
750-830m ROP:0.9-3.2 Ave:1.8	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (50-80%) Light grey, light brown grey, off white, dominantly fine, grading to Calcilutite in part, trace dark lithic fragments, trace glauconite, moderately hard to hard, minor friable. CALCILUTITE: (20-50%) Off white, light grey, argillaceous, trace dark lithic fragments, soft, dispersive.	Nil
830-926m ROP:1.2-2.4 Ave:1.8	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (50-60%) Light grey, off white, light brown grey, dominantly fine, grading to Calcilutite in part, trace dark lithic fragments, rare glauconite grains, trace fossil fragments, moderately hard to hard. CALCILUTITE: (40-50%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.	Nil

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
926-985m ROP:1.0-2.2 Ave: 1.3	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (40-50%) Light grey, off white, light brown grey, dominantly fine, grading to Calcilutite in part, trace dark lithic fragments, trace rare glauconite grains, trace fossil fragments, moderately hard to hard. CALCILUTITE: (50-60%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.	Nil
985-1120m ROP:0.8-3.2 Ave: 2.2	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (10-40%) Light grey, off white, light brown grey, dominantly fine to occasional very fine grained, grading to Calcilutite in part, trace dark lithic fragments, rare glauconite grains, trace fossil fragments of bryozoa, echinoid spine fragments, occasional forams, moderately hard to hard. CALCILUTITE: (60-90%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.	Nil
1120-1187m ROP:1.0-3.8 Ave: 2.3	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (30-50%) Light grey, off white, light brown grey, dominantly fine, occasional very fine grained, grading to Calcilutite in part, trace clear calcite cement, trace dark lithic fragments, rare glauconite grains, trace fossil fragments of bryozoa, echinoid spine fragments, rare forams, moderately hard to hard. CALCILUTITE: (50-70%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace dark grey lithic fragments, trace glauconite, soft to firm, dispersive.	Nil
1187-1260m ROP:1.6-3.5 Ave:3.0	INTERBEDDED CALCARENITE AND CALCILUTITE CALCARENITE: (30-50%) Off white, off white, light brown to brown grey, dominantly fine to occasional medium grained, grading to Calcilutite in part, trace opaque calcite cement, trace dark lithic fragments, rare glauconite grains, trace fossil fragments of shells fragments, bryozoa, echinoid spine fragments, rare forams, moderately hard to hard. CALCILUTITE: (50-70%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace light brown grey lithic fragments, trace glauconite, dominantly soft to firm, dispersive.	Trace units 12/8/11/29/40 to 37/25/10/28 %

## DAILY GEOLOGICAL REPORT

DGR 09

<b>Date:</b>	06 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	8	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1606m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-822m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	333m		
<b>Current Operation:</b>	Tripping out of hole to layout Geopilot BHA having drilled 12.25" Tangent section to casing point.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.45	58	5.8	9.0	6.0	30000	22 / 40	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	Rock T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	Rock T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	Rock T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	20.25	936	In hole

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.21	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
Projected	MWD	1606	71.07	117.05	830.47	1174.23	118.96

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Drill 12.25" tangent section, holding angle at ~71° from 1273m to 1606m with the wellpath maintained as per directional plan. Casing depth of 1606m (-822mSS) reached at 02:30 hrs on 06-08-06. Circulate hole clean at bottom. Pull out of hole to 1408m, observe tight spot (first occurrence of Marl in cuttings). Connect Top Drive and work tight spot at 1408m.

**Anticipated operations:**

Pull out of hole to layout Geopilot assembly. Run in hole with clean out BHA for wiper trip to bottom prior to running 9.625" casing.

**MWD Sensor to Bit:** GR=13m, Survey=9m

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1260-1330m ROP:2.1-3.1 Ave:2.6	<b>INTERBEDDED CALCILUTITE AND CALCARENITE</b> CALCILUTITE: (80-100%) Light grey, off white, brown grey, argillaceous, grading to Argillaceous Calcilutite in part, trace light brown grey lithic fragments, trace glauconite, dominantly soft to firm, dispersive. CALCARENITE: (0-20%) Off white, light brown to brown grey, dominantly fine grained, occasional loose medium grains, grading to Calcilutite in part, trace dark brown lithic fragments, rare glauconite grains, trace fossil fragments of shells fragments, bryozoa, echinoid spine fragments, rare forams, moderately hard to hard.	Traces
1330-1410m ROP:1.8-3.5 Ave: 3.0	<b>CALCILUTITE INTERBEDDED WITH MINOR CALCARENITE</b> CALCILUTITE: (80-90%) Pale grey, light to medium brown grey, argillaceous, minor fossil fragments, trace off white lithic fragments, soft, dispersive. CALCARENITE: (10-20%) Off white, light brown to brown grey, dominantly fine grained, occasional loose medium grains, grading to Calcilutite in part, trace dark brown lithic fragments, rare glauconite grains, trace fossil fragments of shells fragments, bryozoa, echinoid spine fragments, rare forams, moderately hard to hard.	Traces
1410-1480m ROP:2.8-4.5 Ave:3.5	<b>CALCILUTITE INTERBEDDED WITH MARL AND MINOR CALCARENITE</b> CALCILUTITE: (50-60%) Pale brown, pale brown grey, trace off white, argillaceous grading to Marl in part, trace dark grey lithic fragments, soft to firm. MARL: (20-30%) Light to medium grey, argillaceous with occasional light grey argillaceous micro-laminations, soft to dominantly firm, occasional moderately hard, subblocky. CALCARENITE: (10-20%) Light grey, off white, pale grey brown, fine to very fine grained, grading to Calcilutite in part, trace dark grey lithic fragments, trace fossil fragments, moderately hard to friable in part.	Traces

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1480-1563m ROP: 2.7-6.5 Ave: 4.0	CALCILUTITE INTERBEDDED WITH MARL AND MINOR CALCARENITE CALCILUTITE: (40-50%) Pale brown, pale brown grey, trace off white, argillaceous grading to Marl in part, trace dark lithic fragments, soft to firm. MARL: (20-40%) Grey brown, medium grey, light green grey, occasional light grey argillaceous micro-laminations, soft to dominantly firm, occasional moderately hard, subblocky. CALCARENITE: (0-10%) Light grey, off white, pale grey brown, fine to very fine grained, grading to Calcilutite in part, trace dark grey lithic fragments, trace fossil fragments, moderately hard to friable in part.	Traces
1563-1606m ROP: 3.3-6.0 Ave: 3.6	INTERBEDDED MARL AND CALCILUTITE MARL: (30-50%) Grey brown, medium grey, light green grey, occasional light grey argillaceous micro-laminations, soft to dominantly firm, occasional moderately hard, rare pyrite, subblocky. CALCILUTITE: (50-70%) Pale brown, pale brown grey, trace off white, argillaceous grading to Marl in part, trace dark lithic fragments, soft to firm.	Traces



## DAILY GEOLOGICAL REPORT

DGR 10

<b>Date:</b>	07 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	9	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1606m MDRT -822m TVDSS	<b>PTD:</b>	2281m MDRT (-1338mSS)
<b>24 Hr Progress:</b>	0m	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>Current Operation:</b>	Backreaming out of hole @ 1400m on clean-out trip prior to running 9.625" casing		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.45	56	5.2	9.0	6.0	35000	19 / 32	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TCI HP11GJ	12.25"	-	-	Clean-out trip

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.2	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
Projected	MWD	1606.0	71.07	117.05	830.47	1174.23	118.96

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue to pull out of hole at 12.25" section TD, working tight hole at 1408m, 1138m, 1051m and 964m. Work BHA through casing shoe and pull out of hole to surface. Layout Geopilot BHA. Make up 12.25" TCI bit and slick clean-out assembly and run in hole to bottom – hole in good condition. Circulate hole clean. Backream out of hole (at 15mins per stand) prior to running 9.625" casing.

**Anticipated operations:**

Backream out of hole. Rig to and run 9.625" casing (130 joints of 47ppf N80 BTC with shoe planned at 1602m).

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 11

<b>Date:</b>	08 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	10	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1606m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-822m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Running 9.625" casing. (41 of 127 joints run to 510m at 06:00 hrs)		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"		9.625"	47.0	N80 BTC		

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.5	62	4.4	9.5	6.0	33000	22 / 31	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TCI HP11GJ	12.25"	-	-	Clean-out trip

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.2	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
Projected	MWD	1606.0	71.07	117.05	830.47	1174.23	118.96

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue to backream out of hole at 15mins/stand to 1476m and at 10 mins/stand from 1476m to the 13.375" casing shoe at 317m. Continue to pull out of hole and layout clean-out BHA. Pull wear bushing. Change pipe rams to 9.625" and pressure test to 1700 psi. Hold pre-job safety meeting. Rig to and run 9.625" casing to 510m at 06:00 hrs.

**Anticipated operations:**

Run and cement 9.625" casing with shoe planned for 1602m.

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 12

<b>Date:</b>	09 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	11	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1606m MDRT -822m TVDSS	<b>PTD:</b>	2281m MDRT (-1338mSS)
<b>24 Hr Progress:</b>	0m	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>Current Operation:</b>	Dressing 9.625" casing stub prior to installing casing spool and nipping up BOPs.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1602m	EMW= ppg

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.6	62	5.3	9.0	6.0	34000	20 / 34	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TCI HP11GJ	12.25"	-	-	Clean-out trip

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.2	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
Projected	MWD	1606.0	71.07	117.05	830.47	1174.23	118.96

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Rig to and run 9.625" casing to bottom with no hole problems. Fill up casing string. Rig up Halliburton cementing lines and pressure test to 2500 psi. Circulate 2 x casing volume. Cement casing as per program (301 bbls of 12.5 ppg lead slurry; 27.1 bbls of 15.6 ppg tail slurry). Drop bottom plug and displace with Halliburton pump and bump plug with 500 psi. Test casing to 1500 psi for 10mins. Layout cementing head and lines. Nipple down BOP. Rough cut and dress casing.

**Anticipated operations:**

Install casing spool. Nipple up and pressure test BOP. Make up 8.5" drill-out BHA, drill cement & shoe track, 3m formation, LOT, POH. Make up 8.5" directional BHA, run in hole and drill ahead 8.5" directional hole as per plan.

HYDROCARBON SHOW SUMMARY
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 13

<b>Date:</b>	10 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	12	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1606m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-822m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Running in hole with drill-out BHA at 1250m, having nipped up and tested BOPs.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1602m	EMW= ppg

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.6	62	5.3	9.0	6.0	34000	20 / 34	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TCI HP11GJ	12.25"	-	-	Clean-out trip
	6	Hycalog	TCI HP21G	8.5"			

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.2	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
Projected	MWD	1606.0	71.07	117.05	830.47	1174.23	118.96

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue to rough cut and dress 9.625" casing stub. Nipple up BOPs. Install HCR and flowline. Change out pipe rams from 9.625" to 4.5" for drill pipe. Repair leaking mud-saver valve in top drive. Make up combination test tool and pressure test BOPs to 200psi low/1700psi high. Lay out test assembly. Make up new 8.5" bit and drill-out BHA and run in hole to 1250m at 06:00 hrs.

**Anticipated operations:**

Tag cement. Drill float & shoe track, rathole and 3m formation to 1609m. Conduct Leak-off test. Drill to 1615m and POH. Make up 8.5" directional BHA with Geopilot and MWD (GR, Resistivity, Neutron-Density, Surveys), run in hole and drill ahead 8.5" directional hole as per plan.

HYDROCARBON SHOW SUMMARY
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition



## DAILY GEOLOGICAL REPORT

DGR 14

<b>Date:</b>	11 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	13	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1619m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-826m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	13m		
<b>Current Operation:</b>	Circulating hole clean prior to POH to pick up 8.5" directional BHA.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1602m	EMW= 16.7 ppg

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL	9.3	55	4.8	9.5	5.5	30000	13 / 22	-

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TC HP11GJ	12.25"	-	-	Clean-out trip
	6	Hycalog	TC HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC RSX272	8.5"	-	-	Drill out trip #2

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.2	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
Projected	MWD	1606.0	71.07	117.05	830.47	1174.23	118.96

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue to run in hole to tag and drill float at 1575m. Drill cement to 1597m where ROP dropped significantly. Minimal progress observed along with steel (4kg) and aluminium (6kgs) shavings at shakers. Circulate bottoms up and pull out of hole to inspect bit – bit okay. Make up 8.5" PDC bit and BHA (with stabilisers), run in hole and work through float area several times. Continue to work down to 1597m, drill from 1597m to 1598m and attempt to work string. String stuck at 1597m with no rotation possible. Work string free, regain rotation. Drill out rathole to 1606m. Drill new 8.5" hole from 1606m to 1609m, circulate and conduct LOT (EMW=16.7ppg). Continue to drill 8.5" hole from 1609m to 1619m, circulate hole clean prior to pulling out of hole to pick up 8.5" directional BHA.

**Anticipated operations:**

Pull out of hole. Make up 8.5" directional BHA with Geopilot and MWD (GR, Resistivity, Neutron-Density, Surveys), run in hole and drill ahead 8.5" directional hole as per plan.

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition

## DAILY GEOLOGICAL REPORT

DGR 15

<b>Date:</b>	12 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	14	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1646m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-844m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	27m		
<b>Current Operation:</b>	Drilling ahead 8.5" directional hole.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1602m	EMW= 16.7 ppg

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	9.3	53	5.6	9.5	5.5	30000	12 / 21	-

Bit Data	No.	Make	Type		Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI	T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI	T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI	T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC	RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TC	HP11GJ	12.25"	-	-	Clean-out trip
	6	Hycalog	TC	HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	-	-	Drill out trip #2
	8	Hycalog	PDC	RSX616M	8.5"	-	-	

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1551.4	70.95	118.07	812.72	1122.61	119.02
	MWD	1580.21	71.07	117.93	822.10	1149.85	118.99
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
	MWD	1647.79	69.84	118.53	844.55	1213.57	118.93

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Continue to circulate hole clean. Pull out of hole to surface and layout stabilisers. Make up 8.5" directional BHA with Geopilot and MWD (GR, Resistivity, Neutron-Density, Surveys) and surface test same. Run in hole to 1575m and tag float collar. Attempt to work through without success. Slip and cut drilling line. Calibrate MWD depth sensor. Troubleshoot MWD pulse detection- change out downlink choke size in standpipe. Wash down carefully from 1575m to 1619m with no hang-ups observed. Drill ahead 8.5" directional hole from 1619m to 1646m.

**Anticipated operations:**

Drill 8.5" directional hole as per plan.

**Sensor Distances:**

Surveys 8.95m, Gamma Ray 11.42m, Resistivity 13.78m, Pressure 16.31m, Density 22.1m, Neutron Porosity 26.16m

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1606-1640m ROP:3.3-8.0 Ave: 4.0	<b>INTERBEDDED MARL AND CALCILUTITE</b> MARL: (30-80%) Medium to dark grey, light to medium green grey, trace off white lithic fragments, trace fossil fragments, firm to moderately hard, subblocky. CALCILUTITE: (20-70%) Light grey, off white, argillaceous, trace light brown lithic fragments, rare fossil fragments, dominantly moderately hard, minor hard.	Trace

## DAILY GEOLOGICAL REPORT

DGR 16

<b>Date:</b>	13 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	15	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1660m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-840m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	14m		
<b>Current Operation:</b>	Running in hole with circulating BHA while waiting on Top Drive spare parts.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1602m	EMW= 16.7 ppg

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	9.3	46	5.4	9.5	5.4	29000	11 / 17	0.17 @ 75°F

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TC HP11GJ	12.25"	-	-	Clean-out trip
	6	Hycalog	TC HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC RSX272	8.5"	-	-	Drill out trip #2
	8	Hycalog	PDC RSX616M	8.5"	3.2	41	

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
	MWD	1620.16	71.72	118.44	834.93	1187.67	118.95
	MWD	1647.79	69.84	118.53	844.03	1213.76	118.94

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Drill ahead 8.5" directional hole from 1646m to 1659m. Trouble shoot overheating Top Drive hydraulic pump. Pull out of hole to casing shoe and repair seals on Top Drive hydraulic pump. Run in hole and attempt to drill ahead without success. Pull back into casing shoe and troubleshoot Top Drive. Run in hole to bottom and drill ahead from 1659m to 1660m. Top Drive hydraulic pump overheating again. Pull out of hole into casing shoe and wait while locating and mobilising a replacement pump. Pull out of hole to surface, remove MWD radioactive sources, download memory data and rack back Geopilot in derrick. Make up circulating BHA and run in hole to circulate while waiting on spare parts for Top Drive.

**Anticipated operations:**

Circulate while waiting on parts. Repair Top Drive, run in hole with Geopilot & MWD, drill 8.5" directional hole.

**Sensor Distances:**

Surveys 8.95m, Gamma Ray 11.42m, Resistivity 13.78m, Pressure 16.31m, Density 22.1m, Neutron Porosity 26.16m

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1640-1660m ROP:2.8-11.8 Ave: 4.0	<b>INTERBEDDED MARL AND CALCILUTITE</b> MARL: (90%) Medium to dark grey, light to medium green grey, trace off white lithic fragments, trace fossil fragments, firm to moderately hard, subblocky. CALCILUTITE: (10%) Light grey, off white, argillaceous, trace light brown lithic fragments, rare fossil fragments, dominantly moderately hard, minor hard.	Trace

## DAILY GEOLOGICAL REPORT

DGR 17

<b>Date:</b>	14 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	16	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	12.25"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1660m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-840m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Testing Top Drive System having installed replacement hydraulic pump.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1602m	EMW= 16.7 ppg

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	9.8	55	5.9	9.5	5.5	30000	16 / 24	0.17 @ 75°F

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	1	Reed	TCI T11C	17.5"	0.45	20	0-0-NO-A-O-I-RR-BHA
	2RR1	Reed	TCI T11C	17.5"	2.95	200	1-1-NO-A-O-I-RR-TD
	3	Reed	TCI T11	12.25"	9.6	316	0-0-NO-x-0-I-x-BHA
	4	Hycalog	PDC RSX516S	12.25"	21.75	971	1-1-ER-A-X-1-NO-TD
	5	Hughes	TC HP11GJ	12.25"	-	-	Clean-out trip
	6	Hycalog	TC HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC RSX272	8.5"	-	-	Drill out trip #2
	8	Hycalog	PDC RSX616M	8.5"	3.2	41	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC RSX616M	8.5"	-	-	-

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
	MWD	1620.16	71.72	118.44	834.93	1187.67	118.95
	MWD	1647.79	69.84	118.53	844.03	1213.76	118.94

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Circulate and condition mud while waiting on spare parts for Top Drive System. Pull out of hole and change out failed MWD Neutron tool. Shallow test MWD and run in hole to casing shoe. Circulate and condition mud while installing replacement hydraulic pump on TESCO unit (Hydraulic pump arrived on location at 02:30hrs on 14-08-06). Commence testing hydraulic pump and Top Drive System.

**Anticipated operations:**

Test Top Drive System, run in hole with Geopilot & MWD from casing shoe to bottom. Drill 8.5" directional hole.

**Sensor Distances:**

Surveys 8.96m, Gamma Ray 11.43m, Resistivity 13.79m, Pressure 16.32m, Density 22.46m, Porosity 26.55m

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition



## DAILY GEOLOGICAL REPORT

DGR 18

<b>Date:</b>	15 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	17	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1680m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-847m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	20m		
<b>Current Operation:</b>	Running in hole with 8.5" directional BHA at 150m, following trip to clean balled-up bit		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	9.9	51	5.5	9.0	5.5	30000	18 / 29	0.17 @ 75°F

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	-	Drill out trip #2
	8	Hycalog	PDC	RSX616M	8.5"	3.2	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	20
	9RR	Hycalog	PDC	RSX616M	8.5"	-	-

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1596.1	71.07	117.39	827.25	1164.87	118.97
	MWD	1620.16	71.72	118.44	834.93	1187.67	118.95
	MWD	1647.79	69.84	118.53	844.03	1213.76	118.94

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Complete testing replacement hydraulic pump and Top Drive System. Rubber O-ring debris and broken strands of metal wire found in hydraulic ports and hydraulic manifold. Run in hole from casing shoe to 1621m. Observe string hanging up at 1621m. Wash & ream from 1621m to 1650m with intermittent hangups. Troubleshoot and fix MWD depth sensor. Wash & ream from 1650m to 1660m with intermittent hangups. Drill ahead 8.5" directional hole from 1660m to 1680m. ROP dropped to 2 m/hr. Pump sweeps and spot KCL pill at bit for 10 mins in an attempt to clear suspected balled-up bit. No significant change in ROP. Pump out of hole to casing shoe. Pull out of hole and download MWD memory data. Bit balled up with one jet blocked. Clean bit, load radioactive sources, shallow test MWD and run in hole to 150m at 06:00hrs.

**Anticipated operations:**

Run in hole with Geopilot & MWD. Drill ahead 8.5" directional hole dropping angle to 10°.

**Sensor Distances:**

Surveys 8.96m, Gamma Ray 11.43m, Resistivity 13.79m, Pressure 16.32m, Density 22.46m, Porosity 26.55m

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1660-1680m ROP:3.4-11.6 Ave: 9.0	<b>INTERBEDDED MARL AND CALCAREOUS CLAYSTONE</b> MARL: (90%) Light to medium grey, minor dark grey, minor medium green grey, trace off white lithic fragments, trace fossil fragments, firm to moderately hard, soft in part, argillaceous, subblocky. CALCAREOUS CLAYSTONE: (10%) Light to medium grey to green grey, occasional dark grey, argillaceous, trace fossil fragments, firm to moderately hard, subblocky.	Trace

## DAILY GEOLOGICAL REPORT

DGR 19

<b>Date:</b>	16 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	18	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1881m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-957m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	201m		
<b>Current Operation:</b>	Drilling ahead 8.5" directional hole at 6 m/hr.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.0	52	5.8	9.0	5.5	30000	13 / 24	

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	-	Drill out trip #2
	8	Hycalog	PDC	RSX616M	8.5"	3.2	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	0-0-NO- -X-I-NO-PR
	9RR	Hycalog	PDC	RSX616M	8.5"	10.1	167

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1793.14	55.54	117.44	909.28	1343.18	118.88
	MWD	1822.11	51.89	116.24	926.43	1366.51	118.84
	MWD	1851.05	47.98	115.64	945.05	1388.63	118.80

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Run in hole with 8.5" directional BHA with Geopilot & MWD to casing shoe. Precautionary wash and ream to bottom at 1680m. Drill ahead 8.5" directional hole from 1680m to 1865m at average 20 m/hr, dropping angle as per directional plan. Drill ahead from 1865m to 1881m observing lower ROP of 4 to 6 m/hr and increase in pressure from 2700 psi to 2850 psi. Pumped several sweeps with no effect in pressure or ROP.

**Anticipated operations:**

Wiper trip to casing shoe. Drill ahead 8.5" directional hole, dropping angle to 10°.

**Sensor Distances:**

Surveys 8.96m, Gamma Ray 11.43m, Resistivity 13.79m, Pressure 16.32m, Density 22.46m, Porosity 26.55m

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
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1680-1713m ROP:3.4-7.0 Ave: 4.0	INTERBEDDED MARL, CALCAREOUS CLAYSTONE AND MINOR CALCILUTITE MARL: (70-90%) Light to medium grey, occasional medium green grey, slightly arenaceous in part, minor off white lithic fragments, trace fossil fragments, firm to moderately hard, subblocky. CALCAREOUS CLAYSTONE: (20-40%) Light to medium grey, occasional dark grey, argillaceous, trace fossil fragments, soft to dominantly firm, minor moderately hard, subblocky. CALCILUTITE: (10%) Light grey, occasional medium grey, slightly arenaceous in part, soft to moderately hard, occasional hard, subblocky.	No gas
1713-1772m ROP:3.3-5.0 Ave:3.8	INTERBEDDED MARL, CALCAREOUS CLAYSTONE AND MINOR CALCILUTITE MARL: (60-70%) Light grey, medium grey, light to medium green grey, slightly arenaceous, silty, trace glauconite, trace fossil fragments, soft to moderately hard, subblocky. CALCAREOUS CLAYSTONE: (20-30%) Medium to dark grey, argillaceous, arenaceous in part, trace lithic fragments, trace glauconite, firm to occasional moderately hard, subblocky. CALCILUTITE: (0-10%) Light to occasional medium grey, slightly arenaceous, trace fossil fragments, from to moderately hard, subblocky.  <u>Note: Samples contaminated with BARACARB mud additive (sized CaCO<sub>3</sub>)</u>	Nil to trace C1

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1772-1834m ROP:3.2-4.0 Ave:3.8	INTERBEDDED CALCAREOUS CLAYSTONE AND MARL CALCAREOUS CLAYSTONE: (30-70%) Medium to dark grey, pale brown grey, trace disseminated, pyrite, firm to moderately hard, subblocky to occasional subfissile. MARL: (30-70%) Light to medium grey, dominantly argillaceous grading to Calcareous Claystone in part, minor arenaceous, trace lithic fragments, trace glauconite, trace fossil fragments, firm to moderately hard, subblocky.	Trace C1
1834-1865m ROP:3.5-5.6 Ave: 4.0	INTERBEDDED CALCAREOUS CLAYSTONE AND MARL CALCAREOUS CLAYSTONE: (60-70%) Medium to dark grey, trace disseminated, pyrite, firm to moderately hard, subblocky to occasional subfissile. MARL: (30-40%) Pale brown grey, light to dominantly medium grey, dominantly argillaceous grading to Calcareous Claystone in part, minor arenaceous, trace lithic fragments, trace pyrite, trace fossil fragments, firm to moderately hard, subblocky.	Trace C1
1865-1880m ROP:3.8-11.3 Ave:7.5	INTERBEDDED CALCAREOUS CLAYSTONE AND MARL CALCAREOUS CLAYSTONE: (60-70%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part. MARL: (30-40%) Pale brown grey, medium grey, argillaceous, rare pyrite, minor dark grey off white lithic fragments, firm to soft in part, subblocky to subfissile in part.	Trace C1

## DAILY GEOLOGICAL REPORT

DGR 20

<b>Date:</b>	17 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	19	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	1881m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-957m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Repairing leaking valve in Top Drive prior to drilling ahead with new Milled Tooth bit		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.5	55	5.7	9.0	6.3	38000	21 / 26	0.11 @ 75°F

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	3.0	13
	8	Hycalog	PDC	RSX616M	8.5"	3.2	41
	9	Hycalog	PDC	RSX616M	8.5"	3.2	20
	9RR	Hycalog	PDC	RSX616M	8.5"	14.87	201
	10	Hycalog	Rock	TC11P	8.5"		

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1793.14	55.54	117.44	909.28	1343.18	118.88
	MWD	1822.11	51.89	116.24	926.43	1366.51	118.84
	MWD	1851.05	47.98	115.64	945.05	1388.63	118.80

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Backream from 1881m to casing shoe. Attempt to unblock jets and balled bit by pumping Baracarb sweep with no apparent improvement in pressure. Pull out of hole to change out balled bit. Download MWD memory data. Pick up Mill Tooth bit, load MWD radioactive sources, shallow test MWD, run in hole to casing shoe. Slip drilling line. Wash and ream to 1833m. Observe leak in mud saver valve in Top Drive. Pull out of hole into casing shoe and repair Top Drive since 04:30 hrs.

**Anticipated operations:**

Repair Top Drive. Run back to bottom. Drill ahead 8.5" directional hole, dropping angle to 10° by Top Latrobe..

**Sensor Distances:**

Surveys 9.18m, Gamma Ray 11.65m, Resistivity 14.01m, Pressure 16.54m, Density 22.91m, Porosity 26.97m

## HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
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1865-1880m ROP:3.8-11.3 Ave:7.5	INTERBEDDED CALCAREOUS CLAYSTONE AND MARL CALCAREOUS CLAYSTONE: (60-70%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part. MARL: (30-40%) Pale brown grey, medium grey, argillaceous, rare pyrite, minor dark grey off white lithic fragments, firm to soft in part, subblocky to subfissile in part.	Trace C1
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## DAILY GEOLOGICAL REPORT

DGR 21

<b>Date:</b>	18 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	20	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	2038m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-1085m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	157m		
<b>Current Operation:</b>	Drilling 8.5" directional hole at 9 m/hr		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"			60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD log

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.5	52	5.8	9.0	6.5	39000	25 / 32	0.12 @ 75°F

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	3.0	0-1-RG-G-X-I-NO-BHA
	8	Hycalog	PDC	RSX616M	8.5"	3.2	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	0-0-NO- -X-I-NO-PR
	9RR	Hycalog	PDC	RSX616M	8.5"	14.87	0-0-BU- -X-I-NO-PR
	10	Hycalog	Rock	TC11P	8.5"	11.1	Drilling

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1937.90	37.77	114.06	1008.58	1447.51	118.62
	MWD	1966.87	33.71	114.22	1032.08	1464.38	118.57
	MWD	1995.76	30.21	114.36	1056.59	1479.63	118.53

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Repair leaking mud-saver valve in Top Drive. Run in hole from casing shoe, wash down last stand to bottom. Pump 20bbls Baracarb sweep and circulate hole clean (observe excessive cuttings unloading at shakers). Drill ahead from 1881m to 2038m, pumping Baracarb sweeps and working pipe every connection to facilitate cuttings removal.

**Anticipated operations:**

Drill ahead 8.5" directional hole, dropping angle to approx 15° inclination based on current trajectory.

**Sensor Distances:**

Surveys 9.18m, Gamma Ray 11.65m, Resistivity 14.01m, Pressure 16.54m, Density 22.91m, Porosity 26.97m



### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
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1880-1890m ROP:3.6-9.4 Ave: 6.0	INTERBEDDED CALCAREOUS CLAYSTONE, MARL AND SILTSTONE CALCAREOUS CLAYSTONE: (40%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part. MARL: (30%) Pale brown grey, argillaceous, minor off white lithic fragments, firm to soft in part, subblocky to subfissile in part. CALCAREOUS SILTSTONE: (30%) Light to medium grey, occasional dark grey, trace dark grey lithic fragments, firm to moderately hard, argillaceous in part, subblocky to subfissile.	Nil to Trace C1
1890-1910m ROP:3.5-6.0 Ave: 6.0	CALCAREOUS SILTSTONE INTERBEDDED WITH CLAYSTONE CALCAREOUS SILTSTONE: (60-80%) Light to medium grey, occasional dark grey, trace dark grey lithic fragments, firm to moderately hard, argillaceous in part, subblocky to subfissile. CALCAREOUS CLAYSTONE: (20-40%) Medium brown grey, light grey to medium grey, trace off white lithic fragments, trace nod and disseminated pyrite, firm to soft in part, subblocky to subfissile in part.	Nil to trace C1
1910-1949m ROP:3.6-8.3 Ave:6.0	INTERBEDDED CALCAREOUS CLAYSTONE AND SILTSTONE CALCAREOUS CLAYSTONE: (20-50%) Light to medium grey, minor dark grey, grading to Siltstone in part, trace lithic fragments, trace forams, trace fossil fragments, trace pyrite, soft to moderately hard, subblocky. CALCAREOUS SILTSTONE: (50-80%) Medium brown, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.	Nil to Trace C1

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
1949-1974m ROP:3.0-6.1 Ave: 4.0	INTERBEDDED CALCAREOUS CLAYSTONE AND SILTSTONE CALCAREOUS CLAYSTONE: (50-90%) Light to medium grey, grading to Siltstone in part, trace lithic fragments, trace forams, trace bryozoa fossil fragments, rare nodular pyrite, soft to firm, occasional moderately hard, subblocky. CALCAREOUS SILTSTONE: (10-50%) Medium brown, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.	Nil to trace C1
1974-1990m ROP:3.8-9.7 Ave:6.0	MASSIVE CALCAREOUS CLAYSTONE INTERBEDDED WITH MINOR SILTSTONE CALCAREOUS CLAYSTONE: (90-100%) Dominantly light to occasional medium grey, trace lithic fragments, trace forams, trace bryozoa fossil fragments, rare nodular pyrite, soft to firm, occasional moderately hard, subblocky. CALCAREOUS SILTSTONE: (0-10%) Medium grey, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.	Nil to trace C1
1990-2020m ROP: 3.5-8.5 Ave: 5.0	CALCAREOUS CLAYSTONE INTERBEDDED WITH TRACE SILTSTONE CALCAREOUS CLAYSTONE: (90-100%) Dominantly light to occasional medium grey, trace lithic fragments, trace forams, trace bryozoa fossil fragments, rare nodular pyrite, rare carbonaceous specks, soft to firm, occasional moderately hard, subblocky. CALCAREOUS SILTSTONE: (0-10%) Medium grey, medium brown grey, occasional dark grey, trace glauconite, trace lithic fragments, trace pyrite, firm to moderately hard, minor hard, subfissile.	Trace to 2 units 100% C1

## DAILY GEOLOGICAL REPORT

DGR 22

<b>Date:</b>	19 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	21	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	2080m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-1124m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	42m		
<b>Current Operation:</b>	Washing and reaming to bottom having repaired Top Drive. Bit @ 1763m @ 06:00hrs.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"	-	-	60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD log

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.5	55	5.9	9.0	6.5	38000	22 / 34	0.12 @ 75°F

Bit Data	No.	Make	Type		Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	3.0	13	0-1-RG-G-X-I-NO-BHA
	8	Hycalog	PDC	RSX616M	8.5"	3.2	41	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	20	0-0-NO- -X-I-NO-PR
	9RR	Hycalog	PDC	RSX616M	8.5"	14.87	201	0-0-BU- -X-I-NO-PR
	10	Hycalog	Rock	TC11P	8.5"	20.3	199	In hole

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	1995.76	30.21	114.36	1056.59	1479.63	118.53
	MWD	2024.65	26.31	113.76	1082.03	1493.26	118.49
	MWD	2053.45	22.08	113.22	1108.30	1505.02	118.45

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Drill ahead from 2038m to 2080m in the Lakes Entrance Formation. Power cable to Top Drive damaged after being snagged in the derrick structure while moving the block, thus disabling the Top Drive. Rig up circulating swedge and circulate while repairing Top Drive power cable. Pump out of hole on wiper trip. Observe Top Drive Hydraulic motor not functioning properly. Pull back into casing shoe and replace faulty Top Drive Hydraulic motor. Layout circulating swedge. Wash and ream back to bottom with excessive cuttings unloading at shakers. Bit at 1763m at 06:00hrs.

**Anticipated operations:**

Wash & ream from 1763m to bottom, circulating sweeps to unload cuttings. Drill ahead 8.5" directional hole, dropping angle to approx 13° inclination based on current trajectory.

**Sensor Distances:**

Surveys 9.18m, Gamma Ray 11.65m, Resistivity 14.01m, Pressure 16.54m, Density 22.91m, Porosity 26.97m

<b>HYDROCARBON SHOW SUMMARY</b>
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INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
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2020-2050m ROP: 3.2-7.7 Ave: 5.0	<b>INTERBEDDED CALCAREOUS CLAYSTONE AND SILTSTONE</b> CALCAREOUS CLAYSTONE: (40-60%) Medium brown grey, light to medium grey, trace lithic fragments, trace glauconite, trace fossil fragments, rare carbonaceous specks, soft to firm, subblocky. CALCAREOUS SILTSTONE: (40-60%) Medium grey to medium brown grey, trace lithic fragments, firm to moderately hard, subblocky to subfissile.	3 / 2 units 100% C1
2050-2080m ROP: 3.6-8.5 Ave: 5.0	<b>INTERBEDDED CALCAREOUS SILTSTONE AND CLAYSTONE</b> CALCAREOUS SILTSTONE: Light to medium grey, occasional light green to light green grey, common to locally abundant forams, common glauconite grains, trace lithic fragments, trace pyrite, firm to moderately hard, subblocky. CALCAREOUS CLAYSTONE: Light grey, light brown grey, trace fossil fragments, trace glauconite, soft to firm, subblocky.	2 / 1 units 100% C1

## DAILY GEOLOGICAL REPORT

DGR 23

<b>Date:</b>	20 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	22	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	2250m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-1291m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	170m		
<b>Current Operation:</b>	Drilling 8.5" directional hole at average 10 m/hr.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"	-	-	60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD log

Mud Data	Type:	Wt:	Visc:	WL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.5	65	5.9	9.0	6.3	37000	24 / 39	0.12 @ 75°F

Bit Data	No.	Make	Type		Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	3.0	13	0-1-RG-G-X-I-NO-BHA
	8	Hycalog	PDC	RSX616M	8.5"	3.2	41	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	20	0-0-NO- -X-I-NO-PR
	9RR	Hycalog	PDC	RSX616M	8.5"	14.87	201	0-0-BU- -X-I-NO-PR
	10	Hycalog	Rock	TC11P	8.5"	32.7	321	In hole

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	2168.79	9.86	104.21	1218.95	1536.52	118.29
	MWD	2197.64	6.92	99.24	1247.49	1540.56	118.25
	MWD	2226.47	3.33	92.87	1276.20	1542.96	118.22

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Wash & ream from 1763m to 2080m, circulating sweeps to unload cuttings. Drill ahead 8.5" directional hole from 2080m to 2250m dropping angle. Intersected Top Latrobe Clastics at 2124.5m (-1167mSS), 12m Low to prognosis.

**Anticipated operations:**

Drill ahead 8.5" directional hole to total depth. Circulate hole clean. Pull out of hole for possible Geotap pressure survey.

**Sensor Distances:**

Surveys 9.18m, Gamma Ray 11.65m, Resistivity 14.01m, Pressure 16.54m, Density 22.91m, Porosity 26.97m

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS
2124.5-2139m ROP: 2.6-3.9 Ave: 3.6  <u>Note:</u> Control Drilled	SANDSTONE WITH THIN CLAYSTONE INTERBEDS SANDSTONE: Clear to translucent, light grey in part, dominantly medium to very coarse grained, occasional very fine to fine grained aggregates, trace moderately strong siliceous cement, minor off white argillaceous matrix, trace pyrite, trace glauconite grains, trace fossil fragments, common loose clear quartz grains, moderately hard to hard to occasional hard aggregates, poor visual porosity in aggregates, fair to generally good inferred porosity, fluorescence.  <u>2129-2133m</u> : Trace to 5%, dull brown yellow patchy fluorescence, trace pale yellow crush cut, thick ring residue. <u>2133-2139m</u> : Trace to rare fluorescence as above.	8 / 2 units 99/1

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
2080-2124.5m ROP: 3.5-10.5 Ave: 4.0	MASSIVE CALCAREOUS CLAYSTONE INTERBEDDED WITH CALCAREOUS SILTSTONE CALCAREOUS CLAYSTONE: Light to medium grey, green grey, light brown in part, minor medium to dark brown, common glauconite grains, trace fossil fragments, trace pyrite, soft to moderately hard, subblocky. CALCAREOUS SILTSTONE: Light to medium grey, occasional light green grey, trace lithic fragments, trace glauconite grains, trace pyrite, firm to moderately hard, subblocky.	8 / 3 units 100/trace

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
2124.5-2139m ROP: 2.6-3.9 Ave: 3.6  <u>Note:</u> Control Drilled	<p><b>SANDSTONE WITH THIN CLAYSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, light grey in part, dominantly medium to very coarse grained, occasional very fine to fine grained aggregates, trace moderately strong siliceous cement, minor off white argillaceous matrix, trace pyrite, trace glauconite grains, trace fossil fragments, common loose clear quartz grains, moderately hard to hard to occasional hard aggregates, poor visual porosity in aggregates, fair to generally good inferred porosity, fluorescence as below.</p> <p><u>2129-2133m:</u> Trace to 5%, dull brown yellow patchy fluorescence, trace pale yellow crush cut, thick ring residue.</p> <p><u>2133-2139m:</u> Trace to rare fluorescence as above.</p> <p><b>CLAYSTONE:</b> Light to medium grey, brown grey, minor light to medium brown, trace pyrite, firm to moderately hard, occasional hard, subblocky.</p>	8 / 2 units 99/1
2139-2154m ROP:3.5-4.7 Ave: 4.0  <u>Note:</u> Control Drilled	<p><b>SANDSTONE WITH THIN CLAYSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, light grey in part, medium to very coarse grained, moderately poorly sorted, subangular, trace pyrite, trace glauconite grains, common loose clear quartz grains, generally loose and clean, minor moderately hard aggregates, fair to generally good inferred porosity, trace fluorescence as below.</p> <p><u>2148-2151m:</u> Trace dull yellow patchy fluorescence, trace pale yellow crush cut, thick film residue.</p> <p><b>CLAYSTONE:</b> Light to medium grey, brown grey, minor light to medium brown, trace pyrite, firm to moderately hard, occasional hard, subblocky.</p>	6 / 2 units 99/1
2154-2173m ROP:3.7-4.0 Ave: 3.9  <u>Note:</u> Control Drilled	<p><b>SANDSTONE WITH THIN CLAYSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, opaque, light grey in part, fine to very coarse grained, poorly sorted, subrounded to dominantly subangular, common angular, trace glauconite grains, common loose clear quartz grains, generally loose and clean, generally good inferred porosity, no hydrocarbon fluorescence.</p> <p><b>CLAYSTONE:</b> Light to medium grey, brown grey, minor light brown, trace carbonaceous specks, trace pyrite, firm to moderately hard, occasional hard, subblocky.</p>	5 / 2 units 100% C1 to 99/1
2173-2196m ROP:3.6-13.0 Ave:6.0	<p><b>SANDSTONE INTERBEDDED WITH CLAYSTONE</b></p> <p><b>SANDSTONE:</b> Clear to translucent, off white, light grey, minor brown, fine to coarse grained, poorly sorted, subangular to subrounded in part, trace to locally common dolomitic cement, trace pyrite, generally loose, common hard aggregates, poor visual porosity, good inferred porosity, no hydrocarbon fluorescence, common mineral fluorescence.</p> <p><b>CLAYSTONE:</b> Light grey, medium grey, trace micro-carbonaceous specks, trace off white lithic fragments, firm, subblocky.</p>	4 / 2 units 100% C1 to 99/1

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
2196-2242m ROP:3.5-10.4 Ave:4.4	<p>SANDSTONE INTERBEDDED WITH COAL, SILTSTONE AND CLAYSTONE</p> <p>SANDSTONE: Clear to translucent, light grey, opaque, fine to coarse grained, minor very coarse grained, poorly sorted, subangular to subrounded, occasional angular, occasional moderately strong siliceous cement, trace moderately strong calcareous cement, trace light grey argillaceous matrix, dominantly loose, minor moderately hard to hard aggregates, poor visual porosity, fair to good inferred porosity, no hydrocarbon fluorescence.</p> <p>COAL: Very dark brown to brown black, dull, minor sub-vitreous, silty, argillaceous in part, grading to Carbonaceous Siltstone in part, subblocky to subfissile, uneven fracture.</p> <p>SILTSTONE: Brown, brown grey, argillaceous, minor arenaceous, common off white lithic fragments, calcareous, trace carbonaceous specks, slightly micro-micaceous, subblocky.</p> <p>CLAYSTONE: Light to medium green grey, light to medium brown grey, trace glauconite, trace off white lithic fragments, firm to hard in part, subblocky to subfissile.</p>	<p>130 / 18 units 96/4 %</p> <p>Gas from Coals &amp; Carbonaceous Siltstones &amp; Claystones</p>



## DAILY GEOLOGICAL REPORT

DGR 24

<b>Date:</b>	21 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	23	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	2315m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-1356m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	65m		
<b>Current Operation:</b>	Making up new BHA with PDC bit, Geotap Pressure tool and MWD Triple Combo.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"	-	-	60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD log

Mud Data	Type:	Wt:	Visc:	WELL:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.5	60	5.0	9.0	6.0	36000	25 / 36	0.1 @ 75°F

Bit Data	No.	Make	Type		Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	3.0	13	0-1-RG-G-X-I-NO-BHA
	8	Hycalog	PDC	RSX616M	8.5"	3.2	41	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	20	0-0-NO- -X-I-NO-PR
	9RR	Hycalog	PDC	RSX616M	8.5"	14.87	201	0-0-BU- -X-I-NO-PR
	10	Hycalog	Rock	TC11P	8.5"	46.44	434	7-6-NR-A-E-2- -HR

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	2284.1	0.92	88.16	1333.71	1544.63	118.19
	MWD	2303.74	1.19	92.86	1353.34	1544.95	118.18
Projected	MWD	2315.00	1.34	95.55	1364.69	1545.18	118.18

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Drill ahead 8.5" directional hole from 2250m to 2315m. Circulate hole clean. Pump out of hole to casing shoe. Circulate hole clean at casing shoe. Pull out of hole, download MWD data. Layout MWD tools and Geopilot. Make up new BHA with PDC bit, MWD Geotap Pressure tool and Triple Combo MWD string.

**Anticipated operations:**

Make up new BHA with PDC bit, MWD Geotap Pressure tool and Triple Combo MWD string. Shallow test MWD tools and run in hole, wash and ream as required. Conduct Geotap pressure survey. Drill ahead as ordered.

**Sensor Distances:** (Preliminary – may change after the BHA is made up)

Surveys 2.85m  
 Gamma Ray 5.21m  
 Resistivity 7.57m  
 Pressure 10.10m  
 Density 15.95m  
 Porosity 20.53m  
 Geotap: 23.75m

### HYDROCARBON SHOW SUMMARY

INTERVAL	LITHOLOGY & HYDROCARBON FLUORESCENCE	GAS
2261-2272m Ave: 4.0 min/m	SANDSTONE: Clear to translucent, white, off white, minor light brown, fine to coarse grained, dominantly medium grained, moderately sorted, subangular to subrounded, trace pyrite, generally loose, good inferred porosity, mineral fluorescence only.	34 / 20 units 89/9/1/1 %
2281-2294m Ave: 4.0 min/m	SANDSTONE: Clear to translucent, fine to coarse grained, common to dominantly medium grained, generally poorly sorted, trace pyrite, trace fossil fragments, trace glauconite, generally loose and clean, good inferred porosity, mineral fluorescence only.	12 / 5 units 84/11/3/2 %

GAS	MD (m)	Peak	Background	Chromatograph
Trip Gas	-	-	-	-
Connection Gas	-	-	-	-

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
2242-2261m ROP:3.5-10.8 Ave:4.0	INTERBEDDED SANDSTONE, COAL AND CARBONACEOUS SILTSTONE SANDSTONE: Clear to translucent, light grey, opaque, fine to medium grained, occasional coarse grained, moderately poorly sorted, subangular to subrounded, occasional moderately strong siliceous cement, trace light grey argillaceous matrix, generally loose and clean, good inferred porosity, no hydrocarbon fluorescence. COAL: Very dark brown to brown black, black, dull, minor sub-vitreous, silty, argillaceous in part, grading to Carbonaceous Siltstone in part, subblocky to subfissile, hard, brittle in part, uneven fracture. CARBONACEOUS SILTSTONE: Dark to medium brown, medium brown grey, very carbonaceous in part grading to Silty Coal, argillaceous in part, grading to Silty Claystone, trace off white dolomite fragments, firm to hard in part, subblocky to subfissile.	83 / 25 units 96/4/trace %

INTERVAL ROP (min/ft)	LITHOLOGY	GAS (Peak / BG) Composition
2261-2281m ROP:3.4-9.1 Ave: 6.0	<p>SANDSTONE INTERBEDDED WITH CLAYSTONE AND MINOR COAL</p> <p>SANDSTONE: Clear to translucent, white, off white, minor light brown, fine to coarse grained, dominantly medium grained, moderately sorted, subangular to subrounded, trace pyrite, generally loose, good inferred porosity, mineral fluorescence only.</p> <p>CLAYSTONE: Light to medium grey, trace carbonaceous specks, trace lithic fragments, trace dolomite fragments, firm to occasional moderately hard, subblocky to subfissile.</p> <p>COAL: Dark brown, brown black, dull, earthy in part, hard, brittle, silty in part, subfissile, subblocky in part, uneven fracture.</p>	34 / 20 units 89/9/1/1 %
2281-2315m ROP: 3.2-11.5 Ave: 10.0	<p>INTERBEDDED SANDSTONE AND CARBONACEOUS SILTSTONE</p> <p>SANDSTONE: Clear to translucent, fine to coarse grained, common to dominantly medium grained, generally poorly sorted, trace pyrite, trace fossil fragments, trace glauconite, generally loose and clean, good inferred porosity, mineral fluorescence only.</p> <p>CARBONACEOUS SILTSTONE: Dark to medium brown, medium brown grey, very carbonaceous in part grading to Silty Coal, argillaceous in part, grading to Silty Claystone, trace off white dolomite fragments, firm to hard in part, subblocky to subfissile.</p>	12 / 5 units 84/11/3/2 %

## DAILY GEOLOGICAL REPORT

DGR 25

<b>Date:</b>	22 August 2006	<b>Licence / State:</b>	P39 (V) / VIC
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Rig:</b>	Ensign 32
<b>Days from Spud:</b>	24	<b>GL:</b>	2.7m
<b>Current Hole Size:</b>	8.5"	<b>RT:</b>	8.6m
<b>Depth @ 0600 Hrs:</b>	2315m MDRT	<b>PTD:</b>	2281m MDRT (-1338mSS)
	-1356m TVDSS	<b>Spud Date:</b>	04:30 hrs 29/07/06
<b>24 Hr Progress:</b>	0m		
<b>Current Operation:</b>	Laying out Geotap tool and MWD Triple Combo prior to P&A.		

Casing Data	Hole Size	Depth	Casing Size	Wt:	Type	Shoe Depth	LOT
(Conductor)		100m	20"	-	-	60m	
	17.5"	320m	13.375"	54.5	J55 BTC	317m	EMW= 20.0 ppg
	12.25"	1606m	9.625"	47.0	N80 BTC	1598m *	EMW= 16.7 ppg

\* 9.625m Casing Shoe revised to 1598m based on MWD log

Mud Data	Type:	Wt:	Visc:	W L:	PH:	KCl%:	Cl -:	PV/YP:	Rmf:
	KCL-PHPA	10.55	60	5.0	9.0	6.0	37000	25 / 36	0.1 @ 75°F

Bit Data	No.	Make	Type	Size	Hours	Meters	Condition
(@ 24:00)	6	Hycalog	TC	HP21G	8.5"	-	Drill out trip #1
	7	Reed	PDC	RSX272	8.5"	3.0	0-1-RG-G-X-I-NO-BHA
	8	Hycalog	PDC	RSX616M	8.5"	3.2	2-3-CT-A-X-I-BT-RIG
	9	Hycalog	PDC	RSX616M	8.5"	3.2	0-0-NO- -X-I-NO-PR
	9RR	Hycalog	PDC	RSX616M	8.5"	14.87	0-0-BU- -X-I-NO-PR
	10	Hycalog	Rock	TC11P	8.5"	46.44	7-6-NR-A-E-2- -HR
	11RR	Reed	PDC	RSX272	8.5"	-	-

Surveys	Type	MD (m)	Inclination	Azimuth (T)	TVD (m)	Offset (m)	Direction (T)
	MWD	2284.1	0.92	88.16	1333.71	1544.63	118.19
	MWD	2303.74	1.19	92.86	1353.34	1544.95	118.18
Projected	MWD	2315.00	1.34	95.55	1364.69	1545.18	118.18

## OPERATIONS SUMMARY

**Previous 24 hrs Operations Summary:**

Make up new BHA with PDC bit, MWD Geotap Pressure tool and Triple Combo MWD string. Shallow test MWD tools at 186m and run in hole to casing shoe. Slip and cut 20m drilling line. Run in hole to 2123, wash and ream to 2133m. Run MWD correlation pass, conduct Geotap Pressure Survey (11 of 11 Good tests). Circulate and condition mud while the Team and JV evaluate results. Pull out of hole and commence laying out MWD tools prior to P&A.

**Anticipated operations:**

Layout Geotap Pressure tool and Triple Combo MWD string. Make up cement stinger, run in hole, place P&A plugs as per program.

**P & A Planned Depths:**

Plug 1: 2135-2256.5m  
 Plug 2: 2256.5-2078m  
 Plug 3: 1895-1834m  
 Plug 4: 1628-1537m  
 Plug 5: 20-5m.

## **SECTION 6: DAILY DRILLING REPORTS**

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

## Well History

#	Date	Depth	24 Hour Summary
1	11 Jul 2006	64.0m	Rig 40% moved. 2 Crews on site tomorrow and commence rigging up.
2	12 Jul 2006	60.0m	Install mouse hole and cement. Install matting boards
3	13 Jul 2006	60.0m	Install sub bases. Continue to off load trucks. Install spreader beams on sub base. Install drawworks. Spot mud tanks.
4	14 Jul 2006	60.0m	Install drill floor. Rotary table. Install plumbing on mud tanks. Install SCR house. Spot Dog house and Install drilling console. Bund Chubb security shack diesel tank. Santo's equipment arrived on site
5	15 Jul 2006	60.0m	Install fuel tanks,Genset # 2. Install stair ways to rig floor and mud tanks. Install shaker,mud cleaner, degasser. Inventory santo's equipment.
6	16 Jul 2006	60.0m	Build derrick on racks.Install 'A' Leg section. Continue with lighting. Weld on 4" high pressure lines. Continue on shaker tank.
7	17 Jul 2006	60.0m	Continue to dress derrick. Install Mud pump#4 ,Transformer and aux gensets. Continue on mud tanks. Grade drain on lease to drain excess water.
8	18 Jul 2006	60.0m	Dress out derrick. String travelling blocks. Spot sperry shack. Install deriick onto sub base and headache rack. Rigged up 45%.
9	19 Jul 2006	60.0m	Hold Pre tour safety meeting, Dress mud pumps to 6", Continue to dress out mast, Rig up sewage containment system to well site buildings, Continue with fabrication of suction line to T1000 mud pump, Commence make up of 13 5/8" BOP, Continue with general rig up.
10	20 Jul 2006	60.0m	W.O.D., Ensign & contractor personal to "Sale" for "Ice Breaker", W.O.D.
11	21 Jul 2006	60.0m	WOD to 06:00hrs, Toolbox meeting, cont. rig up, off load equipment, WOD f/ 18:00 hrs
12	22 Jul 2006	60.0m	WOD, cont rig up drilling equipment, WOD
13	23 Jul 2006	60.0m	WOD, Toolbox meeting, cont. rig up drilling & contractor equipment
14	24 Jul 2006	60.0m	Cont. rig up drilling & contractor equipment
15	25 Jul 2006	60.0m	Cont. rig up, raise Mast @ 17:00hrs, cont. rig
16	26 Jul 2006	60.0m	Cont. rig up, install Top Drive tracks & Top Drive unit, 75% completed, mega all mud pump elect. motors, all ok, cont. rig up drill floor equipment, off load 13-3/8" csg., complete bunting for waste oil tank & paint locker, general rig clean up, sort out tubulars on racks, complete T1000 mud pump suction line,
17	27 Jul 2006	60.0m	Rig up drilling equipment
18	28 Jul 2006	60.0m	Complete rigging up, Fire & Muster Drill, followed by Emerg. Response Drill, pick up mouse hole sock,attempt to wash down same, no success, re-drill mouse hole, run sock, Pre-Spud Check, repairs to crown o-matic, Rig accepted to SPUD @ 18:30hrs, make up stands of drill pipe & rack in Mast, make up 17-1/2" BHA
19	29 Jul 2006	192.0m	Drilled cmt. to 65m to 80m, open hole f/ 9-5/8" to 17-1/2" f/ 80m to 100m, drill f/ 100m to 120m, circ., POOH, Rig & run directional BHA with 1-1/2 deg. bend, wash & ream f/ 110m to 120m, no fill, Drill, steer & survey f/120m to 192m
20	30 Jul 2006	320.0m	Drill to 320m, circ. wiper to shoe, circ., POOH, rig & run 13-3/8" casing, circ. csg for cmt. job
21	31 Jul 2006	320.0m	Circ., Head up Halliburton, mix,pump & cmt. 13-3/8" csg., WOC, back out Landing jnt., rig down riser, install Braden Head, rig & run BOP, nipple up same
22	01 Aug 2006	320.0m	Complete nipple up on BOP, pressure test same, pressure test surface equip., Safety meeting w/ crew change personal, muster drill & perform E.S.D., all functions ok, JSA on p.u. drill pipe, make up stands of drill pipe & rack in Mast

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

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Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

#	Date	Depth	24 Hour Summary
23	02 Aug 2006	323.0m	Pick up a total of 42 std's D.P. & rack in Mast, make up Sperry Sun directional BHA, calibrate & test same, cont. RIH, tag cmt. @ 303m, drill cmt., shoe track & rat hole to 320m, with water, switch to new KCL/PHPA mud, drill new hole f/ 320m to 323m, circ. & condition mud, pull inside shoe, perform Leak Off Test, equiv. to 20.00ppg, drill ahead f/ 323m
24	03 Aug 2006	636.0m	Drill, steer & survey 12-1/4" hole f/ 323m to 636m ( Survey @ 622.250= 70.37deg., AZI = 121.24) Circulate and condition well. Flow check .TRPO f/- 636m to 13 3/8 casing shoe. Flow check at 13 3/8 casing shoe (static) Continue to TRPO to BHA. 636.0m Lay out 6 1/2 DC and 6 1/2 drilling jars . Rack back 8 1/2 DC. Down load MWD data Lay out Bit# 3 and Mud Motor. Pick up geo pilot tool.
25	04 Aug 2006	1099.0m	Continue to M/UP MWD Tools Attempt to install bit .Sperry's Bit breaker doesnt fit Ensign 32 rotary table. Welder had to modify. Hold Tap root investigation while modifying bit breaker. Continue to m/up 12 1/4 BHA # 4. Shallow test MWD . Geo Span skid on surface no working. Pick up 6 1/2 drilling jars and extra 4 1/2 HWDP and TRPI to 13 3/8 casing shoe. Change out tong hanging line sheaves. Replace 4 1/2 manual elevators(damaged) with Tesco hydraulic set. Attempt to function no good.regulator valve not working. Replace with second hand one also no go. Repaired manual elevators and reinstall. Continue to RIH from 13 3/8 to 626m wash down to 636m. No hang ups. Break circulation and circulate bottoms to break in Geo pilot tool Continue to drill 12 1/4 hole with rotary steerable assy.f/- 636m to 1099m
26	05 Aug 2006	1571.0m	Continue to drill 12 1/4 hole with Geo pilot steerable assy F/- 1099m to 1273m. Take survey every stand. Circulate and condition well while work on mud pump # 4 pop off. Continue to drill 12 1/4 with Geo pilot steerable assy F/-1273m to 1331m. Leaking wash pipe. Rack back one stand and replace washpipe. Continue to drill 12 1/4 F/- 1273m to 1571m. Take survey every stand. Add Radia green salt to active to reduce down hole torque
27	06 Aug 2006	1606.0m	Drill 12 1/4 hole to 1606m Casing depth Circulate and condition. Trip out to casing shoe. Tight at 1408,1138,1051,964. Work through casing shoe, Continue to trip out,layout geo pilot tools. M/up clean out assy . Trip in to casing shoe. Slip line. Continue to trip in to 502m at midnight.
28	07 Aug 2006	1606.0m	Continue to trip in f/-502m to 1606m. Tag bottom and check for junk. Work pipe and circulate clean hole clean. Backream out of hole first 2 stands to equal 2 x bottoms up, Then continue at 15mins per stand.to 1476 continue to Backream out of hole at 10min per stand till 317m 13 3/8 casing shoe. Circulate Bottoms up at casing shoe. Continue to POOH .Lay out 8"DC,bit,bitsub, Retrieve wearbushing Change out pipe rams to 9 5/8 .Pressure test to 1700psi.
29	08 Aug 2006	1606.0m	Clear rig floor and rig up 9 5/8 casing equipment. Hold pre job safety meeting . JHA. M/up reaming shoe. and float . Check float for flow back no flow ok. Continue to Run casing as per programme to 1606m Run total 127 jnts 47 lb 9 5/8 casing .Floating string in . Fill up string venting casing string to atmosphere Install cement vhead and circulate hole while mixing cement chemicals Mix and pump cement 310bbls lead 27 bbls tail Displace and bump plug.
30	09 Aug 2006	1606.0m	Complete cement displacement. Set SLIP and Seal assy. Lift Bop's and cut 9 5/8 casing. lay out excess casing. Rack back BOP'S Final cut 9 5/8 stump. Install B section and test to 1700psi ok. Install BOP and test to 200psi low and 1700psi ok M/up 8 1/2 BHA and RIH to 295m

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Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

#	Date	Depth	24 Hour Summary
31	10 Aug 2006	1606.0m	<p>RIH with dumb 8 1/2 BHA picking up 69 singles of the cat walk.  Perform BOP drill, S/I well &amp; muster  Continue to RIH w/- 8 1/2 assy to 1550m  Break circulation, wash and light ream to 1574 m. Tag cement and drill cement and float at 1575m. Drill cement with 10K WOB, 30 rpm and 200 stks per minute (1000 psi) tag soild at 1597m TMP  ROP dropped off. Steel and aluminium fragments seen at surface.  6kg of Aluminium, 4 kg Carbon Steel  Pull up off bottom and circulate the hole clean.  POOH from 1597m to surface.  Break out bit .Check condition.  M/up BHA # 7 and RIH to 1571m  Tag float collar depth, string torqued up, work through float several times . Continue to wash down to 1597m  Tag up.</p>
32	11 Aug 2006	1606.0m	<p>Continue to drill out the through 1597m, Drill with 50 rpm, 560 gpm, ROP 0.5m/hr. Break through 1598m attempt to work back through 1597m . Sting stalled out. Stuck pipe at 1597m . No rotation 50k overpull. Install work single attempt to work through 1597 to 1598. Regain rotation . Drill NBS through 1597m .Work back through 1597m until torque reduced to 6500 ft/lbs. Continue to drill out rat hole to 1606m. Drill new 8 1/2 hole from 1606m to 1609m. Circulate and condition mud prior to LOT. 60% new formation in sample. Perform LOT at 803m TVD. Leak of pressure 1000psi w/-9.3ppg = EMW 16.4 ppg.  Continue to drill 8 1/2 hole f/-1609 to 1619m. Circulate and condition mud. Pooh f/- 1619m to surface. No hang ups through float and shoe. Break out bit, stabs and lay out. M/up geo-pilot /MWD assy. Calibrate and test MWD Tools, OK. Continue to RIH to 1575m . Tagged float collar. Attempt to work through, no go past 1575m.  Slip and cut 100' drilling.  Sperry sun calibrate block height</p>
33	12 Aug 2006	1660.0m	<p>Attempt to set Geo pilot to Home (zero deflection) setting, unable to set. Change out down link choke size and set geo pilot at Home setting. Wash down f/-1575 to 1619m as per sperry parameters.Tool past float and shoe with no hang ups. Drill 8 1/2 hole f/-1619m to 1659m. Drill with 575gpm, 50rpm, WOB 10. Drill with these parameters until geo pilot tools are in open hole. ROP 12-15m/hr. TDU hydraulic pump over heated. Trouble shoot. POOH back to 9 5/8 casing shoe. Repair seals on TDU hydraulic pump. RIH and attempt to drill f/-1659m TDU Hydraulic pump overheated - 220 deg.  POOH back inside 9 5/8 casing shoe and circulate while change out Tesco hydraulic pump. RIH and continue to drill 8 1/2 hole with rotary steerable assy. f/- 1659m to 1660m .Tesco hydraulic pump overheated - 220deg. POOH back inside 9 5/8 casing shoe. Source replacement pump for Tesco Hydraulic system.  Pooh to surface  Hold JHA for removing Radio active sources. Remove radio active sources,</p>
34	13 Aug 2006	1660.0m	<p>POOH rack geo pilot assy. RIH w/- cleanout assy and condition mud while wait on tesco hydraulic pump. POOH w/- clean out assy. M/UP geo assy ,change out CNP/SLD. Load radio active sources. RIH to 764m at midnight.</p>
35	14 Aug 2006	1680.0m	<p>Repair tesco hydraulic unit. RIH w/- Geopilot to 1570m. Wash and ream down to bottom 1660m .High torque reaming to bottom. Continue to drill 8 1/2 hole w/- geo pilot assy to 1680m ROP dropped f/- 20m/hr to 1.2m/hr. Pump sweeps to unball bit. ROP still 1-2m/hr. POOH to check bit.</p>
36	15 Aug 2006	1847.0m	<p>POOH w/- BHA # 10.  Check bit #9 balled up clean up bit and rerun in hole.  Continue to 8 1/2 hole w/- GeoPilot f/-1680m to 1847m</p>
37	16 Aug 2006	1881.0m	<p>Drill to 1881m ROP reduced from 20m/hr to 3-4m/hr w/ corresponding increase in pump pressure.  Pump barcarb sweeps to clear suspected balled bit, no change.  POOH to check bit, 2 jets blocked &amp; 2 flutes on extended gauge blocked.  RIH w/- 8 1/2 mill tooth 117 bit . Cut drill line. Washing and reaming to bottom, 1617m.</p>
38	17 Aug 2006	1986.0m	<p>Wash and ream to 1881mMD.  Pull into shoe to repair saver sub.  RIH (wash and ream) to 1881m.  Drill 8 1/2" hole with Geo Pilot Assembly from 1881m to 1986m</p>
39	18 Aug 2006	2080.0m	<p>Drill from 1986m to 2080m (TVD 1133m).  Circ as needed to clean hole.  While making a connection, the top drive electrical control lines were pulled out of top drive unit after becoming caught in the derrick.  Repair top drive.  Wiper trip from 2074m to 2064m.  Pooh into casing to change out main hyd motor on top drive. Hyd motor unabe to maintaine proper torque while drilling and reaming.</p>
40	19 Aug 2006	2202.0m	<p>Repair hyd motor on top drive.  Wash and ream to 2080.  Circ hole clean.  Drill ahead.  Top of Latrobe Coarse Clastics at 2124.5m md (1175.6m tvd). 13 ohms max res, max gas 8u, Flour 5%  Top of Latrobe N. Asperus (Coal) 2196m md (1247m tvd).</p>



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Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

#	Date	Depth	24 Hour Summary
41	20 Aug 2006	2315.0m	Drill from 2202m to 2315m. Pump baralift sweeps as required. Pump 3 sweeps and circ hole clean. Pump out of hole f/- 2315m to 9 5/8 casing shoe at 1601m. Pump slug, install wiper rubber and pooh from 1601m to 359m
42	21 Aug 2006	2315.0m	Pooh to directional tools. Unload radioactive source from LWD tools & download logging information. Break-out bit and lay down Geo-Pilot. Pick up new BHA (bit and Geo-Tap on pendulum ass'y). Install new batteries in RLL Tool. Load radioactive source RIH w/- BHA to 186m & shallow test MWD tools OK. RIH to 9 5/8 casing shoe 1601m. Slip & cut drilling line. RIH from 1893m to 2123m. Wash and ream from 2123m to 2133m. Correlate from 2123m to 2133m. Take 11 pressure points with GeoTap tool from 2126m to 2282mMDRT.
43	22 Aug 2006	2315.0m	Finish running pressure surveys with Geo-Tap tool. Pump slug, pooh and lay down bha . M/up 2 7/8 Cement stinger,rih and spot cmt plugs no.1 and no.2. Circ btms up. Spot 30 bbls of high vis mud at 1996m
44	23 Aug 2006	2315.0m	Lay down Drill Collars. Test 13 3/8" x 9 5/8" annulus to 500psi over 20 ppg EMW - OK. Set cmt plugs #3 (Lakes Entrance) and #4 (9-5/8" shoe). Lay down drillpipe. RIH and tag plug #4 at 1504m. Test casing and plug No.4 to 1600psi - OK. POOH laying down drillpipe.
45	24 Aug 2006	2315.0m	Lay out drill pipe. Set cement plug # 5. Remove A&B Section Release ensign 32 at 14:30 hrs.
46	25 Aug 2006	2315.0m	Rig down . Prepare mast for lowering. Lower mast and unspool drilling line. Prepare mud pumps for removing.

**11 Jul 2006**

**From :**  
**To :**

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	0.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	0.0m	Casing O.D.:
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:
RT-GL:		Days From Spud:		F.I.T. / L.O.T. /
GL Elev.:	3.00m	Days On Well:	0.00	Rig Move Distance
Current Op's @ 0600 12 Jul 2006 :				
Planned Operations for 12 Jul 2006 :				
<b>Summary of Period 0000 to 2400 Hrs</b>				

12 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton/Geoff Atherton

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.
GL Elev.:	3.00m	Days On Well:	1.00	Rig Move Distance
Current Op's @ 0600 13 Jul 2006 :				Wait on Daylight
Planned Operations for 13 Jul 2006 :				Install subases spreader beams. Install drawworks . Spot mud tanks

#### Summary of Period 0000 to 2400 Hrs

Install mouse hole and cement.  
Install matting boards

#### Operations For Period 0000 Hrs to 2400 Hrs on 12 Jul 2006

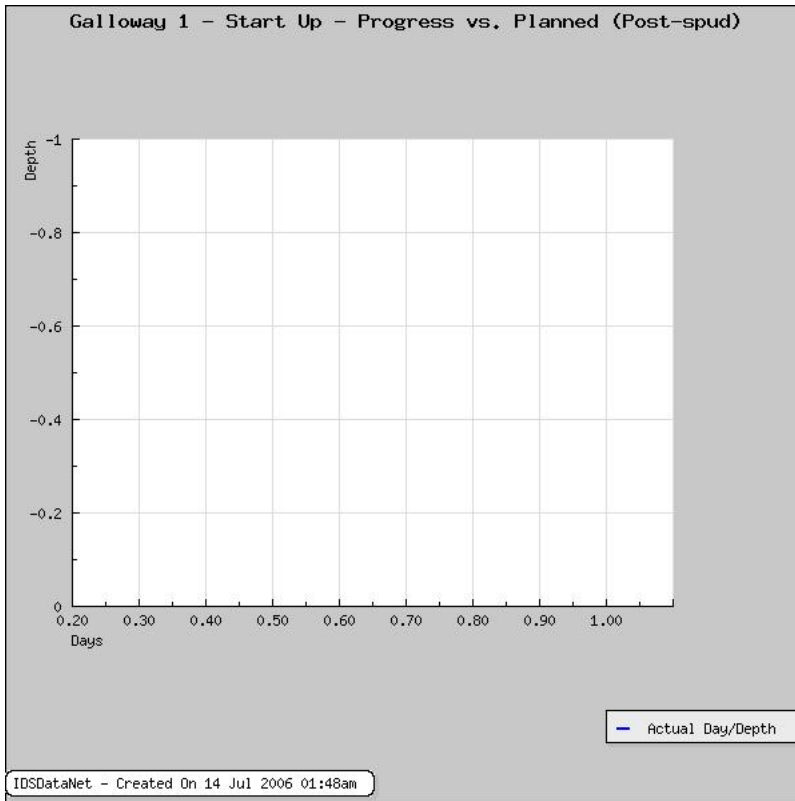
Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RMT	0600	1800	12.00	0.0m	Install mouse hole. used third party Auger unable to clean out hole .Water table at 2.1m. Hole under mined and calapsed. Drove 20" mouse hole sleeve with digger and cemented in place. Scraped of lease and performed final lazer level checks. Installed matting boards. Total loads on site42
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight

#### Operations For Period 0000 Hrs to 0600 Hrs on 13 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0000	0.00	0.0m	Wait on daylight

#### HSE Summary

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	12 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Enviromental issues. Transport.



13 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data					QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	3.00m	Days On Well:	1.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 14 Jul 2006 :					
Planned Operations for 14 Jul 2006 :					

#### Summary of Period 0000 to 2400 Hrs

Install sub bases. Continue to off load trucks.  
Install spreader beams on sub base.  
Install drawworks.  
Spot mud tanks.

#### Operations For Period 0000 Hrs to 2400 Hrs on 13 Jul 2006

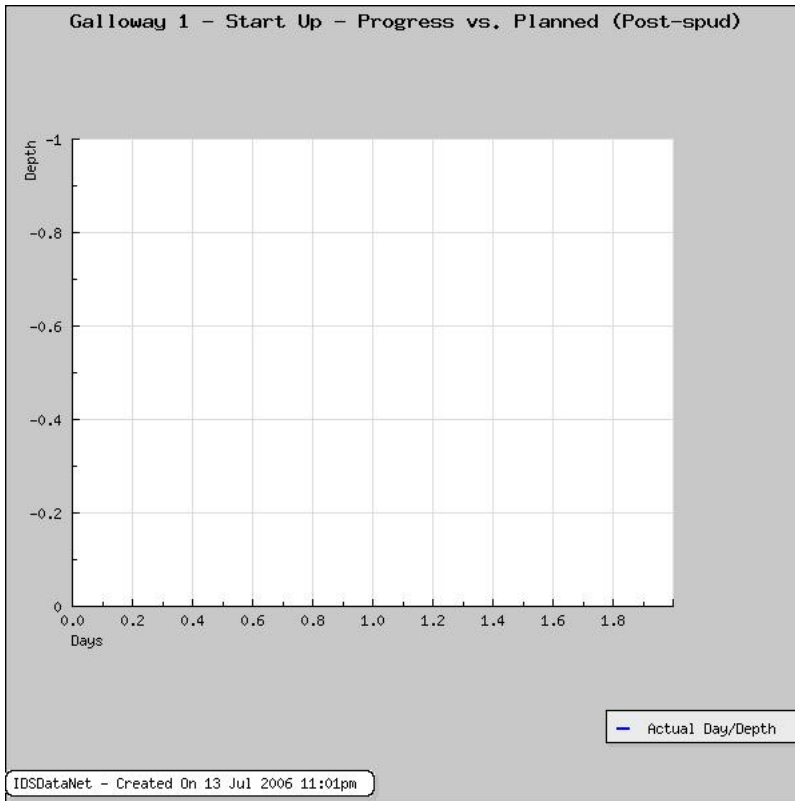
Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0000	0.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Install remaining matting. Install sub bases and install spreader beams. Fabricate and install cellar guard. Spot mud tanks. Install drawworks and rotary table. Total loads 57 Rig move 80% Rigged up 15%
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight

#### General Comments

Comments	Rig Requirements
Changed out Chubb security shacks . Spotted rig site security shack.	

