Well

1 / 2-2

Hummer

End Of Well Report

Section A

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1 EXECUTIVE SUMMARY

1.1 RESULTS OVERVIEW

The 1/2-2 well was drilled to evaluate the prospect named Hummer, located principally in the Production license 143CS and extending into the two adjacent licences PL298 (Paladin operated) and PL018 (ConocoPhillips), (Figure 2.1).

The main objective was to determine the presence of commercial volumes of hydrocarbons within the Forties Member sandstone. The well was drilled as a vertical borehole close to the mapped crest of the Hummer prospect, to obtain an optimum evaluation of the Forties Sand reservoir and its hydrocarbon content. A secondary objective was the Mey Member sandstone and to acquire reservoir pressure data and geological data, to improve reservoir understanding for any future field development.

The well was operated by Paladin Resources Norway Ltd, using the jack up rig Mærsk Giant.

The well was spudded on December the 14th 2005 and permanently Plugged and Abandoned on February 2nd 2006.

A Forties reservoir was penetrated at 3135 m MDRT (3094 m TVDSS), +3m low to the prognosis, however no hydrocarbons were encountered.

A 46m core (4”) was cut in the Forties sandstone Member, from 3141.5m to 3187.5m MDRT. The core recovery was 98% (44.9m)

The well reached a Total Depth of 3434 m MDRT (3392 m TVDSS) in the Shetland Group.

2 LOCATION MAP

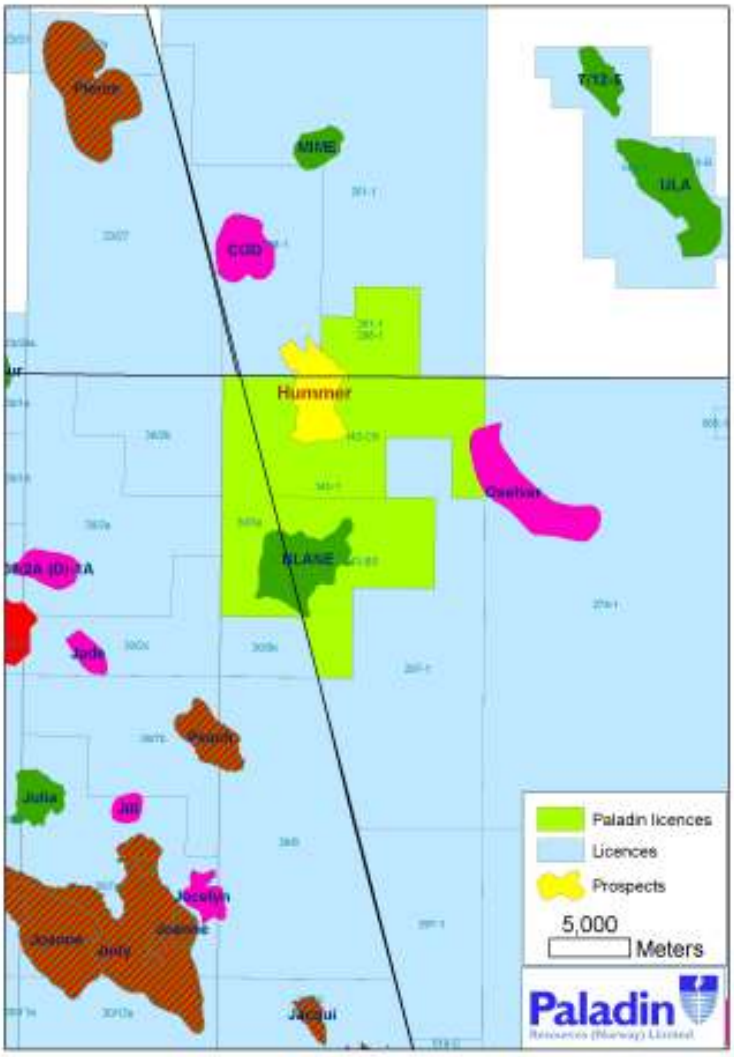


Figure 2- 1: Well Location

3 GENERAL WELL DATA

3.1 WELL DATA

Well	1/2-2	
Operator Name	Paladin Resources (Norway) Ltd	
Operator Address	Lokkevein 103, 4007 Stavanger	
Prospect Name	Hummer	
Licence	PL 143CS	
Block	1/2	
Partners	BG Norge AS	
	DNO	
Drilling Contractor	Maersk Contrators Norge	
Installation Name	Maersk Giant	
Type of Installation	Jack-Up	
Rotary Table Elevation	40 m MSL	
Water Depth	74 m MSL	
Surface Co-ordinates		
Geographic (ED50SOUTH62)	Lat:	56° 59’ 32.008”
	Long:	02° 29’ 47.663”
UTM (ED50SOUTH62)	Easting	469 410.16 mE
	Northing	6 316 774.59 mN
TD Co-ordinates		
Geographic (ED50SOUTH62)	Lat:	56° 59’ 34.173”
	Long:	02° 29’ 48.592”
UTM (ED50SOUTH62)	Easting	469 426.331 mE
	Northing	6 316 841.415 mN
Actual Target Co-ordinates		
Geographic (ED50SOUTH62)	Lat:	56° 59’ 32.022”
	Long:	02° 29’ 47.742”
UTM (ED50SOUTH62)	Easting	469 411.5 mE
	Northing	6 316 775.0 mN
Actual Target Depth	3091 m TVDSS (3131m MDRT)	
Target Depth Uncertainty	+/- 40m	
Target Horizon	Forties Fm, Rogaland Gp, Palaeocene	
Total Depth	3392.0 m TVDSS (3434 m MDRT) Drillers	
	3373 m TVDSS (3415 m MDRT) Loggers	
	unable to reach TD	
Formation at TD	Ekofisk Fm	
Well Status	Permanent Plugged and Abandoned	
Spud Date	14th December 2005 0800 hrs	
TD reached	18th January 2006 1640 hrs	
Rig off Location	2nd February 2006	

3.1.1 Hole Section and Casing Summary

Hole size	36”	9 7/8” / 24”	17 ½”	8 ½”
Depth Interval (MDRT)	114 – 176 m	176 – 703 m	703 – 1507 m	1507 – 3434 m
Mud Type	Seawater	Seawater/prehydrated bentonite sweeps	Performadrill KCl	Enviromul OBM
Mud weight	1.4 sg	1.15 sg	1.55	1.58 sg
Casing size	30”	20”	13 3/8”	
Casing shoe depth (MDRT)	172.7 m	696.8 m	1497.0 m	
FIT		1.61 sg		
LOT			1.81 sg	

4 WELL HISTORY, OBJECTIVES AND RESULTS

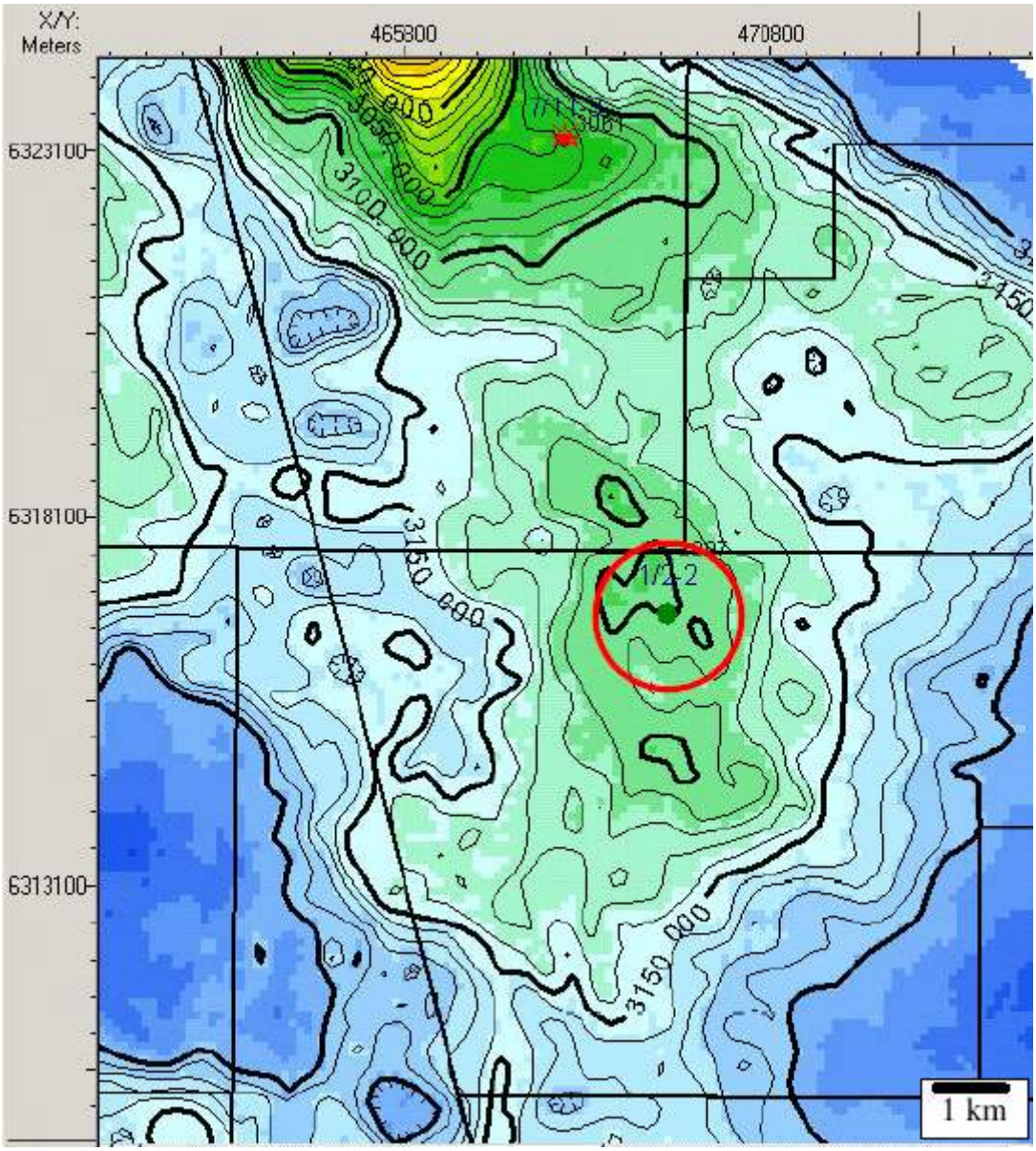
The 1/2-2 well was drilled to evaluate the prospect named Hummer, located principally in the Production license 143CS and extending into the two adjacent licences PL298 (Paladin operated) and PL018 (ConocoPhillips), (Figure 1).

The prospect was a relatively simple four-way dip closure structure, with the primary target being the Palaeocene Forties Sandstone Member of the Sele Formation. There was a secondary target in the underlying Mey Sandstone Member of the Lista Formation.

The Hummer prospect was located between several proven hydrocarbon accumulations in the Forties Sandstone, including the Blane oil discovery in PL 143BS, approximately 11km to the south, the 7/11-3 gas condensate discovery on the flank of the Cod Field, 5Km to the North and the Olselvar gas condensate discovery 12km to the east in Block 1/3

Figure 4-1: Hummer Prospect Location

4.1


X/Y:
Meters
465800
470800
6323100
6318100
6313100
3100.000
3150.000
1/2-2
1 km

WELL OBJECTIVES

Well 1/2-2 was drilled as a vertical borehole close to the mapped crest of the Hummer prospect, to obtain an optimum evaluation of the Forties Sand reservoir and its hydrocarbon content. In the event of success a sidetrack was to be drilled to delineate the accumulation. The information gathered was intended be used to evaluate whether a development would be feasible.

The main objectives of the well were:

- Drill the well without harm to human or environment
- Evaluate the hydrocarbon content and reservoir quality of the Forties Sand Member.
- Evaluate the hydrocarbon and reservoir quality of the Mey Sand Member.
- Obtain wireline data of the porosity and hydrocarbon saturation over the entire prospective reservoir section
- Obtain data on reservoir permeability and sedimentology, by cutting core over any hydrocarbon bearing interval.
- Determine formation pressures.
- Obtain a sample of any hydrocarbons present in the well for analysis
- Obtain geophysical data (check shot and shear wave) to integrate with seismic.

4.2 RESULTS

The well was spudded on December the 14th 2005 and permanently Plugged and Abandoned on February 2nd 2006.

A Forties reservoir was penetrated at 3135 m MDRT (3094 m TVDSS), +3m low from the prognosis, however no hydrocarbons were encountered.

A 46m core (4”) was cut in the Forties sandstone Member, from 3141.5m to 3187.5m MDRT. The core recovery was 98% (44.9m)

The well reached a Total Depth of 3434 m MDRT (3392 m TVDSS) in the Shetland Group.

5 FORMATION TOPS
5.1 LITHOSTRATIGRAPHIC TOPS

FORMATION	PROGNOSED		ACTUAL		DIFF	TVT
	m MDRT	m TVDSS	m MDRT	m TVDSS	m + /-	M
Nordland	114	74	114	74	0	1561
Hordaland	1642	1602	1675	1635	+33	920
Base Oligocene	2565	2525	2595	2555	+30	468
Balder	3081	3041	3063	3022	-19	31
Sele	3091	3051	3094	3053	+2	202
Upper Forties	3131	3091	3135	3094	+3	10
Lower Forties	3141	3101	3145	3104	+3	90
Sele			3236	3194		
Lista	3236	3196	3296	3255	+59	72
Maureen	3347	3307	3368	3326	+19	50
Ekofisk	3395	3355	3418	3376	+21	16
TD	3415	3375	3434	3392	+17	

6 STRATIGRAPHIC EVALUATION
6.1 LITHOSTRATIGRAPHIC SUMMARY

NORDLAND GROUP: 114m MDRT (74 m TVDSS)
This section consisted of limestone, clay, sandstone and claystone. The limestone, seen at the start of the sampling, was white to yellowish grey, very pale orange, light grey, hard to very hard, sub blocky to angular. It was argillaceous in part and microcrystalline. Also present were traces of chert.

The clay was medium dark grey to dark grey, soft, amorphous and sticky. It was generally calcareous and sometimes contained traces of carbonaceous matter. The clay varied from being slightly sandy to very sandy, grading to argillaceous sandstone. Traces of shell fragments were common.

Sandstone was present in the upper half of the Nordland group. It consisted of loose quartz grains, mainly very fine to fine sized, occasionally medium. They were clear to translucent, sub-rounded to rounded and commonly sub-angular, and moderately to well sorted. Mica was commonly present in the samples.

The claystone was dark grey, medium grey and olive black to olive grey. It was usually firm, though softer in the upper part of the sequence. It was firm to moderate hard in the lower part of the Group. The claystone was sub blocky, blocky and sometimes amorphous. It was sticky, homogenous, and slightly calcareous to very calcareous. Carbonaceous materials were seen towards the base of the Group.

HORDALAND GROUP: 1675 m MDRT (1635 m TVDSS)
This section consisted of claystone with stringers and lenses of limestone and dolomite.

The claystone was dark brownish black to dark olive black, becoming olive black and olive grey in the middle part of the sequence. In the lower part, the claystone was dominantly dark greenish grey and more rarely dusky brown. It was firm to moderately hard and sub-blocky. Disseminated micropyrite and carbonaceous inclusions were present at times. The claystone was generally non calcareous, in parts it was very calcareous.

The limestone/dolomite was usually moderate yellowish brown, dark yellowish brown to dusky yellowish brown. It was firm to moderate hard, sub-blocky to blocky and occasionally crumbly. It was microcrystalline and occasionally carbonaceous. Dark argillaceous striations were commonly present.

ROGALAND GROUP:
The Rogaland group consists of the Balder, Sele, Lista and Maureen formations.

BALDER FORMATION: 3063 m MDRT (3022 m TVDSS)
The Balder formation consisted of claystone (tuffaceous) and limestone stringers.

The claystone was varicoloured; olive grey to dark greenish grey, dusky brown, medium dark grey and olive black. It was generally firm, sub-blocky to blocky, occasionally carbonaceous and slightly calcareous. The claystone became more tuffaceous towards the base of the formation. The colour was mainly moderate bluish grey and speckled.

The tuffaceous claystone was pyritic, silty and slightly to very calcareous.

The limestone was dark yellowish grey, off white, yellowish grey and light olive grey. It was moderately hard, blocky to sub-blocky and occasionally crumbly. Thin dark striations were present and the limestone was slightly argillaceous.

SELE FORMATION: 3094 m MDRT (3053 m TVDSS)
The Sele formation consisted of a claystones and sandstone/claystone, the Forties Sandstone Member.

The claystone was predominately olive black, firm to moderately hard and blocky. It contained disseminated micropyrite and was occasionally very micropyritic. Carbonaceous materials were rarely seen. It was slightly silty and was non-to slightly calcareous.

FORTIES SANDSTONE MEMBER: 3135 m MDRT (3094 m TVDSS)
The Forties Sandstone Member was dominantly sandstone with interbeds of claystone.

The sandstone was light grey to medium grey and light olive grey. It was firm, occasionally calcite cemented, commonly with an argillaceous matrix. Glauconite inclusions and traces of pyrite were commonly present. The quartz grains were very fine to medium, occasionally coarse, and moderately sorted. The grains were sub-angular to sub-rounded and transparent to translucent. SHOWS: The visible porosity was poor. Faint hydrocarbon odour was common, and a bright white to yellow direct fluorescence was seen in the upper part of the Forties Member. A moderate fast cloudy bluish white cut fluorescence with no residual ring was present in the uppermost part of this Member. The shows became patchy below 3153m MD, and no shows were seen below 3164m MDRT.

The claystone was olive black to olive grey, firm to moderately hard, sub-blocky and generally non to slightly calcareous. Disseminated micropyrite and carbonaceous materials were common. The claystone was silty and in parts slightly sandy.

LISTA FORMATION: 3296 m MDRT (3255 m TVDSS)
The Lista formation was dominantly claystone, with minor sandstone and siltstones present towards the base of the Formation.

The Claystone was olive grey to olive black, dark greenish grey, and more rarely dusky brown. It was firm to moderate hard, blocky, slightly micropyritic and occasionally carbonaceous. The claystone was slightly calcareous in the upper part of the Lista formation, becoming increasingly calcareous and silty towards the base, in parts grading to siltstone.

The sandstone was usually light to medium dark grey, sometimes light olive grey. It was firm to soft, with dark and white striations. The sandstone was in general slightly calcareous, with glauconite inclusions and traces of pyrite. It was kaolin/silica cemented. The quartz grains were transparent to translucent, sub-angular to sub-rounded. The grain size was very fine to medium, and rarely coarse, with moderate sorting.

The Siltstone was olive black, firm to moderate hard and sub-blocky. In general, it was calcareous and slightly carbonaceous.

MAUREEN FORMATION: 3368 m MDRT (3326 m TVDSS)
The Maureen formation consisted of claystone, with interbeds of limestone, sandstone and siltstone.

The claystone were olive grey to olive black, brownish black, dusky brown and dark greenish grey. It was moderate hard to firm, blocky, sub blocky and slightly micropyritic. In general the claystone was slightly calcareous, in parts very calcareous, and grading to marl. The claystone was also silty, sometimes grading to siltstone.

The limestones were medium grey to light grey, olive grey and light greenish grey. It was firm to moderately hard, blocky, microcrystalline, occasionally sandy, with thin dark striations. The limestone was argillaceous, occasionally very argillaceous and grading to marl.

The sandstone was light grey to medium dark grey and light olive grey. The consolidated sandstone was soft to firm, with a calcareous cement. The quartz grains were very fine to medium, more rarely coarse, with a moderate sorting. The grains were transparent, translucent, sub spherical, and sub-angular to sub-rounded. Pyrite inclusions and a carbonaceous coating were at times seen on the quartz grains.

The siltstone was usually olive black, firm to moderately hard and sub blocky. It was in parts carbonaceous and slightly to very calcareous.

SHETLAND GROUP
EKOFISK FORMATION: 3418 m MDRT (3376 m TVDSS)
The colours of the limestone ranged from medium grey, to medium light grey, light grey and very light grey. It was moderately hard to hard, blocky, brittle, microcrystalline and in parts slightly sandy. Thin dark striations were seen on the limestone cuttings.

7 GEOLOGICAL DATA ACQUISTION

Wellsite geological supervision was provided by: Jay Patel, Rune Heggernes, Dave Tinsley and Atle Scholze. Wellsite Geological services began at 200 m MDRT with first returns. The Mudlogging Contractor Halliburton, provided a full crew of 2 Data Engineers and 2 Mudloggers.

7.1 CUTTINGS SAMPLES

7.1.1 Sampling Programme

Type	Set	Company	Boxes	Depth	Sent to
Unwashed / wet	A and B*	Paladin	1 - 19	200 - 3434	Reslab
Unwashed / wet (BioStrat)	C**	Paladin	1 - 9	2500 - 3434	Reslab
Unwashed / wet	D*	NPD	1 - 19	200 - 3434	Reslab
Unwashed / wet	E*	BG	1 - 19	200 - 3434	Robertsons
Unwashed / wet	D*	DNO	1 - 19	200 - 3434	Reslab
Washed / dried	G and H*	Paladin	1. - 2	200 - 3434	Reslab
Washed / dried	I*	NPD	1 - 2	200 - 3434	Reslab
Washed / dried	J*	BG	1 - 2	200 - 3434	Robertsons
Washed / dried	K*	DNO	1 - 2	200 - 3434	Reslab
Mud Samples	L	Paladin	1	750, 1530, 3147 & 3187***	Reslab

* missed samples 310, 330, 360, 380, 600, 610, 630, 840, 1050, 1280, 1300, 2240, 3141-3187, 3236, 3284, 3293 m MDRT
** missed samples 3141-3187, 3236, 3284, 3293 m MDRT
*** mud samples taken at start of hole sections, before and after coring

7.1.2 Sample Intervals

Samples were caught from first returns and were caught at the following intervals:

Interval	Sample Type	Frequency (m)
200 to 2500 m MDRT	Unwashed Wet Cuttings	10
	Washed and Dried	10
2500 to 3434 m MDRT	Unwashed Wet Cuttings	3
	Washed and Dried	3

7.2 LWD DATA

Halliburton provided the MWD / LWD services. The planned LWD data acquisition programme is outlined in Table 7-1.

Table 7-1: 1/2-2 Programmed Data Acquisition

Hole Size	Data Acquisition
9 5/8" Pilot Hole	**MWD/LWD** GR / RES/ DIR / PWD
24"	DIR
17 1/2"	GR / RES/ DIR / PWD
8 1/2"	GR / RES/ DIR / PWD

7.2.1 MWD/LWD FORMATION EVALUATION & PD PERFORMANCE

7.2.1.1 9 5/8" Pilot Hole

A pilot hole of 9 5/8" was drilled from 176m to 703m MDBRT, this was then opened up to 24", to a depth of 703m MDBRT. An MWD suite of GR/RES/DIR/PWD was used for the pilot hole and a directional only assembly for the hole opener. The hole was displaced to 1.15 SG KCL mud.

7.2.1.2 17 ½" Hole

The 20" casing shoe was set at 697m MDBRT. The 17 ½" hole was drilled from 703m to 706m MDRT and a FIT to 1.61 sg EMW performed. The section was drilled with 1.39-1.41 sg KCl mud, to the TD of the section at 1492 m MDBRT, using a rotary assembly with a tricone insert bit. The MWD suite consisted of GR/RES/DIR/PWD.

7.2.1.3 8 1/2" Hole

13 3/8" casing was run to 1497m MD BRT without problems, and successfully cemented. A 12 ¼" clean out run was performed to 1510m MDBRT, where the hole was displaced to 1.55 SG OBM. A LOT to 1.81 SG EMW was performed. An 8 ½" rotary BHA was picked up with a GR/RES/DIR PWD MWD package and drilling commenced. During this run, some problems with the pulser not working were experienced, but these were rectified by cycling the pumps, and little time was lost. After the coring run, a similar drilling assembly was picked up, and after reaming the cored section, drilled to TD at 3434m, without problems. The memory data was successfully downloaded.

7.2.2 MWD/LWD DATA QUALITY

7.2.2.1 9 5/8" Pilot Hole / 24" Hole

Good quality data, no detection problems or data anomalies.

7.2.2.2 17 ½" Hole

Initially when started drilling the GR traces showed too high values. The MWD engineer had not changed hole size to 17.5". Shallow phase resistivity had too low readings. After changing the calibration the shallow resistivity read correctly.

7.2.2.3 8 ½" Hole

Good data quality, no anomalies but occasional pulser problems during run 3. POOH for coring. Good logs below cored interval to TD.

7.2.3 MWD FAILURE ANALYSIS

7.2.3.1 9 5/8" / 24" section, 176 – 703m MD BRT.

No failures or downtime recorded.

7.2.3.2 17 ½" section, 703 – 1492m MD BRT.

Detection was good down to 1330m where the MWD pulser stopped working. No real-time data between 1330m and 1420m. Between 1420m and TD of section at 1492m the pulser worked intermittently.

7.2.3.3 8½" section, run 3: 1510 – 3141m MD BRT.

MWD pulser failed several times. However, the pulser could be restarted by cycling the pumps. Computer hang-up resulted in half an hour downtime.

7.3 MWD RECOMMENDATIONS / FOLLOW-UP

No issues to follow up.

Table 7-2: Data Acquistion Summary

MWD/LWD Run	BHA No	Depth In	Depth Out	Max. Temp. Deg C	Formation Evaluation Data	Acquired Data Memory		Comments
						m	%	
1	1	176m	703m		DGR/EWR-P4/DIR/PWD	176	100	Good run. Some data gaps in real time due to surface software issues.
2	2	697m	1507m		DGR/EWR-P4/DIR/PWD	810	100	Intermittent Pulser problems from 1326m affecting RT data. Res memory OK
3	3	1507m	3142m		DGR/EWR-P4/DIR/PWD	1635	100	Good run. Occasional pulser problems .POOH for coring
4	4	3142	3434m		DGR/EWR-P4/DIR/PWD	292	100	Good run. No problems. TD

Table 7-3: Well Name - Failure Summary

MWD/LWD Run	Failure	Comments
2	MWD pulser stopped working. No real-time data between 1326m and 1420m. Between 1420m and TD of section at 1492m the pulser worked intermittently.	Cause unknown, to be investigated in town.
3	MWD pulser stopped working several times. However pulser could be restarted every time by cycling the pumps.	Cause unknown. To be investigated in town.

7.4 WIRELINE LOGGING

7.4.1 Introduction

Schlumberger were subcontracted by Halliburton to provide the wireline services. The job took place from the 21st January to the 22nd January, 2006.

The 1st Schlumberger crew arrived on board on the 14th January to check the logging unit and perform the tool checks. The 2nd crew with the seismic specialist arrived the 18th January.

The logging unit and auxiliary equipment (including rig up and fishing equipment) looked in good condition, the crew performed an inventory prior to the start of the job and all required items were present.

The logging program was the dry hole case.

- AIT-DSI-PEX-NGT
- Checkshots

A MDT run had been planned but was cancelled.

7.4.2 Prejob Checks and Tool Preparation

The crew completed all the checks prior to the start of the job on January 21st with four failures or deficiencies found and reported. These were:

1. The Interact system was not operating when the crew arrived, the cable from the unit to the radio room had not been installed. After the rig electrician installed the cable, the engineer completed the Interact system installation but was only able to get one computer system (the acquisition computer) working on the interact system.

2. The backup logging head was missing a lower pin connection; a backup was mobilized and arrived on the rig prior to the start of the job.

3. There were severe fluctuations in the CMR head voltage and current when checked. The CMR was operating normally other than this power fluctuation but this may be an indication

that there is a fault with the tool or it will fail shortly. There was no CMR backup and SLB could not supply another CMR to replace the tool onboard.

4. The backup NGT failed the wellsite calibration. SLB could not provide another NGT to replace the backup.

7.4.3 Logging Job

Total operating time was 35.0 hours with 1.0 hour downtime:

	AIT-DSI-PEX-NGT	AIT-DSI-PEX-NGT	Checkshots	Totals
Total time	7.75	14.25	13	35.0
Downtime	0	0	1	1.0
(%)	-	-	92.3%	97.1%

7.4.4 Depth Control

Schlumberger's depth control was adequate and comparison with the driller's casing shoe was within a meter (Driller's casing shoe = 1497 m, Logger's casing shoe = 1496 m).

7.4.5 Run 1A AIT-DSI-PEX-NGT 1st attempt

The Schlumberger T-bars, sheave wheels and 1st toolstring were rigged up. The head was connected to the toolstring and it was checked. The toolstring was RIH to just above the casing shoe.

The down log from the casing shoe was started. While RIH the toolstring held up at 1510 m, but fell through as soon as the cable was stopped. The toolstring experienced irregular downward movement from this depth until it held up at 1554 m. While attempting to pass this depth the toolstring became stuck in the upward direction at 1548 m. The toolstring could be RIH to the original holdup depth at 1554 but would not pass 1548 while POH. The toolstring was freed after repeated overpulls to 2000 – 3000 lbs and relaxing the pull and RIH to make another attempt. The toolstring was pulled back into the casing shoe with several more overpulls of 1500 - 3000 lbs before the casing shoe was reached. The toolstring was POH, the data acquisition was recorded for this section as per the program (GR to surface). A wiper trip was run to condition the hole for further logging.

7.4.6 Run 1A AIT-DSI-PEX-NGT

After the conditioning trip the toolstring was rigged up and RIH. The down log was started at the casing shoe and recorded to 3330 m. The toolstring set up at 3415 m MDRT, 3 attempts were made to pass this depth unsuccessfully. The hi-resolution data and repeat section was recorded from 3330 to 3100 m. During acquisition and playback the hi-resolution data did not appear on the

presentations. The DLIS files were checked and it appeared the data was there but due to software problems it was not being presented for viewing. The remainder of the logging program was continued and was recorded without further incident. After finishing all data acquisition the computer system was re-booted and the software re-loaded. The hi-resolution data was present on the DLIS files and the presentation of the hi-resolution data was made.

There were no hole problems on this run.

Logging intervals were as follows:

Details	Interval
AIT/PEX	TD (3415 m) to 30 m above top Balder (3030 m) normal resolution. Hi-resolution from 3330 – 3100 m.
DSI	TD (3415 m) to casing shoe (1496 m), P&S and 1 dipole.
Gamma ray	TD (3415 m) to casing shoe (1496 m). GR to surface recorded on previous attempt.

The bottom-hole temperatures from the maximum reading thermometers were: 134, 136, 136° C.

The toolstring was run with eccentered 1.5” standoffs.

7.4.7 Run 1A Checkshots

The toolstring was rigged up and checked. The toolstring was RIH to 624 m for the first checkshot. No hydrophone signal, primary or backup, was detected on the checkshot. The surface equipment was checked. The hydrophone signals were connected to an alternate data channel on the surface equipment. The checkshot at 624 m was recorded. The toolstring was RIH and the GR correlation was made over the interval 3380 – 3300 m. The first checkshot level at 3400 m was recorded and checkshots were recorded every 100 m to 3000 m. Again at 3000 m the hydrophone signals could not be detected. The acquisition system was shut down, all software re-loaded and all surface connections were checked. Upon restarting the survey the hydrophone signals were detected and the checkshot was recorded from 3000 without further incident. The two hydrophone incidents incurred 1 hour lost time during the job.

The bottom-hole temperatures from the maximum reading thermometers were: 138, 138, 138° C.

The toolstring was run with eccentered 1.5” standoffs.

7.5 CORING

A 46m core (4”) was cut in the Forties sandstone Member, from 3141.5m to 3187.5m MDRT. The core recovery was 98% (44.9m). A core depth adjustment of +3.8m was applied to match wireline data (main run, bottom section). See Enclosure 4 for wellsite core chip descriptions.

7.6 SIDEWALL CORES

There were no sidewall cores taken on this well.

8 CPI ANALYSIS

The CPI analysis was carried out by Logtek AS.

8.1 CPI ANALYSIS, METHODOLOGY AND SUMMATIONS

The following methods were applied for the computer processed interpretation (CPI):

1. The analysis is based on preliminary data.
2. Core data had to be adjusted +3.8m to match wireline data (main run, bottom section).
3. Volume of Shale, VSH, estimated as the minimum of clay volume from GR and clay volume calculated from a combination of Density and Neutron logs
4. Porosity is estimated based on density log and adjusted to match net sand porosity from core data.
5. Water saturation is calculated based on Archie equation.
6. Average net sand properties are calculated based on cut of 0.167 (~ 1 md) on porosity and 0.5 on VSH. The values are listed in table 1 below.

Input logs are found in the file: **WL_PETRO_COMPUTED_INPUT.LAS**
Output logs are found in the file: **WL_PETRO_COMPUTED_OUTPUT.LAS**

PARAMETER VALUES:

Shale volume calculation Calculation:
Input logs: GR, RHOZ, TNPH
GR-clean =30
GR-clay =105

Clean sand points have been picked from N-D crossplot:
Clean line point 1:
Neutron porosity 0.0
Density 2.66

Clean line point 2:
Neutron porosity 0.27
Density 2.23

Shale parameters have been picked from crossplot and visual inspection of the logs:

Shale Neutron porosity 0.42
Shale Density 2.55

Water saturation using Archie equation:

Input logs: PHIT, AT90

Electrical properties

Lithology factor (a) = 1.0
Cementation exponent was determined based on the Rw calculated porosity and resistivity log using a Pickett plot.
Cementation exponent (m) = 1.95
Saturation exponent (n) = 2.0

Formation water resistivity

Formation water resistivity was based on water extracted from the core and adjusted to 270 deg F.

- Rw = 0.03 Ohm-m @ 270 deg F
- Formation T=270 deg F

Output logs

Shale volume:	VSH
Total porosity:	PHIT
Water saturation:	SWT

Table 1.: Average Net Sand properties of the Forties Formation

Zone name	Top	Base	NTG	PHIT	SWT
Forties	3129.9	3240.0	0.417	0.19	1.0

WL_PETRO_COMPUTED_PLOT.PDF contains both core and log results.
Sw from core and logs indicate the presence of low hydrocarbon saturation.

WL_PETRO_COMPUTED_INPUT.LAS completed: 25-APR-2006
WL_PETRO_COMPUTED_OUTPUT.LAS completed: 25-APR-2006

9 FORMATION PRESSURE AND TEMPERATURE.

9 7/8" and 24" Hole Sections

No indications of overpressure were observed while drilling the 9 7/8" pilot hole and the 24" hole sections. No trip gas was seen, and the hole was considered to be normally pressured at 1.03 sg EMW. Background gas levels remained relatively low with a maximum of 1.5% seen while drilling the 24" hole section following the pilot hole. Background gas levels remained constant and low.

17 ½" Hole Section

17 ½" hole was drilled, using a rotary assembly, to 1492m MDBRT. After drilling out the 20" shoetrack and 3m of new formation, the hole was displaced to 1.40 SG KCl mud to inhibit the swelling of the clays and to control the anticipated increase in pore pressure experienced in offset wells. A FIT was performed to 1.61 SG EMW.

Drilling went smoothly except for the slow ROP and pasty, sticky cuttings/solids at the shakers. No indication of unstable hole condition such as cavings or connection gasses, except one around 875m TVD. Gas levels continued to rise while drilling to reach a background of 2% by 800m TVD. Two prominent peaks of 5.7% at 806m TVD and 6.8% at 822m TVD (maximum for the section) were seen. These were considered to be drilled gas and did not coincide with connections.

The first indications of overpressure were seen at 875m TVD, from where the D-exponent started to cut back from the normal compaction trend line. The resistivity trend also showed a cut-back. The average gas levels had risen to 2.8%, compared to 0.5% at the start of the section. The D-exponent gave an estimated pore pressure here of 1.08sg. Confirmation of this was a connection gas peak of 1.5% from 872m TVD.

The pore pressure remained unchanged until 1030m TVD when the resistivity readings showed an increase to 1.12 sg EMW. However, the D-exponent showed no indications of an increase. From 1100m to 1300m TVD a cut-back in the resistivity was seen. The D-exponent showed a slight cut-back, resulting in an estimated pore pressure of 1.20 sg at 1193m TVD. From here the resistivity indicated a pore pressure of 1.30 sg at 1300m TVD. Possible confirmation of an increase was the rise in background gas from 1170m TVD, although no connection gases were seen. From here the resistivity tool stopped working, although data were obtained from 1416m TVD in which the cut back from the trend line continued, giving a maximum value of 1.37 sg at 1440m TVD. However, no connection gases were seen and no pressure cavings were observed coming over the shakers with a mud weight of 1.41 sg.

The INSITE calculated D-exponent pore pressure gave a value of 1.26 to 1.29 sg at TD.
The maximum calculated pore pressure therefore varied from 1.26 sg to1.37 sg. No connection gases were seen and the hole was in good condition while drilling, so the upper estimate may have been too high. However, after reaching TD, hole problems were experienced. Tight hole conditions were encountered at 1435m TVD, and after running in hole to TD the mud weight was raised from 1.43 to 1.47 sg. Abundant cavings and soft amorphous sticky clay was seen over the shakers, although no concave pressure cavings were seen. On backreaming out of the hole circulation was lost, and the hole packed-off at 1366m TVD. Rotation was possible and the string could be moved, but 55 bar pressure remained on the pipe after stopping the pumps. Circulation was eventually established and the mud weight was raised to 1.55 sg, before the string could be pulled out of hole. These tight hole conditions, however, were interpreted as being due to swelling clays rather than to overpressured open hole sections.

8 ½" Hole Section

The initial pore pressure for this section was interpreted to be approximately 1.37sg. Pore pressure was estimated to increase from 1.37 sg at 1500 m to 1.49 sg at 1900m (based on resitivity, D-exponent,gas, cavings etc). Low background gas (0.2 %) and some smaller gas peaks (0.5-1.2 %) was observed through the interval. The peaks are interpreted as formation gas. No connection

gases were observed. A general trend, however, of increasing gas peaks (FG) from 0.6% to 1.2% was observed throughout the interval 1600m to 1810m. Some cavings were observed through the interval (Blocky stress relief type, 2cmx3cmx0.5cm). No pressure cavings were observed.

While circulating the hole clean after packing off at 1647m, 30 % cavings were observed (Blocky stress relief type, 1cm x 1cm x 0.3 cm).

The hole condition while performing a wiper trip at 1905m indicated that the hole was in a very good condition with no indication of poor hole cleaning or drag. 3 m of fill was observed on bottom after wiper trip (cuttings, no cavings).

Below 1900m to 2100m, the pore pressure estimate drops to 1.45 -1.46 sg. From 2100m to 2260m there is a slight gradual increase in background gas which corresponds with decreases in Resistivity and Dxc, suggesting a rise in pore pressure to 1.48 sg. From 2280 m to 2320 m there is a more pronounced increase in back ground gas and further decreases in Resistivity and Dxc, indicating an estimated pore pressure of 1.53 sg from 2370m. 0.70% connection gas was observed at 2388m

From 2480m increases in the Dxc were observed suggesting a decrease in pore pressure to 1.50 sg; this value remained constant until 2646m. The Resistivity exhibited fixed pore pressure values over the interval 2480m-2626m at 1.53 sg. From 2646m a clear cutback in Dxc and sigma was observed, with slight increase in background gas, suggesting an increase in pore pressure to 1.53-1.54sg.

From 2700m, further increases in both background gases from 0.6 to 1.0% and connection gases from 0.3 to 0.7% were observed.

From 2800m Both Resistivity and Dxc data became more variable. Connection Gas, however, was still present to 2928m, suggesting a pore pressure of 1.52 sg. From 2928m the Background gas decreased slightly. This coincided with a slight increase in the Dxc and Sigma suggesting the pore pressure had decreased to 1.48 sg at 3000m.

Down to the top of the reservoir the pore pressure is thought to decrease gradually to 1.27 sg at 3098. The Upper forties sandstone was approached at 3034m. The normal trend curves are no longer applicable when a change in formation occurs, but gas levels and the sigma log indicated a decreasing pore pressure to approximately 1.28-1.30 sg through the Upper Forties sand and to TD.

When tripping out of hole from TD some considerable amount of tight hole was experienced at 3240m. A maximum over pull of 30 mton was recorded. The reason for this was thought to be due to a ledge created on the last stand where there was a dogleg of 3.7 degrees.

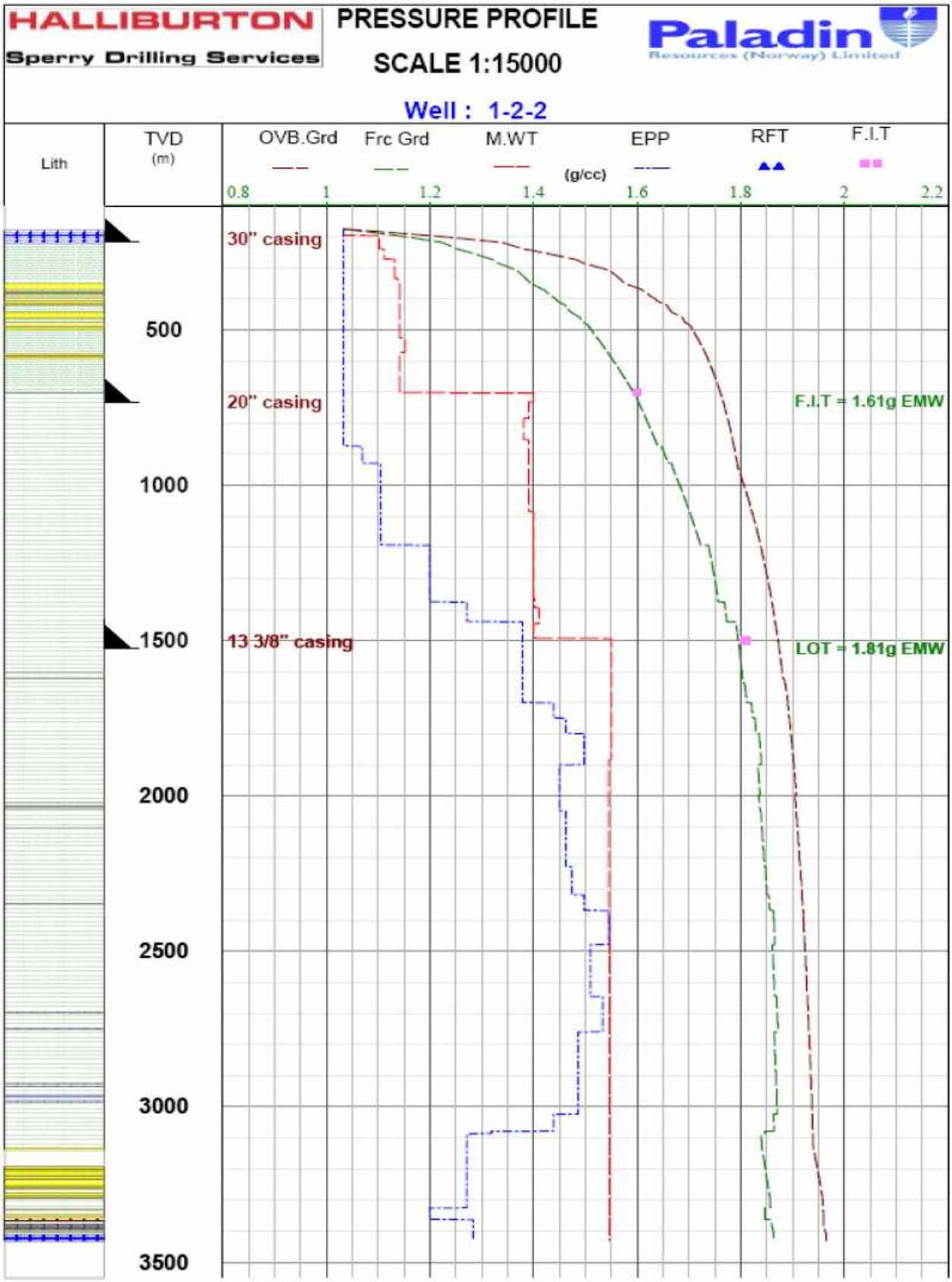


Figure 9-1: Pore Pressure Graph

Section B

Drilling

And

Well Operations

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1 GENERAL INFORMATION

Well 1/2-2 was drilled as an exploration well, and the main objective was to determine the presence of commercial volumes of hydrocarbons within the Forties formation of the Hummer Prospect.

A secondary objective was to acquire reservoir pressure data and geological data, to improve reservoir understanding and future field development.

This report covers all operations from drilling to permanent P&A.

The operation was performed using the jack up rig Mærsk Giant, which arrived on location December 10th at 18:30.

The well was spudded at December 14th at 08:00 and it was left after permanent Plug and Abandonment February 2nd at 23:35.

2 GENERAL WELL DATA

WELL LOCATION

Area	Norwegian North Sea	**Well Classification:**	Appraisal
Field	Hummer	**Well design basis:**	Exploration
PL number	143CS	**Block**	1/2
H_2S, level of preparedness:		0	
Well Identification:	1/2-2		
Spud location	Lat : 56^0 59' 32.022" N Long : 02^0 29' 47.742" E	X= 6316775 Y= 469411.5	
TD		fddfggdsfgdf	

DRILLING RIG

Name:	Mærsk Giant	**Rig heading:**	315°
Type:	Jack Up		
RKB-MSL:	40 m	**Water depth :**	74m

3 BOP SKETCH

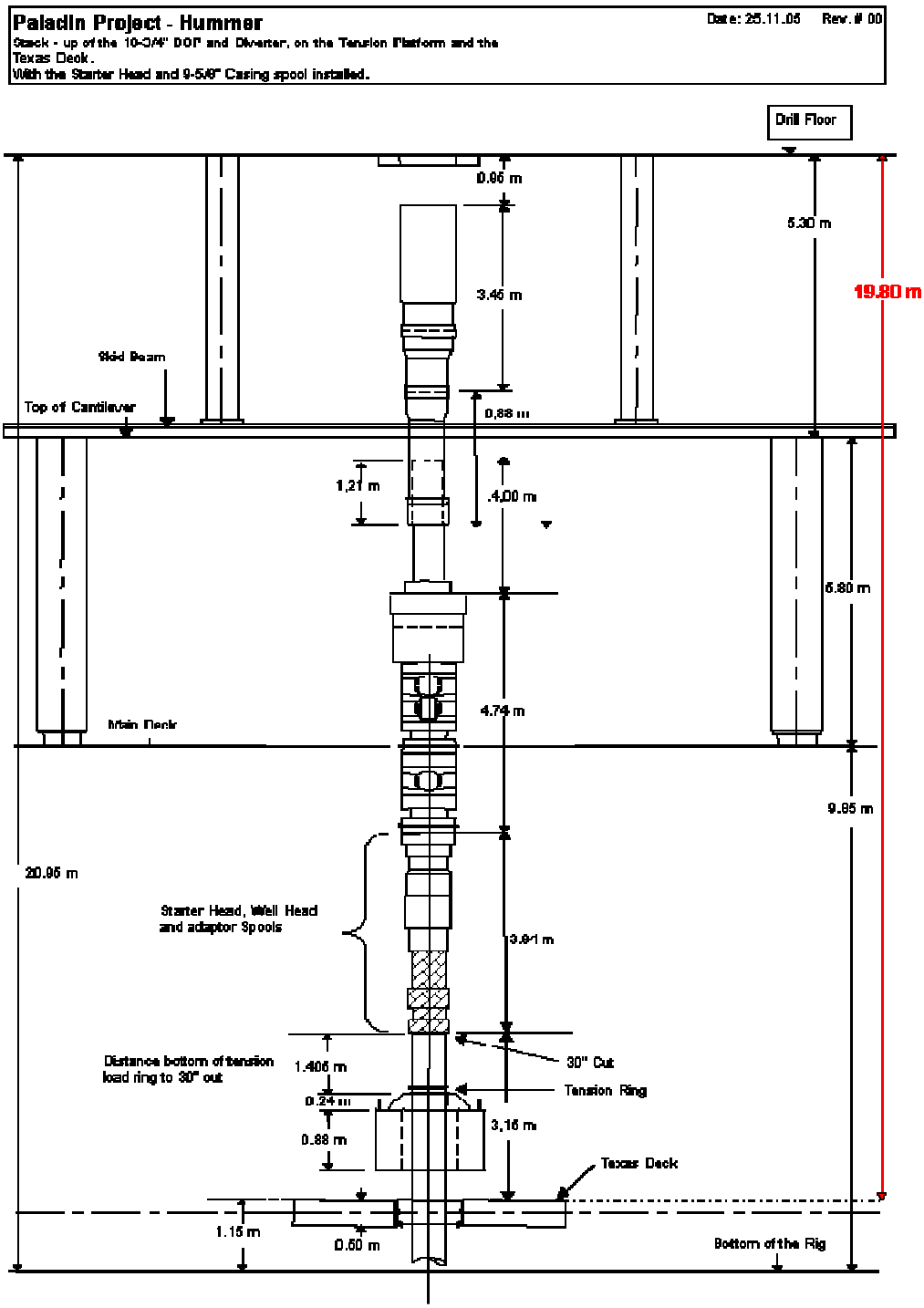


Figure 3-1 **Mærsk Giant Pressure Control Equipment**

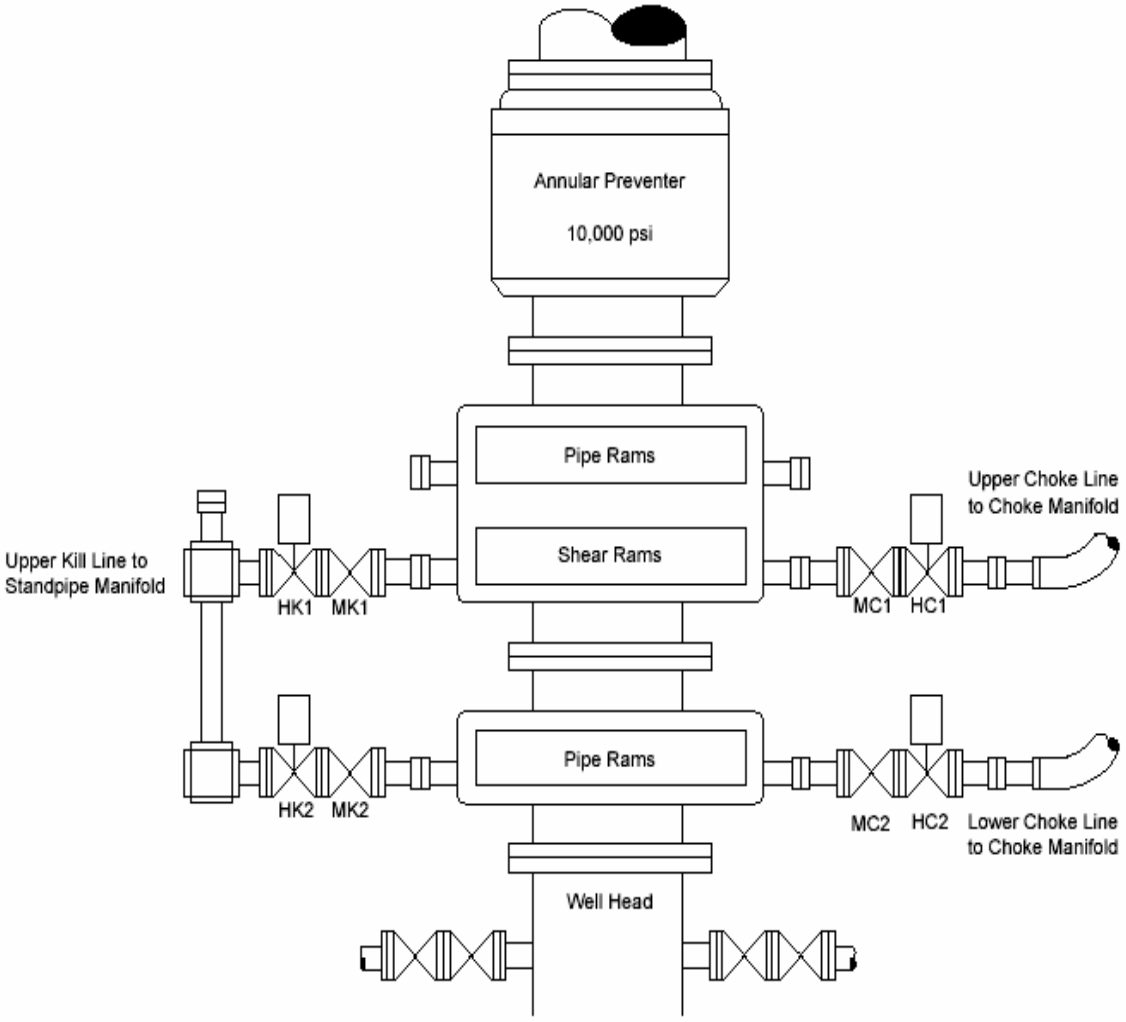


Figure 3-2 Mærsk Giant Pressure Control Equipment

4 LIST OF MAIN CONTRACTORS

Service	Company	Address	Contact	Phone	Fax
Rig*	Mærsk Contractors Norge	Christian August Thoringsv. 9, 4033 Stavanger	Jakop Odgaard	52017025	52017001
Multi-services**	Halliburton	Postboks 200, 4065 Stavanger	Jarl Hovden	51837000	51838383
Wireline	Schlumbereger	Risabergveien 3 Tananger	David Cameron	51946654	51946001
ROV	Oceaneering	Jåttavågen , Hinna	Egil Egeland	51825127	51825290
Wellhead & Conductor	DrilQuip	Lagerveien 31 4033 Stavanger	Torstein Lunder	51443700 90185192	51443701
Tubular services	Vallourec & Mannesman	Nortsea Base	Fraser MacDonald Terje Gamborg	+44 1224 279352 90939899	+44 1224 279341
Casing running	Odfjell Well Services	P.O.Box 152 4098 Tananger	Vegard Nilsen	51648400	51648401
Base and supply boats	Asco BP	Asco Base	Geir Evertsen Tapio Knut Thomas Kusslid	51647557 52015360	51647550 52015505
Helicopter	Helicopter Services		Personnel Duty	81033261	

*Includes rig positioning, anchoring, and communication
**Directional drilling, bits, MWD, mud, mudlogging, wireline logging, cement, casing cutting and overall service planning.

5 OPERATIONS ORGANISATION CHART

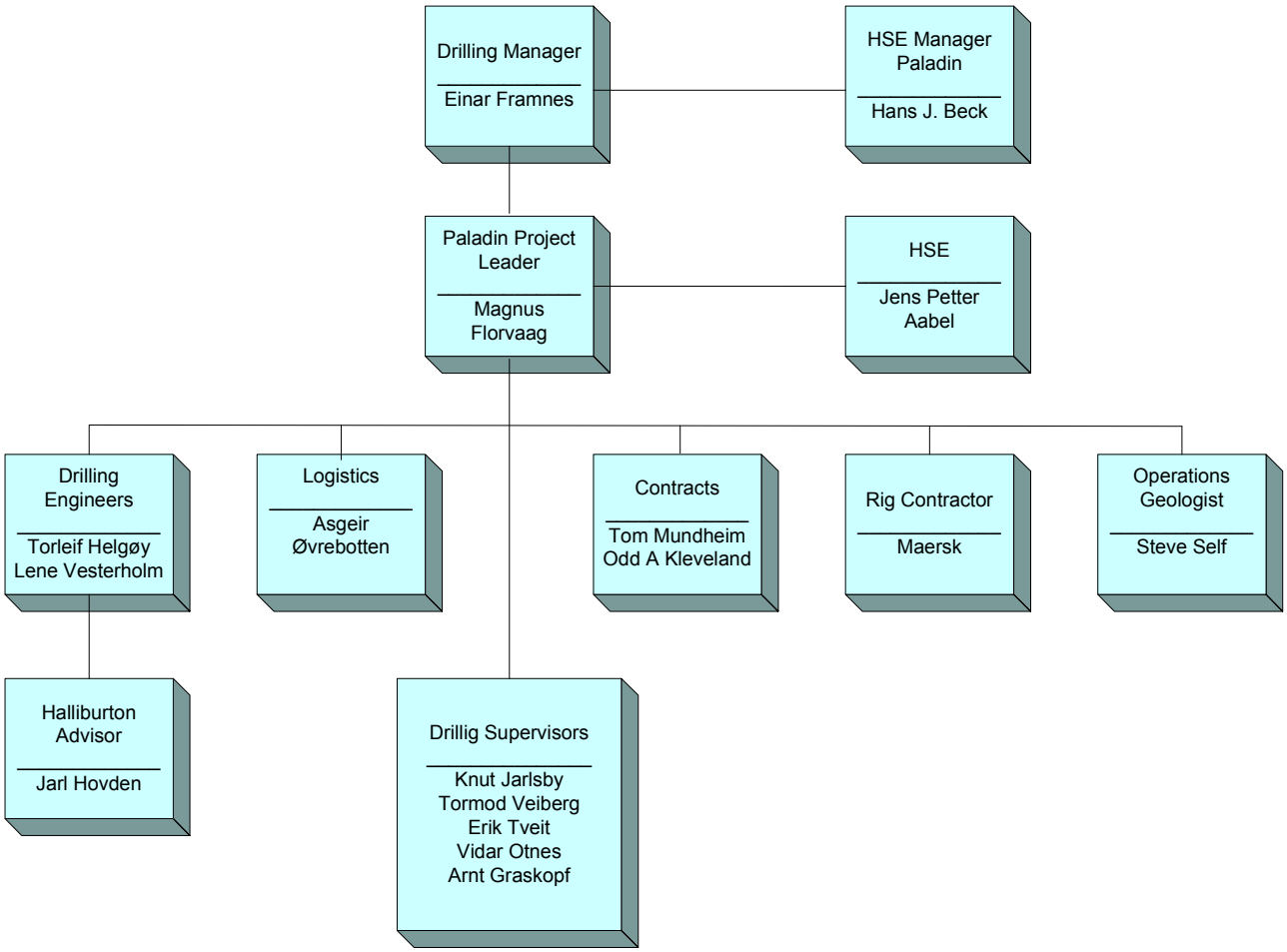


Figure 5-1 Project organization

6 LOCATION MAP

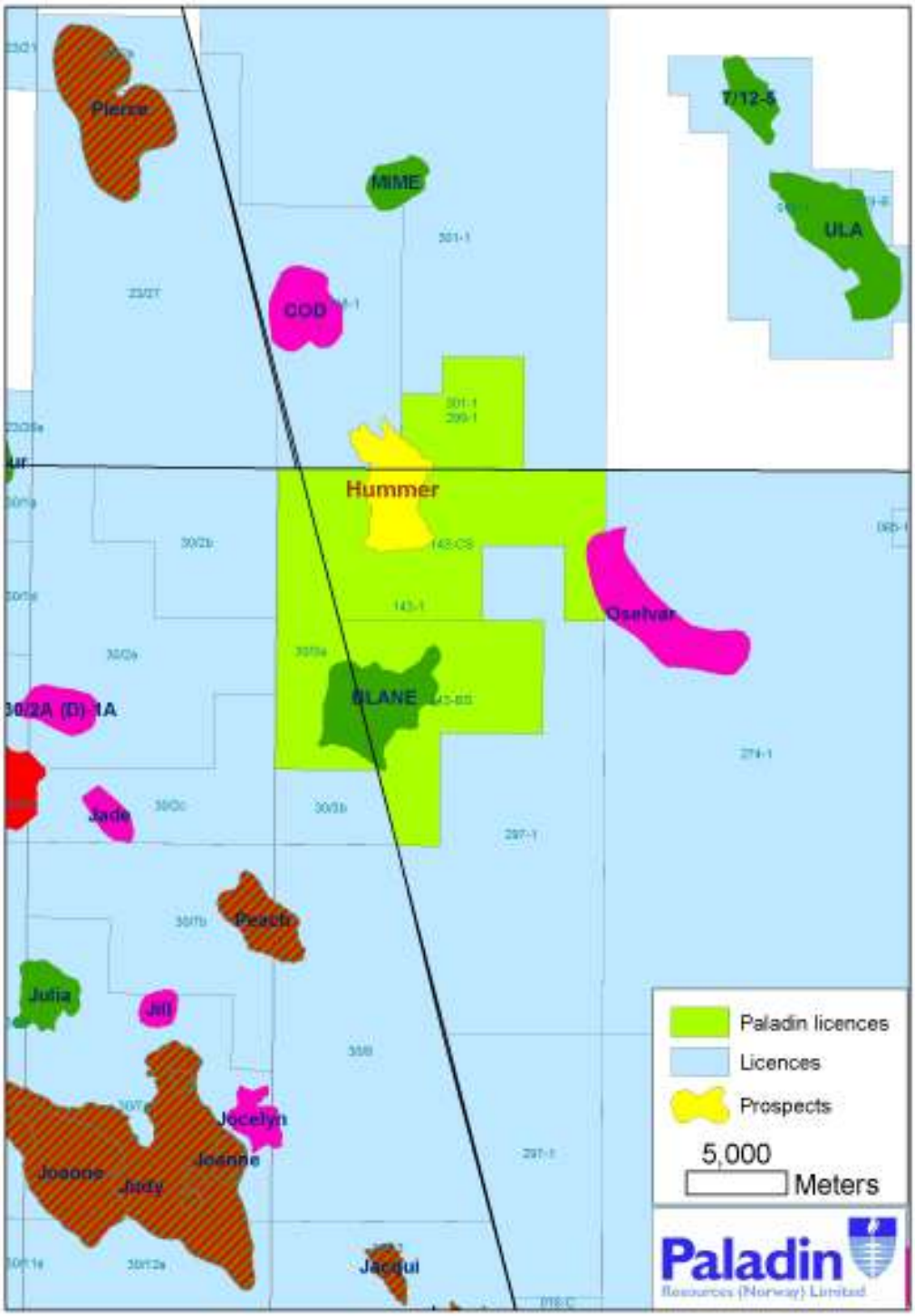


Figure 6-1 Hummer Prospect Location

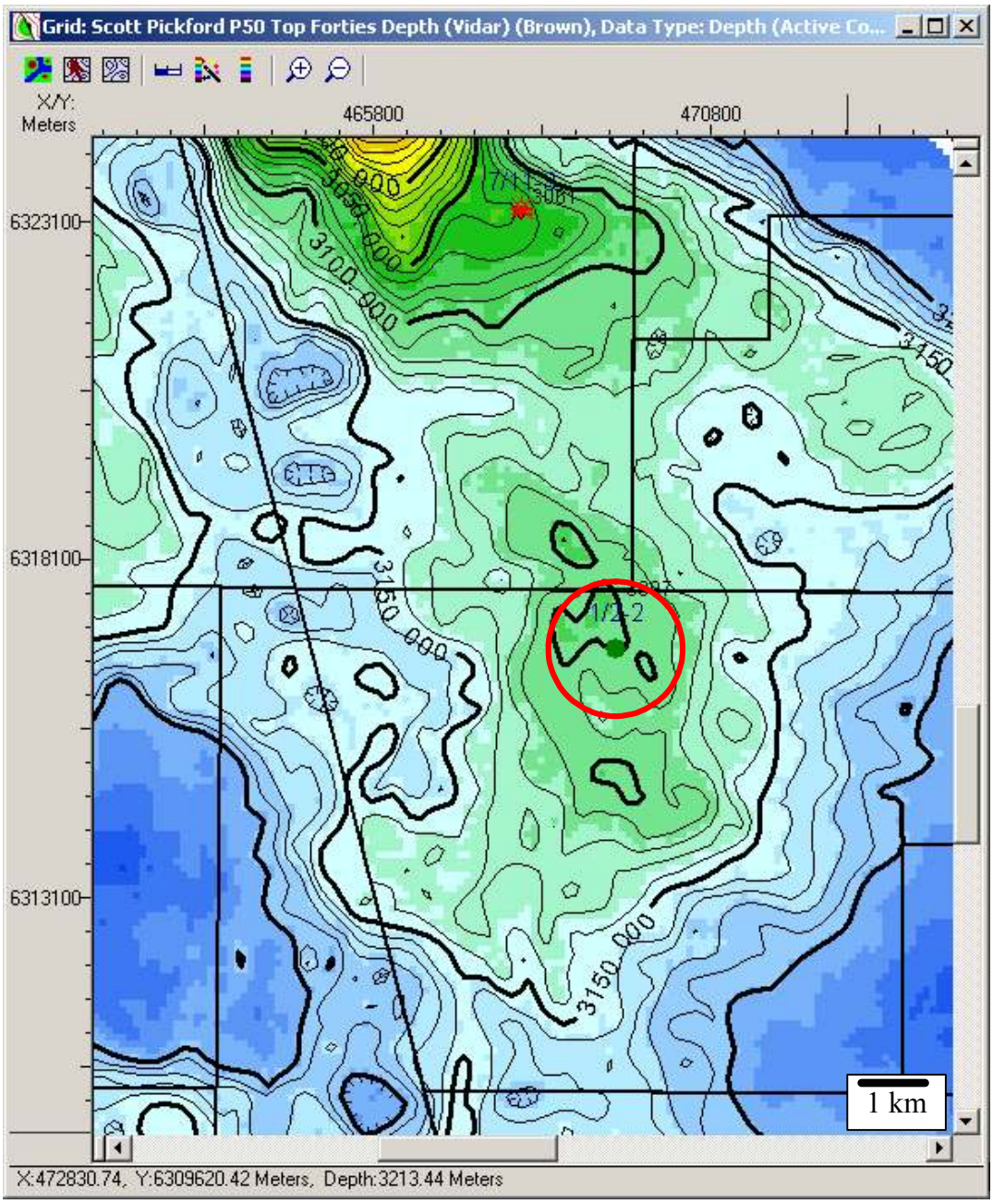
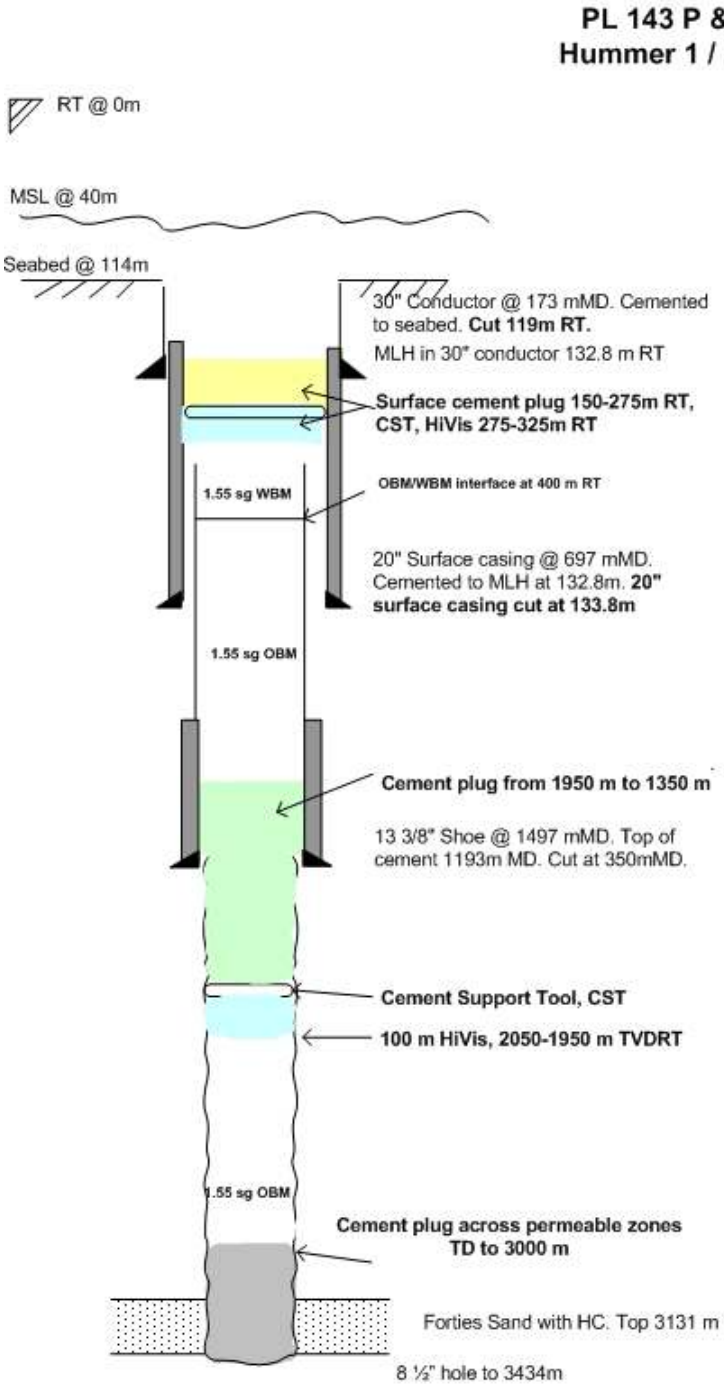


Figure 6-2 **Hummer well location on top Forties Sand Member depth map (meters subsea). Contour interval is 10m.**

7 FINAL WELL STATUS/WELL SKETCH



Well barrier elements	Comments
Primary well barrier	
1. Cement plug	Open hole
Secondary well barrier	
1. Casing cement 2. Cement plug (a)	 Cased hole cement plug installed on top of a mechanical plug.
Open hole to surface well barrier	
1. Cement plug 2. Casing cement	Cased hole cement plug. Surface casing.

Figure 7-1 Final well status

8 OPERATION SUMMARY

Operation commenced December 10th 2005 18:35 when the rig arrived on location PL143CS, Hummer 1/2-2 and finished February 2nd 2006 23:35 when the rig left location.

8.1 RIG MOVE

Transit time:	27.5 hrs
Total time used:	95.5 hrs.
Operational time:	94.5 hrs.
Downtime:	1.0 hrs
Waiting on weather included in NPT:	0.0 hrs

The rig departed from the Aimee location December 09th 2005 15:00 and arrived on location December 10th 2005 18:30 and positioned to final position. The legs were pinned, the hull jacked up to 3.0 m air gap and the preloadoding was done. The rig was jacked up to final air gap of 40.15m after confirming that the spud can penetration was sufficient for operation. The rig was handed over from the Towmaster December 11th 12:30.

8.1.1 NPT and lessons learned

The NPT was caused by a power shut down during jacking up.

8.2 36” SECTION AND 30” CONDUCTOR

Total time used:	167.0 hrs.
Operational time:	59.0 hrs.
Total Non-productive time:	108.0 hrs
Waiting on weather included in NPT:	100.0 hrs

The rig was moved with the primary 36” BHA, 30” conductor string and all drill pipe onboard. The 36” BHA was picked up. Before spudding the Anderdrift tool was tested, but did not respond. It was changed out for the back-up Anderdrift tool. The new Anderdrift was also tested several times, showing too high inclination. Eventually the settings were checked with the supplier and it was discovered that it had been changed without any notice. The inclination was therefore within 1.5° and the well was spudded and 36” hole drilled from 114 m MD to 175.5 m MD using a 17 ½” pilot bit, 36” hole opener and a mud motor. It was drilled with seawater and Hivis pills. It was necessary to ream the hole at 155m and 163m due to well building inclination. Inclination at TD was 1°.
The hole was displaced to 1.50sg bentonite mud at TD. A wiper trip was made, which indicated slick hole The BHA was pulled out and the hole topped up at 124 with a rate below kick in of the motor.

The weather had deteriorated and prevented running conductor through the splash zone. Instead 107 stands of 5” drill pipe was picked up and racked back while waiting on weather. Before the wind speed prevented using the cranes, the 36” BHA was run through the rotary and secured, while waiting on weather. Eventually the BHA was run in hole, but the visibility

was too poor and the current too strong to locate the hole. After another 14 hrs of waiting, a 15 x 10 m crater was observed and a wiper trip was made without any problems.

The 30" conductor shoe was picked up. After another 6 hrs of waiting the conductor was run through the splash zone without damaging the Texas deck. Though the wave height actually increased, the direction changed from port to bow, which allowed the conductor to be run. The 30” conductor was run in hole to 127.2m. The tension system was rigged up. A cement stinger was RIH on 5” drill pipe. The 1.50 sg mud was displaced out of hole with sea water.

The 30”conductor was cemented with 21.8 m3 of 1.56 sg lead and 19.3 m3 of 1.95 sg tail G-neat slurry. The 30” conductor was observed moving around during the cement job due to the wave activity. The 30” conductor was cut at 1.42 m above the tension ring. The 30”landing joints were laid out and the overshot, low pressure riser and the diverter were installed.

8.2.1 NPT and lessons learned for 36” section and 30” conductor

The majority of the downtime was contributed to waiting on weather for running conductor. This can only be mitigated by hammering conductor. The waiting time was used to pick up and rack back stands of 5” drill pipe.

7 hours was lost because the Anderdrift was send out with a different set-up than normal and no information was given about this from the supplier. It is recommended to try running MWD instead of Anderdrift, as the MWD tools have become much more robust.

See next section for lessons learned regarding cementing of 30” conductor

Lessons learned:

Experience / Problem	Recommendation / Solution
Due the weather situation while running the 30" conductor the operations was stopped due to the excessive movement of the conductor when it entered the sea. The conductor "banged" against the texas deck and the operations was stopped in order to have improvement in the weather condition.	If the combined sea is coming from the bow or aft direction of the rig, the operation can continue with higher/stronger wave action than if the sea is coming in from starbord/port sides. The "hinges" on the texas deck will withstand much more force if the sea is coming straight from bow of aft end of the rig.

8.3 9 7/8” PILOT HOLE SECTION

Total time used:	108.5 hrs.
Operational time:	46.5 hrs.
Total Non-productive time, NPT:	62.0 hrs
Waiting on weather and unplanned time included in NPT:	0.0 hrs

Prior to drilling the pilot hole, the shoetrack was drilled out with a 24” bit from 170m to 178m, 3m meter of new formation. Seawater and HiVis sweeps were used for this.

While circulating clean, static losses of 19.3 m^3/hrs was monitored on surface, and the ROV confirmed communication on the outside of the 30” conductor. The BHA was pulled out.

A 5” cement stinger was run in hole and 12 m3 of 1.95 sg G-neat cement slurry was spotted. No returns were noted on surface. Topping up with sea water was stopped, when no returns were noted on surface. The 24” BHA was run in hole again and cement drilled out from 172 to 174 m with losses. A second plug was set. 20 m3 of 1.55 sg lead and 8 m3 of 1.95 sg tail were pumped. The fluid level was observed to rise 10.7 m inside the conductor and cement was observed by the ROV around the conductor. The conductor was not topped up with sea water after pumping the cement.

The 24” BHA was run in hole and cement tagged at 164.5m. Drilling commenced 17 hrs after setting the plug. The cement was drilled out in 4.5 hrs to 178 m. No further significant losses were observed during the 9-5/8” section. The poor cement around the 30” conductor may potentially be attributed to the movement of the conductor during cementing.

The 9-7/8” BHA was made up. The MWD failed and was changed out for the back up. The 9-7/8” hole was drilled from 190-703 m with an average ROP of 19.7 m/hrs. Due to the nearby shallow gas risks the mud weight was kept between 1.10 and 1.15 sg. The hole had to be circulated clean several times due to ECD increasing up to 1.34 sg and dumping and diluting performed on connections.

8.3.1 NPT and lessons learned for the 9-7/8” pilot hole

The majority of the downtime was contributed to curing losses below the 30” conductor to seabed. This is believed to be caused by the conductor moving around during and after the cement job due to the rough seas with a poor cement quality as result. It is recommended to use X-lite slurry as this slurry sets up faster.

8 hrs was lost due to changing out an actuator for the starboard overbord valve on the diverter line.

Lessons learned:

The BHA had 137 m 8" drill collars to increase the back pressure in case of shallow gas. This should be reduced to allow drilling with weighted mud to allow overbalance on connection without creating excessive ECD during drilling. The mud weight was kept between 1.10-1.15 sg, which is a normal weight during a good part of the section, when drilling with dumping and diluting of sea water.

Experience / Problem	Recommendation / Solution
During drilling out cement inside 30" conductor, got massive losses (19.3 m3/hrs) under shoe and up and around 30" conductor to seabed. Rigged up for cement squeeze job. During the cement squeeze job, it was attempting to hold 30" full with seawater, this to obtain volume control and squeeze effect. After cement was pumped (got no returns), did not fill up 30" conductor for reducing hydrostatic pressure. Later it was proved that most of cement was not in place between 30" conductor and formation. A second cement plug was set to heal loses.	If massive losses are experienced after a cement job (up and around conductor to seabed), do not attempt to fill 30" conducor during next cement job. This to reduce hydrostatic pressure and again avoiding cement to be pushed out from desired annulus area. Let water level equalize prior to cement job and use a floating bottle connected to a string for measure water level inside conductor prior and after cement job.