#### HSE Summary

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	13 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Remindd crews of smoking area and housekeeping.



14 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	3.00m	Days On Well:	2.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 15 Jul 2006 :		Wait on daylight			
Planned Operations for 15 Jul 2006 :		assemble derrick.			
		Inventory santo's drilling equipment.			
		Continue with lighting.			
		Continue with mud tank plumbing.			

#### Summary of Period 0000 to 2400 Hrs

Install drill floor. Rotary table.  
Install plumbing on mud tanks.  
Install SCR house.  
Spot Dog house and Install drilling console.  
Bund Chubb security shack diesel tank.  
Santo's equipment arrived on site

#### Operations For Period 0000 Hrs to 2400 Hrs on 14 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Held pre job safety meeting. Install drill floor. Rotary table. Install plumbing on mud tanks. Install SCR house. Spot Dog house and Install drilling console. Bund Chubb security shack diesel tank. Santo's equipment arrived on site Install # 1 generator. Total loads 67 Rigged moved 80% Rigged up 30%
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight

#### Operations For Period 0000 Hrs to 0600 Hrs on 15 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

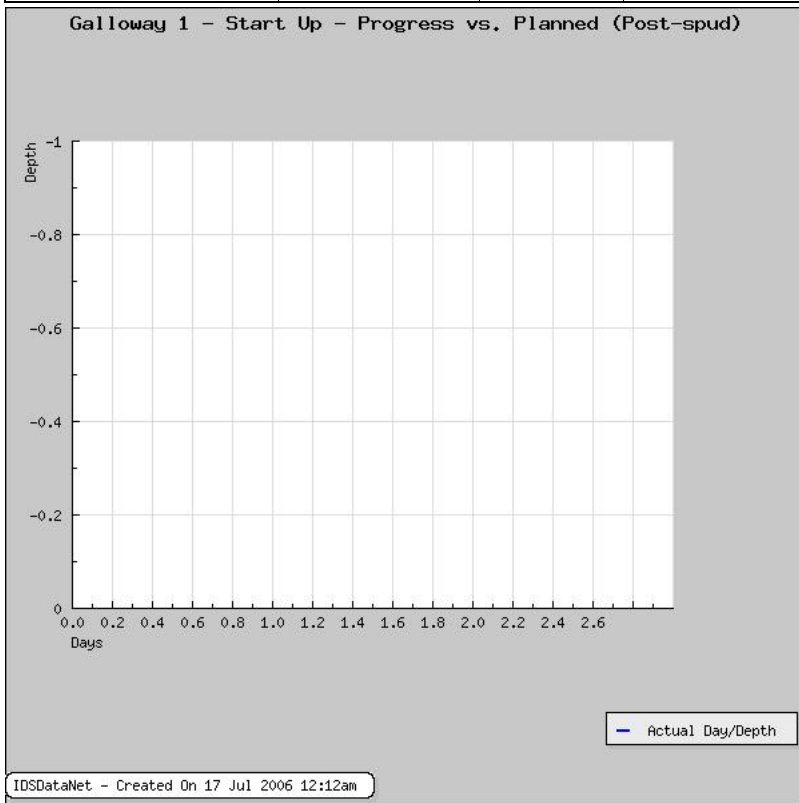
#### General Comments

Comments	Rig Requirements
Chubb securities bulk fuel container is not double skinned and is in a critical enviromental location on the water way. Install liner and Bunded fuel tank area to take the total capacity of fully loaded tank.	

#### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	0	60000	60,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	0	4700	4,700.0

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	14 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Traffic movement. Third party contractors on site . Level three Inductions to be completed by all ensign personal.





15 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.
GL Elev.:	3.00m	Days On Well:	3.75	Rig Move Distance
Current Op's @ 0600 16 Jul 2006 :				Wait on daylight
Planned Operations for 16 Jul 2006 :				Prepare and assemble derrick. Continue with tank plumbing. Pull electrical cables Hook up gensets.

#### Summary of Period 0000 to 2400 Hrs

Install fuel tanks, Genset # 2.  
Install stair ways to rig floor and mud tanks.  
Install shaker, mud cleaner, degasser.  
Inventory santo's equipment.

#### Operations For Period 0000 Hrs to 2400 Hrs on 15 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Held pre tour safety meeting. Install and bund rig diesel tank. Install shakers, degasser, mud cleaner, centrifuge. Install genset# 2 Continue with mud tank plumbing. Install handrail on rig floor. Install stairs to mud tanks and rig floor. Prepare derrick components for assembly Total loads 70 Rig moved 85% Rigged up 35%
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight.

#### Operations For Period 0000 Hrs to 0600 Hrs on 16 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

#### General Comments

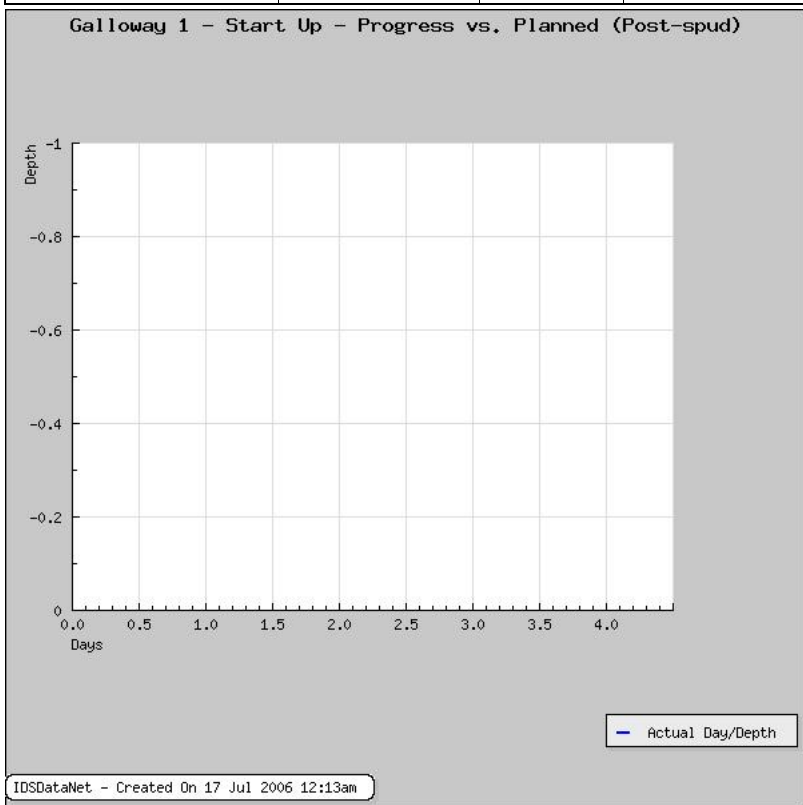
Comments	Rig Requirements
Four truck load stuck in Moomba due to rainy conditions.	

#### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	8000	0	52,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	360	0	4,340.0

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	15 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Traffic movement. Third party contractors on site . Rainy cold conditions 4 degrees. Extra care needed in these hazardous conditions.



16 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.
GL Elev.:	3.00m	Days On Well:	4.75	Rig Move Distance
Current Op's @ 0600 17 Jul 2006 :				Wait on Daylight
Planned Operations for 17 Jul 2006 :				Continue to install lighting in derrick. Pin derrick on rig floor. Install # 3 generator. Continue with high pressure welding.

#### Summary of Period 0000 to 2400 Hrs

Build derrick on racks. Install 'A' Leg section.  
Continue with lighting.  
Weld on 4" high pressure lines.  
Continue on shaker tank.

#### Operations For Period 0000 Hrs to 2400 Hrs on 16 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Hold pre tour safety meeting and weekly safety meeting Build derrick sections on pipe racks. Continue to reinstall light .All bulbs where removed for the rig move . Continue with high pressure welding on Mud lines. Dig drains to sump. Continue with Santo's equipment inventories. 90% Rig Moved. 40% rigged up No loads Recieved today.
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight.

#### Operations For Period 0000 Hrs to 0600 Hrs on 17 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on Daylight.

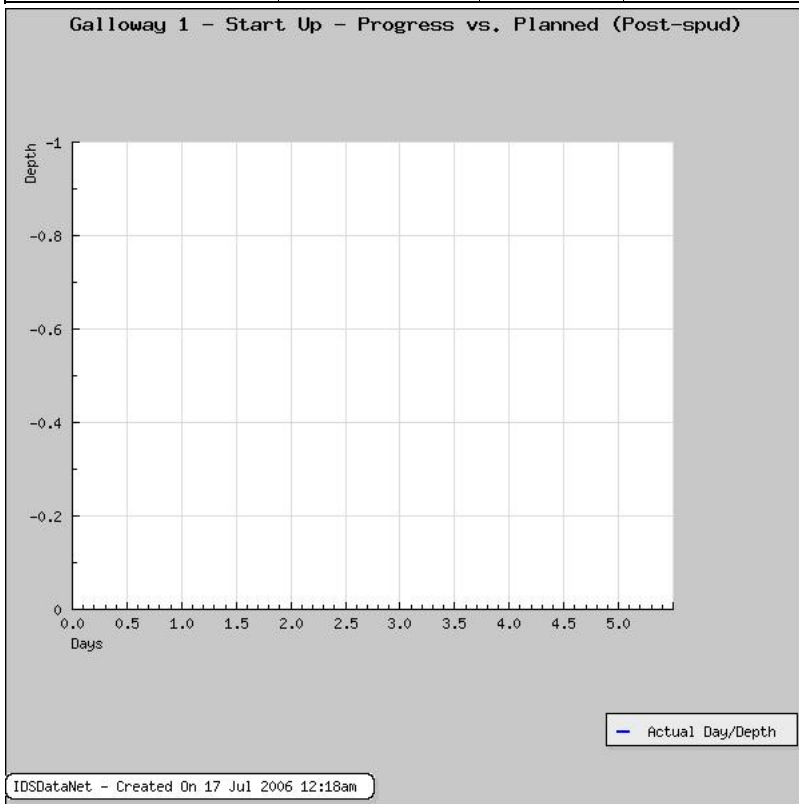
#### General Comments

Comments	Rig Requirements
Lease poding water .Dig small drains to remove water.	

#### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	8000	0	44,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	360	0	3,980.0

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	16 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Traffic movement.
Weekly Safety Meeting	16 Jul 2006	0 Days	Weekly meeting safety	Third party contractors on site . Rainy cold conditions 4 degrees. care Extraneeded in these hazardous conditions.



17 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	3.00m	Days On Well:	5.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 18 Jul 2006 :		Wait on daylight			
Planned Operations for 18 Jul 2006 :		Continue to dress derrick and Install on 'A'leg section. Fabricate high pressure lines and fabricate Suction lines for # 4 mud pump. Install lights and pull electrical cables.			

#### Summary of Period 0000 to 2400 Hrs

Continue to dress derrick.  
Install Mud pump#4 ,Transformer and aux gensets.  
Continue on mud tanks.  
Grade drain on lease to drain excess water.

#### Operations For Period 0000 Hrs to 2400 Hrs on 17 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on Daylight.
PS	P	RM	0600	1800	12.00	0.0m	Held pre tour safety meeting. Continue to dress out derrick. Install standpipe line. Spot # 4 mud pump. Spot transformer and aux gensets. Grade new drain on location to displace water. Continue rigging up mud tanks. Continue to weld high pressure pipe work and fabricate suction lines on mud pump# 4. Rigged moved 90% Rigged up 40%.
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight

#### Operations For Period 0000 Hrs to 0600 Hrs on 18 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

#### General Comments

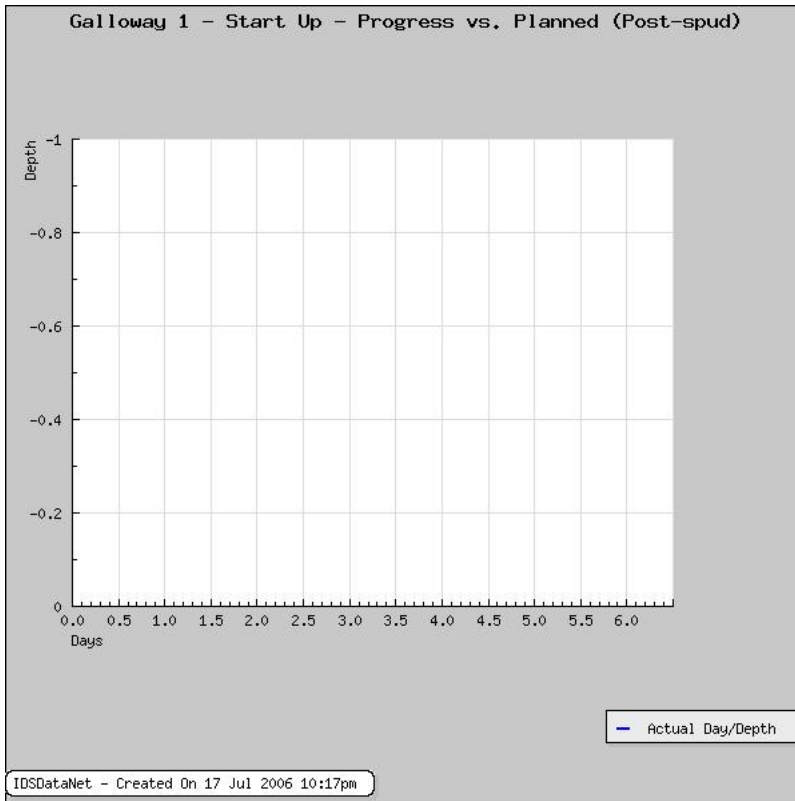
Comments	Rig Requirements
Willcox earthmovers made extra drains on location to remove excess rain water	

#### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	8000	0	36,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	360	0	3,620.0

#### HSE Summary

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	17 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Traffic movement. Working at heights discussed.



18 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	9.84m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	9.84m	Days On Well:	6.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 19 Jul 2006 :		Wait on daylight			
Planned Operations for 19 Jul 2006 :		Power up gensets. continue with electrical hook up and mechanical. Check mud pits valves. Continue to fabricate high pressure lines.			

#### Summary of Period 0000 to 2400 Hrs

Dress out derrick.  
String travelling blocks.  
Spot sperry shack.  
Install derick onto sub base and headache rack.  
Rigged up 45%.

#### Operations For Period 0000 Hrs to 2400 Hrs on 18 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Held pre tour safety meeting. Dress out derrick. String travelling blocks. Lift derrick and pin onto Sub Base. Continue to fabricate high pressure mud lines. Continue with electrical cables and lighting. Install septic holding tanks on rig site. Set up santo's office on rig site. Spot Sperry shacks. Rig moved 90% Rigged up 45%
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight.

#### Operations For Period 0000 Hrs to 0600 Hrs on 19 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

#### General Comments

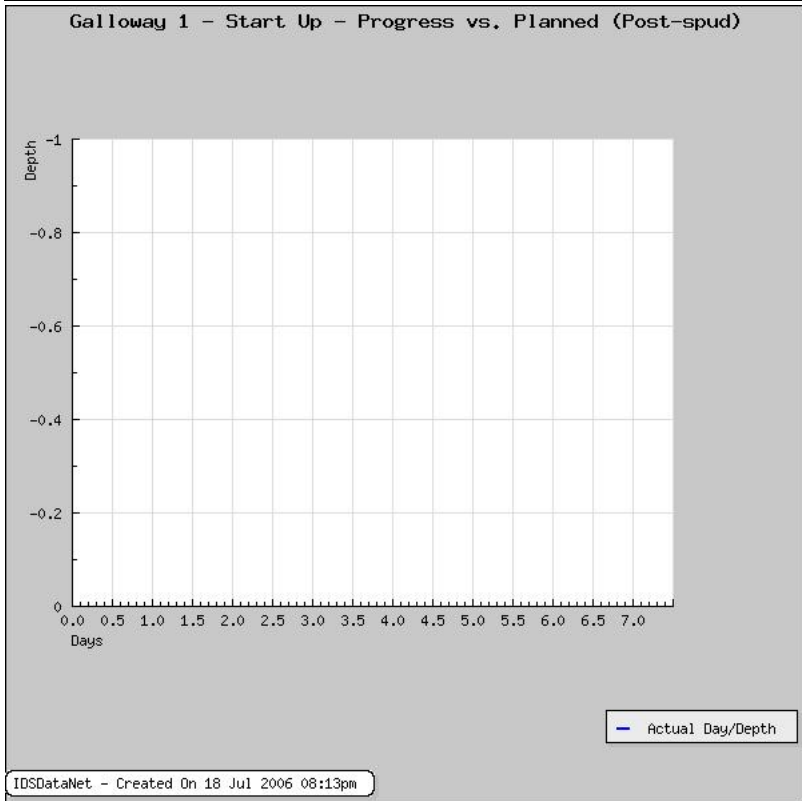
Comments	Rig Requirements
Install grey water holding tanks on rig site. Complete communication hook up. Install extra santo's shack on rig site.	

#### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	8000	0	28,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	360	0	3,260.0

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	18 Jul 2006	0 Days	Pre tour safety meeting	Held pre tour safety meeting. Topic discussed. Rigging and slinging, Traffic movement. Working at heights discussed. Pre job held prior to raising derrick on top head ache rack.





19 Jul 2006

From : Troy Reid  
To : Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	9.84m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	9.84m	Days On Well:	7.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 20 Jul 2006 : Wait on day light.					
Planned Operations for 20 Jul 2006 : Conduct ice breaker and inductions at Sale. continue with general rig up.					

#### Summary of Period 0000 to 2400 Hrs

Hold Pre tour safety meeting, Dress mud pumps to 6", Continue to dress out mast, Rig up sewage containment system to well site buildings, Continue with fabrication of suction line to T1000 mud pump, Commence make up of 13 5/8" BOP, Continue with general rig up.

#### Operations For Period 0000 Hrs to 2400 Hrs on 19 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Hold Pre tour safety meeting, Dress mud pumps to 6", Continue to dress out mast, Rig up sewage containment system to well site buildings, Continue with fabrication of suction line to T1000 mud pump, Commence make up of 13 5/8" BOP, Continue with general rig up.
PS	P	RM	1800	2400	6.00	0.0m	Wait on day light.

#### Operations For Period 0000 Hrs to 0600 Hrs on 20 Jul 2006

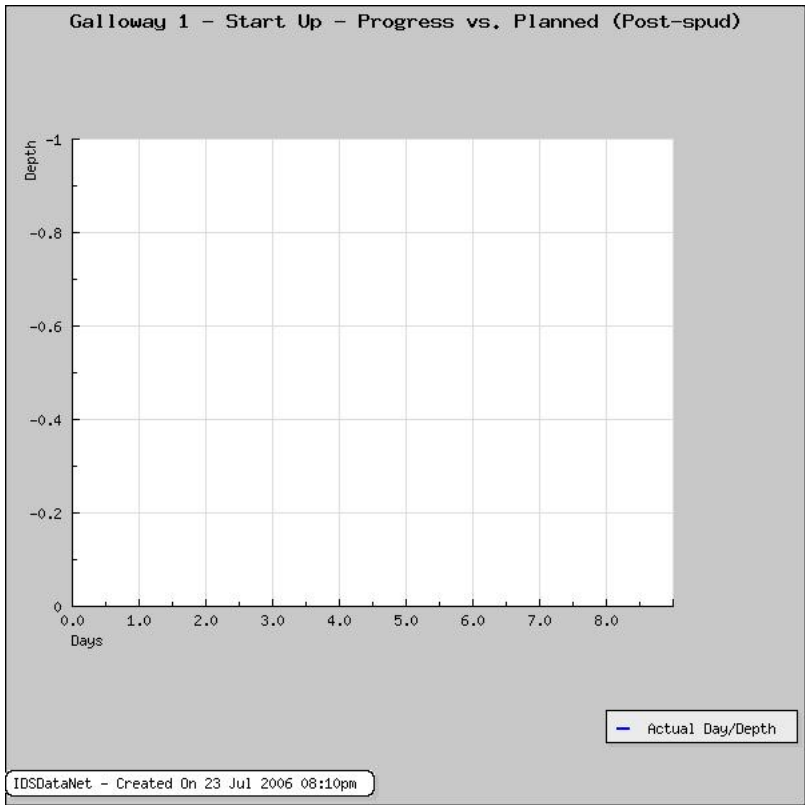
Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on Daylight.

#### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	0	0	28,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	0	0	3,260.0

#### HSE Summary

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	19 Jul 2006	0 Days	Pre-tour safety meeting	Discuss planned activities and associated hazards, Conditions wet and slippery use care when working at hight.



20 Jul 2006

From : Brain Marriott  
To : Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	9.84m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	9.84m	Days On Well:	8.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 21 Jul 2006 : Toolbox meeting, discuss rig up operations for daily operations					
Planned Operations for 21 Jul 2006 : Cont. rig up drilling equipment					

**Summary of Period 0000 to 2400 Hrs**

W.O.D., Ensign & contractor personal to "Sale" for "Ice Breaker", W.O.D.

**Operations For Period 0000 Hrs to 2400 Hrs on 20 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on Daylight.
PS	P	RM	0600	1800	12.00	0.0m	Toolbox meeting, cont. rig up to 08:00hrs Attend "Galloway" Ice Breaker @ Hacenda Inn Conference room, Sale, with Ensign & contractor personal. Hold safety meeting. From 16:30hrs, Continue to assemble BOP, weld down stump. Rig moved 95% Rigged up 50%
PS	P	RM	1800	2400	6.00	0.0m	Wait on daylight

**Operations For Period 0000 Hrs to 0600 Hrs on 21 Jul 2006**

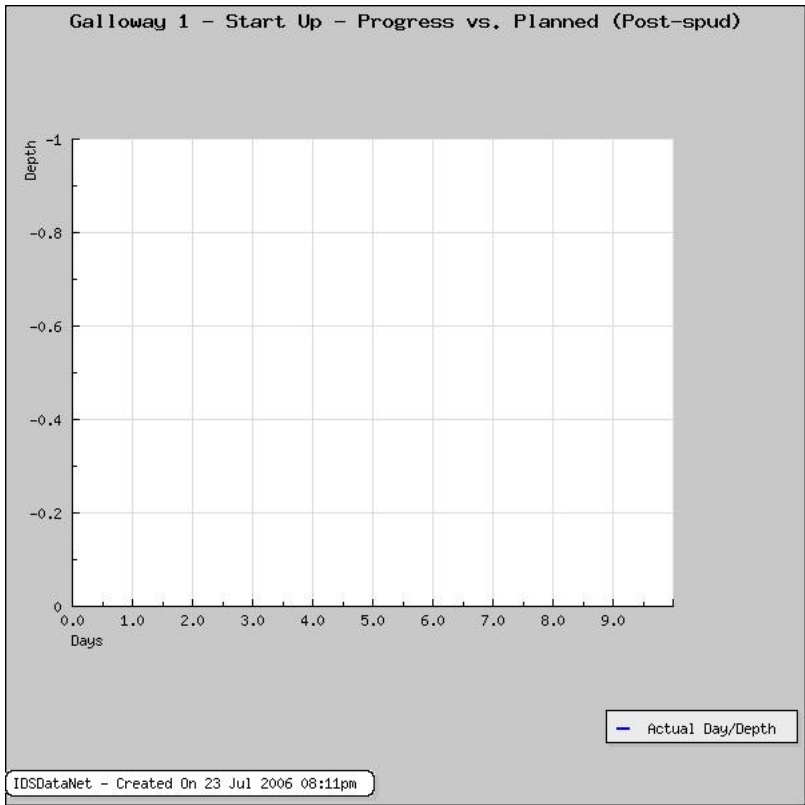
Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

**General Comments**

Comments	Rig Requirements
	Ensign personal measured up for new winter jackets to be supplied by management.

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	8000	0	20,000.0
Rig Fuel	ltr	0	0	0	0.0
Camp Fuel	ltr	0	360	0	2,900.0



21 Jul 2006

From : Brain Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	9.84m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	9.84m	Days On Well:	9.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 22 Jul 2006 :				Tool box meeting on proposed rig up operations	
Planned Operations for 22 Jul 2006 :				Cont. rig up drilling equipment	

**Summary of Period 0000 to 2400 Hrs**

WOD to 06:00hrs, Toolbox meeting, cont. rig up, off load equipment, WOD f/ 18:00 hrs

**Operations For Period 0000 Hrs to 2400 Hrs on 21 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Toolbox meeting, cont. nipple up BOP & spot in sub base, maint. to T1000 & 8P-80 mud pumps, off & back load trucks with equipment, pump rig diesel fuel into holding tank, spot Koomey walk ways, cable trays, stairs, commence to fit suction line to T1000 mud pump, commence to fit new discharge lines to 8P-80 mud pump, fit pulsation dampner to T1000 mud pump, Haliburton bulk tanks arrived
PS	P	RM	1800	2400	6.00	0.0m	WOD

**Operations For Period 0000 Hrs to 0600 Hrs on 22 Jul 2006**

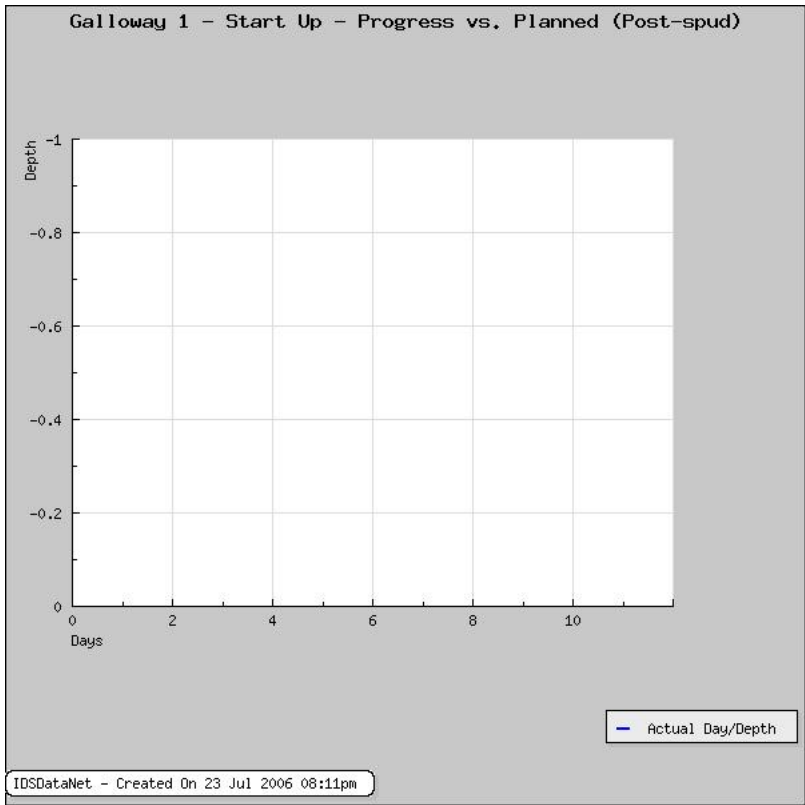
Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
KCI	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Potable Water	ltr	0	8000	0	12,000.0
Rig Fuel	ltr	15950	1000	15650	30,600.0
Camp Fuel	ltr	2450	350	0	5,000.0

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
ToolBox Talk	21 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Clear hand signals to crane operator. Keep vehicles to a minimum @ rig site. Contractors use the bus f/ camp to travel to & from rig



22 Jul 2006

From : Brain Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	9.84m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	9.84m	Days On Well:	10.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 23 Jul 2006 :		Toolbox meeting regarding daily rig up operations. Rig move 100% completed. Rigged up = 60% Possibly raise Mast late Sunday afternoon or first thing Monday morning. Presently blowing warm air into Generators			
Planned Operations for 23 Jul 2006 :		Cont. rig up drilling equipment			

**Summary of Period 0000 to 2400 Hrs**

WOD, cont rig up drilling equipment, WOD

**Operations For Period 0000 Hrs to 2400 Hrs on 22 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	1800	12.00	0.0m	Toolbox meeting, cont. with suction & discharge lines to T1000 & 8P-80 mud pumps, offload Top Drive, Ensign tool shed & handling equipment, Flare tank & accessories, install temporary rented blower heaters to main generators, cont. welding suction & discharge lines on mud pumps, run electrical cables, flush out mud tanks, run fuel & air lines to mud pump #4 & #4 & #5 Generators, plump in Tesco System, hammer up BOP spacer spools, install turkeys nest pump, install shaker flow line,
PS	P	RM	1800	2400	6.00	0.0m	WOD

**Operations For Period 0000 Hrs to 0600 Hrs on 23 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Wait on daylight

**General Comments**

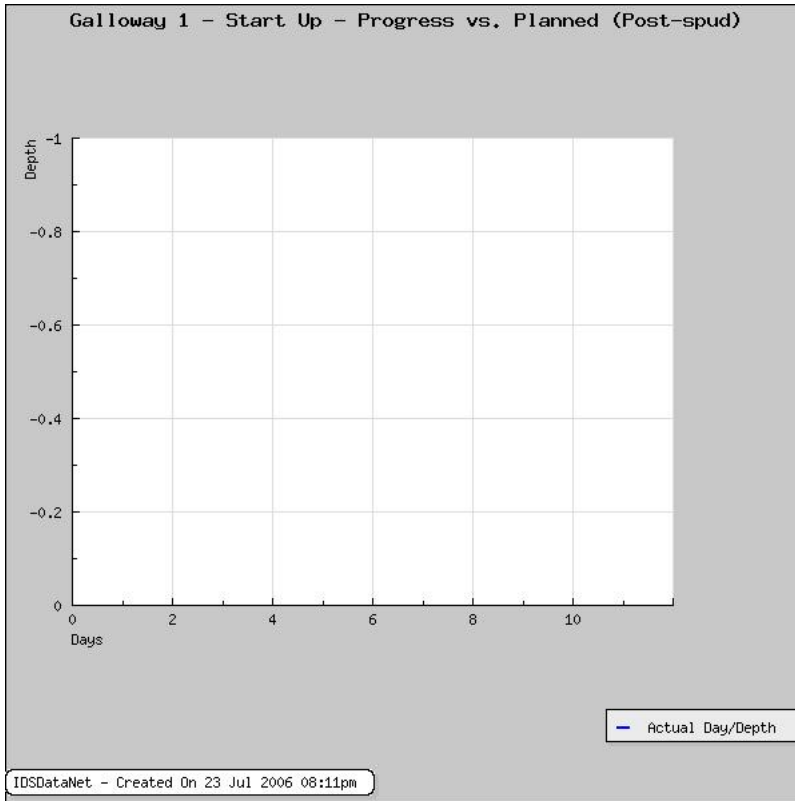
Comments	Rig Requirements
Local CFA & SES volunteers f/ Lock Sport to attend rig site to view if additional fire fighting equipment will be required on site tomorrow Sunday the 23-07-06 Tourist came in from the beach side today, through the bush in the sand dunes to view the rig. They were told to leave the area immediately, as it was a restricted area. They walked from the bush, alongside the outside of the fence by the mud chemicals.	

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	0.0
KCl	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	0.0
Potable Water	ltr	43000	8000	0	47,000.0
Rig Fuel	ltr	10100	1100	0	39,600.0
Camp Fuel	ltr	0	350	0	4,650.0

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
ToolBox Talk	22 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Clear hand signals to crane operator. Keep vehicles to a minimum @ rig site.





23 Jul 2006

**From : Brian Marriott**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.
GL Elev.:	3.00m	Days On Well:	11.75	Rig Move Distance
Current Op's @ 0600 24 Jul 2006 :				Cont. rig up drilling equipment
Planned Operations for 24 Jul 2006 :				Cont. rig up drilling equipment, raise Mast providing Generators & elect. cables check out ok

**Summary of Period 0000 to 2400 Hrs**

WOD, Toolbox meeting, cont. rig up drilling & contractor equipment

**Operations For Period 0000 Hrs to 2400 Hrs on 23 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0.0m	Wait on daylight
PS	P	RM	0600	2400	18.00	0.0m	Toolbox meeting, fill mud tanks & day tank with water, top up Turkeys nest, spot Haliburton cmt. bulker & cmt. unit, completed air throttle controll line to #4 mud pump, service all liner washers on all mud pumps, cont. weld in suction & discharge lines to mud pumps, drain water f/ day tank & repair hole in same, complete installation of lights to mud tanks & Mast, cont. blowing hot air into Generators, prepare B.H masher for modification to torque up 13-3/8" B.H., unload subs f/ crates & store in containor, weld in earth pions & install cables, install 15ft Kelly hose extention, cont. rig up Crews break tours; crew #1 start @ 06:00hrs, finish @ 14:00hrs Crew #2 start @ 10:00hrs, finish @ 24:00hrs

**Operations For Period 0000 Hrs to 0600 Hrs on 24 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Toolbox meeting, re-arrange "Hazard" chemical storage area & re-stack chemicals, complete making up Kelly hose, repair leak in day tank, cont. rig up

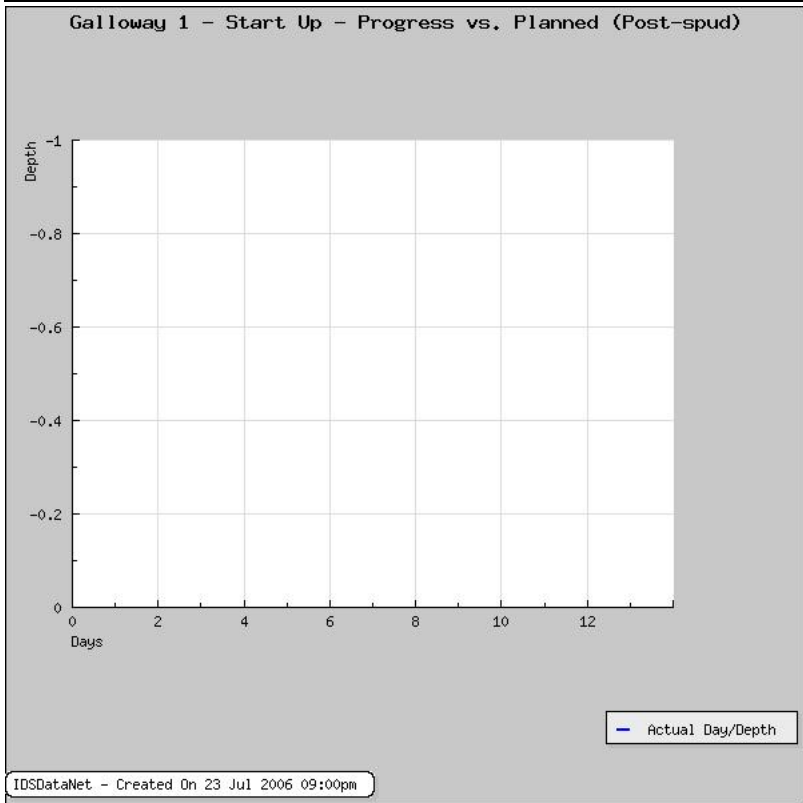
**General Comments**

Comments	Rig Requirements
John Stracey water cartage; 19-07-07, 23000 lit. potable water to camp. John Stracy, 22-07-06, 23000 lit. potable water to camp John Stracey, 23-07-06, #3 loads of water to rig site Turkeys (69000 lit.) = 8 hrs truck hire	Cement arriving Monday morning to fill Haliburton cmt. bulker @ rig site

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	SX	0	0	0	0.0
KCl	SX	0	0	0	0.0
Salt	SX	0	0	0	0.0
Gel	SX	0	0	0	0.0
Potable Water	ltr	0	6000	0	41,000.0
Rig Fuel	ltr	0	1000	0	38,600.0
Camp Fuel	ltr	0	250	0	4,400.0

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
ToolBox Talk	23 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Keep vehicles to a minimum @ rig site. Contractors to use bus service f/ camp to rig.



24 Jul 2006

From : Brain Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.
GL Elev.:	3.00m	Days On Well:	12.75	Rig Move Distance
Current Op's @ 0600 25 Jul 2006 :				Cont. rig up, estimate to raise the Mast by 09:00hrs. Equipment on site = 100% Rigged up = 80%
Planned Operations for 25 Jul 2006 :				Cont. rig up, raise Mast, commence to install Top Drive equipment

**Summary of Period 0000 to 2400 Hrs**

Cont. rig up drilling & contractor equipment

**Operations For Period 0000 Hrs to 2400 Hrs on 24 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	2400	24.00	0.0m	Toolbox meeting, re-arrange "Hazard" chemical storage area & re-stack chemicals, complete making up Kelly hose, repair leak in day tank, spot Haliburton mixing water tanks & 1/2 fill same with water, build pad to sit flare tank on, install drum spooler sheaves, open bonnets on BOP to check ram sizes, tension up blocks & drilling line, install monkey board, check all wires & equipment prior to raising Mast, noticed lease was too short to attach hold back wire line f/ Fork Lift to Mast, make out JSA to run hold back line though a snatch block back to the Fork Lift, ran out of time due to failing light & darkness, prepare equipment to raise Mast @ first light, cont. weld suction line on T1000 mud pump, comence to install 5-1/2" liners & pistons to 8P-80 mud pumps, run water lines for swimming pool, repairs to mud tank hand rails, attach lights & sensors to choke manifold, cont. rig up

**Operations For Period 0000 Hrs to 0600 Hrs on 25 Jul 2006**

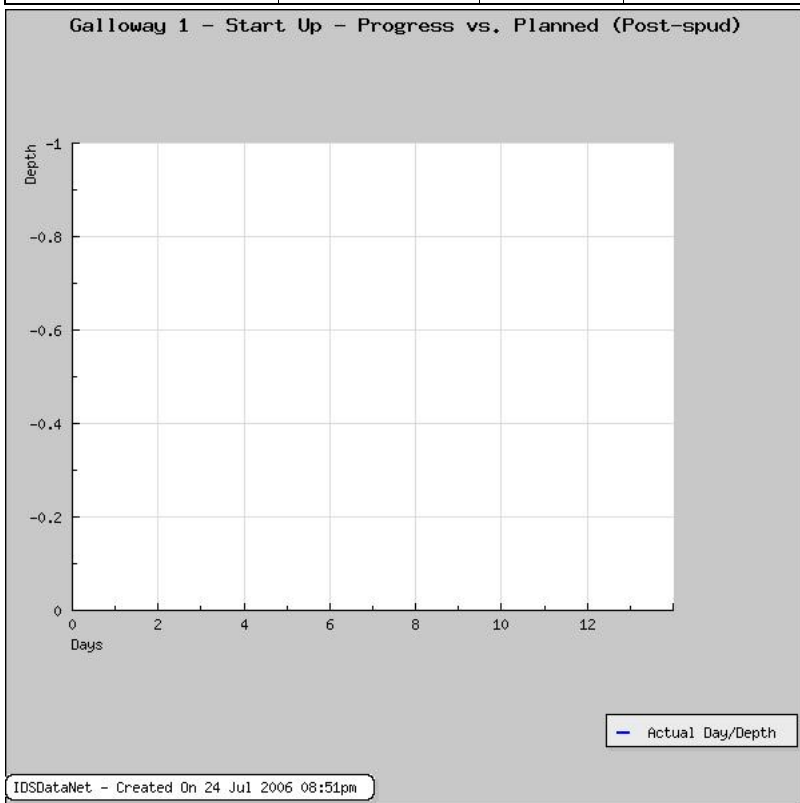
Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	Replace 5" pipe rams in BOP with 4-1/2", cont. install 5-1/2" liners & pistons in 8P-80 mud pumps, replace wear plate in fluid end on mud pump #1, clean up rig site

**General Comments**

Comments	Rig Requirements
<p>Willox Earthmoving; transport 23000lit. potable water, top up portable toilets = 2 hrs</p> <p>Ordered in a truck load of small washed stone, to cover the electrical cable cross over section f/ the Generators to rig site offices. Used the remaining washed stone outside the smoko hut to create a dry standing area, due to the constant water lying on the lease.</p> <p>Ordered additional soil to create a base for the Flare tank location.</p> <p>All soil transported in, came from the same quarry the lease soil came from.</p>	

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	0	0	0.0	
KCl	sx	0	0	0	0.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	0.0	
Potable Water	ltr	0	6000	0	35,000.0	
Rig Fuel	ltr	0	1200	0	37,400.0	
Camp Fuel	ltr	0	350	0	4,050.0	

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	24 Jul 2006	0 Days	Incident free days	Incident free days = 356
ToolBox Talk	24 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Review JSA prior to raising Mast. Keep alert



25 Jul 2006

**From : Brian Marriott**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	3.00m	Days From Spud:		F.I.T. / L.O.T.	/
GL Elev.:	3.00m	Days On Well:	13.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 26 Jul 2006 :		<p>JSA &amp; Toolbox meeting on erecting Top Drive equipment. Mast raised @ 17:00hrs on Tuesday the 25th, estimate spud late Thursday or Friday Geoservices 95% completed. Waiting on plug for rig floor monitor, plus isolator for RPM readings Haliburton cementers = 90% completed. Cement arrived &amp; transferred to bulk pods. Mud Eng. = 95% completed. Directional drillers = 95% completed. Checked out BHA's, x-o's etc. required Sperry = 70% completed, still have to test MWD tool</p>			
Planned Operations for 26 Jul 2006 :		Rig up & install Top Drive equipment, off load chemicals in bunted off section of lease, cont. rig up			

**Summary of Period 0000 to 2400 Hrs**

Cont. rig up, raise Mast @ 17:00hrs, cont. rig

**Operations For Period 0000 Hrs to 2400 Hrs on 25 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	2400	24.00	0.0m	<p>Replace 5" pipe rams in BOP with 4-1/2", cont. install 5-1/2" liners &amp; pistons in 8P-80 mud pumps, replace wear plate in fluid end on mud pump #1, clean up rig site, off load 22 pallets of chemicals, Review JSA to raise Mast, crews prepared to raise Mast, traction motor for Drawworks down to earth, suspend operation, hook up blower heater to dry out motor, wait on new tong hanging sheaves to arrive, re-view JSA with new crew, raise Mast @ 17:00 hrs, pin same to "A" frame, power up lights, check out flashing warning light @ crown, all ok, erect new bunting for additional mud chemicals, rig up rig tongs, tuggers, tongs &amp; rig floor equip., Cat walk, "V"-door, pipe racks. Note; intermittent rain showers all day</p>

**Operations For Period 0000 Hrs to 0600 Hrs on 26 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	<p>Tie in Bridel lines, store away Wedding ring assembly, Cont. rig up drill floor equip., complete installation of fluid end equip. to 8P-80 mud pumps, cont. welding suction line on T1000 mud pump, complete storing mud chemicals, cont. setting up pipe racks etc, hold JSA &amp; Toolbox meeting with Top Drive rep. regarding installation,</p>

**General Comments**

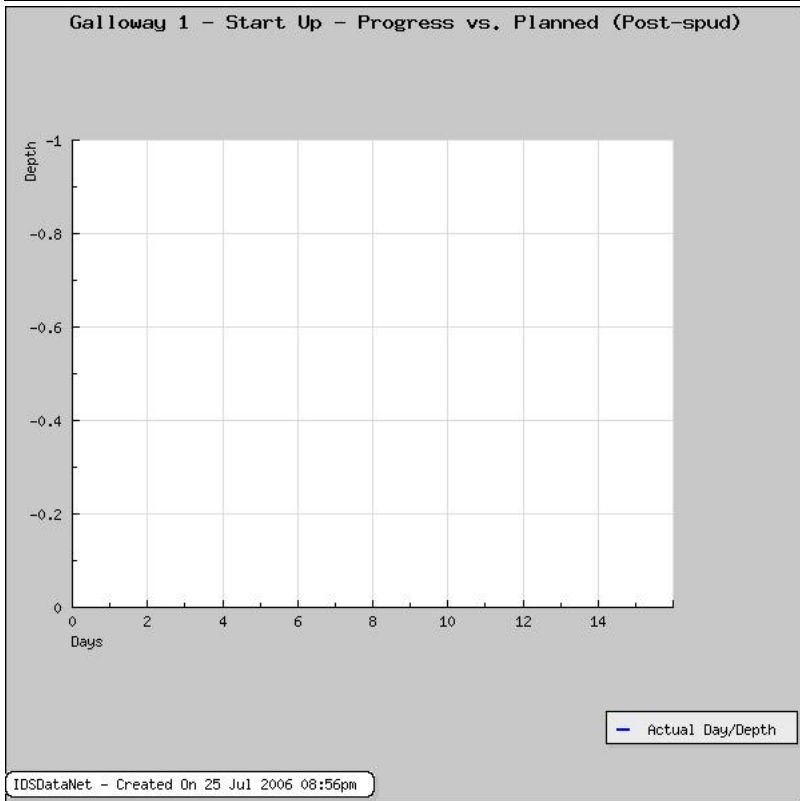
Comments	Rig Requirements
Willox Earthmoving; transport 3 loads of water, = 9hrs	Inspect flashing lights on road over Esso pipe line @ 19:00hrs. All ok

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	0.0
KCl	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	0.0
Potable Water	ltr	0	6000	0	29,000.0
Rig Fuel	ltr	0	1400	0	36,000.0
Camp Fuel	ltr	0	350	0	3,700.0

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
JSA	25 Jul 2006	0 Days	Raise Mast	Review JSA & discuss same for raising Mast
LTI/MTI incident free days	25 Jul 2006	0 Days	Incident free days	Incident free days = 357
ToolBox Talk	25 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Review JSA prior to raising Mast. Keep alert



26 Jul 2006

**From : Brian Marriott**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:
RT-GL:	9.84m	Days From Spud:	27.81	F.I.T. / L.O.T.
GL Elev.:	9.84m	Days On Well:	14.75	Rig Move Distance
Current Op's @ 0600 27 Jul 2006 :				Raise JSA & cont. rig up Top Drive service loop spool hoses, cont. rig up
Planned Operations for 27 Jul 2006 :				Complete rigging up Top Drive & test run same, complete mixing spud mud, run & test all mud pumps, rack & strap BHA, check out all equip., follow up on ESD equip. required, run & check all contractors equip., train rig crews with the operation of the Top Drive, Fire & Muster Drill

**Summary of Period 0000 to 2400 Hrs**

Cont. rig up, install Top Drive tracks & Top Drive unit, 75% completed, mega all mud pump elect. motors, all ok, cont. rig up drill floor equipment, off load 13-3/8" csg., complete bunting for waste oil tank & paint locker, general rig clean up, sort out tubulars on racks, complete T1000 mud pump suction line,

**Operations For Period 0000 Hrs to 2400 Hrs on 26 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	2400	24.00	0.0m	Tie in Bridel lines, store away Wedding ring assembly, Cont. rig up drill floor equip., complete installation of fluid end equip. to 8P-80 mud pumps, complete welding suction line on T1000 mud pump, complete storing mud chemicals, set up pipe racks etc, hold JSA & Toolbox meeting with Top Drive rep. regarding installation, install Top Drive tracks & Top Drive unit, 75% completed, meg. all 8P-80 mud pumps, ok, off load 13-3/8" csg., complete bunting for waste oil tank & paint locker, run Emerg. escape line f/ Mast, anchor same, cont. rig up rig floor equip., commence to mix spud mud, spool wire line onto drawworks winch, sort out tubulars on racks. Note; F/ 13:00hrs to 13:30hrs, shut down operations & hold a safety meeting & discussion with all personal regarding the incident of the dropped jnt. of casing.

**Operations For Period 0000 Hrs to 0600 Hrs on 27 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	0.0m	(IN PROGRESS) Complete mixing spud mud, spot choke manifold & rig up lighting, install racks for BHA, clean up rig site & store rubbish in skip, cont. rig up with rig floor equip., hang tongs etc., run air, water & Hyd. lines, raise JSA & install Top Drive service loop hoses, run Top Drive, all appears ok, need to adjust tracks to centre Top Drive over hole, Rep. out of hours & day light, 95% completed, complete arranging tubulars, weld in choke line support saddles, spot in choke line piping, pressure up all #4 Pulsation Dampners to 800 psi on mud pumps, pressure up Koomey bottles to 1000psi, attempt to install mouse hole, no go, 7 ft high, fit riser & 2" drain valve & weld in same, load drill pipe on racks & commence to clean same, spot BHA jewelry & measure same, clean BHA, connect flow line, fill riser with mud & check for leaks, commence to run mud pumps #1 check operation & pressure test lines to 2000psi Note; take measurements for the re-routing of 8" Blewby line f/ Poor Boy to Flare tank, order pipe & fittings,

Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	0.0
KCl	sx	0	0	0	0.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	0.0
Potable Water	ltr	12000	7000	0	34,000.0
Rig Fuel	ltr	0	1400	0	34,600.0
Camp Fuel	ltr	0	350	0	3,350.0

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Incidents	26 Jul 2006	0 Days	Casing dropped f/ Fork Lift to ground	While unloading csg. f/ truck, Fork Lift tines tilted forward & csg. fell back onto truck, then onto the ground. I.M.S. raised & forwarded to town.
JSA	26 Jul 2006	0 Days	Install Top Drive	Make up JSA's for each section of lift's & installation of tracks & Top Drive
LTI/MTI incident free days	26 Jul 2006	0 Days	Incident free days	Incident free days = 359
ToolBox Talk	26 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Review JSA prior to installing Top Drive. Keep alert. Give clear hand signals to tugger operators



27 Jul 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	19.36m	Days From Spud:	0.00	F.I.T. / L.O.T.	/
GL Elev.:	8.89m	Days On Well:	15.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 28 Jul 2006 :		Rig to install dead man clamp in Mast. Estimate to start picking up drill pipe by 15:00hrs			
Planned Operations for 28 Jul 2006 :		Complete rig up, Pre-Spud check, Fire & Muster drill, Emerg. Response drill with both crews , RE-DRILL MOUSE HOLE (2metres high) make up 10 stands D.P. & rack in Mast, make up BHA, RIH, drill out shoe, drill ahead			

#### Summary of Period 0000 to 2400 Hrs

Rig up drilling equipment

#### Operations For Period 0000 Hrs to 2400 Hrs on 27 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	2400	24.00	0.0m	Complete mixing spud mud, spot choke manifold & rig up lighting, install racks for BHA, clean up rig site & store rubbish in skip, cont. rig up with rig floor equip., hang tongs etc., run air, water & Hyd. lines, raise JSA & install Top Drive service loop hoses, run Top Drive, all appears ok, need to adjust tracks to centre Top Drive over hole, Rep. out of hours & day light, 95% completed, complete arranging tubulars, weld in choke line support saddles, spot in choke line piping, pressure up all #4 Pulsation Dampners to 800 psi on mud pumps, pressure up Koomey bottles to 1000psi, attempt to install mouse hole, no go, 7 ft high, fit riser & 2" drain valve & weld in same, load drill pipe on racks & commence to clean same, spot BHA jewelry & measure same, clean BHA, connect flow line, fill riser with mud & check for leaks, commence to run mud pumps #1 check operation & pressure test lines to 2000psi Note; take measurements for the re-routing of 8" Blewby line f/ Poor Boy to Flare tank, order pipe & fittings,

#### Operations For Period 0000 Hrs to 0600 Hrs on 28 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS		RM	0000	0600	6.00	60.0m	(IN PROGRESS) Run Geograph line, rope & tape together Tesco hyd. lines, run & function test mud pump #2 ,#3 & #4, pressure test lines to 2000psi, pressure test stand pipe low 300psi, high 2000psi, perform weekly rig inspection, complete caliper BHA, clean drill pipe, raise JSA for Top Drive track alignment.

#### General Comments

Comments	Rig Requirements
Enviromentle inspection carried out by Mr. Daniel Moriarty of Enesar Consulting Pty Ltd. No major problems reported	

#### WBM Data

Mud Type:	Spud Mud	Viscosity:	45sec/qt	API FL Loss:	13.5cc	CI	4000	Solids:	3
Depth:	60.0m	PV:	8cp	Filter Cake:		K+:		H2O:	96%
Time:	10:00	YP:	22lb/100ft²	HTHP FL:		Hard/Ca:		Oil:	
Weight:	8.80ppg	Gels 10s/10m:	10 / 15	HTHP Cake:		MBT:		Sand:	
Temp:	20.0F°	Fann (3/6/100):				PM:		pH:	10
			15 / 16 / 23			PF:	0.05	PHPA:	

Comment

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / Babu	
Equipment	Description	Mesh Size	Available	320.0bbl	Losses	0.0bbl	Comment
Centrifuge	DE 1000	Pyramid x 80	Active	320.0bbl	Downhole		
Shaker 1	Derrick		Mixing		Surf. + Equip.	0.0bbl	
Shaker 2	Derrick		Hole	0.0bbl	Dumped		
			Slug		De-Sander		
			Reserve	0.0bbl	De-Silter		
			Kill		Centrifuge		

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	240	0	0	240.0	
KCl	sx	0	0	0	0.0	
Salt	sx	0	0	0	0.0	
Gel	sx	672	192	0	480.0	
Potable Water	ltr	0	8000	0	26,000.0	
Rig Fuel	ltr	0	2600	0	32,000.0	
Camp Fuel	ltr	0	350	0	3,000.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National 8P-80	5.50								
2	National 8P-80	5.50								
3	National 8P-80	5.50								
4	IDECO	6.00								

HSE Summary					
Events	Date of Last	Days Since	Description	Remarks	
Environmental Issue	27 Jul 2006	0 Days	Audit on lease around rig site	Audit carried out by Mr Daniel Moriarty of Enesar Pty Ltd. No major problems.	
JSA	27 Jul 2006	0 Days	Install Top Drive	Make up JSA's for each section of lift's & installation Top Drive service loop hoses	
LTI/MTI incident free days	27 Jul 2006	0 Days	Incident free days	Incident free days = 360	
ToolBox Talk	27 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Review JSA prior to installing Top Drive. Keep alert. Give clear hand signals to tugger operators. Be aware of Fork Lift operations	

28 Jul 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	60.0m	Current Hole Size:	
Rig:	Ensign 32	Midnight Depth (TVD):	60.0m	Casing O.D.:	20.000in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	60.0m
RT-GL:	9.84m	Days From Spud:	30.23	F.I.T. / L.O.T.	/
GL Elev.:	9.84m	Days On Well:	16.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 29 Jul 2006 : Drilling ahead 17-1/2" hole, from 100 metres					
Planned Operations for 29 Jul 2006 : RIH, drill cement, open 9-5/8" pilot hole to 100m, drill ahead to 120m, circ., POOH, run directional BHA, kick off & drill ahead					

#### Summary of Period 0000 to 2400 Hrs

Complete rigging up, Fire & Muster Drill, followed by Emerg. Response Drill, pick up mouse hole sock, attempt to wash down same, no success, re-drill mouse hole, run sock, Pre-Spud Check, repairs to crown o-matic, Rig accepted to SPUD @ 18:30hrs, make up stands of drill pipe & rack in Mast, make up 17-1/2" BHA

#### Operations For Period 0000 Hrs to 2400 Hrs on 28 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PS	P	RM	0000	0700	7.00	60.0m	Run Geograph line, rope & tape together Tesco hyd. lines, run & function test mud pump #2, #3 & #4, pressure test lines to 2000psi, pressure test stand pipe low 300psi, high 2000psi, perform weekly rig inspection, complete caliper BHA, clean drill pipe, raise JSA for Top Drive track alignment.
PS	P	RM	0700	1030	3.50	60.0m	Suspend alignment to Top drive tracks due to no power to hydraulic winches, cont. make up choke lines, remove 13-3/8" protectors, off load mud chemicals (Electrical supply cable for plug in receptical corroded on power supply for Hydraulic pump, repair same)
PS	P	RM	1030	1130	1.00	60.0m	Restored hydraulic power, cont. with alignment to Top Drive alignment
PS	P	RM	1130	1200	0.50	60.0m	Sound rig floor alarm, "Fire & Muster Drill" for Well Control, discuss issues with drilling & third party personal. ( both crews on tour)
PS	P	RM	1200	1230	0.50	60.0m	"Hold Emergency Response Drill", fire coming towards rig, explain emergency procedures & evacuation routes. load all personal into the bus & the Ensign Canter to establish we could remove all personal f/ the rig site to a safe place in the case of a emergency, no problems. Refere to HSE section. ( both crews on tour)
PS	P	RM	1230	1300	0.50	60.0m	Final checks on Top Drive, all ok
PS	P	RM	1300	1700	4.00	60.0m	R.M., Tesco, Driller & crews hold a JSA on making up drill pipe, make up #1 stand, run in mouse hole sock, stab in stand, & attempt to wash down, no success, POOH, lay out mouse hole sock, make up bit, RIH, re-drill out mouse hole, run & set sock.
SH	P	RM	1700	1830	1.50	60.0m	Pre-Spud Check Found crown o-matic was faulty, repair same ( check alignment on Tesco Top Drive)
SH	P	HBHA	1830	2130	3.00	60.0m	"Rig accepted to SPUD" Review JHA on picking up & making up stands of drill pipe, make up 10 stands of D.P., rack same in Mast
SH	P	HBHA	2130	2400	2.50	60.0m	Hold JHA, make up jewelry & 17-1/2" BHA, RIH

#### Operations For Period 0000 Hrs to 0600 Hrs on 29 Jul 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SH		HBHA	0000	0430	4.50	65.0m	Review JHA, cont. make up BHA, RIH, tag cement @ 65metres
SH		DC	0430	0530	1.00	85.0m	Drill cement f/ 65m to 85m
SH		DHO	0530	0600	0.50	100.0m	Open 9-5/8" pilot hole f/ 85m to 100m

General Comments	
Comments	Rig Requirements
Willox, 26-07-06, transport water to Turkeys nest = 3-1/2hrs Willox, 28-07-06, transport potable water to camp, rig & Turkeys Nest = 6-1/2hrs	

WBM Data							
Mud Type:	Spud Mud	Viscosity:	85sec/qt	API FL Loss:	17.0cc	CI	4000
Depth:	60.0m	PV:	9cp	Filter Cake:	2/32nd"	K+:	
Time:	22:00	YP:	52lb/100ft²	HTHP FL:		Hard/Ca:	
Weight:	8.85ppg	Gels 10s/10m:	35 / 46	HTHP Cake:		MBT:	
Temp:	52.0F°	Fann (3/6/100):				PM:	1.2
			31 / 39 / 54			PF:	0.5
Comment	Mixed extra spud mud						

Shakers, Volumes and Losses Data				Engineer: Manfred Olejniczak / J.V.Babu		
Equipment	Description	Mesh Size	Available	435.0bbl	Losses	0.0bbl
Centrifuge	DE 1000		Active	435.0bbl	Downhole	
Centrifuge	DE 1000		Mixing		Surf. + Equip.	0.0bbl
Shaker 1	Derrick	Pyramid x 80	Hole	0.0bbl	Dumped	
Shaker 1	Derrick	Pyramid x 80	Slug		De-Sander	
Shaker 2	Derrick		Reserve	0.0bbl	De-Silter	
Shaker 2	Derrick		Kill		Centrifuge	

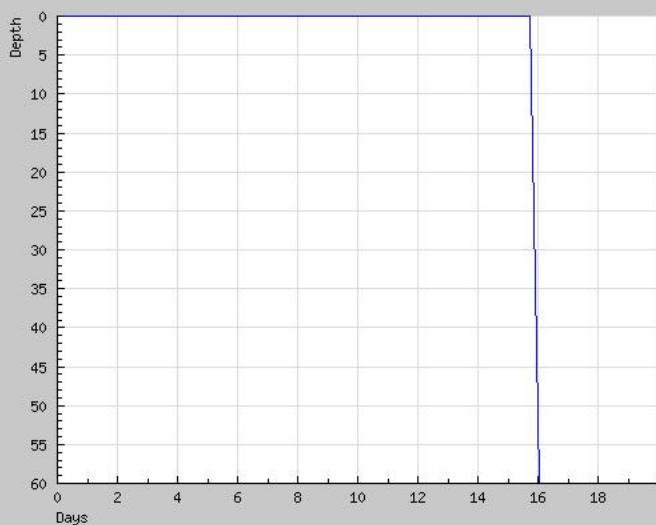
Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	960	0	0	1,200.0	
KCl	sx	800	0	0	800.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	144	0	336.0	
Potable Water	ltr	12000	8000	0	30,000.0	
Rig Fuel	ltr	12600	2400	0	42,200.0	
Camp Fuel	ltr	2950	350	0	5,600.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50								8.85
2	National - 8P-80	5.50								8.85
3	National - 8P-80	5.50								8.85
4	IDECO - T1000	6.00								8.85

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Hazard	28 Jul 2006	0 Days	Hazard hunt	
JSA	28 Jul 2006	0 Days	Install Top Drive	Review JSA's for alignment to Top Drive tracks
LTI/MTI incident free days	28 Jul 2006	0 Days	Incident free days	Incident free days = 361
Muster Drill	28 Jul 2006	0 Days	Fire & Muster Drill and Evacuation Drill	Conducted fire and muster drill with both crews, 5 mins to account for all personnel from Magna Board . Also conducted evacuation drill, loaded personnel onto to bus and canter to make sure their was sufficient room to evacuate all personnel.12 mins from time of siren to having all personnel on bus and canter.
ToolBox Talk	28 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Review JSA prior to aligning Top Drive tracks. Keep alert. Give clear hand signals to tugger operators. Be aware of Fork Lift operations

Galloway 1 - Start Up - Progress vs. Planned (Post-spud)



— Actual Day/Depth

IDSDataNet - Created On 30 Jul 2006 08:11pm

29 Jul 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	192.0m	Current Hole Size:	17.500in
Rig:	Ensign 32	Midnight Depth (TVD):	191.0m	Casing O.D.:	20.000in
Prognosed TD:	2350.0m	Progress:	92.0m	Shoe TVD:	60.0m
RT-GL:	5.90m	Days From Spud:	0.81	F.I.T. / L.O.T.	/
GL Elev.:	2.71m	Days On Well:	17.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 30 Jul 2006 : T.D. @ 320m, Circ. for wiper to shoe					
Planned Operations for 30 Jul 2006 : Wiper to shoe, POOH, rig & run 13-3/8" casing, cement same,					

**Summary of Period 0000 to 2400 Hrs**

Drilled cmt. to 65m to 80m, open hole f/ 9-5/8" to 17-1/2" f/ 80m to 100m, drill f/ 100m to 120m, circ., POOH, Rig & run directional BHA with 1-1/2 deg. bend, wash & ream f/ 110m to 120m, no fill, Drill, steer & survey f/120m to 192m

**Operations For Period 0000 Hrs to 2400 Hrs on 29 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SH	P	HBHA	0000	0430	4.50	65.0m	Review JHA, cont. make up BHA, RIH, tag cement @ 65metres
SH	P	DC	0430	0530	1.00	85.0m	Spud Galloway-1 @ 04:30 on 29-July-06. Drill cement f/ 65m to 85m
SH	P	DHO	0530	0600	0.50	100.0m	Open 9-5/8" pilot hole f/ 85m to 100m
SH	P	D	0600	0700	1.00	120.0m	Drill 17-1/2" hole f/ 100m to 120m (615 gpm in sand)
SH	P	CHC	0700	0800	1.00	120.0m	Sweep 20bbls Hi Vis, excessive sand over shakers, sweep additional 20bbls Hi Vis, spot 40bbls Hi Vis on bottom.
SH	P	TO	0800	1130	3.50	120.0m	POOH, break & lay out jewelry
SH	P	TO	1130	1200	0.50	120.0m	Clear rig floor, remove bow shackles & install #4 piece safety shackles in Tesco Top Drive
SH	P	HBHA	1200	2000	8.00	120.0m	Hold toolbox meeting , make up Directional BHA #2 with 1.5 deg. bend.
SH	P	TI	2000	2100	1.00	120.0m	RIH to 110m, shallow pulse test
SH	P	RW	2100	2130	0.50	120.0m	Wash & Ream f/ 110m to 120m, no fill
SH	P	DM	2130	2400	2.50	192.0m	Drill steer & survey f/ 120m to 192m ( survey @ 190.2 = 4.72 inc, 115.2 AZI )

**Operations For Period 0000 Hrs to 0600 Hrs on 30 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SH		DM	0000	0500	5.00	320.0m	Drill f/ 192m to 320m. ( TVD = 314.7m ) ( survey @ 303.7m, 23.67 inc, 118.68 AZI )
SH		CHC	0500	0600	1.00	320.0m	Sweep 10bbls Hi Vis, circ. hole clean for wiper to shoe, spot 10 bbls Hi Vis

**WBM Data**

Mud Type:	Spud Mud	Viscosity:	48sec/qt	API FL Loss:	10.0cc	CI	5000	Solids:	3
Depth:	145.0m	PV:	12cp	Filter Cake:	2/32nd"	K+:		H2O:	96%
Time:	22:30	YP:	18lb/100ft <sup>2</sup>	HTHP FL:		Hard/Ca:	80	Oil:	
Weight:	9.20ppg	Gels 10s/10m:	17 / 20	HTHP Cake:		MBT:	25	Sand:	2.5
Temp:	52.0F°	Fann (3/6/100):				PM:	1.3	pH:	10
			15 / 18 / 20			PF:	0.3	PHPA:	
Comment		Maintained viscosity with prehydrated gel while drilling loose sands. Added Pac-L for additional filtration control. Hole condition good on trip.							

**Shakers, Volumes and Losses Data**

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	1023.0bbl	Losses	110.0bbl	Comment
Centrifuge	DE 1000		Active	414.0bbl	Downhole		
Centrifuge	DE 1000		Mixing	384.0bbl	Surf. + Equip.	110.0bbl	
Shaker 1	Derrick	Pyramid x 80	Hole	225.0bbl	Dumped		
Shaker 1	Derrick	Pyramid x 84	Slug		De-Sander		
Shaker 2	Derrick		Reserve	0.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid x 84	Kill		Centrifuge		

Bit # 1			Wear	I	O1	D	L	B	G	O2	R
				0	0	NO	A	0	I	RR	BHA
Size:	17.500in	IADC#: 115 M	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	REED	WOB (avg): 10.0klb	No.	Size	Progress: 20.0m			Cum. Progress: 20.0m			
Type:	mt	RPM (avg): 85	1	16/32nd"	On Bottom Time: 0.45h			Cum. On Btm Time: 0.45h			
Serial #:	J50351	F.Rate: 625gpm	3	20/32nd"	IADC Time: 1.00h			Cum. IADC Time: 1.00h			
Depth In:	100.0m	SPP: 600psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	120.0m	HSI:			ROP (avg): 44.44 m/hr			Overall ROP (avg): 44.44 m/hr			
Bit Model:	T11C	TFA: 1.117									

Bit # RR1			Wear	I	O1	D	L	B	G	O2	R
Size:	17.500in	IADC#: 115M	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	REED	WOB (avg): 10.0klb	No.	Size	Progress: 72.0m			Cum. Progress: 72.0m			
Type:	mt	RPM (avg): 50	1	16/32nd"	On Bottom Time: 0.75h			Cum. On Btm Time: 0.75h			
Serial #:	J50351	F.Rate: 700gpm	3	20/32nd"	IADC Time: 2.50h			Cum. IADC Time: 2.50h			
Depth In:	120.0m	SPP: 1250psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:			ROP (avg): 96.00 m/hr			Overall ROP (avg): 96.00 m/hr			
Bit Model:	T11C	TFA: 1.117									



**BHA # 1**

Wt. Below Jars Dry: 7.0klb	Length: 120.0m	Torque (max):	DC (1) Ann Vel.: 58fpm
Weight Dry: 11.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 63fpm
Type: Pendalum	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 54fpm
	Slack-Off Weight:		DP Ann. Vel.: 0fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	T11C bit, with 3x20 jets & 1x16 centre jet	0.47m	17.50in		J50351	1.00h
2	Stab	17-1/2" stab	2.59m			DA 9011	1.00h
3	Bit Sub	Bit sub	0.92m				1.00h
4	8in DC	3 x 8" dc's	27.61m	8.00in	3.00in		1.00h
5	X/Over	x-o	0.80m		2.75in		1.00h
6	6.5in DC	1x6-1/2" dc	9.05m	6.50in	2.75in		1.00h
7	Drilling Jars	Drilling Jars	9.95m	6.50in	2.75in	1760-2031	1.00h
8	6.5in DC	1x6-1/2"dc	9.42m	6.50in	2.75in		1.00h
9	HWDP	HWDP x 4.5"	59.19m	4.50in	2.88in		1.00h

**BHA # 2**

Wt. Below Jars Dry: 29.0klb	Length: 163.4m	Torque (max):	DC (1) Ann Vel.: 65fpm
Weight Dry: 46.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 71fpm
Type: Directional	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 60fpm
	Slack-Off Weight:		DP Ann. Vel.: 60fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	T11C,RR1 bit with 3x20 & 1x16 centre jet	0.47m	17.50in	2.00in	J50351	7.50h
2	A675M78XP Mud Motor	9-5/8" Sperry Drill Lobe	9.68m	9.63in	6.14in	9632212	
3	Float Sub	Flt. sub	0.83m	9.43in	2.81in	A253	
4	Stab	IBS	2.59m	9.50in	3.00in	DA9011	
5	X/O	x-o	1.05m	9.50in	2.80in	DA9083	
6	MWD	MWD	2.77m	8.00in	1.92in		
7	MWD	MWD	3.08m	8.06in	1.92in	10562336	
8	8in DC	3x8"dc's	27.61m	8.00in	2.81in		
9	X/O	x-o	0.80m	8.00in	2.81in		
10	6.5in DC	1x6-1/2"dc	9.05m	6.50in	2.81in		
11	Drilling Jars	Jars	9.95m	6.50in	2.75in	17602030	7.50h
12	6.5in DC	1x6-1/2"dc	9.42m	6.50in	2.81in		
13	HWDP	9x4-1/2" HWDP	86.05m	4.50in	2.75in		

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
190.20	4.72	115.20	190.0	-3.33	2.48	-3.33	7.08	7.83	115.2	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	1,200.0
KCl	sx	0	0	0	800.0
Salt	sx	0	0	0	0.0
Gel	sx	0	48	0	288.0
Potable Water	ltr	0	8000	0	22,000.0
Rig Fuel	ltr	0	4700	0	37,500.0
Camp Fuel	ltr	0	350	0	5,250.0



## Pumps

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	110	97	280	1250			192.0	8.85
2	National - 8P-80	5.50								8.85
3	National - 8P-80	5.50								8.85
4	IDECO - T1000	6.00	110	97	330	1250			192.0	8.85

## HSE Summary

Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	29 Jul 2006	0 Days	Incident free days	Incident free days = 362
ToolBox Talk	29 Jul 2006	0 Days	Discussion on daily rig up	Discuss proposed daily rig up operations. Correct PPE to be worn. Discuss making up BHA. Keep alert. Give clear hand signals to tugger operators. Be aware of Fork Lift operations

30 Jul 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	320.0m	Current Hole Size:	17.500in
Rig:	Ensign 32	Midnight Depth (TVD):	314.7m	Casing O.D.:	20.000in
Prognosed TD:	2350.0m	Progress:	128.0m	Shoe TVD:	60.0m
RT-GL:	5.90m	Days From Spud:	1.81	F.I.T. / L.O.T.	/
GL Elev.:	2.71m	Days On Well:	18.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 31 Jul 2006 :		WOC f/ 04:00hrs			
Planned Operations for 31 Jul 2006 :		WOC, back out Landing jnt., rig down riser, install BOP, pressure test same & surface equipment, set wear bushing, RIH 12-1/4" BHA			

**Summary of Period 0000 to 2400 Hrs**

Drill to 320m, circ. wiper to shoe, circ., POOH, rig & run 13-3/8" casing, circ. csg for cmt. job

**Operations For Period 0000 Hrs to 2400 Hrs on 30 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SH	P	DM	0000	0500	5.00	320.0m	Drill f/ 192m to 320m. ( TVD = 314.7m ) ( survey @ 303.7m, 23.67 inc, 118.68 AZI )
SH	P	CHC	0500	0600	1.00	320.0m	Sweep 10bbls Hi Vis, circ. hole clean for wiper to shoe, spot 10 bbls Hi Vis
SC	P	WT	0600	0800	2.00	320.0m	Wiper to shoe, hole good, RIH, to 307m
SC	P	RW	0800	0830	0.50	320.0m	Wash f/ 307m to 320m, last 5m fill
SC	P	CHC	0830	0900	0.50	320.0m	Circ. hole clean
SC	P	TO	0900	1030	1.50	320.0m	POOH to bit
SC	P	HBHA	1030	1300	2.50	320.0m	Break & lay out, jewelry, MWD etc., back out IBS f/ Down hole motor, clear rig floor
SC	P	RRC	1300	1600	3.00	320.0m	Install bale adapters & additional bales & elev. to Top Drive bales to check operation & clearance, ok, rig down Ensign bales f/ Tesco bales. Rig to run 13-3/8" surface casing, hold safety meeting & JSA
SC	P	RC	1600	1900	3.00	320.0m	Pick up jnt. #1, slip solid master bushing over pin end of 13-3/8" csg., raise bushing with tugger to 5m above rig floor, install #2 solid centralisers with stop rings, make up shoe, fill with mud, check flow thru., lower master bushing into rotory table, make up flt. collar, fill with mud, check flow thru, cont. run 13-3/8" csg. to shoe @ 60m
SC	P	RC	1900	1930	0.50	320.0m	Break circ. while rigging up bale adapter plates to second set of extension bales to allow enough clearance to install circulating swedge & Halliburton cmt. head.
SC	P	RC	1930	2330	4.00	320.0m	Cont. run 28 jnts x 13-3/8" x 54.5 lb/ft x J55 x BTC casing to 317m, shoe depth ( lost 20bbls to formation while running casing)
SC	P	CIC	2330	2400	0.50	320.0m	Circ. prior to cement job

**Operations For Period 0000 Hrs to 0600 Hrs on 31 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC		CIC	0000	0100	1.00	320.0m	Circ. csg., pump 50bbls water ahead with rig pump
SC		HU	0100	0130	0.50	320.0m	Head up Halliburton
SC		HU	0130	0200	0.50	320.0m	Pump 5bbls water ahead, pressure test lines to 4000psi, pump 5bbls water spacer, release Bottom plug, pump 5bbls ahead, remove Hali. cmt. head cap & load Top plug.
SC		CMC	0200	0400	2.00	320.0m	Mix & pump 161bbls of 12.5ppg Lead cmt., followed by 90bbls of 15.8ppg Tail cmt., release Top plug, displace 158bbls water @ 4.7bpm, bump plug w/ 300psi, pressure up csg. to 1200psi for 10 minutes, good test, bleed back 1-1/2bbls, float holding
SC		WOC	0400	0600	2.00	320.0m	(IN PROGRESS) Wait On Cement.

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
							Perform Cmt. Top Up Job. Samples still soft after after 4hrs

### General Comments

Comments	Rig Requirements
29-07-06, Willox, transport water to camp & Turkeys nest, = 3hrs 30-07-06, Willox, transport water to camp & Turkeys nest = 15-1/2hrs	

### WBM Data

Mud Type:	Spud Mud	Viscosity:	68sec/qt	API FL Loss:	8.5cc	CI	7000	Solids:	4.7
Depth:	320.0m	PV:	15cp	Filter Cake:	2/32nd"	K+:	1%	H2O:	94%
Time:	8:30	YP:	34lb/100ft <sup>2</sup>	HTHP FL:		Hard/Ca:	80	Oil:	
Weight:	9.10ppg	Gels 10s/10m:	20 / 25	HTHP Cake:		MBT:	15	Sand:	3
Temp:	52.0F°	Fann (3/6/100):				PM:	0.3	pH:	9.5
			18 / 20 / 37			PF:	0.1	PHPA:	

Comment

### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	1157.0bbl	Losses	294.0bbl	Comment
Centrifuge	DE 1000		Active	380.0bbl	Downhole		
Centrifuge	DE 1000		Mixing	367.0bbl	Surf. + Equip.	294.0bbl	
Shaker 1	Derrick	Pyramid x 84	Hole	410.0bbl	Dumped		
Shaker 1	Derrick	Pyramid x 84	Slug		De-Sander		
Shaker 2	Derrick	Pyramid x 84	Reserve	0.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid x 84	Kill		Centrifuge		

Bit # 1			Wear	I	O1	D	L	B	G	O2	R
				0	0	NO	A	0	I	RR	BHA
Size:	17.500in	IADC#:	115 M	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run		
Mfr:	REED	WOB (avg):	10.0klb	No.	Size	Progress:			Cum. Progress:		
Type:	mt	RPM (avg):	85	1	16/32nd"	On Bottom Time:			Cum. On Btm Time:		
Serial #:	J50351	F.Rate:	625gpm	3	20/32nd"	IADC Time:			Cum. IADC Time:		
Depth In:	100.0m	SPP:	600psi			Total Revs:			Cum. Total Revs:		
Depth Out:	120.0m	HSI:				ROP (avg):			Overall ROP (avg):		
Bit Model:	T11C	TFA:	1.117			N/A			44.44 m/hr		

Bit # RR1			Wear	I	O1	D	L	B	G	O2	R
				1	1	NO	A	0	I	RR	TD
Size:	17.500in	IADC#:	115M	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run		
Mfr:	REED	WOB (avg):	10.0klb	No.	Size	Progress:			Cum. Progress:		
Type:	mt	RPM (avg):	50	1	16/32nd"	On Bottom Time:			Cum. On Btm Time:		
Serial #:	J50351	F.Rate:	625gpm	3	20/32nd"	IADC Time:			Cum. IADC Time:		
Depth In:	120.0m	SPP:	1250psi			Total Revs:			Cum. Total Revs:		
Depth Out:	320.0m	HSI:				ROP (avg):			Overall ROP (avg):		
Bit Model:	T11C	TFA:	1.117			58.18 m/hr			67.80 m/hr		

**BHA # 1**

Wt. Below Jars Dry: 7.0klb	Length: 120.0m	Torque (max):	DC (1) Ann Vel.: 58fpm
Weight Dry: 11.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 63fpm
Type: Pendalum	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 54fpm
	Slack-Off Weight:		DP Ann. Vel.: 0fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	T11C bit, with 3x20 jets & 1x16 centre jet	0.47m	17.50in		J50351	1.00h
2	Stab	17-1/2" stab	2.59m			DA 9011	1.00h
3	Bit Sub	Bit sub	0.92m				1.00h
4	8in DC	3 x 8" dc's	27.61m	8.00in	3.00in		1.00h
5	X/Over	x-o	0.80m		2.75in		1.00h
6	6.5in DC	1x6-1/2" dc	9.05m	6.50in	2.75in		1.00h
7	Drilling Jars	Drilling Jars	9.95m	6.50in	2.75in	1760-2031	1.00h
8	6.5in DC	1x6-1/2"dc	9.42m	6.50in	2.75in		1.00h
9	HWDP	HWDP x 4.5"	59.19m	4.50in	2.88in		1.00h

**BHA # 2**

Wt. Below Jars Dry: 29.0klb	Length: 163.4m	Torque (max): 1420ft-lbs	DC (1) Ann Vel.: 58fpm
Weight Dry: 46.0klb	String Weight: 68.0klb	Torque On Btm: 1400ft-lbs	DC (2) Ann Vel.: 63fpm
Type: Directional	Pick-Up Weight: 70.0klb	Torque Off Btm: 1300ft-lbs	HWDP Ann. Vel.: 54fpm
	Slack-Off Weight: 66.0klb		DP Ann. Vel.: 54fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	T11C,RR1 bit with 3x20 & 1x16 centre jet	0.47m	17.50in	2.00in	J50351	7.50h
2	A675M78XP Mud Motor	9-5/8" Sperry Drill Lobe	9.68m	9.63in	6.14in	9632212	
3	Float Sub	Flt. sub	0.83m	9.43in	2.81in	A253	
4	Stab	IBS	2.59m	9.50in	3.00in	DA9011	
5	X/O	x-o	1.05m	9.50in	2.80in	DA9083	
6	MWD	MWD	2.77m	8.00in	1.92in		
7	MWD	MWD	3.08m	8.06in	1.92in	10562336	
8	8in DC	3x8"dc's	27.61m	8.00in	2.81in		
9	X/O	x-o	0.80m	8.00in	2.81in		
10	6.5in DC	1x6-1/2"dc	9.05m	6.50in	2.81in		
11	Drilling Jars	Jars	9.95m	6.50in	2.75in	17602030	7.50h
12	6.5in DC	1x6-1/2"dc	9.42m	6.50in	2.81in		
13	HWDP	9x4-1/2" HWDP	86.05m	4.50in	2.75in		

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
190.20	4.72	115.20	190.0	-3.33	2.48	-3.33	7.08	7.83	115.2	MWD
303.70	23.67	118.68	299.5	-16.38	16.71	-16.38	31.52	35.52	117.5	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	1,200.0
KCl	sx	0	80	0	720.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	288.0
Potable Water	ltr	42000	8000	0	56,000.0
Rig Fuel	ltr	0	4500	0	33,000.0
Camp Fuel	ltr	0	350	0	4,900.0

<b>Pumps</b>										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	110	97	280	1250			320.0	8.90
2	National - 8P-80	5.50								
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	100	97	300	1200			320.0	8.90

<b>HSE Summary</b>				
Events	Date of Last	Days Since	Description	Remarks
BOP Drill	30 Jul 2006	0 Days	CFS for the week	Be alert handling the larger type csg. Keep hands clear of pinch points. Look up when operating the tugger. Watch out for tugger hanging up in Mast. Keep clear of the csg. coming thru. the "V" door. Only one operator to run power tong. If he wants a break be sure he knows how to operate the tong. . Discuss laying out BHA. Keep alert. Give clear hand signals to tugger operators. Be aware of Fork Lift operations
Safety Meeting	30 Jul 2006	0 Days	Rig & run 13-3/8" csg.	
ToolBox Talk	30 Jul 2006	0 Days	Handle BHA	

31 Jul 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	320.0m	Current Hole Size:	17.500in
Rig:	Ensign 32	Midnight Depth (TVD):	314.7m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	2.81	F.I.T. / L.O.T.	/
GL Elev.:	2.71m	Days On Well:	19.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 01 Aug 2006 :				Pressure test BOP	
Planned Operations for 01 Aug 2006 :				Complete pressure testing BOP, run wear bushing, Perform ESD, make up 42 stands D.P. & rack in Mast, make up 12-1/4" directional BHA, RIH, drill float, shoe, rat hole, 3m of new hole, LOT, drill ahead	

**Summary of Period 0000 to 2400 Hrs**

Circ., Head up Halliburton, mix, pump & cmt. 13-3/8" csg., WOC, back out Landing jnt., rig down riser, install Braden Head, rig & run BOP, nipple up same

**Operations For Period 0000 Hrs to 2400 Hrs on 31 Jul 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC	P	CIC	0000	0100	1.00	320.0m	Circ. csg., pump 50bbls water ahead with rig pump
SC	P	HU	0100	0130	0.50	320.0m	Head up Halliburton
SC	P	HU	0130	0200	0.50	320.0m	Pump 5bbls water ahead, pressure test lines to 4000psi, pump 5bbls water spacer, release Bottom plug, pump 5bbls ahead, remove Hali. cmt. head cap & load Top plug.
SC	P	CMC	0200	0400	2.00	320.0m	Mix & pump 161bbls of 12.5ppg Lead cmt., followed by 90bbls of 15.8ppg Tail cmt., release Top plug, displace 158bbls water @ 4.7bpm, bump plug w/ 300psi, pressure up csg. to 1200psi for 10 minutes, good test, bleed back 1-1/2bbls, float holding
SC	P	WOC	0400	0930	5.50	320.0m	Wait On Cement. Perform Cmt. Top Up Job. Samples still soft after after 4hrs
SC	P	RD	0930	1100	1.50	320.0m	Slack off csg., ok, break off cement head, back out Landing Jnt., lay out same, lay out Riser, cut lower section of conductor, lay out same
SC	P	RU	1100	1630	5.50	320.0m	Pick up B.H. on tugger, position same on csg., make up Braden Head with chain tong, clear rig floor of csg. running equip., rig down double Bales & adapter plates, make up masher tool to a single 6-1/2" d.c., torque up Braden Head, break off masher & lay out same & dc. Cement level dropped off between 20" conductor & 13-3/8" csg., Run weight on string line, level dropped to 24met. (17bbls), run string line & plumb bob f/ rig floor to centre 13-3/8" csg (wind & rain effecting working conditions)
SC	U	RU	1630	1700	0.50	320.0m	Centre csg. & Braden Head w/ plumb bob, weld supports brackets on 20" conductor to centre B.H. with rotory table. (Halliburton to perform Top Up cmt. job, tomorrow)
SC	P	NUB	1700	2400	7.00	320.0m	Write up JHA on nippling up BOP, attach tugger to #2 spacer spools, lift same, install ring gasket, land spools, install studs & nuts, torque up same, Trolley over BOP, land same on spools, nipple up same. Install Bell nipple, angle to Flow line, not correct, remove Bell nipple for modification Cont. mix new KCL / PHPA mud

**Operations For Period 0000 Hrs to 0600 Hrs on 01 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC		NUB	0000	0300	3.00	320.0m	Cont. modifications to Bell nipple, nipple up Koomey lines, function test same, install Kill line, install HCR, load drill pipe onto racks

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC		NUB	0300	0430	1.50	320.0m	Pressure test casing to 200psi low > 1200psi to confirm B.H. connection, install Bell nipple & Flow line,
SC		NUB	0430	0600	1.50	320.0m	(IN PROGRESS) Make up Combination tool, RIH set same, pressure test BOP to 200psi low & 1700psi high, leak between spacer spools in seal area @ 1700 psi, re-torque up studs & nuts, cont. w/ pressure test

#### General Comments

Comments	Rig Requirements
Haliburton; Cement job for 13-3/8" csg. = \$ 55,709:00	Premium Casing Equipment arrived @ Rig
Willox; Transport water to Turkeys Nest. = 16 hrs. ( mix new KCL / PHPA mud sys.)	

#### WBM Data

Mud Type: KCL PHPA	Viscosity:	API FL Loss:	CI	Solids: 4.7
Depth:	PV:	Filter Cake:	K+:	H2O: 94%
Weight:	Yield 10s/10m: /	HTHP Cake:	Hard/Ca:	Sand: 3
Temp:	Fann (3/6/100): //	PM:	PPH:	PPH:
Comment	Mixing new mud			

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	558.0bbl	Losses	0.0bbl	Comment
Centrifuge	DE 1000		Active		Downhole		Cont. mixing new KCL / PHPA mud
Centrifuge	DE 1000		Mixing	558.0bbl	Surf. + Equip.	0.0bbl	
Shaker 1	Derrick	Pyramid x 84	Hole		Dumped		
Shaker 1	Derrick	Pyramid x 140	Slug		De-Sander		
Shaker 2	Derrick	Pyramid x 84	Reserve		De-Silter		
Shaker 2	Derrick	Pyramid x 84	Kill		Centrifuge		

#### BHA # 2

Wt. Below Jars Dry: 29.0klb	Length: 163.4m	Torque (max): 1420ft-lbs	DC (1) Ann Vel.: 58fpm
Weight Dry: 46.0klb	String Weight: 68.0klb	Torque On Btm: 1400ft-lbs	DC (2) Ann Vel.: 63fpm
Type: Directional	Pick-Up Weight: 70.0klb	Torque Off Btm: 1300ft-lbs	HWDP Ann. Vel.: 54fpm
	Slack-Off Weight: 66.0klb		DP Ann. Vel.: 54fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	T11C,RR1 bit with 3x20 & 1x16 centre jet	0.47m	17.50in	2.00in	J50351	7.50h
2	A675M78XP Mud Motor	9-5/8" Sperry Drill Lobe	9.68m	9.63in	6.14in	9632212	
3	Float Sub	Flt. sub	0.83m	9.43in	2.81in	A253	
4	Stab	IBS	2.59m	9.50in	3.00in	DA9011	
5	X/O	x-o	1.05m	9.50in	2.80in	DA9083	
6	MWD	MWD	2.77m	8.00in	1.92in		
7	MWD	MWD	3.08m	8.06in	1.92in	10562336	7.50h
8	8in DC	3x8"dc's	27.61m	8.00in	2.81in		
9	X/O	x-o	0.80m	8.00in	2.81in		
10	6.5in DC	1x6-1/2"dc	9.05m	6.50in	2.81in		
11	Drilling Jars	Jars	9.95m	6.50in	2.75in	17602030	
12	6.5in DC	1x6-1/2"dc	9.42m	6.50in	2.81in		
13	HWDP	9x4-1/2" HWDP	86.05m	4.50in	2.75in		



Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
190.20	4.72	115.20	-	-	-	-	-	7.83	115.2	MWD
303.70	23.67	118.68	190.0	-3.33	2.48	-3.33	7.08	35.52	117.5	MWD
			299.5	-16.38	16.71	-16.38	31.52			

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	0	0	1,200.0	
KCl	sx	0	240	0	480.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	288.0	
Potable Water	ltr	0	8000	0	48,000.0	
Rig Fuel	ltr	0	2500	0	30,500.0	
Camp Fuel	ltr	0	350	0	4,550.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	110	97	280	1250			320.0	8.90
2	National - 8P-80	5.50								
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	100	97	300	1200			320.0	8.90

HSE Summary					
Events	Date of Last	Days Since	Description	Remarks	
JSA	31 Jul 2006	0 Days	Rig & run BOP	Be alert handling BOP. Keep hands clear of pinch points. Correct PPE to be worn. Incident free days = 364	
LTI/MTI incident free days	31 Jul 2006	0 Days	Incident free days		



01 Aug 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	320.0m	Current Hole Size:	17.500in
Rig:	Ensign 32	Midnight Depth (TVD):	314.7m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	3.81	F.I.T. / L.O.T.	/
GL Elev.:	2.71m	Days On Well:	20.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 02 Aug 2006 : Cont. to make up stands of D.P. & rack in Mast, estimate P.U. BHA by 0700hrs					
Planned Operations for 02 Aug 2006 : Pick up 12-1/4" BHA, RIH, drill shoe track, rat hole & 3m new hole, switch to KCL / PHPA mud, circ., L.O.T., drill ahead					

#### Summary of Period 0000 to 2400 Hrs

Complete nipple up on BOP, pressure test same, pressure test surface equip., Safety meeting w/ crew change personal, muster drill & perform E.S.D., all functions ok, JSA on p.u. drill pipe, make up stands of drill pipe & rack in Mast

#### Operations For Period 0000 Hrs to 2400 Hrs on 01 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC	P	NUB	0000	0300	3.00	320.0m	Cont. modifications to Bell nipple, nipple up Koomey lines, function test same, install Kill line, install HCR, load drill pipe onto racks, clean same
SC	P	NUB	0300	0430	1.50	320.0m	Pressure test casing to 200psi low > 1200psi to confirm B.H. connection, install Bell nipple & Flow line,
SC	P	NUB	0430	0900	4.50	320.0m	Make up Combination tool, RIH set same, pressure test BOP to 200psi low & 1700psi high, leak between spacer spools in seal area @ 1700 psi, re-torque up studs & nuts, cont. w/ pressure test. (Perform BOP accumulator test) ( short change w/crews today)
SC	P	NUB	0900	1000	1.00	320.0m	Pull Combination Tool, reverse tool, make up wear bushing, run & set same, POOH, lay out tool
SC	P	NUB	1000	1400	4.00	320.0m	Pressure test surface equipment. ( Haliburton performed 13bbl, top up job between 13-3/8" csg. & 20" conductor, filled csg. to cellar )
SC	P	SM	1400	1500	1.00	320.0m	Hold Safety Meeting & Toolbox talk with new on coming crew & all personal
SC	P	RMT	1500	1600	1.00	320.0m	"Hold Muster Drill" " Test Emergency Shut Downs " all ok, all functions performed with in seconds. Restart Generators, rig back on line
SC	P	SM	1600	1630	0.50	320.0m	New crew, Review JSA, Toolbox talk, regarding making up stands of drill pipe & racking in Mast
SC	P	HBHA	1630	2200	5.50	320.0m	Pick up singles D.P., make up stands & rack in Mast
SC	P	PT	2200	2230	0.50	320.0m	Pressure test Geo Span on Sperry Sun equipment
SC	P	HBHA	2230	2400	1.50	320.0m	Cont. pick up singles D.P., make up stands & rack in Mast

#### Operations For Period 0000 Hrs to 0600 Hrs on 02 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC		HBHA	0000	0600	6.00	320.0m	Cont. pick up singles drill pipe, make up & rack std's in Mast ( total in Mast = 52 stands)

#### General Comments

Comments	Rig Requirements
Performed E.S.D., all operations ok, fuctions performed with in seconds	Received 1 x 4-1/2" Buttress, Halliburton BTC float shoe = \$ 1198:00

WBM Data									
Mud Type:	KCL PHPA	Viscosity:	90sec/qt	API FL Loss:	7.0cc	CI	25000	Solids:	5.96
Depth:	320.0m	PV:	17cp	Filter Cake:	1/32nd"	K+:	5%	H2O:	93%
Time:	17:30	YP:	21lb/100ft²	HTHP FL:		Hard/Ca:		Oil:	
Weight:	8.70ppg	Gels 10s/10m:	8 / 11	HTHP Cake:		MBT:		Sand:	0
Temp:	52.0F°	Fann (3/6/100):	5 / 8 / 22			PM:		pH:	8.5
						PF:	0	PHPA:	
Comment: Continue to shear new mud									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	657.0bbl	Losses	0.0bbl	Comment		
Centrifuge	DE 1000		Active	657.0bbl	Downhole		Continue to shear new mud		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	0.0bbl			
Shaker 1	Derrick	Pyramid x 140	Hole		Dumped				
Shaker 1	Derrick	Pyramid x 140	Slug		De-Sander				
Shaker 2	Derrick	Pyramid x 84	Reserve		De-Silter				
Shaker 2	Derrick	Pyramid x 84	Kill		Centrifuge				

Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
190.20	4.72	115.20	190.0	-3.33	2.48	-3.33	7.08	7.83	115.2	MWD
303.70	23.67	118.68	299.5	-16.38	16.71	-16.38	31.52	35.52	117.5	MWD

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	0	0	1,200.0	
KCl	sx	0	60	0	420.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	288.0	
Potable Water	ltr	0	11000	0	37,000.0	
Rig Fuel	ltr	14000	2500	0	42,000.0	
Camp Fuel	ltr	0	350	0	4,200.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	110	97	280	1250			320.0	8.90
2	National - 8P-80	5.50								
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	100	97	300	1200			320.0	8.90

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Emergency Shutdown	01 Aug 2006	0 Days	E.S.D.	Performed E.S.D., all operations shut down with in seconds. No problems
JSA	01 Aug 2006	0 Days	Run BOP	Be alert handling BOP. Keep hands clear of pinch points. Correct PPE to be worn.

02 Aug 2006

From : Brian Marriott  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	323.0m	Current Hole Size:	12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	318.0m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	3.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	4.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	21.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 03 Aug 2006 : Drill steer & survey thru. 458m (TVD 430.86)					
Planned Operations for 03 Aug 2006 : Drill ahead 12-1/4" directional hole to 625m, circ., POOH to run Geo-Pilot					

**Summary of Period 0000 to 2400 Hrs**

Pick up a total of 42 std's D.P. & rack in Mast, make up Sperry Sun directional BHA, calibrate & test same, cont. RIH, tag cmt. @ 303m, drill cmt., shoe track & rat hole to 320m, with water, switch to new KCL/PHPA mud, drill new hole f/ 320m to 323m, circ. & condition mud, pull inside shoe, perform Leak Off Test, equiv. to 20.00ppg, drill ahead f/ 323m

**Operations For Period 0000 Hrs to 2400 Hrs on 02 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
SC	P	HBHA	0000	0700	7.00	320.0m	Cont. pick up singles drill pipe, make up & rack std's in Mast ( total in Mast = 52 stands)
SC	P	HBHA	0700	0730	0.50	320.0m	Sperry Sun calibrate Drawworks / blocks
SC	P	RS	0730	0900	1.50	320.0m	Rig Service, raise JSA due to Top Drive addition
SC	P	PT	0900	1000	1.00	320.0m	nipple up x-o's, tighten break on Grey stab valve to pressure test same, ok, break down x-o's
SC	P	HBHA	1000	1430	4.50	320.0m	Raise JSA, make up 12-1/4" Sperry directional BHA, test MWD tools, failed
SC	P	RO	1430	1530	1.00	320.0m	Repair MWD connection & re-test, ok
SC	P	HBHA	1530	1630	1.00	320.0m	Cont. RIH to HWDP
SC	P	PT	1630	1700	0.50	320.0m	Shallow pulse test MWD
SC	P	TI	1700	2000	3.00	320.0m	Cont. RIH f/ HWDP, tag cmt. @ 303m. pick up off bottom
SC	P	SM	2000	2030	0.50	320.0m	Simulate well control drill, shut in well, close annular, sound alarm, close pipe rams, all non essential personal off the rig floor, muster checker checked off personal. Returned all the drilling crew to the rig floor & discussed how the well is controlled. circ. with water, pump thru, HCR, choke manifold, & Poor Boy, observe returns @ Poor Boy, end of drill, return manifold to drilling mode, clear rig floor, open rams & Annular Note; Problem with stroke counter on Swaco choke, elect. to repair before drilling out shoe
SC	P	RR	2030	2100	0.50	320.0m	Suction line leaking on #4 mud pump, repair same
SC	P	DFS	2100	2300	2.00	320.0m	Drill cement f/ 303m to float collar @ 305m, shoe track & Rat hole to T.D. @ 320m
IH	P	DM	2300	2330	0.50	323.0m	Switch to mud, drill f/ 320m to 323m
IH	P	LOT	2330	2400	0.50	323.0m	LOT w/ 8.8ppg = 600psi, EMW = 20ppg

**Operations For Period 0000 Hrs to 0600 Hrs on 03 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		DM	0000	0600	6.00	458.0m	Drill, steer & survey 12-1/4" hole f/ 323m to 458m ( TVD = 430.86)

**General Comments**

Comments	Rig Requirements
	Off load 9-5/8" csg, remainder due Thursday

**WBM Data**

Mud Type:	KCI PHPA	Viscosity:	48sec/qt	API FL Loss:	8.5cc	CI	26000	Solids:	1.2
Depth:	323.0m	PV:	10cp	Filter Cake:	1/32nd"	K+:	5%	H2O:	98%
Time:	23:30	YP:	10lb/100ft <sup>2</sup>	HTHP FL:		Hard/Ca:	250	Oil:	
Weight:	8.80ppg	Gels 10s/10m:	3 / 5	HTHP Cake:		MBT:		Sand:	0
Temp:	52.0F°	Fann (3/6/100):				PM:		pH:	8.5
			4 / 6 / 12			PF:	0.35	PHPA:	0.70ppb

Comment Drilled out cement with water. Displaced to new mud and drilled 3m of new hole. Started adding glycol once drilling steadily.

**Shakers, Volumes and Losses Data**

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	669.0bbl	Losses	0.0bbl	Comment
Centrifuge	DE 1000		Active	435.0bbl	Downhole		
Centrifuge	DE 1000		Mixing	93.0bbl	Surf. + Equip.	0.0bbl	
Shaker 1	Derrick	Pyramid x 140	Hole	141.0bbl	Dumped		
Shaker 1	Derrick	Pyramid x 140	Slug		De-Sander		
Shaker 2	Derrick	Pyramid x 84	Reserve		De-Silter		
Shaker 2	Derrick	Pyramid x 84	Kill		Centrifuge		

**Bit # 3**

Size:	12.250in	IADC#:	115	Nozzles		Drilled over last 24 hrs				Calculated over Bit Run			
Mfr:	REED	WOB (avg):	7.0klb	No.	Size	Progress: 3.0m				Cum. Progress: 3.0m			
Type:	Rock	RPM (avg):	75	1	12/32nd"	On Bottom Time: 0.17h				Cum. On Btm Time: 0.17h			
Serial #:	D80027	F.Rate:	432gpm	3	20/32nd"	IADC Time: 0.50h				Cum. IADC Time: 0.50h			
Depth In:	320.0m	SPP:	1050psi			Total Revs:				Cum. Total Revs: 0			
Depth Out:		HSI:				ROP (avg): 17.65 m/hr				Overall ROP (avg): 17.65 m/hr			
Bit Model:	T11C	TFA:	1.031										

**BHA # 3**

Wt. Below Jars Dry:	27.0klb	Length:	165.7m	Torque (max):	2000ft-lbs	DC (1) Ann Vel.:	98fpm
Weight Dry:	43.0klb	String Weight:	58.0klb	Torque On Btm:	2000ft-lbs	DC (2) Ann Vel.:	123fpm
Type:	Directional, down hole motor	Pick-Up Weight:	60.0klb	Torque Off Btm:	1800ft-lbs	HWDP Ann. Vel.:	82fpm
		Slack-Off Weight:	56.0klb			DP Ann. Vel.:	82fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	Tricone, w/ Geo-Pilot sleeve	0.82m		2.00in	D80027	0.50h
2	A675M78XP Mud Motor	8" Sperry Drill Lobe 6/7-4.0	8.22m	8.00in	5.25in	800168	
3	Float Sub	Float sub	0.65m	8.00in	2.81in	91506	
4	Stab	11-7/16" IB stab	1.89m		3.00in	7080449	
5	MWD Tool	8" Dir	2.77m	8.00in	1.92in	10603354	
6	MWD Tool	8" RLL	5.36m	8.00in	1.92in	DM90109064	
7	MWD Tool	8" HOC	3.08m	8.00in	1.92in	10562336	
8	Drill Collar	3x8"dc's	27.61m	8.00in	2.88in		
9	X/O	X-O	0.80m		3.00in		
10	Drill Collar	1x6-1/2" dc	9.05m	6.50in	2.81in		
11	Drilling Jars	Jars	9.95m	6.50in	2.75in	17602031	8.00h
12	Drill Collar	1x6-1/2"dc	9.42m	6.50in	2.81in		
13	HWDP	9xHWDP	86.05m	4.50in	2.75in		

Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
190.20	4.72	115.20	190.0	-3.33	2.48	-3.33	7.08	7.83	115.2	MWD
303.70	23.67	118.68	299.5	-16.38	16.71	-16.38	31.52	35.52	117.5	MWD

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	0	0	1,200.0	
KCl	sx	0	0	0	420.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	288.0	
Potable Water	ltr	0	6000	0	31,000.0	
Rig Fuel	ltr	0	2500	0	39,500.0	
Camp Fuel	ltr	0	350	0	3,850.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	1050	60	120	323.0	8.90
2	National - 8P-80	5.50	85	97	216	1050	60	120	323.0	8.90
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00		97						

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
BOP Drill	02 Aug 2006	0 Days	Simulated well control BOP Drill	BOP drill, shut in well, sound alarm, muster personal. Drilling crew returned to rig floor to discuss & observe the operation of circulating out a kick. Start pump & circ. thru. choke manifold, back thru. Poor Boy
JSA	02 Aug 2006	0 Days	Rig service	Be alert running winch. Keep hands clear of pinch points. Correct PPE to be worn. Raise new JSA, due to additional Top Drive being fitted

**03 Aug 2006**

**From : Troy Reid**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	636.0m	Current Hole Size:	12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	525.0m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	5.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	22.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 04 Aug 2006 : Picking up 4 1/2 HWDP and running in hole to 13 3/8 casing shoe					
Planned Operations for 04 Aug 2006 : Continue to drill 12 1/4 hole f/- 636m with geo pilot . Drift and measure 9 5/8 casing.					

Summary of Period 0000 to 2400 Hrs					
Drill, steer & survey 12-1/4" hole f/ 323m to 636m ( Survey @ 622.250= 70.37deg., AZI = 121.24) Circulate and condition well. Flow check .TRPO f/- 636m to 13 3/8 casing shoe. Flow check at 13 3/8 casing shoe (static) Continue to TRPO to BHA. 636.0m Lay out 6 1/2 DC and 6 1/2 drilling jars . Rack back 8 1/2 DC. Down load MWD data Lay out Bit# 3 and Mud Motor. Pick up geo pilot tool.					

Formation Tops					
Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

**Operations For Period 0000 Hrs to 2400 Hrs on 03 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	DM	0000	1500	15.00	636.0m	Drill, steer & survey 12-1/4" hole f/ 323m to 636m ( Survey @ 622.250= 70.37deg., AZI = 121.24)
IH	P	CHC	1500	1630	1.50	636.0m	Circulate and condition well.
IH	P	TO	1630	1800	1.50	636.0m	Flow check .TRPO f/- 636m to 13 3/8 casing shoe. Flow check at 13 3/8 casing shoe (static) Continue to TRPO to BHA.
IH	P	HBHA	1800	1930	1.50	636.0m	Lay out 6 1/2 DC and 6 1/2 drilling jars . Rack back 8 1/2 DC.
IH	P	HBHA	1930	2000	0.50	636.0m	Down load MWD data
IH	P	HBHA	2000	2200	2.00	636.0m	Lay out Bit# 3 and Mud Motor. Check guage on all stabilizers. Lay out Motor with crane.
IH	P	HBHA	2200	2400	2.00	636.0m	Pick up Geo pilot with crane. Pick up and m/up MWD assy as per directional drillers instructions.

**Operations For Period 0000 Hrs to 0600 Hrs on 04 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		HBHA	0000	0030	0.50	636.0m	Continue to M/UP MWD Tools
IH		HBHA	0030	0230	2.00	636.0m	Attempt to install bit .Sperry's Bit breaker doesnt fit Ensign 32 rotary table. Welder had to modify. Hold Tap root investigation while modifying bit breaker.
IH		HBHA	0230	0430	2.00	636.0m	Continue to m/up 12 1/4 BHA # 4.
IH		HBHA	0430	0500	0.50	636.0m	Shallow test MWD . Geo Span skid on surface no working.
IH		HBHA	0500	0600	1.00	636.0m	Pick up 6 1/2 drilling jars and extra 4 1/2 HWDP



### General Comments

Comments	Rig Requirements
Back loaded 4 x porta loo, Recieved 3 x trucks og 9 5/8 casing. Recieved 2 x trucks mud chemicals. Dyers crane on site 16:45 for geo pilot handling.	4 1/2 " elevators not latching correctly

### WBM Data

Mud Type: KCL PHPA/Glycol	Viscosity: 47sec/qt	API FL Loss: 3.8cc	CI	28000	Solids: 3.2
Depth: 636.0m	PV: 15cp	Filter Cake: 1/32nd"	K+:	6%	H2O: 94%
Time: 21:00	YP: 24lb/100ft²	HTHP FL:	Hard/Ca:	360	Oil:
Weight: 9.10ppg	Gels 10s/10m: 9 / 12	HTHP Cake:	MBT:		Sand: .5
Temp: 90.0F°	Fann (3/6/100):		PM:		pH: 9
	6 / 10 / 23		PF:	0.05	PHPA: 0.70ppb

Comment Glycol 16 drums. Treated mud with KCL/Bacide/Baracarb.

### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	656.0bbl	Losses	502.0bbl	Comment
Centrifuge	DE 1000		Active	315.0bbl	Downhole	151.0bbl	Change out shaker screens to 140
Centrifuge	DE 1000		Mixing	152.0bbl	Surf. + Equip.	331.0bbl	
Shaker 1	Derrick	Pyramid x 140	Hole	164.0bbl	Dumped	20.0bbl	
Shaker 1	Derrick	Pyramid x 140	Slug	25.0bbl	De-Sander		
Shaker 2	Derrick	Pyramid x 84	Reserve		De-Silter		
Shaker 2	Derrick	Pyramid x 140	Kill		Centrifuge		

Bit # 3	Wear	I	O1	D	L	B	G	O2	R
		0	0	NO		0	I		BHA
Size: 12.250in	IADC#: 117	Nozzles	Drilled over last 24 hrs			Calculated over Bit Run			
Mfr: REED	WOB (avg): 7.0klb	No. Size	Progress: 0.0m			Cum. Progress: 3.0m			
Type: mt	RPM (avg): 75	7 16/32nd"	On Bottom Time: 9.45h			Cum. On Btm Time: 9.62h			
Serial #: D80027	F.Rate: 432gpm		IADC Time: 12.00h			Cum. IADC Time: 12.50h			
Depth In: 320.0m	SPP: 1050psi		Total Revs:			Cum. Total Revs: 0			
Depth Out: 636.0m	HSI:		ROP (avg): N/A			Overall ROP (avg): 0.31 m/hr			
Bit Model: T11C	TFA: 1.374								

Bit # 4	Wear	I	O1	D	L	B	G	O2	R
Size: 12.250in	IADC#: S322	Nozzles	Drilled over last 24 hrs			Calculated over Bit Run			
Mfr: HYCLOG	WOB (avg):	No. Size	Progress:			Cum. Progress: 0.0m			
Type: p	RPM (avg):	7 16/32nd"	On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #: 213090	F.Rate:		IADC Time:			Cum. IADC Time: 0.00h			
Depth In: 636.0m	SPP:		Total Revs:			Cum. Total Revs: 0			
Depth Out:	HSI:		ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model: RSX516S	TFA: 1.374								

**BHA # 3**

Wt. Below Jars Dry: 27.0klb	Length: 165.7m	Torque (max): 2000ft-lbs	DC (1) Ann Vel.: 98fpm
Weight Dry: 43.0klb	String Weight: 58.0klb	Torque On Btm: 2000ft-lbs	DC (2) Ann Vel.: 123fpm
Type: Directional, down hole motor	Pick-Up Weight: 60.0klb	Torque Off Btm: 1800ft-lbs	HWDP Ann. Vel.: 82fpm
	Slack-Off Weight: 56.0klb		DP Ann. Vel.: 82fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	Tricone, w/ Geo-Pilot sleeve	0.82m		2.00in	D80027	9.45h
2	A675M78XP Mud Motor	8" Sperry Drill Lobe 6/7-4.0	8.22m	8.00in	5.25in	800168	9.45h
3	Float Sub	Float sub	0.65m	8.00in	2.81in	91506	9.45h
4	Stab	11-7/16" IB stab	1.89m		3.00in	7080449	9.45h
5	MWD Tool	8" Dir	2.77m	8.00in	1.92in	10603354	9.45h
6	MWD Tool	8" RLL	5.36m	8.00in	1.92in	DM90109064	9.45h
7	MWD Tool	8" HOC	3.08m	8.00in	1.92in	10562336	9.45h
8	Drill Collar	3x8"dc's	27.61m	8.00in	2.88in		9.45h
9	X/O	X-O	0.80m		3.00in		9.45h
10	Drill Collar	1x6-1/2" dc	9.05m	6.50in	2.81in		9.45h
11	Drilling Jars	Jars	9.95m	6.50in	2.75in	17602031	9.45h
12	Drill Collar	1x6-1/2"dc	9.42m	6.50in	2.81in		9.45h
13	HWDP	9xHWDP	86.05m	4.50in	2.75in		9.45h

**BHA # 4**

Wt. Below Jars Dry:	Length:	Torque (max):	DC (1) Ann Vel.: 123fpm
Weight Dry: 31031.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 153fpm
Type: Rotary steerable	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 82fpm
	Slack-Off Weight:		DP Ann. Vel.: 82fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		1.00m	12.25in		211345	
2	9600 Geo-Pilot		6.61m	9.50in	4.00in	1225083	
3	Flex Non-Mag DC		2.81m	8.00in	3.50in	CP1015763	
4	MWD		5.36m	8.00in	1.92in	DM90109064	
5	MWD		3.08m	8.00in	1.92in	10562336	
6	Roller Reamer		2.01m	12.25in	3.00in	ASH786019	
7	Float Sub		0.65m	8.00in	2.81in	91506	
8	X/O		1.00m	8.00in	2.75in		
9	HWDP		86.05m	4.50in	2.75in		
10	Drilling Jars		9.42m	6.50in	2.75in	12A14234	
11	HWDP		57.17m	4.50in	2.75in		

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
570.64	62.05	120.65	495.9	-99.86	11.10	-99.86	182.76	208.27	118.7	MWD
584.89	64.27	121.30	502.4	-106.41	16.10	-106.41	193.66	220.97	118.8	MWD
598.88	66.35	122.11	508.2	-113.09	15.77	-113.09	204.48	233.67	118.9	MWD
613.58	68.65	121.68	513.8	-120.26	15.88	-120.26	216.01	247.23	119.1	MWD
622.25	70.37	121.24	516.9	-124.50	20.40	-124.50	222.94	255.34	119.2	MWD



Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	60	0	1,140.0
KCl	sx	0	100	0	320.0
Salt	sx	0	0	0	0.0
Gel	sx	0	48	0	240.0
Potable Water	ltr	0	8000	0	23,000.0
Rig Fuel	ltr	0	5500	0	34,000.0
Camp Fuel	ltr	0	350	0	3,500.0

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	1050	60	120	636.0	9.10
2	National - 8P-80	5.50	85	97	216	1500	60	120	636.0	9.10
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	85	97	312	1500			636.0	9.10

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks

**04 Aug 2006**

**From : Troy Reid**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1099.0m	Current Hole Size:	12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	646.0m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	463.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	6.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	23.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 05 Aug 2006 : Continue to drill 12 1/4 hole with rotary steerable assy to 1273m					
Planned Operations for 05 Aug 2006 : Continue to drill 12 1/4 hole with rotary steerable assy to +/- 1606m. Circulate and condition well. TRPO and pick up clean up assy					

#### Summary of Period 0000 to 2400 Hrs

Continue to M/UP MWD Tools  
 Attempt to install bit .Sperry's Bit breaker doesnt fit Ensign 32 rotary table. Welder had to modify.  
 Hold Tap root investigation while modifying bit breaker.  
 Continue to m/up 12 1/4 BHA # 4.  
 Shallow test MWD . Geo Span skid on surface no working.  
 Pick up 6 1/2 drilling jars and extra 4 1/2 HWDP and TRPI to 13 3/8 casing shoe.  
 Change out tong hanging line sheaves.  
 Replace 4 1/2 manual elevators(damaged) with Tesco hydraulic set. Attempt to function no good.regulator valve not working. Replace with second hand one also no go. Repaired manual elevators and reinstall.  
 Continue to RIH from 13 3/8 to 626m wash down to 636m. No hang ups.  
 Break circulation and circulate bottoms to break in Geo pilot tool  
 Continue to drill 12 1/4 hole with rotary steerable assy.f/- 636m to 1099m

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 04 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	HBHA	0000	0030	0.50	636.0m	Continue to M/UP MWD Tools
IH	TP	HBHA	0030	0230	2.00	636.0m	Attempt to install bit .Sperry's Bit breaker doesnt fit Ensign 32 rotary table. Welder had to modify. Hold Tap root investigation while modifying bit breaker.
IH	P	HBHA	0230	0430	2.00	636.0m	Continue to m/up 12 1/4 BHA # 4.
IH	P	HBHA	0430	0500	0.50	636.0m	Shallow test MWD . Geo Span skid on surface no working.
IH	P	HBHA	0500	0630	1.50	636.0m	Pick up 6 1/2 drilling jars and extra 4 1/2 HWDP and TRPI to 13 3/8 casing shoe.
IH	TP	RR	0630	0830	2.00	636.0m	Change out tong hanging line sheaves. Wrote JHA prior to sheave change out.
IH	TP	RR	0830	1030	2.00	636.0m	Replace 4 1/2 manual elevators(damaged) with Tesco hydraulic set. Attempt to function no good.regulator valve not working. Replace with second hand one also no go. Repaired manual elevators and reinstall.
IH	P	TI	1030	1200	1.50	636.0m	Continue to RIH from 13 3/8 to 626m wash down to 636m. No hang ups.
IH	P	CMD	1200	1300	1.00	636.0m	Break circulation and circulate bottoms to break in Geo pilot tool
IH	P	DM	1300	2400	11.00	1099.0m	Continue to drill 12 1/4 hole with rotary steerable assy.f/- 636m to 1099m first 2-3m break in new PDC bit as per D/D instructions. Circulate Work every stand 10mins prior to connection with high RPM to help with hole cleaning.

#### Operations For Period 0000 Hrs to 0600 Hrs on 05 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		DM	0000	0600	6.00	1273.0m	(IN PROGRESS) Continue to drill 12 1/4 hole with Geo pilot steerable assy F/- 1099m to 1273m. Take survey every stand.

#### General Comments

Comments	Rig Requirements
Held JHA prior to changing out tong line sheaves	Tesco elevators failed on rig up. Regulator valve washed out. Repaired ensigns 4 1/2 elevators.

#### WBM Data

Mud Type: KCl PHPA/Glycol	Viscosity: 48sec/qt	API FL Loss: 6.5cc	CI	28000	Solids: 2.9
Depth: 636.0m	PV: 12cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 94%	
Time: 11:00	YP: 21lb/100ft²	HTHP FL: 11.0cc	Hard/Ca: 440	Oil:	
Weight: 9.10ppg	Gels 10s/10m: 7 / 8	HTHP Cake:	MBT: 5	Sand: .8	
Temp:	Fann (3/6/100):		PM:	pH: 9	
	6 / 8 / 20		PF: 0.05	PHPA: 0.70ppb	
Comment Large volumes premix added today to compensate for shaker losses has increased rheology.					

#### WBM Data

Mud Type: KCl PHPA/Polymer/Glycol	Viscosity: 86sec/qt	API FL Loss: 4.0cc	CI	34000	Solids: 3.9
Depth: 1095.0m	PV: 26cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 94%	
Time: 23:45	YP: 50lb/100ft²	HTHP FL: 10.0cc	Hard/Ca: 360	Oil:	
Weight: 9.30ppg	Gels 10s/10m: 10 / 12	HTHP Cake: 2/32nd"	MBT: 5	Sand: 0.9	
Temp: 115.0F°	Fann (3/6/100):		PM:	pH: 8.5	
	12 / 17 / 46		PF: 0.1	PHPA: 1.00ppb	
Comment					

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	874.0bbl	Losses	339.0bbl	Comment
Centrifuge	DE 1000		Active	178.0bbl	Downhole		Changed shaker screens to 210 and 175 but had to reduce back to 140 after heavy losses.
Centrifuge	DE 1000		Mixing		Surf. + Equip.309.0bbl		
Shaker 1	Derrick	Pyramid x 140	Hole	518.0bbl	Dumped		
Shaker 1	Derrick	Pyramid x 140	Slug		De-Sander		
Shaker 2	Derrick	Pyramid x 140	Reserve	178.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid x 140	Kill		Centrifuge 30.0bbl		

#### Bit # 4

Wear	I	O1	D	L	B	G	O2	R
Size: 12.250in	IADC#:	Nozzles	Drilled over last 24 hrs			Calculated over Bit Run		
Mfr: HYCLOG	WOB (avg): 7.0klb	No. Size	Progress: 463.0m			Cum. Progress: 463.0m		
Type: p	RPM (avg): 150	7 16/32nd"	On Bottom Time: 6.14h			Cum. On Btm Time: 6.14h		
Serial #: 211345	F.Rate: 775gpm		IADC Time: 12.00h			Cum. IADC Time: 12.00h		
Depth In: 636.0m	SPP: 2300psi		Total Revs:			Cum. Total Revs: 0		
Depth Out:	HSI:		ROP (avg): 75.41 m/hr			Overall ROP (avg): 75.41 m/hr		
Bit Model: RSX516S	TFA: 1.374							

**BHA # 4**

Wt. Below Jars Dry: 0.0klb	Length: 175.0m	Torque (max): 6300ft-lbs	DC (1) Ann Vel.: 221fpm
Weight Dry: 31031.0klb	String Weight:	Torque On Btm: 6100ft-lbs	DC (2) Ann Vel.: 275fpm
Type: Rotary steerable	Pick-Up Weight:	Torque Off Btm: 5800ft-lbs	HWDP Ann. Vel.: 146fpm
	Slack-Off Weight:		DP Ann. Vel.: 146fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		1.00m	12.25in		211345	36.50h
2	9600 Geo-Pilot		6.61m	9.50in	4.00in	1225083	36.50h
3	Flex Non-Mag DC		2.81m	8.00in	3.50in	CP1015763	36.50h
4	MWD		5.36m	8.00in	1.92in	DM	36.50h
						90109064	
5	MWD		3.08m	8.00in	1.92in	10562336	36.50h
6	Roller Reamer		2.01m	12.25in	3.00in	ASH786019	36.50h
7	Float Sub		0.65m	8.00in	2.81in	91506	23.00h
8	X/O		1.00m	8.00in	2.75in		45.50h
9	HWDP		86.05m	4.50in	2.75in		45.50h
10	Drilling Jars		9.42m	6.50in	2.75in	12A14234	45.50h
11	HWDP		57.17m	4.50in	2.75in		36.50h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
622.25	70.37	121.24	516.9	-124.50	20.40	-124.50	222.94	255.34	119.2	MWD
683.79	71.72	121.17	536.9	-154.66	2.20	-154.66	272.72	313.52	119.6	MWD
770.66	71.98	125.52	563.9	-200.02	4.77	-200.02	341.65	395.90	120.3	MWD
886.43	71.86	122.55	599.9	-261.61	2.44	-261.61	432.84	505.76	121.1	MWD
1002.25	72.51	119.57	635.3	-318.49	2.51	-318.49	527.29	616.01	121.1	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	1,140.0
KCl	sx	0	320	0	0.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	8000	0	15,000.0
Rig Fuel	ltr	0	4600	0	29,400.0
Camp Fuel	ltr	0	350	0	3,150.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	2450	60	120	1099.0	9.50
2	National - 8P-80	5.50	85	97	216	2450	60	120	1099.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	85	97	312	2450			1099.0	9.50

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	04 Aug 2006	0 Days	Incident free days 397/TRI 179 Days	Held 2 x pre tour safety meeting .Topics discussed .Drilling with TDU. Discussed tap root investigation over finger injury on rig 32.Unloading casing from trucks

05 Aug 2006

**From : Troy Reid**  
**To : Andy Wilkinson/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1571.0m	Current Hole Size:	12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	827.0m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	473.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	7.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	24.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 06 Aug 2006 : Tripping out of hole to pick up Clean out assy					
Planned Operations for 06 Aug 2006 : POOH with rotary steerable assy.					
RIH with clean out assy .					
Circulate and clean well.					
POOH with clean out assy .					
Rig up and run 9 5/8 casing					

#### Summary of Period 0000 to 2400 Hrs

Continue to drill 12 1/4 hole with Geo pilot steerable assy F/- 1099m to 1273m.  
Take survey every stand.  
Circulate and condition well while work on mud pump # 4 pop off.  
Continue to drill 12 1/4 with Geo pilot steerable assy F/-1273m to 1331m.  
Leaking wash pipe. Rack back one stand and replace washpipe.  
Continue to drill 12 1/4 F/- 1273m to 1571m.  
Take survey every stand.  
Add Radia green salt to active to reduce down hole torque

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 05 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	DM	0000	0630	6.50	1273.0m	Continue to drill 12 1/4 hole with Geo pilot steerable assy F/- 1099m to 1273m. Take survey every stand.
IH	TP	RMT	0630	0730	1.00	1273.0m	Circulate and condition well while work on mud pump # 4 pop off.
IH	P	DM	0730	1030	3.00	1331.0m	Continue to drill 12 1/4 with Geo pilot steerable assy F/-1273m to 1331m.
IH	TP	RO	1030	1130	1.00	1331.0m	Leaking wash pipe. Rack back one stand and replace washpipe.
IH	P	DM	1130	2400	12.50	1571.0m	Continue to drill 12 1/4 F/- 1273m to 1571m. Take survey every stand. Add Radia green salt to active to reduce down hole torque

#### Operations For Period 0000 Hrs to 0600 Hrs on 06 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		DM	0000	0230	2.50	1606.0m	Continue to drill 12 1/4 hole F/-1571m to 1606m casing depth for 9 5/8. Take survey every stand.
IH		CMD	0230	0500	2.50	1606.0m	Circulate and condition well prior to tripping out.
IH		TO	0500	0600	1.00	1606.0m	Flow check . POOH to 1408m. Tight spot at 1408. Install TDU

#### General Comments

Comments	Rig Requirements
Removed 3 x 9000 ltr loads from sump to Sale refuge. Chemical study was performed prior to any sump fluid remove and dumped. Recieved 3 x loads of water for turkeys nest.	

WBM Data									
Mud Type:	CI PHPA/Glycol	Viscosity:	64sec/qt	API FL Loss:	4.9cc	CI	30000	Solids:	4.8
Depth:	1359.0m	PV:	22cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	92%
Time:	11:00	YP:	33lb/100ft²	HTHP FL:	10.0cc	Hard/Ca:	450	Oil:	
Weight:	9.50ppg	Gels 10s/10m:	8 / 14	HTHP Cake:	2/32nd"	MBT:	5	Sand:	1.0
Temp:		Fann (3/6/100):				PM:		pH:	9
			9 / 12 / 33			PF:	0.05	PHPA:	0.70ppb
Comment: Reduced rheology and mud weight with dilution and finer shaker screens.									

WBM Data									
Mud Type:	KOU PHPA Polymer/Glycol	Viscosity:	58sec/qt	API FL Loss:	5.8cc	CI	36000	Solids:	3.6
Depth:	1532.0m	PV:	22cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	92%
Time:	21:00	YP:	40lb/100ft²	HTHP FL:	11.0cc	Hard/Ca:	660	Oil:	
Weight:	9.45ppg	Gels 10s/10m:	9 / 13	HTHP Cake:	2/32nd"	MBT:	5	Sand:	1.0
Temp:	134.0F°	Fann (3/6/100):				PM:		pH:	9
			9 / 12 / 36			PF:	0.1	PHPA:	0.60ppb
Comment:									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	1536.0bbl	Losses	350.0bbl	Comment		
Centrifuge	DE 1000		Active	283.0bbl	Downhole		Changed shakers back to 140/140/210/210. A combination that worked.		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	320.0bbl			
Shaker 1	Derrick	Pyramid x 140	Hole	1009.0bbl	Dumped				
Shaker 1	Derrick	Pyramid-140/140	Slug		De-Sander				
Shaker 2	Derrick	Pyramid x 140	Reserve	244.0bbl	De-Silter				
Shaker 2	Derrick	Pyramid-140/140	Kill		Centrifuge	30.0bbl			

Bit # 4			Wear	I	O1	D	L	B	G	O2	R
Size:	12.250in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg): 7.0klb	No.	Size	Progress: 473.0m		Cum. Progress:		936.0m		
Type:	p	RPM (avg): 150	7	16/32nd"	On Bottom Time: 14.11h			Cum. On Btm Time:		20.25h	
Serial #:	211345	F.Rate: 775gpm			IADC Time: 22.50h			Cum. IADC Time:		34.50h	
Depth In:	636.0m	SPP: 2300psi			Total Revs:			Cum. Total Revs:		0	
Depth Out:		HSI:			ROP (avg): 33.52 m/hr			Overall ROP (avg): 46.22 m/hr			
Bit Model:	RSX516S	TFA: 1.374									

**BHA # 4**

Wt. Below Jars Dry: 0.0klb	Length: 175.0m	Torque (max): 6300ft-lbs	DC (1) Ann Vel.: 221fpm
Weight Dry: 31031.0klb	String Weight: 73000.0klb	Torque On Btm: 6100ft-lbs	DC (2) Ann Vel.: 275fpm
Type: Rotary steerable	Pick-Up Weight: 79000.0klb	Torque Off Btm: 5800ft-lbs	HWDP Ann. Vel.: 146fpm
	Slack-Off Weight: 67000.0klb		DP Ann. Vel.: 146fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		1.00m	12.25in		211345	36.50h
2	9600 Geo-Pilot		6.61m	9.50in	4.00in	1225083	36.50h
3	Flex Non-Mag DC		2.81m	8.00in	3.50in	CP1015763	36.50h
4	MWD		5.36m	8.00in	1.92in	DM	36.50h
						90109064	
5	MWD		3.08m	8.00in	1.92in	10562336	36.50h
6	Roller Reamer		2.01m	12.25in	3.00in	ASH786019	36.50h
7	Float Sub		0.65m	8.00in	2.81in	91506	23.00h
8	X/O		1.00m	8.00in	2.75in		45.50h
9	HWDP		86.05m	4.50in	2.75in		45.50h
10	Drilling Jars		9.42m	6.50in	2.75in	12A14234	45.50h
11	HWDP		57.17m	4.50in	2.75in		36.50h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1002.25	72.51	119.57	635.3	-318.49	2.51	-318.49	527.29	616.01	121.1	MWD
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	1,140.0
KCl	sx	0	480	0	-480.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	22000	8000	0	29,000.0
Rig Fuel	ltr	0	9400	0	20,000.0
Camp Fuel	ltr	0	350	0	2,800.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	2450	60	120	1571.0	9.50
2	National - 8P-80	5.50	85	97	216	2450	60	120	1571.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	85	97	312	2450			1571.0	9.50

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	05 Aug 2006	0 Days	Incident free days 398/TRI 180 Days	Held 2 x pre tour safety meeting .Topics discussed .Drifting casing.Working with forklift.MSDS for Mixing Chemicals



**06 Aug 2006**

**From : Troy Reid**  
**To : Andy Wilkinson/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1606.0m	Current Hole Size:	12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	830.0m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	35.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	8.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	25.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 07 Aug 2006 : Continue to Backream at 15min per stand.					
Planned Operations for 07 Aug 2006 : Backream out with clean out assy.					
Run 9 5/8 casing . Floating string into hole.					
Cement casing.					

Summary of Period 0000 to 2400 Hrs					
Drill 12 1/4 hole to 1606m Casing depth					
Circulate and condition. Trip out to casing shoe. Tight at 1408,1138,1051,964.					
Work through casing shoe,					
Continue to trip out,layout geo pilot tools.					
M/up clean out assy . Trip in to casing shoe.					
Slip line.					
Continue to trip in to 502m at midnight.					

**Operations For Period 0000 Hrs to 2400 Hrs on 06 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	DM	0000	0230	2.50	1606.0m	Continue to drill 12 1/4 hole F/-1571m to 1606m casing depth for 9 5/8.
							Take survey every stand.
IH	P	CMD	0230	0500	2.50	1606.0m	Circulate and condition well prior to tripping out.
IH	P	TO	0500	0600	1.00	1606.0m	Flow check . POOH to 1408m.
							Tight spot at 1408. Install TDU
IH	TP	CMD	0600	0700	1.00	1606.0m	Break circulation at 1408m .Work pipe while circulating
IH	P	TO	0700	0830	1.50	1606.0m	Continue POOH f/- 1408m to 1138m. Tight at 1138m
IH	TP	CHC	0830	0930	1.00	1606.0m	Break circulation at 1138m . Work pipe while circulating
IH	TP	TO	0930	1300	3.50	1606.0m	Continue to POOH Tight spot @ 1051 & 964m work clean.Continue to POOH to 326m. Stabilisers at shoe 317m.Unable to come into 13 3/8 shoe.
IH	TP	CMD	1300	1430	1.50	1606.0m	Install TDU. Break circulation. Flush around shoe. Work through shoe area with 10RPM, 3100 ftlbs, max OP 7k. Slowly work into shoe until Bit has passed through shoe Track.
IH	P	TO	1430	1630	2.00	1606.0m	Continue to POOH to MWD tools.
IH	P	LOG	1630	1700	0.50	1606.0m	Download MWD tool at surface.
IH	P	TO	1700	1900	2.00	1606.0m	Lay out MWD and Geo Pilot tools.
IH	P	TI	1900	2230	3.50	1606.0m	M/up bit #5 (9-7/8" mill-tooth) and BHA # 5, RIH to 13 3/8 casing shoe.
IH	P	SC	2230	2300	0.50	1606.0m	Slip 66' drilling line
IH	P	RS	2300	2330	0.50	1606.0m	Rig Service
IH	P	TI	2330	2400	0.50	1606.0m	Continue to RIH to 502m. No hang ups.

**Operations For Period 0000 Hrs to 0600 Hrs on 07 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		TI	0000	0230	2.50	1606.0m	Continue to trip in f/-502m to 1606m. Wash down last 9m.
							Hole in good condition, no hangups going in.



Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		CMD	0230	0400	1.50	1606.0m	Tag bottom and check for junk. Work pipe and circulate hole clean.
IH		RW	0400	0600	2.00	1606.0m	Backream out of hole first 2 stands to equal 2 x bottoms up, then continue at 15mins per stand to 1476m at 06:00 hrs.

#### General Comments

Comments	Rig Requirements
Cement water delivered for halliburton 270bbbls.	

#### WBM Data

Mud Type: KCl PHPA/Glycol	Viscosity: 56sec/qt	API FL Loss: 5.2cc	CI	35000	Solids: 4.4
Depth: 1606.0m	PV: 19cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 92%	
Time: 05:00	YP: 32lb/100ft²	HTHP FL: 13.0cc	Hard/Ca: 600	Oil: 1.0	
Weight: 9.35ppg	Gels 10s/10m: 8 / 13	HTHP Cake: 2/32nd"	MBT: 5	Sand: 1.0	
Temp:	Fann (3/6/100): 8 / 11 / 30		PM: pH: 9		
			PF: 0.1	PHPA: 0.70ppb	

Comment

#### WBM Data

Mud Type: KCl PHPA Polymer/Glycol	Viscosity: 56sec/qt	API FL Loss: 4.5cc	CI	39000	Solids: 4.4
Depth: 1606.0m	PV: 21cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 92%	
Time: 21:00	YP: 25lb/100ft²	HTHP FL: 13.0cc	Hard/Ca: 500	Oil: 0.8	
Weight: 9.45ppg	Gels 10s/10m: 6 / 9	HTHP Cake: 2/32nd"	MBT: 5	Sand: 0.8	
Temp:	Fann (3/6/100): 6 / 10 / 26		PM: pH: 9		
			PF: 0.1	PHPA: 0.70ppb	

Comment

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	1517.0bbl	Losses	142.0bbl	Comment
Centrifuge	DE 1000		Active	299.0bbl	Downhole		
Centrifuge	DE 1000		Mixing		Surf. + Equip.122.0bbl		
Shaker 1	Derrick	Pyramid-140/140/210/210	Hole	1085.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-140/140/210/210	Slud		De-Sander		
Shaker 2	Derrick	Pyramid-140/140/210/210	Reserve	133.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-140/140/210/210	Kill		Centrifuge 20.0bbl		

Bit # 4			Wear	I	O1	D	L	B	G	O2	R
				1	1	ER	A	X	1	NO	TD
Size:	12.250in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg): 7.0klb	No.	Size	Progress:			35.0m			
Type:	p	RPM (avg): 150	7	16/32nd"	On Bottom Time: 1.50h			Cum. Progress: 971.0m			
Serial #:	211345	F.Rate: 775gpm			IADC Time: 2.50h			Cum. On Btm Time: 21.75h			
Depth In:	636.0m	SPP: 2300psi			Total Revs:			Cum. IADC Time: 37.00h			
Depth Out:	1606.0m	HSI:			ROP (avg): 23.33 m/hr			Cum. Total Revs: 0			
Bit Model:	RSX516S	TFA: 1.374						Overall ROP (avg): 44.64 m/hr			
Bit # 5			Wear	I	O1	D	L	B	G	O2	R
Size:	9.875in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HUGHES	WOB (avg):	No.	Size	Progress:			Cum. Progress: 0.0m			
Type:		RPM (avg):			On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	L41360	F.Rate:			IADC Time:			Cum. IADC Time: 0.00h			
Depth In:	1606.0m	SPP:			Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:			ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	HP11GJ	TFA: 0.000									

<b>BHA # 4</b>							
Wt. Below Jars Dry: 0.0klb		Length: 175.0m		Torque (max): 6300ft-lbs		DC (1) Ann Vel.: 221fpm	
Weight Dry: 31031.0klb		String Weight: 73000.0klb		Torque On Btm: 6100ft-lbs		DC (2) Ann Vel.: 275fpm	
Type: Rotary steerable		Pick-Up Weight: 79000.0klb		Torque Off Btm: 5800ft-lbs		HWDP Ann. Vel.: 146fpm	
		Slack-Off Weight: 67000.0klb				DP Ann. Vel.: 146fpm	
#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		1.00m	12.25in		211345	36.50h
2	9600 Geo-Pilot		6.61m	9.50in	4.00in	1225083	36.50h
3	Flex Non-Mag DC		2.81m	8.00in	3.50in	CP1015763	36.50h
4	MWD		5.36m	8.00in	1.92in	DM	36.50h
						90109064	
5	MWD		3.08m	8.00in	1.92in	10562336	36.50h
6	Roller Reamer		2.01m	12.25in	3.00in	ASH786019	36.50h
7	Float Sub		0.65m	8.00in	2.81in	91506	23.00h
8	X/O		1.00m	8.00in	2.75in		45.50h
9	HWDP		86.05m	4.50in	2.75in		45.50h
10	Drilling Jars		9.42m	6.50in	2.75in	12A14234	45.50h
11	HWDP		57.17m	4.50in	2.75in		36.50h

<b>BHA # 5</b>							
Wt. Below Jars Dry: 0.0klb		Length: 175.0m		Torque (max):		DC (1) Ann Vel.: 0fpm	
Weight Dry: 30150.0klb		String Weight:		Torque On Btm:		DC (2) Ann Vel.: 0fpm	
Type: Clean out assy		Pick-Up Weight:		Torque Off Btm:		HWDP Ann. Vel.: 0fpm	
		Slack-Off Weight:				DP Ann. Vel.: 0fpm	
#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.27m	9.78in		L41360	
2	Bit Sub		0.91m	8.00in		M1623	
3	Stab		2.48m		3.00in	SBD2396	
4	Drill Collar		18.66m	8.00in	3.00in		
5	Stab		1.89m		3.00in	7090449	
6	Drill Collar		8.95m		3.00in		
7	X/O		0.80m		2.75in		
8	Drill Collar		27.46m		3.00in		
9	HWDP		86.05m		3.00in		
10	Jar		9.95m		3.00in	176020301	
11	HWDP		57.17m				

<b>Survey</b>											
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type	
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD	
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD	
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD	
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD	
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD	

<b>Bulk Stocks</b>						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	80	0	1,060.0	
KCl	sx	0	0	0	-480.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	240.0	
Potable Water	ltr	0	8000	0	21,000.0	
Rig Fuel	ltr	0	8000	0	12,000.0	
Camp Fuel	ltr	0	350	0	2,450.0	

<b>Pumps</b>										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	2750	60	120	1606.0	9.50
2	National - 8P-80	5.50	85	97	216	2750	60	120	1606.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	85	97	312	2750			1606.0	9.50

<b>HSE Summary</b>				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	06 Aug 2006	0 Days	Incident free days 399/TRI 181 Days	Held 2 x pre tour safety meeting .Topics discussed .Drifting casing.Working with forklift.Tripping, laying out Goe pilot.

07 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				QC Not Done
Drill Co.:	Ensign	Midnight Depth (MD):	1606.0m	Current Hole Size: 12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	830.0m	Casing O.D.: 13.375in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD: 312.0m
RT-GL:	19.36m	Days From Spud:	9.81	F.I.T. / L.O.T. / 20.00ppg
GL Elev.:	8.89m	Days On Well:	26.75	Rig Move Distance 1800+/- k's
Current Op's @ 0600 08 Aug 2006 : Continue to run 9 5/8 casing Floating string in. 500m at 06:00 hrs				
Planned Operations for 08 Aug 2006 : Run 9 5/8 casing and cement.				

#### Summary of Period 0000 to 2400 Hrs

Continue to trip in f/-502m to 1606m.  
Tag bottom and check for junk.  
Work pipe and circulate clean hole clean.  
Backream out of hole first 2 stands to equal 2 x bottoms up, Then continue at 15mins per stand.to 1476 continue to Backream out of hole at 10min per stand till 317m 13 3/8 casing shoe.  
Circulate Bottoms up at casing shoe.  
Continue to POOH .Lay out 8"DC,bit,bitsub,  
Retrieve wearbushing  
Change out pipe rams to 9 5/8 .Pressure test to 1700psi.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 07 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	TI	0000	0230	2.50	1606.0m	Continue to trip in f/-502m to 1606m. Wash down last 9m. Hole in good condition no hangups going in.
IH	P	CMD	0230	0400	1.50	1606.0m	Tag bottom and check for junk. Work pipe and circulate clean hole clean.
IH	P	RW	0400	1700	13.00	1606.0m	Backream out of hole first 2 stands to equal 2 x bottoms up, Then continue at 15mins per stand.to 1476 continue to Backream out of hole at 10min per stand till 317m 13 3/8 casing shoe.
IH	P	CMD	1700	1730	0.50	1606.0m	Circulate Bottoms up at casing shoe.
IH	P	HBHA	1730	2100	3.50	1606.0m	Continue to POOH .Lay out 8"DC,bit,bitsub,
IH	P	RW	2100	2200	1.00	1606.0m	Retrieve wearbushing
IH	P	CMC	2200	2400	2.00	1606.0m	Change out pipe rams to 9 5/8 .Pressure test to 1700psi.

#### Operations For Period 0000 Hrs to 0600 Hrs on 08 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		CMC	0000	0100	1.00	1606.0m	Clear rig floor and rig up 9 5/8 casing equipment.
IH		CMC	0100	0600	5.00	1606.0m	(IN PROGRESS) Hold pre job safety meeting . JHA. M/up reaming shoe. and float . Check float for flow back no flow ok. Continue to Run casing as per programme to 1606m Run total 127 jnts 47 lb 9 5/8 casing .Floating string in .

#### General Comments

Comments	Rig Requirements
Recieved cement at 10:00am Held BOP drill . Shut well in and muster.	No alarm heard at Chubb security shack. Need to address getting alarm at security shack.

WBM Data									
Mud Type:	CI PHPA/Glycol	Viscosity:	61sec/qt	API FL Loss:	4.4cc	Cl	34000	Solids:	6
Depth:	1606.0m	PV:	21cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	90%
Time:	07:00	YP:	32lb/100ft²	HTHP FL:		Hard/Ca:	500	Oil:	
Weight:	9.70ppg	Gels 10s/10m:	8 / 12	HTHP Cake:		MBT:	5	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9
			9 / 11 / 32			PF:	0.05	PHPA:	0.70ppb
Comment		Mud weight increased after trip out of hole. Gradually reduced using shakers, centrifuge and minimal dilution.							

WBM Data									
Mud Type:	Polymer/Glycol	Viscosity:	62sec/qt	API FL Loss:	5.2cc	CI	33000	Solids:	5.5
Depth:	1606.0m	PV:	22cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	92%
Time:	21:00	YP:	31lb/100ft²	HTHP FL:		Hard/Ca:	200	Oil:	
Weight:	9.50ppg	Gels 10s/10m:	8 / 11	HTHP Cake:		MBT:	5	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9.5
			8 / 11 / 31			PF:	0.15	PHPA:	0.60ppb
Comment									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu
Equipment	Description	Mesh Size	Available	Losses	Comment	
Centrifuge	DE 1000		1427.0bbl	152.0bbl		
Centrifuge	DE 1000		Active 234.0bbl	Downhole	Added extra finer shaker sceens and ran centrifuge to control mud wt.	
Shaker 1	Derrick	Pyramid-140/140/210/210	1085.0bbl	Surf. + Equip. 70.0bbl		
Shaker 1	Derrick	Pyramid-175/175/210/210		Dumped		
Shaker 2	Derrick	Pyramid-140/140/210/210		De-Sander		
Shaker 2	Derrick	Pyramid-140/210/210/210	108.0bbl	De-Silter		
				Centrifuge 20.0bbl		
				62.0bbl		

Bit # 5			Wear	I 1	O1 1	D NO	L	B 1	G I	O2 NO	R
Size:	9.875in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HUGHES	WOB (avg): 0.0klb	No.	Size	Progress: 0.0m		Cum. Progress:		0.0m		
Type:	mt	RPM (avg): 120			On Bottom Time:			Cum. On Btm Time:		0.00h	
Serial #:	L41360	F.Rate: 800gpm			IADC Time:			Cum. IADC Time:		0.00h	
Depth In:	1606.0m	SPP: 2570psi			Total Revs:			Cum. Total Revs:		0	
Depth Out:	1606.0m	HSI:			ROP (avg): N/A			Overall ROP (avg):		0.00 m/hr	
Bit Model:	HP11GJ	TFA: 0.000									

**BHA # 5**

Wt. Below Jars Dry:	Length: 175.0m	Torque (max):	DC (1) Ann Vel.: 355fpm
Weight Dry: 30150.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 585fpm
Type: Clean out assy	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 254fpm
	Slack-Off Weight:		DP Ann. Vel.: 254fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.27m	9.78in		L41360	
2	Bit Sub		0.91m	8.00in		M1623	
3	Stab		2.48m	11.75in	3.00in	SBD2396	
4	Drill Collar		18.66m	8.00in	3.00in		
5	Stab		1.89m	11.50in	3.00in	7090449	
6	Drill Collar		8.95m	8.00in	3.00in		
7	X/O		0.80m	8.00in	2.75in		
8	Drill Collar		27.46m	6.25in	3.00in		
9	HWDP		86.05m	6.25in	3.00in		
10	Jar		9.95m	6.50in	3.00in	176020301	
11	HWDP		57.17m	6.25in	3.00in		

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	32	0	1,028.0
KCl	sx	0	0	0	-420.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	8000	0	13,000.0
Rig Fuel	ltr	11030	6000	0	17,030.0
Camp Fuel	ltr	0	350	0	2,100.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	2750	60	120	1606.0	9.50
2	National - 8P-80	5.50	85	97	216	2750	60	120	1606.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	85	97	312	2750			1606.0	9.50

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	07 Aug 2006	0 Days	Incident free days 400/TRI 182 Days	Held 2 x pre tour safety meeting .Topics discussed .Running casing,Working at heights.
Weekly Safety Meeting	07 Aug 2006	0 Days	Held Weekly safety meeting	Held weekly safety meeting.Discussed Check for safety cards, Housekeeping,Working in adverse weather.