8.4 24" SECTION AND 20" CASING

Total time used:	107.5 hrs.
Operational time:	107.5 hrs.
Total Non-productive time, NPT:	0.0 hrs
Waiting on weather and unplanned time included in NPT:	0.0 hrs

The 24" rotary assembly was run in hole. No MWD was run as the 24" BHA would follow the path of the 9-7/8" pilot hole. The 24" section was drilled from 189m to 703m MD with sea water and 10 m3 hi-vis pill on each connection, dumping and diluting as required. Tight spots were reamed at 252-255m, 267-275m and 292-299m. The average ROP was 18.0 m/hr.

At 703m, the hole was circulated clean and a wipertrip made to the conductor shoe. The BHA was run back to TD, no fill. The hole was displaced to 1.15 sg KCL mud, a flow check made with static losses of 0.9 m^3/hrs and the BHA pulled out of hole.

20" 133 ppf X56 E60/MT casing was run and landed at mudline hanger at with the shoe at 697 m MD. The cement head was installed and annulus displaced to seawater. 94.5m^3 1.56 sg lead cement slurry and 11.3m^3 1.96sg tail cement slurry was pumped, the single plug dropped and displaced with sea water and the plug bumped with 97% efficiency. The wash ports on the mudline hanger running tool were opened and annulus flushed with sea water and then displaced to sea water with sugar. No losses were observed while cementing and no cement was observed to surface during the cementing and the flushing of the annulus.

The 20" casing was pressure tested to 134 bar. The landing string was pulled and the diverter nippled down. The casing head running tool was run on drill pipe and 24 T tension was pulled on the 20" casing, before threading the landing ring down on top of the 30" conductor. The wellhead was nippled up. The BOP was installed on the wellhead and kill and choke lines made up. The connection to the wellhead was then pressure tested.

8.4.1 NPT and lessons learned for the 24" section and 20" casing

No NPT

8.5 17 ½" SECTION

Total time used:	271.5 hrs.
Operational time:	160.5 hrs.
Total Non-productive time, NPT:	110.0 hrs
Waiting on weather and unplanned time included in NPT:	0.0 hrs

The 17 ½" rotary drilling assembly was picked up and RIH to top of cement at 682m. The shoetrack and rat-hole were drilled out while displacing to 1.40 sg Performadrill waterbased mud. Additional 3m of new formation was drilled to 706m MD, and the hole circulated clean prior to pulling BHA into 20" shoe. An FIT to 1.61 sg equivalent mud weight was made.

The 17 ½" hole was drilled from 706m to 1498m and the mud weight increased to 1.43 sg while circulating hole clean. The BHA was attempted to be pulled out of hole, but 15 ton overpull was observed. The mud weight was increased to 1.47 sg and conditioned. During

pulling the hole packed off at 1366m and all circulation was lost. The string was worked and minimum return flow regained. The BHA was back reamed with several problems out of hole to 1046m, where the mud weight was gradually increased to 1.55 sg, which reduced caving tendencies and increased back reaming speed. At 852m the well was circulated again and large rounded cavings up to 30 cm returned. The BHA was back reamed into the 20" casing shoe at 697m.

The mud was circulated and conditioned and a pill spotted to clean BHA for any balling. Observed initially large amount of cutting/caving while circulating hole clean.

A swab test was negative and the BHA was run in hole and circulation broken every 10 stands (3500lpm). 30m of fill was tagged at 1462m. The BHA was washed down to 1492m and additional 15m of new formation was drilled to 1507m MD. The hole was circulated and mud conditioned at TD, 1498m. As one hopper was out of service and the fresh mud not ready, a mini wiper trip was made. While pulling out of hole to 1360m, maximum 5 ton over-pull was experienced. The BHA was run back to bottom with 0.5m of fill, and the mud conditioned to obtain mud specifications. 160m # of old mud was dumped and 150m³ of new mud bled in. During pulling out of hole some tight spots were experienced, which were cleaned prior to continuing pulling out of hole.

Prior to running casing a wash assembly was run to clean out Mud Line Hanger area.

13 3/8" 68 ppf L80 Dino Vam casing was run in hole to 1497m, washed down the last 5 joints and landed in the mudline hanger. An Upjet Floatshoe was run after wireline logging problems around the 13-3/8" shoe on aimee. The intention was to set the shoe 1 m off bottom. However the rathole was increased due to the instability of the well. Bottom was circulated up with 2000 LPM / 77 bar. 25m³ of spacer and 41 m^3 cement was pumped. The cement volume was increased on the fly due to poor quality of initial first 11.5 m^3. The cement was displaced with 2000 LPM and the plug bumped with 97.4% efficiency. The casing was pressure tested to 280 bar. The hanger was landed out in the wellhead and the seal assy set. The diverter was nippled down and the BOP lifted aside. The 13-3/8" wellhead hanger was installed to allow running of contingency 9-5/8" casing. The BOP was nippled up again and pressure tested.

8.5.1 NPT and lessons learned for the 17-1/2" section and 13-3/8" casing

The majority of the downtime – 104 hrs - was contributed to problems pulling out of hole. The Performadrill mud was shipped out on the high end of spec. The required size of screens had not been received. After loosing 50 m3 it was therefore necessary to install very coarse screens to minimize losses. This resulted in an increasing amount of fines in the mud and the mud was consequently thinned to allow installation of finer screens. The rheology therefore fell under spec. Simulation shows that the mud was unable to carry out the cuttings of the size made by the 1-1-5 milled tooth bit. The static densities for connections did however not indicate loading up of cuttings in the hole. The mud was brought back in spec just before TD of the section. Even though weighing up the mud cured the cavings it is hard to believe that the problems initially were caused by insufficient mud weight, as the pore pressure at the top of the section is hydrostatic and nearby offset wells have been drilled with similar mud weights without problems. Recommendation is to send out the mud in spec and ensure correct size screens are onboard. If required the necessary time to condition the mud must be used before starting to drill.

Lessons learned database:

Experience / Problem	Recommendation / Solution
High consentration of formation fines (clay) in the 1.47 sg Performadrill mud system when drilling 17 1/2" section. Mud weight in pit room increased from 1.47 sg to 1.5 sg. Shakers (180 mesh) plugged up with massive overflow (50 m3/2 hr). Installed 84 mesh screens and used iron scraper to drag out fines blocking the bottom screens. 84 mesh screen let lots of fines through. Iron scraper created big holes in the screen (10 x 3 cm) when working the scraper on top of the screens. Had to dump and dilute large volumes of mud to get back to spec	Don't use iron scraper that can damage the screens (if possible). Check status of screens every hour if using iron scraper. Replace damaged screens. Have large number of fresh screen available. Repair damaged screens to reduce cost of screens. Don't put on large screens to reduce overflow.
The DrilQuip wellhead was filled with clay/cutting before running 13 3/8" seal assembly. Not able to land seal assembly on first attempt. Had run both mill&flush tool and activated all BOP rams (with pipe inside) prior to running seal assembly. 13 3/8" casing hanger running tool was also covered in clay/cuttings. The seal assembly was installed successfully on second attempt, after additional flushing with mill&flush tool. The 17 1/2" section was drilled to 1492m. The hole packed off after attempting to pull out. Lots of cuttings came over the shaker after the hole had been circulated clean the first time.	Clean the BOP and wellhead area prior to running 13 3/8" casing.

8.6 8 ½” SECTION

Total time used:	234.5 hrs.
Operational planned time:	160.5 hrs.
Operational unplanned time (coring):	61.5 hrs
Total Non-productive time, NPT:	10.0 hrs
Waiting on weather and unplanned time included in NPT:	1.5 hrs

Prior to drilling the 8 ½” section, a 12 ¼” clean out assembly was used to drill out shoetrack and 3m of new formation to 1510m. The hole was circulated clean and a LOT was performed, resulting in equivalent mud weight of 1.81 sg. The hole was displaced to 1.55 sg oil based mud prior to pulling out of hole with the 12 ¼” clean out assembly.

A pendulum assembly consisting of PDC bit and a rotary assembly with GR/RES/DIR/PWD was used for the 8 ½" section. 5" drill pipe was used in open hole, 5-1/2" drill pipe in the 13-3/8" casing.

The section was first drilled to coring point depth of 3141.5m, and post coring continued to 3434m MD.

While drilling the section between 1510-1905m, tight spots and pack-off tendencies were experienced. These problems zones were wiped and verified ok prior to continue drilling. ECD was also higher then expected and showed to be creeping upwards faster then theoretical calculated. As offset wells had experienced problems at the same depth, the hole was circulated clean at 1905m and a wiper trip to the 13 3/8" shoe made to verify good hole conditions. Drilling continued to the target depth of 3141.5m MD. The ROP was reduced to 5 m/hr prior to entering expected reservoir top. The reservoir sand was confirmed at 3141.5, the hole circulated clean and the BHA pulled out of hole without any problems.

A core assembly with 45.7 m core barrel was run in hole. The core was cut from 3141.5-3187.5m MD. The core was pulled out and laid out. Coring efficiency was 97.6 m and ROP 28.8 m.

The 8 ½" drilling assembly was run in hole gain. Due to problems passing the 17 ½" x 12 ¼" transition zone, the interval around 1508 m MDRT was reamed. The BHA was run in hole and reamed down from 3127 m for logging. The well was drilled to final TD of 3434m MD. The hole was circulated clean and the BHA pulled out of hole. At 3235 m 35 ton overpull was taken. The BHA was reamed back in, but stalled out at 3254m. The pumps were shut downs, 20 kflbs's torque applied on the string, which was jarred down and got free. The string was backreamed from 3269m to 3212m without problems. The BHA was pulled out of hole and backreamed into shoe to polish transition zone prior to logging runs.

8.6.1 NPT and lessons learned for the 8-1/2" section

The uncertainty in pore pressure for the Hordaland was so large that the max pore pressure would require a 12-1/4" section to be drilled to case of the Hordaland prior to drilling reservoir. It would also make the mud weight window for drilling a deviated sidetrack difficult.
The mud weight in the 8-1/2" section was therefore selected to match the lowest pore pressure prediction to establish the pore pressure in the Hordaland. High focus was paid to pore pressure prediction throughout the drilling of the section, which proved the lowest pore pressure estimation to be correct.

8.7 LOGGING

Total time used: 72.5 hrs.
Operational time: 30 hrs.
Non-productive time: 42.5 hrs

Wireline equipment was rigged up. Logging String #1 AIT/PEX/DSI/NGT was run in hole and depth correlated with the 13 3/8" casing shoe. At 1554m the sting stood up and further

progress was not possible. Gamma Ray was logged out of hole. The toolstring and wireline equipment was rigged down.

An 8 ½" clean out assembly was run in hole. The shoe track interval was washed /reamed and cavings observed on the shakers. Eventually the rotation was turned off leading to a reduction in cavings. The BHA was run in hole to 1915m. The mud was weighed up to 1.58 sg above 1915m and pulled back into 13 3/8" shoe with 6-10 T overpull and swapping on last 4 stands, which all disappeared once inside the shoe. The BHA was run in hole to 3430m, reaming and working tight spots on the way down. 4 m fill was found on bottom, which was accepted in order not to disturb hole further and the BHA was pulled out to surface without any problems.

Wire line equipment was rigged up and logging String #2: AIT/PEX/DSI/NGT/ACTS ran in hole. It was logged according to logging program down to 3415m. The caliper read 4" at 2641m. The string was pulled out of hole and laid out.

Logging String #3: Check Shot VSP was run in hole. Check shots were taken from 3400m as per program at formation tops, and every 100m from 3000m to seabed. The string was pulled out of hole and wireline equipment rigged down.

8.7.1 NPT and lessons learned for the logging

The NPT related to instability around the casing shoe, which prevented the logging tools to pass. After having reamed the interval for a while and only observed returns of mechanical cavings increasing, it was decided to shut down rotation and only pump to clean area. This proved to be successful.

8.8 P & A

Total time used:	220.5 hrs.
Operational planned time:	178.0 hrs.
Operational unplanned time (P&A of reservoir	42.5 hrs
Total Non-productive time, NPT:	18.0 hrs
Unplanned time included in NPT:	0.5 hrs

3 ½" drill pipe cement stinger was picked up and run in hole to 3387m. It was washed down to 3434m. The well was circulated and mud conditioned to in/out 1.58 sg.

P&A plug #1 was set across the reservoir in two stages from 3434m to 3000m. the stinger was pulled above cement and circulated clean and then pulled out and racked back. An 8 ½" clean out assembly was run in hole and hard cement tagged at 2960m with 12 tons. While pulling out, 156 joints of 5" drill pipe was laid out.

The 3-1/2" stinger was run in hole again to 1488m. It was discovered that a slotted diverter sub had been run by mistake. The string was therefore pulled again and rerun without the diverter sub to allow setting a CST. At 2050m 100 m HiVis was set. The stinger was pulled back to 1960 m, a cement support tool was spotted and cement plug #2 was set in two stages from 1950m to 1350m. The stinger was pulled out of hole and 5" open ended drillpipe was

run in hole and the cement plug tagged at 1377m with 10 tons. The plug was pressure tested to 104 bar, 70 bar over frac pressure at the casing shoe. The string was pulled out of hole to 400m and the well displaced well to 1.55 sg water based mud.

The diverter was nippled down and the BOP lifted to allow pulling the 9-5/8" casing head and associated cross overs. The BOP was nippled up again and the connection tested. The 13-3/8" casing was cut at 350m. The casing was retrieved with a spear and laid out. The well was displaced to sea water at 350m. A Hivis pill was spotted from 330-280m and a 20" CST was set at 280m. Cement plug #3 was set at 275 m to 150 m . The well was circulated clean at 150 m. The stinger was pulled and drill pipe and BHA's were laid out. The 20" cutter assembly was picked up with a bullnose and run in hole. The cement plug was tagged at 153m and the 20" cut below the mudline hanger at 135m.

The BOP nippled down and set back. The 20" casing was retrieved and laid out. The 30" conductor was cut at 119m and retrieved and laid out.

8.8.1 NPT and lessons learned for the P&A

The NPT related to 8.5 hrs for running a diverter sub on the cement stinger though a CST should be pumped. Repairs to pipe handling system caused 6.5 hrs downtime.

A potential time saving option was evaluated, but not utilised. The requirement for a surface plug is no longer included in Norsok. The 13-3/8" casing could therefore have been cemented back inside the 20", in which case the BOP would not have been nippled up after removing the 9-5/8" casing head. This should be evaluated for future wells.

8.9 RIG MOVE

Total time used:	55.0 hrs.
Operational time:	54.5 hrs.
Non-productive time:	0.5 hrs

The Texas deck was raised to vertical rig move position. Equipment was backloaded and the rig sea fastened. The rig was moved off 500m safety zone and continued on tow to Varg South.

9 HSE SUMMARY

	1/2-2
LTI	0
MTI	0
First aid	1
Accidental discharge	0
Dropped objects	0
H2 Value	0

Totally 1 first aid injury reported (squeezed finger), having low potential.

10 DAILY REPORTING

Date : 09 Dec 2005 | **Daily Cost : kr 13283331.28** | **Report Number : 1**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PM	P	OTH		9	On transit from Almee to Hummer. Viking troll in main bridle and Normand Trym in port forward tow wire. Stril Hauk following as standby boat. Tow speed: 3 - 4.5 kt. All legs completely raised at 18:00 hrs.

Date : 10 Dec 2005 | **Daily Cost : kr 3649811.00** | **Report Number : 2**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PM	P	OTH		18.5	On transit from Almee to Hummer. Viking Troll in main bridle and Normand Trym in port forward tow wire. Stril Hauk following behind as standy boat. Meanwhile pressure tested BOP and choke manifold to 20/1035 bar for 5/10 minutes, and standpipe manifold to 30/345 bar for 5/10 minutes. Found leak between IBOP's when attempting to pressure test upper IBOP.
0	PM	P	OTH		2.5	Rig arrived on location. Adjusted heading and position and pinned all three legs. Jacked rig up to minimum air gap (3 m).
0	PM	TP	OTH	RE	1	Lost power on rig. Troubleshot and restarted generators.
0	PM	P	OTH		2	Jacked rig up to adjust for leg penetration (maintained minimum air gap). Disconnected both anchor handling tugs and commenced preloading. Released Normand Trym at 22:50 hrs. Meanwhile prepared new drill line, and repaired leak between IBOP's. Jumped ROV to verify leg penetration, but got problems with umbilical cable. Worked to repair cable.

Date : 11 Dec 2005 | **Daily Cost : kr 2404508.00** | **Report Number : 3**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PM	P	OTH		10	Continued preloading. Dumped water and completed preload test. Meanwhile spooled new drilling line onto drawwork. Continued working on umbilical cable to ROV. Jumped ROV and verified penetration depth of spud cans. Released Viking Troll at 09:15 hrs.
0	PM	P	OTH		2.5	Jacked up rig to operating air gap. RKB - MSL = 40,15 m. Water depth 74.0m MSL.
0	PM	P	OTH		6.5	Removed sea fastening from equipment around on rig. Prepared to lower texas deck. Removed sea fastening from BOP.
0	PM	P	OTH		3.5	Disconnected BOP from test stump. Lifted BOP with BOP cranes. Removed derrick securing bolts.
0	PM	P	OTH		1.5	Held pre-job meeting and skidded derrick to port side (for access to texas deck through rotary).

Date : 12 Dec 2005 | **Daily Cost : kr 2321394.00** | **Report Number : 4**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PM	P	OTH		2	Held pre-job meeting for skidding out cantilever and installing texas deck. Disconnected fire line and stored hydraulic hoses. Rigged up lifting chain for texas deck from top drive, and connected.
0	PM	P	OTH		1	Skidded out cantilever until rotary was straight above texas deck, and took weight of texas deck with top drive. Continued skidding out while slowly lowering texas deck with top drive.
0	PM	P	OTH		1	Rigged up ladder for access down to texas deck.
0	PM	P	OTH		3	Rigged up arms for texas deck.
0	PM	P	OTH		0.5	Performed tool box meeting prior to work on Texas deck.
0	PM	P	OTH		1.5	Landed Texas deck weight on arms and disconnected chain top drive.
0	PM	P	OTH		1.5	Skidded cantilever in and derrick starboard.
0	PM	P	OTH		6.5	Installed stairs and handrails on Texas deck. Removed hatch on aft port of hull. Placed tension frame and high pressure hoses on Texas deck. Installed life raft on Texas deck.
0	PM	P	OTH		1	Skidded cantilever out and derrick port.

Date : 12 Dec 2005 **Daily Cost : kr 2321394.00** **Report Number : 4**

0	PM	P	OTH		1	Installed handrails under cantilever. Rigged up hoses under cantilever.
0	PM	P	OTH		5	Installed kill & choke hoses to BOP manifold. Installed fire main hose and connected service lines. Removed the rotary hose and performed MPI inspection.

Date : 13 Dec 2005 **Daily Cost : kr 2325165.00** **Report Number : 5**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PM	P	OTH		5.5	Installed kill & choke hoses, meanwhile changed wash pipe.
0	PM	P	OTH		1.5	Rigged up air chain hoist for BOP set back platform.
0	PM	P	OTH		6	Installed safety chains on mudlines/high pressure hoses. Leak tested mud hoses: 269 bar/10 min, ok. Pressure tested top drive system, kelly hose and cement line: 35/345 bar 5/10 min, ok. Moved choke hoses on tension deck.
0	CH	P	CSG		1	Made up cement stand, racked back same.
0	CH	P	TRIP		3	Picked up 6 stands of 5" drill pipe, racked back same.
0	PM	P	OTH		1.5	Laid down BOP platform and soft landed drilling BOP.
0	CH	P	TRIP		1.5	Picked up 3 stands of 5" heavy weight drill pipe and 3 stands of drill collars, racked back same.
89	CH	P	TRIP		4	Picked up 36" bottom hole assembly and ran in hole to 89 m. Jumped ROV into sea at 20:40.

Date : 14 Dec 2005 **Daily Cost : kr 2343582.00** **Report Number : 6**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
113	CH	P	TRIP		0.5	Picked up 36" bottom hole assembly and ran in hole from 89 m to 113 m.
94	CH	P	TRIP		0.5	Pulled 36" bottom hole assembly off seabed from 113 m to 94 m (to avoid bad ROV visibility). Positioned ROV at 94 m (at 54 m water depth, strong current). Motor started turning with 430 lpm.
94	CH	TP	SRV	VE	0.5	Tested anderdrift tool several times with different flow rates(2800-3200 lpm), not able to get back pulses from anderdrift tool. Attempted to rotate and again increase pump rate to 3200 lpm, no signals from anderdrift tool.
94	CH	TP	TRIP	RE	0.5	Not able to communicate with fingerboard computer (PLC), re-booted same.
113	CH	TP	TRIP	VE	1	Pulled out of hole from 94 m to 54 m with 36" bottom hole assembly.
54	CH	TP	SRV	VE	0.5	Tested anderdrift twice at shallower depth (14 m water depth, strong current) with 3200 lpm, still not pulsing. Decided to pull out of hole to change anderdrift tool.
17	CH	TP	TRIP	VE	1	Pulled out of hole with 36" bottom hole assembly from 54 m to 17 m. Changed out the anderdrift tool.
29	CH	TP	TRIP	VE	1	Made up 36" bottom hole assembly and ran in hole with same to 29 m.
29	CH	P	SRV		0.5	Tested anderdrift tool, got clear pulses at 1500 lpm.
114	CH	TP	TRIP	VE	0.5	Picked up and ran in hole with 36" bottom hole assembly from 29 m to 114 m.
114	CH	TP	SRV	VE	1.5	Tested anderdrift tool, evaluated pulse discrepancies.
119	CH	P	DRLL		0.5	Drilled/washed 36" hole from 114 m tp 119 m with no surface rotation. (1788 lpm, 11-24 bar, 0 tons, 13 m/hrs, bit rot: 54 RPM, 0 ftlb).
115	CH	TP	SRV	VE	0.5	Performed survey at 119 m, got 1 pulse. Pulled back to 115 m and performed survey, unrealiable pulses. Pulled back to 113 m and performed new survey, got 7 pulses. Recieved new information regarding deciphering pulses, 7 pulses equal to 1 deg inclination.
155	CH	P	DRLL		4	Ran back to 119 m, drilled 36" hole from 119 m to 155 m (3370 lpm, 57 bar, 0 tons, 33 m/hrs, surface RPM: 32, bit RPM: 133, 1.0-4.5 kftlb). Performed inclination survey every 10 m drilled. Pumped 10 m3 hi-vis pill every 15 m drilled.
155	CH	P	REAM		0.5	Reamed/worked string from 155 m to 141 m to bring down inclination. High torque and motor stalled out. Reamed and worked interval. Suspected boulders/gravel falling in on top though no indication of same during drilling.
163	CH	P	DRLL		0.5	Drilled 36" hole from 155 m to 163 m (4400 lpm, 97 bar, 0.5-3.4 tons, 22 m/hrs, surface RPM: 35, bit RPM: 168, 2.1-4.5 kftlbs)
163	CH	P	REAM		1	Reamed/worked string from 163 m to 146 m to bring down inclination. High torque and motor stalled out. Reamed and worked interval. Suspected boulders/gravel falling in on top though no indication of same during drilling.

Date : 14 Dec 2005 **Daily Cost : kr 2343582.00** **Report Number : 6**

176	CH	P	DRLL	2	Drilled 36" hole from 163 m to 175.5 m (4365 lpm, 95 bar, 0.5-4.5 tons, 14 m/hrs, surface RPM: 36, bit RPM: 167, 2-4 kftlbs). Performed survey every 5 m drilled. At TD: 1 deg inclination.
176	CH	P	CC	1	Pumped 2 x 10 m3 hi-vis pills. Circulated hole and displaced same to 1.50 sg bentonite mud.
176	CH	P	TRIP	1	Performed wiper trip: pulled out of hole from 175.5 m to 121 m and back to TD at 175.5 m. Slick hole and no fill.
0	CH	P	TRIP	3	Pulled out of hole with 36" bottom hole assembly from 117.5 m to 124 m, topped up hole with 4 m3 1.50 sg bentonite mud. Pulled out of hole with 36" bottom hole assembly, racked back 5" heavy weight drill pipe. Laid out 9 3/4" drill collars, stab assembly, motor and hole opener.
0	CH	P	TRIP	0.5	Cleared and cleaned rig floor.
0	CON	P	CSG	0.5	Performed tool box meeting prior to rigging up 30" conductor equipment. Placed cold cutter on Texas deck. Started rigging up 30" conductor equipment.
0	CON	TP	CSG	WOW1	Waited on weather (at 23:30: 37 knots, 41 knots gust, increasing), meanwhile prepared for picking up 5" drill pipe. NOTE: ROV still in water.

Date : 15 Dec 2005 **Daily Cost : kr 2349405.00** **Report Number : 7**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
85	CON	TP	CSG	WOW	2.5	Waited on weather for running 30" conductor. Meanwhile performed tool box meeting prior to picking up 5" drill pipe. Picked up and racked back 25 joints of 5" drill pipe. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 00:00----315-----42 knots----48 knots-------3.5 m---------- 5.7 m--------- 5.6 s 02:00----315-----46 knots----55 knots-------4.9 m----------6.4 m----------6.1 s
0	CON	TP	CSG	RE	1.5	Waited on weather for running 30" conductor. Meanwhile picked up 5" drill pipe. Main supply hydraulic hose to iron rough neck (AR 4500) bursted, replaced same. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 04:00----315-----51 knots----60 knots-------6.0 m---------- 8.5 m--------- 6.4 s
85	CON	TP	CSG	WOW	14.5	Waited on weather for running 30" conductor. Meanwhile picked up and racked back 210 joints of 5" drill pipe. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 06:00----315-----40 knots----47 knots-------6.2 m----------10.5 m-------- 6.4 s 08:00----315-----42 knots----51 knots-------6.6 m----------8.3 m----------6.7 s 10:00----315-----45 knots----53 knots-------6.9 m----------9.6 m----------7.1 s 12:00----315-----43 knots----50 knots-------6.6 m----------10.3 m---------6.7 s 14:00----315-----39 knots----43 knots-------6.4 m----------12.1 m---------5.6 s 16:00----315-----33 knots----36 knots-------6.1 m----------8.2 m----------6.1 s 18:00----315-----22 knots----26 knots-------5.1 m----------7.1 m----------6.8 s
85	CON	TP	CSG	WOW	2.5	Waited on weather for running 30" conductor. Laid out drill pipe on cantilever deck, meanwhile changed dies on iron roughneck and pipe racking system. Performed service and maintenance on iron roughneck (AR 4500). Checked top drive for loose items, performed service on same. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 20:00----315-----22 knots----25 knots-------4.5 m---------- 5.4 m--------- 6.6 s
85	CON	TP	CSG	WOW	3	Waited on weather for running 30" conductor. Picked up and racked back 36 joints of 5" drill pipe. NOTE: ROV still in sea. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 22:00----315-----29 knots----33 knots-------4.4 m---------- 7.6 m--------- 6.4 s 24:00----315-----32 knots----36 knots-------4.4 m----------6.8 m----------6.2 s

Date : 16 Dec 2005 **Daily Cost : kr 2349405.52** **Report Number : 8**

Depth (m)	Phase	Cls	Op	R.C. Hrs	Activity
0	CON	TP	CSG	WOW5.5	Waited on weather for running 30" conductor. Picked up and racked back 63 joints (remaining) of 5" drill pipe. Status: 115 stands of 5" drill pipe racked back in derrick. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 00:00----315-----32 knots----36 knots-------4.4 m---------- 6.8 m--------- 6.4 s 02:00----315-----40 knots----43 knots-------4.1 m----------6.3 m----------6.1 s 04:00----315-----44 knots----55 knots-------5.1 m----------7.5 m----------6.2 s
0	CON	TP	CSG	WOW2.5	Waited on weather for running 30" conductor. Performed tool box meeting prior to picking up 36" bottom hole assembly. Made up 36" bottom hole assembly, secured same in rotary. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 06:00----315-----28 knots----34 knots-------4.9 m----------6.0 m----------6.4 s 08:00----315-----34 knots----39 knots-------4.4 m----------5.9 m----------6.1 s
0	CON	TP	CSG	WOW16	Waited on weather. Meanwhile prepared conductor and drilling equipment. Performed general rig maintenance. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 08:00----315-----34 knots----39 knots-------4.4 m---------- 5.9 m--------- 6.1 s 10:00----315-----42 knots----46 knots-------4.6 m----------7.0 m----------6.4 s 12:00----315-----45 knots----52 knots-------5.4 m----------7.9 m----------6.2 s 14:00----315-----41 knots----44 knots-------6.1 m---------- 10.0 m-------- 5.9 s 16:00----315-----49 knots----56 knots-------6.1 m----------9.3 m----------6.5 s 18:00----315-----44 knots----53 knots-------6.9 m----------9.1 m----------6.9 s 20:00----315-----49 knots----53 knots-------7.2 m---------- 9.3 m----------5.9 s 22:00----315-----49 knots----54 knots-------7.5 m----------10.4 m---------6.5 s 24:00----315-----62 knots----66 knots-------8.1 m----------11.9 m---------6.9 s

Date : 17 Dec 2005 **Daily Cost : kr 2345710.00** **Report Number : 9**

Depth (m)	Phase	Cls	Op	R.C. Hrs	Activity
176	CON	TP	CSG	WOW19	Waited on weather with 36" hole opener assy secured in rotary. Meanwhile performed general rig maintenance. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 00:00----315-----62 knots----66 knots-------8.1 m---------- 11.9 m-------- 6.1 s 01:00----315-----70 knots----74 knots-------8.1 m----------12.2 m---------6.4 s 02:00----315-----48 knots----52 knots-------8.1 m----------10.7 m---------6.2 s 03:00----315-----47 knots----53 knots-------8.0 m---------- 12.2 m---------7.3 s 04:00----315-----52 knots----56 knots-------8.0 m----------12.1 m---------7.3 s 05:00----315-----52 knots----56 knots-------8.7 m----------14.4 m---------7.5 s 06:00----315-----53 knots----57 knots-------8.8 m----------12.4 m---------7.7 s 08:00----315-----40 knots----45 knots-------8.5 m----------11.7 m---------8.1 s 10:00----315-----37 knots----41 knots-------7.7 m----------11.3 m---------7.2 s 12:00----315-----42 knots----46 knots-------6.6 m----------9.5 m----------7.3 s 14:00----315-----40 knots----43 knots-------7.0 m----------10.4 m---------7.1 s 16:00----315-----32 knots----38 knots-------6.6 m----------9.9 m----------7.5 s 18:00----315-----35 knots----38 knots-------6.5 m----------9.7 m----------7.1 s
114	CON	TP	CSG	WOW4.5	Waited on weather. Ran in hole with 36" bottom hole assembly to 113 m (no problems during entering splash zone). ROV located 36" bottom hole assembly. Not able to locate 36" hole (not below 36" bottom hole assembly), strong current and bad visibility (+/- 1m). Worked with sonar to locate hole, hard to control ROV. Pulled out of hole with 1 stand. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 20:00----315-----32 knots----40 knots-------5.6 m----------7.9 m---------6.8 s 22:00----315-----25 knots----28 knots-------4.8 m----------6.9 m---------6.6 s
86	CON	TP	CSG	WOW0.5	Waited on weather. Meanwhile picked up 8" drill collars. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 24:00----315-----20 knots----25 knots-------5.6 m----------9.7 m---------6.2 s

Date : 18 Dec 2005 **Daily Cost : kr 2345710.00** **Report Number : 10**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
86	CON	TP	CSG	WOW	1.5	Picked up and racked back 1 stand of 8" collars. Ran back in hole with 36" bottom hole assembly to 113 m. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 00:00----315-----20 knots----25 knots-------5.6 m----------9.7 m---------6.2 s
113	CON	TP	CSG	WOW	3.5	Attempted to observe 36" hole below bit, no success. Strong current and poor visibility (+/-1 m). Hard to control ROV. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 02:00----315-----23 knots----24 knots-------4.3 m----------6.5 m---------6.2 s 04:00----315-----23 knots----24 knots-------4.4 m----------6.3 m---------6.7 s
107	CON	TP	CSG	WOW	0.5	Pulled up 36" bottom hole assembly from 113 m to 107 m. Performed inclination survey: 1.25 deg.
113	CON	TP	CSG	WOW	7.5	Positioned ROV and ran in hole from 107 m to 113 m. Strong current and poor visibility (+/-1 m). Hard to control ROV. Attempted to locate 36" hole. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 06:00----330-----25 knots----28 knots-------4.0 m----------5.7 m---------6.9 s 08:00----330-----24 knots----26 knots-------3.8 m----------5.5 m---------6.8 s 10:00----330-----16 knots----20 knots-------3.7 m----------5.0 m---------6.8 s 12:00----330-----10 knots----12 knots-------3.4 m----------5.5 m---------6.8 s
125	CON	TP	CSG	WOW	1	Observed crater, 15 x 10 m with elongation in direction of rig heading. Edges of crater sharp, otherwise no visibility inside crater. Broke circulation and reamed down from 115 m to 125 m (2900 lpm, 45 bar, 0-1.6 tons, surface RPM: 31, bit RPM: 118, 2-4 kftlbs). Crater approximately 2 m deep. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 14:00----330-----11 knots----14 knots-------3.3 m----------5.0 m---------6.4 s
176	CON	TP	CSG	WOW	2	Washed and reamed down 36" bottom hole assembly from 125 m to 175.5 m. (4000 lpm, 75-97 bar, 0-3.5 tons, surface RPM: 41, bit RPM: 163, 2-5 kftlbs). Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 16:00----330-----20 knots----22 knots-------2.9 m----------4.9 m---------6.4 s
176	CON	TP	CSG	WOW	1	Circulated hole (4080 lpm, 97 bar) and pumped 2 x 10 m3 hi-vis pills. Performed inclination survey: 1.0 deg. Displaced hole to 1.50 sg mud.
176	CON	TP	CSG	WOW	0.5	Pulled out of hole from 175.5 m to 125 m. Ran back to bottom at 175.5 m, slick hole and no fill.
0	CON	TP	CSG	WOW	1.5	Pulled out of hole from 175.5 m to 125 m. Filled top of 36" hole by pumping 4 m3 1.50 sg mud with 400 LPM. Pulled out of hole and racked back 36" bottom hole assembly. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 18:00----330-----22 knots----24 knots-------2.8 m----------4.2 m---------6.6 s
0	CON	TP	CSG	WOW	1.5	Performed tool box meeting. Removed clay on 36" hole opener. Laid out anderdrift tool and hole opener. Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 20:00----010-----25 knots----30 knots-------2.5 m----------3.6 m---------5.7 s
0	CON	TP	CSG	WOW	0.5	Cleared rig floor.
0	CON	P	CSG		1	Rigged up equipment for running 30" conductor.
0	CON	P	CSG		0.5	Performed tool box meeting prior to running 30" conductor.
0	CON	P	CSG		1.5	Picked up landing joint and installed circulation swedge on same. Laid out landing joint.

Date : 19 Dec 2005 **Daily Cost : kr 3221996.00** **Report Number : 11**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
48	CON	P	CSG		2	Picked up 30" conductor shoe, checked shoe by hosing seawater into same, ok. Ran in hole with 30" conductor according to tally to 48 m (8 m into sea). Pulled conductor out of water due to high conductor movement. (Wave sign: 3.6 m, wave max: 4.7 m)
48	CON	TP	CSG	WOW	1	Waited on weater, ran 30" conductor 8 m into sea. Again pulled out of hole due to high conductor movement. (Wave sign: 2.9 m, wave max: 3.8 m) Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 02:00----300-----27 knots----29 knots-------3.2 m----------4.9 m---------6.0 s

Date : 19 Dec 2005 **Daily Cost : kr 3221996.00** **Report Number : 11**

37	CON	TP	CSG	WOW5		Waited on weather, meanwhile performed general rig service and maintenance.
						Time - W. dir. - W. speed - W. gusts - Wave ht sign. - Wave ht max - Period 04:00----Var-----30 knots----34 knots-------2.9 m----------3.9 m---------5.8 s 06:00----Var-----30 knots----33 knots-------3.2 m----------5.1 m---------5.4 s 08:00----Var-----28 knots----34 knots-------6.4 m----------11.8 m--------5.4 s
48	CON	P	CSG		0.5	Ran in hole with 30" conductor from 37 m to 48 m (8 m into sea), checked for conductor movement, acceptable. Wave direction turned from port to bow, less critical for conductor through Texas deck, when running the string through the spaish zone.
173	CON	P	CSG		5.5	Picked up and ran in hole with 30" conductor from 48 m to 172.7 m, slick hole and no fill. Broke and laid out circulation swedge from landing joint.
173	CON	P	CSG		2.5	Installed guides and load bushings on Texas deck. Tensioned up tension system to 93 tons. Rigged down conductor equipment and rigged up 5" drill pipe handling equipment.
173	CON	P	CSG		2	Made up and ran in hole with cement stinger on 5" drill pipe, stung in same with 2 tons. Spaced out and rigged up cement stand.
173	CON	P	CSG		0.5	Displaced out 1.50 sg mud from well to seawater (30 m3, 1500 lpm, 4 bar). Connected cement line to cement head, pressure tested same 250 bar/5 min, ok.
173	CON	P	CSG		0.5	Performed tool box meeting prior to cement job.
173	CON	P	CSG		2	Pumped 5 m3 of dye marker followed with 5 m3 seawater. Mixed and pumped 21.8 m3 1.56 sg lead cement slurry followed by 19.3 m3 1.95 sg tail cement slurry. Displaced surface lines with 400 ltr seawater.
173	CON	P	CSG		1	Pulled stinger out of shoe, rigged down cement hose and racked back cement stand. Dropped sponge ball and flushed 5" drill pipe (stinger) with 2 m3 seawater.
0	CON	P	CSG		1	Pulled out of hole with cement stinger.
						NOTE: ROV out of water at 23:30.
0	CON	P	CSG		0.5	Rigged up long balls for lifting 30" elevator.

Date : 20 Dec 2005 **Daily Cost : kr 2357069.52** **Report Number : 12**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	CON	P	CSG		1	Cut 30" conductor 1.42 m above bottom of tension ring (16,63 m RKB) with 16 tons overpull above cut.
0	CON	P	CSG		1.5	Laid out cut conductor.
0	CON	P	CSG		1.5	Rigged down 30" conductor equipment and cleared rig floor.
0	CON	P	CSG		2	Made up and ran in hole with elephant foot, verified elevation of mud line hang off point: 132,700 m. Pulled out of hole and laid down elephant foot.
0	IH1	P	BOPW		4	Performed tool box meeting. Nippled up overshot, low pressure riser and diverter system.
0	IH1	P	CSG		0.5	Broke down cement stand, laid down same.
0	IH1	TP	BOPW	RE	1	Ran in hole with 5" drill pipe and function tested diverter, no go. Problems to close diverter element.
						NOTE: ROV in sea @11:30
0	IH1	P	BOPW		0.5	Filled hole and flushed through over board lines, ok.
150	IH1	P	TRIP		3.5	Made up and ran 24" bottom hole clean out assembly, ran in hole with same to 150 m.
170	IH1	P	REAM		0.5	Washed and rotated down from 150 m to 170 m. (2400 lpm, 40 bar, 40 RPM).
170	IH1	TP	BOPW	RE	1	Found fault on diverter system (problems to close diverter bag), troubleshot same. Flushed and function tested same (3 bar/5 min), ok.
178	IH1	P	CSG		2	Drilled out cement, shoe and rat hole from 170 m to 178 m (2660 lpm, 44 bar, 0-4 tons, 1-5 m/hrs, 37 RPM, 0-0.9 kftlbs) . Reamed shoe and pumped 10 m3 hi-vis pill.
177	IH1	P	CC		0.5	Circulated hole clean (3200 lpm, 62 bar).
177	IH1	TP	OTH	HPL	1.5	Observed well for static losses: 19.3 m3/hrs. Confirmed communication on outside of 30" conductor with ROV. Evaluated problem.
						NOTE: ROV out of sea @20:32 due to ROV personnel working hours
87	IH1	TP	TRIP	HPL	0.5	Pulled out of hole with 24" bottom hole assembly from 170 m to 87 m.

Date : 20 Dec 2005 **Daily Cost : kr 2357069.52** **Report Number : 12**

87	IH1	TP	TRIP	HPL	1	Removed diverter bag and pulled out of hole with 24" bottom hole assembly, racked back same.
177	IH1	TP	CSG	HPL	1.5	Installed diverter bag and made up 5" cement stinger, ran in hole with same to 177 m.

Date : 21 Dec 2005 **Daily Cost : kr 489877.85** **Report Number : 13**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
177	IH1	TP	CSG	HPL	0.5	Performed tool box meeting prior to cement job.
177	IH1	TP	CSG	HPL	0.5	Hooked up cement line to cement stand. Pressure tested cement line, 250 bar/5 min, ok.
177	IH1	TP	CSG	HPL	0.5	Mixed and pumped 12 m3 1,95 sg cement slurry. Displaced surface lines and cement stinger with 1333 ltr seawater. Did not observe returns. Stopped filling conducor with seawater to reduce hydrostatic pressure.
140	IH1	TP	CSG	HPL	0.5	Removed cement hose and cement stand. Pulled out of hole to 140 m, dropped sponge ball and displaced (1213 lpm) cement stinger with 1320 ltr seawater.
0	IH1	TP	CSG	HPL	0.5	Pulled out of hole with cement stinger.
0	IH1	TP	CSG	HPL	1	Broke down cement stand and cleared rig floor.
0	IH1	TP	CSG	HPL	6	Waited on cement, meanwhile performing general rig maintenance.
130	IH1	TP	TRIP	HPL	2.5	Picked up drill collars, broke bit and racked back drill collars. Made up 24" bottom hole assembly and ran in hole to 130 m.
174	IH1	TP	DRLL	HPL	2	Washed down from from 130 m to 150 m (2400 lpm, 40 bar), losses: 2500 lpm. Ran in hole to 170 m. Washed down from 170 m to 172 m, tagged hard cement at 172 m. Drilled out cement from 172 m to 174 m (2608 lpm, 43 bar, 10-16 ton, 1.7-24 m/hrs, 33 RPM, 1.0-1.7 kftlbs).
0	IH1	TP	TRIP	HPL	1	Pulled out of hole with 24" bottom hole assembly, racked back same.
174	IH1	TP	CSG	HPL	1.5	Installed diverter bag. Made up and ran in hole with cement stinger to 174 m.
174	IH1	TP	CSG	HPL	1	Made up cement assembly and hooked up cement hose. Pressure tested cement lines 250 bar/5 min, ok.
174	IH1	TP	CSG	HPL	0.5	Performed tool box meeting prior to cement job.
174	IH1	TP	CSG	HPL	1.5	Mixed and pumped 20 m3 1.55 sg lead cement slurry followed by 8 m3 1.95 tail cement slurry. No returns to surface. Observed that fluid level in the conductor increased by 10.7 m, equal to 3.8 m3. ROV observed returns up and around conductor.
40	IH1	TP	CSG	HPL	0.5	Pulled cement stinger out of hole to 40 m. Observed static water level inside conductor annulus.
40	IH1	TP	CSG	HPL	2	Waited for cement. Observed level in annulus, dropped 20 cm from 20:00 to 22:00.
0	IH1	TP	CSG	HPL	2	Waited on cement. Pulled out of hole with cement stinger and observed conductor water level, ok static.
						NOTE: ROV out of water 23:40

Date : 22 Dec 2005 **Daily Cost : kr 2496273.17** **Report Number : 14**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	IH1	TP	CSG	HPL	12.5	Waited on cement, meanwhile observing water level inside conductor, ok static. Performed general rig maintenance.
						NOTE: ROV in sea at 02:25.
160	IH1	TP	TRIP	HPL	2	Made up and ran in hole with 24" bottom hole assembly to 160 m.
164	IH1	TP	CC	HPL	0.5	Broke circulation in steps to 2000 lpm, 30 bar. Washed down, tagged cement at 164.5 m.
190	IH1	TP	DRLL	HPL	4.5	Drilled cement from 164.5 m to 178 m (2524 lpm, 39 bar, 8 tons, 6 m/hrs, 68 RPM, 2 kftlbs) and new formation from 178 m to 190 m (2610 lpm, 44 bar, 1-8 tons, 4-25 m/hrs, 52 RPM, 0.1-0.7 kftlbs).
190	IH1	TP	CC	HPL	1	Circulated hole clean (bottoms up) and pumped 10 m3 hi-vis pill.
0	IH1	TP	TRIP	HPL	2	Performed a 10 min flowcheck: losses: 240 ltr/hrs. Laid out single drill pipe. Pulled out of hole with 24" bottom hole assembly, racked back same.
0	IH1	P	TRIP		1	Started picking up 9 7/8" bottom hole assembly including MWD tool.
0	IH1	TP	TRIP	VE	0.5	Communication problem with MWD, troubleshot same.

Date : 23 Dec 2005 **Daily Cost : kr 2220415.17** **Report Number : 15**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	IH1	TP	TRIP	VE	0.5	Communication problem with MWD, troubleshot same.
0	IH1	P	TRIP		0.5	Programmed MWD.
160	IH1	P	TRIP		1.5	Continued to make up and run in hole with 9 7/8" bottom hole assembly.
160	IH1	P	TRIP		1	Performed tool box meeting prior to drilling potential shallow gas zones. Prepared to drill pilot hole.
190	IH1	P	TRIP		0.5	Washed down (2000 lpm, 48 bar) from shoe and down to 190 m.
196	IH1	P	DRLL		1	Drilled 9 7/8" hole from 190 m to 196 m (2200 lpm, 54 bar, 0-4 tons, 66 RPM, 0-2 kftlbs)
170	IH1	TP	BOPW	RE	7.5	Leakage on starboard overboard valve, valve not closing. Troubleshoot same. Pulled 9 7/8" pilot bit into shoe. Installed spare actuator.
145	IH1	TP	TRIP	RE	0.5	Broke circulation and performed survey. Washed down from 145 m to 196 m. (2400 lpm, 63 bar).
318	IH1	P	DRLL		7	Drilled 9 7/8" pilot hole from 196 m to 318 m (2600-2872 lpm, 64-103 bar, 0.1-3.2 tons, 10.5-80 m/hrs, 63-77 RPM, 0-0.3 kftlbs, 0.4-0.80% gas, ECD: 1.21-1.28 sg). Mud weight drifted from 1.11-1.14 sg. Dumped and diluted as required.
318	IH1	P	CC		0.5	Circulated bottoms up due to high ECD (2872 lpm, 103 bar), ECD reduced from 1.28 sg to 1.24 sg.
332	IH1	P	DRLL		0.5	Drilled 9 7/8" pilot hole from 318 m to 332 m (2920 lpm, 99 bar, 1.6-5.6 tons, 13-30 m/hrs, 97 RPM, 0-0.2 kftlbs, 0.2-0.9% gas, ECD: 1.24-1.30 sg)
332	IH1	P	CC		1	Pumped 10 m3 hi-vis pill. Circulated hole due to high ECD. Dumped and diluted over shakers. mud weight reduced from 1.14 sg to 1.13 sg. ECD reduced from 1.30 to 1.26 sg.
351	IH1	P	DRLL		2	Drilled 9 7/8" pilot hole from 332 m to 351 m (2930 lpm, 105 bar, 2-4 tons, 13-24 m/hrs, 95 RPM, 0.0-0.2 kftlbs, 0.20% gas, ECD: 1.26-1.30 sg). Started adding seawater (4 m3/hrs) at 22:00. Dumped and diluted as required.

Date : 24 Dec 2005 **Daily Cost : kr 2220415.17** **Report Number : 16**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
392	IH1	P	DRLL		2	Drilled 9 7/8" pilot hole from 351 m to 392 m (2950 lpm, 104 bar, 0.3-7.5 tons, 17-31 m/hrs, 98 RPM, 0-0.4 kftlbs, 0.30% gas, ECD: 1.29-1.32 sg). Mud weight: 1.13 sg. Dumped and diluted as reqiured (at connections).
392	IH1	P	CC		0.5	Circulated hole due to high ECD (2850 lpm, 103 bar). ECD reduced from 1.32 to 1.27 sg.
703	IH1	P	DRLL		14	Drilled 9 7/8" pilot hole from 392 m to 703 m. (2949 lpm, 102-125 bar, 0.2-9.0 tons, 15-47 m/hrs, 98-142 RPM, 0-0.8 kftlbs, 0.2-0.3% gas, ECD: 1.29 - 1.34 sg). Dumped and diluted as required at connections. Mud weight drifted from 1.13 sg to 1.15 sg.
703	IH1	P	CC		1	Pumped 10 m3 hi-vis pill and circulated hole clean. Performed survey.
169	IH1	P	TRIP		2.5	Performed static flowcheck 10 min: losses 1.2 m3/hrs. Pulled out of hole from 703 m to 169 m (into shoe).
169	IH1	P	TRIP		0.5	Performed static flowcheck 10 min: losses 1.0 m3/hrs. Performed tool box meeting, checked pipe racking system dies and pulled diverter packer.
0	IH1	P	TRIP		1.5	Pulled out of hole with 9 7/8" pilot bottom hole assembly, racked back same.
0	IH1	P	TRIP		1	Switched off MWD tool, broke and laid out same. Broke off bit.
0	IH1	P	TRIP		0.5	Cleared rig floor and performed tool box meeting. Changed pipe racking system dies.
0	IH1	P	TRIP		0.5	Rearranged 24" bottom hole assembly.

Date : 25 Dec 2005 **Daily Cost : kr 2220415.17** **Report Number : 17**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	IH1	P	TRIP		0.5	Continued rearranging 24" bottom hole assembly.
166	IH1	P	TRIP		2.5	Made up 24" bottom hole assembly, ran in hole with same to 166 m.
166	IH1	P	TRIP		0.5	Installed diverter packer and prepared for drilling.
189	IH1	P	TRIP		0.5	Broke circulation and washed down (1000 lpm, 20 bar), tagged bottom at 189 m.
251	IH1	P	HO		4.5	Drilled 24" hole from 190 m to 251 m (3000-3615 lpm, 78-119 bar, 3-6 tons, 5-31 m/hrs, 68-92 RPM, 1.2 kftlbs). Mud weight: 1.15 sg. Dumped and diluted as required. Pumped 10 m3 hi-vis on each connection.

Date : 25 Dec 2005 **Daily Cost : kr 2220415.17** **Report Number : 17**

251	IH1	P	REAM	0.5	Reamed tight spot at 227 - 248 m.
279	IH1	P	HO	1	Drilled 24" hole from 251 m to 279 m (3000-3615 lpm, 78-119 bar, 3-6 tons, 5-31 m/hrs, 68-92 RPM, 1.2 kftlbs). Dumped and diluted as required. Pumped 10 m3 hi-vis on each connection.
279	IH1	P	REAM	1	Reamed tight spots: 252 - 255 m and 267 m - 274 m.
307	IH1	P	HO	1	Drilled 24" hole from 279 m to 307 m (4327 lpm, 170 bar, 0.7-6.5 tons, 16-37 m/hrs, 115 RPM, 0.2-2.5 kftlbs). Dumped and diluted as required. Pumped 10 m3 hi-vis on each connection.
307	IH1	P	REAM	1	Reamed tight spot from 292 m to 299 m.
506	IH1	P	HO	11	Drilled 24" hole from 307 m to 506 m. (4480 lpm, 185 bar, 0.1-9.1 tons, 8-36 m/hrs, 106-112 RPM, 0.1-3.8 kftlbs, gas: 0.3-0.7%). Mud weight reduced from 1.15 sg to 1.14 sg. Dumped and diluted as required. Pumped 10 m3 hi-vis on each connection. NOTE: ROV out of water 22:10

Date : 26 Dec 2005 **Daily Cost : kr 2214959.17** **Report Number : 18**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
703	IH1	P	DRLL		8.5	Drilled 24" hole from 506 m to 703 m. (4433-4483 lpm, 147-197 bar, 0.1-9.4 tons, 8-37 m/hrs, 106-108 RPM, 0.1-3.0 kftlbs, gas: 0.2-0.9%). Dumped and diluted as required. Pumped 10 m3 hi-vis sweeps on each connection. Mud weight decreased from 1.14 sg to 1.13 sg.
703	IH1	P	CC		2	Pumped 10 m3 hi-vis pill and circulated hole clean. Static losses 1.4 m3/hr.
172	IH1	P	TRIP		2	Pulled out of hole from 703 m to 172 m (inside casing).
703	IH1	P	TRIP		1.5	Wiped hole from 172 m to 703 m. No fill at TD and no excess drag while running in.
703	IH1	P	CC		2	Dropped carbide and circulated 15 m3 hiv-vis pill round to measure hole size. Calculated hole size 24.8" (0.8" over gauge).
703	IH1	P	CC		1	Displaced hole to 1.15 sg KCL mud.
703	IH1	P	CC		0.5	Observed well on trip tank for losses (0.9 m3/hr losses to formation).
252	IH1	P	TRIP		2	Pulled out of hole with 24" BHA from 703 m to 252 m.
0	IH1	P	TRIP		3.5	Pulled out of hole with 24" BHA and racked same in derrick. Laid out screen sub and XO. Changed out power slips and pulled diverter packer.
0	IC1	P	CSG		1	Rigged up casing handling equipment.

Date : 27 Dec 2005 **Daily Cost : kr 2249259.17** **Report Number : 19**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	IC1	P	CSG		1.5	Rigged up casing handling equipment.
555	IC1	P	CSG		14	Performed pre job meeting prior to running 20" casing. Picked up shoe joint and check same - OK. Picked up float collar and check same - OK. Backer locked first two joints and installed sentralizers according to tally. Ran 20" casing from 24 m to 543 m. Removed diverter bag and ran in to 555 m. Observed tight sports at 311 - 320 m and 335 - 370 m (took 5 - 25 ton weight)
697	IC1	P	CSG		4.5	Picked up mud line hanger and ran in hole to 697 m. Picked up caing head and made up running tool (run in open position to open and close mudline circulation ports). Landed 20" casing in mud line hanger (MLH) and sat down 79 ton and sat slips.
697	IC1	P	CSG		1	Made up cement head and hooked up hoses. Performed pre job meeting prior to cementing 20" casing.
697	IC1	P	CSG		2	Leak tested cement line to 250 bar/10 min - OK. Displaced annulus to seawater (circulated out 1.15 sg KCL mud). Pumped 11288 stokes (final mud weight out 1.05 sg). No losses observed when circulating @ 3000 lpm.
697	IC1	P	CSG		1	Rigged up for cementing and started to pump 1.56 sg lead cement (1000 lpm, 20 bar).

Date : 28 Dec 2005 **Daily Cost : kr 4837266.17** **Report Number : 20**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
697	IC1	P	CSG		2	Completed pumping 94.5 m3 1.56 sg lead slurry and 11.3 m3 1.96 sg tail slurry. No losses observed

Date : 28 Dec 2005 **Daily Cost : kr 4837266.17** **Report Number : 20**

					during pumping.
697	IC1	P	CSG	1.5	Launched cement plug and displaced 20" casing with 2500 lpm. Increased pump rate @ 7200 strokes to 3000 lpm. Decreased pump rate @ 7423 strokes to 800 lpm. Bumped plug @ 7535 strokes (97% pump efficiency). Pressure tested 20" casing to 90 bar/10 min - OK. Bled of pressure and rigged down cement hose. Checked for back flow - OK.
697	IC1	P	CSG	1.5	Rigged down cement head. Installed circulation swedge.
697	IC1	P	CSG	1	Picked up 24 ton and rotated 20" casing 6 turns to the right to open mud line circulation ports. Rigged up for circulating out excess cement in the 30" x 20" annulus. Pumped sea water at max rate until clean. Pumped 7 m3 sugar pill and displaced with 25 m3 sea water. Rotated 20" casing 6 turns to the left and closed mud line circulation ports.
697	IC1	P	CSG	3	Rigged up and pressure tested casing to 138 bar. Circulation swedge leaked. Bled of pressure and disconnected swedge. Checked connection and doped same. Made up swedge and pressure tested casing to 138 bar/10 min - ok. Rigged down test equipment.
697	IC1	P	CSG	1.5	Released casing head running tool and laid out landing string.
697	IC1	P	CSG	2	Rigged down casing handling equipment and cleared rig floor.
697	E1	P	TRIP	2.5	Performed pre job meeting and laid down 24" BHA.
697	IC1	P	BOPW	2.5	Performed pre job meeting and nippled down diverter and laid out same.
697	IC1	P	BOPW	3.5	Installed split ring and two casing head valves according to DrilQuip procedure. Ran casing head running tool and connected to casing head. Pulled 24 ton and adjusted landing ring. Pulled running tool and laid down same. Ran XO spool on tugger. Installed gasket with o-rings (lower seal surface not preserved - pitting on seal surface). Made up XO spool.
697	IC1	P	BOPW	3	Performed pre job meeting prior to nipple up BOP. Moved BOP from set back position to wellhead and made up wellhead connector. Started to install choke and kill hoses.

Date : 29 Dec 2005 **Daily Cost : kr 2202419.17** **Report Number : 21**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
703	IC1	P	BOPW		5	Completed installation of choke and kill hoses. Installed BOP control hoses. Function tested BOP.
703	IC1	P	BOPW		3.5	Installed diverter spool and nippled up diverter.
703	IC1	P	BOPA		2	Filled and flushed BOP and choke & kill line. Pressure tested BOP connection, upper and lower top drive I-BOP to 138 bar/ 10 min - OK
703	IC1	P	BOPW		1.5	Made up stand with HWDP. Installed wear bushing.
0	IH2	P	TRIP		2.5	Performed pre job meeting prior to running 17 1/2" BHA. Picked up BHA. Hooked up MWD test tools and started testing same.
0	IH2	TP	TRIP	VE	1.5	Communication problems with MWD test tools. Trouble shot problems and changed out testing equipment.
278	IH2	P	TRIP		2.5	Completed downloading and testing MWD tools and ran in hole with remaining BHA to 278 m. Changed to power slips (PS-21).
682	IH2	P	TRIP		2	Ran in hole with 17 1/2" BHA from 278 m to 660 m. Broke circulation and tagged top of cement @ 682 m.
682	IH2	P	BOPA		0.5	Performed choke drill prior to drilling out cement.
686	IH2	P	DRLL		3	Displaced well to 1.4 sg Performadrill mud while drilling shoe track from 682 m to 686 m. Changed screens on shakers due to heavy overflow (84 mech back and 175 mesh in front).

Date : 30 Dec 2005 **Daily Cost : kr 2187683.17** **Report Number : 22**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
706	IH2	P	DRLL		3	Drilled shoe track from 686 m to 697 m. Cleaned out rat hole from 697 m to 703. Drilled new formation from 703 m to 706 m.
687	IH2	P	CC		1	Pulled 17 1/2" BHA up to 687 m and circulated hole clean prior to FIT test.
687	IH2	P	BOPA		1	Line up for FIT test. Performed FIT test to 1.61 sg equivalent mud weight (15 bar surface pressure) - OK. Bled back same volume as pumped into well.
1033	IH2	P	DRLL		19	Drilled 17 1/2" hole from 706 m to 1033 m (20-30 m/hr, 80 - 140 rpm, 5-15 ton, 3000 - 4200 lpm, 2-6 k ft lbs). Occational overflow of mud on shaker (lost approx. 50 m3). Adjusted pump rate to 3000 lpm

Date : 30 Dec 2005 **Daily Cost : kr 2187683.17** **Report Number : 22**

during heavy loss periods. Continuously cleared/cleaned screens manually to reduce plugging. Reduced mud viscosity by adding water.

Date : 31 Dec 2005 **Daily Cost : kr 2187683.17** **Report Number : 23**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1324	IH2	P	DRLL		14	Drilled 17 1/2" hole from 1033 m to 1324 m (20-40 m/hr, 120 - 140 rpm, 5-15 ton, 4000 - 4200 lpm, 4-8 k ft lbs). Increased WOB from 10 to 15 ton @ 1174 m - ROP increased from 25 m/hr to 40 m/hr.
1324	IH2	TP	DRLL	VE	1	Lost communication with MWD. Cycled mud pumps to troubleshoot communication problem without any effect. Decided to continue drilling without MWD at reduced ROP @ 20 - 25 m/hr to avoid building angle (observed increased angle prior to MWD failure).
1446	IH2	P	DRLL		9	Drilled 17 1/2" hole from 1324 m to 1446 m (20-30 m/hr, 120 - 140 rpm, 5-10 ton, 3200 - 4200 lpm, 4-8 k ft lbs). Drilled with reduced ROP (10-15 m/hr) and pump rate (3200 plm) from 1442 m to 1453 m due to breakdown of swab on mud pump 3. Repaired mud pump 3 and continued drilling @ 20 m/hr. MWD worked occationally for a few meters at the time. Estimated pore pressure continuosly using log and drilling paramaters (1.35 sg @ 1446 m).

Date : 01 Jan 2006 **Daily Cost : kr 2285183.17** **Report Number : 24**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1483	IH2	P	DRLL		1.5	Drilled 17 1/2" hole from 1446 m to 1483 m (15 - 20 m/hr, 120 - 140 rpm, 5-10 ton, 3200 - 4200 lpm, 4-8 k ft lbs).
1492	IH2	TP	DRLL	RE	1	Drilled with reduced ROP (10-15 m/hr) and pump rate (3200 plm) from 1483 m to 1492 m due to breakdown of swab on mud pump 3. Repaired mud pump 3. Estimated pore pressure 1.35 sg @ 1492 m. MWD worked on and off.
1492	IH2	P	SRV		0.5	Recorded survey data at TD successfully (1473.36 m, 0.8 deg, 45.05 azimuth).
1492	IH2	P	CC		4	Circulated hole clean with maximum ROP and pump rate (145 rpm, 4000 lpm). Pumped 2 x 15 m3 hi-vis sweeps to clean the hole. Increased mud weight from 1.41 sg to 1.43 sg while circulating hole clean. Racked back one stand every hour. Ran back and tagged TD @ 1492 m before pulling out.
1435	IH2	P	TRIP		1	Flow checked well static - OK. Pulled out of hole with 17 1/2" BHA to 1435 m. Took 10 - 15 ton weight @ 1435 m. Wiped stand until no excess drag. Pumped out and reamed down to further clean the interval.
1492	IH2	P	CC		5	Pumped out from 1435 m to 1412 m. Circulated bottom up - hole not clean. Ran in hole to 1492 m and circulated hole clean while increasing mud weight from 1.43 sg to 1.47 sg. Pulled up to 1470 m. Moved pipe while circulating.
1366	IH2	P	TRIP		1.5	Pulled out of hole from 1470 m and took 30 ton over pull @ 1395 m. Attempted to backream out of hole from 1395 m to 1366 m (2500 - 3500 lpm, 110 - 130 rpm, 2 - 10 k ft lbs, 156 - 303 bar). Packed off @ 1366 m and lost all circulation. Attempted to re-establish circulation without any success.
1432	IH2	TP	CC	HPL	0.5	Ran in hole from 1366 m to 1432 m. Attempted to regain circulation (180 lpm, 51 bar, 110 rpm, 6-7 k ft lbs) without any success.
1440	IH2	TP	CC	HPL	6	Worked string up/down between 1412 m to 1440 m (124 rpm reducing to 30 rpm, 55 bar, 5-7 k ft lbs) to establish circulation. Some minor pulses of mud in return.
1426	IH2	TP	CC	HPL	0.5	Increased rpm to 160/ 30 min and then reduced to 30 rpm. Worked string up/down and got increasing trend in mud return.
1426	IH2	TP	CC	HPL	2.5	Established circulation - pressure dropped from 55 bar to 20 bar with increased pump rate from 5 spm to 25 spm. Increased pump rate slowly from 25 spm to 55 spm. Hole packed of due to increasing pressure (37 bar). Reduced pump rate to 20 spm and observed pressure drop to 18 bar. Increased pump rate slowly from 20 spm to 45 spm (26 bar).

Date : 02 Jan 2006 **Daily Cost : kr 2285183.17** **Report Number : 25**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1426	IH2	P	CC	HPL	6	Increased pump rate slowly from 45 spm to 70 spm. Hole packed of due to increasing pressure (47 bar). Reduced pump rate to 45 spm and observed pressure drop to 32 bar. Rotated string @ 160 rpm/10 min to reduce excess torque from 800 - 1000 ft lbs to 600 ft lbs. Increased pump rate slowly from 45 spm to 70 spm (26 bar). Hole packed of due to increasing pressure (48 bar). Reduced pump rate to 60 spm and observed pressure drop to 37 bar. Rotated string @ 160 rpm/10 min to reduce excess torque from 1500 ft lbs to 850 ft lbs. Increased pump rate slowly from 60 spm to 110 spm (86 bar). Occational pack off tendencies cured with increased PRM/5 min and slight reduction in pump rate until stable parameters.
1626	IH2	P	CC	HPL	10	Continued to increase pump rate in steps from 110 spm to 214 spm (3470 lpm). Increased rotation when increased torque observed to clean pack off tendencies.
1626	IH2	P	CC	HPL	1	Increased RPM in steps of 10 to 140 and monitored returns over the shaker. Occational lots of cutting over the shakers and losses of mud.
1411	IH2	P	REAM	HPL	1	Wiped and reamed stand from 1440 m to 1411 m until no excess torque/drag.
1411	IH2	P	CC	HPL	2.5	Attempted to ciruiate hole clean prior to pulling out of hole. Some cutting still coming over the shakers. Moved/rotated pipe while circulating.
1382	IH2	P	TRIP	HPL	1.5	Recorded drilling parameters prior to pulling out out hole (UW 96 t, DW 94 t, FW 96.5 t, 630 ft lbs @ 30 rpm, 236 bar @ 214 spm). Racked stand. Pumped out of hole from 1411 m to 1382 m. Picked up 5 ton @ 1395 m. Wiped stand without excess drag. Turned of pumps and racked stand.
1354	IH2	P	REAM	HPL	1	Increased pump rate to 3500 lpm. Pumped out of hole from 1382 m to 1354 m. Took weight/pressure increased @ 1366 m (initial pack off depth). Wiped interval - no excess drag/pressure. Wiped stand without excess drag. Turned of pumps and racked stand.
1326	IH2	P	REAM	HPL	1	Increased pump rate to 3500 lpm. Pumped out of hole from 1354 m to 1326 m. Took 5 ton weight several time/pressure increased - wiped interval and moved up. Increasing trend of cutting comming over the shaker. Wiped stand.

Date : 03 Jan 2006 **Daily Cost : kr 2285183.17** **Report Number : 26**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1326	IH2	TP	TRIP	HPL	0.5	Wiped stand (1354 m to 1326 m). Shut down pumps and racked stand.
1298	IH2	TP	TRIP	HPL	1	Broke circulation and increased flow rate to 3500 lpm. Pumped out of hole from 1326 m to 1298 m. Took overpulls several times and wiped spots free of excess drag. Wiped stand without excess drag. Turned of pumps and racked stand.
1271	IH2	TP	TRIP	HPL	2.5	Broke circulation and increased flow rate to 3500 lpm. Pumped out of hole from 1298 m to 1290 m. Not able to pass 1290 m (pumped BHA out of hole with increasing pump pressure, torque increased from 1500 to 10 000 ft lbs). Worked pipe, rotated down 120 rpm, reduced pump rate to 1800 lpm. Cleared pipe and regained parameters. Massive amount of cutting over the shakers - mostly blocky and some sharp cavings. Observed increased mud weight in pit room (1.47 sg to 1.5 sg). Stopped pumps and inspected all screens - changed out damaged screens. Meanwhile pull out from 1290 m to 1271 m (no pumping). Took some weight and wiped spot free. Wiped stand without excess drag. Racked stand.
1243	IH2	TP	TRIP	HPL	5	Pulled out of hole from 1271 m to 1251 m. Took weight @ 1251 m - pulled 20 ton overpull without any progress. Circulated hole @ 3500 lpm and attempted to pump out past 1251 m - no success. Shut of pumps and pulled out to 1243 m (top of stand) with excess drag (15 ton). Not able to loose excess drag after several attempts. Circulated hole at 3500 lpm.
1238	IH2	TP	REAM	HPL	1.5	Reamed down to 1261 m and laid down single. Established parameters (3400 lpm/226 bar, 120 rpm) and back reamed from 1261 m to 1233 m. Got indications of pack off and reamed spot down to 1238 m.
1326	IH2	TP	REAM	HPL	2.5	Back reamed from 1238 m to 1230 m.
1326	IH2	TP	REAM	HPL	11	Back reamed out of hole from 1230 m to 1064 m (3500 lpm/236 bar, 1500 - 4000 ft lbs, 90 ton, 130 rpm). Back ream speed increased over the interval from 4 m/hr to 56 m/hr). Increased mud wight from 1.47 sg to 1.55 sg resulting in decreasing trend of cuttings over the shakers and increasing back ream speed.

Date : 04 Jan 2006 **Daily Cost : kr 2306085.67** **Report Number : 27**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
852	IH2	TP	REAM	HPL	7	Back reamed out of hole from 1064 m to 852 m (3500 lpm/236 bar, 1500 - 4000 ft lbs, 90 ton, 130 rpm). Back ream speed increased to 60 - 90 m/hr. Not much coming over the shakers until 852 m. Stopped and circulated hole clean due to large rounded cavings (max size 30 cm) coming over the shakers in large numbers.
690	IH2	TP	REAM	HPL	3	Back reamed out of hole from 852 m to 690 m.
690	IH2	TP	CC	HPL	1	Circulated hole @ 4000 lpm. Lots of cuttings/cavings coming over the shaker.
690	IH2	TP	CC	HPL	0.5	Spotted 8 m3 pill to desolve possible balled up BHA. Allowed to soak.
690	IH2	TP	CC	HPL	1.5	Circulated out pill (dumped pill at shaker) and circulated hole clean.
533	IH2	TP	OTH	HPL	0.5	Performed swab test (due to BHA possibly balled up) from 690 m to 533 m. No swabbing effect observed.
1462	IH2	TP	TRIP	HPL	5.5	Ran in hole. Broke circulation evey 10 stand (3500 lpm). Tagged fill at 1462 m/ 15 ton (30 m of fill). Observed 2-3 tight spots (5 ton drag @ 1383, 1392, 1457 m) running in hole.
1492	IH2	TP	CC	HPL	3	Washed down from 1462 m to 1492 m (WOB 2 -5 ton, 3500 lpm). Lots of cuttings coming over the shaker.
1507	IH2	TP	DRLL	HPL	1.5	Drilled new formation from 1492 m to 1507 m (to make a fresh 6 m rat hole, add one casing joint to tally).
1505	IH2	TP	CC	HPL	0.5	Pumped 10 m3 hi-vis pill and circulated hole clean (3700 lpm, 140 rpm). Dumped hi-vis when at surface.

Date : 05 Jan 2006 **Daily Cost : kr 3444430.37** **Report Number : 28**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1467	IH2	TP	CC	HPL	4	Circulated hole clean @ 3700 lpm and 140 rpm. Small amount of normal size cutting/cavings over the shakers - no decreasing trend. Dropped carbide pill and circulated round - found hole to be in gauge. Racked back stand every hour.
1507	IH2	TP	CC	HPL	3	Ran in hole from 1467 m and tagged 5 m fill @ 1502 m. Washed down to 1507 m and circulated hole clean (3700 lpm, 110 rpm). Shakers finally very clean. Flow checked well static - OK.

Date : 05 Jan 2006						Daily Cost : kr 3444430.37	Report Number : 28
						Unable to displace hole to mud in spec for casing running. Wash out on hopper delayed mixing.	
1360	IH2	TP	TRIP	HPL	2	Pulled out of hole from 1507 m to 1360 m. Maximum 5 ton excess drag observed while pulling out.	
1507	IH2	TP	TRIP	HPL	1	Ran in hole and tagged 0.5 m fill at 1506.5 m. Washed down to 1507 m.	
1507	IH2	TP	CC	HPL	7	Circulated and conditioned mud to obtain mud spec.(3200 lpm due to only two mud pumps available. SCR failure prevented third pump to be put on line). Dumped 160 m3 at the shaker while circulating and bled in 150 m3 of fresh mud. Measured mud properties prior to pulling out of hole - OK.	
671	IH2	TP	TRIP	HPL	7	Flow checked well static and pulled out of hole from 1507 m to 671 m. Maximum 5 ton excess drag observed while pulling out. Wiped spots clear prior to continue pulling out of hole (1115, 1105, 1040, 1030, 980, 745 m).	

Date : 06 Jan 2006						Daily Cost : kr 3145432.37	Report Number : 29
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity	
671	IH2	P	TRIP		0.5	Flow checked well static - OK. Pumped slug.	
334	IH2	P	TRIP		1	Pulled out of hole from 671 m to 334 m. Flow checked well static - OK.	
0	IH2	P	TRIP		3	Pulled out of hole with 17 1/2" BHA from 334 m to surface. Shut off MWD tool and racked same in derrick. Found both stabilisers balled up - bit partly balled up. Cleared and cleaned drill floor.	
133	IH2	P	CSG		4.5	Ran two stands of HWDP. Picked up mud line hanger (MLH) clean out tool and ran in hole to 133,2 m. Circulated and cleaned MLH. Measured drill pipe while running in hole for correct MLH space out measurement, found to be accurate. Pulled out of hole and racked in derrick. Laid out MLH clean out tool.	
0	IH2	P	BOPW		1	Picked up wear bushing running tool and pulled same.	
0	IC2	P	CSG		3.5	Performed Toolbox talk prior to rigging up 13 3/8" casing handling equipment. Rigged up same.	
782	IC2	P	CSG		10.5	Performed Toolbox talk prior to running in hole with 13 3/8" casing. Ran in hole with same. Total 3 m3 losses @ 350 m. Reduced running speed from 60 to 90 seconds per joint @ 350 m. Loss rate dropped from 460 l/ 5 joints to 50 - 150 l/5 joints). Filled every joint while running and topped up every 5 joints. Total 4 m3 losses @ 782m.	

Date : 07 Jan 2006						Daily Cost : kr 4807743.65	Report Number : 30
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity	
1348	IC2	P	CSG		6	Ran in hole with 13 3/8" from 782 m to 1348 m. Running speed 90 seconds per joint down to 1130 m. Reduced running speed to 120 secounds per joint from 1130 m. Loss rate dropped from 200 l/ 5 joints to 50 - 100 l /5 joints). Filled on every joint and topped up every 5 joints.	
1359	IC2	P	CSG		2	Picked up and checked mudline hanger joint, ran same.	
1409	IC2	P	CSG		1	Continued running in hole with 13 3/8" casing. Joints above MLH made up to max torque-24,95 kft-lbs.	
1476	IC2	P	CSG		1.5	Broke circulation and washed down last 5 13 3/8" casing joints down with 600 lpm.	
1498	IC2	P	CSG		1.5	Picked up and checked wellhead casing hanger, ran same. Picked up landing string and washed down with 600lpm/24 bar and landed casing in MLH. Drained BOP and verified spaceout-OK. Total losses while running casing 5 m3.	
1498	IC2	P	CSG		1	Rigged up cement head and lines.	
1498	IC2	P	CSG		3.5	Staged circulation up to loss free rate of 2000 lpm/77 bar and circulated bottom up. Pumped 25 m3 spacer. Lost 4 m3 during circulation prior to cement job. Tested cement lines to 250bar-OK. Release bottom plug.	
1498	IC2	P	CSG		1	Pumped 41m3 cement (11,5 m3 extra due to poor initial cement) with 850 lpm/20bar.	
1498	IC2	P	CSG		1.5	Released top plug, displaced cement with 2000lpm/124spm. Bumped plug at 7220 strokes, 80 bar. Tested casing to 280bar/10min-OK. Pump efficiency: 97,4%. Lost 5 m3 during cementing and displacement.	
1498	IC2	P	CSG		1	Rigged down cement head and lines.	
1498	IC2	P	CSG		1	Released casing running tool. Pulled and laid down landing string. Found landing string covered in clay.	
1498	IC2	P	CSG		2.5	Rigged down casing running equipment and rigged up 5" drillpipe balls and elevator.	
1498	IC2	P	CSG		0.5	Made up wellhead hanger adjustment tool.	

Date : 08 Jan 2006 **Daily Cost : kr 2335719.15** **Report Number : 31**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1497	IC2	P	CSG		1	Made up and ran in hole with wellhead hanger adjustment tool.
1497	IC2	P	CSG		1.5	Adjusted wellhead hanger. Pulled out and laid down same. Changed dies on Iron Roughneck.
1497	IC2	P	CSG		1	Made up Jet Sub and ran in hole and jetted BOP. Function tested rams. Pulled out and laid down Jet Sub.
1497	IC2	P	CSG		2.5	Made up Mill and Flush tool and ran in hole. Flushed seal assembly setting area. Pulled out and laid down same.
1497	IC2	P	CSG		2	Made up seal assembly running tool and ran in hole to install seal assembly-No go. Pulled out. Seal assembly covered with clay.
1497	IC2	P	CSG		1.5	Made up Mill and Flush tool, ran in hole with same. Circulated and cleaned seal area.
1497	IC2	P	CSG		3.5	Made up seal assembly running tool and ran in hole and installed seal assembly. Pressure tested seal assembly to 206bar/10min-OK. Pulled out and laid out seal assembly running tool.
1497	IC2	P	CSG		0.5	Closed shear ram and tested well to 138bar/10min-OK
1497	IC2	P	CSG		7	Nippled down diverter assembly, slick joint, choke/kill/control hoses and BOP. Lifted BOP to the side.
1497	IC2	P	BOPW		3.5	Nippled down BOP low pressure x-over and installed 13 3/8" wellhead and high pressure BOP x-over.