08 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1606.0m	Current Hole Size:	12.250in
Rig:	Ensign 32	Midnight Depth (TVD):	830.0m	Casing O.D.:	13.375in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	312.0m
RT-GL:	5.90m	Days From Spud:	10.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	27.83	Rig Move Distance	1800+/- k's
Current Op's @ 0600 09 Aug 2006 : Final cut on 9 5/8 casing					
Planned Operations for 09 Aug 2006 : Install casing spool . Install bop and test. M/up 8 1/2 assy and RIH					

#### Summary of Period 0000 to 2400 Hrs

Clear rig floor and rig up 9 5/8 casing equipment.  
Hold pre job safety meeting . JHA. M/up reaming shoe. and float .  
Check float for flow back no flow ok.  
Continue to Run casing as per programme to 1606m  
Run total 127 jnts 47 lb 9 5/8 casing .Floating string in .  
Fill up string venting casing string to atmosphere  
Install cement vhead and circulate hole while mixing cement chemicals  
Mix and pump cement 310bbbs lead 27 bbls tail  
Displace and bump plug.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 08 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	CMC	0000	0100	1.00	1606.0m	Clear rig floor and rig up 9 5/8 casing equipment.
IH	P	CMC	0100	1500	14.00	1606.0m	Hold pre job safety meeting . JHA. M/up W/ford reamer/guide shoe & float. Install torque rings and threadlock conn's. Check float for flow back no flow ok. Continue to run casing as per programme to 1606m Run total 127 jnts 47 lb 9 5/8 casing. Float string in.
IH	P	CMC	1500	1630	1.50	1606.0m	Fill up string venting casing string to atmosphere
IH	P	CMC	1630	2100	4.50	1606.0m	Install cement head and circulate hole while mixing cement chemicals
IH	P	CMC	1900	2400	5.00	1606.0m	Hold pre job safety meeting . Pump 5 bbls spacer. Pressure test lines to 2500psi 5mins ok. Pump 60 bbls tuned spacer. Drop bottom plug. pump 5bbls spacer. Load top plug. Mix and pump lead slurry 12.5 ppg 301 bbls. Mix and Pump tail slurry 15.6ppg 27.1 bbls. Drop bottom plug Displace with Halliburton 383 bbls

#### Operations For Period 0000 Hrs to 0600 Hrs on 09 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		CMC	0000	0100	1.00	1606.0m	Continue to Displace cement actual pumped 389bbbs.. Bump plug at 3 bpm w/- 500psi . Test casing at 1700psi for 10 mins.ok.
IH		CMC	0100	0500	4.00	1606.0m	Lay-out cement surface lines & Halliburton cement head . Install slip and seal assy. Lift BOP and rough cut 9 5/8 casing at 8"

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		BOP	0500	0600	1.00	1606.0m	Remove excess casing. Rack back BOP, remove lower spacer spool. Final cut 9 5/8 casing at 5". Grind 3/8" bevel on OD and Chamfer ID. Prepare B section to install

#### General Comments

Comments	Rig Requirements
Vacume trucks remove excess drilling fluid from sump.	

#### WBM Data

Mud Type: KCl PHPA/Glycol	Viscosity: 62sec/qt	API FL Loss: 5.3cc	CI	34000	Solids: 4.7
Depth: 1606.0m	PV: 20cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 91%	
Time: 10:00	YP: 34lb/100ft²	HTHP FL: 11.2cc	Hard/Ca: 220	Oil:	
Weight: 9.60ppg	Gels 10s/10m: 9 / 12	HTHP Cake: 2/32nd"	MBT: 5	Sand: 0.5	
Temp:	Fann (3/6/100):		PM:	pH: 9	
	7 / 11 / 31		PF: 0.1	PHPA: 0.60ppb	

Comment

#### WBM Data

Mud Type: KCl PHPA Polymer/Glycol	Viscosity: 62sec/qt	API FL Loss: 5.4cc	CI	3400	Solids: 5.5
Depth: 1606.0m	PV: 22cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 92%	
Time: 21:00	YP: 31lb/100ft²	HTHP FL:	Hard/Ca: 30	Oil:	
Weight: 9.50ppg	Gels 10s/10m: 8 / 12	HTHP Cake:	MBT: 5	Sand: 0.4	
Temp:	Fann (3/6/100):		PM:	pH: 9	
	9 / 11 / 31		PF: 0.05	PHPA: 0.60ppb	

Comment

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	1012.0bbl	Losses	415.0bbl	Comment
Centrifuge	DE 1000		Active	205.0bbl	Downhole		Full returns running and cementing casing.
Centrifuge	DE 1000		Mixing		Surf. + Equip.403.0bbl		
Shaker 1	Derrick	Pyramid-175/175/210/210	Hole	387.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-175/175/210/210	Slud		De-Sander		
Shaker 2	Derrick	Pyramid-140/210/210/210	Reserve	420.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-140/210/210/210	Kill		Centrifuge 12.0bbl		

#### Survey

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD

Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	128	0	900.0
KCl	sx	0	0	0	-480.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	4700	0	8,300.0
Rig Fuel	ltr	0	4400	0	12,630.0
Camp Fuel	ltr	0	350	0	1,750.0

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	85	97	216	2750	60	120	1606.0	9.50
2	National - 8P-80	5.50	85	97	216	2750	60	120	1606.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00	85	97	312	2750			1606.0	9.50

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	08 Aug 2006	0 Days	Incident free days 401/TRI 182 Days	Held 2 x pre tour safety meeting .Topics discussed .Running casing,Working at heights.Cement procedure

09 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1606.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	830.0m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	11.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	8.89m	Days On Well:	28.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 10 Aug 2006 : RIH w/- 8 1/2 assy to 1250m					
Planned Operations for 10 Aug 2006 : Drill out float and shoe.					
Drill rat hole and 3m to 1609m new hole .					
Perform LOT.					
Drill to 1615m					
POHH change assy to Rotary steerable assy.					

#### Summary of Period 0000 to 2400 Hrs

Complete cement displacement.  
Set SLIP and Seal assy.  
Lift Bop's and cut 9 5/8 casing.  
lay out excess casing.  
Rack back BOP'S  
Final cut 9 5/8 stump.  
Install B section and test to 1700psi ok.  
Install BOP and test to 200psi low and 1700psi ok  
M/up 8 1/2 BHA and RIH to 295m

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 09 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	CMC	0000	0100	1.00	1606.0m	Continue to Displace cement actual pumped 389bbbls.. Bump plug at 3 bpm w/- 500psi . Test casing at 1700psi for 10 mins.ok.
IH	P	CMC	0100	0500	4.00	1606.0m	Lay cement surface lines halliburton cement head . Install slip and seal assy. Lift BOP and rough cut 9 5/8 casing at 8" Remove excess casing. Rack back BOP ,Remove lower spacer spool.
IH	P	BOP	0500	0700	2.00	1606.0m	Final cut 9 5/8 casing at 5" .Grind 3/8" bevel on OD and Chamfer ID. Prepare B section to install
IH	P	BOP	0700	1300	6.00	1606.0m	Install 'B' section.Very tight pull down with bolts evenly. Test seals to 1700psi 15 mins each.ok.
IH	P	BOP	1300	1330	0.50	1606.0m	Install DSA 11" x 13 5/8
IH	P	BOP	1330	1730	4.00	1606.0m	Install BOP ,HCR,bell NIPPLE ,Flow line.
IH	P	BOP	1730	1830	1.00	1606.0m	Change out Rams from 9 5/8 to 4 1/5 drill pipe rams.
IH	P	BOP	1830	2000	1.50	1606.0m	TDU Mud saver valve leaking. Change out and change damaged saver sub.
IH	P	BOP	2000	2100	1.00	1606.0m	M/up combination test tool and test BOP's .Test new B section X/over spool seal ring ,pipe rams,HCR.Test 200low 5 mins ,1700psi high 10 mins. ok.
IH	P	BOP	2100	2200	1.00	1606.0m	Lay out test assy and install wear bushing
IH	P	HBHA	2200	2400	2.00	1606.0m	M/up new bit # 6,Pick extra up 3 x 6 1/2 DC continue m/up BHA to 250m

**Operations For Period 0000 Hrs to 0600 Hrs on 10 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		TI	0000	0330	3.50	1606.0m	RIH with 8 1/2 dumb BHA & milltooth 8-1/2" bit, picking up 69 singles of the cat walk.
IH		TI	0330	0400	0.50	1606.0m	Perform BOP drill S/I well & muster
IH		TI	0400	0600	2.00	1606.0m	Continue to RIH w/- 8 1/2 assy 1550m

**General Comments**

Comments	Rig Requirements
Visit from Nexus office staff. Back load Sperry sun 12 1/4 geo pilot and MWD tools. Hold BOP drill .secure well and muster at muster station..	

**WBM Data**

Mud Type: CI PHPA/Glycol	Viscosity: 54sec/qt	API FL Loss: 6.0cc	CI	31000	Solids: 4
Depth: 1606.0m	PV: 15cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 94%	
Time: 21:30	YP: 24lb/100ft²	HTHP FL:	Hard/Ca: 200	Oil:	
Weight: 9.25ppg	Gels 10s/10m: 7 / 10	HTHP Cake:	MBT: 5.5	Sand: 0.3	
Temp:	Fann (3/6/100):		PM:	pH: 8.5	
	6 / 8 / 23		PF: 0.1	PHPA: 0.50ppb	

Comment Cut mud weight and solids with 460 screen and centrifuge.

**Shakers, Volumes and Losses Data**

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	879.0bbl	Losses	134.0bbl	Comment
Centrifuge	DE 1000		Active	492.0bbl	Downhole		Ran surface mud over 460 screens and centrifuge all day.
Shaker 1	Derrick	Pyramid-210/210	Mixing		Surf. + Equip. 64.0bbl		
Shaker 2	Derrick	Pyramid-460/460	Hole	387.0bbl	Dumped 50.0bbl		
			Slug		De-Sander		
			Reserve		De-Silter		
			Kill		Centrifuge 20.0bbl		

**Bit # 6**

Wear	I	O1	D	L	B	G	O2	R
Size: 8.500in	IADC#:	Nozzles	Drilled over last 24 hrs			Calculated over Bit Run		
Mfr: Hycalog	WOB (avg):	No. Size	Progress:			Cum. Progress: 0.0m		
Type:	RPM (avg):		On Bottom Time:			Cum. On Btm Time: 0.00h		
Serial #: RO3706	F.Rate:		IADC Time:			Cum. IADC Time: 0.00h		
Depth In: 1606.0m	SPP:		Total Revs:			Cum. Total Revs: 0		
Depth Out:	HSI:		ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr		
Bit Model: HP21G	TFA: 0.000							

**BHA # 6**

Wt. Below Jars Dry:	Length: 208.9m	Torque (max):	DC (1) Ann Vel.: 0fpm
Weight Dry:	String Weight: 46000.0klb	Torque On Btm:	DC (2) Ann Vel.: 0fpm
Type: Pendulum	Pick-Up Weight: 48000.0klb	Torque Off Btm:	HWDP Ann. Vel.: 0fpm
	Slack-Off Weight: 45000.0klb		DP Ann. Vel.: 0fpm

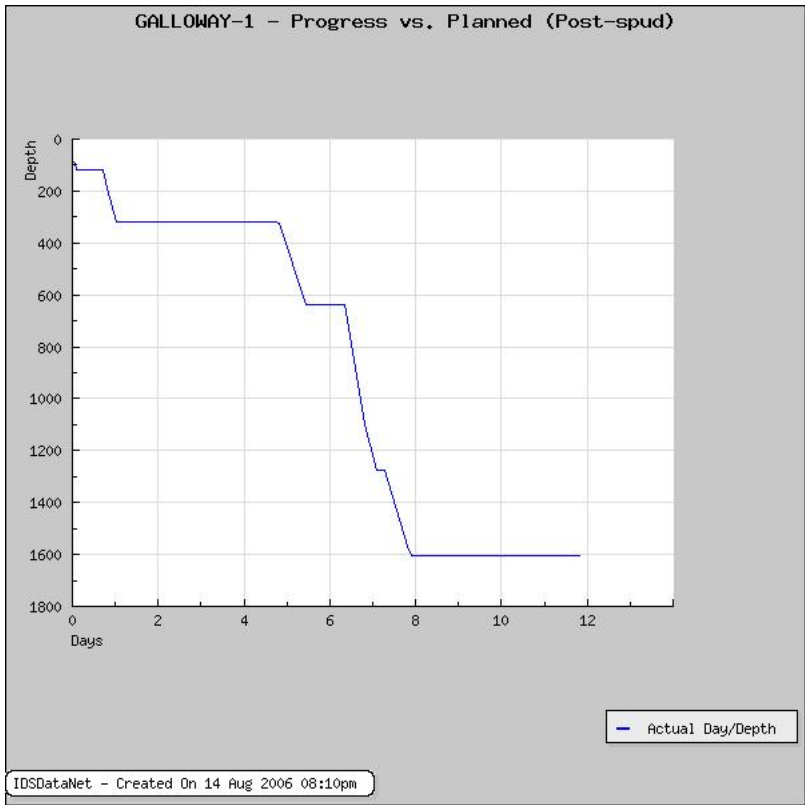
#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit	6 X 6.5 DC 9 X HWDP 6 X HWDP	0.26m	8.50in		RO3706	92.00h
2	Bit Sub		0.92m	6.50in	3.00in		
3	Drill Collar		54.56m	6.50in	3.00in		
4	HWDP		86.05m	4.50in	2.75in		
5	Drilling Jars		9.95m	4.60in	3.00in	176020301	
6	HWDP		57.17m	4.50in	2.75in		

Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD

Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	900.0
KCl	sx	0	0	0	-420.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	38900	6000	0	41,200.0
Rig Fuel	ltr	35570	1600	0	46,600.0
Camp Fuel	ltr	3850	550	0	5,050.0

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50		97						9.50
2	National - 8P-80	5.50		97						9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00		97	312					9.50

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	09 Aug 2006	0 Days	Incident free days 401/TRI 182 Days	Held 2 x pre tour safety meeting .Topics discussed .Nippling up BOP's and testing. Bad weather coming so be prepared,Use provided PPE .



10 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1606.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	830.0m	Casing O.D.:	9.625in
Prognosed TD:	2350.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	5.90m	Days From Spud:	12.81	F.I.T. / L.O.T.	/ 20.00ppg
GL Elev.:	2.71m	Days On Well:	29.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 11 Aug 2006 : Circulate and condition mud prior to POOH.					
Planned Operations for 11 Aug 2006 : POOH Change out BHA to 8-1/2" GeoPilot Rotary Steerable assy.					

#### Summary of Period 0000 to 2400 Hrs

RIH with dumb 8 1/2 BHA picking up 69 singles of the cat walk.  
Perform BOP drill, S/I well & muster  
Continue to RIH w/- 8 1/2 assy to 1550m  
Break circulation, wash and light ream to 1574 m. Tag cement and drill cement and float at 1575m. Drill cement with 10K WOB, 30 rpm and 200 stks per minute (1000 psi) tag soil at 1597m TMP  
ROP dropped off. Steel and aluminium fragments seen at surface.  
6kg of Aluminium, 4 kg Carbon Steel  
Pull up off bottom and circulate the hole clean.  
POOH from 1597m to surface.  
Break out bit .Check condition.  
M/up BHA # 7 and RIH to 1571m  
Tag float collar depth, string torqued up, work through float several times . Continue to wash down to 1597m Tag up.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 10 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	P	TI	0000	0330	3.50	1606.0m	RIH with 8 1/2 dumb BHA & milltooth 8-1/2" bit, picking up 69 singles of the cat walk.
IH	P	TI	0330	0400	0.50	1606.0m	Perform BOP drill S/I well & muster
IH	P	TI	0400	0600	2.00	1606.0m	Continue to RIH w/- 8 1/2 assy 1550m
IH	P	RW	0600	0830	2.50	1606.0m	Break circulation, wash and light ream to 1574 m. Tag cement and drill cement and float at 1575m. Drill cement with 10K on bit, 30 rpm and 200 stks per minute (1000 psi) tag soil at 1597m
IH	TP	DFS	0830	1100	2.50	1606.0m	ROP dropped off. Steel and aluminium fragments seen at surface. 6kg of Aluminium, 4 kg Carbon Steel recovered from ditch magnets and possum bellies.
IH	TP	CMD	1100	1230	1.50	1606.0m	Pull up off bottom and circulate the hole clean.
IH	TP	TO	1230	1530	3.00	1606.0m	POOH from 1597m to surface.
IH	TP	HBHA	1530	1600	0.50	1606.0m	Break out bit. Check condition, worn sholder cutters.
IH	TP	WO	1600	1730	1.50	1606.0m	Wait on decision for next assy.
IH	TP	TI	1730	2230	5.00	1606.0m	M/up BHA # 7 (PDC bit and stabiliser) and RIH to 1571m
IH	TP	RW	2230	2400	1.50	1606.0m	Tag at float collar depth, string torqued up, Work through float several times . Continue down to wash down to 1597m HUD.

#### Operations For Period 0000 Hrs to 0600 Hrs on 11 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH		RW	0000	0100	1.00	1606.0m	Continue to drill out the through 1597m, Drill with 50 rpm, 560gpm, ROP 0.5m/hr. Break through 1598m, attempt to work back through 1597m . Sting stalled out.
IH		WSP	0100	0230	1.50	1606.0m	Stuck pipe at 1597m . No rotation 50k overpull. Install work single & attempt to work through 1597 to 1598m.



Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
							Regain rotation . Drill NBS through 1597m. Work back through 1597m until torque reduced to 6500 ft/lbs. Continue to drill out rat hole to 1606 m
PH		D	0230	0300	0.50	1609.0m	Drill new 8 1/2 hole from 1606m to 1609m.
PH		CMD	0300	0330	0.50	1609.0m	Circulate and condition mud prior to LOT. 60% new formation in sample
PH		LOT	0330	0430	1.00	1609.0m	Perform LOT at 803m TVD. Leak off pressure 1000psi w/-9.3ppg = EMW 16.7 ppg.
PH		D	0430	0530	1.00	1619.0m	Continue to drill 8 1/2 hole f/-1609 to 1619m.
PH		CMD	0530	0600	0.50	1619.0m	Circulate and condition mud .

**General Comments**

Comments	Rig Requirements
Recieved 100 jnts of 7" casing. Returned 17 jnts 9 5/8 casing to storage yard.	

**WBM Data**

Mud Type: KCI PHPA/Glycol	Viscosity: 55sec/qt	API FL Loss: 4.8cc	CI	30000	Solids: 4.6
Depth: 1606.0m	PV: 13cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 93%	
Time: 10:30	YP: 22lb/100ft²	HTHP FL:	Hard/Ca: 180	Oil:	
Weight: 9.30ppg	Gels 10s/10m: 6 / 10	HTHP Cake:	MBT: 6	Sand: 0.3	
Temp:	Fann (3/6/100): 6 / 8 / 21		PM:	pH: 9.5	
			PF: 0.15	PHPA: 0.50ppb	

Comment

**WBM Data**

Mud Type: KCI PHPA/Polymer	Viscosity: 56sec/qt	API FL Loss: 5.8cc	CI	29000	Solids: 4.6
Depth: 1606.0m	PV: 17cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 93%	
Time: 22:00	YP: 24lb/100ft²	HTHP FL:	Hard/Ca: 80	Oil:	
Weight: 9.25ppg	Gels 10s/10m: 7 / 10	HTHP Cake:	MBT: 5.5	Sand: 0.1	
Temp:	Fann (3/6/100): 6 / 9 / 24		PM:	pH: 9.5	
			PF: 0.18	PHPA:	

Comment

**Shakers, Volumes and Losses Data**

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	869.0bbl	Losses	175.0bbl	Comment
Centrifuge	DE 1000		Active	358.0bbl	Downhole		Drilled out cement with old mud in hole. Dumped 155 bbl. Back on system.
Centrifuge	DE 1000		Mixing		Surf. + Equip. 0.0bbl		
Shaker 1	Derrick	Pyramid-210/210	Hole	342.0bbl	Dumped 155.0bbl		
Shaker 1	Derrick	Pyramid-210/210	Slud		De-Sander		
Shaker 2	Derrick	Pyramid-460/460	Reserve	169.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-250/250	Kill		Centrifuge 20.0bbl		

Bit # 6			Wear	I	O1	D	L	B	G	O2	R
				1	1	WT	S	1	I	NO	PR
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	Hycalog	WOB (avg): 5.0klb	No.	Size	Progress:			Cum. Progress: 0.0m			
Type:		RPM (avg): 50			On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	RO3706	F.Rate: 500gpm			IADC Time:			Cum. IADC Time: 0.00h			
Depth In:	1606.0m	SPP: 1400psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	1606.0m	HSI:			ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	HP21G	TFA: 0.000									

Bit # 7			Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#: 519	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	REED	WOB (avg):	No.	Size	Progress:			Cum. Progress: 0.0m			
Type:	p	RPM (avg):			On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	112295	F.Rate:			IADC Time:			Cum. IADC Time: 0.00h			
Depth In:		SPP:			Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:			ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	RSX272	TFA: 0.000									

BHA # 6							
Wt. Below Jars Dry:		Length: 208.9m	Torque (max):		DC (1) Ann Vel.: 408fpm		
Weight Dry:		String Weight: 46000.0klb	Torque On Btm:		DC (2) Ann Vel.: 0fpm		
Type:	Pendulum	Pick-Up Weight: 48000.0klb	Torque Off Btm:		HWDP Ann. Vel.: 236fpm		
		Slack-Off Weight: 45000.0klb			DP Ann. Vel.: 236fpm		
#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.26m	8.50in		RO3706	92.00h
2	Bit Sub		0.92m	6.50in	3.00in		
3	Drill Collar	6 X 6.5 DC	54.56m	6.50in	3.00in		
4	HWDP	9 X HWDP	86.05m	4.50in	2.75in		
5	Drilling Jars		9.95m	4.60in	3.00in	176020301	
6	HWDP	6 X HWDP	57.17m	4.50in	2.75in		

BHA # 7							
Wt. Below Jars Dry: 30000.0klb		Length: 212.4m	Torque (max):		DC (1) Ann Vel.: 0fpm		
Weight Dry: 35300.0klb		String Weight:	Torque On Btm:		DC (2) Ann Vel.: 0fpm		
Type: Pendulum		Pick-Up Weight:	Torque Off Btm:		HWDP Ann. Vel.: 0fpm		
		Slack-Off Weight:			DP Ann. Vel.: 0fpm		
#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.37m	8.50in	3.00in	112295	
2	Near Bit Stabiliser		1.82m		2.88in	47695	
3	X/O		0.45m	6.00in	2.88in	m1623	
4	6.5in DC		9.42m	6.50in	2.75in	32-2-5	
5	X/O		0.32m	6.00in	2.81in		
6	String Stabiliser		1.28m		3.00in	47584	
7	X/O		0.45m		3.00in		
8	6.5in DC		45.14m	6.50in	3.00in		
9	HWDP		86.05m	4.50in	2.81in		
10	Drilling Jars		9.95m		2.75in	176020301	
11	HWDP		57.17m	4.50in	2.81in		

Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD

Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	900.0
KCl	sx	0	60	0	-480.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	6000	0	35,200.0
Rig Fuel	ltr	0	4200	0	42,400.0
Camp Fuel	ltr	0	350	0	4,700.0

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50		97						9.50
2	National - 8P-80	5.50		97						9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00		97	312					9.50

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	10 Aug 2006	0 Days	Incident free days 11/TRI 11 Days	Held 2 x pre tour safety meeting .Topics discussed .Tripping .Manual handling,

11 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1606.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	830.0m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	13.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	13.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	30.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 12 Aug 2006 : Continue to drill 8 1/2 hole with geo pilot rotary steerable assy to 1646m					
Planned Operations for 12 Aug 2006 : Drill 8 1/2 hole using Geo pilot steerable assy.					

#### Summary of Period 0000 to 2400 Hrs

Continue to drill out the through 1597m, Drill with 50 rpm, 560 gpm, ROP 0.5m/hr. Break through 1598m attempt to work back through 1597m . Sting stalled out. Stuck pipe at 1597m . No rotation 50k overpull. Install work single attempt to work through 1597 to 1598. Regain rotation . Drill NBS through 1597m .Work back through 1597m until torque reduced to 6500 ft/lbs. Continue to drill out rat hole to 1606m. Drill new 8 1/2 hole from 1606m to 1609m. Circulate and condition mud prior to LOT. 60% new formation in sample. Perform LOT at 803m TVD. Leak of pressure 1000psi w/-9.3ppg = EMW 16.4 ppg.

Continue to drill 8 1/2 hole f/-1609 to 1619m. Circulate and condition mud. Pooh f/- 1619m to surface. No hang ups through float and shoe. Break out bit, stabs and lay out. M/up geo-pilot /MWD assy. Calibrate and test MWD Tools, OK. Continue to RIH to 1575m . Tagged float collar. Attempt to work through, no go past 1575m.

Slip and cut 100' drilling.

Sperry sun calibrate block height

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 11 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
IH	TP	RW	0000	0100	1.00	1606.0m	Continue to drill out the shoe-track through 1597m, drill with 50rpm, 560gpm, ROP 0.5m/hr, break through 1598m attempt to work back through 1597m. Sting stalled out.
IH	TP	WSP	0100	0230	1.50	1606.0m	Stuck pipe at 1597m . No rotation 50k overpull. Install work single & attempt to work through 1597 to 1598m. Regain rotation . Drill NBS through 1597m. Work back through 1597m until torque reduced to 6500 ft/lbs. Continue to drill out rat hole to 1606m.
PH	P	D	0230	0300	0.50	1609.0m	Drill new 8 1/2 hole from 1606m to 1609m.
PH	P	CMD	0300	0330	0.50	1609.0m	Circulate and condition mud prior to LOT. 60% new formation in sample
PH	P	LOT	0330	0430	1.00	1609.0m	Perform LOT at 803m TVD. Leak of pressure 1000psi w/ 9.3ppg = EMW 16.4 ppg.
PH	P	D	0430	0530	1.00	1619.0m	Continue to drill 8 1/2 hole f/-1609 to 1619m.
PH	P	CMD	0530	0630	1.00	1619.0m	Circulate and condition mud .
PH	P	TO	0630	1000	3.50	1619.0m	Pooh f/- 1619m to surface. No hang-ups through float and shoe.
PH	P	HBHA	1000	1030	0.50	1619.0m	Break out bit, stabs and lay out.
PH	P	HBHA	1030	1400	3.50	1619.0m	M/up geo-pilot LWD/MWD assy.
PH	P	HBHA	1400	1430	0.50	1619.0m	Calibrate and test MWD Tools .OK.
PH	P	TI	1430	2230	8.00	1619.0m	Continue to RIH to 1575m. Tagged float collar. Attempt to work through. No go past 1575..
PH	P	SC	2230	2330	1.00	1619.0m	Slip and cut 100' drilling.
PH	P	SC	2330	2400	0.50	1619.0m	Sperry sun calibrate block height

#### Operations For Period 0000 Hrs to 0600 Hrs on 12 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		SC	0000	0030	0.50	1619.0m	Continue to calibrate block height sensor with sperry sun
PH		CMD	0030	0130	1.00	1619.0m	Attempt to set Geo Pilot to 'home' (zero deflection) setting unable to set. Change out down link choke size and set geo pilot at 'home' setting (zero deflection).
PH		RW	0130	0300	1.50	1619.0m	Wash down f/-1575 to 1619m as per sperry parameters. Tool past float and shoe with no hang ups.
PH		DM	0300	0600	3.00	1646.0m	(IN PROGRESS) Drill 8 1/2 hole f/-1619m to 1659m. Drill with 575gpm, 50rpm, WOB 10klbs. Drill with these parameters until Geo pilot tools are in open hole. ROP 12-15m/hr

### General Comments

Comments	Rig Requirements
220 joints of 7" casing delivered on location.	

### WBM Data

Mud Type: CI PHPA/Glycol	Viscosity: 53sec/qt	API FL Loss: 5.6cc	CI	30000	Solids: 4.6
Depth: 1606.0m	PV: 12cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 93%	
Time: 04:00	YP: 21lb/100ft²	HTHP FL:	Hard/Ca: 220	Oil:	
Weight: 9.30ppg	Gels 10s/10m: 5 / 9	HTHP Cake:	MBT: 5	Sand: 0.3	
Temp:	Fann (3/6/100):		PM:	pH: 9.5	
	7 / 10 / 20		PF: 0.25	PHPA: 0.50ppb	
Comment					

### WBM Data

Mud Type: CI PHPA/Polymer	Viscosity: 52sec/qt	API FL Loss: 5.9cc	CI	30000	Solids: 4.6
Depth: 1619.0m	PV: 14cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 93%	
Time: 22:00	YP: 21lb/100ft²	HTHP FL:	Hard/Ca: 240	Oil:	
Weight: 9.25ppg	Gels 10s/10m: 6 / 9	HTHP Cake:	MBT: 5	Sand: 0.1	
Temp:	Fann (3/6/100):		PM:	pH: 9.5	
	5 / 7 / 19		PF: 0.2	PHPA: 0.50ppb	
Comment					

### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	838.0bbl	Losses	34.0bbl	Comment
Centrifuge	DE 1000		Active	347.0bbl	Downhole		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	19.0bbl	
Shaker 1	Derrick	Pyramid-210/210	Hole	348.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-210/210	Slud		De-Sander		
Shaker 2	Derrick	Pyramid-250/250	Reserve	143.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-250/250	Kill		Centrifuge	15.0bbl	

Bit # 6			Wear	I	O1	D	L	B	G	O2	R
				1	1	WT	S	1	I	NO	PR
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	Hycalog	WOB (avg): 5.0klb	No.	Size	Progress:			Cum. Progress: 0.0m			
Type:		RPM (avg): 50			On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	RO3706	F.Rate: 500gpm			IADC Time:			Cum. IADC Time: 0.00h			
Depth In:	1606.0m	SPP: 1400psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	1606.0m	HSI:			ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	HP21G	TFA: 0.000									
Bit # 7			Wear	I	O1	D	L	B	G	O2	R
				0	1	RG	G	X	I	NO	BHA
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg): 5.0klb	No.	Size	Progress: 13.0m			Cum. Progress: 13.0m			
Type:	p	RPM (avg): 50	6	14/32nd"	On Bottom Time: 3.00h			Cum. On Btm Time: 3.00h			
Serial #:	112295	F.Rate: 500gpm			IADC Time: 1.50h			Cum. IADC Time: 1.50h			
Depth In:	1606.0m	SPP: 1400psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	1609.0m	HSI:			ROP (avg): 4.33 m/hr			Overall ROP (avg): 4.33 m/hr			
Bit Model:	RSX272	TFA: 0.902									
Bit # 8			Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	No.	Size	Progress:			Cum. Progress: 0.0m			
Type:	p	RPM (avg):			On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	213186	F.Rate:			IADC Time:			Cum. IADC Time: 0.00h			
Depth In:	1619.0m	SPP:			Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:			ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	RSX616M-B19	TFA: 0.000									

**BHA # 6**

Wt. Below Jars Dry:	Length: 208.9m	Torque (max):	DC (1) Ann Vel.: 408fpm
Weight Dry:	String Weight: 46000.0klb	Torque On Btm:	DC (2) Ann Vel.: 0fpm
Type: Pendulum	Pick-Up Weight: 48000.0klb	Torque Off Btm:	HWDP Ann. Vel.: 236fpm
	Slack-Off Weight: 45000.0klb		DP Ann. Vel.: 236fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.26m	8.50in		RO3706	
2	Bit Sub		0.92m	6.50in	3.00in		
3	Drill Collar	6 X 6.5 DC	54.56m	6.50in	3.00in		
4	HWDP	9 X HWDP	86.05m	4.50in	2.75in		
5	Drilling Jars		9.95m	4.60in	3.00in	176020301	92.00h
6	HWDP	6 X HWDP	57.17m	4.50in	2.75in		

**BHA # 7**

Wt. Below Jars Dry: 80000.0klb	Length: 212.4m	Torque (max): 8500ft-lbs	DC (1) Ann Vel.: 408fpm
Weight Dry: 35300.0klb	String Weight: 75000.0klb	Torque On Btm: 7000ft-lbs	DC (2) Ann Vel.: 0fpm
Type: Pendulum	Pick-Up Weight: 80000.0klb	Torque Off Btm: 6500ft-lbs	HWDP Ann. Vel.: 236fpm
	Slack-Off Weight: 70000.0klb		DP Ann. Vel.: 236fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.37m	8.50in	3.00in	112295	3.00h
2	Near Bit Stabiliser		1.82m		2.88in	47695	3.00h
3	X/O		0.45m	6.00in	2.88in	m1623	3.00h
4	6.5in DC		9.42m	6.50in	2.75in	32-2-5	36.80h
5	X/O		0.32m	6.00in	2.81in		3.00h
6	String Stabiliser		1.28m		3.00in	47584	3.00h
7	X/O		0.45m		3.00in		39.50h
8	6.5in DC		45.14m	6.50in	3.00in		39.50h
9	HWDP		86.05m	4.50in	2.81in		48.50h
10	Drilling Jars		9.95m		2.75in	176020301	95.00h
11	HWDP		57.17m	4.50in	2.81in		39.50h

**BHA # 8**

Wt. Below Jars Dry: 55860.0klb	Length: 184.6m	Torque (max):	DC (1) Ann Vel.: 0fpm
Weight Dry: 54529.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 0fpm
Type: Rotary Steerable	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 0fpm
	Slack-Off Weight:		DP Ann. Vel.: 0fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.40m	8.50in		213186	4.00h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	4.00h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	4.00h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	4.00h
6	Float Sub		0.63m	6.44in	2.75in	A225	4.00h
7	X/O		0.35m	6.25in	3.00in	M1623	43.50h
8	HWDP		86.05m	6.25in	2.81in		52.50h
9	Drilling Jars		9.95m	6.50in	2.75in	176020301	99.00h
10	HWDP		57.17m	6.25in	2.81in		43.50h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1118.04	71.67	115.22	670.9	-369.18	3.65	-369.18	625.08	725.96	120.6	MWD
1233.87	71.80	114.62	707.2	-415.52	0.50	-415.52	724.83	835.49	119.8	MWD
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD



Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	60	0	840.0
KCl	sx	304	0	0	-176.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	15800	7000	0	44,000.0
Rig Fuel	ltr	0	4100	0	38,300.0
Camp Fuel	ltr	0	350	0	4,350.0

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	120	97	250	1450			1619.0	9.50
2	National - 8P-80	5.50	120	97	250	1450			1619.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00		97	312					9.50

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	11 Aug 2006	0 Days	Incident free days 12/TRI 12 Days	Held 2 x pre tour safety meeting .Topics discussed .Tripping .Handling radio active sources.



**12 Aug 2006**

**From : Troy Reid**  
**To : Andy Wilkinson/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1660.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	848.0m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	41.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	14.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	31.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 13 Aug 2006 : Trip in hole with circulating assy					
Planned Operations for 13 Aug 2006 : Wait on Tesco Hydraulic pump to get flown in and installed. Estimate arrival on site 18:00 hrs.					
POOH with circulating assy once we know parts are on the way.					

#### Summary of Period 0000 to 2400 Hrs

Attempt to set Geo pilot to Home (zero deflection) setting, unable to set. Change out down link choke size and set geo pilot at Home setting. Wash down f/-1575 to 1619m as per sperry parameters. Tool past float and shoe with no hang ups. Drill 8 1/2 hole f/-1619m to 1659m. Drill with 575gpm, 50rpm, WOB 10. Drill with these parameters until geo pilot tools are in open hole. ROP 12-15m/hr. TDU hydraulic pump over heated. Trouble shoot. POOH back to 9 5/8 casing shoe. Repair seals on TDU hydraulic pump. RIH and attempt to drill f/-1659m TDU Hydraulic pump overheated - 220 deg. POOH back inside 9 5/8 casing shoe and circulate while change out Tesco hydraulic pump. RIH and continue to drill 8 1/2 hole with rotary steerable assy. f/- 1659m to 1660m .Tesco hydraulic pump overheated - 220deg. POOH back inside 9 5/8 casing shoe. Source replacement pump for Tesco Hydraulic system.  
Pooh to surface  
Hold JHA for removing Radio active sources. Remove radio active sources,

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 12 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	SC	0000	0030	0.50	1619.0m	Continue to calibrate block height sensor with sperry sun
PH	TP	CMD	0030	0130	1.00	1619.0m	Attempt to set Geo Pilot to 'home' (zero deflection) setting unable to set. Change out down link choke size and set geo pilot at 'home' setting (zero deflection).
PH	P	RW	0130	0300	1.50	1619.0m	Wash down f/-1575 to 1619m as per sperry parameters. Tool past float and shoe with no hang ups.
PH	P	DM	0300	0700	4.00	1646.0m	Drill 8 1/2 hole f/-1619m to 1659m. Drill with 575gpm, 50rpm, WOB 10klbs. Drill with these parameters until Geo pilot tools are in open hole. ROP 12-15m/hr
PH	TP	RO	0700	0730	0.50	1646.0m	TDU hydraulic pump over heated. Trouble shoot.
PH	TP	RO	0730	0930	2.00	1646.0m	Pooh back to 9 5/8 casing shoe. Repair seals on TDU hydraulic pump.
PH	TP	RO	0930	1030	1.00	1646.0m	RIH and attempt to drill f/-1659m TDU Hydraulic pump overheated 220 deg.
PH	TP	RO	1030	1330	3.00	1646.0m	POOH back inside 9 5/8 casing shoe and circulate while change out Tesco hydraulic pump.
PH	TP	DM	1330	1400	0.50	1660.0m	RIH and continue to drill 8 1/2 hole with rotary steerable assy f/- 1659m to 1660m. Tesco hydraulic pump overheated - 220deg
PH	TP	RO	1400	1830	4.50	1660.0m	Pooh back inside 9 5/8 casing shoe. Source replacement pump for Tesco Hydraulic system.
PH	TP	TO	1830	2330	5.00	1660.0m	Pooh to surface.
PH	TP	HBHA	2330	2400	0.50	1660.0m	Hold JHA for removing Radio active sources. Remove radio active sources.

#### Operations For Period 0000 Hrs to 0600 Hrs on 13 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		HBHA	0000	0100	1.00	1660.0m	Down load geo pilot data.
PH		HBHA	0100	0200	1.00	1660.0m	Rack Geo pilot in derrick.
PH		TI	0200	0600	4.00	1660.0m	M/up BHA # 9 and RIH to 1590m

#### General Comments

Comments	Rig Requirements
Tesco hydraulic pump failed and spare was also no good. Unable to continue drilling until new part is flown in.	

#### WBM Data

Mud Type:	CI PHPA/Glycol	Viscosity:	46sec/qt	API FL Loss:	5.4cc	CI	29000	Solids:	4.6
Depth:	1658.0m	PV:	11cp	Filter Cake:	1/32nd"	K+:	5%	H2O:	93%
Time:	06:30	YP:	17lb/100ft²	HTHP FL:	13.5cc	Hard/Ca:	270	Oil:	
Weight:	9.30ppg	Gels 10s/10m:	5 / 8	HTHP Cake:	2/32nd"	MBT:	5	Sand:	0.1
Temp:		Fann (3/6/100):				PM:		pH:	9.5
			5 / 6 / 13			PF:	0.15	PHPA:	0.50ppb
Comment Raising mud weight towards 10.5 ppg for Lakes Entrance Formation.									

#### WBM Data

Mud Type:	CI PHPA/Polymer	Viscosity:	49sec/qt	API FL Loss:	5.5cc	CI	29000	Solids:	5.2
Depth:	1658.0m	PV:	12cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	92%
Time:	10:30	YP:	21lb/100ft²	HTHP FL:		Hard/Ca:	270	Oil:	
Weight:	9.40ppg	Gels 10s/10m:	7 / 12	HTHP Cake:		MBT:	5	Sand:	0.1
Temp:		Fann (3/6/100):				PM:		pH:	9.5
			7 / 9 / 21			PF:	0.15	PHPA:	0.50ppb
Comment									

#### WBM Data

Mud Type:	CI PHPA/Glycol	Viscosity:	51sec/qt	API FL Loss:	6.0cc	CI	31000	Solids:	6.5
Depth:	1660.0m	PV:	14cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	91%
Time:	19:00	YP:	26lb/100ft²	HTHP FL:		Hard/Ca:	280	Oil:	
Weight:	9.90ppg	Gels 10s/10m:	7 / 10	HTHP Cake:		MBT:	5	Sand:	0.1
Temp:		Fann (3/6/100):				PM:	0.4	pH:	9.5
			6 / 9 / 24			PF:	0.15	PHPA:	0.50ppb
Comment									

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	920.0bbl	Losses	91.0bbl	Comment
Centrifuge	DE 1000		Active	355.0bbl	Downhole		Changed no 2 shaker to 175 after losses over shaker and beginning to weight up.
Centrifuge	DE 1000		Mixing		Surf. + Equip.	71.0bbl	
Shaker 1	Derrick	Pyramid-210/210	Hole	398.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-210/210	Slud		De-Sander		
Shaker 2	Derrick	Pyramid-250/250	Reserve	167.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge	20.0bbl	

Bit # 8				Wear	I 2	O1 3	D CT	L A	B X	G I	O2 BT	R RIG
Size:	8.500in	IADC#:	M422	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	5.0klb	No.	Size	Progress: 41.0m			Cum. Progress: 41.0m			
Type:	p	RPM (avg):	100			On Bottom Time: 3.26h			Cum. On Btm Time: 3.26h			
Serial #:	213186	F.Rate:	600gpm			IADC Time: 4.00h			Cum. IADC Time: 4.00h			
Depth In:	1619.0m	SPP:	1600psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	1660.0m	HSI:				ROP (avg): 12.58 m/hr			Overall ROP (avg): 12.58 m/hr			
Bit Model:	RSX616M-B19	TFA:	0.000									

BHA # 8											
Wt. Below Jars Dr			5860.0klb	Length:			184.6m	Torque (max):			DC (1) Ann Vel.: 0fpm
Weight Dry:			54529.0klb	String Weight:				Torque On Btm:			DC (2) Ann Vel.: 0fpm
Type: Rotary Steerable				Pick-Up Weight:				Torque Off Btm:			HWDP Ann. Vel.: 283fpm
				Slack-Off Weight:							DP Ann. Vel.: 283fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.40m	8.50in		213186	4.00h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	4.00h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	4.00h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	4.00h
6	Float Sub		0.63m	6.44in	2.75in	A225	4.00h
7	X/O		0.35m	6.25in	3.00in	M1623	43.50h
8	HWDP		86.05m	6.25in	2.81in		52.50h
9	Drilling Jars		9.95m	6.50in	2.75in	176020301	99.00h
10	HWDP		57.17m	6.25in	2.81in		43.50h

Survey											
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type	
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD	
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD	
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD	
1620.00	71.72	117.39	832.4	-575.63	5.18	-575.63	1053.10	1200.15	118.7	MWD	
1647.00	69.84	118.53	841.3	-587.58	8.02	-587.58	1075.61	1225.64	118.6	MWD	

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	350	0	490.0	
KCl	sx	0	60	0	-236.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	240.0	
Potable Water	ltr	0	7000	0	37,000.0	
Rig Fuel	ltr	0	3200	0	35,100.0	
Camp Fuel	ltr	0	350	0	4,000.0	

Pumps											
Pump Data - Last 24 Hrs							Slow Pump Data				
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)	
1	National - 8P-80	5.50	120	97	246	1600			1660.0	9.50	
2	National - 8P-80	5.50	120	97	246	1600			1660.0	9.50	
3	National - 8P-80	5.50									
4	IDECO - T1000	6.00		97	312					9.50	

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	12 Aug 2006	0 Days	Incident free days 13/TRI 13 Days	Held 2 x pre tour safety meeting .Topics discussed .housekeeping.Tripping pipe.unloading casing.

13 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1660.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	848.0m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	15.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	32.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 14 Aug 2006 : Test new Hydraulic pump on tesco unit.					
Planned Operations for 14 Aug 2006 : Continue to drill 8 1/2 hole f/-1660m					

#### Summary of Period 0000 to 2400 Hrs

POOH rack geo pilot assy. RIH w/- cleanout assy and condition mud while wait on tesco hydraulic pump.  
POOH w/- clean out assy. M/UP geo assy ,change out CNP/SLD. Load radio active sources. RIH to 764m at midnight.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 13 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	TP	HBHA	0000	0100	1.00	1660.0m	Down load geo pilot data.
PH	TP	HBHA	0100	0200	1.00	1660.0m	Rack Geo pilot in derrick.
PH	TP	TI	0200	0600	4.00	1660.0m	M/up BHA # 9 and RIH to 1590m
PH	TP	CMD	0600	1500	9.00	1660.0m	Circulate and condition while waiting on tesco parts. Continue to work on Tesco unit hydraulic system. Change filters ,check for blockages in lines.
PH	TP	TO	1500	1900	4.00	1660.0m	POOH to change BHA to rotary steerable assy.
PH	TP	HBHA	1900	2100	2.00	1660.0m	Layout CNP/SLD tool in Sperry Sun BHA assy. CNP/SLD tool failed. Install new CNP/SLD.
PH	TP	HT	2100	2130	0.50	1660.0m	M/up BHA #10. Install Radioactive source in tools.
PH	TP	HT	2130	2230	1.00	1660.0m	RIH to 118m w/- geo pilot.
PH	TP	HT	2230	2300	0.50	1660.0m	Test MWD tools
PH	TP	TI	2300	2400	1.00	1660.0m	Continue to RIH to 1571m, filling every 20 stands to 764m

#### Operations For Period 0000 Hrs to 0600 Hrs on 14 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		TI	0000	0430	4.50	1660.0m	RIH w/- Geo Pilot assy to 1571m. Hydraulic pump arrived on location at 02:30 hrs.
PH		CHC	0430	0500	0.50	1660.0m	Circulate and condition while tesco installs hydraulic pump on tesco unit.
PH		RO	0500	0600	1.00	1660.0m	(IN PROGRESS) Test tesco hydraulic pump. Precharge pressure on Top drive started at 400psi normal. Started to rotate, pre-charge pressure dropped to 220psi. Continue to trouble shoot hydraulic system. Clean out hyraulic filters and found o-ring in hydraulic port. Also found wire strands in hydraulic manifold. Replaced filters and test hydraulic system, all working to spec.

#### General Comments

Comments	Rig Requirements
Tesco hydraulic pump arriving Adelaide 19:45 hrs 130806	

WBM Data									
Mud Type:	CI PHPA/Glycol	Viscosity:	52sec/qt	API FL Loss:	5.9cc	Cl	30000	Solids:	6.1
Depth:	1660.0m	PV:	13cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	92%
Time:	08:00	YP:	23lb/100ft²	HTHP FL:		Hard/Ca:	350	Oil:	
Weight:	9.80ppg	Gels 10s/10m:	6 / 10	HTHP Cake:		MBT:	5	Sand:	0.1
Temp:		Fann (3/6/100):				PM:		pH:	9.5
			6 / 9 / 22			PF:	0.15	PHPA:	0.50ppb
Comment									

WBM Data									
Mud Type:	CI PHPA/Polymer	Viscosity:	55sec/qt	API FL Loss:	5.9cc	CI	30000	Solids:	6.2
Depth:	1660.0m	PV:	16cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	92%
Time:	21:00	YP:	24lb/100ft²	HTHP FL:		Hard/Ca:	240	Oil:	
Weight:	9.80ppg	Gels 10s/10m:	8 / 11	HTHP Cake:		MBT:	5	Sand:	0.1
Temp:		Fann (3/6/100):				PM:		pH:	9.5
			6 / 10 / 23			PF:	0.15	PHPA:	0.50ppb
Comment									

Shakers, Volumes and Losses Data					Engineer: Manfred Olejniczak / J.V.Babu		
Equipment	Description	Mesh Size	Available	890.0bbl	Losses	24.0bbl	Comment
Centrifuge	DE 1000		Active	339.0bbl	Downhole		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	0.0bbl	
Shaker 1	Derrick	Pyramid-210/210	Hole	398.0bbl	Dumped	24.0bbl	
Shaker 1	Derrick	Pyramid-210/210	Slud		De-Sander		
Shaker 2	Derrick	Pyramid-175/175	Reserve	153.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge		

Bit # 8				Wear	I 2	O1 3	D CT	L A	B X	G I	O2 BT	R RIG
Size:	8.500in	IADC#:	M422	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	5.0klb	No.	Size	Progress:			Cum. Progress: 41.0m			
Type:	p	RPM (avg):	100			On Bottom Time: 0.00h			Cum. On Btm Time: 3.26h			
Serial #:	213186	F.Rate:	600gpm			IADC Time: 0.00h			Cum. IADC Time: 4.00h			
Depth In:	1619.0m	SPP:	1600psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	1660.0m	HSI:				ROP (avg): N/A			Overall ROP (avg): 12.58 m/hr			
Bit Model:	RSX616M-B19	TFA:	0.000									
Bit # 6rr				Wear	I	O1	D	L	B	G	O2 NO	R
Size:	8.500in	IADC#:		Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	Hycalog	WOB (avg):		No.	Size	Progress:			Cum. Progress: 0.0m			
Type:	mt	RPM (avg):				On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	RO3706	F.Rate:				IADC Time:			Cum. IADC Time: 0.00h			
Depth In:	1606.0m	SPP:				Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:				ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	HP21G	TFA:	0.000									
Bit # 9				Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#:		Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):		No.	Size	Progress:			Cum. Progress: 0.0m			
Type:	p	RPM (avg):		6	14/32nd"	On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #:	210621	F.Rate:				IADC Time:			Cum. IADC Time: 0.00h			
Depth In:	1660.0m	SPP:				Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:				ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model:	RSX616	TFA:	0.902									



**BHA # 9**

Wt. Below Jars Dry:	Length: 208.9m	Torque (max):	DC (1) Ann Vel.: 0fpm
Weight Dry:	String Weight: 46000.0klb	Torque On Btm:	DC (2) Ann Vel.: 0fpm
Type: Pendulum	Pick-Up Weight: 110000.0klb	Torque Off Btm:	HWDP Ann. Vel.: 0fpm
	Slack-Off Weight: 54000.0klb		DP Ann. Vel.: 0fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.26m	8.50in		RO3706	
2	Bit Sub		0.92m	6.50in	3.00in		43.50h
3	Drill Collar	6 X 6.5 DC	54.56m	6.50in	3.00in		52.50h
4	HWDP	9 X HWDP	86.05m	4.50in	2.75in		52.50h
5	Drilling Jars		9.95m	4.60in	3.00in	176020301	92.00h
6	HWDP	6 X HWDP	57.17m	4.50in	2.75in		43.50h

**BHA # 10**

Wt. Below Jars Dry: 55860.0klb	Length: 185.2m	Torque (max):	DC (1) Ann Vel.: 0fpm
Weight Dry: 54529.0klb	String Weight:	Torque On Btm:	DC (2) Ann Vel.: 0fpm
Type: Rotary Steerable	Pick-Up Weight:	Torque Off Btm:	HWDP Ann. Vel.: 0fpm
	Slack-Off Weight:		DP Ann. Vel.: 0fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		210621	7.50h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	7.50h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	7.50h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	7.50h
5	MWD		9.18m	6.75in	1.92in	DM90107112	7.50h
6	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	3.50h
7	Float Sub		0.63m	6.44in	2.75in	A225	7.50h
8	X/O		0.35m	6.25in	3.00in	M1623	47.00h
9	HWDP		86.05m	6.25in	2.81in		55.50h
10	Drilling Jars		9.95m	6.50in	2.75in	176020301	102.50h
11	HWDP		57.17m	6.25in	2.81in		47.00h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD
1620.00	71.72	117.39	832.4	-575.63	5.18	-575.63	1053.10	1200.15	118.7	MWD
1647.00	69.84	118.53	841.3	-587.58	8.02	-587.58	1075.61	1225.64	118.6	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	490.0
KCl	sx	0	0	0	-236.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	7000	0	30,000.0
Rig Fuel	ltr	0	3000	0	32,100.0
Camp Fuel	ltr	0	350	0	3,650.0



<b>Pumps</b>										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	120	97	246	1600			1660.0	9.50
2	National - 8P-80	5.50	120	97	246	1600			1660.0	9.50
3	National - 8P-80	5.50								
4	IDECO - T1000	6.00		97	312					9.50

<b>HSE Summary</b>				
Events	Date of Last	Days Since	Description	Remarks
Hazard	13 Aug 2006	0 Days	CFS from weekly safety meeting	
LTI/MTI incident free days	13 Aug 2006	0 Days	Incident free days 14/TRI 14 Days	Held 2 x pre tour safety meeting .Topics discussed .Housekeeping, drifting casing.

14 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1680.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	856.0m	Casing O.D.:	9.625in
Prognosed TD:	2350.0m	Progress:	20.0m	Shoe TVD:	803.0m
RT-GL:	5.90m	Days From Spud:	16.81	F.I.T. / L.O.T.	/ 16.40ppg
GL Elev.:	2.71m	Days On Well:	33.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 15 Aug 2006 : RIH w/- geo pilot assy					
Planned Operations for 15 Aug 2006 : Continue to drill 8 1/2 hole w/- geo pilot.					

#### Summary of Period 0000 to 2400 Hrs

Repair tesco hydraulic unit. RIH w/- Geopilot to 1570m. Wash and ream down to bottom 1660m .High torque reaming to bottom. Continue to drill 8 1/2 hole w/- geo pilot assy to 1680m ROP dropped f/- 20m/hr to 1.2m/hr. Pump sweeps to unball bit. ROP still 1-2m/hr. POOH to check bit.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 14 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	TP	TI	0000	0430	4.50	1660.0m	RIH w/- Geo Pilot assy to 1571m. Hydraulic pump arrived on location at 02:30 hrs.
PH	TP	CHC	0430	0500	0.50	1660.0m	Circulate and condition while tesco installs hydraulic pump on tesco unit.
PH	TP	RO	0500	1200	7.00	1660.0m	Test tesco hydraulic pump. Precharge pressure on Top drive started at 400psi normal. Started to rotate, pre-charge pressure dropped to 220psi. Continue to trouble shoot hydraulic system. Clean out hyraulic filters and found o-ring in hydraulic port. Also found wire strands in hydraulic manifold. Replaced filters and test hydraulic system, all working to spec.
PH	TP	RW	1200	1330	1.50	1660.0m	RIH f/- 1570m to 1621m. Take weight at 1621m. Work through, high torque 15000ft/lbs spikes. 35k overpull. Wash and ream to 1650m
PH	TP	TO	1330	1400	0.50	1660.0m	Sperry height calibration failed. POOH back to 9 5/8 casing shoe.
PH	TP	RO	1400	1500	1.00	1660.0m	Sperry replace decoder and calibrate block height.
PH	TP	RW	1500	1600	1.00	1660.0m	RIH to 1650m wash and ream f/-1650 to 1660m. High torque 15000 ft/lbs. From 1658m torque reduced to 8500 ft/bls. Tag bottom at 1660m.
PH	P	DM	1600	2100	5.00	1680.0m	Continue to drill 8 1/2 hole f/-1660m to 1680m. ROP avg 2m/hr. WOB 20-24, RPM 140, Torque 8500ft/lbs. Pump 2 x 20bbls 40ppb baracarb 600. Pump 20bbls 22% KCL sweep and soak for 10mins around bit.
PH	TP	RW	2100	2130	0.50	1680.0m	Pump back f/- 1680m to 9 5/8 casing shoe.
PH	TP	TO	2130	2400	2.50	1680.0m	Flow check pump slug POOH to 500m

#### Operations For Period 0000 Hrs to 0600 Hrs on 15 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		TO	0000	0130	1.50	1680.0m	Continue to POOH to 10m.
PH		HT	0130	0200	0.50	1680.0m	Hold PJSM and unload radiuo active source
PH		HT	0200	0230	0.50	1680.0m	Down load MWD data
PH		HBHA	0230	0330	1.00	1680.0m	Lay out flex joint and pull Bit# 9. Bit balled up with 1x blocked jet. Clean up bit and remove and clean out jets. No junk damage on BHA.

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		HT	0330	0430	1.00	1680.0m	M/up bit# 9RR. Pick up flex joint and Test MWD. OK.
PH		HT	0430	0500	0.50	1680.0m	Hole PJSM. Install radioactive source
PH		TI	0500	0600	1.00	1680.0m	Continue to RIH w/- BHA#11

#### General Comments

Comments	Rig Requirements
Repair tesco hydraulic unit. Clean out filter cans. Ditch magnet 24 hr period 7kg	

#### WBM Data

Mud Type: KCl PHPA/Glycol	Viscosity: 51sec/qt	API FL Loss: 5.5cc	CI	30000	Solids: 6.6
Depth: 1681.0m	PV: 18cp	Filter Cake: 1/32nd"	K+: 6%		H2O: 91%
Time: 21:30	YP: 29lb/100ft <sup>2</sup>	HTHP FL:	Hard/Ca: 320		Oil: 0.3
Weight: 9.90ppg	Gels 10s/10m: 9 / 13	HTHP Cake:	MBT: 5		Sand: 0.3
Temp:	Fann (3/6/100):		PM:		pH: 9
	7 / 10 / 29		PF: 0.05		PHPA: 0.50ppb

Comment

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	910.0bbl	Losses	17.0bbl	Comment
Centrifuge	DE 1000		Active	417.0bbl	Downhole		Losses over shakers from bit balling pill pumped.
Centrifuge	DE 1000		Mixing		Surf. + Equip. 17.0bbl		
Shaker 1	Derrick	Pyramid-210/210	Hole	360.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-210/210	Slug		De-Sander		
Shaker 2	Derrick	Pyramid-175/175	Reserve	133.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge		

Bit # 9			Wear	I	O1	D	L	B	G	O2	R
Size: 8.500in	IADC#:		Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr: HYCALOG	WOB (avg): 18.0klb		No.	Size	Progress: 20.0m			Cum. Progress: 20.0m			
Type: p	RPM (avg): 120		6	14/32nd"	On Bottom Time: 3.27h			Cum. On Btm Time: 3.27h			
Serial #: 210621	F.Rate: 600gpm				IADC Time: 5.00h			Cum. IADC Time: 5.00h			
Depth In: 1660.0m	SPP: 2300psi				Total Revs:			Cum. Total Revs: 0			
Depth Out: 1680.0m	HSI:				ROP (avg): 6.12 m/hr			Overall ROP (avg): 6.12 m/hr			
Bit Model: RSX616	TFA: 0.902										

**BHA # 10**

Wt. Below Jars Dr	5860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	70000.0klb	Torque On Btm:	8500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	120000.0klb	Torque Off Btm:	8500ft-lbs	HWDP Ann. Vel.:	283fpm
		Slack-Off Weight:	55000.0klb			DP Ann. Vel.:	283fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		210621	7.50h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	7.50h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	7.50h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	7.50h
5	MWD		9.18m	6.75in	1.92in	DM90107112	7.50h
6	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	3.50h
7	Float Sub		0.63m	6.44in	2.75in	A225	7.50h
8	X/O		0.35m	6.25in	3.00in	M1623	47.00h
9	HWDP		86.05m	6.25in	2.81in		55.50h
10	Drilling Jars		9.95m	6.50in	2.75in	176020301	102.50h
11	HWDP		57.17m	6.25in	2.81in		47.00h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1378.57	70.75	115.43	753.7	-473.49	0.90	-473.49	849.00	972.11	119.1	MWD
1522.57	71.02	117.07	800.8	-533.67	1.09	-533.67	971.03	1108.01	118.8	MWD
1606.00	71.07	117.05	827.9	-569.56	0.06	-569.56	1041.30	1186.89	118.7	MWD
1620.00	71.72	117.39	832.4	-575.63	5.18	-575.63	1053.10	1200.15	118.7	MWD
1647.00	69.84	118.53	841.3	-587.58	8.02	-587.58	1075.61	1225.64	118.6	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	40	0	450.0
KCl	sx	0	40	0	-276.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	7000	0	23,000.0
Rig Fuel	ltr	0	2600	0	29,500.0
Camp Fuel	ltr	0	350	0	3,300.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	120	97	246	2400			1680.0	9.90
2	National - 8P-80	5.50	120	97	246	2400			1680.0	9.90
3	National - 8P-80	5.50								
4	IDECO - T1000									

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	14 Aug 2006	0 Days	Incident free days 15/TRI 15 Days	Held 2 x pre tour safety meeting .Topics discussed .Housekeeping,Unloading third party truck,Mixing mud chemicals.

15 Aug 2006

From : Troy Reid  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1847.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	941.0m	Casing O.D.:	9.625in
Prognosed TD:	2350.0m	Progress:	167.0m	Shoe TVD:	803.0m
RT-GL:	5.90m	Days From Spud:	17.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	2.71m	Days On Well:	34.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 16 Aug 2006 : Continue to drill 8 1/2 hole w/- geo pilot. ROP Reduced at 1860m f/- 20m/hr to 6m/hr.					
Planned Operations for 16 Aug 2006 : Continue to drill 8 1/2 hole w/- geo pilot to TD 2350m					

#### Summary of Period 0000 to 2400 Hrs

POOH w/- BHA # 10.  
Check bit #9 balled up clean up bit and rerun in hole.  
Continue to 8 1/2 hole w/- GeoPilot f/-1680m to 1847m

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 15 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	TP	TO	0000	0130	1.50	1680.0m	Continue to POOH to 10m.
PH	TP	HT	0130	0200	0.50	1680.0m	Hold PJSM and unload radioactive source
PH	TP	HT	0200	0230	0.50	1680.0m	Download MWD data
PH	TP	HBHA	0230	0330	1.00	1680.0m	Lay out flex joint and pull Bit# 9. Bit balled up with 1x blocked jet. Clean up bit and remove and clean out jets. No junk damage on BHA.
PH	TP	HT	0330	0430	1.00	1680.0m	M/up bit# 9RR Pick up flex joint and Test MWD. OK.
PH	TP	HT	0430	0500	0.50	1680.0m	Hole PJSM. Install radioactive source.
PH	TP	TI	0500	0600	1.00	1680.0m	Continue to RIH w/- BHA#11 to 214m
PH	TP	HT	0600	0630	0.50	1680.0m	Shallow test sperry geo pilot ok.
PH	TP	TI	0630	0830	2.00	1680.0m	Continue to RIH to 9 5/8 casing shoe 1602m
PH	TP	RW	0830	0930	1.00	1680.0m	Wash and ream down f/- 1602m to 1680m
PH	P	DM	0930	1200	2.50	1717.0m	Drill 8 1/2 hole w/- 1680m to 1717m
PH	U	RS	1200	1230	0.50	1717.0m	Service Top drive
PH	P	DM	1230	2400	11.50	1847.0m	Continue to drill 8 1/2 hole to 1847m ,WOB,10-12k, RPM 140, SPM 255 = 650GPM, SPP=2650psi.

#### Operations For Period 0000 Hrs to 0600 Hrs on 16 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		DM	0000	0200	2.00	1881.0m	Continue to drill 8 1/2 to 1881m At 1865m pressure increase 2700psi to 2850 psi. ROP decreased f/- 20m/hr to 4-6 m/hr.
PH		DM	0200	0600	4.00	1881.0m	Suspect plugged jets. Pump several baracarb/KCl sweeps in attempt to clear jets. No change in pressure or ROP. Pull back to 1750m & perform flow test. Circ rate decreased from 645gpm to 540gpm w/ similar circ pressure. Clean hole & POOH to inspect/change bit.

#### General Comments

Comments	Rig Requirements
Tesco's second engineer on site .	

WBM Data									
Mud Type:	KCl PHPA/Glycol	Viscosity:	52sec/qt	API FL Loss:	5.8cc	CI	30000	Solids:	7.1
Depth:	1681.0m	PV:	13cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	90%
Time:	10:30	YP:	24lb/100ft²	HTHP FL:	11.5cc	Hard/Ca:	350	Oil:	
Weight:	10.00ppg	Gels 10s/10m:	7 / 11	HTHP Cake:	2/32nd"	MBT:	5	Sand:	0.2
Temp:		Fann (3/6/100):				PM:		pH:	9
			6 / 9 / 23			PF:	0.1	PHPA:	0.50ppb
Comment									

WBM Data									
Mud Type:	KCl/PHPA/Glycol	Viscosity:	49sec/qt	API FL Loss:	5.8cc	CI	39000	Solids:	8
Depth:	1825.0m	PV:	19cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	89%
Time:	21:45	YP:	31lb/100ft²	HTHP FL:		Hard/Ca:	360	Oil:	
Weight:	10.40ppg	Gels 10s/10m:	9 / 12	HTHP Cake:		MBT:	5	Sand:	0.3
Temp:	129.0F°	Fann (3/6/100):				PM:	0.15	pH:	9
			8 / 10 / 29			PF:	0.05	PHPA:	0.50ppb
Comment Added Radsiaagreene to reduce torque. Also reduced rheology. Increased KCl and Glycol.									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	870.0bbl	Losses	82.0bbl	Comment		
Centrifuge	DE 1000		Active	372.0bbl	Downhole				
Centrifuge	DE 1000		Mixing		Surf. + Equip.	82.0bbl			
Shaker 1	Derrick	Pyramid-210/210	Hole	398.0bbl	Dumped				
Shaker 1	Derrick	Pyramid-210/210	Slud		De-Sander				
Shaker 2	Derrick	Pyramid-175/175	Reserve	100.0bbl	De-Silter				
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge				

Bit # 9			Wear	I	O1	D	L	B	G	O2	R
				0	0	NO		X	I	NO	PR
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg): 18.0klb	No.	Size	Progress:			Cum. Progress:			
Type:	p	RPM (avg): 120	6	14/32nd"	On Bottom Time: 0.00h			Cum. On Btm Time: 3.27h			
Serial #:	210621	F.Rate: 600gpm			IADC Time: 0.00h			Cum. IADC Time: 5.00h			
Depth In:	1660.0m	SPP: 2300psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:	1680.0m	HSI:			ROP (avg): N/A			Overall ROP (avg): 6.12 m/hr			
Bit Model:	RSX616	TFA: 0.902									

Bit # 9rr			Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg): 18.0klb	No.	Size	Progress:			Cum. Progress:			
Type:	p	RPM (avg): 120	6	18/32nd"	On Bottom Time: 10.10h			Cum. On Btm Time: 10.10h			
Serial #:	210621	F.Rate: 600gpm			IADC Time: 13.50h			Cum. IADC Time: 13.50h			
Depth In:	1680.0m	SPP: 2300psi			Total Revs:			Cum. Total Revs: 0			
Depth Out:		HSI:			ROP (avg): 16.53 m/hr			Overall ROP (avg): 16.53 m/hr			
Bit Model:	RSX616	TFA: 1.491									

**BHA # 10**

Wt. Below Jars Dr	5860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	70000.0klb	Torque On Btm:	8500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	120000.0klb	Torque Off Btm:	8500ft-lbs	HWDP Ann. Vel.:	283fpm
		Slack-Off Weight:	55000.0klb			DP Ann. Vel.:	283fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		210621	7.50h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	7.50h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	7.50h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	7.50h
5	MWD		9.18m	6.75in	1.92in	DM90107112	7.50h
6	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	3.50h
7	Float Sub		0.63m	6.44in	2.75in	A225	7.50h
8	X/O		0.35m	6.25in	3.00in	M1623	47.00h
9	HWDP		86.05m	6.25in	2.81in		55.50h
10	Drilling Jars		9.95m	6.50in	2.75in	176020301	102.50h
11	HWDP		57.17m	6.25in	2.81in		47.00h

**BHA # 11**

Wt. Below Jars Dr	5860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	75000.0klb	Torque On Btm:	8500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	80000.0klb	Torque Off Btm:	8500ft-lbs	HWDP Ann. Vel.:	283fpm
		Slack-Off Weight:	65000.0klb			DP Ann. Vel.:	283fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		210621	17.60h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	17.60h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	17.60h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	17.60h
5	MWD		9.18m	6.75in	1.92in	DM90107112	17.60h
6	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	13.60h
7	Float Sub		0.63m	6.44in	2.75in	A225	17.60h
8	X/O		0.35m	6.25in	3.00in	M1623	57.10h
9	HWDP		86.05m	6.25in	2.81in		55.60h
10	Drilling Jars		9.95m	6.50in	2.75in	176020301	112.60h
11	HWDP		57.17m	6.25in	2.81in		57.60h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1647.00	69.84	118.53	841.3	-587.58	8.02	-587.58	1075.61	1225.64	118.6	MWD
1706.30	64.96	118.42	864.1	-613.68	8.23	-613.68	1123.72	1280.37	118.6	MWD
1764.18	58.81	117.25	891.3	-637.51	10.77	-637.51	1168.84	1331.39	118.6	MWD
1822.11	51.89	116.24	924.3	-658.96	12.03	-658.96	1211.36	1378.99	118.5	MWD
1851.05	47.98	115.64	942.9	-668.65	13.60	-668.65	1231.27	1401.11	118.5	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	320	480	0	290.0
KCl	sx	0	80	0	-356.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	30000	7000	0	46,000.0
Rig Fuel	ltr	12100	6700	0	34,900.0
Camp Fuel	ltr	2150	350	0	5,100.0



<b>Pumps</b>										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	90	97	228	2700	40	200	1847.0	10.50
2	National - 8P-80	5.50	90	97	228	2700	60	300	1847.0	9.90
3	National - 8P-80	5.50	90	97	228	2700			1847.0	10.50
4	IDECO - T1000									

<b>HSE Summary</b>				
Events	Date of Last	Days Since	Description	Remarks
LTI/MTI incident free days	15 Aug 2006	0 Days	Incident free days 16/TRI 16 Days	Held 2 x pre tour safety meeting .Topics discussed .Housekeeping,Mixing chemicals.New crew on location take care .



16 Aug 2006

**From : Troy Reid/Conway Waak**  
**To : Andy Wilkinson/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1881.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	966.0m	Casing O.D.:	9.625in
Prognosed TD:	2350.0m	Progress:	34.0m	Shoe TVD:	803.0m
RT-GL:	5.90m	Days From Spud:	18.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	2.71m	Days On Well:	35.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 17 Aug 2006 : Repairing Tesco actuator valve (mud saver).					
Planned Operations for 17 Aug 2006 : Repair mud saver valve. Wash and ream to bottom. Drill 8 1/2" hole.					

#### Summary of Period 0000 to 2400 Hrs

Drill to 1881m ROP reduced from 20m/hr to 3-4m/hr w/ corresponding increase in pump pressure.  
Pump barcarb sweeps to clear suspected balled bit, no change.  
POOH to check bit, 2 jets blocked & 2 flutes on extended gauge blocked.  
RIH w/- 8 1/2 mill tooth 117 bit . Cut drill line. Washing and reaming to bottom, 1617m.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 16 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	DM	0000	0200	2.00	1881.0m	Continue to drill 8 1/2 to 1881m At 1865m pressure increase 2700psi to 2850 psi. ROP decreased f/- 20m/hr to 4-6 m/hr. Pump several barcarb/KCL sweeps.No change in pressure or ROP.
PH	TP	DM	0200	0600	4.00	1881.0m	Suspect plugged jets. Pump several barcarb/KCl sweeps in attempt to clear jets. No change in pressure or ROP. Pull back to 1750m & perform flow test. Circ rate decreased from 645gpm to 540gpm w/ similar circ pressure. Clean hole & POOH to inspect/change bit.
PH	TP	RW	0600	0830	2.50	1881.0m	Back ream F/-1881m to 1601m. Overpull and pump increase coming into the 9 5/8 shoe
PH	TP	CMD	0830	1030	2.00	1881.0m	Pump 20bbls barcarb 600 and attempt to clear bit. No change in pump pressure. Excessive cutting over shaker circulate clean.
PH	TP	TO	1030	1400	3.50	1881.0m	Flow check Pump slug. POOH to 32m
PH	TP	HT	1400	1500	1.00	1881.0m	Down load MWD and unload radioactive source.
PH	TP	HBHA	1500	1600	1.00	1881.0m	Continue to POOH w/- BHA # 11. Layout bit #9rr
PH	TP	HBHA	1600	1630	0.50	1881.0m	M/up bit# 10 and sleeve. RIH to 32m
PH	TP	HT	1630	1730	1.00	1881.0m	Load radioactive sources.
PH	TP	TI	1730	1800	0.50	1881.0m	RIH w/- BHA # 12 to 118m.
PH	TP	HT	1800	1830	0.50	1881.0m	Surface test MWD.
PH	TP	TI	1830	2230	4.00	1881.0m	RIH from 118m to 1600m.
PH	TP	SC	2230	2300	0.50	1881.0m	Slip 33' of drill line.
PH	TP	TI	2300	2330	0.50	1881.0m	No. 4 pump failed. Bring No.3 pump on line.
PH	TP	RW	2330	2400	0.50	1881.0m	Wash and ream from 1600m to 1617m.

#### Operations For Period 0000 Hrs to 0600 Hrs on 17 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		RW	0000	0330	3.50	1881.0m	Wash and ream from 1617m to 1833m. Having to work bit through micro ledges. Observe mud saver valve leaking oil. Unable to continue in the hole.
PH		TO	0330	0430	1.00	1881.0m	Pull back to shoe to repair mud saver valve.

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		RO	0430	0600	1.50	1881.0m	Repair mud saver valve.