Date : 09 Jan 2006 **Daily Cost : kr 2355887.15** **Report Number : 32**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	IC2	P	BOPW		1	Nippled down low pressure BOP x-over and installed 13 3/8" wellhead and high pressure BOP x-over.
0	IC2	P	BOPW		6	Nippled up slick joint, BOP, kill/choke/control hoses.
0	IC2	P	BOPA		5	Ran 3 stands HWDP, BOP and Top Drive test assembly. Pressure tested BOP to 20/300 bar for 5/10 minutes.
0	IC2	TP	BOPA	VE	1	Attempted pressure test on Top Drive-No Go. Changed lo-torque valve and cement hose on cement unit due to leak.
0	IC2	P	BOPA		2.5	Continued pressure test on Top Drive to 20/300bar for 5/10 minutes.
0	IC2	TP	BOPA	VE	2.5	Released test plug from string and pulled out to test shear ram against BOP test plug- No Go. Found leaking test sub.
0	IC2	P	BOPA		1	Pulled and laid out BOP test assembly.
0	IC2	P	BOPA		0.5	Pressure tested shear ram and adjustment sub against 13 3/8" casing to 280 bar for 10 minutes.
0	PH	P	TRIP		0.5	Picked up 12,25" clean out assembly.
0	IC2	P	BOPW		0.5	Installed wearbushing.
85	PH	P	TRIP		1.5	Made up 12,25" clean out assembly.
854	PH	P	TRIP		2	Changed to 5" handling equipment and ran in hole with 12,25" clean out assembly from 85m to 854m.

Date : 10 Jan 2006 **Daily Cost : kr 2306216.15** **Report Number : 33**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1465	PH	P	TRIP		2	Continued to run in hole with 12,25" clean out assembly from 854m to 1465m. Tagged plug at 1465m.
1465	PH	P	BOPA		0.5	Performed choke drill.
1507	PH	P	DRLL		6.5	Drilled float and firm cement in shoetrack. Drilled out shoe @ 1497m. Cleaned out rat hole to 1507m.
1510	PH	P	DRLL		0.5	Drilled new formation from 1507m to 1510m.
1510	PH	P	REAM		0.5	Reamed area between 1504-1510m.
1510	PH	P	CC		1	Pumped 2x10m^3 Hi-Vis pills around. Circulated and conditioned mud.
1510	PH	P	BOPA		1.5	Performed Leak Off Test to 1,81sg EMW.
1510	PH	P	CC		1.5	Performed Pre-job meeting prior to displacing well. Displaced well to 1,55sg oil based mud. 3250lpm(40-50bar) / 60rpm.
1510	PH	P	OTH		1.5	Cleaned shakers and trip tank. Prepared oil based slug.
110	PH	P	TRIP		3	Pumped slug. Pulled out of hole from 1510m to 110m.

Date : 10 Jan 2006 **Daily Cost : kr 2306216.15** **Report Number : 33**

0	PH	P	TRIP		1.5	Flow checked well prior to pulling bottom hole assembly through BOP. Pulled out and racked back 12,25" clean out assembly in derrick.
0	PH	P	TRIP		1	Performed toolbox talk prior to picking up 8,5" drilling assembly. Picked up same.
0	PH	P	TRIP		1	Uploaded and tested MWD.
20	PH	TP	TRIP	RE	1	Troubleshot pipe pick up system (PLS).
20	PH	P	TRIP		1	Continued making up 8,5" drilling assembly.

Date : 11 Jan 2006 **Daily Cost : kr 2405600.15** **Report Number : 34**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
145	PH	P	TRIP		3	Continued making up 8,5" drilling assembly.
1510	PH	P	TRIP		3	Changed to 5" handling equipment and ran in hole. Washed down last stand and tagged bottom at 1510m.
1510	PH	P	CC		1.5	Pulled into 13 3/8" casing shoe and circulated and conditioned the mud.
1530	PH	P	DRLL		2	Drilled 8,5" hole from 1510m to 1530m.
1530	PH	P	REAM		0.5	Pulled back and reamed transition area between 17,5" and 8,5" hole several times.
1647	PH	P	DRLL		5.5	Continued drilling from 1530m to 1647m. (Flow: 1971 lpm, SPP:147bar, WOB: 4 T, RPM: 118, TQ: 1,2 kN.m, ROP: c. 36,2 m/hr, ECD: 1,57 Sg EMW)
1648	PH	P	REAM		2	Had pack off tendencies at 1647m to 1648m. Reamed stand and whiped tight spots.
1656	PH	P	DRLL		0.5	Continued drilling from 1648m to 1656m. (Flow: 1980 lpm, SPP:149bar, WOB: 2,3 T, RPM: 125, TQ: 1,3 kN.m, ROP: c. 36,8 m/hr, ECD: 1,58 Sg EMW)
1656	PH	TP	DRLL	VE	0.5	Picked off bottom and circulated while troubleshooting mudlogging computer system.
1742	PH	P	DRLL		3.5	Continued drilling from 1656m to 1742m. Cycled pumps several times during drilling due to MWD pulser shutting off. (Flow: 2002 lpm, SPP:149bar, WOB: 0,8 T, RPM: 125, TQ: 1,2 kN.m, ROP: c. 36,4 m/hr, ECD: 1,58 Sg EMW)
1742	PH	P	REAM		0.5	Had pack off tendencies at 1742. Reamed stand and whiped tight spots.
1755	PH	P	DRLL		0.5	Continued drilling from 1742m to 1755m.
1755	PH	P	REAM		0.5	Had pack off tendencies at 1755m, ECD gradually increased from 1,58sg EMW to 1,6sg EMW. Reamed stand and whiped tight spots.
1762	PH	P	DRLL		0.5	Continued drilling from 1755m to 1762m. (Flow: 1989 lpm, SPP:150bar, WOB: 1,4 T, RPM: 128, TQ: 1,4 kN.m, ROP: c. 34,6 m/hr, ECD: 1,59 Sg EMW)

Date : 12 Jan 2006 **Daily Cost : kr 2343028.55** **Report Number : 35**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1905	PH	P	DRLL		7.5	Continued drilling from 1762m to 1905m. Cycled pumps several times during drilling due to MWD pulser shutting off. (Flow: 1969 lpm, SPP:147bar, WOB: 0,7 T, RPM: 126, TQ: 1,2 kN.m, ROP: ~32 m/hr, ECD: 1,59 sg EMW) Had pack off tendencies at 1840 m and 1864 m.
1905	PH	P	CC		1	Circulated hole clean with 2000 lpm, 159 bar, 115 RPM .
1905	PH	P	TRIP		0.5	Flow check prior to pulling out of hole-OK.
1479	PH	P	TRIP		1.5	Pulled out of hole from 1905m to 1479m-OK.
1905	PH	P	TRIP		1.5	Ran in hole, tagged fill at 1902m. Washed down from 1902m to 1905m. Fill concisted of cuttings.
2261	PH	P	DRLL		12	Continued drilling 8,5" hole from 1905m to 2261m. (Flow: 2016 - 2069lpm, SPP:161 - 178bar, WOB: 1,7-2 T, RPM: 128 - 134, TQ: 1,4 - 1,8 kN.m, ROP: 38 - 46 m/hr, ECD: 1,59 - 1,61 Sg EMW)

Date : 13 Jan 2006 **Daily Cost : kr 2542716.55** **Report Number : 36**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2359	PH	P	DRLL		3	Continued drilling 8,5 hole from 2261m to 2359m. (Flow: 2046 lpm, SPP:180bar, WOB: 2,1 T, RPM: 134, TQ: 2ft-klb, ROP: ~49m/hr, ECD: 1,61Sg EMW)
2359	PH	TP	DRLL	RE	0.5	Observed washout between top drive saversub and drill pipe. Racked back stand.
2359	PH	TP	DRLL	RE	1	Circulated bottoms up prior to changing out saversub.
2359	PH	TP	DRLL	RE	0.5	Changed out saversub.
2758	PH	P	DRLL		12.5	Continued drilling from 2359m to 2758m. (Flow: 2044-2080 lpm, SPP:184-196bar, WOB: 1.6-3.4 T, RPM:130 - 140, TQ: 2 - 2.6 ft-klb, ROP: ~41-58m/hr, ECD: 1,61-1.62Sg EMW)
2758	PH	P	PRESS		0.5	Flow checked well due to pit volume increase-OK. Found increase to be surface related.
2899	PH	P	DRLL		6	Continued drilling from 2758m to 2899m. (Flow: 2061-2086 lpm, SPP:194-196bar, WOB: 2.4-3.4 T, RPM: 140, TQ: 2.5 - 2.7 ft-klb, ROP: ~30-41m/hr, ECD: 1,61g EMW)

Date : 14 Jan 2006 **Daily Cost : kr 2334067.55** **Report Number : 37**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3094	PH	P	DRLL		13	Continued drilling 8,5" hole from 2899m to 3094m. (Reduced ROP to 15 m/hr prior to drilling into the Balder) (Flow: 2052 - 2153 lpm, SPP:194 - 197 bar, WOB: 2,7-4,7 T, RPM: 139-144, TQ: 2,9-3,1 ft-klb, ROP: 15 - 25m/hr, ECD: 1,61 Sg EMW)
3094	PH	P	CC		0.5	Circulated bottoms up for samples from 3094m.
3131	PH	P	DRLL		6	Continued drilling 8,5" hole with reduced ROP from 3094m to 3131m. (Reduced ROP additionally while searching for top reservoir) (Flow: 2069 lpm, SPP:197 bar, WOB: 2,8 - 4,3 T, RPM: 141, TQ: 2,9 - 3,8 klb-ft, ROP: 4,8 - 9,3 m/hr, ECD: 1,60 Sg EMW)
3131	PH	P	CC		1	Circulated bottoms up for samples from 3131m.
3141	PH	P	DRLL		2	Continued drilling 8,5" hole with reduced ROP from 3131m to 3141,5m. (Max ROP = 5 m/hr while searching for top reservoir) (Flow: 2068 lpm, SPP: 197 bar, WOB: 2,8 T, RPM: 143, TQ: 2,6 klb-ft, ROP: ~4,7 m/hr, ECD: 1,61 Sg EMW)
3141	PH	P	CC		1.5	Circulated bottoms up for samples from 3141,5m

Date : 15 Jan 2006 **Daily Cost : kr 2334067.55** **Report Number : 38**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3141	PH	U	CC		0.5	Flow checked well at 3141,5m - OK.
287	PH	U	TRIP		7	Pulled out of hole with 8,5" drilling assembly from 3141,5m to 287m.
287	PH	U	TRIP		0.5	Flow checked well prior to pulling bottom hole assembly through BOP.
7	PH	U	TRIP		1	Pulled out and racked 8,5" bottom hole assembly in derrick.
7	PH	U	TRIP		1	Downloaded data from MWD tool.
0	PH	U	TRIP		0.5	Racked back MWD stand.
0	PH	U	OTH		1	Slipped and cut drilling line.
0	PH	U	TRIP		2	Laid down 17,5" drilling assembly from derrick.
276	PH	U	TRIP		7	Picked up and ran in hole with core assembly number 1.
1650	PH	U	TRIP		3.5	Ran in hole with 8 1/2" core assembly on 5" drill pipe from 276m to 1650m.

Date : 16 Jan 2006 **Daily Cost : kr 2836139.55** **Report Number : 39**

3081	PH	U	TRIP		3.5	Continued running in hole with 8 1/2" core assembly on 5" drill pipe from 1650 m to 3081 m. Filled pipe every 1000 m.
3142	PH	U	REAM		1	Washed down from 3081 m (Flow: 1000 lpm, SPP: 40 - 45 bar) and tagged bottom at 3141,5 m. Reamed tight spot at 3087 m. No fill observed on bottom. Dropped ball and circulated down with 700 lpm.
3188	PH	U	DRLL		2	Cut 8 1/2" core from 3141,5 m to 3187.5 m
3188	PH	U	CC		0.5	Pulled free core sample with 3 tons overpull. Performed flow checked, ok static.
1492	PH	U	TRIP		5.5	Pulled out of hole with core assembly from 3187.5 m to 1492 m (5 m into 13 3/8" shoe).
1387	PH	U	TRIP		0.5	Performed flow check: 15 min, ok static. Pulled out of hole with core assembly from 1492 m to 1387 m.
1387	PH	TU	TRIP	RE	1.5	Hydraulic hose on pipe racking system (upper arm) bursted, replaced same.
360	PH	U	TRIP		2.5	Pulled out of hole with core assembly from 1387 m to 360 m. Performed flow check prior to pulling bottom hole assembly through BOP, ok static.
48	PH	U	TRIP		2	Pulled out of hole with core assembly from 360 m to 48 m.
48	PH	U	TRIP		0.5	Performed tool box meeting prior to cut and lay down core barrel.
48	PH	U	TRIP		4.5	Broke and laid down 5 joints of inner barrel. Meanwhile performed service on top drive system. Changed dies on pipe racking system.

Date : 17 Jan 2006 **Daily Cost : kr 2743410.05** **Report Number : 40**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PH	U	TRIP		2.5	Pulled out of hole and laid down outer core barrels.
0	PH	TU	TRIP	VE	2.5	Made up 8 1/2" bottom hole assembly (changed out non functional P4M pulser and directional probe).
0	PH	U	TRIP		1	Inspected float sub and uploaded MWD data.
115	PH	U	TRIP		1.5	Made up and ran in hole with 8 1/2" bottom hole assembly from 20 m to 115 m.
1508	PH	U	TRIP		2.5	Ran in hole with 8 1/2" bottom hole assembly on 5" drill pipe from 115 m to 1508 m.
1508	PH	U	REAM		0.5	Experienced problems passing 17 1/2" x 12 1/4" transition at 1508 m, reamed same. (1900 lpm, 125 bar)
3127	PH	U	TRIP		3.5	Ran in hole with 8 1/2" bottom hole assembly from 1508 m to 3127 m.
3188	PH	U	REAM		2.5	Broke circulation and reamed down from 3127 m to 3187.5 m for MWD log. (2000 lpm, 220 bar, 40 RPM, 2 kftlb's, max gas: 2.8%).
3209	PH	P	DRLL		1.5	Drilled 8 1/2" hole from 3187.5 m to 3209 m. (2070 lmp, 210 bar, 0.6-3.4 tons, 16 m/hrs, 123 RPM, 4.3 kftlb's, ECD: 1.62 sg).
3209	PH	TP	DRLL	RE	1	Lost 30 bar on stand pipe pressure, identified problem (washout on discharge seats for mud pump #1). Isolated mud pump #1.
3282	PH	P	DRLL		5	Drilled 8 1/2" hole from 3209 m to 3282 m (2060 lpm, 209 bar, 0.6-5.8 tons, 8-22 m/hrs, 123-139 RPM, 1.4-5.5 kftlb's, max gas: 0.1 %, ECD: 1.61-1.62 sg).

Date : 18 Jan 2006 **Daily Cost : kr 2833989.99** **Report Number : 41**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3361	PH	P	DRLL		5.5	Drilled 8 1/2" hole from 3282 m to 3361 m with restricted ROP (max 20 m/hrs). (2060 lpm, 209 bar, 0.6-5.0 tons, 8-22 m/hrs, 139 RPM, 3.1-5.0 kftlb's, ECD: 1.61-1.62 sg).
3361	PH	P	CC		1.5	Circulated for samles from 3361 m (2035 lpm, 209 bar, 139 RPM).
3434	PH	P	DRLL		9.5	Drilled 8 1/2" hole from 3361 m to 3434 m (2070-2080 lpm, 204-209 bar, 2-16 tons, 3-42 m/hrs, 131-150 RPM, 3-9 kftlbs, ECD: 1.60-1.61 sg). Drilled with restricted ROP (max 20 m/hrs) from 3360 m to 3364 m.
3434	PH	P	CC		1.5	Circulated hole clean from 3434 m (2087 lpm, 204 bar, 150 RPM).
3235	PH	P	TRIP		1	Performed flowcheck, ok static. Pulled out of hole with 8 1/2" bottom hole assembly from 3434 m to 3235 m.
3235	PH	TP	OTH	HPL	1	Observed 35 tons overpull at 3235 m. Slacked off weight, established rotation and circulation and reamed back in. Stalled out at 3254 m (22 kftlb's), string got stuck. Shut down pumps and applied 20

Date : 18 Jan 2006					Daily Cost : kr 2833989.99	Report Number : 41
						kftlb's torque on string. Jarred down, got free.
3212	PH	P	REAM		1	Backreamed from 3269 m to 3212 m (2000 lpm, 202 bar, 100 RPM, 1 kftlb's). Ran back in to 3248 m and pulled out without any problems. (Tightspot at 3235 m. Full gauge stabilizer was at 3235 m, when string got stuck)
2272	PH	P	TRIP		3	Pulled out of hole with 8 1/2" bottom hole assembly from 3212 m to 2272 m.

Date : 19 Jan 2006					Daily Cost : kr 2741747.11	Report Number : 42
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1516	PH	P	TRIP		2	Pulled out of hole with 8 1/2" bottom hole assembly from 2272 m to 1516 m.
1487	PH	P	REAM		1	Back reamed shoe track area from 1516 m (13 3/8" shoe at 1497 m) to 1487 m (2100 lpm, 160 bar, 38-135 RPM, 0.5-1.0 kftbl's).
1487	PH	P	CC		1	Circulated hole clean (2100 lpm, 158 bar, 35 RPM).
626	PH	P	TRIP		3	Performed flow check, ok static. Pulled out of hole with 8 1/2" bottom hole assembly from 1487 m to 626 m.
626	PH	TP	TRIP	RE	3	Troubleshot the Pipe Racking System. Lower arm loosing calibration. Found faulty sensor/transponder on lower arm, replaced same. Performed test run on pipe racking system, ok
259	PH	P	TRIP		0.5	Continued to pull out of hole with 8 1/2" bottom hole assembly from 626 m to 259 m.
259	PH	P	TRIP		0.5	Flowchecked well prior to pulling bottom hole assembly through BOP, changed to manual slips.
0	PH	P	TRIP		3	Racked upper part of the 8 1/2" bottom hole assebly in the derrick and laid out 8 1/2" MWD package.
0	PH	P	OTH		2	Rigged up for wireline logging. Performed tool -box talk with all personel involved in rigging up for wireline.
0	PH	P	OTH		1.5	Made up wireline tool string #1: AIT/PEX/DSI/NGT and loaded the radioactive sources
1450	PH	P	OTH		1	Ran in hole with wireline run #1 and depth correlated the log at the 13 3/8" casing shoe.
1554	PH	TP	OTH	HPL	0.5	Started to log down from 1450 m. Toolstring stood up at 1554 m. Started to work the toolstring in an attempt to get down, but could not pass the obstruction. Pulled 900 kg overpull when pulling the toolstring back into the casing shoe
0	PH	TP	OTH	HPL	1.5	Logged Gamma ray from 13 3/8" casing shoe to sea-bed and pulled out of hole with wireline tools.
0	PH	TP	OTH	HPL	2	Removed the radioactive soruces and rigged down the wireline equipment. Observed damage to stand-offs.
156	PH	TP	TRIP	HPL	1.5	Made up and ran in hole with the 8 1/2" clean out assembly to 156 m.

Date : 20 Jan 2006					Daily Cost : kr 2096082.05	Report Number : 43
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
240	PH	TP	TRIP	HPL	0.5	Made up and ran in hole with 8 1/2" clean out bottom hole assembly to 240 m.
1488	PH	TP	TRIP	HPL	3.5	Ran in hole with 8 1/2" clean out bottom hole assembly on 5" drill pipe from 240 m to 1488 m.
1580	PH	TP	CC	HPL	1.5	Broke circulation and washed down (2000 lpm, 112 bar, 0 RPM) from 1488 m to 1580 m. Obsticles observed on: 1510 m, 1542 m and 1545 m. Observed cavings over shakers.
1580	PH	TP	CC	HPL	1	Pumped 10 m3 hi-vis pill, circulated same (3040 lpm, 230 bar, 126 RPM) out of hole.
1489	PH	TP	REAM	HPL	1	Back reamed from 1580 m to inside 13 3/8" shoe at 1489 m (3000 lpm, 208 bar, 150 RPM)
1515	PH	TP	REAM	HPL	3	Worked area from 1580 m to 1489 m (3236 lpm, 247 bar, 140 RPM). Moderate cavings observed over shakers. Continued working same area without rotation, amount and size of cavings reduced at shakers.
1544	PH	TP	REAM	HPL	1.5	Worked area from 1526 m to 1544 m (3236 lpm, 249 bar, 10 RPM). Observed further reduction of cavings over shakers.
1915	PH	TP	TRIP	HPL	1	Ran in hole from 1526 m to 1915 m.
1915	PH	TP	CC	HPL	2	Circulated (2000 lpm, 108 bar, 10 RPM) and weighted up mud above 1915 m to 1.58 sg.
1488	PH	TP	TRIP	HPL	2	Pulled out of hole from 1915 m to inside 13 3/8" shoe at 1488 m. Observed 6-10 tons overpull and swabbing on the last 4 stands. Weight disappeared when bottom hole assembly was pulled inside 13 3/8" casing.
1488	PH	TP	CC	HPL	0.5	Circulated inside 13 3/8" casing to clean bottom hole assembly (2000 lpm, 100 bar, 10-30 RPM).

Date : 20 Jan 2006						Daily Cost : kr 2096082.05	Report Number : 43
2584	PH	TP	TRIP	HPL	3	Ran in hole with 8 1/2" clean out assembly from 1488 m to 2584 m.	
2597	PH	TP	TRIP	HPL	0.5	Tight spot at 2584 m. Not able to pass obstruction. Worked area (400 lpm, 6 bar, 20 RPM) from 2584 m to 2597 m.	
3364	PH	TP	TRIP	HPL	3	Ran in hole with 8 1/2" clean out assembly from 2597 m to 3364 m. Observed 4 m fill.	

Date : 21 Jan 2006						Daily Cost : kr 2913919.55	Report Number : 44
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity	
1490	PH	TP	TRIP	HPL	4.5	Pulled out of hole with 8 1/2" clean out assembly from 3430 m to inside shoe at 1490 m. No tight spots observed. Wiped 8 1/2" clean out assembly from 1490 m to 1519 m and back to 1490 m, no obsticles observed.	
1490	PH	TP	CC	HPL	0.5	Performed flowcheck, ok static. Pumped slug.	
523	PH	TP	TRIP	HPL	1.5	Pulled out of hole with 8 1/2" clean out assembly from 1490 m to 523 m.	
523	PH	TP	TRIP	RE	0.5	Set down sensor on pipe racking system did not give signal. Sensor out of position, adjusted same. Reset pipe racking system.	
150	PH	TP	TRIP	HPL	0.5	Pulled out of hole with 8 1/2" clean out assembly from 523 m to 150 m.	
150	PH	TP	TRIP	HPL	0.5	Flow checked, ok static. Changed to manual slips and changed dies on pipe racking machine.	
0	PH	TP	TRIP	HPL	1.5	Pulled out of hole and racked back 8 1/2" clean out assembly. Cleared rig floor.	
0	PH	TP	OTH	HPL	1	Rigged up electric wireline equipment for running AIT/PEX/DSI/NGT/ACTS logs.	
0	PH	TP	OTH	HPL	1	Made up wireline tool string and installed radioactive sources.	
1360	PH	TP	OTH	HPL	1	Ran in hole with AIT/PEX/DSI/NGT/ACTS to 1360 m.	
3415	PH	P	OTH		10	Performed AIT/PEX/DSI/NGT/ACTS logging according to logging program. Not able to get further down than 3415 m. Caliper reading 4" at 2641 m. Got 1363 kg overpull when top of toolstring at 13 3/8" casing shoe (1497 m). Closed caliper for 2'nd attempt, no overpull entering casing shoe. Pulled out of hole with AIT/PEX/DSI/NGT/ACTS logging tool.	
0	PH	P	OTH		1	Rigged down AIT/PEX/DSI/NGT/ACTS toolstring.	
0	PH	P	OTH		0.5	Performed tool box/safety meeting regarding VSP logging and air guns.	

Date : 22 Jan 2006						Daily Cost : kr 2602391.55	Report Number : 45
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity	
0	PH	P	OTH		1	Prepared for Check shot survey. Deployed guns over the side of rig and made up Check shot tool string.	
624	PH	P	OTH		1.5	Ran in hole with tool string to 624 m.	
624	PH	TP	OTH	VE	0.5	Back up hydrophone not working. Troubleshot same. Connected backup hydrophone to another channel. Primary and and back up hydrophone signals ok.	
3400	PH	P	OTH		1	Continued running in hole with Check shot tool string from 624 m to 3400 m. Performed GR correlation.	
3400	PH	P	OTH		3	Recorded 1'st Check shot level at 3400 m. Continued shooting check shots as per programme at formation tops and every 100 m from 3000 m to 1600 m.	
1497	PH	TP	OTH	LOC	1	Pulled out of hole with check shot tool into 13 3/8" shoe, and pulled out of sea with air guns. This was done to remove crane from helideck prior to helicopter arrival. Ran in hole again with check shot tool string from 13 3/8" shoe to 1600 m, and deployed air guns back into sea.	
3434	PH	P	OTH		3	Continued check shot survey as per program at formation tops and every 100 m from 1600 m to seabed.	
0	PH	P	OTH		1	Pulled out and laid down check shot tool string.	
0	PH	P	OTH		0.5	Cleared rig floor for wireline equipment.	
0	ABN	P	TRIP		0.5	Rigged up 3 1/2" drill pipe handling equipment, meanwhile function tested BOP.	
188	ABN	P	TRIP		2.5	Picked up cement stinger. Picked up and ran in hole with 20 joints of 3 1/2" drill pipe.	
188	ABN	TP	TRIP	RE	0.5	Recalibrated pipe lifting system, angles out of sync.	
290	ABN	P	TRIP		1	Continued picking up 3 1/2" drill pipe from deck and ran in hole to 290 m. Picked up 30 joints in total.	

Date : 22 Jan 2006					Daily Cost : kr 2602391.55	Report Number : 45
290	ABN	P	TRIP		1	Rearranged pipe in derrick and changed to 5" handling equipment.
3387	ABN	P	TRIP		5.5	Ran in hole with cement stinger on 5" drill pipe from 290 m to 3387 m. Broke circulation every 500 m.
3434	ABN	P	CC		0.5	Broke circulation at 3387 m and washed down (1600 lpm, 118 bar) cement stinger from 3387 m to TD (3434 m).

Date : 23 Jan 2006					Daily Cost : kr 2263217.86	Report Number : 46
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3434	ABN	P	CC		5	Circulated (2000 lpm, 209 bar, 7 RPM) hole clean and conditioned mud weight in/out to 1,58 sg. Meanwhile performed tool box meeting prior to cement job.
3430	ABN	P	OTH		1	Rigged up cement stand and hooked up cement hose. Pressure tested rig up from cement unit to rig floor: 200 bar/5 min, ok. Prepared for cement job.
3434	ABN	P	OTH		2	Spotted P&A bottom plug stage #1(balanced) from 3434 m to 3215 m: Pumped 8 m3 1,65 sg spacer. Mixed and pumped 9,8 m3 1,90 sg cement slurry followed by 1,2 m3 1,63 sg spacer. Displaced same with 26 m3 1,58 sg mud. Got full returns during cement job and displacement.
3215	ABN	P	TRIP		1	Broke off cement stand and pulled slowly (max 2 min/stand) out cement stinger from 3434 m to 3215 m.
3215	ABN	P	CC		1.5	Circulated (2020 lpm, 221 bar, 23 RPM) 1,5 x bottoms up, diverted excess cement and spacer to slop pit. Continued circulating until 1,58 sg mud weight equal in/out.
3215	ABN	P	OTH		1	Installed cement stand and cement hose. Performed tool box meeting prior to cement job. Pressure tested line from cement unit to drill floor (200 bar/5 min, ok).
3215	ABN	P	OTH		1.5	Spotted P&A bottom plug stage #2 (balanced) from 3215 m to 3000 m: Pumped 8 m3 1,65 sg spacer. Mixed and pumped 9,8 m3 1,90 sg cement slurry followed by 1,2 m3 1,63 sg spacer. Displaced same with 23 m3 1,58 sg mud. Got full returns during cement job and displacement.
2675	ABN	P	TRIP		2	Broke off cement stand and pulled slowly (max 2 min/stand) out cement stinger from 3215 m to 2675 m. (above spacer).
2675	ABN	P	CC		1.5	Circulated (2000 lpm, 210 bar, 23 RPM) bottoms up pluss 16 m3, no traces of cement over shakers.
1490	ABN	P	TRIP		3	Pulled out of hole with cement stinger from 2675 m to 1490 m.
1490	ABN	P	OTH		0.5	Performed flow check, ok static. Pumped slug.
291	ABN	P	TRIP		2	Pulled out of hole with cement stinger from 1490 m to 291 m.
0	ABN	P	TRIP		1	Changed to 3 1/2" drill pipe handling equipment. Pulled out of hole with 3 1/2" drill pipe and cement stinger, racked back same.
39	ABN	P	TRIP		1	Picked up 8 1/2" clean out assembly (for tagging) and ran in hole to 39 m.

Date : 24 Jan 2006					Daily Cost : kr 1969461.40	Report Number : 47
Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2960	ABN	P	TRIP		6.5	Picked up and ran in hole with 8 1/2" clean out assembly from 39 m to 2954 m. Broke circulation each 580 m tripped. Washed down (1600 lpm, 140 bar, 30 RPM) from 2954 m to 2960 m. Stopped pumps and rotation, tagged top of cement with 12 tons, 5 min, ok.
2960	ABN	P	OTH		0.5	Performed flow check, ok static. Pumped slug.
1695	ABN	P	TRIP		2	Pulled out of hole with 8 1/2" clean out assembly from 2960 m to 1695 m.
228	ABN	P	TRIP		7.5	Laid out 156 joints of 5" drill pipe.
228	ABN	P	OTH		0.5	Performed service on top drive.
228	ABN	TP	OTH	RE	0.5	Welded broken guard on top drive system.
228	ABN	P	TRIP		0.5	Cleaned and inspected pipe racking system dies prior pulling bottom hole assembly. Changed to manual slips.
0	ABN	P	TRIP		3	Pulled and laid out 8 1/2" clean out bottom hole assembly (including 6 3/4" drill collars).
291	ABN	P	TRIP		1.5	Rigged up 3 1/2" drill pipe handling equipment and ran in hole with cement stinger and 3 1/2" drill pipe to 291 m.
688	ABN	P	TRIP		1	Rigged up 5" drill pipe handling equipment and ran in hole from 291 m to 688 m with cement stinger.
688	ABN	TP	TRIP	RE	0.5	Reset pipe racking system (frosen software).

Date : 25 Jan 2006 **Daily Cost : kr 1639466.00** **Report Number : 48**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1488	ABN	P	TRIP		2	Ran in hole with cement stinger from 688 m to 1488 m.
1488	ABN	TP	TRIP	OPS	0.5	Found out that cement diverter was on cement stinger. Decided to pull out and remove cement diverter and change to open ended 3 1/2" drill pipe. Performed flow check, ok static. Pumped slug.
0	ABN	TP	TRIP	OPS	3	Pulled out of hole with cement stinger from 1488 m. Broke off cement diverter.
1488	ABN	TP	TRIP	OPS	5	Ran in hole with 3 1/2" cement stinger to 1488 m.
1488	ABN	TP	OTH	RE	4	Found fault cable on pipe racking machine. Replaced same.
1488	ABN	P	TRIP		0.5	Changed dies on pipe racking machine.
1488	ABN	TP	TRIP	RE	0.5	Broken bolt on dies holder for pipe racking system, replaced same.
2050	ABN	P	TRIP		1.5	Ran in hole with open ended 3 1/2" drill pipe from 1488 m to 2050 m.
2050	ABN	P	CC		2.5	Staged up pumps gradually to 2000 lpm (180 bar, 25 RPM). Circulated until mud weight equal in/out 1.58 sg. Moderate amounts of fine clay over shakers.
2050	ABN	P	CC		0.5	Spotted a 100 m hi-vis pill from 2050 m to 1950 m.
1960	ABN	P	TRIP		0.5	Pulled back slowly from 2050 m to 1960 m.
1960	ABN	P	CC		0.5	Dropped and pumped down CST tool.
1950	ABN	P	TRIP		1	Spaced out and made up cement assembly. Pressure tested line up from cement unit to rig floor to 200 bar/5 min, ok.
1950	ABN	P	OTH		1	Spotted P&A balanced cement plug #2, stage #1 from 1950 m to 1650 m: Pumped 6,9 m3 1.65 sg spacer. Mixed and pumped 13,7 m3 1.95 sg cement slurry followed by 1,2 m3 1.65 sg spacer. Displaced same with 11,6 m3 1.58 sg mud. Got full returns during cement job.
1920	ABN	P	TRIP		1	Removed cement hose. Pulled out of hole slowly (max 2 min/stand) from 1950 m to 1920 m.

Date : 26 Jan 2006 **Daily Cost : kr 2797408.30** **Report Number : 49**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1650	ABN	P	TRIP		0.5	Pulled slowly out of hole (max 2 min/stand) from 1920 m to 1650 m.
1650	ABN	P	CC		2	Circulated hole (2000 lpm, 160 bar, 28 RPM), diverted excess cement (trace) and spacer (35 m3 contaminated mud) to slop pit. Continued circulating until even mud weight in/out 1.58 sg. Observed moderate amounts of fine clay over shakers.
1650	ABN	P	OTH		0.5	Rigged up cement assembly. Pressure tested line up from cement unit to drill floor 200 bar/5 min, ok.
1650	ABN	P	OTH		1	Spotted P&A balanced cement plug #2, stage #2 from 1650 m to 1350 m. Pumped 7 m3 1.65 sg spacer. Mixed and pumped 20,3 m3 1.95 sg cement slurry followed by 960 ltr 1.65 sg spacer. Displaced same with 9.5 m3 1.58 sg mud. Full returns during cement job.
1235	ABN	P	TRIP		3	Pulled slowly with singles due to broken pipe racking system. (max 2 min/stand) out of hole from 1650 m to 1235 m.
1235	ABN	P	CC		1	Dropped sponge ball and circulated (2600 lpm, 210 bar, 30 RPM) 1.5 x bottoms up, no spacer or cement observed on shakers.
1235	ABN	P	OTH		1.5	Cut and slipped 108 ft drill line.
0	ABN	P	TRIP		5.5	Pulled out of hole with 5" and 3 1/2" drill pipe. Laid down 3 1/2" drill pipe.
0	ABN	TP	TRIP	OPS	0.5	Made up and ran in hole with 12 1/4" clean out assembly. Pulled out again and racked back same due to changed plans to go in with open ended 5" drill pipe.
1650	ABN	TP	RUP	OPS	1	Made up 5" drill pipe with muleshoe and ran in hole, pulled out of hole to remove mule shoe.
1220	ABN	P	TRIP		1.5	Made up cement stinger, ran in hole with open 5" drill pipe to 1220 m.
1377	ABN	P	CC		1	Washed down (300 lpm, 3 bar) from 1220 m to 1377 m. Tagged hard cement at 1377 m, load tested same 5-10 tons, ok.
1331	ABN	P	TRIP		0.5	Pulled back to 1331 m.
1331	ABN	P	OTH		1	Spaced out and flushed lines. Performed leak test on P&A cement plug #2, 104 bar (1.58 sg mud)/10 min, ok.
993	ABN	P	TRIP		1	Performed flow check, ok static. Pulled out of hole from 1331 m to 993 m.
547	ABN	P	TRIP		2.5	Pulled out of hole and laid down 5" singles from 993 to 547 m.

Date : 27 Jan 2006 **Daily Cost : kr 1598256.00** **Report Number : 50**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
400	ABN	P	TRIP		0.5	Pulled out of hole and laid down 5" drill pipe singles from 547 m to 400 m.
400	ABN	P	CC		0.5	Performed tool box meeting prior to displacing well to water based mud.
400	ABN	P	CC		0.5	Displaced well from 400 m and up to 1.55 sg water based mud.
0	ABN	P	TRIP		2.5	Pulled out of hole and laid down 5" drill pipe from 400 m to surface.
0	ABN	P	TRIP		0.5	Cleared rig floor.
0	ABN	P	BOPW		0.5	Retrieved wear bushing.
0	ABN	P	BOPW		0.5	Drained BOP and riser. Meanwhile prepared to nipple down diverter.
0	ABN	P	BOPW		1.5	Nippled down diverter system
0	ABN	P	BOPW		2	Performed tool box meetning. Cleaned off cuttings in diverter. Laid out diverter.
0	ABN	P	BOPW		2	Drained remaining fluid level in BOP and wellhead.
0	ABN	P	BOPW		2.5	Nippled down slick joint and broke BOP connector. Lifted BOP and moved to starboard.
0	ABN	P	BOPW		1.5	Moved kill hose from well centre and rigged up lifting equipment.
0	ABN	P	BOPW		2.5	Broke and recovered x-over adaptors. Cleaned wellhead.
0	ABN	P	BOPW		1	Removed wing valves.
0	ABN	P	BOPW		1.5	Made up wellhead retrieving tool, screw in same and broke wellhead connector. Retrieved wellhead and remover 13 3/8" lock ring.
0	ABN	P	BOPW		0.5	Picked up BOP x-over, landed and made up same.
0	ABN	P	BOPW		3.5	Nippled up BOP, slip joint and diverter system.