#### WBM Data

Mud Type:	KCl PHPA/Glycol	Viscosity:	49sec/qt	API FL Loss:	4.9cc	CI	36000	Solids:	8.7
Depth:	1871.0m	PV:	18cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	88%
Time:	03:30	YP:	27lb/100ft²	HTHP FL:	9.5cc	Hard/Ca:	220	Oil:	
Weight:	10.50ppg	Gels 10s/10m:	6 / 10	HTHP Cake:	2/32nd"	MBT:	5	Sand:	0.2
Temp:		Fann (3/6/100):				PM:		pH:	9
			7 / 10 / 27			PF:	0.1	PHPA:	0.50ppb

Comment

#### WBM Data

Mud Type:	KCl/PHPA/Glycol	Viscosity:	55sec/qt	API FL Loss:	5.7cc	CI	38000	Solids:	8.6
Depth:	1881.0m	PV:	21cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	88%
Time:	22:00	YP:	26lb/100ft²	HTHP FL:		Hard/Ca:	180	Oil:	
Weight:	10.50ppg	Gels 10s/10m:	8 / 12	HTHP Cake:		MBT:	5	Sand:	0.2
Temp:		Fann (3/6/100):				PM:		pH:	9
			7 / 10 / 29			PF:	0.04	PHPA:	0.50ppb

Comment

#### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	954.0bbl	Losses	54.0bbl	Comment
Centrifuge	DE 1000		Active	374.0bbl	Downhole		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	35.0bbl	
Shaker 1	Derrick	Pyramid-210/210	Hole	411.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-210/210	Stud		De-Sander		
Shaker 2	Derrick	Pyramid-175/175	Reserve	169.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge		
					tripping	19.0bbl	

Bit # 10			Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	No.	Size	Progress:			Cum. Progress:			
Type:		RPM (avg):	3	20/32nd"	On Bottom Time:			Cum. On Btm Time:			
Serial #:	EM2429	F.Rate:			IADC Time:			Cum. IADC Time:			
Depth In:	1881.0m	SPP:			Total Revs:			Cum. Total Revs:			
Depth Out:		HSI:			ROP (avg):			Overall ROP (avg):			
Bit Model:	TC11P	TFA:	0.920		N/A						

Bit # 9rr			Wear	I	O1	D	L	B	G	O2	R
				0	0	BU		X	I	NO	PR
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	No.	Size	Progress:			Cum. Progress:			
Type:	p	RPM (avg):	6	18/32nd"	On Bottom Time:			Cum. On Btm Time:			
Serial #:	210621	F.Rate:			IADC Time:			Cum. IADC Time:			
Depth In:	1680.0m	SPP:			Total Revs:			Cum. Total Revs:			
Depth Out:	1881.0m	HSI:			ROP (avg):			Overall ROP (avg):			
Bit Model:	RSX616	TFA:	1.491		7.13 m/hr			13.52 m/hr			

**BHA # 12**

Wt. Below Jars Dr	35860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	75000.0klb	Torque On Btm:	8500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	80000.0klb	Torque Off Btm:	8500ft-lbs	HWDP Ann. Vel.:	0fpm
		Slack-Off Weight:	65000.0klb			DP Ann. Vel.:	0fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		EM2429	0.00h
2	Near Bit Stab		0.40m	8.50in	2.75in	10625874	
3	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	17.60h
4	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	17.60h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	17.60h
6	MWD		9.18m	6.75in	1.92in	DM90107112	17.60h
7	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	13.60h
8	Float Sub		0.63m	6.44in	2.75in	A225	17.60h
9	X/O		0.35m	6.25in	3.00in	M1623	57.10h
10	HWDP		86.05m	6.25in	2.81in		55.60h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	112.60h
12	HWDP		57.17m	6.25in	2.81in		57.60h

**BHA # 11**

Wt. Below Jars Dr	35860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	75000.0klb	Torque On Btm:	8500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	80000.0klb	Torque Off Btm:	8500ft-lbs	HWDP Ann. Vel.:	283fpm
		Slack-Off Weight:	65000.0klb			DP Ann. Vel.:	283fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		210621	17.60h
2	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	17.60h
3	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	17.60h
4	6-3/4		8.49m	6.75in	1.92in	DM90108295	17.60h
5	MWD		9.18m	6.75in	1.92in	DM90107112	17.60h
6	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	13.60h
7	Float Sub		0.63m	6.44in	2.75in	A225	17.60h
8	X/O		0.35m	6.25in	3.00in	M1623	57.10h
9	HWDP		86.05m	6.25in	2.81in		55.60h
10	Drilling Jars		9.95m	6.50in	2.75in	176020301	112.60h
11	HWDP		57.17m	6.25in	2.81in		57.60h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1647.00	69.84	118.53	841.3	-587.58	8.02	-587.58	1075.61	1225.64	118.6	MWD
1706.30	64.96	118.42	864.1	-613.68	8.23	-613.68	1123.72	1280.37	118.6	MWD
1764.18	58.81	117.25	891.3	-637.51	10.77	-637.51	1168.84	1331.39	118.6	MWD
1822.11	51.89	116.24	924.3	-658.96	12.03	-658.96	1211.36	1378.99	118.5	MWD
1851.05	47.98	115.64	942.9	-668.65	13.60	-668.65	1231.27	1401.11	118.5	MWD

Bulk Stocks					
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	230	0	60.0
KCl	sx	0	94	0	-450.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	240.0
Potable Water	ltr	0	8000	0	38,000.0
Rig Fuel	ltr	0	9700	0	25,200.0
Camp Fuel	ltr	0	350	0	4,750.0

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	90	97	228	2700	40	200	1847.0	10.50
2	National - 8P-80	5.50	90	97	228	2700	60	300	1847.0	9.90
3	National - 8P-80	5.50	90	97	228	2700			1847.0	10.50
4	IDECO - T1000									

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	16 Aug 2006	0 Days	Incident free days 401/TRI 17Days	Held 2 x pre tour safety meeting .Topics discussed .Housekeeping,Mixing chemicals.Tripping

17 Aug 2006

From : Troy Reid/Conway Waak  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	1986.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1048.0m	Casing O.D.:	9.625in
Prognosed TD:	2350.0m	Progress:	105.0m	Shoe TVD:	803.0m
RT-GL:	5.90m	Days From Spud:	19.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	2.71m	Days On Well:	36.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 18 Aug 2006 : Continue drill with 8 1/2" hole with Geo Pilot Drilling assembly to 2038m.					
Planned Operations for 18 Aug 2006 : Drill 8 1/2" hole, pumping sweeps as required to TD (2350m).					

#### Summary of Period 0000 to 2400 Hrs

Wash and ream to 1881mMD.  
Pull into shoe to repair saver sub.  
RIH (wash and ream) to 1881m.  
Drill 8 1/2" hole with Geo Pilot Assembly from 1881m to 1986m

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 17 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	RW	0000	0330	3.50	1881.0m	Wash and ream from 1617m to 1833m. Having to work bit through micro ledges. Observe mud saver valve leaking oil. Unable to continue in the hole.
PH	TP	TO	0330	0430	1.00	1881.0m	Pull back to shoe to repair mud saver valve.
PH	TP	RO	0430	0630	2.00	1881.0m	Repair Tesco mud saver valve test ok.
PH	TP	TI	0630	0830	2.00	1881.0m	RIH f/- 9 5/8 casing shoe to 1881m. Wash down last stand.
PH	TP	CHC	0830	0930	1.00	1881.0m	Pump 20bbls baralift sweep and circulate hole clean . Excessive cutting coming over the shakers. continue to circulate clean. SPP reduced 200psi after cleaning hole.
PH	P	DM	0930	1430	5.00	1920.0m	Continue to Drill 8 1/2 hole f/- 1881m to 1920m
PH	P	RS	1430	1500	0.50	1920.0m	Rig service (top drive)
PH	P	DM	1500	2400	9.00	1986.0m	Continue to drill 8 1/2 hole f/-1920m to 1986m. Pump sweeps at the end and middle of each stand to help clean hole.

#### Operations For Period 0000 Hrs to 0600 Hrs on 18 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		DM	0000	0600	6.00	2038.0m	Drill from 1986m to 2038m. Gpm 555. Spp 2788. RPM 140. WOB 22k. Mud Weight 10.5 ppg. Torque 7400 off-Btm 9100 On-Btm

#### General Comments

Comments	Rig Requirements
Demin water for 7" cement job delivered.	

WBM Data									
Mud Type:	CI PHPA/Glycol	Viscosity:	51sec/qt	API FL Loss:	5.8cc	CI	36000	Solids:	8.7
Depth:	1881.0m	PV:	18cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	88%
Time:	09:15	YP:	32lb/100ft²	HTHP FL:	9.5cc	Hard/Ca:	320	Oil:	
Weight:	10.50ppg	Gels 10s/10m:	8 / 13	HTHP Cake:	2/32nd"	MBT:	5	Sand:	0.2
Temp:		Fann (3/6/100):				PM:		pH:	9
			9 / 11 / 31			PF:	0.05	PHPA:	0.50ppb
Comment									

WBM Data									
Mud Type:	CI/PHPA/Glycol	Viscosity:	52sec/qt	API FL Loss:	5.8cc	CI	39000	Solids:	8.5
Depth:	1978.0m	PV:	25cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	88%
Time:	22:30	YP:	32lb/100ft²	HTHP FL:		Hard/Ca:	300	Oil:	
Weight:	10.50ppg	Gels 10s/10m:	10 / 14	HTHP Cake:		MBT:	5	Sand:	0.2
Temp:	136.0F°	Fann (3/6/100):				PM:		pH:	9
			10 / 14 / 36			PF:	0.07	PHPA:	0.50ppb
Comment Increased 6 rpm rheology									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	1040.0bbl	Losses	58.0bbl	Comment		
Centrifuge	DE 1000		Active	402.0bbl	Downhole				
Centrifuge	DE 1000		Mixing		Surf. + Equip.	48.0bbl			
Shaker 1	Derrick	Pyramid-210/210	Hole	428.0bbl	Dumped				
Shaker 1	Derrick	Pyramid-210/210	Slud		De-Sander				
Shaker 2	Derrick	Pyramid-175/175	Reserve	210.0bbl	De-Silter				
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge	10.0bbl			

Bit # 10			Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	No.	Size	Progress:			Cum. Progress:			
Type:	mt	RPM (avg):	3	20/32nd"	On Bottom Time:			Cum. On Btm Time:			
Serial #:	EM2429	F.Rate:			IADC Time:			Cum. IADC Time:			
Depth In:	1881.0m	SPP:			Total Revs:			Cum. Total Revs:			
Depth Out:		HSI:			ROP (avg):			Overall ROP (avg):			
Bit Model:	TC11P	TFA:									

**BHA # 12**

Wt. Below Jars Dr	5860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	92000.0klb	Torque On Btm:	7100ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	110000.0klb	Torque Off Btm:	6800ft-lbs	HWDP Ann. Vel.:	264fpm
		Slack-Off Weight:	73000.0klb			DP Ann. Vel.:	264fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		EM2429	11.06h
2	Near Bit Stab		0.40m	8.50in	2.75in	10625874	11.06h
3	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	28.66h
4	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	28.66h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	28.66h
6	MWD		9.18m	6.75in	1.92in	DM90107112	28.66h
7	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	24.66h
8	Float Sub		0.63m	6.44in	2.75in	A225	28.66h
9	X/O		0.35m	6.25in	3.00in	M1623	68.16h
10	HWDP		86.05m	6.25in	2.81in		66.60h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	123.66h
12	HWDP		57.17m	6.25in	2.81in		68.66h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1880.03	44.71	114.61	962.9	-677.56	11.57	-677.56	1250.25	1422.04	118.5	MWD
1908.97	41.14	113.88	984.1	-685.65	12.45	-685.65	1268.21	1441.70	118.4	MWD
1937.90	37.77	114.06	1006.4	-693.12	11.66	-693.12	1285.01	1460.02	118.3	MWD
1966.87	33.71	114.22	1029.9	-700.04	14.02	-700.04	1300.45	1476.90	118.3	MWD
1995.76	30.31	114.36	1054.4	-706.34	11.77	-706.34	1314.41	1492.17	118.3	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	76	0	-16.0
KCl	sx	0	40	0	-490.0
Salt	sx	0	0	0	0.0
Gel	sx	0	10	0	230.0
Potable Water	ltr	20000	7000	0	51,000.0
Rig Fuel	ltr	16520	6800	0	34,920.0
Camp Fuel	ltr	0	350	0	4,400.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	77	97	555	2800	43	250	1986.0	10.50
2	National - 8P-80	5.50	77	97	555	2800	62	350	1986.0	9.90
3	National - 8P-80	5.50	77	97	555	2800	62	350	1986.0	10.50
4	IDECO - T1000									

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	17 Aug 2006	0 Days	Incident free days 402/TRI 18Days	Held 2 x pre tour safety meeting .Topics discussed .Working in hazardous weather conditions.Using manrider.PTW System



18 Aug 2006

From : Troy Reid/Conway Waak  
To : Andy Wilkinson/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2080.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1133.0m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	94.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	20.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	37.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 19 Aug 2006 : Washing and reaming to TD after top drive repair.					
Planned Operations for 19 Aug 2006 : Drill 8 1/2" hole to TD (2350m). Circ and pump sweeps as required to clean hole.					

#### Summary of Period 0000 to 2400 Hrs

Drill from 1986m to 2080m (TVD 1133m).  
Circ as needed to clean hole.  
While making a connection, the top drive electrical control lines were pulled out of top drive unit after becoming caught in the derrick.  
Repair top drive.  
Wiper trip from 2074m to 2064m.  
POOH into casing to change out main hyd motor on top drive. Hyd motor unable to maintain proper torque while drilling and reaming.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 18 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	DM	0000	0600	6.00	2038.0m	Drill from 1986m to 2038m. GPM 555. SPP 2788. RPM 140. WOB 22k. Mud Weight 10.5 ppg. Torque 7400 off-Btm 9100 On-Btm
PH	P	CMD	0600	1000	4.00	2063.0m	Circulate for 30mins prior to connection to unload hole
PH	P	DM	1000	1230	2.50	2080.0m	Continue dill 8 1/2 hole f/- 2063m to 2080m. High torque, GPM 555, RPM 135. MW 10.5ppg. Pump 10 bbl Baralift sweeps every 1/2 stand.
PH	TP	DM	1230	1430	2.00	2080.0m	Work on TDU. Electric control line caught up in derrick disabling the TDU unit. Repair and test ok. circulate with swedge while repairing TDU.
PH	TP	RW	1430	1500	0.50	2080.0m	Ream from 2064m to 2074m. Unable to get the proper torque from the top drive due to the fluid flow on top drive hydraulic motor not working properly.
PH	TP	RW	1500	1830	3.50	2080.0m	POOH into 9-5/8" casing shoe to change out hydraulic motor on top drive. Backream from 2074m to 1868m. High torque (9000 ft-lbs) and packing off.
PH	TP	RW	1830	2000	1.50	2080.0m	Pump out of hole from 1868m to 1581m. Max O/P 25klbs. No packing off.
PH	TP	RO	2000	2400	4.00	2080.0m	Change out main hydraulic motor on top drive.

#### Operations For Period 0000 Hrs to 0600 Hrs on 19 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		RO	0000	0030	0.50	2080.0m	Finish replacing hydraulic motor on top drive.
PH		TI	0030	0200	1.50	2080.0m	Lay down circ swedge. RIH with 1 stand to 1601m. Top drive hydraulic malfunction. POOH into casing.
PH		RO	0200	0400	2.00	2080.0m	Repair unloader valve on top drive.



Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		TI	0400	0500	1.00	2080.0m	RIH. Wash and ream 6 stands to bottom (1763m).
PH		TI	0500	0600	1.00	2080.0m	Circulate and condition mud due to excessive cutting. Hole unloading.

### General Comments

Comments	Rig Requirements
Add Radiagreen salt to reduce torque.	

### WBM Data

Mud Type: KCI/PHPA/Glycol	Viscosity: 55sec/qt	API FL Loss: 5.9cc	CI	38000	Solids: 8.6
Depth: 2007.0m	PV: 22cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 88%	
Time: 02:30	YP: 34lb/100ft²	HTHP FL: 11.2cc	Hard/Ca: 380	Oil: 0.3	
Weight: 10.50ppg	Gels 10s/10m: 8 / 17	HTHP Cake: 2/32nd"	MBT: 8	Sand: 0.3	
Temp: 143.0F°	Fann (3/6/100): 9 / 13 / 35		PM: 0.05	pH: 9	
			PF: 0.05	PHPA: 0.50ppb	
Comment Increased 6 rpm rheology target to 14					

### WBM Data

Mud Type: KCI/PHPA/Glycol	Viscosity: 55sec/qt	API FL Loss: 5.8cc	CI	38000	Solids: 8.6
Depth: 2047.0m	PV: 24cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 88%	
Time: 09:00	YP: 37lb/100ft²	HTHP FL:	Hard/Ca: 350	Oil: 0.2	
Weight: 10.50ppg	Gels 10s/10m: 8 / 18	HTHP Cake:	MBT: 8	Sand: 0.2	
Temp:	Fann (3/6/100): 10 / 14 / 37		PM:	pH: 9	
			PF: 0.05	PHPA: 0.50ppb	
Comment					

### WBM Data

Mud Type: KCI/PHPA/Poly	Viscosity: 61sec/qt	API FL Loss: 5.7cc	CI	41000	Solids: 8.1
Depth: 2080.0m	PV: 24cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 89%	
Time: 22:00	YP: 43lb/100ft²	HTHP FL:	Hard/Ca: 200	Oil: 0.2	
Weight: 10.50ppg	Gels 10s/10m: 10 / 14	HTHP Cake:	MBT: 8	Sand: 0.2	
Temp:	Fann (3/6/100): 14 / 39		PM: 0.12	PHPA:	
Comment					

### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	956.0bbl	Losses	88.0bbl	Comment
Centrifuge	DE 1000		Active	319.0bbl	Downhole		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	53.0bbl	
Shaker 1	Derrick	Pyramid-210/210	Hole	460.0bbl	Dumped		
Shaker 1	Derrick	Pyramid-210/210	Slug		De-Sander		
Shaker 2	Derrick	Pyramid-175/175	Reserve	177.0bbl	De-Silter		
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge	15.0bbl	
					tripping	20.0bbl	

### Bit # 10

Wear	I	O1	D	L	B	G	O2	R
Size: 8.500in	IADC#: 2	Nozzles	Drilled over last 24 hrs			Calculated over Bit Run		
Mfr: HYCALOG	WOB (avg): 22000.0klb	No. Size	Progress: 94.0m			Cum. Progress: 199.0m		
Type: mt	RPM (avg): 140	3 20/32nd"	On Bottom Time: 9.30h			Cum. On Btm Time: 20.36h		
Serial #: EM2429	F.Rate: 560gpm		IADC Time: 11.00h			Cum. IADC Time: 22.00h		
Depth In: 1881.0m	SPP: 2650psi		Total Revs:			Cum. Total Revs: 0		
Depth Out:	HSI: 6.30HSI		ROP (avg): 10.11 m/hr			Overall ROP (avg): 9.77 m/hr		
Bit Model: TC11P	TFA: 0.920							

**BHA # 12**

Wt. Below Jars Dry: 0.0klb	Length: 185.2m	Torque (max): 15500ft-lbs	DC (1) Ann Vel.: 0fpm
Weight Dry: 54.5klb	String Weight: 100.0klb	Torque On Btm: 7500ft-lbs	DC (2) Ann Vel.: 0fpm
Type: Rotary Steerable	Pick-Up Weight: 120000.0klb	Torque Off Btm: 9500ft-lbs	HWDP Ann. Vel.: 264fpm
	Slack-Off Weight: 75000.0klb		DP Ann. Vel.: 264fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		EM2429	46.44h
2	Near Bit Stab		0.40m	8.50in	2.75in	10625874	46.44h
3	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	64.04h
4	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	64.04h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	64.04h
6	MWD		9.18m	6.75in	1.92in	DM90107112	64.04h
7	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	60.04h
8	Float Sub		0.63m	6.44in	2.75in	A225	64.04h
9	X/O		0.35m	6.25in	3.00in	M1623	103.54h
10	HWDP		86.05m	6.25in	2.81in		101.98h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	159.04h
12	HWDP		57.17m	6.25in	2.81in		104.04h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
1937.90	37.77	114.06	1006.4	-693.12	11.66	-693.12	1285.01	1460.02	118.3	MWD
1966.87	33.71	114.22	1029.9	-700.04	14.02	-700.04	1300.45	1476.90	118.3	MWD
1995.76	30.31	114.36	1054.4	-706.34	11.77	-706.34	1314.41	1492.17	118.3	MWD
2024.65	26.31	113.76	1079.8	-711.92	13.88	-711.92	1326.91	1505.83	118.2	MWD
2053.45	22.08	113.22	1106.1	-716.63	14.71	-716.63	1337.73	1517.59	118.2	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	-16.0
KCl	sx	0	0	0	-490.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	230.0
Potable Water	ltr	0	8000	0	43,000.0
Rig Fuel	ltr	24900	10000	0	49,820.0
Camp Fuel	ltr	4050	350	0	8,100.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2600	44	300	2080.0	10.50
2	National - 8P-80	5.50	74	97	568	2600	75	500	2080.0	10.50
3	National - 8P-80	5.50	74	97	568	2600			2080.0	10.50
4	IDECO - T1000									

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Near Miss	18 Aug 2006	0 Days	IMS 9123	
Pre-Tour Meetings	18 Aug 2006	0 Days	Incident free days 403/TRI 19Days	Held 2 x pre tour safety meeting .Topics discussed .Review lifting and forklift procedures.

**19 Aug 2006**

**From : Troy Reid/Conway Waak**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2202.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1251.0m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	122.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	21.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	38.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 20 Aug 2006 : Drilling ahead at 2250m.					
Planned Operations for 20 Aug 2006 : Drill ahead to TD at approx 2320m.					
Circ hole clean.					
Pooh for for GEO-TAP.					

**Summary of Period 0000 to 2400 Hrs**

Repair hyd motor on top drive.  
Wash and ream to 2080.  
Circ hole clean.  
Drill ahead.  
Top of Latrobe Coarse Clastics at 2124.5m md (1175.6m tvd). 13 ohms max res, max gas 8u, Flour 5%  
Top of Latrobe N. Asperus (Coal) 2196m md (1247m tvd).

**Formation Tops**

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

**Operations For Period 0000 Hrs to 2400 Hrs on 19 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	TP	RO	0000	0030	0.50	2080.0m	Finish replacing hydraulic motor on top drive.
PH	TP	TI	0030	0200	1.50	2080.0m	Lay down circ swedge. RIH with 1 stand to 1601m. Top drive hydraulic malfunction. POOH into casing.
PH	TP	RO	0200	0400	2.00	2080.0m	Repair unloader valve on top drive.
PH	P	TI	0400	0500	1.00	2080.0m	RIH. Wash and ream 6 stands to bottom (1763m).
PH	P	TI	0500	0600	1.00	2080.0m	Circulate and condition mud due to excessive cutting. Hole unloading.
PH	P	RW	0600	0830	2.50	2080.0m	Continue to wash and ream f/- 1763m to 2080m (4m fill).
PH	P	CMD	0830	0900	0.50	2080.0m	Pump sweep at 2080m and circulate clean prior to drilling out.
PH	P	RS	0900	0930	0.50	2080.0m	Continue to circulate while performing rig service.
PH	P	DM	0930	2400	14.50	2202.0m	Continue to drill drill 8 1/2 hole w/- geo pilot. Top Lotrobe Course Clastics 2124.5m max resistivity 13 ohms. Max gas 8 units, fluoro 5%. Drill thru coal bed from 2173m to 2202m. Drill from 2080m to 2202m, 14.5 hrs, Rop: 8.4 m/hr, PP: 2690 psi, GPM: 550, RPM: 70, WOB: 20-30

**Operations For Period 0000 Hrs to 0600 Hrs on 20 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		DM	0000	0600	6.00	2315.0m	(IN PROGRESS) Drill from 2202m to 2315m. WOB: 20/30, RPM: 70, GPM: 550, PP: 2650, Rop: 14 m/h, Gas 33 units. Pump baralift sweeps as required.

WBM Data									
Mud Type:	CI PHPA/Glycol	Viscosity:	65sec/qt	API FL Loss:	5.9cc	CI	37000	Solids:	8.6
Depth:	2080.0m	PV:	24cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	88%
Time:	10:00	YP:	39lb/100ft²	HTHP FL:	11.4cc	Hard/Ca:	360	Oil:	
Weight:	10.50ppg	Gels 10s/10m:	9 / 18	HTHP Cake:	2/32nd"	MBT:	9	Sand:	0.3
Temp:		Fann (3/6/100):				PM:		pH:	9
			11 / 15 / 38			PF:	0.05	PHPA:	
Comment Added Baracarb for Latrobe and Barablok for coals.									

WBM Data									
Mud Type:	CI/PHPA/Glycol	Viscosity:	60sec/qt	API FL Loss:	5.4cc	CI	38000	Solids:	8.6
Depth:	2180.0m	PV:	26cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	88%
Time:	21:30	YP:	38lb/100ft²	HTHP FL:	8.4cc	Hard/Ca:	220	Oil:	
Weight:	10.45ppg	Gels 10s/10m:	9 / 13	HTHP Cake:	2/32nd"	MBT:	8.4	Sand:	0.3
Temp:	135.0F°	Fann (3/6/100):				PM:		pH:	9
			10 / 13 / 36			PF:	0.18	PHPA:	
Comment									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	1038.0bbl	Losses	82.0bbl	Comment		
Centrifuge	DE 1000		Active	406.0bbl	Downhole		Changed no1 shaker to 140 mesh for Baracarb additions.		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	37.0bbl			
Shaker 1	Derrick	Pyramid-210/210	Hole	475.0bbl	Dumped				
Shaker 1	Derrick	Pyramid-140/140	Slud		De-Sander				
Shaker 2	Derrick	Pyramid-175/175	Reserve	157.0bbl	De-Silter				
Shaker 2	Derrick	Pyramid-175/175	Kill		Centrifuge tripping	15.0bbl 30.0bbl			

Bit # 10			Wear	I	O1	D	L	B	G	O2	R
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCALOG	WOB (avg): 25000.0klb	No.	Size	Progress: 122.0m			Cum. Progress:		321.0m	
Type:	mt	RPM (avg): 70	3	20/32nd"	On Bottom Time: 12.37h			Cum. On Btm Time:		32.73h	
Serial #:	EM2429	F.Rate: 560gpm			IADC Time: 14.50h			Cum. IADC Time:		36.50h	
Depth In:	1881.0m	SPP: 2680psi			Total Revs:			Cum. Total Revs:		0	
Depth Out:		HSI: 6.30HSI			ROP (avg): 9.86 m/hr			Overall ROP (avg):		9.81 m/hr	
Bit Model:	TC11P	TFA: 0.920									

<b>BHA # 12</b>							
Wt. Below Jars Dry:	0.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54.5klb	String Weight:	105000.0klb	Torque On Btm:	8800ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	120000.0klb	Torque Off Btm:	13400ft-lbs	HWDP Ann. Vel.:	264fpm
		Slack-Off Weight:	85000.0klb			DP Ann. Vel.:	264fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		EM2429	46.44h
2	Near Bit Stab		0.40m	8.50in	2.75in	10625874	46.44h
3	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	64.04h
4	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	64.04h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	64.04h
6	MWD		9.18m	6.75in	1.92in	DM90107112	64.04h
7	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	60.04h
8	Float Sub		0.63m	6.44in	2.75in	A225	64.04h
9	X/O		0.35m	6.25in	3.00in	M1623	103.54h
10	HWDP		86.05m	6.25in	2.81in		101.98h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	159.04h
12	HWDP		57.17m	6.25in	2.81in		104.04h

### Survey

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect. (deg/100ft)	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2082.29	19.06	112.80	1133.1	-720.60	10.48	-720.60	1347.06	1527.68	118.1	MWD
2111.13	15.99	111.60	1160.6	-723.88	10.72	-723.88	1355.09	1536.32	118.1	MWD
2139.98	13.10	108.53	1188.5	-726.39	10.36	-726.39	1361.89	1543.50	118.1	MWD
2168.79	9.86	104.21	1216.8	-728.03	11.63	-728.03	1367.38	1549.11	118	MWD
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD

### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	-16.0
KCl	sx	0	40	0	-530.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	230.0
Potable Water	ltr	0	7000	0	36,000.0
Rig Fuel	ltr	0	7200	0	42,620.0
Camp Fuel	ltr	0	350	0	7,750.0

### Pumps

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	71	97	550	2550	42	300	2202.0	10.50
2	National - 8P-80	5.50	71	97	550	2550	60	400	2202.0	10.50
3	National - 8P-80	5.50	71	97	550	2550	42	300	2202.0	10.50
4	IDECO - T1000						60	400		

### HSE Summary

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	19 Aug 2006	0 Days	Incident free days 404/TRI 20Days	Held 2 x pre tour safety meeting .Topics discussed .House keeping. drilling through production zone.

**20 Aug 2006**

**From : Troy Reid/Conway Waak**  
**To : Bob Goosem/ Brian King/James Hinton**

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2315.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1364.8m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	113.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	22.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	39.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 21 Aug 2006 : Picking up new bha (Bit and GEO TAP).					
Planned Operations for 21 Aug 2006 : Pick up Bit and GEO-Tap. GIH. Wash and ream as needed. LOG well / drill ahead if req'd.					

**Summary of Period 0000 to 2400 Hrs**

Drill from 2202m to 2315m.  
Pump baralift sweeps as required.  
Pump 3 sweeps and circ hole clean.  
Pump out of hole f/- 2315m to 9 5/8 casing shoe at 1601m.  
Pump slug, install wiper rubber and pooh from 1601m to 359m

**Formation Tops**

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

**Operations For Period 0000 Hrs to 2400 Hrs on 20 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	DM	0000	1530	15.50	2315.0m	Drill from 2202m to 2315m. WOB: 20/30, RPM: 70, GPM: 550, PP: 2650, Rop: 14 m/h, Gas 33 units. Pump baralift sweeps as required.
PH	P	RW	1530	1730	2.00	2315.0m	Pump 3 sweeps and circ hole clean.
PH	P	TOB	1730	2130	4.00	2315.0m	Pump out of hole f/- 2315m to 9 5/8 casing shoe at 1601m. Mas O/P: 25klbs
PH	P	TOB	2130	2400	2.50	2315.0m	Pump slug, install wiper rubber and POOH from 1601m to 359m.

**Operations For Period 0000 Hrs to 0600 Hrs on 21 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		TOB	0000	0100	1.00	2315.0m	POOH to directional tools.
PH		HT	0100	0230	1.50	2315.0m	Safety meeting. Unload radioactive source from directional tool. Download logging information.
PH		HT	0230	0400	1.50	2315.0m	Safety meeting. Rack back MWD tools. Break bit and lay down Geo-Pilot.
PH		HT	0400	0600	2.00	2315.0m	Safety meeting. Pick up new BHA (Bit and Geo-Tap). Install new batteries in RLL Tool.

**General Comments**

Comments	Rig Requirements
Back load TCP equipment.	

WBM Data									
Mud Type:	CI PHPA/Glycol	Viscosity:	60sec/qt	API FL Loss:	5.0cc	CI	36000	Solids:	10.3
Depth:	2280.0m	PV:	25cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	87%
Time:	10:00	YP:	36lb/100ft²	HTHP FL:	9.5cc	Hard/Ca:	320	Oil:	
Weight:	10.50ppg	Gels 10s/10m:	8 / 18	HTHP Cake:	2/32nd"	MBT:	10	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9
			10 / 13 / 36			PF:	0.05	PHPA:	
Comment									

WBM Data									
Mud Type:	CI/PHPA/Glycol	Viscosity:	58sec/qt	API FL Loss:	5.0cc	CI	38000	Solids:	10.1
Depth:	2315.0m	PV:	28cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	87%
Time:	18:00	YP:	40lb/100ft²	HTHP FL:		Hard/Ca:	300	Oil:	
Weight:	10.60ppg	Gels 10s/10m:	9 / 16	HTHP Cake:		MBT:	8.5	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9
			9 / 13 / 37			PF:	0.12	PHPA:	
Comment									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	1000.0bbl	Losses	78.0bbl	Comment		
Centrifuge	DE 1000		Active	372.0bbl	Downhole		Both shakers now on 140 mesh to retain Baracarb additions.		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	28.0bbl			
Shaker 1	Derrick	Pyramid- 4x140	Hole	529.0bbl	Dumped	25.0bbl			
Shaker 1	Derrick	Pyramid-4x210	Slug		De-Sander				
Shaker 2	Derrick	Pyramid- 4x140	Reserve	99.0bbl	De-Silter				
Shaker 2	Derrick	Pyramid- 4x175	Kill		Centrifuge tripping	25.0bbl			

Bit # 10			Wear	I	O1	D	L	B	G	O2	R
				7	6	NR	A	E	2		HR
Size:	8.500in	IADC#:	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):	2	2000.0klb	No.	Size	Progress:	113.0m	Cum. Progress:	434.0m	
Type:	mt	RPM (avg):	140		3	20/32nd"	On Bottom Time:	13.71h	Cum. On Btm Time:	46.44h	
Serial #:	EM2429	F.Rate:	560gpm				IADC Time:	15.50h	Cum. IADC Time:	52.00h	
Depth In:	1881.0m	SPP:	2650psi				Total Revs:		Cum. Total Revs:	0	
Depth Out:	2315.0m	HSI:	6.30HSI				ROP (avg):	8.24 m/hr	Overall ROP (avg):	9.35 m/hr	
Bit Model:	TC11P	TFA:	0.920								



<b>BHA # 12</b>							
Wt. Below Jars Dry:	0.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54.5klb	String Weight:	115.0klb	Torque On Btm:	7500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	130.0klb	Torque Off Btm:	9500ft-lbs	HWDP Ann. Vel.:	264fpm
		Slack-Off Weight:	90.0klb			DP Ann. Vel.:	264fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.41m	8.50in		EM2429	46.44h
2	Near Bit Stab		0.40m	8.50in	2.75in	10625874	46.44h
3	9600 Geo-Pilot		7.08m	8.50in	1.92in	GP850085	64.04h
4	Geo-Pilot NM Flex Joint w/-DM		2.81m	6.75in	1.92in	CP1004338	64.04h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	64.04h
6	MWD		9.18m	6.75in	1.92in	DM90107112	64.04h
7	Non Mag Hang Off Sub		3.05m	6.75in	1.92in	10635033	60.04h
8	Float Sub		0.63m	6.44in	2.75in	A225	64.04h
9	X/O		0.35m	6.25in	3.00in	M1623	103.54h
10	HWDP		86.05m	6.25in	2.81in		101.98h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	159.04h
12	HWDP		57.17m	6.25in	2.81in		104.04h

### Survey

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD
2226.47	3.33	92.87	1274.0	-729.24	12.59	-729.24	1374.04	1555.56	118	MWD
2255.27	1.11	90.43	1302.8	-729.28	7.71	-729.28	1375.15	1556.57	117.9	MWD
2284.10	0.92	88.16	1331.6	-729.27	0.67	-729.27	1375.66	1557.02	117.9	MWD
2303.74	1.19	92.86	1351.2	-729.28	1.44	-729.28	1376.03	1557.34	117.9	MWD

### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	115	0	-131.0
KCl	sx	0	40	0	-570.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	230.0
Potable Water	ltr	0	8000	0	28,000.0
Rig Fuel	ltr	0	8700	0	33,920.0
Camp Fuel	ltr	0	350	0	7,400.0

### Pumps

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
2	National - 8P-80	5.50	74	97	568	2650	60	400	2315.0	10.50
3	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
4	IDECO - T1000						60	400		

### HSE Summary

Events	Date of Last	Days Since	Description	Remarks
Hazard Pre-Tour Meetings	20 Aug 2006 19 Aug 2006	0 Days 1 Day	CFS total for the week Incident free days 404/TRI 20 Days	Held 2 x pre tour safety meeting .Topics discussed .Loading tubing onto racks.Driving on 4wd roads.



21 Aug 2006

From : Troy Reid/Conway Waak  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2315.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1364.8m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	23.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	40.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 22 Aug 2006 : Pooh with Geo-Tap logging tool.					
Planned Operations for 22 Aug 2006 : Pooh.					
Lay down logging tools.					
Pick up cmt stinger.					
Rih and plug well.					

#### Summary of Period 0000 to 2400 Hrs

Pooh to directional tools. Unload radioactive source from LWD tools & download logging information. Break-out bit and lay down Geo-Pilot. Pick up new BHA (bit and Geo-Tap on pendulum ass'y). Install new batteries in RLL Tool. Load radioactive source RIH w/- BHA to 186m & shallow test MWD tools OK. RIH to 9 5/8 casing shoe 1601m. Slip & cut drilling line. RIH from 1893m to 2123m. Wash and ream from 2123m to 2133m. Correlate from 2123m to 2133m. Take 11 pressure points with GeoTap tool from 2126m to 2282mMDRT.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 21 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	TOB	0000	0100	1.00	2315.0m	POOH to directional tools.
PH	P	HT	0100	0230	1.50	2315.0m	Safety meeting. Unload radioactive source from directional tool. Download logging information.
PH	P	HT	0230	0400	1.50	2315.0m	Safety meeting. Rack back MWD tools. Break bit and lay down Geo-Pilot.
PH	P	HT	0400	0600	2.00	2315.0m	Safety meeting. Pick up new BHA (Bit and Geo-Tap). Install new batteries in RLL Tool.
PH	P	HBHA	0600	0730	1.50	2315.0m	M/up bit RR7, sleeve, stab and Geo-Tap.
PH	P	HT	0730	0800	0.50	2315.0m	Load MWD data.
PH	P	HT	0800	0830	0.50	2315.0m	Load radioactive source
PH	P	HBHA	0830	0900	0.50	2315.0m	RIH w/- BHA to 186m.
PH	P	HT	0900	0930	0.50	2315.0m	Shallow test MWD tools ok.
PH	P	TI	0930	1300	3.50	2315.0m	RIH to 9 5/8 casing shoe 1601m
PH	P	SC	1300	1400	1.00	2315.0m	Slip 66' drilling line. Cut 117' drilling line.
PH	P	RS	1400	1430	0.50	2315.0m	Rig service
PH	P	TI	1430	1500	0.50	2315.0m	RIH from 1893m to 2123m.
PH	P	RW	1500	1630	1.50	2315.0m	Wash and ream from 2123m to 2133m.
PH	P	LOG	1630	1700	0.50	2315.0m	Correlate from 2123m to 2133m.
PH	P	LOG	1700	2130	4.50	2315.0m	Take pressure points with GeoTap tool at 1177, 1178, 1186, 1197,1211, 1234 & 1257mRT (sample point depths)/
PH	P	LOG	2130	2200	0.50	2315.0m	Correlate from 2271m to 2278m.
PH	P	LOG	2200	2400	2.00	2315.0m	Take pressure points with GeoTap tool at 1311, 1313, 1318 & 1332mRT (sample point depths).

#### Operations For Period 0000 Hrs to 0600 Hrs on 22 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH		LOG	0000	0030	0.50	2315.0m	Finish running pressure surveys with Geo-Tap tool.
PH		CIR	0030	0130	1.00	2315.0m	C&C mud. WOO.
PH		TO	0130	0530	4.00	2315.0m	Pump slug and pooh to BHA
PH		LDP	0530	0600	0.50	2315.0m	(IN PROGRESS) Layout out HWDP 15 jnts.

### General Comments

Comments	Rig Requirements
Recieve back up geo tap tool.	

### WBM Data

Mud Type: KCl PHPA/Glycol	Viscosity: 60sec/qt	API FL Loss: 5.0cc	CI	37000	Solids: 10.2
Depth: 2315.0m	PV: 25cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 87%	
Time: 8:00	YP: 36lb/100ft²	HTHP FL: 9.5cc	Hard/Ca: 380	Oil: 0.5	
Weight: 10.55ppg	Gels 10s/10m: 9 / 15	HTHP Cake: 2/32nd"	MBT: 8.5	Sand: 0.5	
Temp:	Fann (3/6/100): 10 / 13 / 36		PM: 0.05	pH: 9	
			PF: 0.05	PHPA:	

Comment Maintaining properties with centrifuge plus new dilution.

### WBM Data

Mud Type: KCl/PHPA/Glycol	Viscosity: 65sec/qt	API FL Loss: 5.0cc	CI	37000	Solids: 10.2
Depth: 2315.0m	PV: 25cp	Filter Cake: 1/32nd"	K+: 6%	H2O: 87%	
Time: 22:30	YP: 36lb/100ft²	HTHP FL:	Hard/Ca: 380	Oil: 0.5	
Weight: 10.55ppg	Gels 10s/10m: 9 / 15	HTHP Cake:	MBT: 8	Sand: 0.5	
Temp:	Fann (3/6/100): 10 / 13 / 36		PM: 0.05	pH: 9	
			PF: 0.05	PHPA:	

Comment

### Shakers, Volumes and Losses Data

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	953.0bbl	Losses	159.0bbl	Comment
Centrifuge	DE 1000		Active	288.0bbl	Downhole		
Centrifuge	DE 1000		Mixing		Surf. + Equip.	99.0bbl	
Shaker 1	Derrick	Pyramid-140/140	140/140	499.0bbl	Dumped	25.0bbl	
Shaker 1	Derrick	Pyramid-140/140	140/140		De-Sander		
Shaker 2	Derrick	Pyramid-140/140	140/140		De-Silter		
Shaker 2	Derrick	Pyramid-140/140	140/140	166.0bbl	Centrifuge	10.0bbl	
			Kill		filtration	25.0bbl	

Bit # 7rr	Wear	I	O1	D	L	B	G	O2	R
Size: 8.500in	IADC#: 519	Nozzles	Drilled over last 24 hrs			Calculated over Bit Run			
Mfr: HYCLOG	WOB (avg):	No. Size	Progress:			Cum. Progress: 0.0m			
Type: p	RPM (avg): 70	6 14/32nd"	On Bottom Time:			Cum. On Btm Time: 0.00h			
Serial #: 112295	F.Rate: 550gpm		IADC Time:			Cum. IADC Time: 0.00h			
Depth In: 2315.0m	SPP: 2650psi		Total Revs:			Cum. Total Revs: 0			
Depth Out:	HSI: 6.00HSI		ROP (avg): N/A			Overall ROP (avg): 0.00 m/hr			
Bit Model: RSX272	TFA: 0.902								

**BHA # 13**

Wt. Below Jars Dr	35860.0klb	Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry:	54529.0klb	String Weight:	100.0klb	Torque On Btm:	7500ft-lbs	DC (2) Ann Vel.:	0fpm
Type:	Rotary Steerable	Pick-Up Weight:	120000.0klb	Torque Off Btm:	9500ft-lbs	HWDP Ann. Vel.:	264fpm
		Slack-Off Weight:	75000.0klb			DP Ann. Vel.:	264fpm

#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.37m	8.50in		EM2429	32.73h
2	Stab		0.38m	8.50in	2.75in	10625874	32.73h
3	Float Sub		0.63m	6.44in	1.92in	GP850085	50.33h
4	MWD		2.70m	6.75in	1.92in	CP1004338	50.33h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	50.33h
6	Resistivity		9.18m	6.75in	1.92in	DM90107112	50.33h
7	Pressure Sensor		8.43m	6.75in	1.92in	10635033	46.33h
8	Non Mag Hang Off Sub		3.06m	6.44in	2.75in	A225	50.33h
9	X/O		0.35m	6.25in	3.00in	M1623	89.83h
10	HWDP		86.05m	6.25in	2.81in		88.27h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	145.33h
12	HWDP		57.17m	6.25in	2.81in		90.33h

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD
2226.47	3.33	92.87	1274.0	-729.24	12.59	-729.24	1374.04	1555.56	118	MWD
2255.27	1.11	90.43	1302.8	-729.28	7.71	-729.28	1375.15	1556.57	117.9	MWD
2284.10	0.92	88.16	1331.6	-729.27	0.67	-729.27	1375.66	1557.02	117.9	MWD
2303.74	1.19	92.86	1351.2	-729.28	1.44	-729.28	1376.03	1557.34	117.9	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	-131.0
KCl	sx	0	50	0	-620.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	230.0
Potable Water	ltr	0	8000	0	20,000.0
Rig Fuel	ltr	0	3800	0	30,120.0
Camp Fuel	ltr	0	350	0	7,050.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
2	National - 8P-80	5.50	74	97	568	2650	60	400	2315.0	10.50
3	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
4	IDECO - T1000						60	400		

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	21 Aug 2006	0 Days	Incident free days 21/TRI 21 Days	Held 2 x pre tour safety meeting .Topics discussed ,Tripping with geo tap.Housekeeping around rig site.

22 Aug 2006

From : Troy Reid/Conway Waak  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2315.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1364.8m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	24.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	41.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 23 Aug 2006 : C&C mud. WOC.					
Planned Operations for 23 Aug 2006 : Spot cmt plugs 3 & 4. WOC. Test 13 3/8" x 9 5/8" annulus (20 ppg + 500 psi). Test and tag cmt plug in 9 5/8" casing. Lay down drillpipe.					

#### Summary of Period 0000 to 2400 Hrs

Finish running pressure surveys with Geo-Tap tool.  
Pump slug, pooh and lay down bha .  
M/up 2 7/8 Cement stinger, rih and spot cmt plugs no.1 and no.2.  
Circ btms up. Spot 30 bbls of high vis mud at 1996m

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 22 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PH	P	LOG	0000	0030	0.50	2315.0m	Finish running pressure surveys with Geo-Tap tool.
PH	P	CIR	0030	0130	1.00	2315.0m	C&C mud. WOO.
PH	P	TO	0130	0530	4.00	2315.0m	Pump slug and pooh to BHA
PH	P	LDP	0530	0700	1.50	2315.0m	Layout out HWDP 15 jnts.
PH	P	HT	0700	0800	1.00	2315.0m	Down load MWD Data and remove radio active sources.
PH	P	HBHA	0800	1030	2.50	2315.0m	Lay out Geo-Tap, MWD ,Bit
PH	P	TI	1030	1200	1.50	2315.0m	M/up 2 7/8 Cement stinger and RIH to 212m
PH	P	TI	1200	1600	4.00	2315.0m	Continue to RIH w/- P & A stinger to 9 5/8 casing shoe. 1601.
PH	P	CMD	1600	1630	0.50	2315.0m	Break circulation and condition mud
PH	P	TO	1630	1830	2.00	2315.0m	Continue to RIH w/- cement stinger to TD 2315m. C&C mud.
PH	P	CMP	1830	2100	2.50	2315.0m	Safety meeting. Install circ swedge. Pump 5 bbls of spacer and test lines to 3000 psi. Pump 5 bbls of spacer. Mix and pump 183 cf of cmt. Displace with cmt with 98.5 bbls of mud. Pooh to 2150 and circ btms up.
PH	P	CMP	2100	2300	2.00	2315.0m	Rih to 2198m.Safety meeting. Install circ swedge. Pump 5 bbls of spacer and test lines to 3000 psi. Pump 5 bbls of spacer. Mix and pump 182 cf of cmt. Displace with cmt with 92.9 bbls of mud. Pooh to 1996m.
PH	P	CIR	2300	2400	1.00	2315.0m	Circ btms up. Spot 30 bbls of high vis mud at 1996m.

#### Operations For Period 0000 Hrs to 0600 Hrs on 23 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PA		TO	0000	0100	1.00	2315.0m	POOH from 1996m to 1588m.
PA		LDP	0100	0230	1.50	2315.0m	RIH with 6 1/4" drill collars from 1588m to 1645m. POOH laying down drill collars.
PA		CIR	0230	0600	3.50	2315.0m	(IN PROGRESS) Circulate and condition mud wait on cement.

General Comments	
Comments	Rig Requirements
Release wood group Release Premium casing services, Release expertist, Release Sperry directional drillers. Back load 240 joints 7" casing Backload geo pilot-Geo tap. Release 4 3/4 directional tools.	

WBM Data									
Mud Type:	KCl PHPA/Glycol	Viscosity:	63sec/qt	API FL Loss:	5.0cc	CI	37000	Solids:	10.2
Depth:	2315.0m	PV:	25cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	87%
Time:	18:00	YP:	35lb/100ft²	HTHP FL:		Hard/Ca:	380	Oil:	
Weight:	10.55ppg	Gels 10s/10m:	9 / 14	HTHP Cake:		MBT:	8	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9
			10 / 13 / 35			PF:	0.05	PHPA:	
Comment									

Shakers, Volumes and Losses Data						Engineer: Manfred Olejniczak / J.V.Babu			
Equipment	Description	Mesh Size	Available	866.0bbl	Losses	134.0bbl	Comment		
Centrifuge	DE 1000		Active	200.0bbl	Downhole				
Shaker 1	Derrick	Pyramid-140/140	Mixing	140/140	Surf. + Equip.	99.0bbl			
Shaker 2	Derrick	Pyramid-140/140	40/140	556.0bbl	Dumped	25.0bbl			
			Slug		De-Sander				
			Reserve	110.0bbl	De-Silter				
			Kill		Centrifuge	10.0bbl			

Bit # 7rr				Wear	I	O1	D	L	B	G	O2 NO	R	
Size:	8.500in	IADC#:	519	Nozzles		Drilled over last 24 hrs				Calculated over Bit Run			
Mfr:	HYCLOG	WOB (avg):		No.	Size	Progress:				Cum. Progress:		0.0m	
Type:	p	RPM (avg):	70	6	14/32nd"	On Bottom Time:				Cum. On Btm Time:		0.00h	
Serial #:	112295	F.Rate:	550gpm			IADC Time:				Cum. IADC Time:		0.00h	
Depth In:	2315.0m	SPP:	2650psi			Total Revs:				Cum. Total Revs:		0	
Depth Out:	2315.0m	HSI:	6.00HSI			ROP (avg):				Overall ROP (avg):		0.00 m/hr	
Bit Model:	RSX272	TFA:	0.902										

BHA # 13							
Wt. Below Jars Dr: 35860.0klb		Length:	185.2m	Torque (max):	15500ft-lbs	DC (1) Ann Vel.:	0fpm
Weight Dry: 54529.0klb		String Weight:	100.0klb	Torque On Btm:	7500ft-lbs	DC (2) Ann Vel.:	0fpm
Type: Rotary Steerable		Pick-Up Weight:	120000.0klb	Torque Off Btm:	9500ft-lbs	HWDP Ann. Vel.:	0fpm
		Slack-Off Weight:	75000.0klb			DP Ann. Vel.:	0fpm
#	Equipment	Tool Description	Length	O.D.	I.D.	Serial #	Hours
1	Bit		0.37m	8.50in		EM2429	32.73h
2	Stab		0.38m	8.50in	2.75in	10625874	32.73h
3	Float Sub		0.63m	6.44in	1.92in	GP850085	50.33h
4	MWD		2.70m	6.75in	1.92in	CP1004338	50.33h
5	6-3/4		8.49m	6.75in	1.92in	DM90108295	50.33h
6	Resistivity		9.18m	6.75in	1.92in	DM90107112	50.33h
7	Pressure Sensor		8.43m	6.75in	1.92in	10635033	46.33h
8	Non Mag Hang Off Sub		3.06m	6.44in	2.75in	A225	50.33h
9	X/O		0.35m	6.25in	3.00in	M1623	89.83h
10	HWDP		86.05m	6.25in	2.81in		88.27h
11	Drilling Jars		9.95m	6.50in	2.75in	176020301	145.33h
12	HWDP		57.17m	6.25in	2.81in		90.33h

Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD
2226.47	3.33	92.87	1274.0	-729.24	12.59	-729.24	1374.04	1555.56	118	MWD
2255.27	1.11	90.43	1302.8	-729.28	7.71	-729.28	1375.15	1556.57	117.9	MWD
2284.10	0.92	88.16	1331.6	-729.27	0.67	-729.27	1375.66	1557.02	117.9	MWD
2303.74	1.19	92.86	1351.2	-729.28	1.44	-729.28	1376.03	1557.34	117.9	MWD

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	249	0	-380.0	
KCl	sx	0	0	0	-620.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	230.0	
Potable Water	ltr	0	8000	0	12,000.0	
Rig Fuel	ltr	0	4300	0	25,820.0	
Camp Fuel	ltr	0	350	0	6,700.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
2	National - 8P-80	5.50	74	97	568	2650	60	400	2315.0	10.50
3	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
4	IDECO - T1000						60	400		

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	21 Aug 2006	1 Day	Incident free days 21/TRI 21 Days	Held 2 x pre tour safety meeting .Topics discussed ,Tripping with geo tap.Housekeeping around rig site.





23 Aug 2006

From : Troy Reid/Conway Waak  
To : Bob Goosem/ Brian King/James Hinton

Well Data				Town Side QC Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2315.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1364.8m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	25.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	42.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 24 Aug 2006 : Finish laying down drillpipe. Nipple down bop's					
Planned Operations for 24 Aug 2006 : L/d drillpipe. N/d bop's. Remove wellhead. Clean mud pits. Rig Release					

#### Summary of Period 0000 to 2400 Hrs

Lay down Drill Collars. Test 13 3/8" x 9 5/8" annulus to 500psi over 20 ppg EMW - OK. Set cmt plugs #3 (Lakes Entrance) and #4 (9-5/8" shoe). Lay down drillpipe. RIH and tag plug #4 at 1504m. Test casing and plug No.4 to 1600psi - OK. POOH laying down drillpipe.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 23 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PA	P	TO	0000	0100	1.00	2315.0m	POOH from 1996m to 1588m.
PA	P	LDP	0100	0230	1.50	2315.0m	RIH with 6 1/4" drill collars from 1588m to 1645m. POOH laying down drill collars.
PA	TP	CIR	0230	0830	6.00	2315.0m	Circulate and condition mud wait on cement.
PA	P	CAT	0830	0900	0.50	2315.0m	Pressure test 13 3/8" x 9 5/8" annulus to 1600 psi (500 psi over LOT) for 10 mins - OK.
PH	P	CIR	0900	1000	1.00	2315.0m	RIH to 1895m break circulation
PA	P	CMP	1000	1100	1.00	2315.0m	Hold PJSM. Pump 5 bbls spacer, test surface lines to 3000psi ok, pump 5 bbls spacer. Mix and pump 94.5 cu/ft 15.8ppg slurry, displace w/-79.3 bbls. Check back flow - static.
PA	P	TO	1100	1130	0.50	2315.0m	POOH f/- 1895m to 1750m .
PA	P	CMD	1130	1200	0.50	2315.0m	Circulate bottoms up at 1750m.
PA	P	CMD	1200	1230	0.50	2315.0m	Spot 30 bbl high vis spacer under plug #4. POOH to 1627m
PA	P	CMP	1230	1330	1.00	2315.0m	Hold PJSM. Install cement swedge. Pump 5 bbls spacer. Test surface lines to 3000psi - OK. Pump 5 bbls spacer. Mix and pump 303cu/ft 15.8ppg slurry. Displace w/-64.6 bbls. Check back flow - static
PA	P	TO	1330	1400	0.50	2315.0m	POOH F/-1627m to 1400m
PA	P	CMD	1400	1500	1.00	2315.0m	Circulate 2 x bottoms up
PA	P	LDP	1500	1830	3.50	2315.0m	Pooh laying down drillpipe (78 singles).
PA	P	TI	1830	1930	1.00	2315.0m	RIH to 1311m
PA	P	WOC	1930	2030	1.00	2315.0m	WOC. Prep to lay down drillpipe.
PA	P	TI	2030	2100	0.50	2315.0m	RIH to 1504m and tag top of plug #4.
PA	P	PT	2100	2130	0.50	2315.0m	POOH to 1460m. Rig up and test casing and cement plug to 1600 psi (500 psi over LOT).
PA	P	LDP	2130	2400	2.50	2315.0m	POOH laying down drillpipe.



**Operations For Period 0000 Hrs to 0600 Hrs on 24 Aug 2006**

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PA		LDP	0000	0200	2.00	2315.0m	Continue to lay down drill pipe to 212m 2 7/8 cement stinger . Corrosion protection used on drill pipe laying down
PA		LDP	0200	0530	3.50	2315.0m	Layout 2 7/8 cement stinger
PA		BOP	0530	0600	0.50	2315.0m	Retrieve wear bushing .

**General Comments**

Comments	Rig Requirements
Release mud engineers. Back load PCS equipment. Prepare santos equipment for backload.	

**WBM Data**

Mud Type: KCl PHPA/Glycol	Viscosity: 63sec/qt	API FL Loss: 5.0cc	CI	37000	Solids: 10.2
Depth: 2315.0m	PV: 25cp	Filter Cake: 1/32nd"	K+	6%	H2O: 87%
Time: 18:00	YP: 35lb/100ft²	HTHP FL:	Hard/Ca:	380	Oil:
Weight: 10.55ppg	Gels 10s/10m: 9 / 14	HTHP Cake:	MBT:	8	Sand: 0.5
Temp:	Fann (3/6/100):		PM:		pH: 9
	10 / 13 / 35		PF:	0.05	PHPA:

Comment

**Shakers, Volumes and Losses Data**

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	866.0bbl	Losses	134.0bbl	Comment
Centrifuge	DE 1000		Active	200.0bbl	Downhole		
Shaker 1	Derrick	Pyramid - 4x140	Mixing		Surf. + Equip. 99.0bbl		
Shaker 2	Derrick	Pyramid - 4x140	Hole	556.0bbl	Dumped 25.0bbl		
			Slug		De-Sander		
			Reserve	110.0bbl	De-Silter		
			Kill		Centrifuge 10.0bbl		

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD
2226.47	3.33	92.87	1274.0	-729.24	12.59	-729.24	1374.04	1555.56	118	MWD
2255.27	1.11	90.43	1302.8	-729.28	7.71	-729.28	1375.15	1556.57	117.9	MWD
2284.10	0.92	88.16	1331.6	-729.27	0.67	-729.27	1375.66	1557.02	117.9	MWD
2303.74	1.19	92.86	1351.2	-729.28	1.44	-729.28	1376.03	1557.34	117.9	MWD

**Bulk Stocks**

Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	-380.0
KCl	sx	0	0	0	-620.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	230.0
Potable Water	ltr	32000	8000	0	36,000.0
Rig Fuel	ltr	0	4100	0	21,720.0
Camp Fuel	ltr	0	350	0	6,350.0

<b>Pumps</b>										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
2	National - 8P-80	5.50	74	97	568	2650	60	400	2315.0	10.50
3	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
4	IDECO - T1000						60	400		

<b>HSE Summary</b>				
Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	23 Aug 2006	0 Days	Incident free days 23/TRI 23 Days	Held 2 x pre tour safety meeting .Topics discussed ,Cement operations

24 Aug 2006

From : Troy Reid/Conway Waak  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2315.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1364.8m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	26.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	43.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 25 Aug 2006 : Rigging down					
Planned Operations for 25 Aug 2006 : Lower mast .					
Rig down.					
Back load rental equipmnt.					

#### Summary of Period 0000 to 2400 Hrs

Lay out drill pipe.  
Set cement plug # 5.  
Remove A&B Section  
Release ensign 32 at 14:30 hrs.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 24 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PA	P	LDP	0000	0200	2.00	2315.0m	Continue to lay down drill pipe to 212m 2 7/8 cement stinger . Corrosion protection used on drill pipe laying down
PA	P	LDP	0200	0530	3.50	2315.0m	Layout 2 7/8 cement stinger
PA	P	BOP	0530	0600	0.50	2315.0m	Retrieve wear bushing .
PA	P	BOP	0600	0630	0.50	2315.0m	Flush Surface lines.
PA	P	BOP	0630	1100	4.50	2315.0m	Nipple down BOP .Lay out bell nipple.flow line. Remove spacer spools
PA	P	CMP	1100	1200	1.00	2315.0m	Rih W/- Cement stinger to 72m mix and pump 15 bbls 15.8 slurry Displace w/- 1 bbl.
PA	P	BOP	1200	1430	2.50	2315.0m	Pooh and lay out cement stinger Rough cut A & B section and remove. Dress stump and wels on cap . Galloway 1 with date written on cap.
PA	P	RD	1430	2400	9.50	2315.0m	Release Ensign rig 32. Lay out Top drive . Backload Santos and halliburton equipment. Dismantle flare line and choke manifold. Prepare derrick to lower.Dismantle mud pits.

#### Operations For Period 0000 Hrs to 0600 Hrs on 25 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PA		RD	0000	0600	6.00	2315.0m	Continue prepare derrick to lower and dismantle mud pits. Dismantle choke lines. Prepare backloads for third party rental equipment.

#### General Comments

Comments	Rig Requirements
Back load mud chemicals to barry,s beach Back load 2 x santos con tainer to Toll in Adelaide. Backload halliburton bulker	

WBM Data									
Mud Type:	KCl PHPA/Glycol	Viscosity:	63sec/qt	API FL Loss:	5.0cc	CI	37000	Solids:	10.2
Depth:	2315.0m	PV:	25cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	87%
Time:	18:00	YP:	35lb/100ft²	HTHP FL:		Hard/Ca:	380	Oil:	
Weight:	10.55ppg	Gels 10s/10m:	9 / 14	HTHP Cake:		MBT:	8	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9
			10 / 13 / 35			PF:	0.05	PHPA:	
Comment									

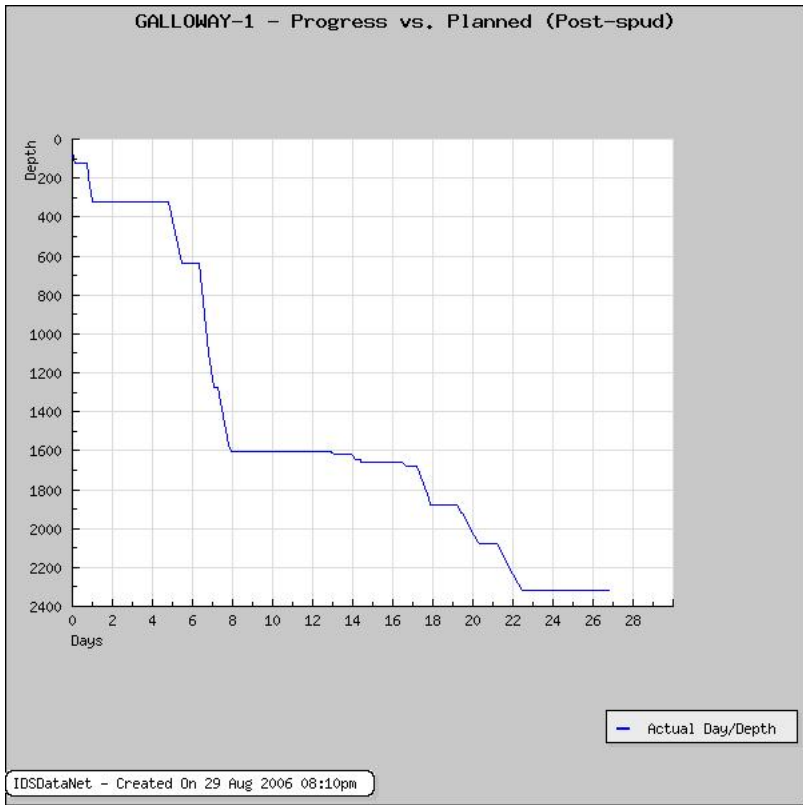
Shakers, Volumes and Losses Data					Engineer: Manfred Olejniczak / J.V.Babu				
Equipment	Description	Mesh Size	Available	866.0bbl	Losses	134.0bbl	Comment		
Centrifuge	DE 1000		Active	200.0bbl	Downhole				
Shaker 1	Derrick	Pyramid-4x140	Mixing		Surf. + Equip.	99.0bbl			
Shaker 2	Derrick	Pyramid-4x140	Hole	556.0bbl	Dumped	25.0bbl			
			Slug		De-Sander				
			Reserve	110.0bbl	De-Silter				
			Kill		Centrifuge	10.0bbl			

Survey										
MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD
2226.47	3.33	92.87	1274.0	-729.24	12.59	-729.24	1374.04	1555.56	118	MWD
2255.27	1.11	90.43	1302.8	-729.28	7.71	-729.28	1375.15	1556.57	117.9	MWD
2284.10	0.92	88.16	1331.6	-729.27	0.67	-729.27	1375.66	1557.02	117.9	MWD
2303.74	1.19	92.86	1351.2	-729.28	1.44	-729.28	1376.03	1557.34	117.9	MWD

Bulk Stocks						
Name	Unit	In	Used	Adjust	Balance	
Barite	sx	0	0	0	-380.0	
KCl	sx	0	0	0	-620.0	
Salt	sx	0	0	0	0.0	
Gel	sx	0	0	0	230.0	
Potable Water	ltr	16000	8000	0	44,000.0	
Rig Fuel	ltr	7080	4400	0	24,400.0	
Camp Fuel	ltr	0	350	0	6,000.0	

Pumps										
Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
2	National - 8P-80	5.50	74	97	568	2650	60	400	2315.0	10.50
3	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
4	IDECO - T1000						60	400		

HSE Summary				
Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	24 Aug 2006	0 Days	Incident free days 24/TRI 24 Days	Held 2 x pre tour safety meeting .Rigging down .Third party trucks and equipment.



25 Aug 2006

From : Troy Reid/Conway Waak  
To : Bob Goosem/ Brian King/James Hinton

Well Data				QC Not Done	
Drill Co.:	Ensign	Midnight Depth (MD):	2315.0m	Current Hole Size:	8.500in
Rig:	Ensign 32	Midnight Depth (TVD):	1364.8m	Casing O.D.:	9.625in
Prognosed TD:	7710.0m	Progress:	0.0m	Shoe TVD:	803.0m
RT-GL:	19.36m	Days From Spud:	27.81	F.I.T. / L.O.T.	/ 16.70ppg
GL Elev.:	8.89m	Days On Well:	44.75	Rig Move Distance	1800+/- k's
Current Op's @ 0600 26 Aug 2006 :					
Planned Operations for 26 Aug 2006 :					

#### Summary of Period 0000 to 2400 Hrs

Rig down .  
Prepare mast for lowering.  
Lower mast and unspool drilling line.  
Prepare mud pumps for removing.

#### Formation Tops

Sequence	Formation Name	Top Depth (MD, (m))	Top Depth (TVD, (m))	Comment	Wireline Depth (m)

#### Operations For Period 0000 Hrs to 2400 Hrs on 25 Aug 2006

Phse	Cls	Op	From	To	Hrs	Depth	Activity Description
PA	P	RD	0000	0600	6.00	2315.0m	Continue prepare derrick to lower and dismantle mud pits. Dismantle choke lines. Prepare backloads for third party rental equipment.
PA	P	RD	0600	0900	3.00	2315.0m	Remove vee door ,catwalk,disassemble mud tanks.Rig down rig floor ,
PA	P	RD	0900	1800	9.00	2315.0m	Lower derrick ,Unspool drilling lines , Prepare backloads . Remove rig power from mini camp and rig up mini camp genset. Remove sub shack.Remove mud pumps and spot on side of location.
PA	P	WOD	1800	2400	6.00	2315.0m	Wait on daylight

#### General Comments

Comments	Rig Requirements
Backload santo's equipment. Backload halliburton equipment	

#### WBM Data

Mud Type:	KCI PHPA/Glycol	Viscosity:	63sec/qt	API FL Loss:	5.0cc	CI	37000	Solids:	10.2
Depth:	2315.0m	PV:	25cp	Filter Cake:	1/32nd"	K+:	6%	H2O:	87%
Time:	18:00	YP:	35lb/100ft²	HTHP FL:		Hard/Ca:	380	Oil:	
Weight:	10.55ppg	Gels 10s/10m:	9 / 14	HTHP Cake:		MBT:	8	Sand:	0.5
Temp:		Fann (3/6/100):				PM:		pH:	9
			10 / 13 / 35			PF:	0.05	PHPA:	
Comment									

**Shakers, Volumes and Losses Data**

Engineer: Manfred Olejniczak / J.V.Babu

Equipment	Description	Mesh Size	Available	866.0bbl	Losses	134.0bbl	Comment
Centrifuge	DE 1000		Active	200.0bbl	Downhole		
Shaker 1	Derrick	Pyramid-140/140	Mixing		Surf. + Equip.	99.0bbl	
Shaker 2	Derrick	Pyramid-140/140	Hole	556.0bbl	Dumped	25.0bbl	
			Slug		De-Sander		
			Reserve	110.0bbl	De-Silter		
			Kill		Centrifuge	10.0bbl	

**Survey**

MD (m)	Incl. (deg)	Corr. AZ (deg)	TVD (m)	'V' Sect.	Dogleg (deg/100ft)	N/S (m)	E/W (m)	Departure	Deviation	Tool Type
2197.64	6.92	99.24	1245.3	-728.91	10.49	-728.91	1371.49	1553.16	118	MWD
2226.47	3.33	92.87	1274.0	-729.24	12.59	-729.24	1374.04	1555.56	118	MWD
2255.27	1.11	90.43	1302.8	-729.28	7.71	-729.28	1375.15	1556.57	117.9	MWD
2284.10	0.92	88.16	1331.6	-729.27	0.67	-729.27	1375.66	1557.02	117.9	MWD
2303.74	1.19	92.86	1351.2	-729.28	1.44	-729.28	1376.03	1557.34	117.9	MWD

**Bulk Stocks**

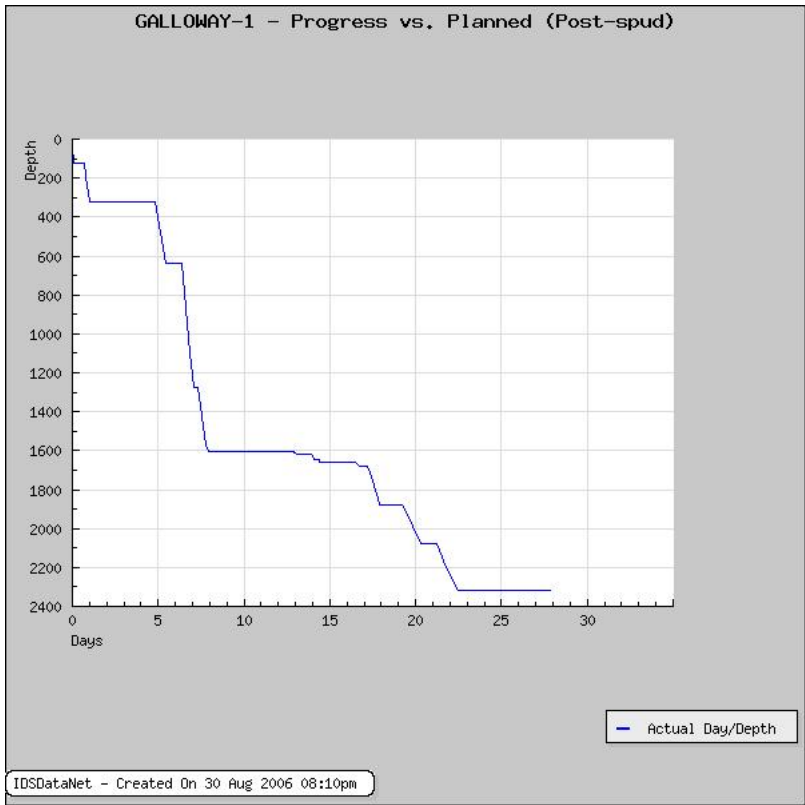
Name	Unit	In	Used	Adjust	Balance
Barite	sx	0	0	0	-380.0
KCl	sx	0	0	0	-620.0
Salt	sx	0	0	0	0.0
Gel	sx	0	0	0	230.0
Potable Water	ltr	0	0	0	44,000.0
Rig Fuel	ltr	0	0	0	24,400.0
Camp Fuel	ltr	0	0	0	6,000.0

**Pumps**

Pump Data - Last 24 Hrs							Slow Pump Data			
No.	Type	Liner (in)	SPM	Eff. (%)	Flow (gpm)	SPP (psi)	SPM	SPP (psi)	Depth (m)	MW (ppg)
1	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
2	National - 8P-80	5.50	74	97	568	2650	60	400	2315.0	10.50
3	National - 8P-80	5.50	74	97	568	2650	44	300	2315.0	10.50
4	IDECO - T1000						60	400		

**HSE Summary**

Events	Date of Last	Days Since	Description	Remarks
Pre-Tour Meetings	24 Aug 2006	1 Day	Incident free days 24/TRI 24 Days	Held 2 x pre tour safety meeting .Topics discussed ,Rigging Down

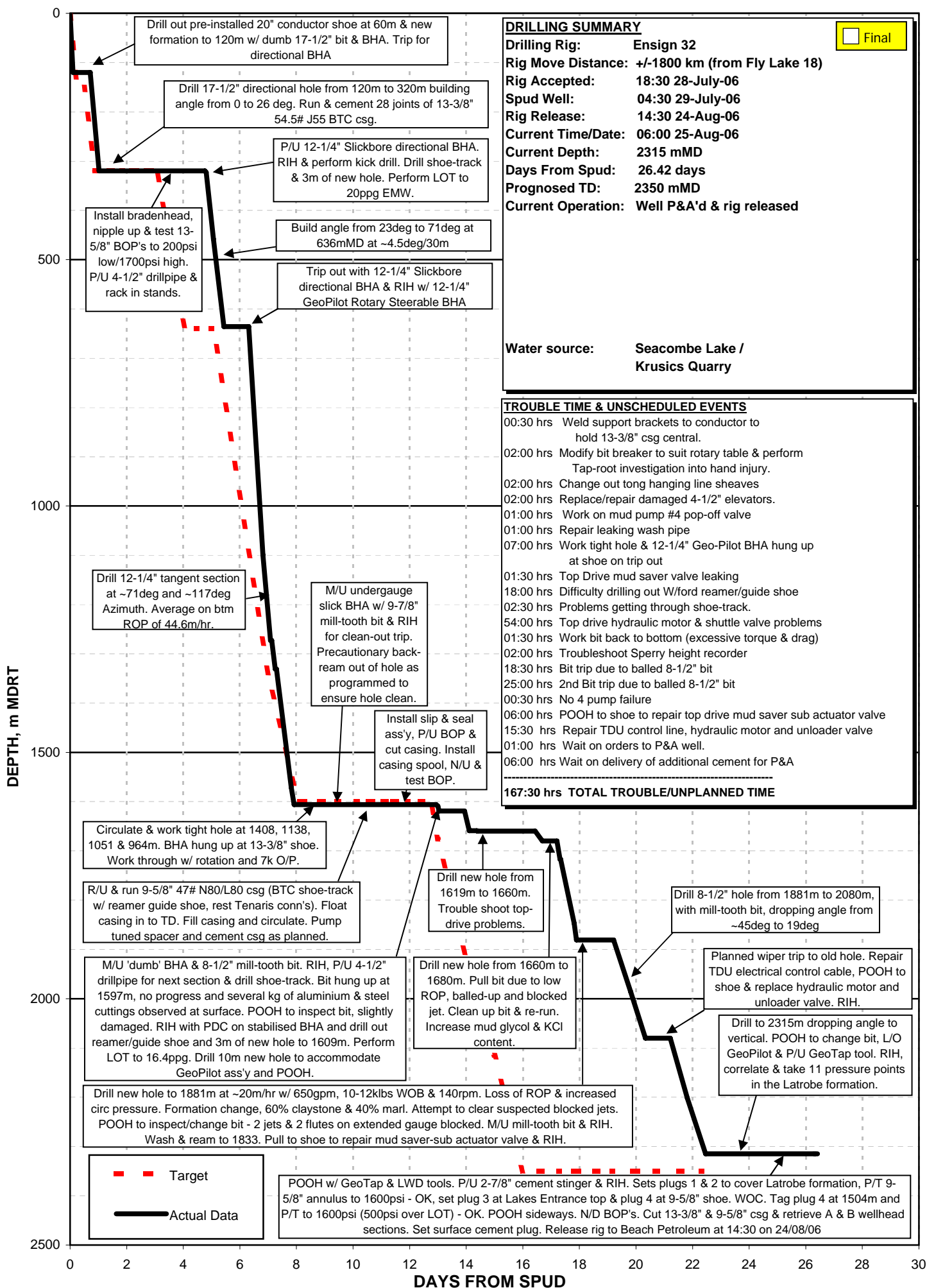




## **SECTION 7: TIME vs DEPTH CURVE**

# GALLOWAY 1

## TIME v DEPTH CURVE



RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

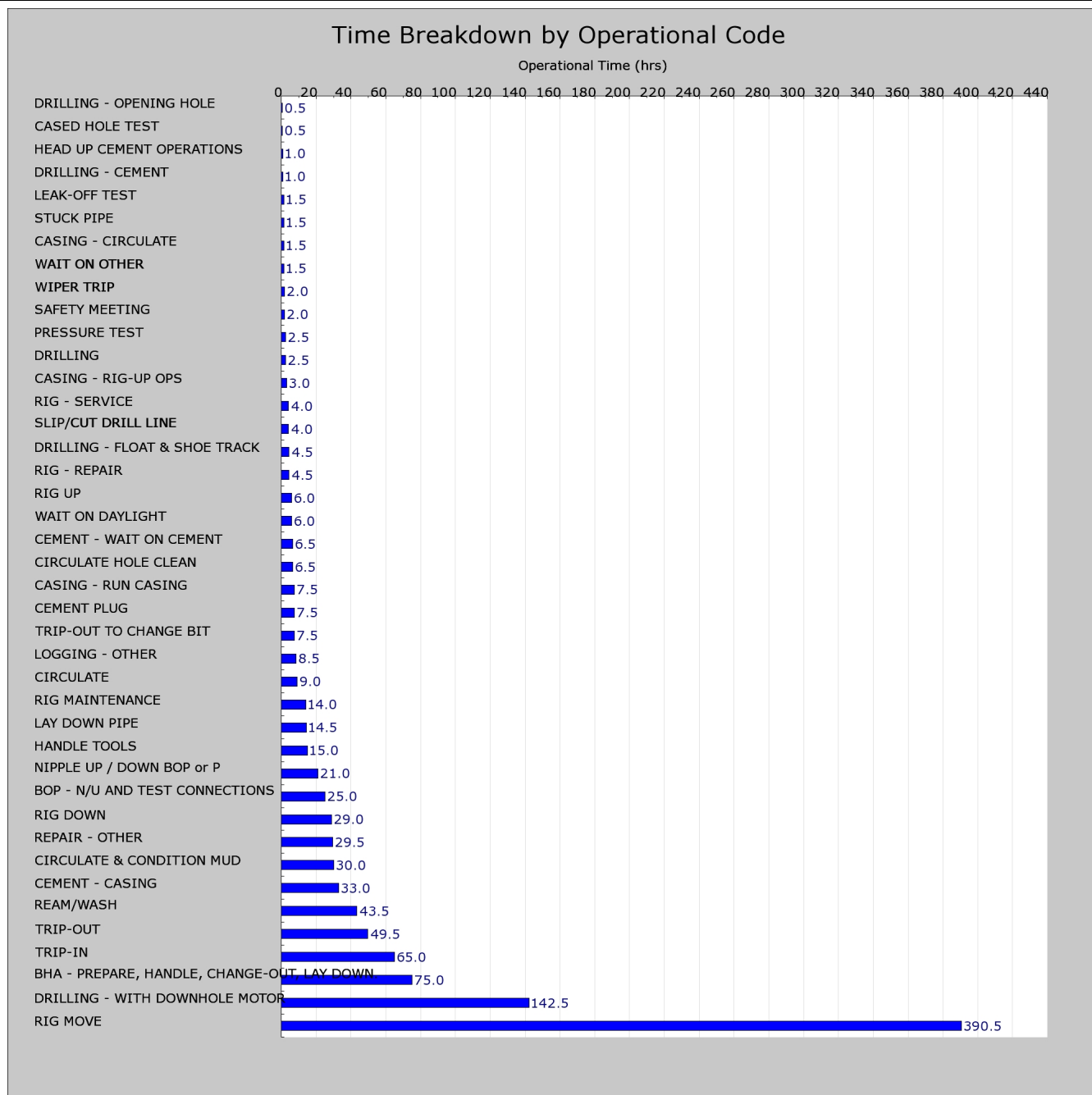
GL Elevation : 2.70m

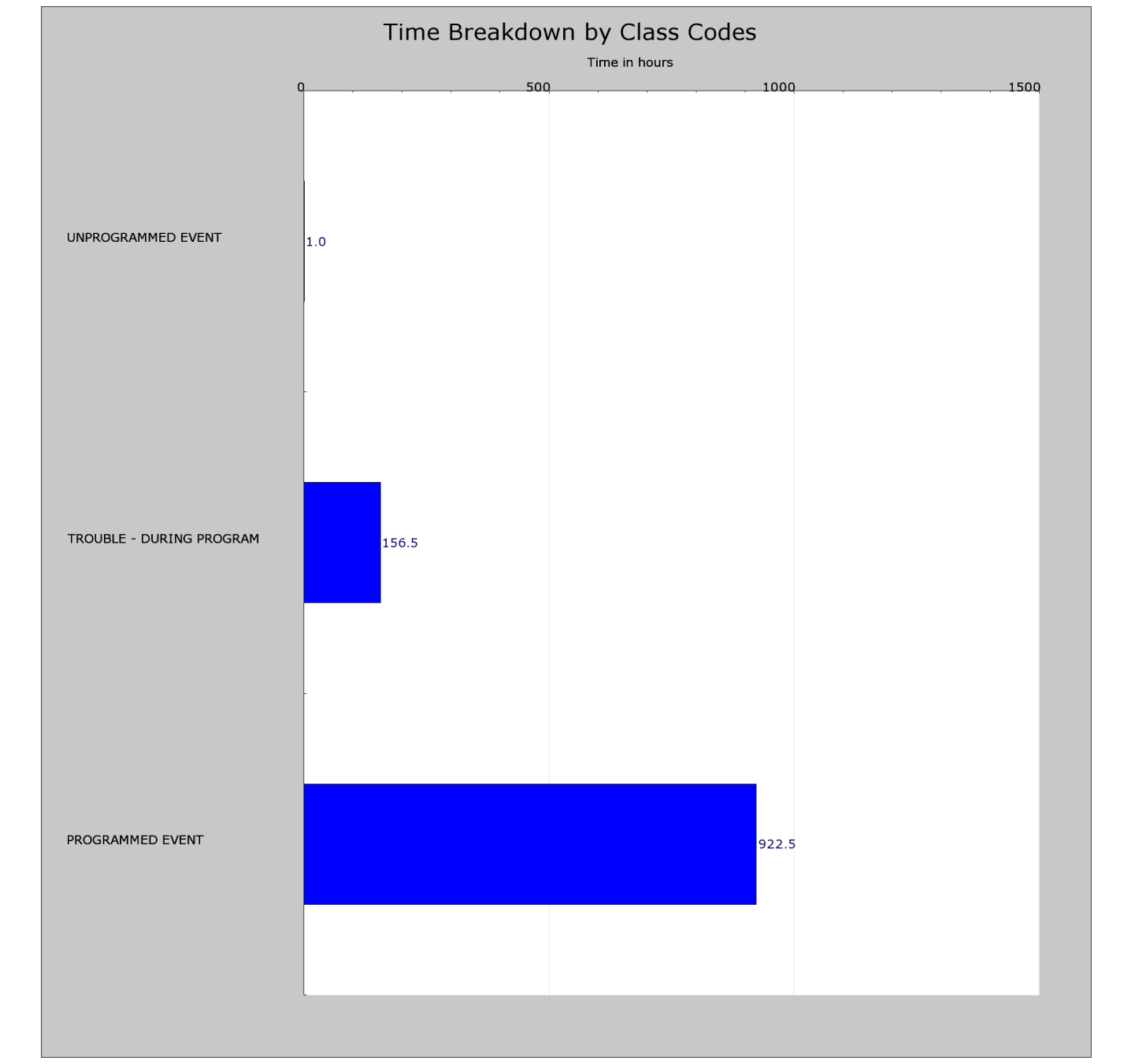
Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

## Time Analysis Breakdown





RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

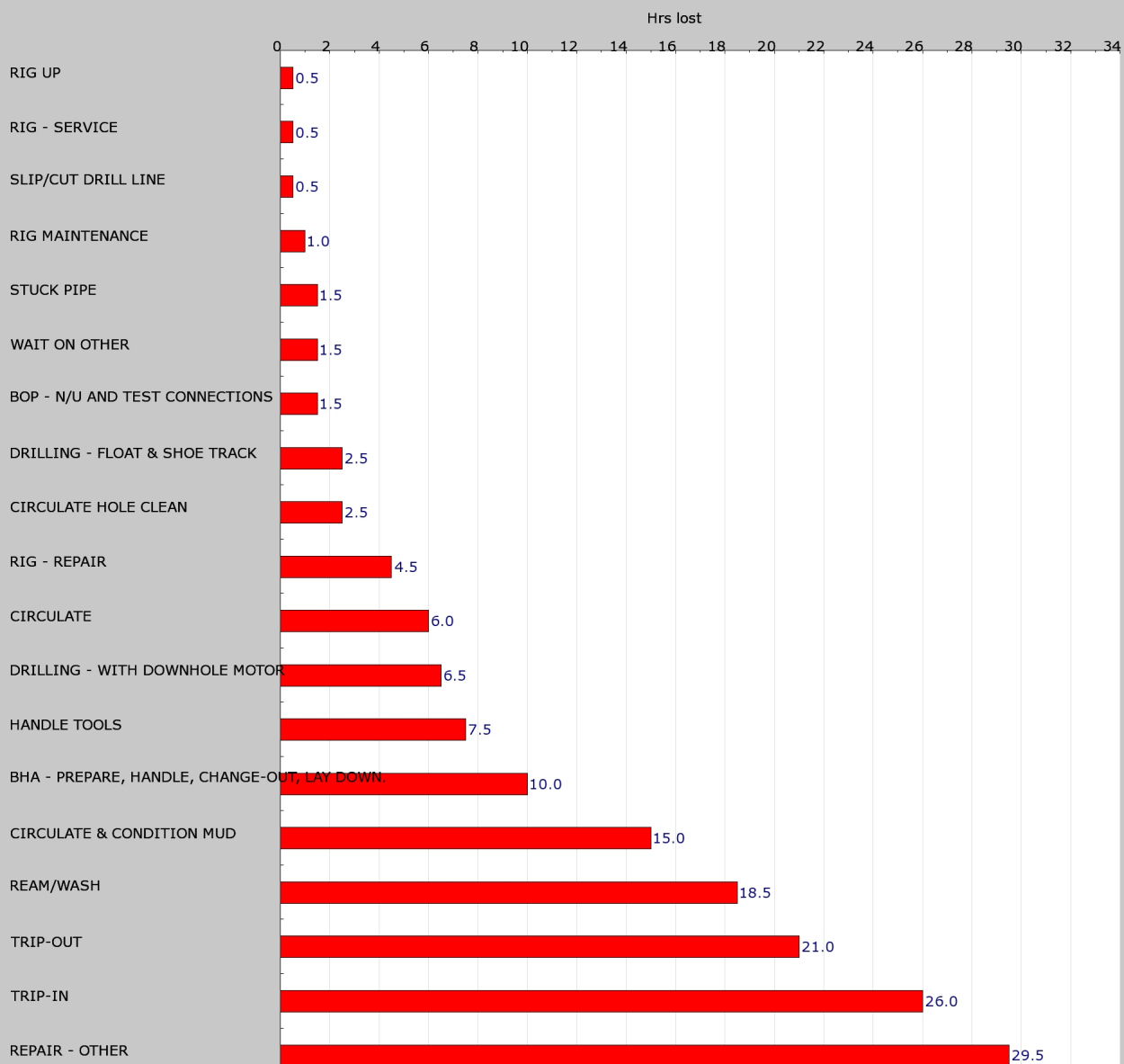
Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

## Trouble

### Drilling : Lost Time Summary (hrs)



## **SECTION 8: BHA SUMMARY**

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time: 04:30

Release Time: 14:30

## BHA Record

#	Length	Weight	Weight Blw/Jar	String Weight	Pick-Up Weight	Slack-Off Weight	Torque Max	Torque on Bottom	Torque off Bottom	BHA Description
1	120.0	11.0								Bit, IDS, Bit sub, 3x8"dc's, x-o, 1x6.5"dc, Jars, 1x6.5"dc, HWDP
2	163.4	46.0		68.0	70.0	66.0	1420	1400	1300	Bit, 9-5/8" SperryDrill Lobe, flt. sub., IBS, x-o, 8" PM Dir., 8" HOC, 3x8"dc's, x-o, 1x6-1/2" dc, Jar, 1x6-1/2"dc, 9x4-1/2" HWDP
3	165.7	43.0		58.0	60.0	56.0	2000	2000	1800	Tricone bit, 8" Sperry Drill Lobe, flt. sub, IBS, 8" Dir, 8" RLL, 8" HOC, 3x8"dc's, x-o, 1x6-1/2"dc, Jar, 1x6-1/2"dc, 9xHWDP
4	175.0	31031.0		73000.0	79000.0	67000.0	6300	6100	5800	Bit # 3, Geo pilot,non mag flex joint,8" RLL, 8" HOC, Roller reamer,Float sub,x/over,9x hwdp,jar,6 x Hwdp
5	175.0	30150.0								9 7/8 bit,bit sub,stab,2x8"dc,stab,1x8"dc,x/0,3x6 1/2 dc,9xhwdp.jar,6xhwdp.
6	208.9			46000.0	48000.0	45000.0				Bit,Bit sub, 6 x 6.5 DC,9 X 4.5 HWDP,Drilling Jar,6 x HWDP.
7	212.4	35300.0		75000.0	80000.0	70000.0	8500	7000	6500	Bit, N/B Stab, 6.5 D/C, Stab, 6 x 6.5 D/C, 9 x 4.5 HWDP, Jars, 6 x 4.5 HWDP
8	184.6	54529.0								Bit,Geo pilot,non mag flex,6 3/4 RLL,6 3/4 CNP/SLD/,No mag DC,Float sub,x/over,9 x HWDP,Drilling Jar, 6 x HWDP,
9	208.9			46000.0	110000.0	54000.0				Bit,Bit sub, 6 x 6.5 DC,9 X 4.5 HWDP,Drilling Jar,6 x HWDP.
10	185.2	54529.0		70000.0	120000.0	55000.0	15500	8500	8500	Bit,Geo pilot,non mag flex,6 3/4 RLL,6 3/4 CNP/SLD/,No mag DC,Float sub,x/over,9 x HWDP,Drilling Jar, 6 x HWDP,
11	185.2	54529.0		75000.0	80000.0	65000.0	15500	8500	8500	Bit,Geo pilot,non mag flex,6 3/4 RLL,6 3/4 CNP/SLD/,No mag DC,Float sub,x/over,9 x HWDP,Drilling Jar, 6 x HWDP,
12	185.2	54.5		115.0	130.0	90.0	15500	7500	9500	Bit,Geo pilot,non mag flex,6 3/4 RLL,6 3/4 CNP/SLD/,No mag DC,Float sub,x/over,9 x HWDP,Drilling Jar, 6 x HWDP,
13	185.2	54529.0		100.0	120000.0	75000.0	15500	7500	9500	Bit,Geo pilot,non mag flex,6 3/4 RLL,6 3/4 CNP/SLD/,No mag DC,Float sub,x/over,9 x HWDP,Drilling Jar, 6 x HWDP,

## **SECTION 9: BIT RECORD & PERFORMANCE SUMMARY**



RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time: 04:30

Release Time: 14:30

Bit Record

Date Out	Bit#	Size in	Ser #	IADC	Mfr	Type	Jets # x	D.In m	D.Out m	Prog	Hrs o/b	SPP psi	Flow gpm	WOB klb	RPM	MW	TFA	ROP ft/hr	I	O1	D	L	B	G	O2	R
29 Jul 2006	1	17.500	J50351	115 M	REED	T11C	1 x 16 3 x 20	100.0	120.0	20	0.45	600	625	10.0	85	9.20	1.117	44.40	0	0	NO	A	0	I	RR	BHA
30 Jul 2006	RR1	17.500	J50351	115M	REED	T11C	1 x 16 3 x 20	120.0	320.0	200	2.95	1250	644	10.0	50	9.20	1.117	67.80	1	1	NO	A	0	I	RR	TD
03 Aug 2006	3	12.250	D80027	117	REED	T11C	1 x 16 3 x 20	320.0	636.0	316	9.62	1050	432	7.0	75	8.80	1.117	32.90	0	0	NO	A	0	I	RR	BHA
06 Aug 2006	4	12.250	211345	S322	HYCALOG	RSX516S	7 x 16	636.0	1606.0	970	21.75	2300	775	7.0	150	9.30	1.374	44.60	1	1	ER	A	X	1	NO	TD
06 Aug 2006	5	9.875	L41360	116	REED	HP11GJ	3 x 32	1606.0	1606.0	0							2.356	0.00	0	0	NO	A	0	I	RR	BHA
11 Aug 2006	7	8.500	112295	N/A	HYCALOG	RSX272	2 x 10 5 x 14	1606.0	1609.0	3	3	1400	500	5.0	50	9.30	0.905	1.00	0	1	RG	G	X	I	NO	BHA
12 Aug 2006	8	8.500	213186	M422	HYCALOG	RSX616M-B19	6 x 14	1619.0	1660.0	41	3.26	1600	600	5.0	100	9.30	0.902	12.60	2	3	CT	A	X	I	BT	RIG
14 Aug 2006	9	8.500	210621	M422	HYCALOG	RSX616M-B19	6 x 14	1660.0	1680.0	20	3.27	2300	600	18.0	120	9.80	0.902	6.10	0	0	BU	A	X	I	NO	PR
16 Aug 2006	9rr	8.500	210621	M422	HYCALOG	RSX616M-B19	6 x 18	1680.0	1881.0	201	14.87	2300	600	18.0	120	10.40	1.491	13.50	0	0	BU	A	X	I	NO	PR
20 Aug 2006	10	8.500	EM2429	117	REED	TC11P	3 x 20	1881.0	2315.0	434	46.44	2658	560	22799.1	121	10.50	0.92	9.30	7	6	WT	A	E	2	NR	HR
22 Aug 2006	7rr	8.500	112295	N/A	HYCALOG	RSX272	2 x 10 5 x 14	2315.0	2315.0	0							0.905	0.00	0	1	RG	G	X	I	NO	TD

## **SECTION 10: DRILLING FLUIDS REPORT**

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time: 04:30

Release Time: 14:30

## Mud Recap

## WBM

Date - Time	Type	Depth m	Tmp F°	MW ppg	VIS sec/qt	PV cp	YP lb/100ft²	Gel10s (lb/100ft²) / 10m (lb/100ft²)	F.L. API cc	F.L. hthp cc	Sols	Sand	MBT	PH	CI	Hard	KCl %	Daily Cost \$
27 Jul 2006 - 10:00	Spud Mud	60.0	20.0	8.80	45	8	22	10 / 15	13.5		3			10	4000			1427
28 Jul 2006 - 22:00	Spud Mud	60.0	52.0	8.85	85	9	52	35 / 46	17.0		3.6			9	4000			1099
29 Jul 2006 - 22:30	Spud Mud	145.0	52.0	9.20	48	12	18	17 / 20	10.0		3	2.5	25	10	5000	80		1162
30 Jul 2006 - 8:30	Spud Mud	320.0	52.0	9.10	68	15	34	20 / 25	8.5		4.7	3	15	9.5	7000	80	1	2578
31 Jul 2006 -	KCL PHPA							/			4.7	3						9285
01 Aug 2006 - 17:30	KCL PHPA	320.0	52.0	8.70	90	17	21	8 / 11	7.0		5.96	0		8.5	25000		5	2560
02 Aug 2006 - 23:30	KCl PHPA	323.0	52.0	8.80	48	10	10	3 / 5	8.5		1.2	0		8.5	26000	250	5	258
03 Aug 2006 - 21:00	KCl PHPA/Glycol	636.0	90.0	9.10	47	15	24	9 / 12	3.8		3.2	.5		9	28000	360	6	18485
04 Aug 2006 - 11:00	KCl PHPA/Glycol	636.0		9.10	48	12	21	7 / 8	6.5	11.0	2.9	.8	5	9	28000	440	6	24188
04 Aug 2006 - 23:45	KCl/PHPA/Polymer/Glycol	1005.0	115.0	9.30	86	26	50	10 / 12	4.0	10.0	3.9	0.9	5	8.5	34000	360	6	
05 Aug 2006 - 11:00	KCl/PHPA/Glycol	1359.0		9.50	64	22	33	8 / 14	4.9	10.0	4.8	1.0	5	9	30000	450	6	38107
05 Aug 2006 - 21:00	KCl/PHPA/Poly/Gly	1532.0	134.0	9.45	58	22	40	9 / 13	5.8	11.0	3.6	1.0	5	9	36000	660	6	
06 Aug 2006 - 05:00	KCl/PHPA/Glycol	1606.0		9.35	56	19	32	8 / 13	5.2	13.0	4.4	1.0	5	9	35000	600	6	829
06 Aug 2006 - 21:00	KCl/PHPA/Poly/Gly	1606.0		9.45	56	21	25	6 / 9	4.5	13.0	4.4	0.8	5	9	39000	500	6	
07 Aug 2006 - 07:00	KCl/PHPA/Glycol	1606.0		9.70	61	21	32	8 / 12	4.4		6	0.5	5	9	34000	500	6	652
07 Aug 2006 - 21:00	KCl/PHPA/Poly/Gly	1606.0		9.50	62	22	31	8 / 11	5.2		5.5	0.5	5	9.5	33000	200	6	
08 Aug 2006 - 10:00	KCl/PHPA/Glycol	1606.0		9.60	62	20	34	9 / 12	5.3	11.2	4.7	0.5	5	9	34000	220	6	788
08 Aug 2006 - 21:00	KCl/PHPA/Poly/Gly	1606.0		9.50	62	22	31	8 / 12	5.4		5.5	0.4	5	9	3400	30	6	
09 Aug 2006 - 21:30	KCl/PHPA/Glycol	1606.0		9.25	54	15	24	7 / 10	6.0		4	0.3	5.5	8.5	31000	200	6	75
10 Aug 2006 - 10:30	KCl PHPA/Glycol	1606.0		9.30	55	13	22	6 / 10	4.8		4.6	0.3	6	9.5	30000	180	6	2401
10 Aug 2006 - 22:00	KCl/PHPA/Polymer	1606.0		9.25	56	17	24	7 / 10	5.8		4.6	0.1	5.5	9.5	29000	80	6	
11 Aug 2006 - 04:00	KCl PHPA/Glycol	1606.0		9.30	53	12	21	5 / 9	5.6		4.6	0.3	5	9.5	30000	220	6	467
11 Aug 2006 - 22:00	KCl/PHPA/Polymer	1619.0		9.25	52	14	21	6 / 9	5.9		4.6	0.1	5	9.5	30000	240	6	
12 Aug 2006 - 06:30	KCl PHPA/Glycol	1658.0		9.30	46	11	17	5 / 8	5.4	13.5	4.6	0.1	5	9.5	29000	270	5	9800
12 Aug 2006 - 10:30	KCl/PHPA/Polymer	1658.0		9.40	49	12	21	7 / 12	5.5		5.2	0.1	5	9.5	29000	270	6	
12 Aug 2006 - 19:00	KCl/PHPA/Glycol	1660.0		9.90	51	14	26	7 / 10	6.0		6.5	0.1	5	9.5	31000	280	6	
13 Aug 2006 - 08:00	KCl PHPA/Glycol	1660.0		9.80	52	13	23	6 / 10	5.9		6.1	0.1	5	9.5	30000	350	6	
13 Aug 2006 - 21:00	KCl/PHPA/Polymer	1660.0		9.80	55	16	24	8 / 11	5.9		6.2	0.1	5	9.5	30000	240	6	
14 Aug 2006 - 21:30	KCl PHPA/Glycol	1681.0		9.90	51	18	29	9 / 13	5.5		6.6	0.3	5	9	30000	320	6	2461

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time: 04:30

Release Time: 14:30

15 Aug 2006 - 10:30	KCI PHPA/Glycol	1681.0		10.00	52	13	24	7 / 11	5.8	11.5	7.1	0.2	5	9	30000	350	6	15447
15 Aug 2006 - 21:45	KCI/PHPA/Glycol	1825.0	129.0	10.40	49	19	31	9 / 12	5.8		8	0.3	5	9	39000	360	6	
16 Aug 2006 - 03:30	KCI PHPA/Glycol	1871.0		10.50	49	18	27	6 / 10	4.9	9.5	8.7	0.2	5	9	36000	220	6	3361
16 Aug 2006 - 22:00	KCI/PHPA/Glycol	1881.0		10.50	55	21	26	8 / 12	5.7		8.6	0.2	5	9	38000	180	6	
17 Aug 2006 - 09:15	KCI PHPA/Glycol	1881.0		10.50	51	18	32	8 / 13	5.8	9.5	8.7	0.2	5	9	36000	320	6	11202
17 Aug 2006 - 22:30	KCI/PHPA/Glycol	1978.0	136.0	10.50	52	25	32	10 / 14	5.8		8.5	0.2	5	9	39000	300	6	
18 Aug 2006 - 02:30	KCI PHPA/Glycol	2007.0	143.0	10.50	55	22	34	8 / 17	5.9	11.2	8.6	0.3	8	9	38000	380	6	4198
18 Aug 2006 - 09:00	KCI/PHPA/Glycol	2047.0		10.50	55	24	37	8 / 18	5.8		8.6	0.2	8	9	38000	350	6	
18 Aug 2006 - 22:00	KCI/PHPA/Poly	2080.0		10.50	61	24	43	10 / 14	5.7		8.1	0.2	8		41000	200	6	
19 Aug 2006 - 10:00	KCI PHPA/Glycol	2080.0		10.50	65	24	39	9 / 18	5.9	11.4	8.6	0.3	9	9	37000	360	6	19121
19 Aug 2006 - 21:30	KCI/PHPA/Glycol	2180.0	135.0	10.45	60	26	38	9 / 13	5.4	8.4	8.6	0.3	8.4	9	38000	220	6	
20 Aug 2006 - 10:00	KCI PHPA/Glycol	2280.0		10.50	60	25	36	8 / 18	5.0	9.5	10.3	0.5	10	9	36000	320	6	6817
20 Aug 2006 - 18:00	KCI/PHPA/Glycol	2315.0		10.60	58	28	40	9 / 16	5.0		10.1	0.5	8.5	9	38000	300	6	
21 Aug 2006 - 8:00	KCI PHPA/Glycol	2315.0		10.55	60	25	36	9 / 15	5.0	9.5	10.2	0.5	8.5	9	37000	380	6	3063
21 Aug 2006 - 22:30	KCI/PHPA/Glycol	2315.0		10.55	65	25	36	9 / 15	5.0		10.2	0.5	8	9	37000	380	6	
22 Aug 2006 - 18:00	KCI PHPA/Glycol	2315.0		10.55	63	25	35	9 / 14	5.0		10.2	0.5	8	9	37000	380	6	2805
23 Aug 2006 - 18:00	KCI PHPA/Glycol	2315.0		10.55	63	25	35	9 / 14	5.0		10.2	0.5	8	9	37000	380	6	2805
24 Aug 2006 - 18:00	KCI PHPA/Glycol	2315.0		10.55	63	25	35	9 / 14	5.0		10.2	0.5	8	9	37000	380	6	2805
25 Aug 2006 - 18:00	KCI PHPA/Glycol	2315.0		10.55	63	25	35	9 / 14	5.0		10.2	0.5	8	9	37000	380	6	2805

## **SECTION 11: CASING & CEMENTING SUMMARY**

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

## Casing &amp; Cementing Summary

<b>Casing Type:</b> Intermediate Casing		Originated By: Troy Reid		Checked By: Not Checked		Date: 08 Aug 2006	
Hole Size: 12.25in		Total Depth: 1606.00m		Cementing Contractor: Haliburton			
<u>PRE-FLUSH</u> 60.0bbl @ 10.50ppg		<u>SPACER</u> 5.0bbl @ 9.30ppg					
Additives: Tuned spacer 1440 LBS		Additives: 10 bbls H2O					
<u>CEMENT</u>				<u>ADDITIVES</u>	%	Amount	Units
LEAD SLURRY:		1665sx					
Brand / Class:		HTB 35:65 / HTB		Gascon 469		1000	Gal
Slurry Yield:		2.13cu.f/sx		Gasstop		.3 500	LBS
Mixwater Req't:		234.00gal/sx		HR5		.1 514	LBS
Actual Slurry Pumped:		296.0bbl		NR-6		.25 3.5	GAL
Density:		12.50ppg					
Cement Top (MD):		4930.0m					
TAIL SLURRY:		179sx					
Brand / Class:		HTB 35:65 / HTB		Halad-344		.3	LBS
Slurry Yield:		144.00cu.f/sx		CFR-3		500	LBS
Mixwater Req't:		16.00gal/sx		HR-3			LBS
Actual Slurry Pumped:		27.0bbl		NF-6		3	GAL
Density:		15.80ppg		Gasstop			ga/10bbls
Cement Top (MD):		1293.0m					
<u>DISPLACEMENT</u>				Fluid: 9.3ppg @ 9.50ppg			
Theoretical Displ.:		383.0bbl		Bumped Plug with:		500psi	
Actual Displ.:		389.0bbl @ 6.0bpm		Pressure Tested To:		1700psi	
Displaced via:		Halliburton		Bleed Back:		2.5bbl	
<u>ACTIVITY</u>	Time/Date	Returns to Surface: mud, 0.0bbl cmt					
Start Running csg.	01:00	Casing Action During Preflush : No Action Taken Cement : No Action Taken Displacement :					
Casing On Bottom	15:00	Top Up Job run: N/A of class					
Start Circulation	15:10	Plug Set: Make: Halliburton Type: Non rotating					
Start Pressure Test	21:20	Centralizer Type: Rigid Centralizer Placement Depth: 1601,1600,304					
Pump Preflush	21:40	Wiper Plug Top: Yes					
Start Mixing	21:55	Wiper Plug Bottom: N/A					
Finish Mixing	23:30 08 August 06						
Start Displacing	23:35 08 August 06						
Stop Displ./Bump	00:47 09 August 06						
Pressure Test	00:57 09 August 06						
CASING AND EQUIPMENT RECORD AS RUN FROM SURFACE							
Stick Up							-1.00m
No. Joints	OD	Wt	Grade	Comment	Thread	Length	To
1	9.625	47.0lbs/ft	L80	Landing Joint, cut off	Tenaris AMS	12.5m	-1.00m 11.5m
124	9.625	47.0lbs/ft	L80		Tenaris AMS	1552.4m	11.5m 1563.9m
1	9.625	47.0lbs/ft	L80	Cross-over	BTC Pin xTenaris AMS Box	12.0m	1563.9m 1575.9m
1	9.625	47.0lbs/ft	L80	Halliburton Float Collar	BTC	0.3m	1575.9m 1576.2m
2	9.625	47.0lbs/ft	N80	2 Joints	BTC	24.7m	1576.2m 1600.9m
1	9.625	47.0lbs/ft	L80	Weatherford 9-5/8" x 12" OD Reamer Shoe (RD095120CV)	New Vam	1.1m	1600.9m 1602m
Theoretical Bouyed wt. of casing:				290625.0klb		Bradenhead Height above GL:	
Casing wt. prior to landing csg:				Bradenhead Description / Length: /			
Actual wt. of casing (last joint run-block wt):				Tubing Spool Size:			
Landing wt. (after cementing and pressure bleed off):				Setting Slips:			
Cementing Job Remarks:		Float equipment thread-locked. A torque ring was installed between the 2 joint of 9-5/8" BTC casing in the shoe-track to give suficient torque rating to allow the string to be rotated if necessary.					
		During drillout, the float collar was tagged at 1575m. the shoe-track was drilled out to 1597m when ROP suddenly declined and large quantities of steel and aluminium were observed on ditch magnets and in possum bellies. Suspected locked cone on bit. Upon POOH to inspect the bit, it was found to be in good condition. A PDC on a stabilised assembly was RIH to drill out he remainder of the reamer/guide shoe.					

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time : 04:30

Release Time : 14:30

<b>Casing Type:</b>	Surface Casing	Originated By:	Brian Marriott	Checked By:	Not Checked	Date:	30 Jul 2006
Hole Size:	17.50in	Total Depth:	320.00m	Cementing Contractor:	Haliburton		
PRE-FLUSH	@			SPACER	50.0bbl @ 8.40ppg		
Additives:				Additives:	50bbbls water ahead		
CEMENT				ADDITIVES	%	Amount	Units
LEAD SLURRY:	423sx						
Brand / Class:	ABC / G			Econolite		318	gallons
Slurry Yield:	2.14cu.f/sx			NF6		2	gallons
Mixwater Req't:	12.50gal/sx						
Actual Slurry Pumped:	161.0bbl						
Density:	12.50ppg						
Cement Top (MD):	0.0m						
TAIL SLURRY:	437sx						
Brand / Class:	ABC / G			NF6		2	gallons
Slurry Yield:	1.16cu.f/sx						
Mixwater Req't:	5.11gal/sx						
Actual Slurry Pumped:	90.0bbl						
Density:	15.80ppg						
Cement Top (MD):	213.0m						
DISPLACEMENT				Fluid: Water @ 8.40ppg			
Theoretical Displ.:	154.6bbl			Bumped Plug with:	300psi		
Actual Displ.:	158.0bbl @ 4.7bpm			Pressure Tested To:	1200psi		
Displaced via:	Halliburton			Bleed Back:	1.5bbl		
ACTIVITY	Time/Date	Returns to Surface: 310.0bbl mud, 42.0bbl cmt					
Start Running csg.	16:00 30 Jul 2006	Casing Action During Preflush : Reciprocate Cement : Reciprocate Displacement : Reciprocate					
Casing On Bottom	23:20	Top Up Job run: Yes 50sx of class G					
Start Circulation	23:30	Plug Set: Make: Haliburton Type: Non rotating					
Start Pressure Test	01:30 31 Jul 2006	Centralizer Type: 2 x solid & 1 x bow Centralizer Placement Depth: 316, 52					
Pump Preflush	01:00	Wiper Plug Top: Yes					
Start Mixing	02:15	Wiper Plug Bottom: Yes					
Finish Mixing	03:12						
Start Displacing	03:15						
Stop Displ./Bump	03:54						
Pressure Test	04:04						
CASING AND EQUIPMENT RECORD AS RUN FROM SURFACE							
Stick Up							-1.35m
No. Joints	OD	Wt	Grade	Comment	Thread	Length	From To
1	13.375	54.5lbs/ft	J55	Landing Jnt.	BTC	8.5m	-1.35m 7.15m
27	13.375	54.5lbs/ft	J55	27 x jnt csg	BTC	297.8m	7.15m 304.95m
1		lbs/ft		1xfloat	BTC	0.5m	304.95m 305.45m
1	13.375	54.5lbs/ft	J55	1xjnt csg	BTC	10.7m	305.45m 316.15m
1		lbs/ft		1xfloat	BTC	0.5m	316.15m 316.65m
1		lbs/ft		1xshoe	BTC	0.3m	316.65m 316.95m
Theoretical Bouyed wt. of casing:				49.0klb	Bradenhead Height above GL:		-0.70m
Casing wt. prior to landing csg:				75.0klb	Bradenhead Description / Length:		W2-BP, 13.625, 3m x 13.375 / 0.70m
Actual wt. of casing (last joint run-block wt):				50.0klb	Tubing Spool Size:		
Landing wt. (after cementing and pressure bleed off):				74.0klb	Setting Slips:		
Cementing Job Remarks:				Good cement job with even wt's & full returns. Plug bumped with 300psi, pressure up to 1200psi for 10 minutes, open lo-torque, bleed back 1-1/2bbbls, float holding. 42bbbls cmt. to surface			

## LEAK OFF TEST RESULTS

**WELL:** Galloway 01

**RIG:** Ensign # 32

**DATE:** 2/08/2006

**CASING SIZE:** 13.375 (inch)

**Santos Rig Representative**
**Brian Marriott**

A. MUD DENSITY IN USE:

8.8 (ppg)

B. HOLE DEPTH:

1043 (ft)

C. SHOE DEPTH:

1027 (ft)

D. LEAK-OFF PRESSURE (GRAPH):

600 (psi)

E. EQUIVALENT DENSITY:

 $\frac{\text{LEAK-OFF PRES. (D) (psi)}}{\text{SHOE DEPTH (C) (ft)} \times 0.052} + \text{MUD DENSITY IN USE (A) (ppg)}$ 

20.0 (ppg) (EMW)

F. MAXIMUM PRESSURE RECORDED:

600 (psi)

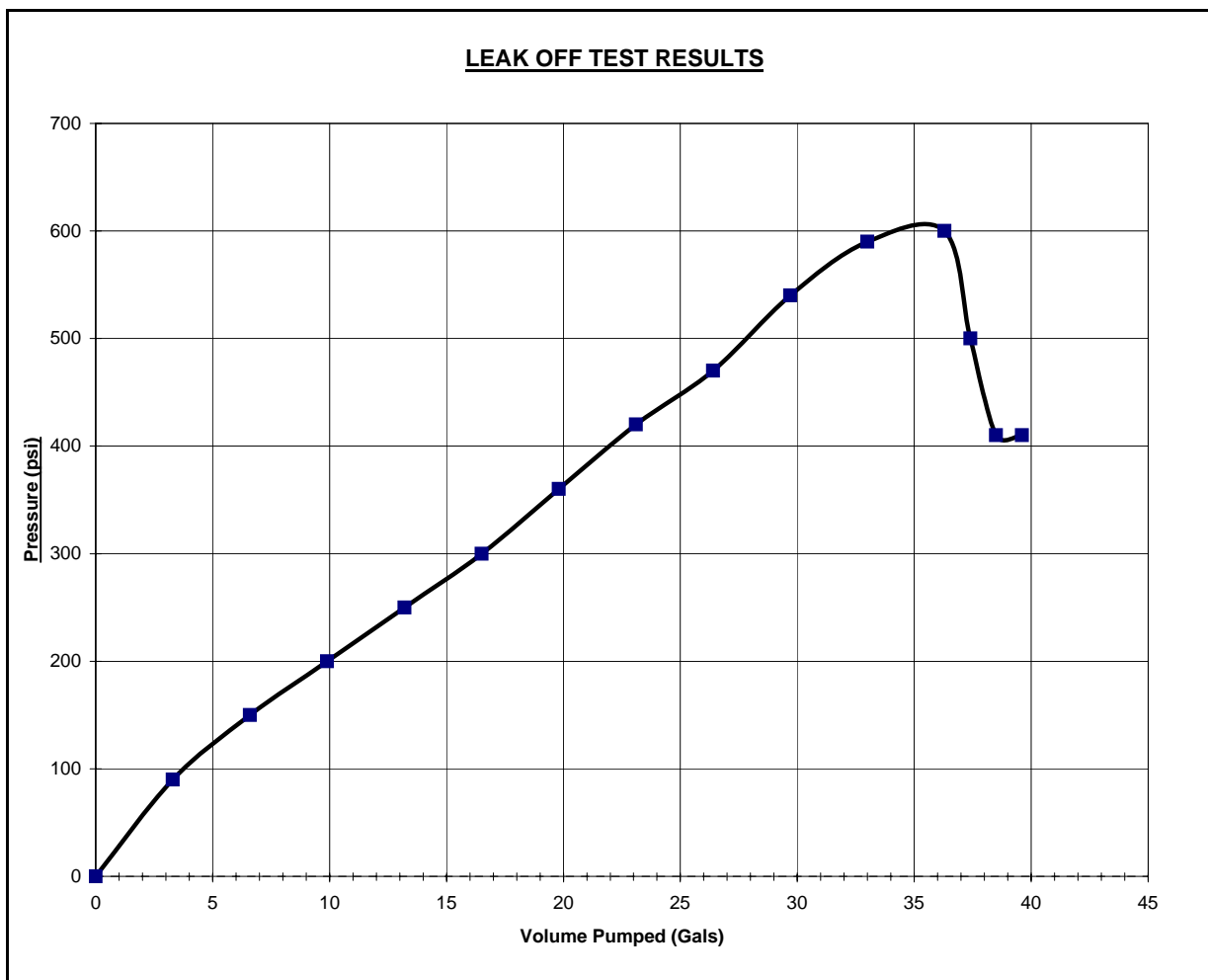
G. VOLUME PUMPED:

39.6 (gals)

H. VOLUME REGAINED:

13.2 (gals)

Gals pumped	0	3.3	6.6	9.9	13.2	16.5	19.8	23.1	26.4	29.7	33	36.3	37.4	38.5	39.6
PRESSURE:	0	90	150	200	250	300	360	420	470	540	590	600	500	410	410





## LEAK OFF TEST RESULTS

WELL: **Galloway 01**

RIG: **Ensign # 32**

DATE: **11/08/2006**

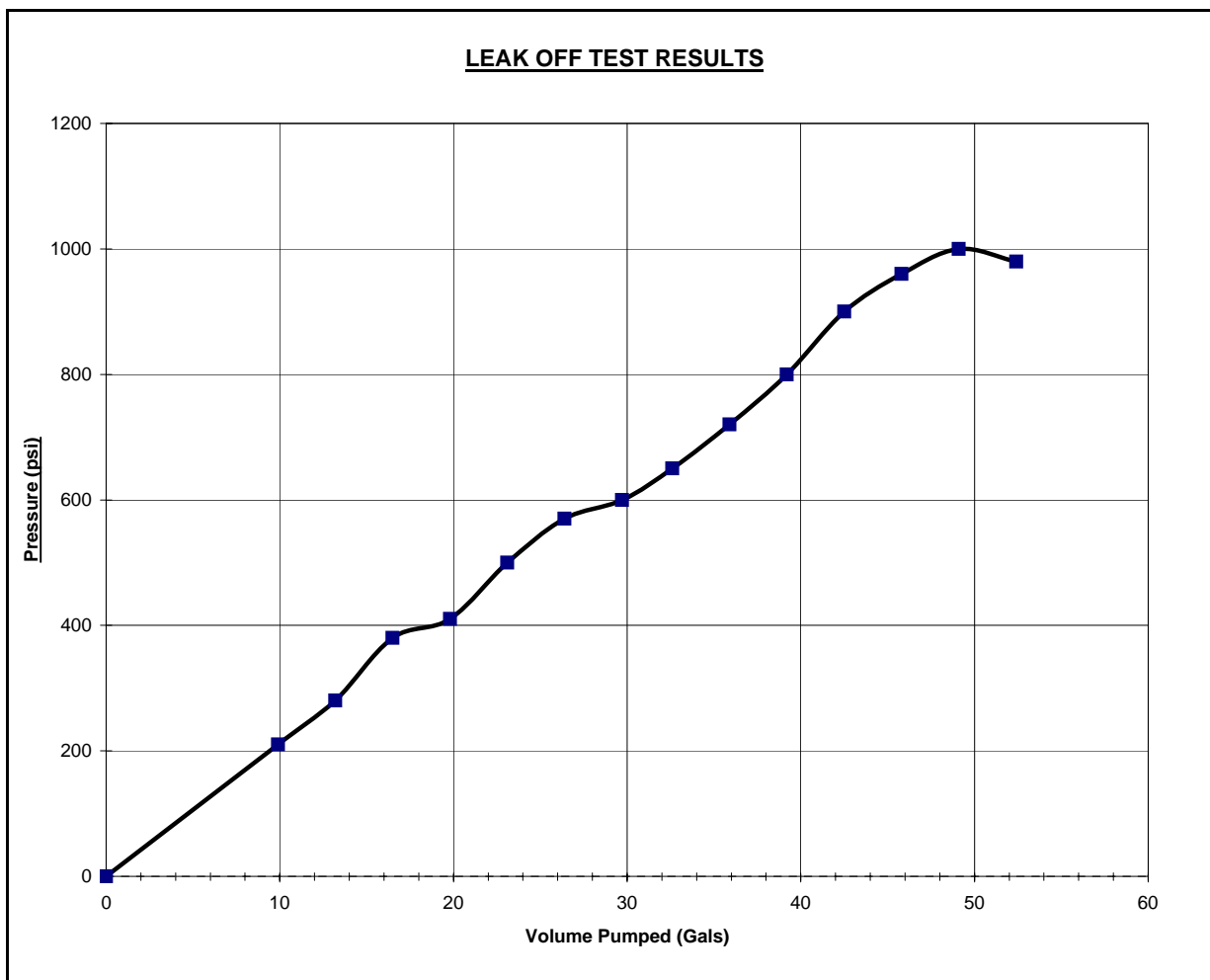
CASING SIZE: **9.625** (inch)

Santos Rig Representative

**Troy Reid**

A. MUD DENSITY IN USE: **9.3** (ppg)  
 B. HOLE DEPTH: **2723** (ft)  
 C. SHOE DEPTH: **2722** (ft)  
 D. LEAK-OFF PRESSURE (GRAPH): **1000** (psi)  
 E. EQUIVALENT DENSITY:  
      $\frac{\text{LEAK-OFF PRES. (D) (psi)}}{\text{SHOE DEPTH (C) (ft)} \times 0.052} + \text{MUD DENSITY IN USE (A) (ppg)}$  **16.4** (ppg) (EMW)  
 F. MAXIMUM PRESSURE RECORDED: **1000** (psi)  
 G. VOLUME PUMPED: **52.4** (gals)  
 H. VOLUME REGAINED: **13.2** (gals)

Gals pumped	0	9.9	13.2	16.5	19.8	23.1	26.4	29.7	32.6	35.9	39.2	42.5	45.8	49.1	52.4
PRESSURE:	0	210	280	380	410	500	570	600	650	720	800	900	960	1000	980



## **SECTION 12: MUDLOGGING WELL REPORT**

No Mudlogging Report was prepared for Galloway 1 as it was drilled using a land based rig. The 1:500 Mudlog is included in the “Mudlogging” folder included on this CD.

## **SECTION 13: WELL ABANDONMENT AND PLUG REPORT**

RT above GL : 5.88m

Lat : 38 Deg 05 Min 08.78 Sec

Spud Date : 29 Jul 2006

Release Date : 24 Aug 2006

GL Elevation : 2.70m

Long : 147 Deg 33 Min 44.10 Sec

Spud Time: 04:30

Release Time: 14:30

## Plug and Abandon

**Well: GALLOWAY-1**
**Formation Tops (m)**

Formation	Depth	Formation	Depth	Formation	Depth
Gippsland LMST	235.0m	Latrobe Coarse Clastics	2124.0m	Total Depth	2315.0m
Lakes Entrance	1880.0m	Latrobe N Asperus (Coal)	2196.0m		

**Plug Details 24 Aug 2006**

Plug No.	Reason	Top Depth	Bottom Depth	Length	Cement Type	Sacks	Weight	Additives	Tagged Depth	Tagged Weight
1	Lower Latrobe (N. asperous) formation	2196.0m	2315.0m	119m	Adelaide Brighton Class G	159	15.80ppg	Halad-344 .3%, Halad-413 .3%, CFR-3 .2% N/A	m	klb
2	Isolate the Upper Latrobe (Coarse Clastics)	2078.0m	2196.0m	118m	Adelaide Brighton Class G	157	15.80ppg	Halad-344 .3%, Halad-413 .3%, CFR-3 .2% N/A	m	klb
3	Isolate the Lakes Entrance formation	1833.0m	1894.0m	61m	Adelaide Brighton Glass A	81	15.80ppg	Halad-344 .3%, Halad-413 .3%, CFR-3 .2% N/A	m	klb
4	Isolate the casing string from the wellbore	1432.0m	1627.0m	195m	Adelaide Brighton Glass A	303	15.80ppg	Halad-344 .3%, Halad-413 .3%, CFR-3 .2% N/A	1504.0m	10.0klb
5	Seal off the casing at surface	51.0m	72.0m	21m	Adelaide Brighton Glass A	71	15.80ppg	Halad-344 .3%, Halad-413 .3%, CFR-3 .2% N/A	m	klb

Surface Casing Shoe Depth: 1602.0(m)

Pressure Tested Shoe Plug To: 1600(psi)

Identification Plate Installed (Yes/No)?

Yes

Bradenhead Removed (Yes/No)?

Yes

**Additional Comments:**

Plugs 1 and 2 were placed to entirely cover the Latrobe formation.

The plug set inside the 9 5/8" shoe was tagged and then pressure tested to 1600 psi (500 psi over leak off pressure).

The mud weight of the drilling fluid left in the hole was 10.5 ppg.

The 13 3/8" x 9 5/8" annulus was tested to 1600 psi (500 psi over leak off) to confirm the integrity of the cement in the 13 3/8" x 9 5/8" casing annulus.

The A & B sections were removed and the stump was then dressed prior to having a cap welded in place.

All plug depths are given in measured depths and formations are given in true vertical depths

**Plug Measured Depth Versus True Vertical Depth**

Plug 1 - 1247 m TVD (top) to 1365 mTVD (bottom).

Plug 2 - 1131 mTVD (top) to 1247 mTVD (bottom).

Plug 3 - 932 mTVD (top) to 975 mTVD (bottom).

Plug 4 - 772 mTVD (top) to 837 mTVD (bottom).

Plug Details 24 Aug 2006										
Plug No.	Reason	Top Depth	Bottom Depth	Length	Cement Type	Sacks	Weight	Additives	Tagged Depth	Tagged Weight
Plug 5 - 51 mTVD (top) to 72 mTVD (bottom)										

## **SECTION 14: WELL PATH SCHEMATIC**

Santos Ltd.



Directional Drilling End of Well Report

**Well : Galloway-1**

Date: July - August 2006

## **Table of Contents**

1. Well Summary
  2. Definitive Survey Report and A4 Plot
  3. Survey and Drilling Parameters
  4. BHA Data
  5. Motor Performance Reports
  6. Daily Directional Drilling Reports
-



**Customer : Santos Ltd.**

**Well : Galloway-1**

**Job Objectives:**

The Galloway-1 well is designed as a deviated exploration well. The objective is to drill an extended reach well which will then drop back to vertical through the primary target, being the Upper Latrobe Coarse Clastics. The secondary target for this well is the N. asperous (coal).

**Summary of Results:**

The well was drilled without any major issues with the major drilling assemblies performing very well. The slickbore assembly performed very well in the build section of the 12 1/4" hole with only the initial doglegs coming in on the low side which is to be expected on exit from the 13 3/8" casing. Once the motor was 'buried' in the build, the assembly performed very well with motor outputs in the order of 6-7°/30m.

The remainder of the 12 1/4" section was the tangent which was drilled with the 9600 GeoPilot. The BHA handled very well and responded accordingly to any commands from surface. The well was brought back to within a couple of metres of the well plan.

The 8 1/2" section involved dropping the well back to vertical with the 7600 series GeoPilot. The drop was started early so as to allow for any problems with obtaining drop rate. The planned drop rate of 4.24°/30m was never achieved, though due to dropping off early and sustaining relatively high doglegs, the well followed the plan to TD intersecting the target 13.28m from target centre, keeping the well within the 95% confidence zone.

**Discussion:**

**BHA Summary:**

-----  
17 1/2" Hole Section  
-----

The kickoff was started early at 125m, in order to allow for some room to pick up the doglegs due to the soft formation and shallow kickoff depth. Initially the formation was very soft and doglegs of under 2 degrees were achieved. At 190m the formation hardened and doglegs of 4.3 - 6.4 degrees were achieved. The motor yielded approximately 6°/30m degrees. TD was called at 320m. The section was drilled 76.25% (152.5m) in sliding mode and 23.75% (47.5m) in rotary mode.

-----  
12-1/4" Hole Section  
-----

Initially the first assembly drilled with light weight on bit and the assembly returned doglegs in the order of 2-3 degrees. The WOB was ramped up to 15klbs and the assembly responded by achieving 5-7°/30m. The assembly displayed a drop tendency in rotary mode in the order of 2-4°/30m and hence 92.5% of the run was drilled in oriented mode. ROP's of 20-50m/hr were achieved throughout this run.

The tangent portion of this hole section was drilled with a GeoPilot assembly. Due to a strong dropping tendency in the formation, the GeoPilot was run with an average of 60% deflection whilst steering highside. After a couple of stands, the trend seen was a strong right hand walk tendency. The GeoPilot was then oriented to an average of 45deg left of high-side to negate this effect and bring the well back onto target. The GeoPilot performed and responded well to what was requested. ROP's averaged in the order of 30-50m/hr, though for the top 50% of the run ROP's in the order of 80-100m/hr were sustainable and control drilling was introduced at the client's request for the purpose of hole cleaning.

-----  
8 1/2" Section  
-----

This section took four assemblies to drill, with the first two being pulled due to top drive failure and bit balling respectively. The 3rd assembly drilled from 1680m to 1881m with DLS increasing as it drilled to a maximum DLS of 4.081°/30m. ROP's were in the order of 18-25m/hr with an average WOB of 12klbs and 125rpm rotary speed. Upon entry into the Lakes Entrance formation, the ROP died

instantly to 3-4m/hr, the result of a blocked nozzle and two flutes blocked at the neck of the bit. The final assembly was run with a 117 tri-cone and sleeve. WOB fluctuated between 25-35klbs, depending on ROP values that were being generated. Torque was again a problem for the top drive, so rotary speeds were kept at 80rpm to allow the top drive to operate in low gear.

The GeoPilot was drilled at 100% deflection most of the time, in order to drop angle quick enough to intercept the target at the target TVD. As we approached the target, and angle was reducing, deflection rates were reduced in 25% increments, until we reached vertical. At the target depth, the wellpath missed target centre by 13.28m, keeping the well within the 95% confidence area.

BHA #	Bit #	Motor Run #	Hole Size (in)	MD In (m)	MD Out (m)	TVD In (m)	TVD Out (m)	Inc In (deg)	Inc Out (deg)	Azi In (deg)	Azi Out (deg)	Drlg hrs	Circ hrs
1	1		17.500	0	120	0	120	0.0	0.5	0	121	3	1
2	1rr1	1	17.500	120	320	120	315	0.5	22.6	121	120	8	3
3	2	2	12.250	320	637	315	525	22.6	71.0	120	121	18	2
4	3	?	12.250	637	1606	525	830	71.0	71.3	121	118	37	5
5	4		8.000	1606	1606	830	830	71.3	71.3	118	118	0	15
6	5		6.500	1606	1606	830	830	71.3	71.3	118	118	0	7
7	6		6.500	1606	1619	830	835	71.3	71.7	118	118	2	5
8	7	?	8.500	1619	1659	835	848	71.7	69.0	118	119	5	10
9	8		6.500	1659	1659	848	848	69.0	69.0	119	119	0	7
10	8	?	8.500	1659	1680	848	856	69.0	67.5	119	119	5	12
11	8rr1	?	8.500	1680	1881	856	966	67.5	44.6	119	115	20	9
12	9	?	8.500	1881	2315	966	1365	44.6	3.5	115	275	56	22

Table 1 - BHA Summary

### **Motor Run Summary:**

#### 17-1/2" Section

Motor run 1

120.0 - 320.0m

9-5/8" SperryDrill 6/7 Lobe 5.0stg PDM

S/N: 963-212

Gauge: 17.25"

Stab Sleeve S/N: DOTS6962

Circ hrs: 6.5 hrs

Drlg hrs: 2.9 hrs

The motor achieved approximately 6.25 degree dogleg severity. The formation was quite soft and initial build rates were stifled by washing out the hole. The motor performed well.

#### 12-1/4" Section

Motor run 2

320.0 - 636.5m

8" SperryDrill 6/7 Lobe 4.0stg PDM

S/N: 800-168

Gauge: 8"

Stab Sleeve S/N: No sleeve

Circ hrs: 16.1 hrs

Drlg hrs: 9.8 hrs

The motor achieved DLS of 4.5 - 7.2 degrees with 92.5% sliding. The motor performed well.

Motor Run #	Manufacturer	Type	Lobe	OD (in)	Gauge (in)	Bend (deg)	Adj	DLS (Ori) (°/30m)	ROP (Ori) (m/hr)	ROP (Rot) (m/hr)
1	SSDS	SperryDrill	6/7	9.625	17.250	1.50	Y		25	30
2	SSDS	SperryDrill	6/7	8.000		1.15	Y		17	24
?	SDS	9600 Geopilot	/	9.500	12.062	0.00	N	1.00	0	27
?	SSDS		/	7.600	8.500	0.00	N		0	9
?	SSDS		/	7.600	8.500	0.00	N		0	4
?	SSDS		/	7.600	8.500	0.00	N		0	10
?	SSDS		/	7.600	8.500	0.00	N		0	8

Table 2 - Motor Run Summary

### **Bit Run Summary:**

#### 17-1/2" Hole Section

Bit 1

6.0 - 120.0m

Make: Reed Hycalog

Type: T11C

S/N: J50351

Jets: 3x20, 1x16

TFA: 1.117  
IADC:115M  
Grade in: New  
Grade out: not graded  
Drilling hrs: 2.5 hrs

Bit 1rr1  
120.0 - 320.0m  
Make: Reed Hycalog  
Type: T11C  
S/N: J50351  
Jets: 3x20, 1x16  
TFA: 1.117  
IADC:115M  
Grade in: not graded  
Grade out: not graded  
Drilling hrs: 2.9 hrs

12-1/4" Section  
-----

Bit 2  
320.0 - 636.5m  
Make: Reed Hycalog  
Type: T11C  
S/N: D80027  
Jets: 3x20, 1x12  
TFA: 1.031  
IADC: 115M  
Grade in: New  
Grade out: 3-3-NO-A-E-1-NO-TD  
Drilling hrs: 9.8 hrs

Bit 3  
636.5 - 1606m  
Make: Reed Hycalog  
Type: RSX516S  
S/N: 211345  
Jets: 7x16  
TFA: 1.374  
IADC: S322  
Grade in: New  
Grade out: 1-1-ER-A-X-1-NO-TD  
Drilling hrs: 20.4 hrs

Bit 5  
1606-1619m --- Drill out cement/shoe and formation for FIT only  
Make: Reed Hycalog  
Type:  
S/N: 112295  
Jets:  
TFA:  
IADC: 217  
Grade in: New  
Grade out: Not Graded  
Drilling hrs: 2 hrs

Bit 6  
1619-1659m  
Make: Reed Hycalog  
Type: RSX  
S/N: 213186  
Jets: 6 x 14  
TFA: 0.902  
IADC: 616  
Grade in: New  
Grade out: 2-3-CT-A-X-I-NO-RIG  
Drilling hrs: 3.3hrs

Bit 8  
 1660-1680m  
 Make: Reed Hycalog  
 Type: RSX  
 S/N: 210621  
 Jets: 6 x 14  
 TFA: 0.902  
 IADC: 616  
 Grade in: New  
 Grade out: 1-1-NO-A-X-I-NO-PR  
 Drilling hrs: 3.27hrs

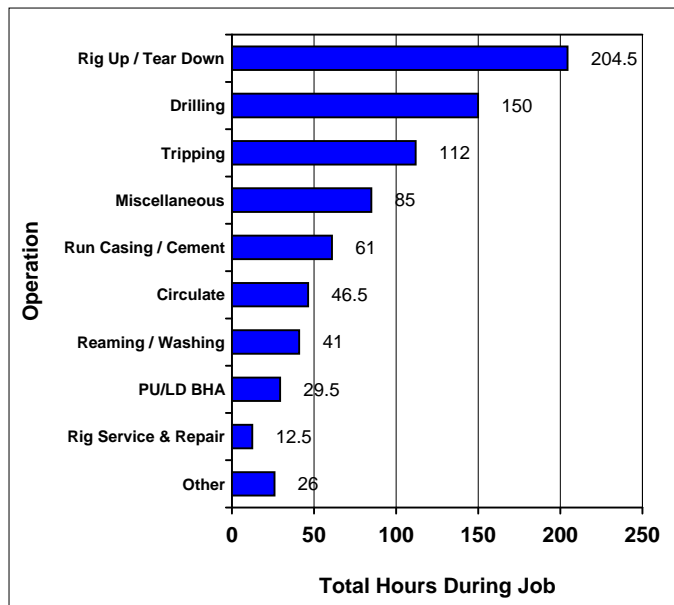
Bit 8a (Re-Run bit 8)  
 1680-1881m  
 Make: Reed Hycalog  
 Type: RSX  
 S/N: 210621  
 Jets: 6 x 18  
 TFA: 1.491  
 IADC: 616  
 Grade in: 1-1-NO-A-X-I-NO-PR  
 Grade out: 1-1-PN-A-X-I-NO-PR  
 Drilling hrs: 19.5

Bit 9  
 1881-2315m(TD)  
 Make: Reed Hycalog  
 Type: 117  
 S/N:  
 Jets: 3 x 20  
 TFA: 0.92  
 IADC: 117  
 Grade In: New  
 Grade Out:  
 Drilling hours: 46.65hrs

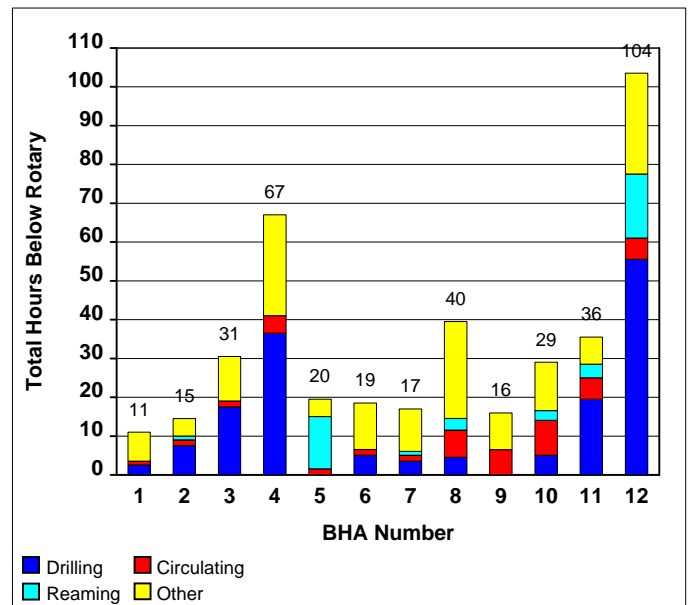
Bit #	Manufacturer	Style	OD (in)	Gge Len (in)	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Grades I O D L B G O R	Ftge (m)	Drlg hrs	ROP (m/hr)
1	Reed Hycalog	T11	17.500		3x20, 1x16	1.117		120	2.50	48
1rr1	Reed Hycalog	T11	17.500		3x20, 1x16	1.117	1-1-NO-A -0-I-RR-TD	200	7.50	27
2	Reed	T11C	12.250		3x20, 1x12	1.031	3-3-NO-A -E-1-NO-TD	317	17.50	18
3	Reed Hycalog	RSX516S	12.250	2.000	7x16	1.374	1-1-ER-A -X-1-NO-TD	969	36.50	27
4			8.000					0	0.00	
5	Reed		6.500			0.000		0	0.00	
6	Reed		6.500			0.000		13	1.50	9
7	Hycalog Reed	PDC	8.500	12.750	6x14	0.902	2-3-CT-A -X-I-NO-RIG	40	4.50	9
8	Reed		6.500			0.000		0	0.00	
8	Hycalog Reed	PDC	8.500	12.750	6x14	0.902	- - - - -	21	5.00	4
8rr1	Hycalog Reed	PDC	8.500	12.750	6x18	1.491	1-1-PN-A -X-I-NO- PR	201	19.50	10
9	Reed Hycalog steel	Mill Tooth	8.500		3x20	0.920		434	55.50	8

Table 3 - Bit Run Summary

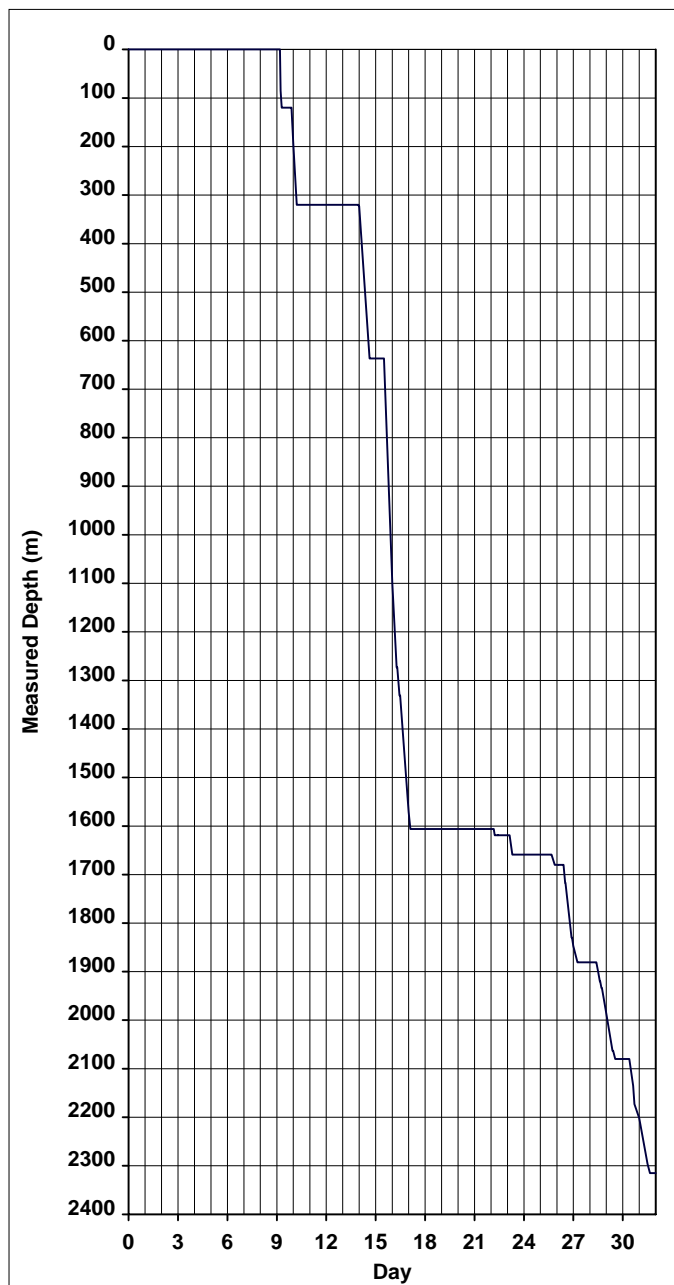
## Hours by Operation Summary



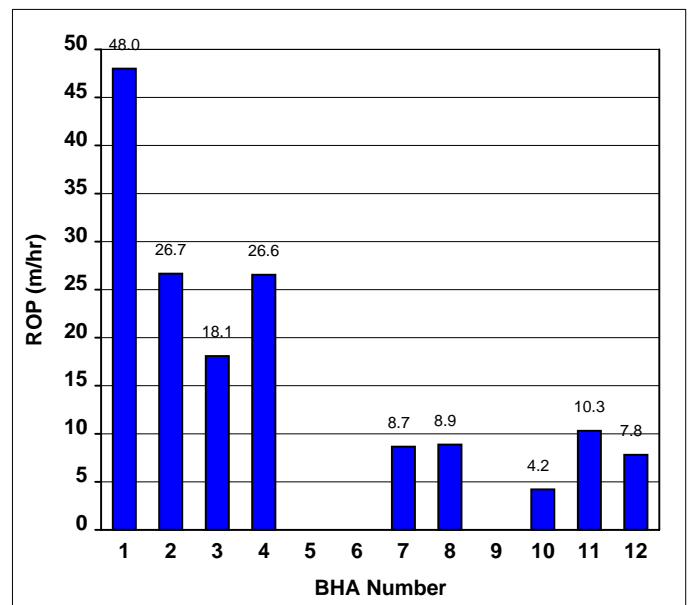
## Hours per BHA Breakdown



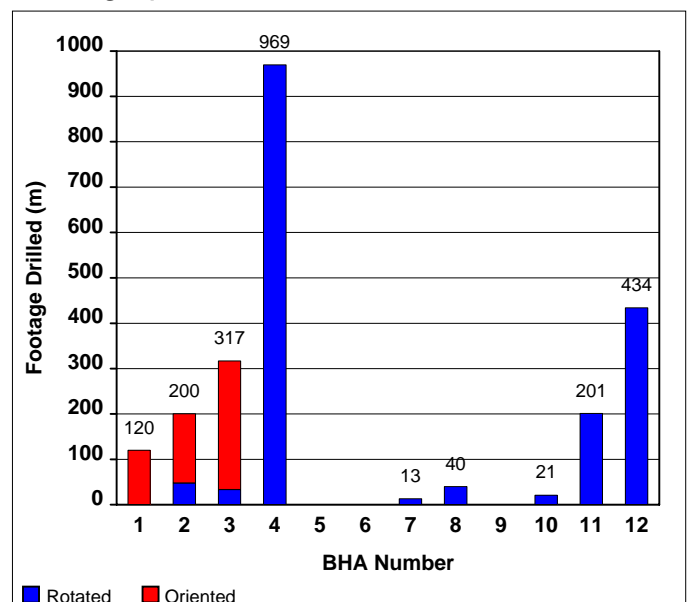
## Days vs. Depth

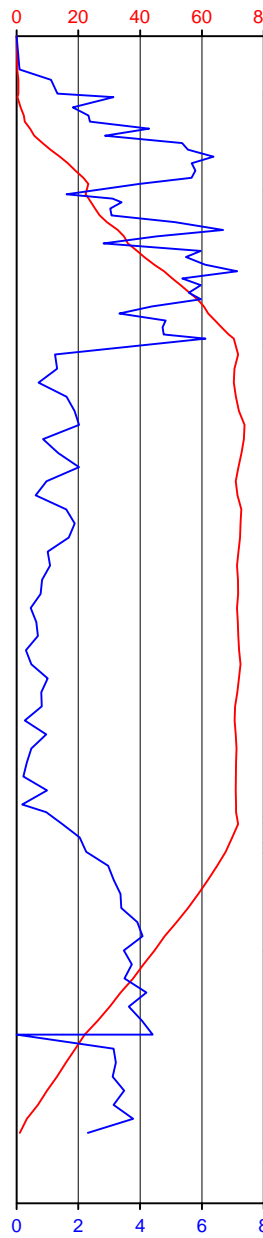


## Average Rate of Penetration per BHA



## Footage per BHA



MD (m)	Formation Name MD/TVD	<div>Inclination — DLS —</div>	Bit Data	Drilling Parameters	Motor	BHA Stabilizers	Comments	BHA ID
0	Tambo River 143 / 143 Gippsland Limestone 235 / 235		T11 3x20, 1x16 /32's 0.80 m/min 2.50 hrs	WOB klbs RPM FLO gpm SPP psi		16.250 in @ 1.57 m	In hole at: 00:00 hrs 29/07/2006 Out of hole at: 11:00 hrs 29/07/2006 Depth in: 3.0 m Depth out: 120.0 m Circulating hours: 3.5 hrs Drilling Hours: 2.5 hrs	#1 @ 0
100			T11 3x20, 1x16 /32's 0.44 m/min 7.50 hrs	WOB 9 klbs RPM 50 FLO 660 gpm SPP 1101 psi	9-5/8" SperryDrill 6/7 L 1.50° ABH	17.250 in @ 1.24 m 16.250 in @ 12.08 m	In hole at: 12:00 hrs 29/07/2006 Out of hole at: 12:00 hrs 30/07/2006 Depth in: 120.0 m Depth out: 320.0 m Circulating hours: 6.5 hrs Drilling Hours: 2.5 hrs	#2 @ 120
200			T11C 3x20, 1x12 /32's 0.30 m/min 17.50 hrs	WOB 13 klbs RPM 70 FLO 693 gpm SPP 1346 psi	8" SperryDrill 6/7 L 1.15° ABH	11.437 in @ 10.59 m	In hole at: 10:00 hrs 02/08/2006 Out of hole at: 21:00 hrs 03/08/2006 Depth in: 320.0 m Depth out: 636.5 m Circulating hours: 16.1hrs Drilling Hours: 9.8 hrs	#3 @ 320
300			RSX516S 7x16 /32's 0.44 m/min 36.50 hrs	WOB 11 klbs RPM 148 FLO 791 gpm SPP 1763 psi	9600 Geopilot / L	12.062 in @ 6.67 m 12.125 in @ 19.42 m	In hole at: 22:00 hrs 03/08/2006 Out of hole at: 06:30 hrs 06/08/2006 Depth in: 636.5 m Depth out: 1606 m Circulating hours: 34.6 hrs Drilling Hours: xx hrs	#4 @ 637
400								
500								
600								
700	Lakes Entrance 1880 / 965		WOB 15 klbs RPM 120 FLO 600 gpm SPP 1800 psi			8.250 in @ 10.69 m 8.188 in @ 21.34 m	Depth in; 1620.00m Depth out; 1660.00m Sensor Distances ----- ABL = 1.4m Pressure = 16.31m Survey = 8.95m Density = 21.89m Gamma = 11.42m Caliper = 25.10m Resistivity = 13.78m Porosity = 25.96	#8 @ 1619
1400								
1500								
1600								
1600	PDC 6x14 /32's 0.15 m/min 4.50 hrs		WOB 15 klbs RPM 120 FLO 600 gpm SPP 1800 psi		8.250 in @ 10.70 m 8.188 in @ 22.33 m	Depth In; 1660.00m Depth Out; 1680.00m Sensor Distances ----- ABL = 1.41m Pressure = 16.32m Survey = 8.96m Density = 22.46m Gamma = 11.43m Resistivity = 13.79m Porosity = 26.55m	#10 @ 1659	
1700	PDC 6x14 /32's 0.07 m/min 5.00 hrs		WOB 25 klbs RPM 120 FLO 600 gpm SPP 2181 psi		8.250 in @ 10.70 m 8.188 in @ 22.33 m	Depth In; 1680.00m Depth Out; 1881.00m Sensor Distances ----- ABL = 1.41m Pressure = 16.32m Survey = 8.96m Density = 22.46m Gamma = 11.43m Resistivity = 13.79m Porosity = 26.55m	#11 @ 1680	
1800	PDC 6x18 /32's 0.17 m/min 19.50 hrs		WOB 14 klbs RPM 132 FLO 635 gpm SPP 2634 psi		8.250 in @ 10.70 m 8.188 in @ 22.33 m	Depth In; 1881.00m Depth Out; 2327.00m Sensor Distances ----- ABL = 1.63m Pressure = 16.54m Survey = 9.18m Density = 22.91m Gamma = 11.65m Porosity = 26.97m Resistivity = 14.01m Drilling hours: 46.65hrs	#12 @ 1881	
1900	Mill Tooth 3x20 /32's 0.13 m/min 55.50 hrs		WOB 28 klbs RPM 111 FLO 564 gpm SPP 2690 psi		8.500 in @ 0.44 m 8.250 in @ 10.92 m 8.188 in @ 22.55 m			
2000								
2100								
2200								
2300								
2400								