Date : 28 Jan 2006 **Daily Cost : kr 1598256.00** **Report Number : 51**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	ABN	P	BOPW		2	Continued nippling up diverter system.
0	ABN	P	BOPW		0.5	Cleared rig floor.
0	ABN	P	BOPA		0.5	Filled BOP with water based mud. Tested BOP connection 104 bar/10 min, ok.
0	ABN	P	OTH		0.5	Performed tool box meeting prior to picking up 13 3/8" casing cutter assembly.
350	ABN	P	TRIP		1	Picked up and ran in hole with 13 3/8" casing cutter assembly to 350 m.
350	ABN	P	TRIP		0.5	Performed tool box meeting prior to cut 13 3/8" casing.
350	ABN	P	OTH		1	Spaced out and cut 13 3/8" casing at 350 m. Closed annular and circulated down string and up between 13 3/8" - 20" casings until even mud weight in/out.
0	ABN	P	TRIP		1.5	Pulled out of hole with 13 3/8" cutting assembly, laid down same.
16	ABN	P	OTH		2	Picked up and ran in hole with 13 3/8" spear assembly, engaged spear at 16.2 m, pulled 13 3/8" casing to surface (pulled with 50 tons overpull to loosen 13 3/8" casing, 24 tons overpull after lifting 2 m), secured same.
340	ABN	P	OTH		0.5	Changed dies on pipe racking system. Released and pulled out of hole with spear, racked same.
340	ABN	P	CSG		3	Rigged up 13 3/8" casing equipment. Changed jaws on pipe lifting system.
335	ABN	P	CSG		1	Pulled 13 3/8" hanger and laid out same. Rigged up casing slips.
335	ABN	P	CSG		1	Rigged up 500 T balls and elevator.
335	ABN	TP	CSG	OPS	0.5	500 T balls did not fit the 500 T elevator, changed out balls.
0	ABN	P	CSG		3	Pulled out of hole and laid down cut 13 3/8" casing.
0	ABN	P	CSG		2	Rigged down casing handling eqipment.
350	ABN	TP	BOPW	OPS	1	Made up wear bushing running tool. Ran in hole and attempted several times to set wear bushing, not able to pass annular bag. Pulled out of hole and laid out wear bushing running tool.
150	ABN	P	TRIP		0.5	Ran in hole with open ended 5" drill pipe to 150 m.
340	ABN	P	TRIP		1.5	Washed down (1200 lpm, 3 bar, 40 RPM) from 150 m to 340 m.
340	ABN	P	CC		0.5	Flushed manifold and BOP with seawater.

Date : 29 Jan 2006 **Daily Cost : kr 1598256.00** **Report Number : 52**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
340	ABN	P	CC		0.5	Performed tool box meeting prior to displacing well to seawater.
340	ABN	P	CC		1.5	Displaced well from 340 m and up with seawater. Flushed surface lines with seawater.
330	ABN	P	CC		0.5	Spotted a balanced hi-vis plug from 330 m to 280 m. Pumped out of hole from 330 m to 280 m.
280	ABN	P	CC		0.5	Installed CST tool and dart, spotted same at 280 m.
280	ABN	P	OTH		1	Performed tool box meeting prior to cement job. Rigged up cement stand and cement hose. Pressure tested line from cement unit to drill floor 200 bar/10 min, ok.
275	ABN	P	OTH		1	Sat a balanced P&A cement plug #3 from 275 m to 150 m: Mixed and pumped 26.7 m3 1.92 sg cement slurry, displaced same with 1010 ltr seawater.
150	ABN	P	TRIP		0.5	Disconnected cement hose and cement stand. Slowly (2 min/stand) pulled out of hole from 275 m to 150 m.
150	ABN	P	CC		0.5	Inserted drill pipe wiper ball and circulated (3000 lpm, 7 bar) out excess cement (small amount of cement in return).
150	ABN	P	TRIP		0.5	Broke out cement stand. Changed jaws (for 5" drill pipe) on pipe lifting system.
0	ABN	P	TRIP		2.5	Laid out 5" drill pipe from 150 m. Laid out 5" drill and 5" heavy weight drill pipe in derrick.
0	ABN	P	TRIP		4.5	Broke and laid out 13 3/8" spear assembly. Ran in hole with 8" drill collars, jar and 9" drill collars, laid down same. Cleared all excess equipment.
0	ABN	P	TRIP		1	Picked up 30" spear assembly, racked same.
90	ABN	P	TRIP		1	Picked up and ran in hole with 20" casing cutter assembly to 90 m.
90	ABN	P	OTH		1.5	Washed surface lines.
153	ABN	P	TRIP		0.5	Made up and ran in hole with 20" cutter assembly from 90 m to 153 m. Tagged hard cement at 153 m.
135	ABN	P	OTH		0.5	Pulled back and spaced out. Cut 20" conductor at 135 m.
0	ABN	P	TRIP		1	Pulled out of hole with 20" casing cutter assembly, racked back same.
0	ABN	P	CC		1	Made up jet sub, ran in hole and jetted (4500 lpm, 208 bar) BOP and wellhead area.
0	ABN	P	BOPW		3.5	Performed tool box meeting. Nippled down diverter system and slick joint.
0	ABN	P	BOPW		0.5	Performed tool box meeting and started nippling down kill & choke hoses.

Date : 30 Jan 2006 **Daily Cost : kr 2357516.00** **Report Number : 53**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	ABN	P	BOPW		2.5	Continued nippling down kill & choke hoses. Nippled down control hoses.
0	ABN	P	BOPW		0.5	Moved BOP to BOP folding deck.
0	ABN	P	BOPW		1.5	Nippled down 2 ea wellhead x-overs and laid down same.
0	ABN	P	CSG		1.5	Performed tool box meeting. Ran in hole with 20" retrieving tool, rotated same into starter head (by 6 turns clockwise) to engage starter head. Pulled 20" casing (16 tons, no overpull) to drill floor.
0	ABN	P	CSG		1	Performed tool box talk and rigged up casing handling equipment.
0	ABN	P	CSG		1	Performed tool box talk with new crew and laid out casing hanger assembly.
0	ABN	P	CSG		1	Rigged up 350 tons long bails and elevator.
0	ABN	P	CSG		3	Broke out and laid down 20" casing
0	ABN	P	CSG		1.5	Rigged down the casing handling equipment and rigged up drilling equipment.
0	ABN	P	CSG		2	Redressed the casing cutter assembly and changed stabilizer blade and jet nozzles
119	ABN	P	CSG		2.5	Ran in hole with 30" casing cutter assembly on 5" drill pipe and cut the 30" conductor at 119 m. Used 2 hours to cut the conductor.
0	ABN	P	TRIP		0.5	Pulled out of hole with the 30" casing cutter assembly and laid down same.
119	ABN	P	CSG		0.5	Picked up and made up 30" casing spear. Ran in hole and engaged the spear in the 30" conductor according to procedure.
119	ABN	P	CSG		1.5	Held tool box talk and removed the conductor guides on the texas deck and tension platform.
119	ABN	P	CSG		0.5	Pulled the conductor to drill floor and landed the conductor in the elevator. Released the spear and racked in the derrick.

Date : 30 Jan 2006 **Daily Cost : kr 2357516.00** **Report Number : 53**

119	ABN	P	CSG		0.5	Rigged up 30" condcuctor handling equipment
100	ABN	P	CSG		1.5	Held tool box talk and pulled and laid out conductor from 119 m to 100 m
100	ABN	TP	CSG	RE	0.5	Reset proxes for pipe lay down system to move lay down arm into v-door fox hole.
88	ABN	P	CSG		0.5	Continued to lay down 30" conductor from 100 m to 88 m

Date : 31 Jan 2006 **Daily Cost : kr 1638756.00** **Report Number : 54**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	ABN	P	CSG		3	Continued to lay down 30" conductor from 88 m to 0 m
0	ABN	P	CSG		0.5	Rigged down 30" conductor handling equipment.
0	ABN	P	TRIP		5	Broke out and laid down remaining tubular in the derrick and cleared the rig floor of excess equipment. Laid down 23 joints of 5" drill pipe, 30" spear assembly and 6 joints of 8" drill collars.
0	ABN	P	BOPW		3.5	Rigged down conductor tensioner lines and stored same
0	ABN	P	BOPW		4.5	Nipple down choke & kill lines and BOP control lines and store same. Lifted the BOP to well center
0	RMO	P	OTH		3.5	Prepared to skid cantilever and derrick. Raised and secured the BOP set back platform and verified rig status on skidding checklist prior to skid.
0	RMO	P	OTH		2	Skidded the cantilever deck in and skidded the derrick 4 m to starboard to give crane access to Texas deck.
0	RMO	P	OTH		1.5	Started to clear the Texas deck for equipment and to remove the handrails.

Date : 01 Feb 2006 **Daily Cost : kr 2060456.00** **Report Number : 55**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RMO	P	OTH		3	Continued to remove equipment and handrails from the Texas deck.
0	RMO	P	OTH		2	Rigged down the staircase to the Texas deck and closed Texas deck hatch in the hull
0	RMO	P	OTH		1	Skidding derrick 4 m to port and skidded out the cantilever deck to get access to main deck for conductor and tubular storage and to raise the Texas deck.
0	RMO	P	OTH		1	Hooked up the fire water, installed handrails aft and hooked up slings to the texas deck.
0	RMO	P	OTH		3	Held pre-job meeting and performed a safe job analysis on rig up and raising of the Texas deck. Removed Texas deck support and stored same. Meanwhile startet to back-load bulk and equipment and take onboard tubular and conductor.
0	RMO	P	OTH		3.5	Skidded in the cantilever deck while raising the Texas deck. Secured the Texas deck and skidded out the cantilever deck again. Meanwhile continued to back-load bulk and equipment and take onboard tubular and conductor.
0	RMO	P	OTH		2.5	Sea-fastened the Texas deck. Meanwhile continued to back-load bulk and equipment and take onboard tubular and conductor.
0	RMO	P	OTH		7.5	Continued to sea-fasten the rig for rig move in shaker, pump room, heavy tool store and on the drill-floor. Meanwhile continued to back-load bulk and equipment and take onboard tubular and conductor.
0	RMO	P	OTH		0.5	Skidded in the cantilever deck to rig move position. Meanwhile continued to back-load bulk and equipment and take onboard tubular and conductor.

Date : 02 Feb 2006 **Daily Cost : kr 1983901.00** **Report Number : 56**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RMO	P	OTH		0.5	Continued to skid in the cantilever deck to rig move position.
0	RMO	P	OTH		16	Skidded the derrick starboard to rig move position and continued to sea-fasten equipment, the derrick and BOP prior to rig move.
0	RMO	P	OTH		0.5	Held tool box talk for the jacking operation with all involved personell.
0	RMO	P	OTH		1.5	Jacked the rig down to 3 m draft.
0	RMO	P	OTH		1	Checked the hull integrity and found leakage into pit # 6. Showed to be a leaking check valve on the master dump line.
0	RMO	P	OTH		0.5	Held tool box talk for the jacking operation with night crew.
0	RMO	TP	OTH	RE	0.5	Jacked the rig up again to 0.5 m air gap.
0	RMO	P	OTH		1	Connected the main tow bridle to Sea Lynx and the port forward tow bridle to Tor Viking. Meanwhile blinded the leaking check valve on the master dump line and jacked the rig down to 3 m draft and checked the hull integrity again.
0	RMO	P	OTH		2.5	Continued to raise the legs to allow start sailing to the 15/12-16 S Varg South location. Rig outside the 500 m radius at the 1/2-2 well location at 23:35 hrs

11 CASING AND LINER DATA

Size	Shoe (m TVD RKB)	Shoe (m MD RKB)	Top (m TVD RKB)	Top (m MD RKB)	Weight (lbs/ft)	Grade	Connection	Collapse rating (bar)	Burst rating (bar)	Tension minimum yield (kdaN)
30”	172,68	172,68	16,7	16,7	457	X-52	HD90MT			
20”	697,7	696,7	16,7	16,7	133	X-56	E-60/MT	104	276	1373
13 3/8”	1497	1497	16,7	16,7	98	L80	Dino Vam	199	510	970

11.1 30” CONDUCTOR AS RUN

1/2-2 30" Conductor tally As Run

Shoe depth	**172,68**	m
Section TD (36")	**175,50**	m
Min Make up torque:	**25 000**	ftlb
OD	**30,00**	Inch
OD connection	**32,25**	"
ID 30"	**27,00**	"
ID BWS	**24,75**	"
Weight	**686,00**	kg/m
Grade	**X-52**	
Connection	**HD90MT**	

Run nr:	S/N	Length (m)	Btm jnt. when RIH	Top jnt.when RIH	Depth btm. of Jt. (m)	Depth top of jt. (m)	Remarks
1	AW11349-01	12,590	12,590	0,000	172,68	160,09	30" x 1 1/2" Cement shoe joint
2	AW70179-13	12,265	24,855	12,590	160,09	147,82	30" x 1 1/12" Intermediate joint
3	AW73396-07	12,280	37,135	24,855	147,82	135,54	30" x 1 1/12" Intermediate joint
4	NW02449-01	11,560	48,695	37,135	135,54	123,98	30" x 1 1/2" Landing joint (BWS)
5	AW60407-05	12,303	60,998	48,695	123,98	111,68	30" x 1/12" Intermediate joint
6	AW73407-15	12,260	73,258	60,998	111,68	99,42	30" x 1/12" Intermediate joint
7	AW73407-04	12,030	85,288	73,258	99,42	87,39	30" x 1/12" Intermediate joint
Pup A	DK11302-023	3,045	88,333	85,288	87,39	84,35	30" x 1 1/2" Pup joint
8	AW73306-06	12,260	100,593	88,333	84,35	72,09	30" x 1/12" Intermediate joint
9	AW73407-09	12,280	112,873	100,593	72,09	59,81	30" x 1/12" Intermediate joint
10	AW73407-07	12,275	125,148	112,873	59,81	47,53	30" x 1/12" Intermediate joint
11	AW73407-08	12,095	137,243	125,148	47,53	35,44	30" x 1/12" Intermediate joint
12	AW70197-04	11,995	149,238	137,243	35,44	23,44	30" x 1/12" Intermediate joint
13	NW02448-01	12,040	161,278	149,238	23,44	11,40	30" x 1/12" Tension joint
14	AW62344-13	12,050	173,328	161,278	11,40	-0,65	30" x 1/12" Landing joint
					-0,65	-0,65	

11.2 20” CASING AS RUN

WELL: 1/2-2 **AS RUN** **Revision Date: 06.04.2006 13:58**
CSG. SIZE: 20" **Utarbeidet av: K. D. Jarlsby**
GRADE: 133#, X-56, E60/MT **Sjekket av : A. Graskopf**

Run no	Joint no	Joint length (m)	Total length (m)	Depth btm.item (mMD)	Depth top.item (mMD)	Comments
					24" hole to:	703,00
					696,79	20" shoe depth
1	Shoe A	12,570	12,57	696,79	684,22	2 x Centr + Bakerlock
2	Float A	12,640	25,21	684,22	671,58	2 x Centr + Bakerlock
3	60	11,800	37,01	671,58	659,78	1 x Centralizer
4	59	12,079	49,09	659,78	647,70	1 x Centralizer
5	58	12,079	61,17	647,70	635,62	
6	57	12,080	73,25	635,62	623,54	
7	56	12,064	85,31	623,54	611,48	
8	55	12,076	97,39	611,48	599,40	
9	54	12,077	109,47	599,40	587,33	
10	53	12,083	121,55	587,33	575,24	
11	52	12,082	133,63	575,24	563,16	
12	51	12,082	145,71	563,16	551,08	
13	50	12,075	157,79	551,08	539,01	# 49 to be used later above ML hanger
14	Spare A	12,068	169,86	539,01	526,94	Barbord main deck
15	48	12,079	181,93	526,94	514,86	
11	47	12,077	194,01	514,86	502,78	
12	46	12,075	206,09	502,78	490,71	
13	45	12,060	218,15	490,71	478,65	
14	44	12,073	230,22	478,65	466,57	
15	43	12,070	242,29	466,57	454,50	
16	42	12,070	254,36	454,50	442,43	
17	41	12,056	266,42	442,43	430,38	
18	40	12,068	278,48	430,38	418,31	
19	39	12,070	290,55	418,31	406,24	
20	38	12,064	302,62	406,24	394,18	
21	37	12,055	314,67	394,18	382,12	
22	36	12,068	326,74	382,12	370,05	
23	35	12,063	338,80	370,05	357,99	
24	34	12,067	350,87	357,99	345,92	
25	33	12,065	362,94	345,92	333,86	

26	32	12,067	375,00	333,86	321,79	
27	30	12,065	387,07	321,79	309,73	Joint 31 damaged!
28	29	12,071	399,14	309,73	297,65	
29	28	12,068	411,21	297,65	285,59	
30	27	12,067	423,27	285,59	273,52	
31	26	12,065	435,34	273,52	261,45	Torque to max. Tq 50 kftlbs
32	25	12,068	447,41	261,45	249,39	Torque to max. Tq 50 kftlbs
33	24	12,071	459,48	249,39	237,32	Torque to max. Tq 50 kftlbs
34	23	12,060	471,54	237,32	225,26	Torque to max. Tq 50 kftlbs
35	22	12,068	483,61	225,26	213,19	Torque to max. Tq 50 kftlbs
36	21	12,018	495,62	213,19	201,17	Torque to max. Tq 50 kftlbs
37	20	12,072	507,70	201,17	189,10	Torque to max. Tq 50 kftlbs
38	19	12,070	519,77	189,10	177,03	Torque to max. Tq 50 kftlbs
39	18	12,069	531,83	177,03	164,96	Torque to max. Tq 50 kftlbs
40	17	12,065	543,90	164,96	152,89	Torque to max. Tq 50 kftlbs
41	16	12,065	555,96	152,89	140,83	Torque to max. Tq 50 kftlbs
42	ML hngr below HOP	7,994	563,96	140,83	132,83	Torque to max. Tq 50 kftlbs
	ML hngr above HOP	6,237	570,20	132,83	126,60	
	PUP A	3,025	573,22	126,60	123,57	Torque to max. Tq 50 kftlbs
43	15	12,076	585,30	123,57	111,50	Torque to max. Tq 50 kftlbs
44	14	12,081	597,38	111,50	99,42	Torque to max. Tq 50 kftlbs
45	49	12,084	609,46	99,42	87,33	Torque to max. Tq 50 kftlbs
46	12	12,080	621,54	87,33	75,25	Torque to max. Tq 50 kftlbs
47	11	12,079	633,62	75,25	63,17	Torque to max. Tq 50 kftlbs
48	10	12,062	645,68	63,17	51,11	Torque to max. Tq 50 kftlbs
49	9	12,076	657,76	51,11	39,03	Torque to max. Tq 50 kftlbs
50	8	12,074	669,83	39,03	26,96	Torque to max. Tq 50 kftlbs
51	WH below HOP	10,290	680,12	26,96	16,67	Torque to max. Tq 50 kftlbs
	WH above HOP	4,691	684,81	16,67	11,98	16,67 = HOP
52	Landing joint	13,857	698,67	11,98	-1,88	

11.3 13 3/8" CASING AS RUN

WELL: 1/2-2				Rev 02	Date:	06.04.2006 14:01
CSG. SIZE: 13 3/8"				Utarbeidet av:		T. Veiberg
GRADE: 68 #, L80, Dino VAM				Sjekket av :		V. Otnes
Run no	**Joint no**	**Joint length (m)**	**Total length (m)**	**Depth btm.item (mMD)**	**Depth top.item (mMD)**	**Comments**
					17 1/2" hole to:	**1507,00**
					1497,08	13 3/8" shoe depth
1	Shoe	13,632	13,63	**1497,082**	1483,450	Centralizer
2	Intermediate	13,560	27,19	1483,450	1469,890	Centralizer
3	Pup below FC	3,000	30,19	1469,890	1466,890	Centralizer
	Float Collar	0,647	30,84	**1466,890**	1466,243	
	Pup above FC	10,636	41,48	1466,243	1455,607	
4	125	13,839	55,31	1455,607	1441,768	
5	124	13,582	68,90	1441,768	1428,186	
6	123	13,762	82,66	1428,186	1414,424	
7	122	10,257	92,92	1414,424	1404,167	
8	121	13,718	106,63	1404,167	1390,449	
9	120	13,811	120,44	1390,449	1376,638	
10	119	13,785	134,23	1376,638	1362,853	
11	118	13,553	147,78	1362,853	1349,300	
12	117	13,778	161,56	1349,300	1335,522	
13	116	12,322	173,88	1335,522	1323,200	
14	115	13,782	187,66	1323,200	1309,418	
15	114	12,566	200,23	1309,418	1296,852	
16	113	13,351	213,58	1296,852	1283,501	
17	112	12,901	226,48	1283,501	1270,600	
18	111	13,362	239,84	1270,600	1257,238	
19	110	12,719	252,56	1257,238	1244,519	
20	109	11,965	264,53	1244,519	1232,554	
21	108	10,703	275,23	1232,554	1221,851	
22	107	13,801	289,03	1221,851	1208,050	
23	106	12,616	301,65	1208,050	1195,434	
24	105	13,109	314,76	1195,434	1182,325	
25	104	13,191	327,95	1182,325	1169,134	

26	103	12,898	340,85	1169,134	1156,236	
27	102	13,871	354,72	1156,236	1142,365	
28	101	13,863	368,58	1142,365	1128,502	
29	100	13,442	382,02	1128,502	1115,060	
30	99	13,810	395,83	1115,060	1101,250	
31	98	13,339	409,17	1101,250	1087,911	
32	97	10,915	420,09	1087,911	1076,996	
33	96	13,790	433,88	1076,996	1063,206	
34	95	13,777	447,65	1063,206	1049,429	
35	94	13,845	461,50	1049,429	1035,584	
36	93	13,832	475,33	1035,584	1021,752	
37	92	13,747	489,08	1021,752	1008,005	
38	91	13,735	502,81	1008,005	994,270	
39	90	13,389	516,20	994,270	980,881	
40	89	13,797	530,00	980,881	967,084	
41	88	13,815	543,81	967,084	953,269	
42	87	11,286	555,10	953,269	941,983	
43	86	13,119	568,22	941,983	928,864	
44	85	12,042	580,26	928,864	916,822	
45	84	13,523	593,78	916,822	903,299	
46	83	13,428	607,21	903,299	889,871	
47	82	13,801	621,01	889,871	876,070	
48	81	13,437	634,45	876,070	862,633	
49	80	13,877	648,33	862,633	848,756	
50	79	13,377	661,70	848,756	835,379	
51	78	12,456	674,16	835,379	822,923	
52	77	13,107	687,27	822,923	809,816	
53	76	12,964	700,23	809,816	796,852	
54	75	13,488	713,72	796,852	783,364	
55	74	13,287	727,01	783,364	770,077	
56	73	13,821	740,83	770,077	756,256	
57	72	13,798	754,62	756,256	742,458	
58	71	13,557	768,18	742,458	728,901	
59	70	13,681	781,86	728,901	715,220	
60	69	13,704	795,57	715,220	701,516	
61	68	13,805	809,37	701,516	687,711	
62	67	13,654	823,03	687,711	674,057	
63	66	13,158	836,18	674,057	660,899	
64	65	13,873	850,06	660,899	647,026	
65	64	13,543	863,60	647,026	633,483	

66	63	13,689	877,29	633,483	619,794	
67	62	13,811	891,10	619,794	605,983	
68	61	13,250	904,35	605,983	592,733	
69	60	13,579	917,93	592,733	579,154	
70	59	13,288	931,22	579,154	565,866	
71	58	13,387	944,60	565,866	552,479	
72	57	13,838	958,44	552,479	538,641	
73	56	12,503	970,94	538,641	526,138	
74	55	13,836	984,78	526,138	512,302	
75	54	13,833	998,61	512,302	498,469	
76	53	13,609	1012,22	498,469	484,860	
77	52	13,792	1026,01	484,860	471,068	
78	51	13,813	1039,83	471,068	457,255	
79	50	11,329	1051,16	457,255	445,926	
80	49	13,815	1064,97	445,926	432,111	
81	48	12,833	1077,80	432,111	419,278	
82	47	13,201	1091,01	419,278	406,077	
83	46	12,340	1103,35	406,077	393,737	
84	45	12,786	1116,13	393,737	380,951	
85	44	13,387	1129,52	380,951	367,564	
86	43	12,793	1142,31	367,564	354,771	
87	42	13,763	1156,07	354,771	341,008	
88	41	12,549	1168,62	341,008	328,459	
89	39	13,855	1182,48	328,459	314,604	
90	38	13,656	1196,13	314,604	300,948	
91	37	13,393	1209,53	300,948	287,555	
92	36	13,613	1223,14	287,555	273,942	
93	35	13,830	1236,97	273,942	260,112	
94	33	13,860	1250,83	260,112	246,252	
95	32	13,554	1264,38	246,252	232,698	
96	31	12,374	1276,76	232,698	220,324	
97	30	13,529	1290,29	220,324	206,795	
98	29	13,865	1304,15	206,795	192,930	
99	28	13,269	1317,42	192,930	179,661	
100	27	12,819	1330,24	179,661	166,842	
101	15	13,385	1343,63	166,842	153,457	
102	Pup K	4,442	1348,07	153,457	149,015	
103	13	11,599	1359,67	149,015	137,416	
	Below MLHP	4,177	1363,84	137,416	133,239	HOP @ MLH
104	Above MLHP	4,922	1368,77	**133,239**	128,317	
105	26	13,183	1381,95	128,317	115,134	

12 CEMENTING DATA

On the following pages there is a description of the cement jobs executed in this drilling operation. Each description will include a summary of events in addition to slurry and spacer recipes. In the table below all the jobs are listed in a chronological order:

Job description	Date
Cement 30" Conductor	19.12.2005
Lost Circ Plug # 1	21.12.2005
Lost Circ Plug # 2	21.12.2005
Cement 20" Casing	27.12.2005
Cement 13 3/8" Casing	07.01.2006
P&A Bottom Plug # 1	23.01.2006
P&A Bottom Plug # 2	23.01.2006
P&A Plug # 1 on Top of CST	25.01.2006
P&A Plug # 2 on Top of CST	26.01.2006
P&A Surface Plug on Top of CST	29.01.2006

12.1 30" CONDUCTOR

General Information:

WELL DATA - 30" CONDUCTOR					
Casing Depth, MD	[m]	± 173	BHST	[°C]	9
Casing Depth, TVD	[m]	± 173	BHCT	[°C]	7
Conductor Size	["]	30	WOC Time	[hrs]	± 12
Conductor Thickness	["]	1.5	Mud Type		WBM
Slurry Volume (lead/tail)	[m^3]	± 18/20	Mud Weight	[SG]	1.50
Hole Size	["]	36	TOC, MD	[m]	Seabed @ 113
OH Excess (lead/tail)	[%]	200/200	TOC, TAIL	[m]	143

Spacer Recipe:

The well was circulated to seawater in front of the cement job. A white Dye Marker E+ tracer pill was pumped in front to verified the hole volume.

5 M³ OF WHITE PILL USING DYE MARKER E+				
Description	Component	Amount per 1000 litre	Unit	Order of addition
	Seawater	904,8	litre	1
Viscosifier	Econolite Liquid	95,2	litre	2
Dye	Dye Marker E+	10	kg	3
Rheology at 15°C		16 11 7 5,5 4,5 2 1,5	300 200 100 60 30 6 3	

Slurry Recipe:

CEMENT SLURRY DESIGN & DATA				
Slurry design	Dyckerhoff class "G" Cement w/ 0.1% EZ-FLO	**Amount:**		**Units**
		Lead	Tail	
	Econolite	3.20		Liter/100kg
	Liquid $CaCl_2$		4.33	Liter/100kg
	NF-6	0.10	0.10	Liter/100kg
	Sea Water	94.77	39.37	Liter/100kg
	Density	**1.56**	**1.95**	**SG**
	Total Mix Fluid	98.07	43.80	Liter/100kg
	Yield	129.22	74.95	Liter/100kg
	Typical data for			
	Thickening Time at 9 °C:			
Lab ref. tail: 262/1	Time to 70 BC	>7	3:45	Hrs
Typical data	Minimum required hang off strength	8 hrs		100 psi

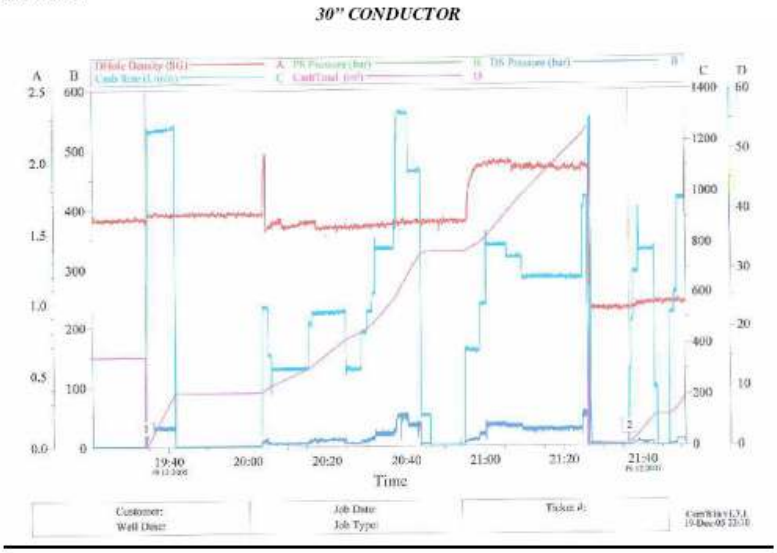
Job Execution Cementing Conductor 19.12.2005:

1. Ran in hole with 30" conductor from 37 m to 48 m (8 m into sea), checked for conductor movement, acceptable.
2. Picked up and ran in hole with 30" conductor from 48 m to 172.7 m, slick hole and no fill. Broke and laid out circulation swedge.
3. Installed guides and load bushings on Texas deck. Tensioned up tension system to 93 tons. Rigged down conductor equipment and rigged up 5" drill pipe handling equipment.
4. Made up and ran in hole with cement stinger on 5" drill pipe, stung in same with 2 tons. Spaced out and rigged up cement stand.
5. Displaced out 1.50 sg mud from well to seawater (30 m3, 1500 lpm, 4 bar).
6. Connected cement line to cement head, pressure tested same 250 bar/5 min, ok.
7. Performed tool box meeting prior to cement job.
8. Pumped 5 m3 of dye marker followed with 5 m3 seawater.
9. Mixed and pumped 21.8 m3 1.56 sg lead cement slurry followed by 19.3 m3 1.95 sg tail cement slurry.
10. Displaced surface lines with 400 ltr seawater.
11. Pulled stinger out of shoe, rigged down cement hose and racked back cement stand. Dropped sponge ball and flushed 5" drill pipe (stinger) with 2 m3 seawater.
12. Pulled out of hole with cement stinger.

Experiences/Conclusions / Focus Points

- Job done as planned.
- Drilled out cement shoe and rat hole from 170 m to 178 m
- Observed losses after drilling out cement

Job Chart:



12.2 CEMENTING LOST CIRCULATING PLUG # 1

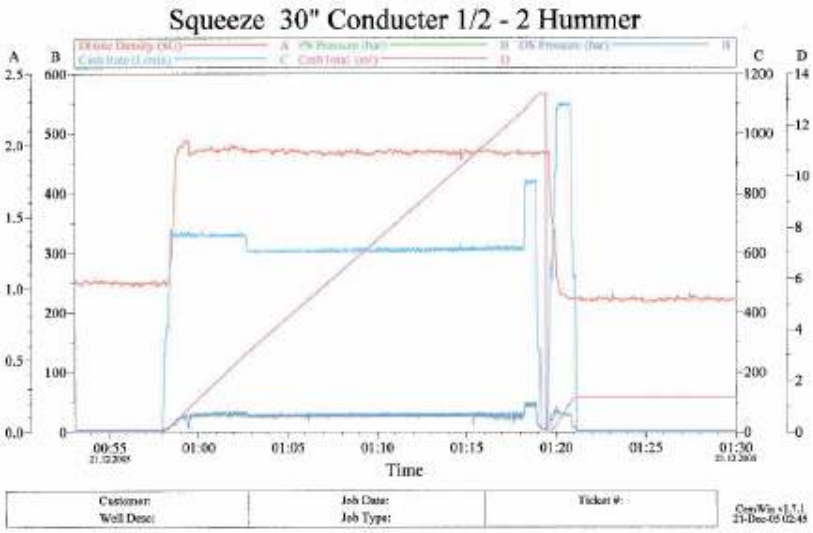
Due to lost circulation below the 30" conductor shoe, two additional cement plugs was set to cure the losses. The tail slurry for the conductor was used.

Job Execution 21.12.2005:

1. Performed tool box meeting prior to cement job.
2. Hooked up cement line to cement stand. Pressure tested cement line, 250 bar/5 min, ok.
3. Mixed and pumped 12 m3 1,95 sg cement slurry.
4. Displaced surface lines and cement stinger with 1333 ltr seawater. Did not observe returns. Stopped filling conductor with seawater to reduce hydrostatic pressure.
5. Removed cement hose and cement stand. Pulled out of hole to 140 m.
6. Dropped sponge ball and displaced (1213 lpm) cement stinger with 1320 ltr seawater.
7. Pulled out of hole with cement stinger.
8. Broke down cement stand and cleared rig floor.

Drilled out cement from 172 m to 174 m

Job Chart:



12.3 CEMENTING LOST CIRCULATING PLUG # 2:

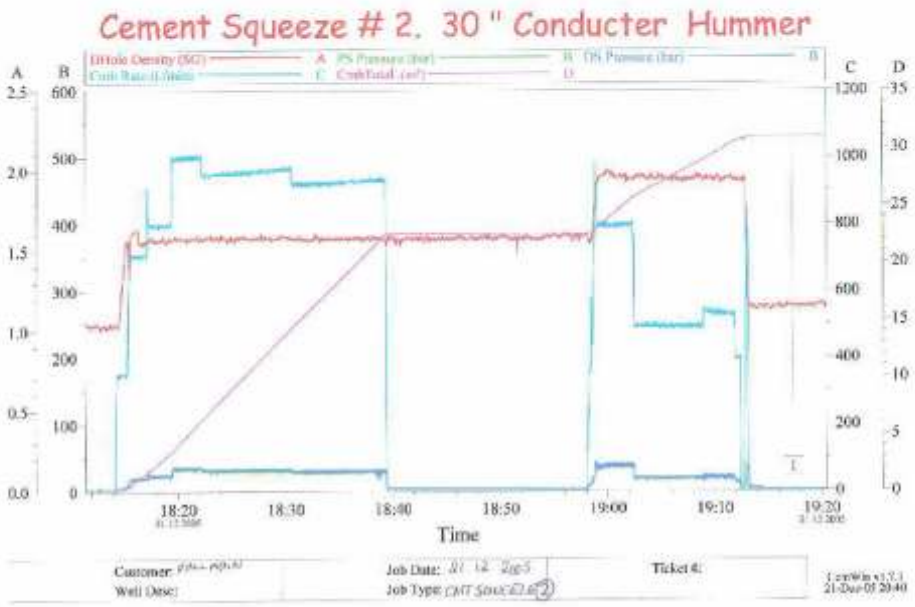
On lost circulation plug # 2 both the lead and tail slurry was pumped, due to lack of additives for the tail slurry.

Job Execution 21.12.2005:

1. Installed diverter bag. Made up and ran in hole with cement stinger to 174 m.
2. Made up cement assembly and hooked up cement hose. Pressure tested cement lines 250 bar/5 min, ok.
3. Performed tool box meeting prior to cement job.
4. Mixed and pumped 20 m3 1.55 sg lead cement slurry followed by 8 m3 1.95 tail cement slurry. No returns to surface. Observed that fluid level in the conductor raised by 10.7 m, equal to 3.8 m3. ROV observed returns up and around conductor.
5. Pulled cement stinger out of hole to 40 m.

Tagged cement at 164,5 m

Job Chart:



12.4 20" SURFACE CASING

General Information:

WELL DATA - 20" CONDUCTOR					
Casing Depth, MD	[m]	± 693	BHST	[°C]	24
Casing Depth, TVD	[m]	± 693	BHCT	[°C]	20
Casing Size	["]	20	WOC Time	[hrs]	± 24
Casing Thickness	["]	0.625	Mud Type		WBM
Slurry Volume (lead/tail)	[m^3]	± 94/12	Mud Weight	[SG]	1.15
Hole Size	["]	24	TOC, MD	[m]	Seabed @ 113
OH Excess (lead/tail)	[%]	100/100	TOC, TAIL	[m]	643

Spacer Recipe:

The 1.08 sg water based mud was displaced out of the hole with sea water.

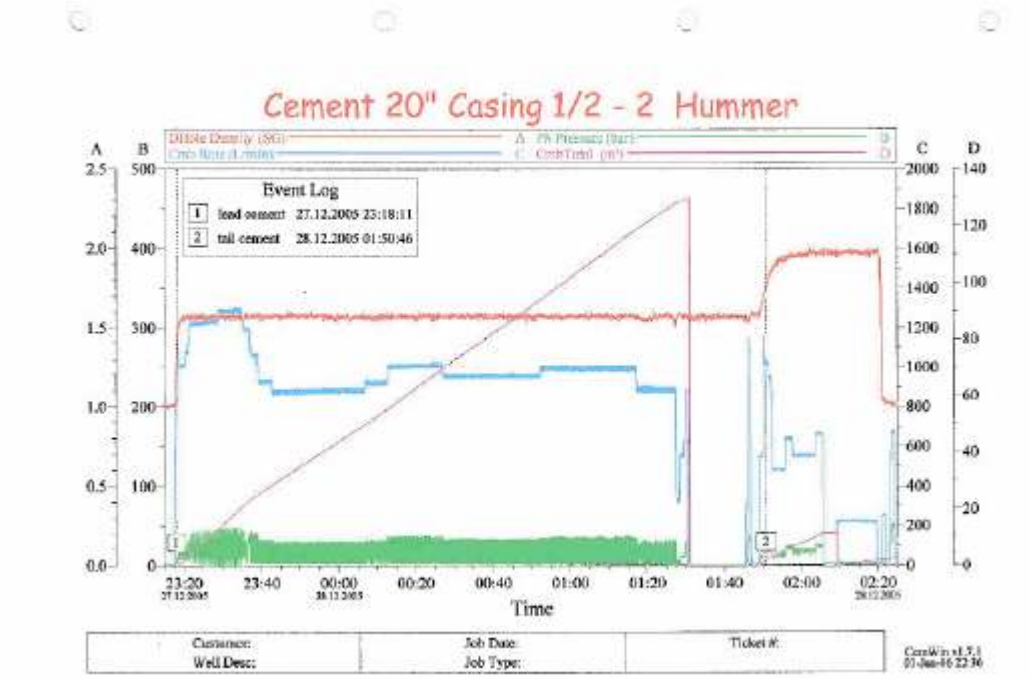
Job Execution Cementing 20"Casing 27.12.2005:

- Ran in hole and landed 20" casing at 703 m MD.
- Rigged up cement head and surface lines.
- Performed pre job meeting
- Pressure tested cement lines to 250 bar/10 min-ok.
- Displaced annulus to seawater (circulated out 1.15 sg KCL mud). Pumped 11288 strokes (final mud weight out 1.05 sg). No losses observed when circulating @ 3000 lpm.
- Mixed and pumped 94,5 m3 1,56 sg lead slurry.
- Mixed and pumped 11,3 m3 1,95 sg tail slurry. No losses observed.
- Launched cement plug and displaced 20" casing with 2500 lpm. Increased pump rate @ 7200 strokes to 3000 lpm. Decreased pump rate @ 7423 strokes to 800 lpm.
- Bumped plug @ 7535 strokes (97% pump efficiency).
- Pressure tested 20" casing to 90 bar/10 min - OK. Bled of pressure and rigged down cement hose. Checked for back flow - OK.
- Rigged down cement head. Installed circulation swedge.
- Turned 20" casing 6 turns to the right to open mud line circulation ports. Rigged up for circulating out excess cement in the 30" x 20" annulus. Pumped sea water at max rate until clean. Pumped 7 m3 seawater added sugar and displaced with 25 m3 sea water. Rotated 20" casing 6 turns to the left and closed mud line circulation ports.