**Santos Ltd.**

**Galloway**

**Galloway**

**Galloway-1**

**Galloway-1**

**Design: Galloway-1**

## **Standard Survey Report**

**05 September, 2006**



# Sperry Drilling Services

## Survey Report

<b>Company:</b>	Santos Ltd.	<b>Local Co-ordinate Reference:</b>	Well Galloway-1
<b>Project:</b>	Galloway	<b>TVD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Site:</b>	Galloway	<b>MD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Well:</b>	Galloway-1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Galloway-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Galloway-1	<b>Database:</b>	Perth Office Database

<b>Project</b>	Galloway		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	GDA94		
<b>Map Zone:</b>	Zone 55S (144 E to 150 E)		

<b>Site</b>	Galloway		
<b>Site Position:</b>		<b>Northing:</b>	5,784,520.00 m
<b>From:</b>	Map	<b>Easting:</b>	549,307.00 m
<b>Position Uncertainty:</b>	0.00 m	<b>Slot Radius:</b>	in
		<b>Latitude:</b>	38° 05' 08.750" S
		<b>Longitude:</b>	147° 33' 44.113" E
		<b>Grid Convergence:</b>	-0.347 °

<b>Well</b>	Galloway-1		
<b>Well Position</b>	<b>+N/-S</b>	0.00 m	<b>Northing:</b> 5,784,520.00 m
	<b>+E/-W</b>	0.00 m	<b>Easting:</b> 549,307.00 m
<b>Position Uncertainty</b>	0.00 m	<b>Wellhead Elevation:</b>	m
		<b>Latitude:</b>	38° 05' 08.750" S
		<b>Longitude:</b>	147° 33' 44.113" E
		<b>Ground Level:</b>	2.78 m

<b>Wellbore</b>	Galloway-1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	BGGM2006	13/07/2006	12.797
			<b>Dip Angle (°)</b>
			-68.709
			<b>Field Strength (nT)</b>
			59,935

<b>Design</b>	Galloway-1		
<b>Audit Notes:</b>	Casing depths are provisional, and should only be used as a guide.		
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>
	(m)	(m)	(m)
	0.00	0.00	0.00
			<b>Direction (°)</b>
			118.500

<b>Survey Program</b>	<b>Date</b>	5/09/2006			
<b>From (m)</b>	<b>To (m)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
68.73	303.70	17 1/2" MWD (Galloway-1)	MWD Magnetic	MWD Magnetic Survey (Thorogood)	
325.21	828.55	12 1/4" MWD (Galloway-1)	MWD Magnetic	MWD Magnetic Survey (Thorogood)	
857.49	2,315.00	8 1/2" MWD (Galloway-1)	MWD Magnetic	MWD Magnetic Survey (Thorogood)	

<b>Survey</b>										
<b>Measured Depth (m)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (m)</b>	<b>+N/-S (m)</b>	<b>+E/-W (m)</b>	<b>Vertical Section (m)</b>	<b>Dogleg Rate (°/30m)</b>	<b>Build Rate (°/30m)</b>	<b>Turn Rate (°/30m)</b>	
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.000	0.00	0.00	
68.73	0.220	154.700	68.73	-0.12	0.06	0.11	0.096	0.10	0.00	
89.74	0.640	277.760	89.74	-0.14	-0.04	0.03	1.117	0.60	175.72	
118.31	0.630	112.180	118.31	-0.18	-0.06	0.04	1.323	-0.01	-173.87	
125.39	0.310	210.530	125.39	-0.21	-0.03	0.07	3.142	-1.36	416.74	
146.55	1.330	135.420	146.55	-0.43	0.11	0.31	1.823	1.45	-106.49	
163.20	2.410	112.530	163.19	-0.70	0.57	0.84	2.329	1.95	-41.24	
175.90	2.700	134.290	175.88	-1.02	1.03	1.39	2.375	0.69	51.40	
190.20	4.400	115.220	190.15	-1.49	1.77	2.27	4.296	3.57	-40.01	
204.73	5.780	113.550	204.62	-2.01	2.95	3.55	2.865	2.85	-3.45	
219.70	8.440	111.190	219.47	-2.71	4.66	5.39	5.362	5.33	-4.73	



# Sperry Drilling Services

## Survey Report

<b>Company:</b>	Santos Ltd.	<b>Local Co-ordinate Reference:</b>	Well Galloway-1
<b>Project:</b>	Galloway	<b>TVD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Site:</b>	Galloway	<b>MD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Well:</b>	Galloway-1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Galloway-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Galloway-1	<b>Database:</b>	Perth Office Database

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
233.58	10.990	113.040	233.15	-3.60	6.83	7.72	5.552	5.51	4.00
247.70	13.990	113.350	246.94	-4.80	9.64	10.76	6.376	6.37	0.66
261.59	16.600	112.230	260.33	-6.22	13.01	14.41	5.673	5.64	-2.42
276.52	19.070	117.090	274.55	-8.14	17.16	18.96	5.791	4.96	9.77
291.26	21.660	120.030	288.36	-10.60	21.66	24.09	5.666	5.27	5.98
303.70	23.230	118.680	299.86	-12.92	25.80	28.84	3.985	3.79	-3.26
312.11	22.902	119.484	307.60	-14.52	28.68	32.14	1.622	-1.17	2.87
13 3/8"									
325.21	22.400	120.780	319.69	-17.06	33.04	37.18	1.622	-1.15	2.97
334.10	23.320	120.730	327.88	-18.82	36.01	40.63	3.105	3.10	-0.17
341.63	24.170	120.940	334.77	-20.38	38.62	43.66	3.403	3.39	0.84
354.39	25.450	121.320	346.36	-23.14	43.20	49.01	3.033	3.01	0.89
368.84	26.910	120.740	359.32	-26.43	48.66	55.38	3.077	3.03	-1.20
382.56	29.250	120.440	371.43	-29.72	54.22	61.83	5.126	5.12	-0.66
398.50	32.800	120.730	385.08	-33.90	61.29	70.04	6.687	6.68	0.55
411.79	34.800	121.090	396.13	-37.69	67.63	77.42	4.537	4.51	0.81
426.36	36.070	120.210	408.00	-42.00	74.90	85.86	2.818	2.61	-1.81
441.55	39.040	119.300	420.04	-46.59	82.94	95.12	5.967	5.87	-1.80
454.18	41.350	119.260	429.69	-50.58	90.05	103.27	5.487	5.49	-0.10
470.21	44.590	118.690	441.41	-55.87	99.61	114.19	6.107	6.06	-1.07
483.69	47.790	118.330	450.75	-60.51	108.15	123.92	7.145	7.12	-0.80
498.44	50.430	118.300	460.40	-65.80	117.97	135.07	5.370	5.37	-0.06
512.24	53.160	117.920	468.93	-70.91	127.53	145.91	5.970	5.93	-0.83
527.62	56.020	117.930	477.84	-76.78	138.61	158.45	5.579	5.58	0.02
541.36	58.570	119.100	485.27	-82.30	148.77	170.01	5.968	5.57	2.55
556.00	60.630	119.750	492.68	-88.50	159.76	182.63	4.375	4.22	1.33
570.64	62.050	120.650	499.70	-94.96	170.87	195.47	3.330	2.91	1.84
584.89	64.270	121.300	506.13	-101.51	181.77	208.17	4.831	4.67	1.37
598.88	66.350	122.110	511.97	-108.19	192.58	220.86	4.731	4.46	1.74
613.58	68.650	121.680	517.60	-115.36	204.11	234.42	4.763	4.69	-0.88
622.25	70.370	121.240	520.63	-119.60	211.04	242.53	6.120	5.95	-1.52
654.81	71.720	121.170	531.21	-135.55	237.37	273.29	1.245	1.24	-0.06
683.79	70.550	121.690	540.58	-149.85	260.77	300.68	1.314	-1.21	0.54
712.75	70.350	122.390	550.27	-164.33	283.91	327.91	0.714	-0.21	0.73
741.72	71.060	123.870	559.84	-179.28	306.80	355.17	1.623	0.74	1.53
770.66	71.980	125.520	569.02	-194.90	329.37	382.45	1.882	0.95	1.71
799.62	73.810	126.250	577.54	-211.12	351.79	409.90	2.029	1.90	0.76
827.87	73.624	125.430	585.46	-227.00	373.78	436.80	0.859	-0.20	-0.87
9 5/8"									
828.55	73.620	125.410	585.65	-227.38	374.31	437.44	0.859	-0.20	-0.87
857.49	72.830	124.330	594.00	-243.22	397.04	464.98	1.349	-0.82	-1.12
886.43	71.860	122.550	602.78	-258.42	420.05	492.45	2.025	-1.01	-1.85
915.36	70.940	122.360	612.01	-273.13	443.19	519.81	0.972	-0.95	-0.20
944.35	71.530	122.470	621.33	-287.85	466.36	547.19	0.620	0.61	0.11
973.27	72.750	121.460	630.20	-302.42	489.71	574.67	1.611	1.27	-1.05
1,002.25	72.510	119.570	638.85	-316.46	513.54	602.31	1.884	-0.25	-1.96
1,031.20	72.380	117.860	647.59	-329.72	537.74	629.91	1.695	-0.13	-1.77
1,060.16	71.850	117.000	656.48	-342.42	562.20	657.46	1.010	-0.55	-0.89
1,089.04	71.390	116.010	665.59	-354.65	586.73	684.85	1.087	-0.48	-1.03
1,118.04	71.670	115.220	674.77	-366.54	611.53	712.32	0.827	0.29	-0.82
1,147.01	71.720	114.430	683.87	-378.09	636.49	739.77	0.778	0.05	-0.82
1,175.95	71.380	114.730	693.03	-389.51	661.46	767.16	0.460	-0.35	0.31
1,204.93	71.660	115.310	702.22	-401.13	686.36	794.59	0.639	0.29	0.60
1,233.87	71.800	114.620	711.29	-412.73	711.28	822.02	0.695	0.15	-0.72

# Sperry Drilling Services

## Survey Report

<b>Company:</b>	Santos Ltd.	<b>Local Co-ordinate Reference:</b>	Well Galloway-1
<b>Project:</b>	Galloway	<b>TVD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Site:</b>	Galloway	<b>MD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Well:</b>	Galloway-1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Galloway-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Galloway-1	<b>Database:</b>	Perth Office Database

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,262.80	72.050	114.780	720.27	-424.22	736.26	849.46	0.303	0.26	0.17
1,291.77	72.510	114.840	729.08	-435.80	761.31	877.00	0.480	0.48	0.06
1,320.70	72.000	115.710	737.90	-447.56	786.23	904.51	1.009	-0.53	0.90
1,349.57	71.480	115.110	746.95	-459.33	810.99	931.89	0.802	-0.54	-0.62
1,378.57	70.750	115.430	756.33	-471.04	835.81	959.28	0.818	-0.76	0.33
1,407.21	70.630	115.670	765.80	-482.70	860.19	986.27	0.268	-0.13	0.25
1,436.05	70.950	116.590	775.29	-494.69	884.64	1,013.49	0.963	0.33	0.96
1,464.90	71.220	116.990	784.65	-506.99	909.00	1,040.77	0.483	0.28	0.42
1,493.72	71.070	117.290	793.96	-519.44	933.27	1,068.03	0.334	-0.16	0.31
1,522.57	71.020	117.070	803.33	-531.90	957.55	1,095.31	0.223	-0.05	-0.23
1,551.40	70.950	118.070	812.72	-544.51	981.71	1,122.56	0.986	-0.07	1.04
1,580.21	71.070	117.930	822.10	-557.30	1,005.76	1,149.80	0.186	0.12	-0.15
1,596.10	71.070	117.390	827.25	-564.28	1,019.07	1,164.83	0.964	0.00	-1.02
1,620.16	71.720	118.440	834.93	-574.96	1,039.22	1,187.63	1.482	0.81	1.31
1,647.79	69.840	118.530	844.03	-587.40	1,062.15	1,213.72	2.043	-2.04	0.10
1,677.35	67.720	119.250	854.72	-600.71	1,086.28	1,241.27	2.257	-2.15	0.73
1,706.30	64.960	118.420	866.34	-613.50	1,109.50	1,267.79	2.967	-2.86	-0.86
1,735.26	61.920	118.320	879.29	-625.81	1,132.29	1,293.69	3.151	-3.15	-0.10
1,764.18	58.810	117.250	893.59	-637.53	1,154.53	1,318.82	3.367	-3.23	-1.11
1,793.14	55.540	117.440	909.28	-648.70	1,176.14	1,343.15	3.391	-3.39	0.20
1,822.11	51.890	116.240	926.43	-659.25	1,196.97	1,366.49	3.910	-3.78	-1.24
1,851.05	47.980	115.640	945.05	-668.94	1,216.88	1,388.61	4.081	-4.05	-0.62
1,880.03	44.710	114.610	965.05	-677.84	1,235.86	1,409.54	3.472	-3.39	-1.07
1,908.97	41.140	113.880	986.24	-685.94	1,253.83	1,429.19	3.736	-3.70	-0.76
1,937.90	37.770	114.060	1,008.58	-693.41	1,270.62	1,447.51	3.497	-3.49	0.19
1,966.87	33.710	114.220	1,032.08	-700.32	1,286.06	1,464.38	4.205	-4.20	0.17
1,995.76	30.210	114.360	1,056.59	-706.61	1,300.00	1,479.63	3.635	-3.63	0.15
2,024.65	26.310	113.760	1,082.03	-712.19	1,312.49	1,493.26	4.061	-4.05	-0.62
2,053.45	22.080	113.220	1,108.30	-716.90	1,323.31	1,505.02	4.412	-4.41	-0.56
2,082.29	19.060	112.800	1,135.30	-720.86	1,332.63	1,515.11	3.145	-3.14	-0.44
2,111.13	15.990	111.600	1,162.79	-724.15	1,340.67	1,523.74	3.215	-3.19	-1.25
2,111.97	15.905	111.526	1,163.60	-724.24	1,340.88	1,523.97	3.109	-3.02	-2.64
Upper Latrobe									
2,139.98	13.100	108.530	1,190.72	-726.65	1,347.46	1,530.90	3.109	-3.00	-3.21
2,168.79	9.860	104.210	1,218.95	-728.30	1,352.95	1,536.51	3.488	-3.37	-4.50
2,197.64	6.920	99.240	1,247.49	-729.18	1,357.06	1,540.55	3.146	-3.06	-5.17
2,226.47	3.330	92.870	1,276.20	-729.50	1,359.61	1,542.94	3.777	-3.74	-6.63
2,255.27	1.110	90.430	1,304.97	-729.55	1,360.73	1,543.94	2.314	-2.31	-2.54
2,284.10	0.920	88.160	1,333.80	-729.54	1,361.24	1,544.39	0.202	-0.20	-2.36
2,303.74	1.190	92.860	1,353.43	-729.55	1,361.60	1,544.71	0.433	0.41	7.18
2,315.00	1.190	92.860	1,364.69	-729.56	1,361.83	1,544.92	0.000	0.00	0.00

# Sperry Drilling Services

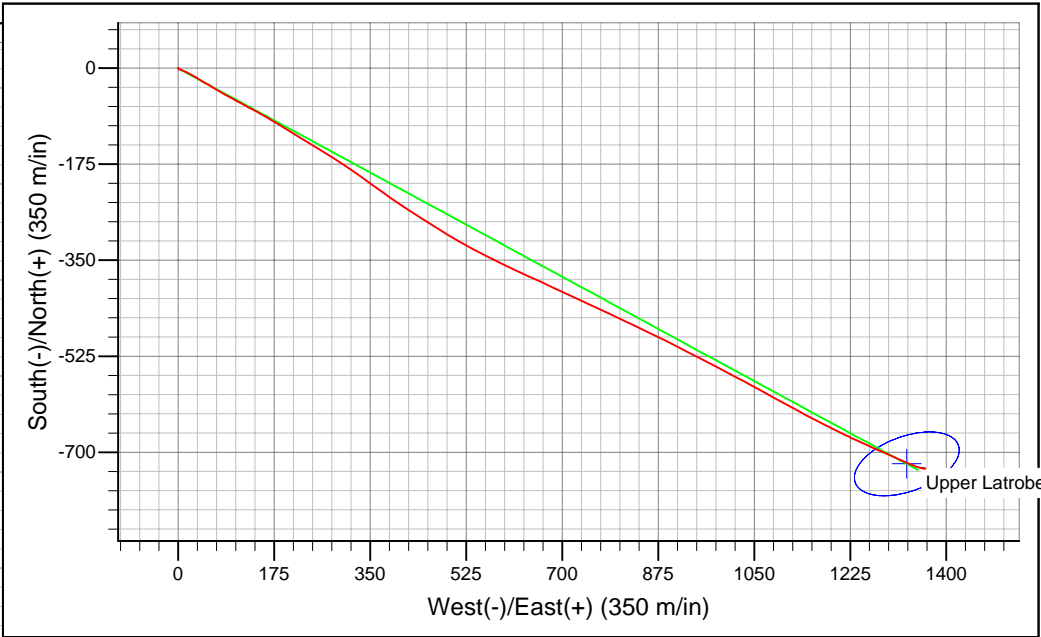
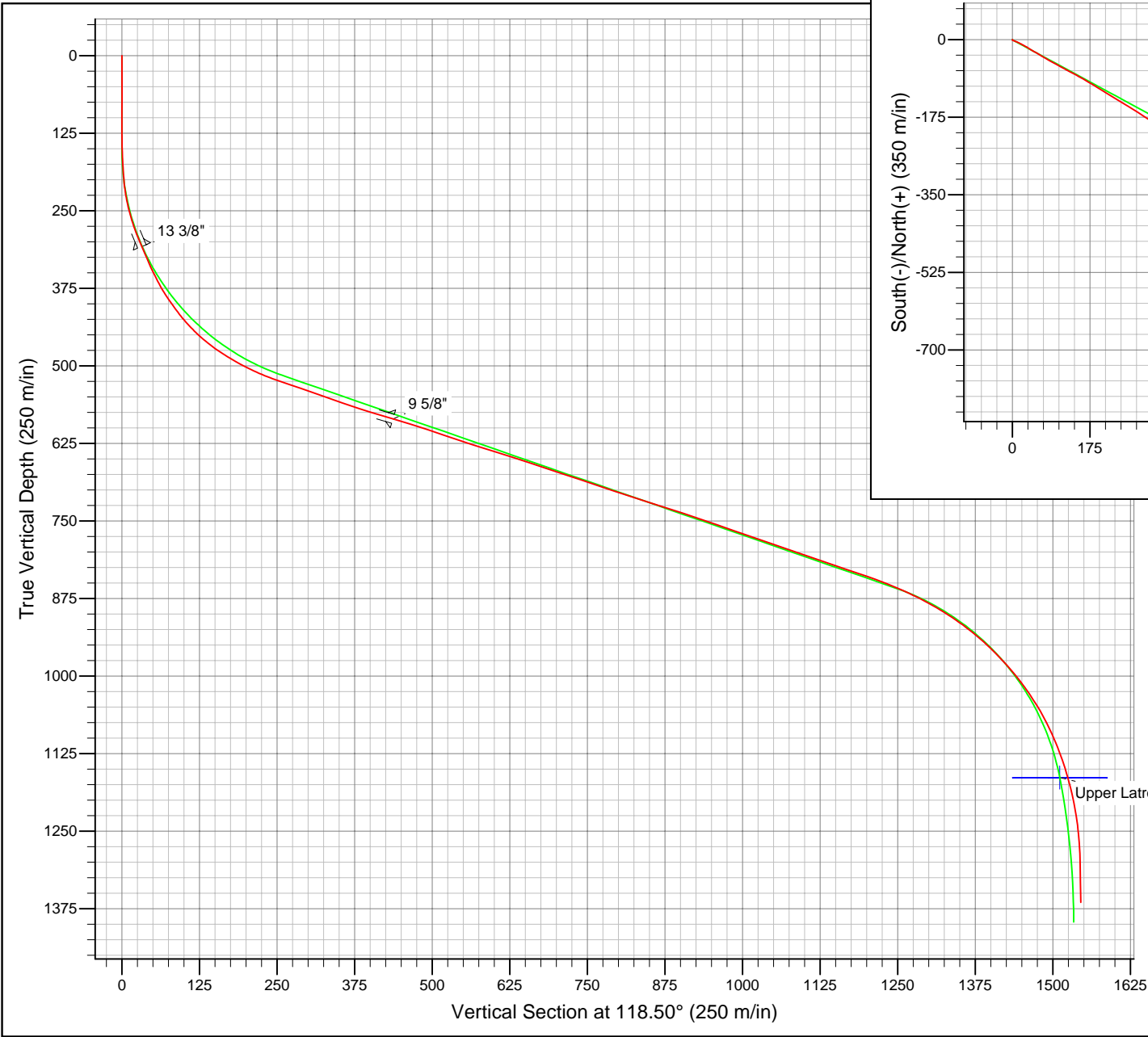
## Survey Report

<b>Company:</b>	Santos Ltd.	<b>Local Co-ordinate Reference:</b>	Well Galloway-1
<b>Project:</b>	Galloway	<b>TVD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Site:</b>	Galloway	<b>MD Reference:</b>	New RT @ 8.60m (Ensign 32)
<b>Well:</b>	Galloway-1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Galloway-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Galloway-1	<b>Database:</b>	Perth Office Database

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(m)	m	m	(m)	(m)		
Upper Latrobe	0.00	0.00	1,163.60	-721.00	1,328.00	5,783,799.00	550,635.00	38° 05' 31.878" S	147° 34' 38.810" E
- actual wellpath misses by 13.28m at 2111.97m MD (1163.60 TVD, -724.24 N, 1340.88 E)									
- Ellipse (radii L100.00 W50.00 on 70.000 azi)									

Casing Points				
Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)
312.11	307.60	13 3/8"	13.37	17.50
827.87	585.46	9 5/8"	9.62	12.25

Checked By: _____	Approved By: _____	Date: _____
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WELLBORE SURVEY										DRILLING PARAMETERS									Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (klbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation		Tool Face (deg)	ROP (m/hr)	BHA No. (#)	
					N/S (m)	E/W (m)								From (m)	To (m)				
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00									1	Tieon
68.73	0.22	154.70	68.7	0.1	-0.1	0.1	0.10	0.10	0.00									1	
89.74	0.64	277.76	89.7	0.0	-0.1	0.0	1.12	0.60	0.00									1	
118.31	0.63	112.18	118.3	0.0	-0.2	-0.1	1.32	-0.01	0.00									1	
125.39	0.31	210.53	125.4	0.1	-0.2	0.0	3.14	-1.36	0.00	3		660	950	125	125	118R	60	2	
146.55	1.33	135.42	146.5	0.3	-0.4	0.1	1.82	1.45	0.00	7		660	1000	125	140	118R	55	2	
														144	147	120R		2	
163.20	2.41	112.53	163.2	0.8	-0.7	0.6	2.33	1.95	-41.24	7		660	1000	147	156	120R	50	2	
														163	163	120R		2	
175.90	2.70	134.29	175.9	1.4	-1.0	1.0	2.37	0.69	51.40	10	50	660	1000	163	173	120R	60	2	
190.20	4.40	115.22	190.1	2.3	-1.5	1.8	4.30	3.57	-40.01	10	50	660	1050	177	186	122R	50	2	
204.73	5.78	113.55	204.6	3.6	-2.0	2.9	2.87	2.85	-3.45	10	50	660	1050	192	204	HS	50	2	
219.70	8.44	111.19	219.5	5.4	-2.7	4.7	5.36	5.33	-4.73	12	50	660	1100	207	219	HS	50	2	
233.58	10.99	113.04	233.2	7.7	-3.6	6.8	5.55	5.51	4.00	12		660	1100	221	234	HS	45	2	
247.70	13.99	113.35	246.9	10.8	-4.8	9.6	6.38	6.37	0.66	12	50	660	1200	234	246	HS	50	2	
261.59	16.60	112.23	260.3	14.4	-6.2	13.0	5.67	5.64	-2.42	8	50	660	1260	249	261	HS	50	2	
276.52	19.07	117.09	274.5	19.0	-8.1	17.2	5.79	4.96	9.77	8	50	660	1260	264	276	15R	50	2	
291.26	21.66	120.03	288.4	24.1	-10.6	21.7	5.67	5.27	5.98	8	50	660	1260	278	290	15R	50	2	
303.70	23.23	118.68	299.9	28.8	-12.9	25.8	3.98	3.79	-3.26	10		660	1250	293	304	30R	45	2	
325.21	22.40	120.78	319.7	37.2	-17.1	33.0	1.62	-1.16	2.93	8		680	1150	304	304	30R	45	3	
														307	317	15L		3	
														323	325	HS		3	
334.10	23.32	120.73	327.9	40.6	-18.8	36.0	3.11	3.10	-0.17	8		680	1150	325	332	HS	45	3	
														334	334	HS		3	
341.63	24.17	120.94	334.8	43.7	-20.4	38.6	3.40	3.39	0.84	8		680	1150	334	336	HS	45	3	
														338	342	10L		3	
354.39	25.45	121.32	346.4	49.0	-23.1	43.2	3.03	3.01	0.89	8		680	1150	342	351	10L	45	3	
														353	354	25L		3	
368.84	26.91	120.74	359.3	55.4	-26.4	48.7	3.08	3.03	-1.20	12		680	1200	354	366	25L	50	3	
														367	369	20L		3	

WELLBORE SURVEY										DRILLING PARAMETERS									Comment
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (klbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation		Tool Face (deg)	ROP (m/hr)	BHA No. (#)	
382.56	29.25	120.44	371.4	61.8	-29.7	54.2	5.13	5.12	-0.66	12		680	1200	369	383	20L	50	3	
398.50	32.80	120.73	385.1	70.0	-33.9	61.3	6.69	6.68	0.55	12		680	1200	383	394	20L	50	3	
														396	399	20L		3	
411.79	34.80	121.09	396.1	77.4	-37.7	67.6	4.54	4.51	0.81	12	70	660	1260	399	410	20L	50	3	
426.36	36.07	120.21	408.0	85.9	-42.0	74.9	2.82	2.61	-1.81	13		680	1275	413	423	30L	45	3	
														425	426	20L		3	
441.55	39.04	119.30	420.0	95.1	-46.6	82.9	5.97	5.87	-1.80	13		680	1275	426	442	20L	45	3	
454.18	41.35	119.26	429.7	103.3	-50.6	90.0	5.49	5.49	-0.10	14		700	1350	442	452	20L	40	3	
														453	454	20L		3	
470.21	44.59	118.69	441.4	114.2	-55.9	99.6	6.11	6.06	-1.07	14		700	1350	454	470	20L	40	3	
483.69	47.79	118.33	450.7	123.9	-60.5	108.2	7.15	7.12	-0.80	14		700	1350	470	484	20L	40	3	
498.44	50.43	118.30	460.4	135.1	-65.8	118.0	5.37	5.37	-0.06	14		700	1425	484	492	20L	35	3	
														493	498	20L		3	
512.24	53.16	117.92	468.9	145.9	-70.9	127.5	5.97	5.93	-0.83	14		700	1425	498	512	20L	35	3	
527.62	56.02	117.93	477.8	158.4	-76.8	138.6	5.58	5.58	0.02	14		700	1425	512	528	20L	35	3	
541.36	58.57	119.10	485.3	170.0	-82.3	148.8	5.97	5.57	2.55	14		700	1525	528	538	20L	35	3	
														540	541	20L		3	
556.00	60.63	119.75	492.7	182.6	-88.5	159.8	4.37	4.22	1.33	14		700	1525	541	556	20L	35	3	
570.64	62.05	120.65	499.7	195.5	-95.0	170.9	3.33	2.91	1.84	18		700	1525	556	567	20L	35	3	
														569	571	30L		3	
584.89	64.27	121.30	506.1	208.2	-101.5	181.8	4.83	4.67	1.37	18		700	1525	571	585	30L	35	3	
598.88	66.35	122.11	512.0	220.9	-108.2	192.6	4.73	4.46	1.74	18		700	1525	585	599	30L	35	3	
613.58	68.65	121.68	517.6	234.4	-115.4	204.1	4.76	4.69	-0.88	18		700	1525	599	614	30L	35	3	
622.25	70.37	121.24	520.6	242.5	-119.6	211.0	6.12	5.95	-1.52	18		700	1525	614	622	30L	35	3	
654.81	71.72	121.17	531.2	273.3	-135.6	237.4	1.25	1.24	-0.06	10	75	780	1200	622	627	30L	80	4	
683.79	70.55	121.69	540.6	300.7	-149.9	260.8	1.31	-1.21	0.54	15	150	780	1200				80	4	
712.75	70.35	122.39	550.3	327.9	-164.3	283.9	0.71	-0.21	0.73	15	150	780	1200				80	4	
741.72	71.06	123.87	559.8	355.2	-179.3	306.8	1.62	0.74	1.53	12	150	780	1200				80	4	
770.66	71.98	125.52	569.0	382.5	-194.9	329.4	1.88	0.95	1.71	12	160	780	1200				80	4	
799.62	73.81	126.25	577.5	409.9	-211.1	351.8	2.03	1.90	0.76	12	150	770	1200				80	4	
828.55	73.62	125.41	585.6	437.4	-227.4	374.3	0.86	-0.20	-0.87	15	150	800	1250				80	4	

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m) E/W (m)		DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (klbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m) To (m)		Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
857.49	72.83	124.33	594.0	465.0	-243.2	397.0	1.35	-0.82	-1.12	12	150	800	1250				80	4	
886.43	71.86	122.55	602.8	492.5	-258.4	420.0	2.03	-1.01	-1.85	12	150	800	1250				80	4	
915.36	70.94	122.36	612.0	519.8	-273.1	443.2	0.97	-0.95	-0.20	12	150	800	1300				80	4	
944.35	71.53	122.47	621.3	547.2	-287.8	466.4	0.62	0.61	0.11	12	150	800	1350				80	4	
973.27	72.75	121.46	630.2	574.7	-302.4	489.7	1.61	1.27	-1.05	12	150	800	1400				80	4	
1002.25	72.51	119.57	638.9	602.3	-316.5	513.5	1.88	-0.25	-1.96	12	150	800	1450				80	4	
1031.20	72.38	117.86	647.6	629.9	-329.7	537.7	1.69	-0.13	-1.77	12	150	800	1500				80	4	
1060.16	71.85	117.00	656.5	657.5	-342.4	562.2	1.01	-0.55	-0.89	12	150	800	1600				70	4	
1089.04	71.39	116.01	665.6	684.9	-354.6	586.7	1.09	-0.48	-1.03	12	150	800	1700				70	4	
1118.04	71.67	115.22	674.8	712.3	-366.5	611.5	0.83	0.29	-0.82	12	150	800	1700				70	4	
1147.01	71.72	114.43	683.9	739.8	-378.1	636.5	0.78	0.05	-0.82	12	150	800	1700				70	4	
1175.95	71.38	114.73	693.0	767.2	-389.5	661.5	0.46	-0.35	0.31	12	150	800	1800				60	4	
1204.93	71.66	115.31	702.2	794.6	-401.1	686.4	0.64	0.29	0.60	12	150	800	1900				55	4	
1233.87	71.80	114.62	711.3	822.0	-412.7	711.3	0.69	0.15	-0.72	12	150	800	1950				65	4	
1262.80	72.05	114.78	720.3	849.5	-424.2	736.3	0.30	0.26	0.17	13	150	800	2050				65	4	
1291.77	72.51	114.84	729.1	877.0	-435.8	761.3	0.48	0.48	0.06	12	150	730	2150				40	4	
1320.70	72.00	115.71	737.9	904.5	-447.6	786.2	1.01	-0.53	0.90	12	150	800	2190				35	4	
1349.57	71.48	115.11	746.9	931.9	-459.3	811.0	0.80	-0.54	-0.62	12	150	790	2250				60	4	
1378.57	70.75	115.43	756.3	959.3	-471.0	835.8	0.82	-0.76	0.33	12	150	790	2200				40	4	
1407.21	70.63	115.67	765.8	986.3	-482.7	860.2	0.27	-0.13	0.25	11	150	720	2350				40	4	
1436.05	70.95	116.59	775.3	1013.5	-494.7	884.6	0.96	0.33	0.96	10	150	800	2350				25	4	
1464.90	71.22	116.99	784.6	1040.8	-507.0	909.0	0.48	0.28	0.42	9	150	800	2400				15	4	
1493.72	71.07	117.29	794.0	1068.0	-519.4	933.3	0.33	-0.16	0.31	9	150	800	2400				20	4	
1522.57	71.02	117.07	803.3	1095.3	-531.9	957.5	0.22	-0.05	-0.23	8	150	800	2400				20	4	
1551.40	70.95	118.07	812.7	1122.6	-544.5	981.7	0.99	-0.07	1.04	7	150	800	2400				20	4	
1580.21	71.07	117.93	822.1	1149.8	-557.3	1005.8	0.19	0.12	-0.15	6	150	800	2400				20	4	
1596.10	71.07	117.39	827.3	1164.8	-564.3	1019.1	0.96	0.00	-1.02	6	150	800	2400				20	4	
1620.16	71.72	118.44	834.9	1187.6	-575.0	1039.2	1.48	0.81	1.31	15	120	600	1800				15	8	
1647.79	69.84	118.53	844.0	1213.7	-587.4	1062.2	2.04	-2.04	0.10	15	120	600	1800				15	8	
1677.35	67.72	119.25	854.7	1241.3	-600.7	1086.3	2.26	-2.15	0.73	25	120	600	2200				5	10	
1706.30	64.96	118.42	866.3	1267.8	-613.5	1109.5	2.97	-2.86	-0.86	10	130	640	2500				17	11	

**Field :** Galloway  
**Lease :**  
**Job # :** AU-DD-0004392520

**VS Dir : 118.50° (from Wellhead)**

[illegible]



# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 1

BHA# 1 : Date In :28/07/2006 MD In (m) : 0 TVD In (m) : 0 Date Out 29/07/2006 MD Out (m): 120 TVD Out (m): 120

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
1	17.500	Reed Hycalog	T11	J50351	3x20, 1x16	1.117	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Reed Hycalog T11C tricone bit	J50351	17.500	2.000	17.500	809.01	P 7-5/8" Reg	0.47	1.57
2	Integral Blade Stabilizer	DA 9011	9.500	3.000	16.250	217.48	P 7-5/8" Reg	2.59	
3	Bit Sub - with Float	Santos	9.500	2.812		220.40	B 6-5/8" Reg	0.92	
4	3x 8" Drill collar		8.000	2.810		150.00	B 6-5/8" Reg	27.61	
5	Cross Over Sub	Santos	8.000	2.812		150.14	B 4" IF	0.80	
6	1x 6.5" Drill Collar		6.500	2.812		91.92	B 4" IF	9.05	
7	Jar	17602031	6.500	2.750		92.85	B 4" IF	9.95	
8	1x 6.5" Drill Collar		6.500	2.812		91.92	B 4" IF	9.42	
9	9x HWDP		4.500	2.750		41.00	B 4" IF	86.05	
								146.86	

Parameter	Min	Max	Ave
WOB (klbs) :			
RPM (rpm) :			
Flow (gpm) :			
SPP (psi) :			

Activity	Hrs
Drilling :	2.50
Reaming :	0.00
Circ-Other :	1.00
Total :	3.50

BHA Weight (lb)
in Air (Total) : 37919
in Mud (Total) :
in Air (Bel Jars) : 20472
in Mud (Bel Jars) :

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	

#### PERFORMANCE

	In	Out
Inclination (deg)	0.00	0.47
Azimuth (deg)	0.00	121.06

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	120.00	0			
Rotated :	0.00	0			
Total :	120.00	48	0.12	0.00	0.12

#### COMMENTS

In hole at: 00:00 hrs 29/07/2006  
 Out of hole at: 11:00 hrs 29/07/2006  
 Depth in: 3.0 m  
 Depth out: 120.0 m  
 Circulating hours: 3.5 hrs  
 Drilling Hours: 2.5 hrs

**Customer :** Santos Ltd.

**Well :** Galloway-1

**Field :** Galloway

**Lease :**

**Rig :** Ensign 32

**Job # :** AU-DD-0004392520

**BHA# 1**

**OBJECTIVES:**

The objective of this assembly is to spud the well and drill vertically to 150m.

# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 2

BHA# 2 : Date In :29/07/2006 MD In (m) : 120 TVD In (m) : 120 Date Out 30/07/2006 MD Out (m): 320 TVD Out (m): 315

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
1rr1	17.500	Reed Hycalog	T11	J50351	3x20, 1x16	1.117	1-1-NO-A -0-I-RR-TD

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
1	9.625	SSDS	SperryDrill	963212	1.50°		95	10.00

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Reed Hycalog T11C tricone bit	J50351	17.500	2.000	17.500	809.01	P 7-5/8" Reg	0.47	
2	9-5/8" SperryDrill Lobe 6/7 - 5.0 stg	963212	9.625	6.135	17.250	147.21	B 7-5/8" Reg	9.68	1.24
3	Float Sub	A253	9.437	2.812		217.21	B 7-5/8" Reg	0.83	
4	Integral Blade Stabilizer	DA 9011	9.500	3.000	16.250	217.48	P 7-5/8" Reg	2.59	12.08
5	Cross Over Sub	DA9083	9.500	2.812		220.40	B 6-5/8" Reg	1.05	
6	8" PM Dir		8.000	1.920		161.44	B 6-5/8" Reg	2.77	
7	8" HOC	10562336	8.062	1.920		164.10	B 6-5/8" Reg	3.08	
8	3x 8" Drill collar		8.000	2.875		149.18	B 6-5/8" Reg	27.61	
9	Cross Over Sub	Santos	8.000	2.812		150.14	B 4" IF	0.80	
10	1x 6.5" Drill Collar		6.500	2.812		91.92	B 4" IF	9.05	
11	Jar	17602030	6.500	2.750		92.85	B 4" IF	9.95	
12	1x 6.5" Drill Collar		6.500	2.812		91.92	B 4" IF	9.42	
13	9x HWDP		4.500	2.750		41.00	B 4" IF	86.05	
								163.35	

Parameter	Min	Max	Ave
WOB (klbs) :	3	12	9
RPM (rpm) :	50	50	50
Flow (gpm) :	660	660	660
SPP (psi) :	950	1260	1101

Activity	Hrs
Drilling :	7.50
Reaming :	1.00
Circ-Other :	1.50
Total :	10.00

BHA Weight	(lb)
in Air (Total) :	46330
in Mud (Total) :	40116
in Air (Bel Jars) :	28884
in Mud (Bel Jars) :	25009

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	157

#### PERFORMANCE

	In	Out
Inclination (deg)	0.47	22.60
Azimuth (deg)	121.06	120.26

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	152.50	25			
Rotated :	47.50	30			
Total :	200.00	27	3.32	0.00	3.32

#### COMMENTS

In hole at: 12:00 hrs 29/07/2006  
 Out of hole at: 12:00 hrs 30/07/2006  
 Depth in: 120.0 m  
 Depth out: 320.0 m  
 Circulating hours: 6.5 hrs  
 Drilling Hours: 2.5 hrs

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 2

**OBJECTIVES:**

The objective of this assembly is to kick-off in the 17-1/2" section at 150m and build to 310m, building to 24 degrees with 4.5°/30m.

**RESULTS:**

The kickoff was started at 125m, in order to allow leeway in consideration of the soft formation and shallow kickoff depth. Initially the formation was very soft and doglegs of under 2 degrees were achieved. At 190m the formation hardened and doglegs of 4.3 - 6.4 degrees were achieved. The motor yielded approximately 6°/30m degrees. TD was called at 320m. The section was drilled 76.25% (152.5m) in sliding mode and 23.75% (47.5m) in rotary mode.

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 3

BHA# 3 : Date In :2/08/2006 MD In (m) : 320 TVD In (m) : 315 Date Out 3/08/2006 MD Out (m): 637 TVD Out (m): 525

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
2	12.250	Reed	T11C	D80027	3x20, 1x12	1.031	3-3-NO-A -E-1-NO-TD

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
2	8.000	SSDS	SperryDrill	800168	1.15°		103	19.00

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Tri-Cone with Geo-Pilot Sleeve	D80027	12.250	2.000	12.250	390.96	P 6-5/8" Reg	0.82	10.59
2	8" SperryDrill Lobe 6/7 - 4.0 stg	800168	8.000	5.250		97.54	B 6-5/8" Reg	8.16	
3	Float Sub	91506	8.000	2.810		150.17	B 6-5/8" Reg	0.65	
4	11-7/16" IB Stabiliser	7080449	8.000	3.000	11.437	147.22	B 6-5/8" Reg	1.89	
5	8" Dir	10603354	8.000	1.920		161.44	B 6-5/8" Reg	2.77	
6	8" RLL	DM90109064	8.000	1.920		161.44	B 6-5/8" Reg	5.36	
7	8" HOC	10562336	8.000	1.920		161.44	B 6-5/8" Reg	3.08	
8	3x 8" Drill collar	Rig	8.000	2.875		149.18	B 6-5/8" Reg	27.61	
9	Cross Over Sub	Santos	8.000	3.000		147.22	B 4" IF	0.80	
10	1x 6.5" Drill Collar	Rig	6.500	2.812		91.92	B 4" IF	9.05	
11	Jar	17602030	6.500	2.750		92.85	B 4" IF	9.95	
12	1x 6.5" Drill collar	Rig	6.500	2.812		91.92	B 4" IF	9.42	
13	9x HWDP		4.500	2.750		33.96	B 4" IF	86.05	
								165.61	

Parameter	Min	Max	Ave
WOB (klbs) :	8	18	13
RPM (rpm) :	50	75	70
Flow (gpm) :	660	780	693
SPP (psi) :	1150	1525	1346

Activity	Hrs
Drilling :	17.50
Reaming :	0.00
Circ-Other :	1.50
Total :	19.00

BHA Weight	(lb)
in Air (Total) :	42922
in Mud (Total) :	36969
in Air (Bel Jars) :	27463
in Mud (Bel Jars) :	23654

Drill String	OD(in)	Len(m)
DP(G)-NC46(XH)-16.60#	4.500	471

#### PERFORMANCE

	In	Out
Inclination (deg)	22.60	70.96
Azimuth (deg)	120.26	121.21

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	283.50	17			
Rotated :	33.10	24			
Total :	316.60	18	4.58	0.09	4.58

#### COMMENTS

In hole at: 10:00 hrs 02/08/2006  
 Out of hole at: 21:00 hrs 03/08/2006  
 Depth in: 320.0 m  
 Depth out: 636.5 m  
 Circulating hours: 16.1hrs  
 Drilling Hours: 9.8 hrs

**Customer :** Santos Ltd.**Well :** Galloway-1**Field :** Galloway**Lease :****Rig :** Ensign 32**Job # :** AU-DD-0004392520**BHA# 3****OBJECTIVES:**

The objective of this assembly was to drill from 320m to 625m, building at 4.5 deg/stand to an inclination of 70.86 deg on an azimuth of 118.5 deg.

**RESULTS:**

The well path at the beginning of the section was a couple of meters behind in section. Drilling out the shoe and drilling the first 3m in rotary mode before the LOT caused any building tendency that may have been present to be lost. Light WOB (7klbs) were used initially, with resultant build rates of 2-3 degrees. The WOB was increased to 14 and the assembly responded by achieving doglegs of 5-7 degrees. The assembly displayed a severe tendency to drop in rotary mode and consequently 92.5% (283.5m) of the run was drilled in sliding mode and 7.5% (23m) was drilled in rotary mode. ROP's of 20-50m/hr were achieved throughout the run.

**RECOMMENDATIONS:**

The slickbore enabled a smooth profile due to consistent slides. The 1.15 degree bend was good allowing consistent manageable doglegs. Higher WOB achieved larger doglegs.

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## DRILLING SERVICES

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 4

BHA# 4 : Date In :4/08/2006 MD In (m) : 637 TVD In (m) : 525 Date Out 6/08/2006 MD Out (m): 1606 TVD Out (m): 830

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
3	12.250	Reed Hycalog	RSX516S	211345	7x16	1.374	1-1-ER-A -X-1-NO-TD

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
	9.500	SDS	9600 Geopilot	1225083	0.00°		0	41.00

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Reed Hycalog RSX516S	211345	12.250	2.000	12.250	390.96	P 6-5/8" Reg	0.53	6.67
2	9600 GeoPilot w/GABI	1225083	9.500	4.000	12.062	198.74	B 6-5/8" Reg	6.61	
3	Non-Mag Flex collar	CP1015763	8.000	3.500		138.52	B 6-5/8" Reg	2.81	
4	8" RLL	DM90109064	8.000	1.920		161.44	B 6-5/8" Reg	5.36	19.42
5	8" HOC	10562336	8.000	1.920		161.44	B 6-5/8" Reg	3.08	
6	Roller Reamer	XM350	8.000	3.000	12.125	147.22	B 6-5/8" Reg	2.01	
7	Float Sub	91506	8.000	2.810		150.17	B 6-5/8" Reg	0.65	
8	Cross Over Sub	Santos	8.000	3.000		147.22	B 4" IF	0.80	
9	9x HWDP		4.500	2.750		33.96	B 4" IF	86.05	
10	Drilling Jar	17602031	6.500	2.750		92.85	B 4" IF	9.95	
11	6x HWDP		4.500	2.750		33.96	B 4" IF	57.17	
								175.02	

Parameter	Min	Max	Ave
WOB (klbs) :	6	15	11
RPM (rpm) :	75	160	148
Flow (gpm) :	720	800	791
SPP (psi) :	1200	2400	1763

Activity	Hrs
Drilling :	36.50
Reaming :	0.00
Circ-Other :	4.50
Total :	41.00

BHA Weight	(lb)
in Air (Total) :	31402
in Mud (Total) :	27047
in Air (Bel Jars) :	22002
in Mud (Bel Jars) :	18950

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	1431

#### PERFORMANCE

	In	Out
Inclination (deg)	70.96	71.34
Azimuth (deg)	121.21	117.82

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			1.00
Rotated :	969.40	27	-2.00	3.00	
Total :	969.40	27	0.01	-0.10	0.10

#### COMMENTS

In hole at: 22:00 hrs 03/08/2006  
 Out of hole at: 06:30 hrs 06/08/2006  
 Depth in: 636.5 m  
 Depth out: 1606 m  
 Circulating hours: 34.6 hrs  
 Drilling Hours: xx hrs

**Customer :** Santos Ltd.**Well :** Galloway-1**Field :** Galloway**Lease :****Rig :** Ensign 32**Job # :** AU-DD-0004392520**BHA# 4****OBJECTIVES:**

The objective of this assembly was to hold 70.8 degrees at 118.5 degrees azimuth until 1670mMD.

**RESULTS:**

GeoPilot was RIH with the bit dressed with 7x16, giving a TFA of 1.374. The Geospan was installed with a 18/32 choke. The VPA mean was 300 - 380 psi and the tool downlinked reliably.

The GeoPilot assembly to complete the relatively long tangent section of the well. Due to being behind in section the focus was on maintaining the inclination at 72 degrees though due to a strong dropping tendency in the formation, the GeoPilot was run with an average of 60% deflection whilst steering highside. After a couple of stands, the trend seen was a strong right hand walk tendency. The GeoPilot was then oriented to an average of 45deg left of high-side to negate this effect and bring the well back onto target. The GeoPilot performed and responded well to what was requested. ROP's averaged in the order of 30-50m/hr, though for the top 50% of the run ROP's in the order of 80-100m/hr were sustainable and control drilling was introduced at the client's request for the purpose of hole cleaning.

**Running Parameters (Averaged)**

-----  
WOB; 8-15klbs  
Rotary speed; 150rpm  
SPP; 1800-2500psi  
Flowrate; 800gpm  
Torque; 4500-6500ft/lbs

**RECOMMENDATIONS:**

None required. The assembly performed well and behaved as expected.



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## DRILLING SERVICES

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 5

BHA# 5 : Date In :6/08/2006 MD In (m) : 1606 TVD In (m) : 830 Date Out 8/08/2006 MD Out (m): 1606 TVD Out (m): 830

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
4	8.000			L41367			

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Bit	L41367	8.000	3.000	9.625	147.22		0.27	
2	Bit Sub	M1623	8.000	3.000		147.22		0.91	
3	11" Stabilizer	SBD2396	8.000	3.000	11.000	147.22		2.48	2.42
4	2x Drill collar		8.000	3.000		147.00		18.65	
5	11 7/16" Stabilizer	7080449	8.000	3.000	11.437	147.22		1.89	23.25
6	1x Drill collar		8.000	3.000		147.00		8.95	
7	Cross Over Sub		8.000	3.000		147.22		0.80	
8	3x Drill Collar		6.500	2.500		96.00		27.47	
								61.42	

Parameter	Min	Max	Ave
WOB (klbs) :			
RPM (rpm) :			
Flow (gpm) :			
SPP (psi) :			

Activity	Hrs
Drilling :	0.00
Reaming :	13.50
Circ-Other :	1.50
Total :	15.00

BHA Weight	(lb)
in Air (Total) :	25030
in Mud (Total) :	21558
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)

#### PERFORMANCE

	In	Out
Inclination (deg)	71.34	71.34
Azimuth (deg)	117.82	117.82

Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :				
Rotated :				
Total :				

#### COMMENTS

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## DRILLING SERVICES

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 6

BHA# 6 : Date In :9/08/2006 MD In (m) : 1606 TVD In (m) : 830 Date Out 10/08/2006 MD Out (m): 1606 TVD Out (m): 830

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
5	6.500	Reed		RQ3706		0.000	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	RQ3706	6.500	2.500	8.500	96.36	P 4-1/2" IF	0.25	
2	Bit Sub ---- Non-Ported Float	Santos	6.500	2.812	6.500	91.92	B 4" IF	0.92	
3	6 x Drill Collar --- still to strap ***		6.500	2.812		91.92	B 4" IF	54.00	
4	9 x HWDP		4.500	2.750		41.00	B 4" IF	86.05	
5	Jar	17602031	6.500	2.500		96.00	B 4" IF	9.95	
6	6 x HWDP		4.500	2.750		41.00	B 4" IF	57.17	
								208.34	

Parameter	Min	Max	Ave
WOB (klbs) :			
RPM (rpm) :			
Flow (gpm) :			
SPP (psi) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.00
Circ-Other :	6.50
Total :	6.50

BHA Weight	(lb)
in Air (Total) :	39041
in Mud (Total) :	33626
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)

#### PERFORMANCE

	In	Out
Inclination (deg)	71.34	71.34
Azimuth (deg)	117.82	117.82

Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :				
Rotated :				
Total :				

#### COMMENTS

No Jets in Bit  
Non-ported float in Bit Sub

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## DRILLING SERVICES

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 7

BHA# 7 : Date In :10/08/200 MD In (m) : 1606 TVD In (m) : 830 Date Out 11/08/200 MD Out (m): 1619 TVD Out (m): 835

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
6	6.500	Reed		112295		0.000	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	PDC	112295	6.500	2.500	8.500	96.36	P 4-1/2" IF	0.37	1.28
2	Near Bit Stabilizer	47695						1.82	
3	Cross Over Sub	M1623						0.45	
4	1x Drill Collar		6.500	2.812		91.92	B 4" IF	9.42	13.02
5	Cross Over Sub							0.32	
6	8 1/4" Stabilizer	47584						1.28	
7	Cross Over Sub							0.45	
8	5x Drill collar		6.500	2.813		92.00	B 4" IF	45.14	
9	9x HWDP		4.500	2.750		41.00	B 4" IF	86.05	
10	Drilling Jar	176020301	6.500	2.500		96.36		9.95	
11	6x HWDP		4.500	2.750		41.00		57.17	
								212.42	

Parameter	Min	Max	Ave
WOB (klbs) :	15	15	15
RPM (rpm) :	120	120	120
Flow (gpm) :	600	600	600
SPP (psi) :	1800	1800	1800

Activity	Hrs
Drilling :	1.50
Reaming :	1.00
Circ-Other :	3.50
Total :	6.00

BHA Weight	(lb)
in Air (Total) :	
in Mud (Total) :	
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)

#### PERFORMANCE

	In	Out
Inclination (deg)	71.34	71.69
Azimuth (deg)	117.82	118.39

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	13.00	9			
Total :	13.00	9	0.81	1.31	1.48

#### COMMENTS

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 8

BHA# 8 : Date In :11/08/200 MD In (m) : 1619 TVD In (m) : 835 Date Out 13/08/200 MD Out (m): 1659 TVD Out (m): 848

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
7	8.500	Hycalog Reed	PDC	213186	6x14	0.902	2-3-CT-A -X-I-NO-RIG

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
	7.600	SSDS		GP850085	0.00°		0	14.50

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Reed Hycalog PDC	213186	8.500	2.000	8.500	182.68	B 4-1/2" IF	0.40	
2	7600 GeoPilot w/ABI	GP850085	7.600	1.920	8.500	144.74	B 4-1/2" IF	7.08	
3	Non-Mag Flex Pony Collar + DM	CP1004338	6.750	1.920		112.09	B 4-1/2" IF	2.81	
4	6-3/4" RLL w/DGR + EWR + PWD + HCIM	DM90108295	6.750	1.920	8.250	112.09	B 4-1/2" IF	8.49	
5	6-3/4" CNP/SLD	DM90108296	6.750	1.920	8.188	112.09	B 4-1/2" IF	8.60	
6	Non-Mag Hang-off Collar w/ Pulser & TM	10635033	6.750	1.920		112.09	B 4-1/2" IF	3.05	
7	Float sub, with solid float	A225	6.438	2.750		90.70	B 4-1/2" IF	0.63	
8	Cross Over Sub	M1623	6.250	3.000		80.47	B 4" IF	0.35	
9	9x HWDP		6.250	2.813		83.38	B 4" IF	86.05	
10	Drilling Jar	176020301	6.500	2.750		92.85	B 4" IF	9.95	
11	6x HWDP		6.250	2.813		83.38	B 4" IF	57.17	
								184.58	

Parameter	Min	Max	Ave
WOB (klbs) :	15	15	15
RPM (rpm) :	120	120	120
Flow (gpm) :	600	600	600
SPP (psi) :	1800	1800	1800

Activity	Hrs
Drilling :	4.50
Reaming :	3.00
Circ-Other :	7.00
Total :	14.50

BHA Weight	(lb)
in Air (Total) :	54529
in Mud (Total) :	46550
in Air (Bel Jars) :	35860
in Mud (Bel Jars) :	30613

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	1474

#### PERFORMANCE

	In	Out
Inclination (deg)	71.69	69.04
Azimuth (deg)	118.39	118.80

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	40.00	9			
Total :	40.00	9	-1.99	0.31	2.01

#### COMMENTS

Depth in; 1620.00m  
Depth out; 1660.00m

Sensor Distances

-----  
ABI = 1.4m Pressure = 16.31m  
Survey = 8.95m Density = 21.89m  
Gamma = 11.42m Caliper = 25.10m

**OBJECTIVES:**

To drill the drop section of the 8 1/2" hole. Initial doglegs required are in the order of 4.24°/30m.

**RESULTS:**

On the trip into hole, the BHA took 10klbs on the shoe. The shoe had been cleaned out previously with a PDC assembly. Upon seeing the 10klbs, the decision was then made to try and pull back into the casing. 15klbs overpull was required to achieve this. After client consultation, the decision was made to drill ahead with this BHA.

A total of 40m was drilled with this assembly before top-drive failures and an extended period of downtime resulted in this BHA being tripped out to surface and racked back in favour of a more basic assembly. Whilst drilling, the GeoPilot was set at 40% deflection and a toolface of 200deg. Due to the short section drilled, there was not adequate time to gauge the behaviour of the GeoPilot. Initial surveys however showed it to be reacting as expected with good toolface control and communications.

**RECOMMENDATIONS:**

None Required.

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 9

BHA# 9 : Date In :13/08/200 MD In (m) : 1659 TVD In (m) : 848 Date Out 13/08/200 MD Out (m): 1659 TVD Out (m): 848

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
8	6.500	Reed		RQ3706		0.000	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	RQ3706	6.500	2.500	8.500	96.36	P 4-1/2" IF	0.25	
2	Bit Sub --- Float	Santos	6.500	2.812	6.500	91.92	B 4" IF	0.92	
3	6 x Drill Collar --- still to strap ***		6.500	2.812		91.92	B 4" IF	54.00	
4	9 x HWDP		4.500	2.750		41.00	B 4" IF	86.05	
5	Jar	176020301	6.500	2.500		96.00	B 4" IF	9.95	
6	6 x HWDP		4.500	2.750		41.00	B 4" IF	57.17	
								208.34	

Parameter	Min	Max	Ave
WOB (klbs) :			
RPM (rpm) :			
Flow (gpm) :			
SPP (psi) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.00
Circ-Other :	6.50
Total :	6.50

BHA Weight	(lb)
in Air (Total) :	39041
in Mud (Total) :	33328
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)

#### PERFORMANCE

	In	Out
Inclination (deg)	69.04	69.04
Azimuth (deg)	118.80	118.80

Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :				
Rotated :				
Total :				

#### COMMENTS

BHA used to circulate whilst waiting on rig repair (top drive)

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 10

BHA# 10 : Date In :13/08/200 MD In (m) : 1659 TVD In (m) : 848 Date Out 15/08/200 MD Out (m): 1680 TVD Out (m): 856

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
8	8.500	Hycalog Reed	PDC	210621	6x14	0.902	- - - - -

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
	7.600	SSDS		GP850085	0.00°		0	31.00

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Reed Hycalog PDC	210621	8.500	2.000	8.500	182.68	B 4-1/2" IF	0.41	
2	7600 GeoPilot w/ABI	GP850085	7.600	1.920	8.500	144.74	B 4-1/2" IF	7.08	
3	Non-Mag Flex Pony Collar + DM	CP1004338	6.750	1.920		112.09	B 4-1/2" IF	2.81	
4	6-3/4" RLL w/DGR + EWR + PWD + HCIM	DM90108295	6.750	1.920	8.250	112.09	B 4-1/2" IF	8.49	
5	6-3/4" CNP/SLD	DM90107112	6.750	1.920	8.188	112.09	B 4-1/2" IF	9.18	
6	Non-Mag Hang-off Collar w/ Pulser & TM	10635033	6.750	1.920		112.09	B 4-1/2" IF	3.05	
7	Float sub, with solid float	A225	6.438	2.750		90.70	B 4-1/2" IF	0.63	
8	Cross Over Sub	M1623	6.250	3.000		80.47	B 4" IF	0.35	
9	9x HWDP		6.250	2.813		83.38	B 4" IF	86.05	
10	Drilling Jar	176020301	6.500	2.750		92.85	B 4" IF	9.95	
11	6x HWDP		6.250	2.813		83.38	B 4" IF	57.17	
								185.17	

Parameter	Min	Max	Ave
WOB (klbs) :	15	25	25
RPM (rpm) :	120	120	120
Flow (gpm) :	600	600	600
SPP (psi) :	1800	2200	2181

Activity	Hrs
Drilling :	5.00
Reaming :	2.50
Circ-Other :	9.00
Total :	16.50

BHA Weight	(lb)
in Air (Total) :	54748
in Mud (Total) :	46988
in Air (Bel Jars) :	36079
in Mud (Bel Jars) :	30965

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	1495

#### PERFORMANCE

	In	Out
Inclination (deg)	69.04	67.47
Azimuth (deg)	118.80	119.18

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	21.00	4			
Total :	21.00	4	-2.24	0.54	2.30

#### COMMENTS

Depth In; 1660.00m  
Depth Out; 1680.00m

Sensor Distances

-----  
ABI = 1.41m Pressure = 16.32m  
Survey = 8.96m Density = 22.46m  
Gamma = 11.43m

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 10

**OBJECTIVES:**

To drill the drop section of the 8 1/2" hole. Initial doglegs required are in the order of 4.24°/30m.

**RESULTS:**

This assembly drilled at low ROP (2-6m) compared to the 20m per hour seen in the last run with the same bit type and lower WOB. Baracarb 600 sweeps and KCL sweeps were used to clear away any possible bit balling. After several sweeps and attempts to clear bit face away with higher GPM over several hours, the client made the decision to trip out of hole. At surface it was perceived that bit balling was responsible for the low ROP and to counteract this, the nozzles were changed to a larger TFA to allow greater flow rates. The drilling practices will also be modified in order to minimise the possibility of bit balling and to increase ROP.



### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 11

BHA# 11 : Date In :15/08/200 MD In (m) : 1680 TVD In (m) : 856 Date Out 16/08/200 MD Out (m): 1881 TVD Out (m): 966

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
8rr1	8.500	Hycalog Reed	PDC	210621	6x18	1.491	1-1-PN-A -X-I-NO- PR

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
	7.600	SSDS		GP850085	0.00°		0	59.50

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Reed Hycalog PDC	210621	8.500	2.000	8.500	182.68	B 4-1/2" IF	0.41	
2	7600 GeoPilot w/ABI	GP850085	7.600	1.920	8.500	144.74	B 4-1/2" IF	7.08	
3	Non-Mag Flex Pony Collar + DM	CP1004338	6.750	1.920		112.09	B 4-1/2" IF	2.81	
4	6-3/4" RLL w/DGR + EWR + PWD + HCIM	DM90108295	6.750	1.920	8.250	112.09	B 4-1/2" IF	8.49	
5	6-3/4" CNP/SLD	DM90107112	6.750	1.920	8.188	112.09	B 4-1/2" IF	9.18	
6	Non-Mag Hang-off Collar w/ Pulser & TM	10635033	6.750	1.920		112.09	B 4-1/2" IF	3.05	
7	Float sub, with solid float	A225	6.438	2.750		90.70	B 4-1/2" IF	0.63	
8	Cross Over Sub	M1623	6.250	3.000		80.47	B 4" IF	0.35	
9	9x HWDP		6.250	2.813		83.38	B 4" IF	86.05	
10	Drilling Jar	176020301	6.500	2.750		92.85	B 4" IF	9.95	
11	6x HWDP		6.250	2.813		83.38	B 4" IF	57.17	
								185.17	

Parameter	Min	Max	Ave
WOB (klbs) :	10	25	14
RPM (rpm) :	125	135	132
Flow (gpm) :	600	650	635
SPP (psi) :	2400	2700	2634

Activity	Hrs
Drilling :	19.50
Reaming :	3.50
Circ-Other :	5.50
Total :	28.50

BHA Weight	(lb)
in Air (Total) :	54748
in Mud (Total) :	46404
in Air (Bel Jars) :	36079
in Mud (Bel Jars) :	30580

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	1696

#### PERFORMANCE

	In	Out
Inclination (deg)	67.47	44.59
Azimuth (deg)	119.18	114.59

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	201.00	10			
Total :	201.00	10	-3.41	-0.68	3.46

#### COMMENTS

Depth In; 1680.00m  
Depth Out; 1881.00m

Sensor Distances

-----  
ABI = 1.41m Pressure = 16.32m  
Survey = 8.96m Density = 22.46m  
Gamma = 11.43m

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 11

**OBJECTIVES:**

To drill the drop section of the 8 1/2" hole. Initial doglegs required are in the order of 4.24°/30m.

**RESULTS:**

This assembly drilled from 1680m to 1881m. The Geopilot was run in 100% deflection and the resulting doglegs climbed gradually from 2°/30m to a maximum of 4.081°/30m. ROP's were in the order of 18-25m/hr with an average WOB of 12klbs and 125rpm rotary speed. Upon entry into the Lakes Entrance formation, the ROP died instantly to 3-4m/hr and the SPP increased by approximately 300psi. After several attempts to clean the BHA, it was decided to trip out of hole. At the shoe, another attempt was made to clean the BHA which was unsuccessful. The BHA was tripped out of hole and the bit was found to have a blocked nozzle and two flutes were blocked at the neck.

### BHA Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

BHA# 12

BHA# 12 : Date In :16/08/200 MD In (m) : 1881 TVD In (m) : 966 Date Cur: 20/08/200 MD Cur (m): 2315 TVD Cur (m): 1365

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
9	8.500	Reed Hycalog steel	Mill Tooth	EM2429	3x20	0.920	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
	7.600	SSDS		GP850085	0.00°		0	137.00

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (m)	Bit - Center Blade (m)
1	Tri-cone Steel Mill tooth	EM2429	8.500	2.000	8.500	182.68	P 4-1/2" Reg	0.25	0.44
2	Sleeve Type Stabilizer	10625874	8.500	2.000	8.500	182.68	B 4-1/2" IF	0.38	
3	7600 GeoPilot w/ABI	GP850085	7.600	1.920	8.500	144.74	B 4-1/2" IF	7.08	
4	Non-Mag Flex Pony Collar + DM	CP1004338	6.750	1.920		112.09	B 4-1/2" IF	2.81	
5	6-3/4" RLL w/DGR + EWR + PWD + HCIM	DM90108295	6.750	1.920	8.250	112.09	B 4-1/2" IF	8.49	
6	6-3/4" SLD/CNP	DM90107112	6.750	1.920	8.188	112.09	B 4-1/2" IF	9.18	
7	Non-Mag Hang-off Collar w/ Pulser & TM	10635033	6.750	1.920		112.09	B 4-1/2" IF	3.05	
8	Float sub, with solid float	A225	6.438	2.750		90.70	B 4-1/2" IF	0.63	
9	Cross Over Sub	M1623	6.250	3.000		80.47	B 4" IF	0.35	
10	9x HWDP		6.250	2.813		83.38	B 4" IF	86.05	
11	Drilling Jar	176020301	6.500	2.750		92.85	B 4" IF	9.95	
12	6x HWDP		6.250	2.813		83.38	B 4" IF	57.17	
								185.39	

Parameter	Min	Max	Ave
WOB (klbs) :	20	35	28
RPM (rpm) :	70	140	111
Flow (gpm) :	560	630	564
SPP (psi) :	2650	2750	2690

Activity	Hrs
Drilling :	55.50
Reaming :	16.50
Circ-Other :	5.50
Total :	77.50

BHA Weight	(lb)
in Air (Total) :	54880
in Mud (Total) :	46097
in Air (Bel Jars) :	36211
in Mud (Bel Jars) :	30416

Drill String	OD(in)	Len(m)
DP(S)-NC50(IF)-16.60#	4.500	2130

#### PERFORMANCE

	In	Out
Inclination (deg)	44.59	3.50
Azimuth (deg)	114.59	275.24

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	434.00	8			
Total :	434.00	8	-2.84	11.11	3.31

#### COMMENTS

Depth In; 1881.00m

Depth Out; 2327.00m

Sensor Distances

-----  
 ABI = 1.63m Pressure = 16.54m  
 Survey = 9.18m Density = 22.91m  
 Gamma = 11.65m Porosity = 26.97m

**OBJECTIVES:**

To continue to drill the drop section of the 8 1/2" hole. Initial doglegs required are in the order of 4.24°/30m.

**RESULTS:**

This BHA drilled the remainder of the drop section of Galloway-1.

Doglegs were not quite as high as expected though the target was hit approx 13.28m from centre. The GeoPilot was run at 100% deflection for the majority of this section though upon approach to vertical, this was reduced in 25% increments until vertical, where the deflection was set to 0%. ROP's averaged approx 12m/hr. WOB was held at 25klbs though once the ROP was down to around the 2-5m/hr mark, it was thought that the weight was not getting down to the bit so the WOB was increased to 35klbs where the ROP was sustained at between 17-20m/hr. Torque again became an issue for the top-drive thus rotation was reduced to 80rpm to allow for the top-drive to operate in low gear.

**RECOMMENDATIONS:**

Set the drop off point earlier so that lower doglegs are built into the plan.  
4.25°/30m was slightly higher than what was achievable.

Motor Serial # : 963212	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Rowland	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 1rr1 BHA # : 2
Depth In/Out : 120 / 320 m	Date In/Out : 29/07/2006 / 30/07/2006
Application Details :	Motor Run # : 1
	Hole Size : 17.500 in

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
Upr Stab	1 1.24	Sleeve Stab/Pad	Yes	17.250 17.250
Lwr Stab or Pad Sub	2 2.73	Bent Housing	Yes	Adjustable: 1.50° bend
Motor Top	3	Housing Tool Used	No	
Pad	4 10.15	Stator Elastomer	No	
Bend (Housing)	5	Bent Sub / 2nd Bent Hsg	No	
Sleeve Tool	6 12.08	Lower String Stab	Yes	16.250 16.250
	7	Upper String Stab	No	
Additional Features :				Arr Ret
Flex Collar : No	Short Brg Pack : No	Rtr Noz / Size : /32's	Pick Up Sub : No	No
Brg Cfg (Off/On) :	Lobe Cfg : 6/7	BHA OD/ID : 9.437 / 2.812 in	Bit Box Protr : No	No

**MOTOR RUN DATA**

Max Dogleg While Rotating		:	%30m	RPM	:	Motor Stalled	:	No	Prev Job/Well Hrs	:	0.00		
Max Dogleg Overpulled In		:	%30m	Force	:	lbf	Float Valve	:	No	Drilling Hrs	:	7.50	
Max Dogleg Pushed Through		:	%30m	Force	:	lbf	DP Filter	:	No	Circ Hrs	:	1.50	
Hole Azimuth Start / End		:	121.06° / 120.26°		Inc Start / End	:	0.47° / 22.60°		Reaming Hrs	:	1.00		
Interval Oriented / Rot.		:	153 / 47 m		Directional Perf Ori / Rot	:	/ %30m		Total Hrs This Run	:	10.00		
Jarring Occured		:	No						New Cumulative Hrs	:	10.00		
	Diff Press	(psi)	Str RPM	Rotn Torque	(ft-lbs)	Drag Up/Dn	(lbf)	WOB	(klbs)	ROP Oriented	(m/hr)	ROP Rotated	(m/hr)
Avg :	95		50	2000		/		9		25		30	
Max :	200		50	2000		/		12		60		70	

**PRE-RUN TESTS**

Motor Tested Pre-Run : Yes	with : 2 Collars, Bit, MWD
Dump Sub Operating : N/A	Brg Play : 3.0 mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : Yes	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : 3.0 mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : Yes	
Fluid Flushed : No	Fluid Used :

**MUD DATA**

Base : Water	Additives :	Mud Wt : 8.8 ppg	SPP Start/End : 950 / 1260 psi
% Oil/Water : /	% Solids : 3.10	% Sand : 2.50	PV : 18 cp YP : 13.0 lbf/100ft² pH : 9.5
DH Temp Avg/Max : 31.0 / 31.0	FlowRate Avg/Max : 660 / 660 gpm	Chloride Content : 4000 ppm	
Principle Formation Name(s) : Jemmys Point, Tambo River, Gippsland Limestone	Lithology : Limestone		

**BIT DATA**

Make : Reed Hycalog	Type : T11	Serial # : J50351	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In								
Prev Drilling Hrs : 2.50	Prev Reaming Hrs : 0.00	No of Runs This Bit : 2	Out	1	1	NO	A	0	I	RR	TD
Jet Sizes (/32's) : 3x20, 1x16	TFA : 1.117 in²	Gage Length : in									

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :
Motor preformed well, section was only 200m long from 120m to 320m. Max WOB was 12k and the flow was 660-850GPM. This motor was hardly worked at all.			
Customer Representative's Signature (optional) : .....		Date: .....	