Slurry Recipe:

CEMENT SLURRY DESIGN & DATA				
Slurry design	Dyckerhoff class "G" Cement w/ 0.1% EZ-FLO	**Amount:**		**Units**
		Lead	Tail	
	Econolite	3.20	-	Liter/100kg
	Liquid $CaCl_2$	-	3.00	Liter/100kg
	NF-6	0.10	0.10	Liter/100kg
	Sea Water	94,78	40.28	Liter/100kg
	Density	**1.56**	**1.95**	**SG**
	Total Mix Fluid	98.08	43.38	Liter/100kg
	Yield	129.24	74.53	Liter/100kg
	Thickening Time at BHCT			Cement samples
Test results	Time to 30 BC	6:42	1:51	Hrs:Mins
Lab reference:299	Time to 70 BC	**7:00**	**3:27**	Hrs:Mins
	Time to 100 BC	-	3:38	Hrs:Mins
	SG top/bottom	1.56/1.56	1.95/1.95	SG / SG
	Fann readings at BHCT	6	104	300 RPM
		5	88	200 RPM
		4	70	100 RPM
		3	62	60 RPM
		2	54	30 RPM
		2	26	6 RPM
		2	18	3 RPM
	UCA compressive strength	-	5:16	50 psi
		-	11:42	500 psi
		-	36:00	2171 psi

Job Chart:



12.5 13 3/8"INTERMEDIATE CASING

General Information:

WELL DATA – 13 3/8" SURFACE CASING					
Casing Depth, MD	[m]	± 1493	BHST	[°C]	65
Casing Depth, TVD	[m]	± 1493	BHCT	[°C]	42
Casing Size	["]	13 3/8	WOC Time	[hrs]	± 24
Casing Weight	[lb/ft]	68	Mud Type		WBM
Slurry Volume	[m^3]	29	Mud Weight	[SG]	1,55
Hole Size	["]	17 ½	TOC	[m]	1193
OH Excess	[%]	40			

Spacer Recipe:

SPACER DESIGN & DATA				
Volume:	25 m^3 ahead	**Amount**	**Unit**	**Order of addition**
	Drill water	772,8	Liter	1 Check Chlorides
	NF-6	3,0	Liter	2 Disperse in water
Spacer design	Tuned Spacer E+	35,0	Kg	3 Yield min. 1/2 hour
Per 1 m^3:	Barite	893,3	Kg	4 Weigh up to initial SG
Initial SG			SG	
	Final density	**1,70**	SG	
Typical data	Rheology:	61 37 29 21 7 6	300 200 100 60 30 6 3	

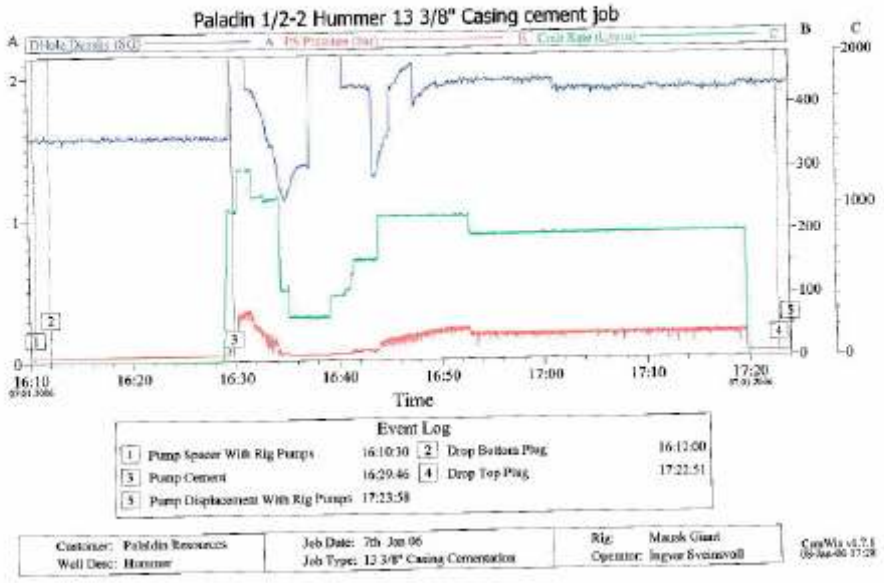
Job Execution Cementing 13 3/8"Casing 07.01.2006:

- Ran the 13 3/8" casing to 1497 mMD. Landed off in mudline hangar.
- Installed cement head and lines
- Circulated up to loss free rate of 2000lpm and circulated bottom up. No losses.
- Pumped 25 m3 1,70 s.g. Tuned Spacer E+.
- Pressure tested cement line to 250 bar/10 min -ok.
- Released bottom plug.
- Mixed and pumped 41 m3 1.92 sg cement slurry (11,5 m3 extra due to poor initial cement).
- Released top plug, displaced cement slurry with 2000 lpm.
- Bumped plug at 7220 strokes 80 bar.
- Lined up cement unit and pressure tested 13 3/8" casing to 280 bar/10 min, ok.
- Rigged down cement head and cement hose.

Slurry Recipe:

CEMENT SLURRY DESIGN & TEST RESULTS			
Slurry design:	Dyckerhoff "G" + 0,1% Ez-Flo	**Tail**	**Units**
	HR-4L	0,50	ltr/100 kg
	NF-6	0,10	ltr/100 kg
	Fresh water	43,17	ltr/100 kg
	Density	**1,92**	SG
	Total Mix Fluid	43,77	ltr/100 kg
	Yield	74,93	ltr/100 kg
	Thickening Time at BHCT		Cement samples
Test results	Time to 30 BC	2:30	Hrs:Mins
	Time to 70 BC	**3:11**	Hrs:Mins
Lab reference:322	Time to 100 BC	3:57	Hrs:Mins
	API Free Water, vertical	1,0	%
	SG top/bottom	1,92/1,92	SG / SG
	API fluid loss at BHCT	-	cc/30 min
	Fann readings at BHCT	88	300 RPM
		59	200 RPM
		49	100 RPM
		44	60 RPM
		40	30 RPM
		22	6 RPM
		15	3 RPM
	UCA compressive strength	5:03	50 psi
		6:56	500 psi
		10:40	1610 psi

Job Chart:



12.6 ABANDONMENT PLUG#1

General Information:

WELL DATA					
Plug Depth, MD	(m)	± 3434	BHST	(°C)	138
Plug Depth, TVD	(m)	± 3434	BHCT (API)	(°C)	106
String Size	(")	5	Mud Type		OBM
String Weight	(lb/ft)	19,5	Mud Weight	(SG)	1,58
Hole Size	(")	8 1/2	TOC, MD	(m)	± 3000
Excess OH	(%)	25	Volume cement slurry	(m^3)	± 20
Spacer type		Tuned Spacer E+	Volume spacer ahead	(m^3)	8

Job Execution Cementing P&A Plug#1, 23.01.2006:

Summary of Events First Stage:

- Circulated (2000 lpm, 209 bar, 7 RPM) hole clean and conditioned mud weight in/out to 1,58 sg. Meanwhile performed tool box meeting prior to cement job.
- Rigged up cement stand and hooked up cement hose. Pressure tested rig up from cement unit to rig floor: 200 bar/5 min, ok. Prepared for cement job.
- Spotted P&A bottom plug stage #1(balanced) from 3434 m to 3215 m:
- Pumped 8 m3 1,65 sg spacer.
- Mixed and pumped 9,8 m3 1,90 sg cement slurry followed by 1,2 m3 1,63 sg spacer. Displaced same with 26 m3 1,58 sg mud. Got full returns during cement job and displacement.
- Broke off cement stand and pulled slowly (max 2 min/stand) out cement stinger from 3434 m to 3215 m.
- Circulated (2020 lpm, 221 bar, 23 RPM) 1,5 x bottoms up, diverted excess cement and spacer to slop pit.

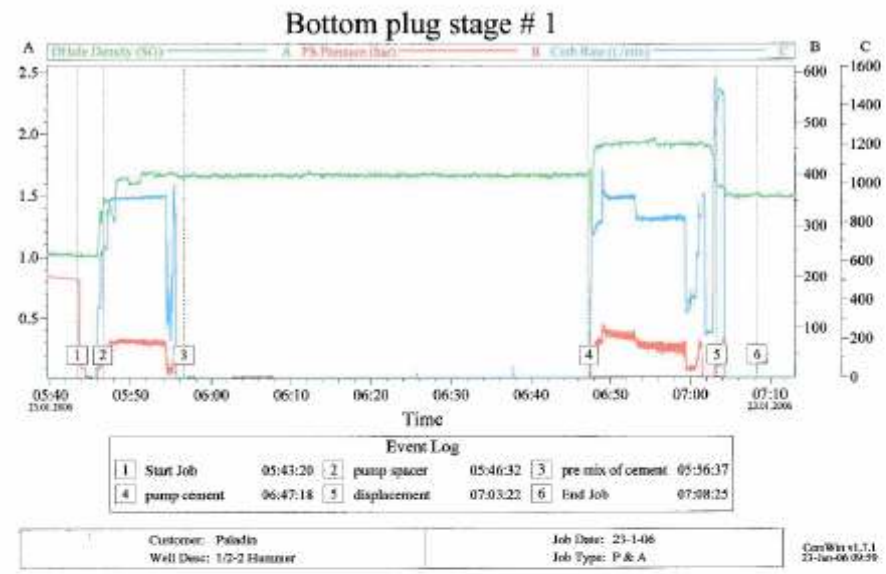
Summary of Events Second Stage:

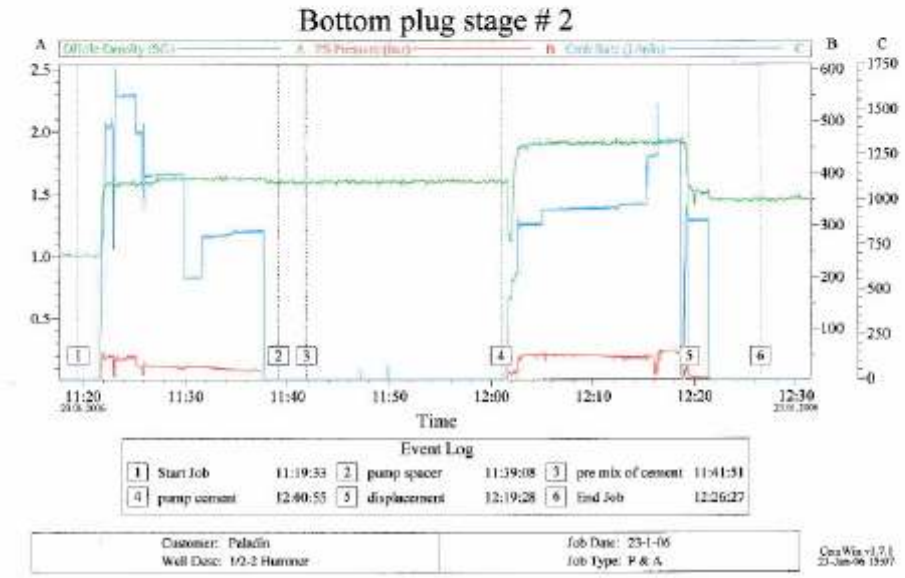
- Continued circulating until 1,58 sg mud weight equal in/out.
- Installed cement stand and cement hose.
- Performed tool box meeting prior to cement job. Pressure tested line from cement unit to drill floor (200 bar/5 min, ok).
- Spotted P&A bottom plug stage #2 (balanced) from 3215 m to 3000 m:
- Pumped 8 m3 1,65 sg spacer. Mixed and pumped 9,8 m3 1,90 sg cement slurry followed by 1,2 m3 1,63 sg spacer. Displaced same with 23 m3 1,58 sg mud. Got full returns during cement job and displacement.
- Broke off cement stand and pulled slowly (max 2 min/stand) out cement stinger from 3215 m to 2675 m. (above spacer).
- Circulated (2000 lpm, 210 bar, 23 RPM) bottoms up pluss 16 m3, no traces of cement over shakers.
- Pulled out of hole with cement stinger from 2675 m to 1490 m.
- Performed flow check, ok static. Pumped slug.
- Pulled out of hole with cement stinger from 1490 m to 291 m.

Slurry Recipe:

CEMENT SLURRY DESIGN & TEST RESULTS			
Slurry design:	Dyckerhoff "G" + 0,1% Ez-Flo + 35% SSA-1		**Units**
	Gascon	5,40	ltr/100 kg
	CFR-8L	1,60	ltr/100 kg
	Halad 413L	5.40	ltr/100 kg
	HR-5L	2,10	ltr/100 kg
	NF-6	0,10	ltr/100 kg
	Fresh water	43,17	ltr/100 kg
	Density	**1,90**	SG
	Total Mix Fluid	57,77	ltr/100 kg
	Yield	102,23	ltr/100 kg
	Thickening Time at BHCT		
Test results	Time to 30 BC	05:37	Hrs:Mins
	Time to 70 BC	**05:48**	Hrs:Mins
Lab reference 400	Time to 100 BC	05:51	Hrs:Mins
	API Free Water, vertical	0	%
	SG top/bottom	1,90/1,90	SG / SG
	API fluid loss at BHCT	46	cc/30 min
	Fann readings at BHCT	131	300 RPM
		96	200 RPM
		55	100 RPM
		37	60 RPM
		22	30 RPM
		7	6 RPM
		4	3 RPM
	API gel strength, 10sec/min	4/43	CP
	UCA compressive strength	04:51	50 psi
		05:42	500 psi
		16:20	2004 psi

Job Chart:





12.7 ABANDONMENT PLUG#2

General Information:

WELL DATA			
Depth to Plug Bottom MD:	1950 m	Total Volume Slurry (m^3)	34
Depth to Plug Bottom TVD:	1950 m	Excess (%)	
Depth to Plug Top MD:	1350 m	Excess OH: (%)	25
Length Cement Plug:	600 m	Casing I D: (")	12,347
Drilling Mud Type:	OBM	Drill Pipe Size: (")	5 x 3 1/2
Drilling Mud Weight:	1,58 S.G	BHST Temperature (°C)	87°C
Spacer fluid:	Tuned Spacer E+	BHCT Temperature: (°C)	71 °C
		Volume Spacer ahead of each plug (m^3)	8

Job Execution Cementing P&A Plug #2, 25.01.2006:

Summary of Events First Stage:

- Held pre job meeting
- Ran in hole with open ended 3 1/2" drill pipe from 1488 m to 2050 m.
- Staged up pumps gradually to 2000 lpm (180 bar, 25 RPM). Circulated until mud weight equal in/out 1.58 sg. Moderate amounts of fine clay over shakers.
- Spotted a 100 m hi-vis pill from 2050 m to 1950 m. Pulled back slowly from 2050 m to 1960 m.
- Dropped and pumped down CST tool.
- Spaced out and made up cement assembly.
- Pressure tested line up from cement unit to rig floor to 200 bar/5 min, ok.
- Spotted P&A balanced cement plug #2, stage #1 from 1950 m to 1650 m:
- Pumped 6,9 m3 1.65 sg spacer.
- Mixed and pumped 13,7 m3 1.95 sg cement slurry followed by 1,2 m3 1.65 sg spacer. Displaced same with 11,8 m3 1.58 sg mud. Got full returns during cement job.
- Dropped two ea wiperballs
- Removed cement hose. Pulled out of hole slowly (max 2 min/stand) from 1950 m to 1920 m.
- Pulled slowly out of hole (max 2 min/stand) from 1920 m to 1650 m.

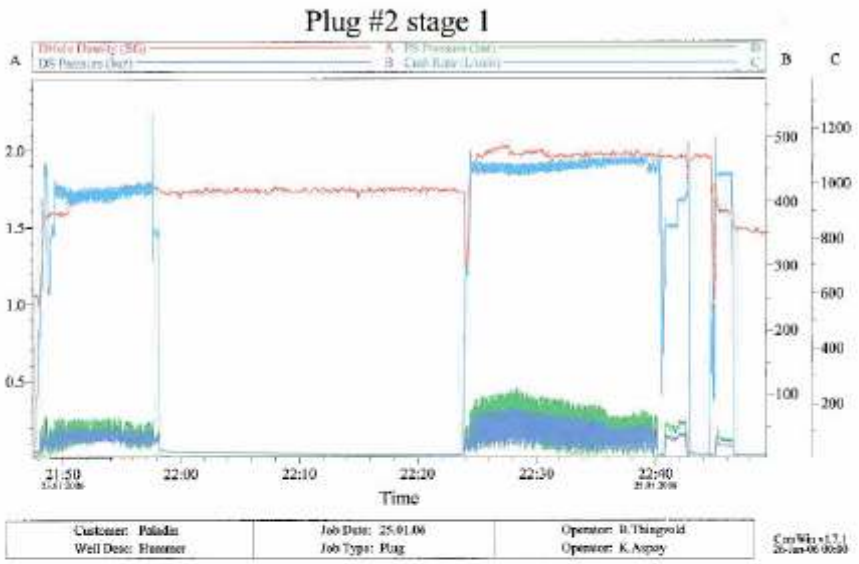
Summary of Events First Stage:

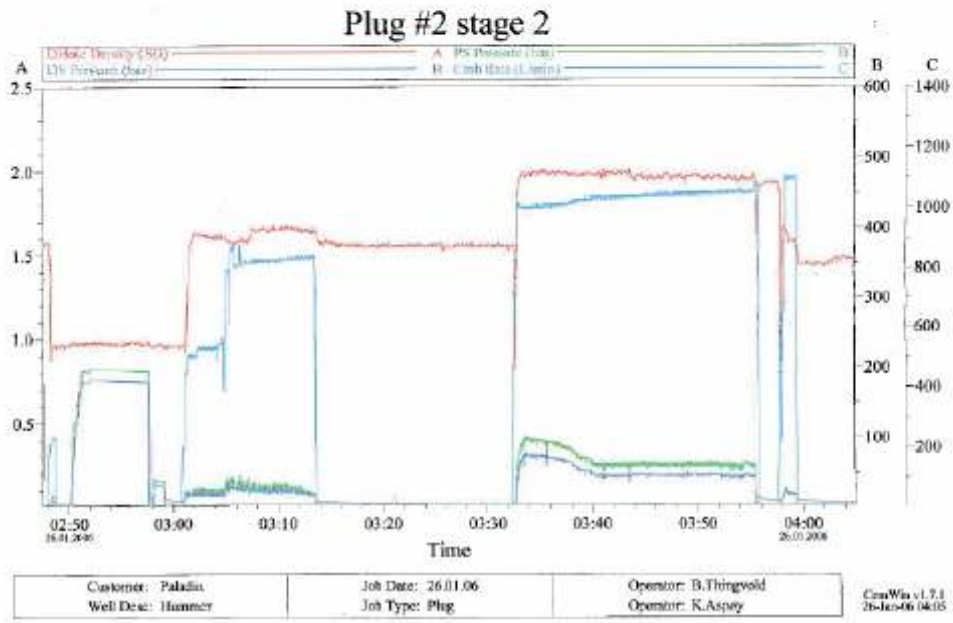
- Circulated hole (2000 lpm, 160 bar, 28 RPM), diverted excess cement (trace) and spacer to slop pit. Continued circulating until even mud weight in/out 1.58 sg. Observed moderate amounts of fine clay over shakers.
- Rigged up cement assembly. Pressure tested line up from cement unit to drill floor 200 bar/5 min, ok.
- Spotted P&A balanced cement plug #2, stage #2 from 1650 m to 1350 m:
- Pumped 7 m3 1.65 sg spacer. Mixed and pumped 20,3 m3 1.95 sg cement slurry followed by 960 ltr 1.65 sg spacer. Displaced same with 9.5 m3 1.58 sg mud. Got full returns during cement job.
- Pulled slowly with singles due to broken pipe racking system. (max 2 min/stand) out of hole from 1650 m to 1394 m

Slurry Recipe:

CEMENT SLURRY DESIGN & DATA			
Design:	Dyckerhoff "G" + 0,1% Ez-Flo		**Units**
	HR-4L	0,40	lbk
	CFR-8L	1,00	
	NF-6	0,10	lbk
	Freshwater	40,05	lbk
	Density	**1,95**	**SG**
	Total Mix Fluid	41,55	lbk
	Yield	72,71	lbk
Lab Reference 401	Thickening Time at BHCT		
	Time to 30 BC	3:27	hrs:min
	Time to 70 BC	3:36	hrs:min
	Time to 100 BC	3:50	hrs:min
	Fann rheology at BHCT	53	300 rpm
		35	200 rpm
		18	100 rpm
		12	60 rpm
		7	30 rpm
		3	6 rpm
		2	3 rpm
	Compressive strength	4:48	50 Psi
		5:30	500 Psi
		23 hr	3173 Psi

Job Chart:





12.8 ABANDONMENT PLUG#3

General Information:

WELL DATA			
Depth to Plug Bottom MD:	275 m	Casing ID	18,73 inch
Depth to Plug Bottom TVD:	275 m	Excess:	20 %
Depth to Plug Top MD:	150 m	Drill Pipe Size:	5 inch
Depth to Plug Top TVD:	150 m	BHST Temperature:	10 °C
Length Cement Plug:	125 m	BHCT Temperature:	8 °C
Drilling Mud Type:	Seawater	Drilling Mud Weight:	1,03 S.G
Spacer fluid:	Seawater	Spacer volume:	10 m^3

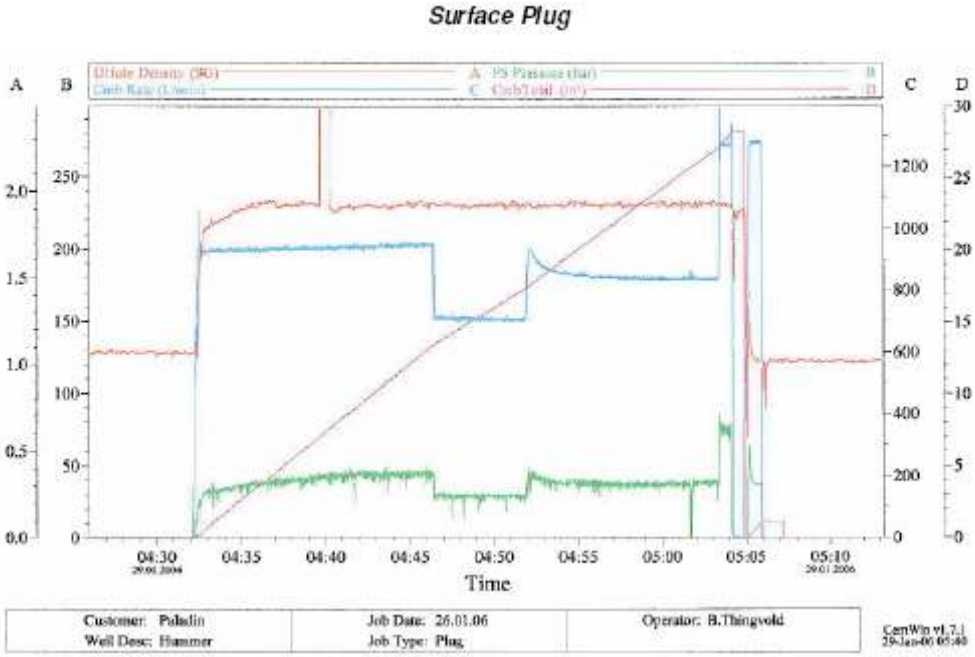
Job Execution Cementing P&A Plug #3, 29.01.2006:

- Displaced hole from 340 m and up to seawater. Flushed surface lines with seawater.
- Spotted a balanced hi-vis plug from 330 m to 280 m. Pumped out of hole from 330 m to 280 m.
- Installed CST tool and dart, spotted same at 280 m.
- Performed tool box meeting prior to cement job.
- Rigged up cement stand and cement hose. Pressure tested line from cement unit to drill floor 200 bar/10 min, ok.
- Sat a balanced P&A cement plug #3 from 275 m to 150 m: Mixed and pumped 26.7 m3 1.92 sg cement slurry, displaced same with 1010 ltr seawater.
- Disconnected cement hose and cement stand. Slowly (2 min/stand) pulled out of hole from 275 m to 150 m.
- Inserted drill pipe wiper ball and circulated (3000 lpm, 7 bar) out excess cement.

Slurry Recipe:

CEMENT SLURRY DESIGN & DATA			
Design:	Dyckerhoff "G" + 0,1% Ez-Flo		**Units**
	Calcium chloride – liquid	4,33	lhk
	NF-6	0,10	lhk
	Sea Water	41,88	lhk
	Density	**1,92**	**SG**
	Total Mix Fluid	46,31	lhk
	Yield	77,46	lhk
Lab Reference: 402	Thickening Time at BHCT		
	Time to 30 BC		hrs:min
	Time to 70 BC	3:42	hrs:min
	Time to 100 BC	4:00	hrs:min
	Fann rheology at BHCT	125	300 rpm
		108	200 rpm
		92	100 rpm
		82	60 rpm
		74	30 rpm
		41	6 rpm
		27	3 rpm
	API gel strength, 10sec/min	37/42	CP
	Compressive strength at 10°C	5:30	50 Psi
		13:59	500 Psi
		1722	42 Hrs

Job Chart:



12.9 MATERIAL USAGE AND DISCHARGE

In the tables below the total usage and discharge are broken down into the belonging cement operations.

Total usage and discharge
Well 1/2-2 Hummer

Product	Usage	Unit	Destruction	Left in well	Reinjected	To Sea
Dyckerhoff G	322,5	MT	0	313,7	0	8,8
SSA-1	7,5	ltr		2,5	0	5
EzFlo	330	kg	0	316,2	0	13,8
CaCl2 liquid	3900	ltr	0	3606	0	294
Econolite	4240	ltr	0	4180	0	60
HR-4L	680	ltr	207	476	0	204
NF-6	536	ltr	0	498	0	38
CFR-8L	894	ltr	116	778	0	116
HR-5L	450	ltr	44	406	0	44
Gascon	1056	ltr	0	1048	0	8
Halad-413L	1064	ltr	0	1048	0	16
Musol E	808	ltr	0	808	0	0
Sem-8	404	ltr	0	404	0	0
Tuned Spacer E+	2000	kg	0	1715	0	285
Dye Marker E+	100	kg	0	85	0	15

13 DRILLING FLUIDS

Baroid Fluid Services

Operator	Paladin Resources Norway
Well Name	1/2-2 Hummer
Contractor	Maersk Contractors Norge
Rig No	Maersk Giant
Unit System	Paladin

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 50 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	Pa				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness			% by vol				600	300	200	100	6	3
	m	Deg C	SG	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l	kg/m3 Eq.	% by vol	Corr Solid	LGS	NAP Base	Water						
Interval # 01										From Date				12/14/2005						Top of Interval				114.0		m						
Max. Hole Size / Bit Size 36.000 / 36.000 in										To Date				12/21/2005						Bottom of Interval				178.0		m						
12/14/2005	165		1.500		7	13.9	14.0	23.0	28.0					10.50					9,000		55.0		15.5	0.14		84	43.0	36.0	33.0	30.0	24.0	23.0
12/14/2005	165		1.030	180										10.50									2.06	2.05		97.7						
12/15/2005	175		1.500		7	13.9	14.0	23.0	28.0					10.40					9,000		55.0		15.5	0.14		84	43.0	36.0	33.0	30.0	24.0	23.0
12/15/2005	175		1.040	163										10.50									2.66	2.63		97.1						
12/16/2005	0		1.500		7	13.9	14.0	23.0	28.0					10.40					9,000		55.0		15.5	0.14		84	43.0	36.0	33.0	30.0	24.0	23.0
12/17/2005	175		1.500		7	14.4	16.0	24.0	28.0					10.40					9,000		53.0		15.5	0.14		84	44.0	37.0	34.0	31.0	24.0	23.0
12/17/2005	175		1.040	152										10.30									2.66	2.63		97.1						
12/18/2005	175		1.040	135										10.00									2.66	2.63		97.1						
12/18/2005	175		1.500	42	9	15.3	16.0	24.0	28.0						9.80				10,000		49.0		15.4	0.12		84	50.0	41.0	36.0	32.0	26.0	25.0
12/19/2005	0		1.500	43	9	15.8	16.0	24.0	28.0						9.80				10,000		49.0		15.4	0.12		84	51.0	42.0	37.0	33.0	26.0	25.0
12/20/2005	0		1.100	80											9.60											98						
12/21/2005	0		1.050	75											9.50											97						
Interval # 02										From Date				12/22/2005						Top of Interval				178.0		m						
Max. Hole Size / Bit Size 36.000 / 36.000 in										To Date				12/28/2005						Bottom of Interval				703.0		m						
12/22/2005	0		1.100	62											9.00											98						
12/23/2005	0		1.040	124											9.80								2.66	2.63		97.1						
12/23/2005	221		1.100	41	6	14.8	7.0	20.0	21.0						11.00	2.35	0.24	0.39	10,000	2,000	42.0		4.36	3.04		95	43.0	37.0	33.0	30.0	17.0	14.0
12/23/2005	330	27	1.140	48	7	14.8	7.0	22.0	22.0						11.00	2.30	0.20	0.40	9,000	1,900	50.0		7.42	6.58		92	45.0	38.0	34.0	31.0	17.0	14.0
12/24/2005	400	37	1.130	41	6	15.8	10.0	21.0	22.0						11.10	2.30	0.21	0.39	9,000	980	45.0		7.42	7.21		92	45.0	39.0	36.0	33.0	24.0	20.0
12/24/2005	523	26	1.140	37	3	9.6	7.7	8.2	8.6						9.80	0.30	0.06	0.30	10,500	1,000	44.8		7.86	7.56		91.5	26.0	23.0	21.0	20.0	16.0	15.0
12/24/2005	700	27	1.150	35	3	9.6	7.7	8.2	8.6						9.80	0.30	0.06	0.30	10,500	1,000	44.0	0.10	8.36	7.94		91	26.0	23.0	21.0	20.0	16.0	15.0
12/25/2005	380	38	1.150	31	5	6.2	6.0	7.0	8.0						9.00	0.19	0.07	0.15	12,000	580		0.50	8.3	7.91		91	23.0	18.0	16.0	15.0	12.0	11.0
12/25/2005	466		1.130	31	6	5.7	6.0	7.0	8.0						9.00	0.18	0.07	0.14	12,000	580			7.29	7.15		92	24.0	18.0	16.0	15.0	12.0	11.0
12/26/2005	600	38	1.130	32	5	6.2	6.0	7.0	8.0						9.80								7.77	7.24		92	23.0	18.0	16.0	15.0	12.0	11.0
12/26/2005	703		1.150		17	5.3	2.0	3.0	3.0	4.5		1			9.50						15.0		7.79	6.09		92	45.0	28.0	21.0	19.0	4.0	3.0
Interval # 03										From Date				12/29/2005						Top of Interval				703.0		m						

Baroid Fluid Services

Operator	Paladin Resources Norway
Well Name	1/2-2 Hummer
Contractor	Maersk Contractors Norge
Rig No	Maersk Giant
Unit System	Paladin

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 50 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	Pa				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness			% by vol				600	300	200	100	6	3
	m	Deg C	SG	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l	kg/m3 Eq.	% by vol	Corr Solid	LGS	NAP Base	Water						
Max. Hole Size / Bit Size		17.500 / 17.500 in								To Date				01/09/2006						Bottom of Interval			1,607.0			m						
12/30/2005	719	30	1.400	92	32	10.1	2.4	2.9	3.1	2.6		1			12.00	0.30	0.25	1.20	98,000	420	5.0	0.30	9.89	1.62		82.5	85.0	53.0	40.0	24.0	5.0	4.0
12/30/2005	787	33	1.395	92	32	12.0	4.2	4.5	4.5	2.2		1			11.80	0.30	0.25	1.20	98,000	400	5.6	0.30	10.4	2.98		82	89.0	57.0	45.0	29.0	9.0	8.0
12/30/2005	876	39	1.400	89	23	9.1	1.5	2.0	2.0	2.6		1			10.50	0.30	0.20	0.90	90,000	280	5.6	0.30	10	1.38		83	65.0	42.0	31.0	19.0	4.0	3.0
12/30/2005	980	50	1.400	63	24	7.7	1.5	2.0	2.0	2.7		1			9.80	0.25	0.20	0.85	90,000	280	5.6	0.30	10	1.38		83	54.0	40.0	30.0	19.0	4.0	3.0
12/31/2005	1,100	38	1.400	58	27	7.7	1.4	1.4		3.1		1			8.90	0.25	0.20	0.85	88,000	220	14.0	0.75	10.2	1.57		83	70.0	43.0	33.0	20.0	4.0	3.0
12/31/2005	1,155	60	1.400	53	25	7.2	1.5	1.5	2.0	3.1		1			8.90	0.25	0.20	0.85	88,000	220	15.0	0.75	10.2	1.57		83	65.0	40.0	30.0	19.0	4.0	3.0
12/31/2005	1,208	62	1.400	57	30	11.0	2.0	2.0	2.5	2.9		1			8.90	0.25	0.20	0.85	94,000	180	16.8	0.50	10.8	3.07		82	83.0	53.0	40.0	25.0	4.0	3.0
12/31/2005	1,256	63	1.400	63	36	13.4	2.0	2.5	2.5	2.7		1			8.90	0.25	0.20	0.80	90,000	180	16.8	1.00	10	1.38		83	100.0	64.0	59.0	31.0	5.0	4.0
12/31/2005	1,327	55	1.410	64	41	15.8	2.5	2.5	3.0	3.9		1			8.30	0.30	0.05	1.10	75,000	220	22.8	1.50	11.3	2.21		83	115.0	74.0	56.0	35.0	7.0	5.0
12/31/2005	1,441	36	1.400	66	54	19.6	3.8	5.8	6.7	3.9		1			8.10	0.34	0.40	1.10	70,000	200	25.2	1.00	11.7	3.3		83	149.0	95.0	73.0	45.0	11.0	8.0
01/01/2006	1,492	50	1.430	89	61	21.1	4.0	6.0	7.0	4.0		1			8.20	0.20	0.24	0.82	79,000	850	28.0	1.50	12.1	2.65		82	166.0	105.0	82.0	53.0	10.0	8.0
01/01/2006	1,492	50	1.470	90	58	23.9	4.0	6.0	8.0	3.8		1			8.10	0.20	0.24	0.82	79,000	1,000	33.6	1.50	13.7	3.27		80.5	166.0	108.0	83.0	54.0	11.0	8.0
01/01/2006	1,492	38	1.470	120	49	20.6	3.8	4.8	6.7	3.7		1			8.20	0.20	0.24	0.82	79,000	900	33.6	1.00	13.1	2.23		81	141.0	92.0	73.0	48.0	10.0	8.0
01/02/2006	1,492	38	1.470	100	34	9.6	1.9	2.9	3.9	3.7		1			8.20	0.24	0.20	0.80	73,000	800	33.6	0.50	13.6	2.79		81	88.0	54.0	41.0	31.0	6.0	4.0
01/02/2006	1,492	36	1.500	120	39	14.8	2.9	3.9	4.8	3.7		1			8.30	0.24	0.20	0.80	69,000	800	28.0	0.50	13.9	1.28		81	109.0	70.0	54.0	36.0	8.0	6.0
01/02/2006	1,424	43	1.480	85	40	13.9	2.5	3.0	3.0	3.5		1			8.20	0.05	0.01	0.60	75,000	1,000	22.4	0.50	14.5	4.05		80	109.0	69.0	52.0	35.0	7.0	5.0
01/03/2006	1,492	42	1.480	115	61	21.5	3.0	4.5	5.0	3.6		1			8.10	0.06	0.01	0.60	75,000	1,000	24.0	0.30	13.5	1.98		81	167.0	106.0	82.0	53.0	10.0	7.0
01/03/2006	1,492	42	1.480	125	68	25.9	3.5	4.5	5.0	3.6		1			8.00	0.05	0.01	0.60	75,000	1,000	28.0	0.50	13.5	1.98		81	190.0	122.0	94.0	61.0	14.0	9.0
01/03/2006	1,492	36	1.470	76	38	13.4	2.4	3.8	4.6	3.8		1			8.00	0.20	0.20	0.80	79,000	1,000	28.0	0.25	13.1	2.23		81	104.0	66.0	51.0	32.0	7.0	5.0
01/03/2006	1,492	39	1.470	67	36	12.4	1.9	2.9	3.8	3.5		1			8.00	0.24	0.20	0.80	79,000	1,000	28.0	0.30	13.1	2.23		81	98.0	62.0	47.0	30.0	6.0	5.0
01/03/2006	1,170	42	1.550	118	65	23.9	3.5	4.5	5.0	4.0		1			8.20	0.80	0.01	0.60	81,000	1,000	38.0	0.50	15.1	1.21		79	180.0	115.0	87.0	56.0	9.0	7.0
01/04/2006	900	42	1.550	130	66	27.8	4.0	5.0	5.5	4.2		1			7.90	1.00	0.15	0.60	82,000	1,000	50.0	0.50	15	1.12		79	190.0	124.0	96.0	63.0	15.0	10.0
01/04/2006	789	36	1.550	96	48	26.8	11.6	20.6	24.7	4.6		2			8.00	0.15	0.10	0.60	84,000	850	50.4	0.75	14.9	0.93		79	152.0	104.0	86.0	63.0	28.0	27.0
01/04/2006	1,289	37	1.550	96	43	23.9	10.2	19.1	20.6	4.7		2			8.00	0.15	0.10	0.60	81,000	850	50.4	0.50	15.1	1.21		79	136.0	93.0	75.0	53.0	22.0	20.0
01/04/2006	1,478	42	1.550	98	60	23.9	9.5	17.0	19.3	5.0		1			8.00	1.00	0.10	0.60	85,000	1,000	58.0	0.50	14.8	0.84		79	170.0	110.0	86.0	58.0	18.0	14.0
01/05/2006	1,457	42	1.550	92	58	23.5	9.0	17.0	19.6	5.2		1			7.90	1.00	0.10	0.60	84,000	1,000	65.0	0.25	14.9	0.93		79	165.0	107.0	84.0	56.0	16.0	12.0
01/05/2006	1,504	34	1.550	92	41	19.6	9.1	15.4	19.2	5.6		1			7.80	0.25	0.20	0.60	83,000	1,160	50.4	0.25	15	1.02		79	123.0	82.0	66.0	46.0	19.0	16.0