Motor Serial # : 800168	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Rowland	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 2      BHA # : 3      Motor Run # : 2
Depth In/Out : 320 / 637 m	Date In/Out : 2/08/2006 / 3/08/2006      Hole Size : 12.250 in
Application Details : Steerable Drilling	

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
1		Sleeve Stab/Pad	No	
2	2.86	Bent Housing	Yes	Adjustable: 1.15° bend
3		Housing Tool Used	No	
4	8.98	Stator Elastomer	Nitrile	Stator: Oversized
5		Bent Sub / 2nd Bent Hsg	No	
6	10.59	Lower String Stab	Yes	Stab: 3 180°
7		Upper String Stab	No	11.437 11.437

<b>Additional Features :</b> Flex Collar : Yes    Short Brg Pack : No    Rtr Noz / Size : /32's Brg Cfg (Off/On) :    Lobe Cfg : 6/7    BHA OD/ID : 8.000 / 2.810 in	<b>Arr Ret</b> Pick Up Sub : No No Bit Box Protr : Yes No
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------

**MOTOR RUN DATA**

Max Dogleg While Rotating : °/30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 0.00
Max Dogleg Overpulled In : °/30m	Force : lbf	Float Valve : Yes	Drilling Hrs : 17.50
Max Dogleg Pushed Through : °/30m	Force : lbf	DP Filter : No	Circ Hrs : 1.50
Hole Azimuth Start / End : 120.26° / 121.21°	Inc Start / End : 22.60° / 70.96°		Reaming Hrs : 0.00
Interval Oriented / Rot. : 284 / 33 m	Directional Perf Ori / Rot : / °/30m		Total Hrs This Run : 19.00
Jarring Occured : No			New Cumulative Hrs : 19.00

	Diff Press (psi)	Str RPM	Rotn Torque (ft-lbs)	Drag Up/Dn (lbf)	WOB (klbs)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	103	70		/	13	17	24
Max :	175	75		/	18	50	80

**PRE-RUN TESTS**

Motor Tested Pre-Run : Yes	with : 2 Collars, Bit, MWD
Dump Sub Operating : N/A	Brg Play : 3.0 mm
Flow 1 : 800 gpm	Pressure 1 : 750 psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : Yes	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : 3.0 mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : Yes	
Bearing Leakage Observed : Yes	
Driveshaft Rotated to Drain Mud : Yes	
Fluid Flushed : Yes	Fluid Used : Water

**MUD DATA**

Base : Water	Additives :	Mud Wt : 9.1 ppg	SPP Start/End : 1150 / 1200 psi
% Oil/Water : /	% Solids : 3.20	% Sand : 0.75	PV : 13 cp    YP : 14.0 lbf/100ft²    pH : 9.5
DH Temp Avg/Max : /	FlowRate Avg/Max : 693 / 780 gpm	Chloride Content : 28000 ppm	
Principle Formation Name(s) : Gippsland Limestone	Lithology : Limestone		

**BIT DATA**

Make : Reed	Type : T11C	Serial # : D80027	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells: 0			In								NEW
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	3	3	NO	A	E	1	NO	TD
Jet Sizes (/32's) : 3x20, 1x12	TFA : 1.031 in²	Gage Length : in									

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : Yes	Tandem Motor : No	LIH : No	PPR Ref # :

Motor performed well. No stalling was encountered. Doglegs of up to 7.15 degrees were encountered. 283.5m of the run (92.5%) of the section sliding mode and 23m (7.5%) was drilled in rotary mode.

Customer Representative's Signature (optional) : ..... Date: .....

Motor Serial # : 1225083	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Coppin	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 3      BHA # : 4
Depth In/Out : 637 / 1606 m	Date In/Out : 4/08/2006 / 6/08/2006
Application Details : Steerable Drilling	Motor Run # :      Hole Size : 12.250 in

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
Upr Stab	1 6.67	Sleeve Stab/Pad	Yes	12.062 12.062
Lwr Stab or Pad Sub	2	Bent Housing	No	
Motor Top	3	Housing Tool Used	No	
Pad	4 7.14	Stator Elastomer		
Bend (Housing)	5	Bent Sub / 2nd Bent Hsg	No	
	6 19.42	Lower String Stab	Yes	12.125 12.125
Sleeve Tool	7	Upper String Stab	No	

Additional Features :	Arr	Ret
Flex Collar : No	Pick Up Sub : No	No
Short Brg Pack : No	Bit Box Protr : No	No
Rtr Noz / Size : /32's		
Brg Cfg (Off/On) :	Lobe Cfg :	BHA OD/ID : 8.000 / 3.500 in

**MOTOR RUN DATA**

Max Dogleg While Rotating : 2.80 °/30m	RPM : 150	Motor Stalled : No	Prev Job/Well Hrs : 0.00
Max Dogleg Overpulled In : 6.00 °/30m	Force : 10000 lbf	Float Valve : Yes	Drilling Hrs : 36.50
Max Dogleg Pushed Through : 6.00 °/30m	Force : 6000 lbf	DP Filter : No	Circ Hrs : 4.50
Hole Azimuth Start / End : 121.21° / 117.82°	Inc Start / End : 70.96° / 71.34°		Reaming Hrs : 0.00
Interval Oriented / Rot. : 0 / 969 m	Directional Perf Ori / Rot : 1.00 / 3.47 °/30m		Total Hrs This Run : 41.00
Jarring Occured : No			New Cumulative Hrs : 41.00

	Diff Press (psi)	Str RPM	Rotn Torque (ft-lbs)	Drag Up/Dn (lbf)	WOB (klbs)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	0	148	7277	6000 / 4000	11	0	27
Max :	0	160	8500	10000 / 6000	15		80

**PRE-RUN TESTS**

Motor Tested Pre-Run : Yes	with : 0 Collars, Bit, MWD
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : 500 gpm	Pressure 1 : 1200 psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with : 0 Collars
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

**MUD DATA**

Base : Water	Additives :	Mud Wt : 9.6 ppg	SPP Start/End : 1200 / 2400 psi
% Oil/Water : /	% Solids : 4.60	% Sand : 1.00	PV : 22 cp      YP : 33.0 lbf/100ft²      pH : 9.0
DH Temp Avg/Max : 52.4 / 64.0	FlowRate Avg/Max : 791 / 800 gpm	Chloride Content : 30000 ppm	
Principle Formation Name(s) : Gippsland Limestone	Lithology : Limestone		

**BIT DATA**

Make	Type	Serial #	Dull Grade	1	2	3	4	5	6	7	8
Reed Hycalog	RSX516S	211345	In								
Pre Existing Hours From Other Wells: 0			Out	1	1	ER	A	X	1	NO	TD
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1									
Jet Sizes (/32's) : 7x16	TFA : 1.374 in²	Gage Length : 2.000 in									

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : No	Tandem Motor : No	LIH : No	PPR Ref # :
Customer Representative's Signature (optional) : .....		Date: .....	

Motor Serial # : GP850085	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Coppin	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 7      BHA # : 8
Depth In/Out : 1619 / 1659 m	Date In/Out : 11/08/2006 / 13/08/2006
Application Details :	Motor Run # :      Hole Size : 8.500 in

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
Upr Stab	1	Sleeve Stab/Pad	No	
	2	Bent Housing	No	
Lwr Stab or Pad Sub	3	Housing Tool Used	No	
Motor Top	4	Stator Elastomer		
Pad	5	Bent Sub / 2nd Bent Hsg	No	
Bend (Housing)	6	Lower String Stab	No	
Sleeve Tool	7	Upper String Stab	No	

Additional Features :	Arr	Ret
Flex Collar : No	Pick Up Sub : No	No
Short Brg Pack : No	Bit Box Protr : No	No
Rtr Noz / Size : /32's		
Brg Cfg (Off/On) :		
Lobe Cfg :		
BHA OD/ID : 6.750 / 1.920 in		

**MOTOR RUN DATA**

Max Dogleg While Rotating : %30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 0.00
Max Dogleg Overpulled In : %30m	Force : lbf	Float Valve : No	Drilling Hrs : 4.50
Max Dogleg Pushed Through : %30m	Force : lbf	DP Filter : No	Circ Hrs : 7.00
Hole Azimuth Start / End : 118.39° / 118.80°	Inc Start / End : 71.69° / 69.04°		Reaming Hrs : 3.00
Interval Oriented / Rot. : 0 / 40 m	Directional Perf Ori / Rot : / %30m		Total Hrs This Run : 14.50
Jarring Occured : No			New Cumulative Hrs : 14.50

	Diff Press (psi)	Str RPM	Rotn Torque (ft-lbs)	Drag Up/Dn (lbf)	WOB (klbs)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	0	120		/	15	0	9
Max :	0	120		/	15		15

**PRE-RUN TESTS**

Motor Tested Pre-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

**MUD DATA**

Base : Water	Additives :	Mud Wt : 9.3 ppg	SPP Start/End : psi
% Oil/Water : /	% Solids : 4.60	% Sand : 0.10	PV : 11 cp      YP : 21.0 lbf/100ft²      pH : 9.5
DH Temp Avg/Max : /	FlowRate Avg/Max : 600 / 600 gpm	Chloride Content : 29000 ppm	
Principle Formation Name(s) : Gippsland Limestone	Lithology : Limestone		

**BIT DATA**

Make : Hycalog Reed	Type : PDC	Serial # : 213186	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In	NEW							
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out	2	3	CT	A	X	I	NO	RIG
Jet Sizes (/32's) : 6x14	TFA : 0.902 in²	Gage Length : 12.750 in									

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : No	Tandem Motor : No	LIH : No	PPR Ref # :
Customer Representative's Signature (optional) : .....		Date: .....	



Motor Serial # : GP850085	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Coppin	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 8      BHA # : 10      Motor Run # :
Depth In/Out : 1659 / 1680 m	Date In/Out : 13/08/2006 / 15/08/2006      Hole Size : 8.500 in
Application Details :	

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
Upr Stab	1	Sleeve Stab/Pad	No	
	2	Bent Housing	No	
Lwr Stab or Pad Sub	3	Housing Tool Used	No	
Motor Top	4	Stator Elastomer		
Pad	5	Bent Sub / 2nd Bent Hsg	No	
Bend (Housing)	6	Lower String Stab	No	
Sleeve Tool	7	Upper String Stab	No	

Additional Features :	Arr	Ret
Flex Collar : No	Pick Up Sub : No	No
Short Brg Pack : No	Bit Box Protr : No	No
Rtr Noz / Size : /32's		
Brg Cfg (Off/On) :	Lobe Cfg :	BHA OD/ID : 6.750 / 1.920 in

**MOTOR RUN DATA**

Max Dogleg While Rotating : /30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 14.50
Max Dogleg Overpulled In : /30m	Force : lbf	Float Valve : No	Drilling Hrs : 5.00
Max Dogleg Pushed Through : /30m	Force : lbf	DP Filter : No	Circ Hrs : 9.00
Hole Azimuth Start / End : 118.80° / 119.18°	Inc Start / End : 69.04° / 67.47°		Reaming Hrs : 2.50
Interval Oriented / Rot. : 0 / 21 m	Directional Perf Ori / Rot : / /30m		Total Hrs This Run : 16.50
Jarring Occured : No			New Cumulative Hrs : 31.00

	Diff Press (psi)	Str RPM	Rotn Torque (ft-lbs)	Drag Up/Dn (lbf)	WOB (klbs)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	0	120	8500	/	25	0	4
Max :	0	120	8500	/	25		15

**PRE-RUN TESTS**

Motor Tested Pre-Run : Yes	with : , MWD
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : 500 gpm	Pressure 1 : 1000 psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

**MUD DATA**

Base : Water	Additives :	Mud Wt : 9.9 ppg	SPP Start/End : 2200 / 2200 psi
% Oil/Water : /	% Solids : 6.60	% Sand : 0.30	PV : 18 cp      YP : 29.0 lbf/100ft²      pH : 9.0
DH Temp Avg/Max : /	FlowRate Avg/Max : 600 / 600 gpm	Chloride Content : 30000 ppm	
Principle Formation Name(s) : Gippsland Limestone	Lithology : Limestone		

**BIT DATA**

Make : Hycalog Reed	Type : PDC	Serial # : 210621	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In	NEW							
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	Out								
Jet Sizes (/32's) : 6x14	TFA : 0.902 in²	Gage Length : 12.750 in									

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : No	Tandem Motor : No	LIH : No	PPR Ref # :
Customer Representative's Signature (optional) : .....		Date: .....	

Motor Serial # : GP850085	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Coppin	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 8rr1 BHA # : 11
Depth In/Out : 1680 / 1881 m	Date In/Out : 15/08/2006 / 16/08/2006
Application Details :	Motor Run # : Hole Size : 8.500 in

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
Upr Stab	1	Sleeve Stab/Pad	No	
	2	Bent Housing	No	
Lwr Stab or Pad Sub	3	Housing Tool Used	No	
Motor Top	4	Stator Elastomer		
Pad	5	Bent Sub / 2nd Bent Hsg	No	
Bend (Housing)	6	Lower String Stab	No	
Sleeve Tool	7	Upper String Stab	No	

Additional Features :

Flex Collar : No	Short Brg Pack : No	Rtr Noz / Size : /32's	Arr Ret
Brg Cfg (Off/On) :	Lobe Cfg :	BHA OD/ID : 6.750 / 1.920 in	Pick Up Sub : No No
			Bit Box Protr : No No

**MOTOR RUN DATA**

Max Dogleg While Rotating : %30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 31.00
Max Dogleg Overpulled In : %30m	Force : lbf	Float Valve : No	Drilling Hrs : 19.50
Max Dogleg Pushed Through : %30m	Force : lbf	DP Filter : No	Circ Hrs : 5.50
Hole Azimuth Start / End : 119.18° / 114.59°	Inc Start / End : 67.47° / 44.59°		Reaming Hrs : 3.50
Interval Oriented / Rot. : 0 / 201 m	Directional Perf Ori / Rot : / %30m		Total Hrs This Run : 28.50
Jarring Occured : No			New Cumulative Hrs : 59.50

	Diff Press (psi)	Str RPM	Rotn Torque (ft-lbs)	Drag Up/Dn (lbf)	WOB (klbs)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	0	132	9500	/	14	0	10
Max :	0	135	9500	/	25		20

**PRE-RUN TESTS**

Motor Tested Pre-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

**MUD DATA**

Base : Water	Additives :	Mud Wt : 10.0 ppg	SPP Start/End : 2400 / 2700 psi
% Oil/Water : /	% Solids : 7.10	% Sand : 0.20	PV : 13 cp YP : 24.0 lbf/100ft² pH : 9.0
DH Temp Avg/Max : 62.0 / 62.0	FlowRate Avg/Max : 635 / 650 gpm	Chloride Content : 30000 ppm	
Principle Formation Name(s) : Gippsland Limestone, Lakes Entrance	Lithology : Limestone, Silt/Claystone		

**BIT DATA**

Make : Hycalog Reed	Type : PDC	Serial # : 210621	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:			In								
Prev Drilling Hrs : 5.00	Prev Reaming Hrs : 2.50	No of Runs This Bit : 2	Out	1	1	PN	A	X	I	NO	PR
Jet Sizes (/32's) : 6x18	TFA : 1.491 in²	Gage Length : 12.750 in									

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : No	Tandem Motor : No	LIH : No	PPR Ref # :

Customer Representative's Signature (optional) : ..... Date: .....

Motor Serial # : GP850085	Job # : AU-DD-0004392520
Directional Driller(s) : B. Sears, B. Coppin	Customer : Santos Ltd.
Location :	Rig : Ensign 32
Well : Galloway-1	Bit Run # : 9      BHA # : 12      Motor Run # :
Depth In/Out : 1881 / 2315 m	Date In/Out : 16/08/2006 / 20/08/2006      Hole Size : 8.500 in
Application Details :	

**MOTOR CONFIGURATION**

	From Bit (m)	Component	Type	Diam In/Out (in)
Upr Stab	1	Sleeve Stab/Pad	No	
	2	Bent Housing	No	
	3	Housing Tool Used	No	
	4	Stator Elastomer		
	5	Bent Sub / 2nd Bent Hsg	No	
	6	Lower String Stab	No	
	7	Upper String Stab	No	

<b>Additional Features :</b> Flex Collar : No      Short Brg Pack : No      Rtr Noz / Size : /32's Brg Cfg (Off/On) :      Lobe Cfg :      BHA OD/ID : 6.750 / 1.920 in	<b>Arr Ret</b> Pick Up Sub : No No Bit Box Protr : No No
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**MOTOR RUN DATA**

Max Dogleg While Rotating : %30m	RPM :	Motor Stalled : No	Prev Job/Well Hrs : 59.50
Max Dogleg Overpulled In : %30m	Force : lbf	Float Valve : No	Drilling Hrs : 55.50
Max Dogleg Pushed Through : %30m	Force : lbf	DP Filter : No	Circ Hrs : 5.50
Hole Azimuth Start / End : 114.59° / 275.24°	Inc Start / End : 44.59° / 3.50°		Reaming Hrs : 16.50
Interval Oriented / Rot. : 0 / 434 m	Directional Perf Ori / Rot : / %30m		Total Hrs This Run : 77.50
Jarring Occured : No			New Cumulative Hrs : 137.00

	Diff Press (psi)	Str RPM	Rotn Torque (ft-lbs)	Drag Up/Dn (lbf)	WOB (klbs)	ROP Oriented (m/hr)	ROP Rotated (m/hr)
Avg :	0	111	9780	/	28	0	8
Max :	0	140	10500	/	35		17

**PRE-RUN TESTS**

Motor Tested Pre-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	

**POST-RUN TESTS**

Motor Tested Post-Run : No	with :
Dump Sub Operating : N/A	Brg Play : mm
Flow 1 : gpm	Pressure 1 : psi
Flow 2 : gpm	Pressure 2 : psi
Driveshaft Rotation Observed : No	
Bearing Leakage Observed : No	
Driveshaft Rotated to Drain Mud : No	
Fluid Flushed : No	Fluid Used :

**MUD DATA**

Base : Water	Additives :	Mud Wt : 10.5 ppg	SPP Start/End : 2700 / 2650 psi
% Oil/Water : /	% Solids : 8.60	% Sand : 0.30	PV : 24 cp      YP : 39.0 lbf/100ft²      pH : 9.0
DH Temp Avg/Max : 67.3 / 68.0	FlowRate Avg/Max : 564 / 630 gpm	Chloride Content : 37000 ppm	
Principle Formation Name(s) : Lakes Entrance	Lithology : Silt/Claystone		

**BIT DATA**

Make : Reed Hycalog steel	Type : Mill Tooth	Serial # : EM2429	Dull Grade	1	2	3	4	5	6	7	8
Pre Existing Hours From Other Wells:											
Prev Drilling Hrs : 0.00	Prev Reaming Hrs : 0.00	No of Runs This Bit : 1	In								NEW
Jet Sizes (/32's) : 3x20	TFA : 0.920 in²	Gage Length : in	Out								

**PERFORMANCE COMMENTS**

Problem Perceived : No	Problem Date :	Service Interrupt : No	Service Interrupt Hrs :
Performance Motor : No	Tandem Motor : No	LIH : No	PPR Ref # :

Customer Representative's Signature (optional) : ..... Date: .....



**Job # :** AU-DD-0004392520

<b>CURRENT STATUS</b>	<b>Report # 1</b>	<b>20/07/2006</b>
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<b>Total Depth</b>	<b>(m)</b>	<b>:</b>	<b>0</b>
<b>Drilled last 24 hrs</b>	<b>(m)</b>	<b>:</b>	<b>0</b>
<b>Hole Size</b>	<b>(in)</b>	<b>:</b>	

Casing Depth (m) :  
Casing Diameter (in) :  
Casing ID (in) :

SSDS Reps : B Sears (1)

## LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

**LAST FORMATION TOP**

Formation Name	MD Top (m)	TVD Top (m)
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## BHA SUMMARY

## MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft³)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

## TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up

## COMMENTS

Ice Breaker induction and lease site induction



**Job # :** AU-DD-0004392520

<b>CURRENT STATUS</b>	<b>Report # 2</b>	<b>21/07/2006</b>
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## LAST SURVEY

**LAST FORMATION TOP**

## BHA SUMMARY

## MUD DATA

## TIME BREAKDOWN

## COMMENTS

## Rig Up



**Job # :** AU-DD-0004392520

<b>CURRENT STATUS</b>	<b>Report # 3</b>	<b>22/07/2006</b>
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## LAST SURVEY

**LAST FORMATION TOP**

## BHA SUMMARY

## MUD DATA

## TIME BREAKDOWN

## COMMENTS

## Rig Up



**Job # :** AU-DD-0004392520

Total Depth	(m)	:	0
Drilled last 24 hrs	(m)	:	0
Hole Size	(in)	:	

**Casing Depth (m) :**  
**Casing Diameter (in) :**  
**Casing ID (in) :**

**SSDS Reps** : B Sears (4)

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

Formation Name	MD Top (m)	TVD Top (m)

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft²)	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up

## Rig Up



**Job # :** AU-DD-0004392520

<b>CURRENT STATUS</b>	<b>Report # 5</b>	<b>24/07/2006</b>
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## LAST SURVEY

**LAST FORMATION TOP**

## BHA SUMMARY

## MUD DATA

## TIME BREAKDOWN

## COMMENTS

Rig Up





**Job # :** AU-DD-0004392520

Total Depth	(m)	:	0
Drilled last 24 hrs	(m)	:	0
Hole Size	(in)	:	

Casing Depth (m) :  
Casing Diameter (in) :  
Casing ID (in) :

**Operator Reps** : Brian King

**SSDS Reps** : B Sears (6), A Pritchard (2)

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

Formation Name	MD Top (m)	TVD Top (m)

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:00	24.00	0.00		Rig Up / Tear Down

## Rig Up



# Daily Drilling Report

**Customer :** Santos Ltd.

**Well :** Galloway-1

**Field :** Galloway

**Lease :**

**Rig :** Ensign 32

**Job # : AU-DD-0004392520**

**CURRENT STATUS**    Report # 7    26/07/2006

**Total Depth (m) :** 0

**Drilled last 24 hrs (m) :** 0

**Hole Size (in) :**

**Casing Depth (m) :**

**Casing Diameter (in) :**

**Casing ID (in) :**

**Operator Reps** : Brian King

**SSDS Reps** : B Sears (7), A Pritchard (3)

## LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
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0.00	0.00	0.00	0.00	0.00	N00.00E
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LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
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## BHA SUMMARY

## MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
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KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	
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## TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
------	----	-------	---------	-------	----------

00:00	00:00	24.00	0.00		Rig Up
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## COMMENTS

## Rig Up



**Job # :** AU-DD-0004392520

**CURRENT STATUS** Report # 8 27/07/2006

## LAST SURVEY

**LAST FORMATION TOP**

## BHA SUMMARY

MUD DATA

## TIME BREAKDOWN

## COMMENTS

## Rig Up



# Daily Drilling Report

**Customer :** Santos Ltd.

**Well :** Galloway-1

**Field :** Galloway

**Lease :**

**Rig :** Ensign 32

**Job # :** AU-DD-0004392520

**CURRENT STATUS** Report # 9 28/07/2006

<b>Total Depth</b>	<b>(m)</b>	<b>:</b>	<b>0</b>
<b>Drilled last 24 hrs</b>	<b>(m)</b>	<b>:</b>	<b>0</b>
<b>Hole Size</b>	<b>(in)</b>	<b>:</b>	<b>17.500</b>

Casing Depth (m) :  
Casing Diameter (in) :  
Casing ID (in) :

**Operator Reps** : Brian King  
**SSDS Reps** : B. Sears (1), B. Rowland (1)

## LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

**LAST FORMATION TOP**

Formation Name	MD Top (m)	TVD Top (m)

## BHA SUMMARY

BHA 1: 146.86 m; Bit #1 (1. hrs), Stab, Sub, 3x DC, Sub, 1x DC, Jar, 1x DC, 9x HWDP

## MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

## TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	12:30	12.50	0.00		Rig Up
12:30	18:00	5.50	0.00		M/U DP, wash mouse hole
18:00	18:30	0.50	0.00		Repair TDS
18:30	21:30	3.00	0.00		MU and rack back DP
21:30	00:00	2.50	0.00	1	P/U Spud BHA

## COMMENTS

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# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 10 29/07/2006

Total Depth (m) :	192	Casing Depth (m) :		Operator Reps :	Brian King
Drilled last 24 hrs (m) :	192	Casing Diameter (in) :		SSDS Reps :	B. Sears (2), B. Rowland (2)
Hole Size (in) :	17.500	Casing ID (in) :			

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
190.20	4.40	115.22	190.15	2.31	S50.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Tambo River	143.00	143.00

#### BHA SUMMARY

BHA 1: 146.86 m; Bit #1 (2.5 hrs), Stab, Sub, 3x DC, Sub, 1x DC, Jar, 1x DC, 9x HWDP

BHA 2: 163.35 m; Bit #1rr1 (5.5 hrs), PDM #1 (3. hrs), Sub, Stab, Sub, MWD, MWD, 3x DC, Sub, 1x DC, Jar, 1x DC, 9x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	04:30	4.50	0.00	1	M/U BHA, RIH, tag cmt at 65m
04:30	05:30	1.00	85.00	1	Drilling cmt to 85m
05:30	06:00	0.50	100.00	1	Open hole to 100m
06:00	07:00	1.00	120.00	1	Drilling 17.5" hole to 120m
07:00	08:00	1.00	120.00	1	Circulate
08:00	11:00	3.00	120.00	1	POOH, MU 8" DC.
11:00	12:00	1.00	120.00	1	Clean Rig floor
12:00	20:00	8.00	120.00	1	PU 17-1/2" BHA
20:00	21:00	1.00	120.00	2	RIH to 110m
21:00	21:30	0.50	120.00	2	Wash/Ream from 110m to 120m
21:30	00:00	2.50	192.00	2	Drill and Slide from 120m to 192m.

#### COMMENTS

Drilling Hrs: 2.5 hrs

Circ Hrs: 3.5 hrs

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 11 30/07/2006

Total Depth (m) :	320	Casing Depth (m) :	317.00	Operator Reps :	Brian King
Drilled last 24 hrs (m) :	128	Casing Diameter (in) :	13.375	SSDS Reps :	B. Sears (3), B. Rowland (3)
Hole Size (in) :	17.500	Casing ID (in) :	12.610		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
303.70	23.23	118.68	299.86	28.86	S63.40E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 2: 163.35 m; Bit #1rr1 (11. hrs), PDM #1 (10. hrs), Sub, Stab, Sub, MWD, MWD, 3x DC, Sub, 1x DC, Jar, 1x DC, 9x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	05:00	5.00	320.00	2	Drill and Slide from 192m to 320m
05:00	06:00	1.00	320.00	2	Circulate hole clean
06:00	08:00	2.00	320.00	2	POOH to 77m, RIH to 307m
08:00	08:30	0.50	320.00	2	Wash/Ream from 307m to 320m
08:30	09:00	0.50	320.00	2	Circulate and condition mud
09:00	10:30	1.50	320.00	2	POOH
10:30	12:00	1.50	320.00	2	Break bit, LD MWD, Stab, Motor
12:00	13:00	1.00	320.00	2	PU/LD BHA clean rig floor
13:00	16:00	3.00	320.00		Rig up for 13 3/8" casing
16:00	23:30	7.50	320.00		Run Casing
23:30	00:00	0.50	320.00		Circulate casing

#### COMMENTS

Drilling Hrs: 2.9 hrs

Circ Hrs: 6.5 hrs



**Job # :** AU-DD-0004392520

**CURRENT STATUS** Report # 12 31/07/2006

## LAST SURVEY

**LAST FORMATION TOP**

## BHA SUMMARY

## MUD DATA

## TIME BREAKDOWN

## COMMENTS

### Cementing and pressure testing

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 13 1/08/2006

Total Depth (m) :	320	Casing Depth (m) :	317.00	Operator Reps :	Brian King
Drilled last 24 hrs (m) :	0	Casing Diameter (in) :	13.375	SSDS Reps :	B. Sears (5), B. Rowland (5)
Hole Size (in) :		Casing ID (in) :	12.610		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
303.70	23.23	118.68	299.86	28.86	S63.40E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

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#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	50	18	13.0	11.0 / 20.0		9.5	3.10	2.50	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:00	3.00	320.00		Modify Bell Nipple, Function test Koomey
03:00	07:00	4.00	320.00		Pressure test casing
07:00	09:00	2.00	320.00		Pressure test HCR
09:00	10:00	1.00	320.00		Install wear bushing
10:00	12:00	2.00	320.00		Pressure test IBOP
12:00	14:00	2.00	320.00		Pressure test standpipe
14:00	15:00	1.00	320.00		Hold PTSM
15:00	16:00	1.00	320.00		Hold BOP muster
16:00	22:00	6.00	320.00		Making up drill pipe
22:00	22:30	0.50	320.00		Pressure test GeoSpan, clear rig floor 5000psi test
22:30	00:00	1.50	320.00		Cont making up drill pipe

#### COMMENTS

Casing, pressure test and making up drill pipe



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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 14 2/08/2006

Total Depth (m) :	323	Casing Depth (m) :	317.00	Operator Reps :	Brian King
Drilled last 24 hrs (m) :	3	Casing Diameter (in) :	13.375	SSDS Reps :	B. Sears (6), B. Rowland (6)
Hole Size (in) :	12.250	Casing ID (in) :	12.610		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
303.70	23.23	118.68	299.86	28.86	S63.40E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 3: 165.61 m; Bit #2 (2.5 hrs), PDM #2 (2.5 hrs), Sub, Stab, MWD, MWD, MWD, 3x DC, Sub, 1x DC, Jar, 1x DC, 9x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	8.8	48	10	10.0	20.0 / 25.0		10.0	1.30	3.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	07:00	7.00	320.00		Making up drill pipe
07:00	07:30	0.50	320.00		Sperry calibrate drawworks
07:30	09:00	1.50	320.00		Rig Service
09:00	10:00	1.00	320.00		Nipple up LOT test equip
10:00	14:30	4.50	320.00		PU sperry drill, MWD test, MWD test fail
14:30	15:30	1.00	320.00		Repair and test MWD
15:30	16:30	1.00	320.00	3	Trip In
16:30	17:00	0.50	320.00	3	Shallow pulse test MWD
17:00	20:00	3.00	320.00	3	Trip In to 303m
20:00	20:30	0.50	320.00	3	well control drill
20:30	21:00	0.50	320.00	3	suction line leak, repair
21:00	23:00	2.00	320.00	3	Drilling cement, float, shoe
23:00	23:30	0.50	323.00	3	Drilling 3m of formation
23:30	00:00	0.50	323.00	3	Leak Of Test

#### COMMENTS

drill hrs: 0.5  
 circ hrs: 3.0  
 tot drill hrs: 0.5  
 tot circ Hrs: 3.0



**Job # :** AU-DD-0004392520

**Operator Reps** : Troy Reid  
**SSDS Reps** : B. Sears (7), B. Rowland (7)

drill hrs: 9.3  
circ hrs: 13.1  
tot drill hrs: 9.8  
tot circ Hrs: 16.1

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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 16 4/08/2006

Total Depth (m) :	1099	Casing Depth (m) :	317.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	462	Casing Diameter (in) :	13.375	SSDS Reps :	B. Sears (8), B. Coppin (1)
Hole Size (in) :	12.250	Casing ID (in) :	12.610		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1089.04	71.39	116.01	665.59	685.58	S58.85E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 4: 175.02 m; Bit #3 (12. hrs), PDM #3 (12. hrs), Flex, MWD, MWD, Stab, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.1	45	13	14.0	4.0 / 7.0		9.5	3.20	0.75	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	636.60	4	Trip In
00:30	02:30	2.00	636.60	4	Wait on bit breaker modification and safety meeting ikhfanknckascknk
02:30	06:30	4.00	636.60	4	RIH to shoe
06:30	08:30	2.00	636.60	4	Replace tong sheeves in derrick
08:30	10:30	2.00	636.60	4	TDS repair/maintance
10:30	12:00	1.50	636.60	4	Trip In
12:00	00:00	12.00	1099.00	4	Drilling 636.60 - 1099m

#### COMMENTS

drill hrs: 6.2  
circ hrs: 13.2  
tot drill hrs: 6.2  
tot circ Hrs: 13.2

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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 17 5/08/2006

Total Depth (m) : 1571  
Drilled last 24 hrs (m) : 472  
Hole Size (in) : 12.250

Casing Depth (m) : 317.00  
Casing Diameter (in) : 13.375  
Casing ID (in) : 12.610

Operator Reps : Troy Reid  
SSDS Reps : B. Sears (9), B. Coppin (2)

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1551.40	70.95	118.07	812.72	1122.61	S60.98E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 4: 175.02 m; Bit #3 (34. hrs), PDM #3 (34. hrs), Flex, MWD, MWD, Stab, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.1	45	13	14.0	4.0 / 7.0		9.5	3.20	0.75	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:30	6.50	1273.00	4	Drilling 1099 - 1273m
06:30	07:30	1.00	1273.00	4	Repair pop off
07:30	10:30	3.00	1331.00	4	Drilling 1273 - 1331m
10:30	11:30	1.00	1331.00	4	Repair washpipe
11:30	00:00	12.50	1571.00	4	Drilling 1331 - 1571m

#### COMMENTS

drill hrs: 14.2  
circ hrs: 21.4  
tot drill hrs: 20.4  
tot circ Hrs: 34.6

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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 18 6/08/2006

Total Depth (m) :	1606	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	35	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (10), B. Coppin (3)
Hole Size (in) :	9.625	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1596.10	71.07	117.39	827.25	1164.87	S61.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 4: 175.02 m; Bit #3 (36.5 hrs), PDM #3 (41. hrs), Flex, MWD, MWD, Stab, Sub, Sub, 9x HWDP, Jar, 6x HWDP

BHA 5: 61.42 m; Bit #4 (13.5 hrs), Sub, Stab, 2x DC, Stab, 1x DC, Sub, 3x DC

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.6	64	22	33.0	8.0 / 14.0		9.0	4.60	1.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	02:30	2.50	1606.00	4	Drilling 1571 - 1606m
02:30	05:00	2.50	1606.00	4	Circulate
05:00	06:00	1.00	1606.00	4	Flow check, Trip Out, tight at 1408m
06:00	07:00	1.00	1606.00	4	Circulate under tight hole
07:00	08:30	1.50	1606.00	4	Trip Out, tight out 1138m
08:30	09:30	1.00	1606.00	4	Circulate under tight hole
09:30	13:00	3.50	1606.00	4	Trip Out
13:00	14:30	1.50	1606.00	4	Hang up at 317m as BHA passed through shoe
14:30	16:30	2.00	1606.00	4	Trip Out
16:30	17:00	0.50	1606.00	4	Download MWD
17:00	19:00	2.00	1606.00	4	L/O BHA
19:00	22:30	3.50	1606.00	5	PU BHA
22:30	23:00	0.50	1606.00	5	slip and cut
23:00	23:30	0.50	1606.00	5	Lubricate Rig
23:30	00:00	0.50	1606.00	5	Trip In

#### COMMENTS

drill hrs: 1.8  
 circ hrs: 2.1  
 tot drill hrs: 22.2  
 tot circ Hrs: 36.7

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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 19 7/08/2006

Total Depth (m) :	1606	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	0	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (11), B. Coppin (4)
Hole Size (in) :	9.625	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1596.10	71.07	117.39	827.25	1164.87	S61.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 5: 61.42 m; Bit #4 (13.5 hrs), Sub, Stab, 2x DC, Stab, 1x DC, Sub, 3x DC

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.6	64	22	33.0	8.0 / 14.0		9.0	4.60	1.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	02:30	2.50	1606.00	5	Trip In to 1606m
02:30	03:30	1.00	1606.00	5	Circulate hole clean
03:30	17:00	13.50	1606.00	5	Back Reaming to Shoe as per DrillEng Instruction
17:00	17:30	0.50	1606.00	5	Circulate bottoms up and flow check, BOP drill
17:30	19:00	1.50	1606.00	5	Trip Out (at Surface)
19:00	20:30	1.50	1606.00	5	LD BHA
20:30	21:00	0.50	1606.00	5	Clear rig floor before casing run
21:00	22:00	1.00	1606.00	5	Retrieve wear bush and make up test plug
22:00	23:30	1.50	1606.00	5	Change BOP rams
23:30	00:00	0.50	1606.00	5	Pressure test rams to 2000psi

#### COMMENTS

Wiper trip  
Circ hrs: 14

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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 20 8/08/2006

Total Depth (m) : 1606  
Drilled last 24 hrs (m) : 0  
Hole Size (in) : 9.625

Casing Depth (m) : 1598.00  
Casing Diameter (in) : 9.625  
Casing ID (in) : 8.681

Operator Reps : Troy Reid  
SSDS Reps : B. Sears (12), B. Coppin (5)

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1596.10	71.07	117.39	827.25	1164.87	S61.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 5: 61.42 m; Bit #4 (13.5 hrs), Sub, Stab, 2x DC, Stab, 1x DC, Sub, 3x DC

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.6	64	22	33.0	8.0 / 14.0		9.0	4.60	1.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:00	1.00	1606.00	5	Rig Up Casing run
01:00	08:30	7.50	1606.00		Run Casing Shoe and Float
08:30	15:00	6.50	1606.00		Run Casing
15:00	16:30	1.50	1606.00		Rig up for Cement
16:30	21:00	4.50	1606.00		Set up Cement, prep spacers
21:00	00:00	3.00	1606.00		test Cement lines and Cement

#### COMMENTS

9 5/8" Casing and Cement

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## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 21 9/08/2006

Total Depth (m) : 1606  
Drilled last 24 hrs (m) : 0  
Hole Size (in) : 8.500

Casing Depth (m) : 1598.00  
Casing Diameter (in) : 9.625  
Casing ID (in) : 8.681

Operator Reps : Troy Reid  
SSDS Reps : B. Sears (13), B. Coppin (6)

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1596.10	71.07	117.39	827.25	1164.87	S61.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 6: 208.34 m; Bit #5 (2.5 hrs), Sub, 6 x DC, 9 x HWDP, DC, 6 x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.6	64	22	33.0	8.0 / 14.0		9.0	4.60	1.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:00	1.00	1606.00		Displace cement
01:00	12:00	11.00	1606.00		Rig down Csg/Cmt and work on BOP
12:00	13:00	1.00	1606.00		Test BOP
13:00	13:30	0.50	1606.00		install x/over spool
13:30	17:30	4.00	1606.00		Move BOP - install Bell Nipple
17:30	18:00	0.50	1606.00		Change pipe rams
18:00	19:00	1.00	1606.00		lay out D/P to run for next section, clean
19:00	20:00	1.00	1606.00		Change TDS saver sub
20:00	21:00	1.00	1606.00		Pressure Test BOP
21:00	21:30	0.50	1606.00		install wear bushing
21:30	00:00	2.50	1606.00	6	P/U BHA and Trip In

#### COMMENTS

Cement-BOP-BHA 6



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 22 10/08/2006

Total Depth (m) :	1606	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	0	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (14), B. Coppin (7)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1596.10	71.07	117.39	827.25	1164.87	S61.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 6: 208.34 m; Bit #5 (5. hrs), Sub, 6 x DC, 9 x HWDP, DC, 6 x HWDP

BHA 7: 212.42 m; Bit #6 (1.5 hrs), Stab, Sub, 1x DC, Sub, Stab, Sub, 5x DC, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.6	64	22	33.0	8.0 / 14.0		9.0	4.60	1.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:30	3.50	1606.00	6	Trip In
03:30	04:00	0.50	1606.00	6	BOP Drill
04:00	06:00	2.00	1606.00	6	Trip In
06:00	08:30	2.50	1606.00	6	Drill Cement
08:30	11:00	2.50	1606.00	6	Drill Cement Float-NO ROP steel in returns
11:00	12:30	1.50	1606.00	6	Circulate
12:30	16:00	3.50	1606.00	6	Trip Out (at Surface)
16:00	16:30	0.50	1606.00	6	Break off bit
16:30	17:30	1.00	1606.00	6	Clear rig floor-await decision from Santos office
17:30	22:30	5.00	1606.00	7	M/U PDC bit and Trip In
22:30	00:00	1.50	1606.00	7	Drill cement and expected milling of casing

#### COMMENTS

Drill cement-shoe-mill casing

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 23 11/08/2006

Total Depth (m) :	1619	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	13	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (15), B. Coppin (8)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1596.10	71.07	117.39	827.25	1164.87	S61.03E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 7: 212.42 m; Bit #6 (4.5 hrs), Stab, Sub, 1x DC, Sub, Stab, Sub, 5x DC, 9x HWDP, Jar, 6x HWDP

BHA 8: 184.58 m; Bit #7 (1. hrs), PDM # (1. hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.6	64	22	33.0	8.0 / 14.0		9.0	4.60	1.00	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:00	1.00	1606.00	7	Reaming from 1597-1598m for tight hole inside casing.
01:00	02:00	1.00	1606.00	7	Reaming 1598-1600m and pipe became stuck inside casing string.
02:00	02:30	0.50	1606.00	7	Work string in tight spot and established rotation.
02:30	03:00	0.50	1606.00	7	Drill out shoe and rat hole
03:00	03:30	0.50	1606.00	7	Circulate hole clean
03:30	04:00	0.50	1606.00	7	FIT
04:00	05:30	1.50	1619.00	7	Drilling out of shoe
05:30	06:30	1.00	1619.00	7	Circulate hole clean - pump slug
06:30	10:00	3.50	1619.00	7	Trip Out
10:00	10:30	0.50	1619.00	7	Lay Out BHA
10:30	14:00	3.50	1619.00	8	P/U GeoPilot and MWD tools
14:00	14:30	0.50	1619.00	8	Shallow pulse test MWD
14:30	21:30	7.00	1619.00	8	Trip In to tag at 1575m
21:30	22:30	1.00	1619.00	8	Start Circ and attempt to wash past casing float
22:30	23:30	1.00	1619.00	8	Slip and Cut
23:30	00:00	0.50	1619.00	8	Sperry calibrate block height

#### COMMENTS

Drill 8 1/2"

Problems with Shoe

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 24 12/08/2006

Total Depth (m) :	1659	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	40	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (16), B. Coppin (9)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1647.79	69.84	118.53	844.03	1213.76	S61.06E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 8: 184.58 m; Bit #7 (7.5 hrs), PDM # (14.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.3	49	11	21.0	5.0 / 8.0		9.5	4.60	0.10	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	1619.00	8	Sperry calibrate block height
00:30	01:30	1.00	1619.00	8	Downlinking to GeoPilot to reset to home position for passing problematic float
01:30	03:00	1.50	1619.00	8	Reaming to 1619m
03:00	07:00	4.00	1659.00	8	Drilling 1619 - 1659m
07:00	07:30	0.50	1659.00	8	TDS fault, pull back to shoe
07:30	09:00	1.50	1659.00	8	Circulate
09:00	10:30	1.50	1659.00	8	RIH and test TDS, test failed
10:30	11:00	0.50	1659.00	8	Pull back to shoe
11:00	11:30	0.50	1659.00	8	rig maintance
11:30	13:30	2.00	1659.00	8	Circulate while waiting on Tesco repairs
13:30	14:00	0.50	1659.00	8	Washing to bottom
14:00	14:30	0.50	1659.00	8	try to drill, Tesco unit overheat
14:30	15:00	0.50	1659.00	8	Pull back to shoe
15:00	18:30	3.50	1659.00	8	Circulate
18:30	23:30	5.00	1659.00	8	Trip Out
23:30	00:00	0.50	1659.00	8	Remove FE tool radioactive source

#### COMMENTS

Drill 8 1/2"

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 25 13/08/2006

Total Depth (m) :	1659	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	0	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (17), B. Coppin (10)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1647.79	69.84	118.53	844.03	1213.76	S61.06E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 8: 184.58 m; Bit #7 (7.5 hrs), PDM # (14.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

BHA 9: 208.34 m; Bit #8 (5. hrs), Sub, 6 x DC, 9 x HWDP, DC, 6 x HWDP

BHA 10: 185.17 m; Bit #8 (1.5 hrs), PDM # (16.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.3	49	11	21.0	5.0 / 8.0		9.5	4.60	0.10	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:00	1.00	1659.00	8	Sperry download FE tools
01:00	02:00	1.00	1659.00	8	Rackback GeoPilot and FE tools
02:00	08:00	6.00	1659.00	9	M/U BHA9 and RIH to Circ
08:00	14:30	6.50	1659.00	9	Circulate whilst waiting for Tesco parts
14:30	18:00	3.50	1659.00	9	Flow check-pump pill and POOH
18:00	20:30	2.50	1659.00	9	Lay Down CNP/SLD
20:30	21:30	1.00	1659.00	9	Pick up CNP+SLD and make up HOC and float
21:30	22:30	1.00	1659.00	9	Sperry load source
22:30	23:00	0.50	1659.00	10	Trip In tp 118m
23:00	23:30	0.50	1659.00	10	Shallow pulse test MWD
23:30	00:00	0.50	1659.00	10	Trip In

#### COMMENTS

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 26 14/08/2006

Total Depth (m) :	1680	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	21	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (18), B. Coppin (11)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1677.35	67.72	119.25	854.73	1241.31	S61.06E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 10: 185.17 m; Bit #8 (7.5 hrs), PDM # (31. hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	9.9	51	18	29.0	9.0 / 13.0		9.0	6.60	0.30	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	1659.00	10	Rig up circulating swedge and circulate
00:30	02:30	2.00	1659.00	10	Trip In to 1571m
02:30	04:30	2.00	1659.00	10	Rig up circulating swedge and circulate
04:30	06:00	1.50	1659.00	10	Tesco repairs, rig down bail arms, rig down swedge and function test TDS-failed
06:00	12:00	6.00	1659.00	10	Rig up swedge, circulate and Tesco fix hydraulic problem with TDS
12:00	13:30	1.50	1659.00	10	RIH 1571m and take weight at 1621m and ream to 1650m
13:30	14:00	0.50	1659.00	10	Trip Out to 1572m
14:00	14:30	0.50	1659.00	10	Sperry replace decoder and re-calibrate block height
14:30	15:00	0.50	1659.00	10	Wait on orders from town
15:00	16:00	1.00	1659.00	10	Trip In to 1650m, high trq and stall
16:00	21:00	5.00	1680.00	10	Drilling 1659 - 1680m
21:00	22:00	1.00	1680.00	10	Circulate bottoms up
22:00	23:00	1.00	1680.00	10	Pump out of hole to 1602m
23:00	00:00	1.00	1680.00	10	Flow check, pump slug and begin tripping out

#### COMMENTS

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 27 15/08/2006

Total Depth (m) :	1847	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	167	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (19), B. Coppin (12)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1822.11	51.89	116.24	926.43	1366.51	S61.16E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Gippsland Limestone	235.00	234.55

#### BHA SUMMARY

BHA 10: 185.17 m; Bit #8 (7.5 hrs), PDM # (31. hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

BHA 11: 185.17 m; Bit #8rr1 (22. hrs), PDM # (45.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	10.0	52	13	24.0	7.0 / 11.0		9.0	7.10	0.20	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	01:30	1.50	1680.00	10	Trip Out
01:30	02:00	0.50	1680.00	10	Sperry remove source
02:00	03:00	1.00	1680.00	10	Sperry download tool
03:00	03:30	0.50	1680.00	10	Trip Out-Break bit-Change Nzls
03:30	04:30	1.00	1680.00	11	PU MWD
04:30	06:00	1.50	1680.00	11	Trip In
06:00	06:30	0.50	1680.00	11	Sperry shallow test
06:30	08:30	2.00	1680.00	11	Trip In
08:30	09:30	1.00	1680.00	11	Ream to 1680m
09:30	12:00	2.50	1717.00	11	Drilling 1680 - 1717m
12:00	12:30	0.50	1717.00	11	Service TDS
12:30	21:30	9.00	1830.00	11	Drilling 1717 - 1830m
21:30	22:00	0.50	1830.00	11	Change piston on Mud Pump 2
22:00	00:00	2.00	1847.00	11	Drilling 1830 - 1847m

#### COMMENTS

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 28 16/08/2006

Total Depth (m) :	1881	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	34	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (20), B. Coppin (13)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1880.03	44.71	114.61	965.05	1409.55	S61.26E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Lakes Entrance	1880.00	965.03

#### BHA SUMMARY

BHA 11: 185.17 m; Bit #8rr1 (30.5 hrs), PDM # (59.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

BHA 12: 185.39 m; Bit #9 (0.5 hrs), Stab, PDM # (60.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	10.0	52	13	24.0	7.0 / 11.0		9.0	7.10	0.20	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	06:00	6.00	1881.00	11	Drilling 1847 - 1881m
06:00	08:30	2.50	1881.00	11	Back ream to 1601m, overpull at shoe.
08:30	10:30	2.00	1881.00	11	Pump baracarb 600 and attempt to clear bit. No change SPP.
10:30	14:00	3.50	1881.00	11	Flow check and pump slug. POOH to 32m
14:00	15:00	1.00	1881.00	11	Download MWD and unload radio active source.
15:00	16:00	1.00	1881.00	11	POOH, change bit
16:00	16:30	0.50	1881.00	11	Make up tri-cone bit and sleeve
16:30	17:30	1.00	1881.00	12	RIH and load radio active source.
17:30	18:00	0.50	1881.00	12	Trip In tp 118m
18:00	18:30	0.50	1881.00	12	Shallow pulse test MWD
18:30	22:30	4.00	1881.00	12	Trip In to 1600m
22:30	23:00	0.50	1881.00	12	Cut Drill Line
23:00	23:30	0.50	1881.00	12	Pump 4 failed, bring pump 3 online
23:30	00:00	0.50	1881.00	12	Wash and ream from 1600m to 1617m

#### COMMENTS

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

#### CURRENT STATUS Report # 29 17/08/2006

Total Depth (m) :	1986	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	105	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (21), B. Coppin (14)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
1966.87	33.71	114.22	1032.08	1464.38	S61.43E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Lakes Entrance	1880.00	965.03

#### BHA SUMMARY

BHA 12: 185.39 m; Bit #9 (17.5 hrs), Stab, PDM # (79. hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	10.5	51	18	32.0	8.0 / 13.0		9.0	8.70	0.20	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	03:30	3.50	1881.00	12	Wash to 1833m, TDS actuator leak
03:30	04:30	1.00	1881.00	12	Trip Out 1833-1601m
04:30	06:30	2.00	1881.00	12	Tesco repair TDS actuator
06:30	08:30	2.00	1881.00	12	Trip In to bottom
08:30	09:30	1.00	1881.00	12	Pump Barolift sweep - Circ
09:30	12:00	2.50	1900.00	12	Drilling 1881 - 1900m
12:00	14:30	2.50	1920.00	12	Drilling 1900 - 1920m
14:30	15:00	0.50	1920.00	12	Service Rig
15:00	17:00	2.00	1934.00	12	Drilling 1920 - 1934m
17:00	17:30	0.50	1934.00	12	Pump sweep
17:30	00:00	6.50	1986.00	12	Drilling 1934 - 1986m

#### COMMENTS

GeoPilot drilling



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 30 18/08/2006

Total Depth (m) :	2080	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	94	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (22), B. Coppin (15)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2053.45	22.08	113.22	1108.30	1505.02	S61.55E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Lakes Entrance	1880.00	965.03

#### BHA SUMMARY

BHA 12: 185.39 m; Bit #9 (35. hrs), Stab, PDM # (97. hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	10.5	51	18	32.0	8.0 / 13.0		9.0	8.70	0.20	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	09:00	9.00	2063.00	12	Drilling 1986 - 2063m
09:00	09:30	0.50	2063.00	12	Lubricate Rig
09:30	10:00	0.50	2063.00	12	Circulate hole clean - high trq
10:00	13:00	3.00	2080.00	12	Drilling with sweeps
13:00	14:30	1.50	2080.00	12	Repair damaged electric TDS cables
14:30	15:00	0.50	2080.00	12	Ream 2064-2077m
15:00	18:30	3.50	2080.00	12	Backream 2074-1868m
18:30	20:00	1.50	2080.00	12	Pump out 1868-1581m
20:00	00:00	4.00	2080.00	12	Change out main hyd motor on TDS

#### COMMENTS

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 31 19/08/2006

Total Depth (m) :	2202	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	122	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (23), B. Coppin (16)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2197.64	6.92	99.24	1247.49	1540.56	S61.75E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Lakes Entrance	1880.00	965.03

#### BHA SUMMARY

BHA 12: 185.39 m; Bit #9 (52.5 hrs), Stab, PDM # (115.5 hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	10.5	65	24	39.0	9.0 / 18.0		9.0	8.60	0.30	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	00:30	0.50	2080.00	12	cont - replace hyd motor on TDS
00:30	02:00	1.50	2080.00	12	Trip In to 1601m, TDS failure trip out to 1573m
02:00	04:00	2.00	2080.00	12	Tesco repair unloader valve
04:00	05:00	1.00	2080.00	12	RIH to 1601m and wash to 1630m
05:00	05:30	0.50	2080.00	12	Pump sweep and circ hole clean
05:30	08:30	3.00	2080.00	12	Reaming / Washing to 2080m
08:30	09:00	0.50	2080.00	12	Pump sweep
09:00	09:30	0.50	2080.00	12	Lubricate Rig
09:30	15:00	5.50	2135.00	12	Drilling 2080 - 2135m
15:00	17:00	2.00	2173.00	12	Drilling (controlled) 2135 - 2173m
17:00	00:00	7.00	2202.00	12	Drilling 2173 - 2202m

#### COMMENTS

Drill 8 1/2"

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Santos Ltd.

Well : Galloway-1

Field : Galloway

Lease :

Rig : Ensign 32

Job # : AU-DD-0004392520

CURRENT STATUS Report # 32 20/08/2006

Total Depth (m) :	2315	Casing Depth (m) :	1598.00	Operator Reps :	Troy Reid
Drilled last 24 hrs (m) :	113	Casing Diameter (in) :	9.625	SSDS Reps :	B. Sears (24), B. Coppin (17)
Hole Size (in) :	8.500	Casing ID (in) :	8.681		

#### LAST SURVEY

Depth (m)	Inclination	Azimuth	TVD (m)	Displ (m)	Direction
2255.27	1.11	90.43	1304.97	1543.96	S61.80E

#### LAST FORMATION TOP

Formation Name	MD Top (m)	TVD Top (m)
Lakes Entrance	1880.00	965.03

#### BHA SUMMARY

BHA 12: 185.39 m; Bit #9 (72. hrs), Stab, PDM # (137. hrs), Flex, MWD, MWD, Sub, Sub, Sub, 9x HWDP, Jar, 6x HWDP

#### MUD DATA

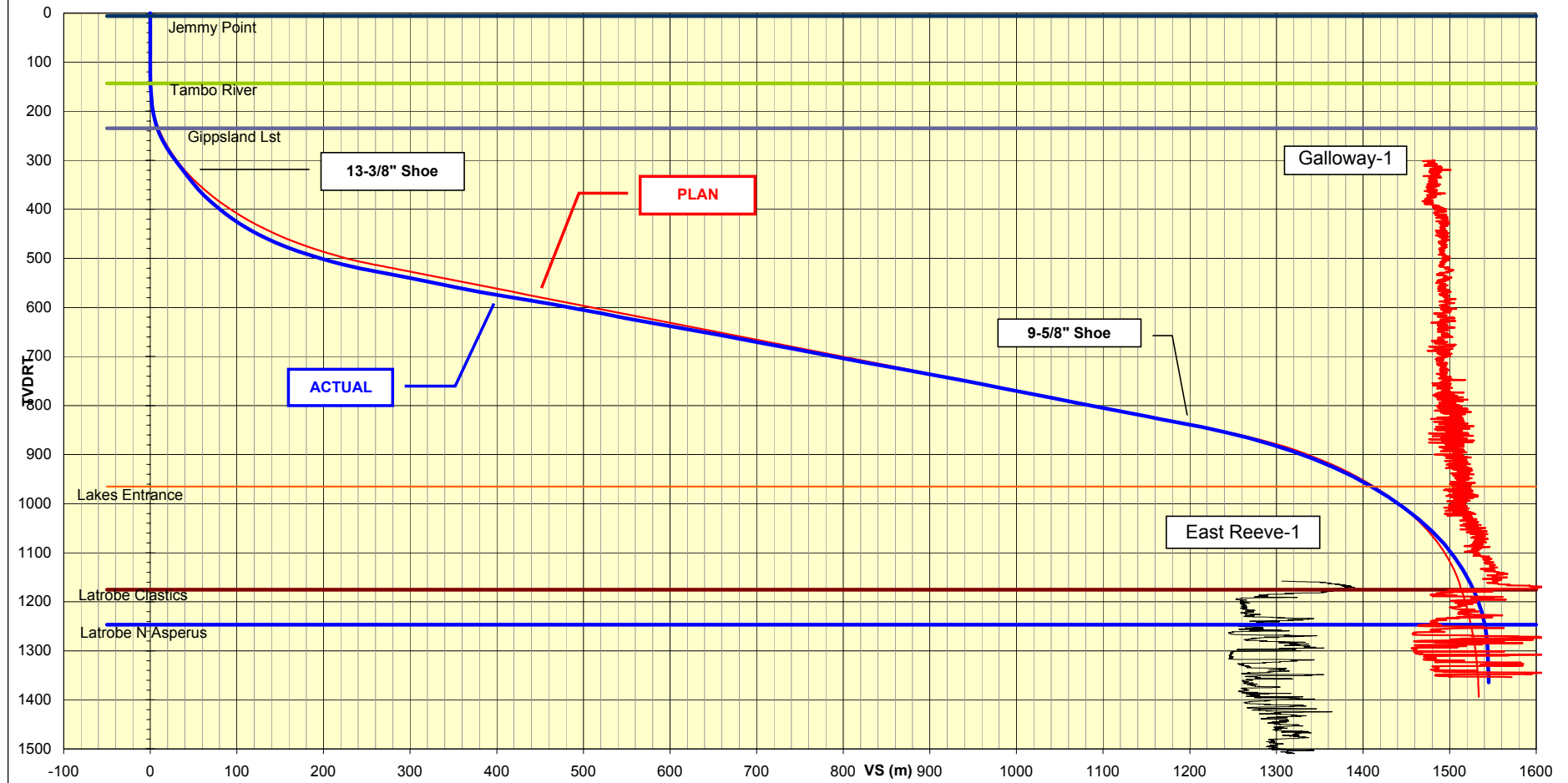
Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
KCl/Polymer	10.5	65	24	39.0	9.0 / 18.0		9.0	8.60	0.30	

#### TIME BREAKDOWN

From	To	Hours	TMD (m)	BHA #	Activity
00:00	12:00	12.00	2296.00	12	Drilling 2202 - 2296m
12:00	15:30	3.50	2315.00	12	Drilling 2296 - 2315m
15:30	17:30	2.00	2315.00	12	Pump 3 Sweeps and Circulate
17:30	21:30	4.00	2315.00	12	Pump out of hole 2315-1601m. Tight between 1829-1825m
21:30	00:00	2.50	2315.00	12	Pumps slug and POOH 1601-359m

#### COMMENTS

# Galloway 1 Vertical Section @ 118.5 Deg



## **SECTION 15: RIG SPECIFICATIONS**

## GRADED RIG # 32 – INVENTORY

ITEM	DESCRIPTION
<b>DRAWWORKS:</b>	National 610E with Baylor Elmagco 5032 brake c/w battery back up and cooling tower. Horsepower rating 750/1000 input. General Electric Model 5GE752AR1 DC Traction type electric motor with 5hp Blower motor. National Type B-2 Catheads makeup and breakout. Hoisting Speed - 4 Rotary Speed – 2
<b>ENGINES:</b>	3 - Caterpillar Model 3508DISTA motors with rig savers (rated 1000hp). All engines have fuel and air safety shut-offs.
<b>SUBSTRUCTURE:</b>	Dreco four section box style. Max pipe set back capacity - 300,000 lbs Max rotary table capacity - 400,000 lbs Simultaneous Capacity: 700,000 lbs Overall size - 29' w x 45' l x 18' h Kelly Bushing to ground level - 20' Top of matting to under Rotary Table beams - 13'10"
<b>MAST:</b>	Dreco Cantilever Type 133' 133 feet clear height - 21 feet wide base mast. Static hook load capacity of 500,000 lbs with 10 lines. Static hook load capacity of 467,000 lbs with 8 lines.
<b>SWIVEL:</b>	National Model N-69 swivel, complete with Foster Kelly spinner. Capacity - 300 tons.
<b>CROWN BLOCK:</b>	5 x 36" cross sheave and 1 x 42" fast sheave - grooved for 1 1/8"
<b>TRAVELLING BLOCK:</b>	National type 540-G-250 hook block combination with 5-40" diameter. Capacity - 250 ton.
<b>ROTARY TABLE:</b>	National Model C205 - 20½" rotary table with direct prop shaft drive. Clutch 27" E475 Torque Rating @ 150 rpm - 20,000 ft/lbs
<b>KELLY:</b>	Two (2) - 4¼" hex x 40' long with HT 40 Pin connection down.
<b>KELLY DRIVE:</b>	Varco type HDP-20 pin drive roller kelly bushing for 4 ¼" hex kelly.
<b>MUD PUMPS:</b>	3 - National type 8P-80, 6" x 8.1/2" Triplex single acting pumps 800 H.P. complete with Hydril pulsation dampener K20-3000 and Demco 3" shear relief valve. Powered by G.E. 752 DC traction motors. Each pump is charged by mission magnum 6" x 5" x 12" Precharge pump belt, powered by 50 H.P. electric motor.
<b>MIXING PUMPS:</b>	1 x Mission Magnum 6"x8"x12" pump powered by a 100 HP electric motor.
<b>MUD AGITATORS:</b>	3 Brandt 10 HP: 3 Suction tank, 1 Shaker tank, and 1 5 HP in Pill tank.

ITEM	DESCRIPTION
<b>SHALE SHAKERS:</b>	3 Linear Motion Shakers Model No: D.F.E. SCR 01. Adjustable screen deck -1° to +5° Size screens: DFE84 and DFE110 Optional screens: DFE185, DFE210 & DFE250
<b>DEGASSER:</b>	1 - Shell Co design Poor-Boy Degasser.
<b>DESANDER:</b>	Not Offered - (Replaced by 3 <sup>rd</sup> Shaker).
<b>DESILTER:</b>	1 - Demco Unit with 10 x 4" cones driven by a Mission Magnum 5"x6"x11" pump, powered by a 50 H.P. electric motor.
<b>GENERATORS &amp; SCR SYSTEM:</b>	3-600v Caterpillar generator sets 1137kVa, 60hz synchronous alternators.
<b>SCR:</b>	Ross Hill Controls - control centre 600V 3 phase, 60 hz, 3 generators + 4 SCR bays, metering panels for 1137 kVa generators @ 1800 RPM. 600V motor control centre with starters.
<b>BLOW-OUT PREVENTERS:</b>	1 - 13.5/8" - 5,000 psi Hydril Type "GK" annular preventer. 1-13.5/8" Shaffer 5K manual lock double gate, studded BOPs c/w 4", 5.1/2", 7", 9.5/8" and CSO rams. 1 - Hytorque Hydraulic 3 x 1 Bolt Make Up System. 1 Stripping Bottle - Annular. 1 - BOP Handling System complete with test stump facility mounted under substructure floor.
<b>ACCUMULATOR:</b>	Wagner Model 25-120-3BN accumulator 140 gallon capacity, 5 station control valves. Nitrogen bottle backup system. Triplex pump with 25 Hp electric motor. Remote drillers control panel.
<b>CHOKE MANIFOLD:</b>	Armco Oilmaster Well Control Manifold 3x3" - complete with 1x3" - 5000 p.s.i. Armco ball valve. 2 - Willis M-3 multi-orifice chokes. 200 ft flare line, 3 1/2" tubing.
<b>DRILLPIPE SAFETY VALVE:</b>	1 - Hydril safety valve. 1 - Gray inside BOP valve - 10,000 psi HT 40 box & pin connections.
<b>WINCHES:</b>	1 - Gearmatic hydraulic tugger winch complete with 250' of .5/8" steel cable. 1 - Toko Manrider.
<b>SURVEY WIRE LINE UNIT:</b>	1 - Mathey wireline survey unit with .092 plow steel line.
<b>SPOOLS &amp; VALVES:</b>	1 - 13.5/8" - 5,000 psi to 13.5/8" - 5,000 psi 1 - 13.5/8" - 5,000 psi to 11" - 5,000 psi 1 - 13.5/8" - 5,000 psi to 11" - 3,000 psi 1 - 13.5/8" - 5,000 psi to 7.1/16" - 5,000 psi 1 - 13.5/8" - 5,000 psi spacer spool complete with:- 2 - 3" x 5,000 psi flanged outlets 3 - 3" x 5,000 psi gate valves 1 - 3" x 5,000 psi HCR valve

<b>ITEM</b>	<b>DESCRIPTION</b>
<b>SHAKER TANK:</b>	42' x 9' x 9' 3 x 3" subsurface guns Sand Trap/Settling Tank: 133 bbls. Settling Tank: 133 bbls. Settling Tank/Reserve: 133 bbls. Total Capacity: 399 bbls.
<b>SUCTION TANK:</b>	42' x 9' x 9' 4 x 3" subsurface guns Suction Tank #1: 144 bbls. Suction Tank #2: 144 bbls. Pre-mix Tank: 107 bbls. Pill Tank: 53 bbls. Total Capacity: 448 bbls.
<b>TRIP TANK PUMP:</b>	60 bbls tank built into substructure (pony sub) complete with 2"x3" mission pump.
<b>DRILL PIPE:</b>	12,500ft - 4" OD Grant Prideco Grade G-105 I.U. 2 <sup>11</sup> / <sub>16</sub> " ID. 14.0 lb/ft nominal with HT40 connections 5.¼" OD tool joints, internal coating and hardbanding. 1 each - 10ft and 15 ft pup joint as above.
<b>DRILL COLLARS:</b>	12 x 6.½" OD 2 <sup>13</sup> / <sub>16</sub> " ID spiral drill collar with 4" IF connections 92 lbs/ft c/w 4 x 6 ½" OD pick up subs (18□ taper).
<b>KELLY COCK:</b>	1 - upper kelly cock, 10,000 psi test with 6. <sup>5</sup> / <sub>8</sub> " API reg connections. 1 - lower kelly cock, 5,000 psi test with HT 40 connections.
<b>FISHING TOOLS:</b>	To suit all Contractor's tubulars, including overshots, washover pipe and burn shoes. 1 - 6.¼" O.D. 4" IF Type 'Z' Bowen fishing jar.
<b>HANDLING TOOLS:</b>	2.¼" x 108" weldless elevator links 2 - 4" BJ 18 degree, type "MSG" centre latch drill pipe elevators 1 - 350T slip type elevators and spider to 5.½", 7", 9. <sup>5</sup> / <sub>8</sub> " and 13 <sup>3</sup> / <sub>8</sub> ". Casing elevators and slips for 5.½", 7", 9. <sup>5</sup> / <sub>8</sub> " and 13. <sup>3</sup> / <sub>8</sub> " 1 - Varco 4" rotary slips. 1 - Varco 6.½" drill collars slips. 12 ¼", 8 ½", 6 ¾" Bit Breakers
<b>ROTARY TONGS:</b>	1 set BJ type "DB" tongs complete with jaws 3.½" to 13. <sup>3</sup> / <sub>8</sub> ".
<b>POWER TONG:</b>	Farr model "LW" Hi-Torque casing tong with torque gauge assembly, complete with 5.½", 7", 9. <sup>5</sup> / <sub>8</sub> " and 13. <sup>3</sup> / <sub>8</sub> " casing jaws.
<b>HYDRAULIC PACKAGE:</b>	2 x Commercial hydraulic power systems driven by 60 Hp electric motor (mounted in substructure).
<b>WELDING EQUIPMENT:</b>	1 - 400 amp Miller welding machine. 1 - oxy/acetylene set.
<b>PIPE RACKS:</b>	5 - 3'6" h x 30' l sets of tumble pipe racks.



<b>ITEM</b>	<b>DESCRIPTION</b>
<b>CATWALK:</b>	2 section 7'8" wide x 40' long x 3'6" high.
<b>WATER STORAGE:</b>	640 BBL - 10'x x 40' l x 9' h
<b>FUEL STORAGE:</b>	1 - 32,000 litres - 7' dia x 30' l
<b>SUBSTITUTES:</b>	All subs required for Contractor's tubulars.
<b>INSTRUMENTATION:</b>	1 - Totco type "G" weight indicator. 1 - Bell automatic driller. 1 - Rotary RPM gauge. 1 - Tong torque gauge. 1 - Dual shot deviation recorder - 7 deg. + 14 deg. 1 - Geolograph Drill Sentry 6 pen. 1 - M/D Totco Drill Watch System.
<b>MUD TESTING:</b>	1 - Baroid portable rig lab #821.
<b>MUD SAVER:</b>	1 - Okeh Unit.
<b>CUP TESTERS:</b>	1 - Cameron type "F".
<b>WATER TRANSFER PUMP:</b>	2 - Mission 2 x 3R, centrifugal pumps with 10 Hp electric motor.
<b>SUMP PUMP:</b>	1 - Diesel powered Pump complete with 3" suction & delivery lines.
<b>SAFETY EQUIPMENT:</b>	Includes: stretcher, safety belts, first aid kits, Royal Flying Doctor Service kit, general fire extinguishers, inflatable air splints, chemical goggles, geronimo safety slide, face shields, vest type safety harnesses, lift harnesses.
<b>RIG COMMUNICATION SYSTEM:</b>	1 - Gaitronics intrinsically safe industrial telephone system with 5 stations. (class 1 zone 2).
<b>EXTERNAL COMMUNICATION SYSTEM:</b>	1 - Mobile Satellite Telecommunication system complete with facsimile machine and mobile vehicle accessories.
<b>WELL SITE SHACKS:</b>	2 - Toolpusher Units 40' x 10' (1 new) 1 - 40 Skid Mounted Shack subdivided to incorporate communications centre and briefing room with table, chairs and white board. 1 - Skid Mounted Female Ablution Shack.
<b>CAMP EQUIPMENT:</b>	1 - 32-man camp fully furnished with shared en-suite facilities per two rooms, fully air conditioned with recreation room. 1 - Camp Support Unit comprising generators, fuel and water tanks and camp equipment storage.      1 - Cooler/Freezer/Storeroom.
<b>TRANSPORT EQUIPMENT AND MOTOR VEHICLES:</b>	1 - 4-Wheel drive forklift, complete with bucket and forks 1 - 4-Wheel drive Toolpusher Ute 1 - 4-Wheel drive Crew Wagon

## UPGRADED RIG # 32 - RENTAL EQUIPMENT

ITEM	DESCRIPTION
<b>DEGASSER:</b>	1 - DFE Vacuum Degasser
<b>DRILL COLLARS:</b>	30 x 5.¼" OD 2. 11/16" ID spiral drill collars with HT40 connections 53 lbs/ft. 10 x 5.¼" OD pick up subs (18° taper). 1 x 5 ¼ " O.D. 10' Pony Collar with HT40 connections.
<b>HEVI-WATE PIPE:</b>	9 x 4" OD 2. 11/16" ID Spiral-Wate drill pipe with HT40 connections 5.¼" OD tool joints 32 lbs/ft.
<b>FISHING TOOLS:</b>	1 x Bowen 6 3/8 OD, Series 150 S.H. Overshot assembly # 6655. 1 x Reverse Circulating Junk Basket 1 x Junk Sub
<b>SUBSTITUTES:</b>	2 x 4" HT-40 Box x 4" IF Pin, 5 ¼" OD Subs 2 x 4" HT-40 Pin x 4" IF Box, 5 ¼" OD Subs 1 x Bit Sub 4" IF Box x 6 5/8" Reg Box, w/- float recess. 1 x Bit Sub 4" HT-40 Box x 3 ½" Reg Box, w/- float recess. 1 x 4" HT-40 Drillpipe Circulating Swedge