Baroid Fluid Services

Operator	Paladin Resources Norway
Well Name	1/2-2 Hummer
Contractor	Maersk Contractors Norge
Rig No	Maersk Giant
Unit System	Paladin

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 50 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	Pa				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness			% by vol				600	300	200	100	6	3
	m	Deg C	SG	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l	kg/m3 Eq.	% by vol	Corr Solid	LGS	NAP Base	Water						
01/05/2006	1,497	36	1.550	85	43	15.8	6.2	13.0	15.0	5.6		1			8.00	0.25	0.20	0.60	87,000	1,000	44.8	0.25	14.6	0.65		79	119.0	76.0	61.0	42.0	15.0	14.0
01/05/2006	1,122		1.550	65	41	19.2	3.5	4.5	5.0	4.4		1			8.20	0.80	0.20	0.50	84,000	1,000	40.0	0.10	14.9	0.93		79	122.0	81.0	65.0	46.0	19.0	16.0
01/06/2006	1,507		1.550	67	43	15.8	3.5	4.5	5.0	4.0		1			8.20	0.80	0.10	0.50	84,000	1,000	40.0	0.10	14.9	0.93		79	119.0	76.0	61.0	42.0	15.0	14.0
01/06/2006	1,507		1.550	70	42	15.8	3.0	4.0	4.5	3.8		1			8.20	0.80	0.10	0.50	84,000	1,000	38.0	0.25	14.9	0.93		79	117.0	75.0	60.0	41.0	14.0	13.0
01/07/2006	1,507	33	1.550	70	42	15.8	3.0	4.0	4.5	3.8		1			8.20	0.80	0.10	0.60	84,000	1,000	38.0	0.10	14.9	0.93		79	117.0	75.0	60.0	41.0	14.0	13.0
01/07/2006	1,498	18	1.550	70	28	11.5	2.4	3.3	4.5	3.8		1				0.80		0.60	84,000	1,000	38.0	0.10	14.9	0.93		79	80.0	52.0	40.0	26.0	6.0	5.0
01/07/2006	1,498		1.550	70	42	15.8	3.0	4.0	4.5	3.8		1			8.20	0.80	0.10	0.50	84,000	1,000	38.0	0.25	14.9	0.93		79	117.0	75.0	60.0	41.0	14.0	13.0
01/08/2006	1,507		1.550	70	42	15.8	3.0	4.0	4.5	3.8		1			8.20	0.80	0.10	0.50	84,000	1,000	38.0	0.15	14.9	0.93		79	117.0	75.0	60.0	41.0	14.0	13.0
01/08/2006	1,507		1.550	75	40	11.5	7.7	10.1	12.0		1.0	1		120		0.80				5		0.01	19.1	2.93	60	17.5	104.0	64.0	50.0	34.0	13.0	12.0
01/09/2006	0		1.550	70	42	15.8	3.0	4.0	4.5	3.8		1				0.80		0.50	84,000	1,000	38.0		14.9	0.93		79	117.0	75.0	60.0	41.0	14.0	13.0
01/09/2006	0		1.550	75	40	11.5	7.7	10.1			1.0		1	120		0.80				5		0.01	19.1	2.93	60	17.5	104.0	64.0	50.0	34.0	13.0	12.0
Interval # 04										From Date				01/10/2006						Top of Interval			1,510.0	m								
Max. Hole Size / Bit Size			17.500 / 17.500 in							To Date				01/22/2006						Bottom of Interval			3,434.0	m								
Interval # 06										From Date				01/23/2006						Top of Interval			2,960.0	m								
Max. Hole Size / Bit Size			17.500 / 17.500 in							To Date				01/31/2006						Bottom of Interval			0.0	m								
01/27/2006	0		1.580	88	40	7.7	7.2	8.6	8.6		2.0		1	120		0.65				3		0.01	20.5	2.07	60	17	96.0	56.0	44.0	30.0	11.0	10.0
01/28/2006	0		1.580	88	40	7.7	7.2	8.6	8.6		2.0		1	120		0.65				3		0.01	20.5	2.07	60	17	96.0	56.0	44.0	30.0	11.0	10.0
01/29/2006	0		1.580		40	7.7	7.2	8.6	8.6					120									23	3.21	60	17	96.0	56.0	44.0	30.0	11.0	10.0

Baroid Fluid Services

Operator	Paladin Resources Norway
Well Name	1/2-2 Hummer
Contractor	Maersk Contractors Norge
Rig No	Maersk Giant
Unit System	Paladin

Fluid Property Recap : NAP-Based Fluid (API Titrations)

Date	Depth	FL Temp	Density	Funn Visc	Rheology 50 Deg C					Filtration			Elec. Stability	Excess Lime Content	Whole Fluid Alk	Whole Fluid Ca	Whole Fluid Cl	Sand	Retort Analysis					Rheometer Dial Readings					
					PV	YP	10S	10M	30M	HTHP	Cake	Temp							Corr Solid	LGS	NAP	Water	NAP/Water Ratio	600	300	200	100	6	3
	m	Deg C	SG	sec/qt	cP	Pa				ml/30 min	32nd in	Deg C	volt	kg/m3	ml	mg/l	mg/l	% by vol	% by vol										
Interval # 01										From Date				12/14/2005					Top of Interval				114.0 m						
Max. Hole Size / Bit Size 36.000 / 36.000 in										To Date				12/21/2005					Bottom of Interval				178.0 m						
Interval # 02										From Date				12/22/2005					Top of Interval				178.0 m						
Max. Hole Size / Bit Size 36.000 / 36.000 in										To Date				12/28/2005					Bottom of Interval				703.0 m						
Interval # 03										From Date				12/29/2005					Top of Interval				703.0 m						
Max. Hole Size / Bit Size 17.500 / 17.500 in										To Date				01/09/2006					Bottom of Interval				1,507.0 m						
Interval # 04										From Date				01/10/2006					Top of Interval				1,510.0 m						
Max. Hole Size / Bit Size 17.500 / 17.500 in										To Date				01/22/2006					Bottom of Interval				3,434.0 m						
01/10/2006	1,510.0	21	1.550	88	40	12.4	6.7	8.6	9.6	1.8	1	120	740	1.48	0.40			0.0	19.5	2.5	60.0	18.0	76.92/23.08	100.0	66.0	51.0	34.0	13.0	12.0
01/11/2006	1,762.0		1.550	120	41	11.5	6.7	8.6	9.6	1.8	1	120	740	1.48	0.40			0.0	19.5	1.9	60.0	18.0	76.92/23.08	100.0	65.0	51.0	34.0	13.0	12.0
01/11/2006	1,556.0	37	1.550	115	45	12.0	6.5	9.5	10.0	2.0	1	120	840	1.48	0.40			0.0	19.3	1.9	59.5	18.5	76.28/23.72	115.0	70.0	54.0	37.0	14.0	12.0
01/11/2006	1,647.0	36	1.550	93	42	10.1	6.5	8.5	9.5	2.0	1	120	730	1.29	0.35			0.0	19.3	1.9	59.5	18.5	76.28/23.72	105.0	63.0	47.0	33.0	14.0	12.0
01/11/2006	1,707.0	40	1.545	88	35	8.6	5.2	6.2	7.2	2.0	1	120	740	2.22	0.60			0.1	19.5	2.2	60.0	18.0	76.92/23.08	88.0	53.0	41.0	28.0	12.0	11.0
01/12/2006	1,995.0	37	1.550	72	38	10.1	6.2	7.2	7.7	2.0	1	120	775	1.48	0.40			0.0	19.5	1.9	60.0	18.0	76.92/23.08	97.0	59.0	45.0	30.0	11.0	10.0
01/12/2006	1,905.0	36	1.550	74	39	10.1	6.2	6.7	7.2	2.0	1	120	775	1.48	0.40			0.0	19.5	1.9	60.0	18.0	76.92/23.08	99.0	60.0	45.0	30.0	11.0	10.0
01/12/2006	1,823.0	41	1.550	75	34	9.1	5.8	6.7	7.7	2.0	1	120	780	2.22	0.60			0.1	19.5	1.9	60.0	18.0	76.92/23.08	87.0	53.0	41.0	28.0	12.0	11.0
01/12/2006	2,155.0	43	1.550	70	34	8.6	5.8	6.7	7.7	1.6	1	120	840	2.22	0.60			0.1	19.5	1.9	60.5	17.5	77.56/22.44	86.0	52.0	41.0	28.0	12.0	11.0
01/13/2006	2,359.0	41	1.550	71	35	10.1	5.8	7.7	8.6	1.8	1	120	880	1.85	0.50			0.1	19.6	1.9	60.5	17.5	77.56/22.44	91.0	56.0	43.0	29.0	13.0	12.0
01/13/2006	2,515.0	36	1.550	72	43	10.5	6.2	7.7	8.6	2.0	1	120	840	2.03	0.55			0.0	19.3	1.8	60.0	18.0	76.92/23.08	100.0	65.0	49.0	32.0	13.0	12.0
01/13/2006	2,728.0	39	1.550	70	40	11.0	6.7	8.2	9.1	1.8	1	120	880	2.03	0.55			0.0	19.4	1.8	61.0	17.0	78.21/21.79	100.0	63.0	48.0	32.0	14.0	12.0
01/13/2006	2,838.0	43	1.545	70	33	9.1	5.7	7.7	8.6	2.0	1	120	860	1.85	0.50			0.1	19.6	2.2	61.0	17.0	78.21/21.79	85.0	52.0	41.0	28.0	12.0	11.0
01/14/2006	3,086.0	47	1.550	68	37	8.6	5.8	7.7	8.6	2.0	1	120	750	2.22	0.60			0.0	19.6	1.8	61.0	17.0	78.21/21.79	92.0	55.0	42.0	28.0	11.0	10.0
01/14/2006	3,121.0	52	1.550	66	34	9.6	5.8	7.7	8.6	2.0	1	120	780	2.22	0.60			0.0	19.5	1.8	61.0	17.0	78.21/21.79	88.0	54.0	41.0	28.0	11.0	10.0
01/14/2006	2,978.0	50	1.545	66	34	9.6	5.7	7.7	8.6	2.0	1	120	860	1.85	0.50			0.1	19.6	2.2	61.0	17.0	78.21/21.79	88.0	54.0	42.0	29.0	12.0	11.0
01/14/2006	3,136.0	53	1.550	60	32	9.1	5.3	7.2	8.2	2.0	1	120	910	1.48	0.40			0.1	19.9	2.8	61.0	16.5	78.71/21.29	83.0	51.0	40.0	27.0	12.0	11.0
01/15/2006	3,141.0		1.330	79	28	6.2	3.8	4.8	5.7	2.0	1	120	520	1.85	0.50			0.0	11.9	1.1	62.5	22.5	73.53/26.47	69.0	41.0	31.0	20.0	8.0	7.0
01/15/2006	3,141.0		1.550	68	32	9.1	5.3	7.2	8.2	2.0	1	120	910	1.48	0.40			0.1	19.7	2.7	60.5	17.0	78.06/21.94	83.0	51.0	40.0	27.0	12.0	11.0
01/16/2006	3,187.0	30	1.550	70	32	9.1	5.2	7.2	8.2	2.0	1	120	910	1.48	0.40			0.1	19.9	2.8	60.5	17.0	78.06/21.94	83.0	51.0	40.0	27.0	12.0	11.0

Baroid Fluid Services

Operator	Paladin Resources Norway
Well Name	1/2-2 Hummer
Contractor	Maersk Contractors Norge
Rig No	Maersk Giant
Unit System	Paladin

Fluid Property Recap : NAP-Based Fluid (API Titrations)

Date	Depth	FL Temp	Density	Funn Visc	Rheology 50 Deg C					Filtration			Elec. Stability	Excess Lime Content	Whole Fluid Alk	Whole Fluid Ca	Whole Fluid Cl	Sand	Retort Analysis					Rheometer Dial Readings					
					PV	YP	10S	10M	30M	HTHP	Cake	Temp							Corr Solid	LGS	NAP	Water	NAP/Water Ratio	600	300	200	100	6	3
	m	Deg C	SG	sec/qt	cP	Pa				ml/30 min	32nd in	Deg C	volt	kg/m3	ml	mg/l	mg/l	% by vol	% by vol										
01/17/2006	3,186.0	40	1.550	65	31	7.7	4.8	6.2	7.7	2.0	1	120	870	1.48	0.40			0.2	19.5	1.7	62.5	15.5	80.13/19.87	78.0	47.0	37.0	26.0	11.0	10.0
01/17/2006	3,243.0	42	1.550	70	31	8.6	5.8	7.2	7.7	2.0	1	120	839	1.11	0.30			0.2	19.5	1.8	61.0	17.0	78.21/21.79	80.0	49.0	38.0	26.0	11.0	10.0
01/18/2006	3,360.0	52	1.550	66	32	8.1	5.8	7.7	8.2	2.0	1	120	850	0.81	0.22			0.1	19.5	1.8	61.0	17.0	78.21/21.79	81.0	49.0	38.0	26.0	11.0	10.0
01/18/2006	3,400.0	53	1.550	63	33	9.6	5.8	6.7	7.7	1.6	1	120	850	1.11	0.30			0.1	19.5	1.7	62.0	16.0	79.49/20.51	86.0	53.0	42.0	28.0	13.0	12.0
01/18/2006	3,432.0	55	1.550	62	33	10.1	5.7	6.7	7.7	1.5	1	120	860	1.11	0.30			0.1	19.5	1.8	61.0	17.0	78.21/21.79	87.0	54.0	42.0	29.0	12.0	11.0
01/18/2006	3,434.0	55	1.550	62	33	10.1	5.8	6.7	7.7	1.6	1	120	871	1.00	0.27			0.1	19.5	1.8	61.0	17.0	78.21/21.79	87.0	54.0	42.0	29.0	12.0	11.0
01/19/2006	3,434.0	54	1.550	63	33	10.1	5.8	6.7	7.7	1.6	1	120	843	0.92	0.25			0.1	19.5	1.8	61.0	17.0	78.21/21.79	87.0	54.0	42.0	29.0	12.0	11.0
01/19/2006	3,434.0		1.550	75	33	10.1	5.8	6.7	7.7	1.6	1	120	856	1.00	0.27			0.1	19.5	1.8	61.0	17.0	78.21/21.79	87.0	54.0	42.0	29.0	12.0	11.0
01/20/2006	3,434.0	43	1.550	73	37	11.5	6.7	7.7	8.6	1.8	1	120	850	1.11	0.30			0.1	19.5	1.9	60.0	18.0	76.92/23.08	98.0	61.0	48.0	33.0	13.0	12.0
01/20/2006	3,434.0		1.580	76	34	11.5	6.2	7.7	8.2	1.6	1	120	850	2.22	0.60			0.1	20.6	2.1	59.0	18.0	76.62/23.38	92.0	58.0	46.0	32.0	13.0	12.0
01/21/2006	3,434.0		1.580	79	34	11.5	6.2	7.7	8.2	1.6	1	120	843	2.22	0.60			0.1	20.6	2.1	59.0	18.0	76.62/23.38	92.0	58.0	46.0	32.0	13.0	12.0
01/21/2006	3,434.0		1.580	80	34	11.5	6.2	7.7	8.2	1.6	1	120	856	2.22	0.60			0.1	20.6	2.1	59.0	18.0	76.62/23.38	92.0	58.0	46.0	32.0	13.0	12.0
01/22/2006	3,434.0		1.580	87	34	11.5	6.2	7.7	8.2	1.6	1	120	853	2.22	0.60			0.1	20.6	2.1	59.0	18.0	76.62/23.38	92.0	58.0	46.0	32.0	13.0	12.0
Interval # 06										**From Date**				**01/23/2006**					**Top of Interval**					**2,960.0 m**					
Max. Hole Size / Bit Size 17.500 / 17.500 in										**To Date**				**01/31/2006**					**Bottom of Interval**					**0.0 m**					
01/23/2006	3,434.0	52	1.580	73	38	8.6	6.2	8.2	8.6	1.7	1	120	811	2.40	0.65			0.1	20.6	2.1	59.0	18.0	76.62/23.38	94.0	56.0	43.0	29.0	11.0	10.0
01/23/2006	3,434.0		1.580	84	39	7.7	6.2	8.6	8.6	1.7	1	120	720	1.77	0.48			0.0	20.5	2.1	59.0	18.0	76.62/23.38	94.0	55.0	43.0	29.0	10.0	9.0
01/24/2006	2,960.0		1.580	85	39	7.7	6.2	8.6	8.6	1.7	1	120	750	1.85	0.50			0.0	20.5	2.1	59.0	18.0	76.62/23.38	94.0	55.0	43.0	29.0	10.0	9.0
01/25/2006	0.0		1.580	85	39	7.7	6.2	8.6	8.6	1.7	1	120	750	1.85	0.50			0.0	20.5	2.1	59.0	18.0	76.62/23.38	94.0	55.0	43.0	29.0	10.0	9.0
01/26/2006	1,378.0	20	1.580	88	40	7.7	7.2	8.6	8.6	1.9	1	120	440	2.40	0.65			0.0	20.5	2.1	60.0	17.0	77.92/22.08	95.0	56.0	44.0	30.0	11.0	10.0

13.1 DISCHARGE FROM DRILLING

SHEET B1 **DISCHARGE FROM DRILLING**

Rig: Maersk Giant | Block no: 1/2 | Well no: 1/2-2 Hummer

Reporting period: From 14/Dec/05 To 21/Dec/05 | Operation: Drilling

Drilling mud (m3)

Section: 36 in

Mud type: SW / Bent. | Density: 1.5 kg/l

Volume Built & Recd	Lost to formation	Dumped	To sea Lost with cuttings	Injection	Next Sect	Returned
662 m3			238			424

Cuttings

Length drilled	Theoretical hole vol.	Estimated hole vol.	Cuttings density	Cuttings amt.
64 m	42 m3	48 m3	2.60 kg/l	126 tonn

Cuttings to sea (tonn)	Cuttings to land (tonn)	Cuttings reinjected (tonn)
126		

Mud chemicals

Trade name	Function group	Used tonn	Lost to form. tonn	Disch. to sea tonn	Injection tonn	Next Sect. tonn	Returned to land tonn
BARACARB	16						
BARAKLEAN GOLD	27						
BARASCAV L	5						
DEXTRIDE E	18						
BARAZAN	18						
Barite	16	104.000		37.390			66.610
Calcium Chloride	16						
Caustic Soda	11						
PERFORMATROL	21						
DURATONE E	21						
EZ MUL NT	22						
GELTONE II	18						
GEM GP	21						
Lime	11	0.160		0.058			0.102
PAC R/L	18						
BARAZAN L	18						
OMC 3	18						
STEELSEAL	17						
BAROFIBRE	17	0.018		0.006			0.012
Clairsol NS (baseoil)	17						
Soda Ash	11	0.475		0.171			0.304
OCMA Bentonite	18	41.000		14.740			26.260
Wall-Nut	17						
Driltreat	18						
SUSPENTONE	18						
KCl-powder	16						
Sugar	22						
Barabuf	11						

SHEET B1 **DISCHARGE FROM DRILLING**

Rig Maersk Giant Block no 1/2 Well no 1/2-2 Hummer

Reporting period From 22/Dec/05 To 28/Dec/05 Operation Drilling

Drilling mud (m3)

Section 24 in

Mud type Sw / Bent. & KCl/Pac Density 1.15 kg/l

Volume Built & Recd	Lost to formation	Dumped	To sea Lost with cuttings	Injection	Next Sect	Returned
1,638 m3	72	128	1,438			

Cuttings

Length drilled	Theoretical hole vol.	Estimated hole vol.	Cuttings density	Cuttings amt.
525 m	153 m3	177 m3	2.60 kg/l	460 tonn

Cuttings to sea (tonn)	Cuttings to land (tonn)	Cuttings reinjected (tonn)
460		

Mud chemicals

Trade name	Function group	Used tonn	Lost to form. tonn	Disch. to sea tonn	Injection tonn	Next Sect. tonn	Returned to land tonn
BARACARB	16						
BARAKLEAN GOLD	27						
BARASCAV L	5						
DEXTRIDE E	18						
BARAZAN	18	0.275	0.012	0.263			
Barite	16	69.471	3.054	66.418			
Calcium Chloride	16						
Caustic Soda	11						
PERFORMATROL	21						
DURATONE E	21						
EZ MUL NT	22						
GELTONE II	18						
GEM GP	21						
Lime	11	0.497	0.022	0.475			
PAC R/L	18	1.750	0.077	1.673			
BARAZAN L	18						
OMC 3	18						
STEELSEAL	17						
BAROFIBRE	17	0.109	0.005	0.104			
Clairsol NS (baseoil)	17						
Soda Ash	11	0.602	0.026	0.576			
OCMA Bentonite	18	55.249	2.429	52.820			
Wall-Nut	17	0.050	0.002	0.048			
Driltreat	18						
SUSPENTONE	18						
KCl-powder	16	18.000	0.791	17.209			
Sugar	22	0.250		0.250			
Barabuf	11						

SHEET B1 **DISCHARGE FROM DRILLING**

Rig Maersk Giant Block no 1/2 Well no 1/2-2 Hummer

Reporting period From 29/Dec/06 To 9/Jan/06 Operation Drilling

Drilling mud (m3)

Section 17.5 in

Mud type PERFORMADRIL Density 1.55 kg/l

Volume Built & Recd	Lost to formation	Dumped	Lost with cuttings To sea	Injection	Next Sect	Returned
1021 m3	58	172	791			

Cuttings

Length drilled	Theoretical hole vol.	Estimated hole vol.	Cuttings density	Cuttings amt.
804 m	125 m3	144 m3	2.60 kg/l	374 tonn

Cuttings to sea (tonn)	Cuttings to land (tonn)	Cuttings reinjected (tonn)
374		

Mud chemicals

Trade name	Function group	Used tonn	Lost to form. tonn	Disch. to sea tonn	Injection tonn	Next Sect. tonn	Returned to land tonn
BARACARB	16						
BARAKLEAN GOLD	27						
BARASCAV L	5						
DEXTRIDE E	18	6.964	0.396	6.568			
BARAZAN	18	1.360	0.077	1.282			
Barite	16	506.000	28.744	477.256			
Calcium Chloride	16						
Caustic Soda	11						
PERFORMATROL	21	41.054	2.332	38.721			
DURATONE E	21						
EZ MUL NT	22						
GELTONE II	18						
GEM GP	21	27.304	1.551	25.753			
Lime	11						
PAC R/L	18	7.464	0.424	7.040			
BARAZAN L	18						
OMC 3	18						
STEELSEAL	17						
BAROFIBRE	17						
Clairsol NS (baseoil)	17						
Soda Ash	11	3.330	0.189	3.141			
OCMA Bentonite	18						
Wall-Nut	17						
Driltreat	18						
SUSPENTONE	18						
KCl-powder	16	97.750	5.553	92.197			
Sugar	22						
Barabuf	11						

SHEET B1 **DISCHARGE FROM DRILLING**

Rig Maersk Giant Block no 1/2 Well no 1/2-2 Hummer

Reporting period From 10/Jan/06 To 31/Jan/06 Operation Drilling & Abandon.

Drilling mud (m3)

Section 8.5 in

Mud type ENVIROMUL Density 1.58 kg/l

Volume Built & Recd	Lost to formation	Dumped	To sea Lost with cuttings	To shore for	Next Sect	Returned
539.00 m3	134			142		263

Cuttings

Length drilled	Theoretical hole vol.	Estimated hole vol.	Cuttings density	Cuttings amt.
1924 m	70 m3	81 m3	2.60 kg/l	211 tonn

Cuttings to sea (tonn)	Cuttings to land (tonn)	Cuttings reinjected (tonn)
0	211	

Mud chemicals

Trade name	Function group	Used tonn	Lost to form. tonn	Disch. to sea tonn	To shore for destruction tonn	Next Sect. tonn	Returned to land tonn
BARACARB	16	12.904	3.208		3.399		6.296
BARAKLEAN GOLD	27						
BARASCAV L	5						
DEXTRIDE E	18						
BARAZAN	18	0.100	0.025		0.026		0.049
Barite	16	484.069	120.344		127.528		236.197
Calcium Chloride	16	33.172	8.247		8.739		16.186
Caustic Soda	11						
PERFORMATROL	21						
DURATONE E	21	9.461	2.352		2.493		4.617
EZ MUL NT	22	14.415	3.584		3.798		7.034
GELTONE II	18	4.047	1.006		1.066		1.975
GEM GP	21						
Lime	11	6.950	1.728		1.831		3.391
PAC R/L	18						
BARAZAN L	18						
OMC 3	18	0.029	0.007		0.008		0.014
STEELSEAL	17	2.887	0.718		0.761		1.409
BAROFIBRE	17						
Clairsol NS (baseoil)	17	247.378	61.500		65.172		120.706
Soda Ash	11						
OCMA Bentonite	18	2.000	2.000				
Wall-Nut	17						
Driltreat	18						
SUSPENTONE	18	0.271	0.067		0.071		0.132
KCl-powder	16						
Sugar	22	0.225			0.225		
Barabuf	11						
NaCl powder	16						

SHEET B1 **DISCHARGE FROM DRILLING**

Rig Maersk Giant Block no 1/2 Well no 1/2-2 Hummer

Reporting period From 14-Dec-05 To 31-Jan-06 Operation Total Well

Drilling mud (m3)

Section in

Mud type Density kg/l

Volume Built & Recd	Lost to formation	Dumped	To sea Lost with cuttings	To shore for	Next Sect	Returned
3860 m3	264	300	2467	142		687

Cuttings

Length drilled	Theoretical hole vol.	Estimated hole vol.	Cuttings density	Cuttings amt.
3317 m	390 m3	451 m3	2.80 kg/l	1171 tonn

Cuttings to sea (tonn)	Cuttings to land (tonn)	Cuttings reinjected (tonn)
960	211	

Mud chemicals

Trade name	Function group	Used tonn	Lost to form. tonn	Disch. to sea tonn	To shore for destruction tonn	Next Sect. tonn	Returned to land tonn
BARACARB	16	12.904	3.208		3.399		6.296
BARAKLEAN GOLD	27						
BARASCAV L	5						
DEXTRIDE E	18	6.964	0.396	6.568			
BARAZAN	18	1.735	0.114	1.545	0.026		0.049
Barite	16	1,163.541	152.142	581.063	127.528		302.807
Calcium Chloride	16	33.172	8.247		8.739		16.186
Caustic Soda	11						
PERFORMATROL	21	41.054	2.332	38.721			
DURATONE E	21	9.461	2.352		2.493		4.617
EZ MUL NT	22	14.415	3.584		3.798		7.034
GELTONE II	18	4.047	1.006		1.066		1.975
GEM GP	21	27.304	1.551	25.753			
Lime	11	7.607	1.750	0.532	1.831		3.494
PAC R/L	18	9.214	0.501	8.713			
BARAZAN L	18						
OMC 3	18	0.029	0.007		0.008		0.014
STEELSEAL	17	2.887	0.718		0.761		1.409
BAROFIBRE	17	0.127	0.005	0.111			0.012
Clairsol NS (baseoil)	17	247.378	61.500		65.172		120.706
Soda Ash	11	4.408	0.216	3.888			0.304
OCMA Bentonite	18	98.249	4.429	67.561			26.260
Wall-Nut	17	0.050	0.002	0.048			
Driltreat	18						
SUSPENTONE	18	0.271	0.067		0.071		0.132
KCl-powder	16	115.750	6.344	109.406			
Sugar	22	0.475		0.250	0.225		
Barabuf	11						
NaCl powder	16						

14 BIT DATA

Drill bits Performance summary

Well 1/2-2
Section 9 7/8"

System	Group	Formation	MD (M)	Bit run	Comments
Tertiary	Nordland	Oxf. Sst	176	EBXS12DS sn: 10749342 513 m 18.8 hrs 27.3 m/hr Bit run 1 1-1-WT-A-E-I-NO-BHA	Drilling started at 190m with 2000 lpm initially and 10 - 20 m/hr. When no losses where seen the flow was increased to 3000 lpm andROP increased to 40 m/hr with 140 RPM. The well remained vertical with the maximum inclination seen being 0.41 degrees. The ECD was seen to rise on several occasions and it was necessary to circulate to reduce it to an acceptable level. The well was drilledto section TD of 700m.No shallow gas was seen.
			1330		
			1360	TD	

SDBS recommendation: Recommendation is to run same BHA and soft insert bit for the next well

Drill bits Performance summary
Well 1/2-2
Section 17 1/2"

System	Group	Formation	MD (M)	Bit run	Comments
Tertiary	Nordland		703	EBXT1GSLC sn: 10779727 804 m 33.1 hrs 24.2 m/hr Bit run 1 1-1-WT-A-E-I-NO-TD	The top plug was tagged at 682m. The well was displaced to 1.40sg mud while drilling cement. Due to hard cement the shoetrack andshoe required 6 hours to drill. After the FIT the drilling continued with immediate losses over the shakers that required the flow to be cut back to 3000 lpm. This problempersisted and required the ROP to be controlled at 20 m/hr. No drilling problems where encountered and the inclination remained at 0.6towards the east. Once the mud was conditioned it was possible to increase the flow to 4100 lpm and increase the ROP to 35 - 40 m/hr with 12 - 14t WOB.Surveys showed a small build tendency of 0.07 deg/30m had been initiated corresponding to the increased WOB. After drilling to 1326m the MWD failed with only occasional pulses seen. However, the decision was made by Paladin to drill on. The MWD worked intermittently and two further surveys were obtained including one at section TD. The well was drilled to section TD at1492m with a maximum inclination of 0.93 deg and a final inclination of 0.80 deg. A 20 m3 hi vis was pumped at section TD and the well circulated for 4hrs until clean. While pulling out 30t overpull was seen at 1396m.Backreaming commenced to 1366m where the hole packed off and circulation was lost. Worked the string and eventually regainedcirculation and it was possible to backream very slowly. Hole problems continued with pack offs and tight hole. Cavings were observed over the shakers indicating the mud weight was too low.Over the next 3 days the mud was therefore weighted up to 1.55 sg. Periods with massive amounts of cuttings coming over the shakers.Mostly blocky and some sharp cavings. At 852m several large rounded cavings (max size 30cm) came over the shakers. After trippingback in from the casing shoe 30m of fill was seen. After washing down to TD at 1492m 15m of fresh formation was drilled to 1507m and the hole circulated
			1507	TD	After extensive mud conditioning the BHA was pulled out of hole with a maximum of 5t drag. Several tight spots required working butotherwise the trip out was free of problems. On reaching surface the stabilisers were badly balled and the bit partially balled although ingood condition. The assembly was racked back to run 13 3/8" casing.

SDBS recommendation: Recommendation is to run same BHA and bit for the next well

Drill bits Performance summary

Well 1/2-2
Section 8 1/2"

System	Group	Formation	MD (M)	Bit run	Comments
Tertiary	Hordaland		1510	FM3755Z sn:10696608 1631 m 51.4 hrs 31.7 m/hr Bit Run 1 1-3-BT-S-X-I-CT-CP	The bit FM3755Z was performing very well during this BHA run. The ROP was kept between 40 and 60m/hr with very little WOB, and alsolimestone stringers were drilled through at acceptable ROPs. As good as no vibrations were seen, and the directional stability wasexcellent. Even if the bit had been taking some beating, it was drilling well until the end of the run.
	Rogaland	Balder	3081		
		Sele	3091		
		Forties Sst	3131		
			3141	CORING RUN	
		Lista	3167 3236	FM3743Z sn:10758479 247 m 3.5 hrs 13.2 m/hr Bit Run 1 1-3-WT-S-X-I-ER-TD	This pendulum assembly managed to keep the well vertical almost all the way to TD. The inclination started increasing above 1deg from 2295m, which coinsided with an increase in ROP from 40m/hr to 60m/hr. At approx. 2700m the ROP was cut back to 40m/hr again, and the inclination levelled out just above 3deg, which was held to TD. Well ended up approx. 48-49m away from target centre, which was wellinside the target specifications. A very good assembly for this kind of wells.
		Maureen	3347		
Cretaceous	Shetland	Ekofisk	3395		
			3415	TD	

SDBS recommendation: Run same bit type and BHA

15 BOTTOM-HOLE ASSEMBLIES

sperry-sun DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 1

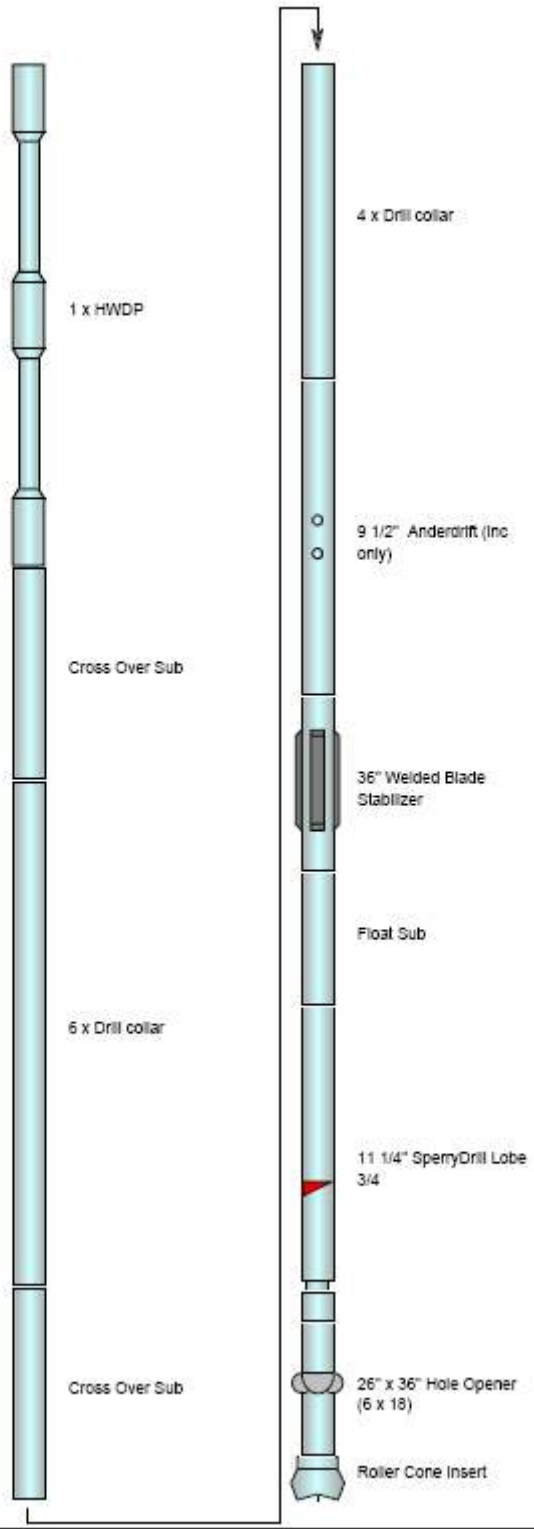
36" Spud Assembly#1

BHA Configuration

O.D.	Length	Description
17.5"	0.41m	Roller Cone Insert
36"	3.94m	26" x 36" Hole Opener (6 x 18)
11.25"	9.43m	11 1/4" SperryDrill Lobe 3/4
9.375"	0.91m	Float Sub
9.5"	2.57m	36" Welded Blade Stabilizer
9.375"	3.08m	9 1/2" Anderdrift (Inc only)
9.5"	37.71m	4 x Drill collar
9.25"	1.19m	Cross Over Sub
8"	55.02m	6 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	9.45m	1 x HWDP

BHA Discussion

RIH to 15m above seabed, tested Anderdrift - no go. POOH to replace.



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 1

BHA# 1 : Date In :13-12-200 MD In (m) : 114 TVD In (m) : 114 Date Out 14-12-2005 MD Out (m): 114 TVD Out (m): 114

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
1	17.500	Security DBS	XTD12DSCL	755262	1x16, 2x18, 6x18	2.184	0-0-WT-A -E-I-NO-DTF

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs
1	11.250	SDS	SperryDrill	1125026				0.50

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Insert	755262	17.500	3.000	17.500		P 7-5/8" Reg	0.41	
2	26" x 36" Hole Opener (6 x 18)	OWS-HO-3615	36.000	3.000	36.000		B 7-5/8" Reg	3.94	
3	11 1/4" SperryDrill Lobe 3/4	1125026	11.250	6.132		354.29	B 7-5/8" Reg	9.43	
4	Float Sub	OWS91201	9.375	3.000		314.18	B 7-5/8" Reg	0.91	
5	36" Welded Blade Stabilizer	74467	9.500	3.000	36.000	323.58	B 7-5/8" Reg	2.57	15.98
6	9 1/2" Anderdrift (Inc only)	ADB986	9.375	3.000		314.18	B 7-5/8" Reg	3.08	
7	4 x Drill collar		9.500	3.250		316.92	B 7-5/8" Reg	37.71	
8	Cross Over Sub		9.250	3.000		304.91	B 6-5/8" Reg	1.19	
9	6 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	55.02	
10	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
11	1 x HWDP		5.000	3.000		73.35	B N.C. 50	9.45	
								124.81	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.00
Circ-Other :	0.50
Total :	0.50

BHA Weight	(kg)
In Air (Total) :	51617
In Mud (Total) :	
In Air (Bel Jars) :	0
In Mud (Bel Jars) :	

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	

PERFORMANCE

	In	Out
Inclination (deg)	0.00	0.00
Azimuth (deg)	0.00	0.00

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

RIH to 15m above seabed, tested Anderdrift - no go. POOH to replace.

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 1**

OBJECTIVES:

To spud the well and drill 36" hole from the seabed to 175.5m maintaining verticality.

RESULTS:

After running in to 15m above the seabed the Anderdrift was tested as per program. No pulses were seen despite varying flow rates and increasing the pumps off time as well as other trouble shooting procedures.
The assembly was pulled back and the backup tool picked up.

RECOMMENDATIONS:

Given the problems encountered with the Anderdrift a surface test may be advisable in future.

sperry-sun DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 2

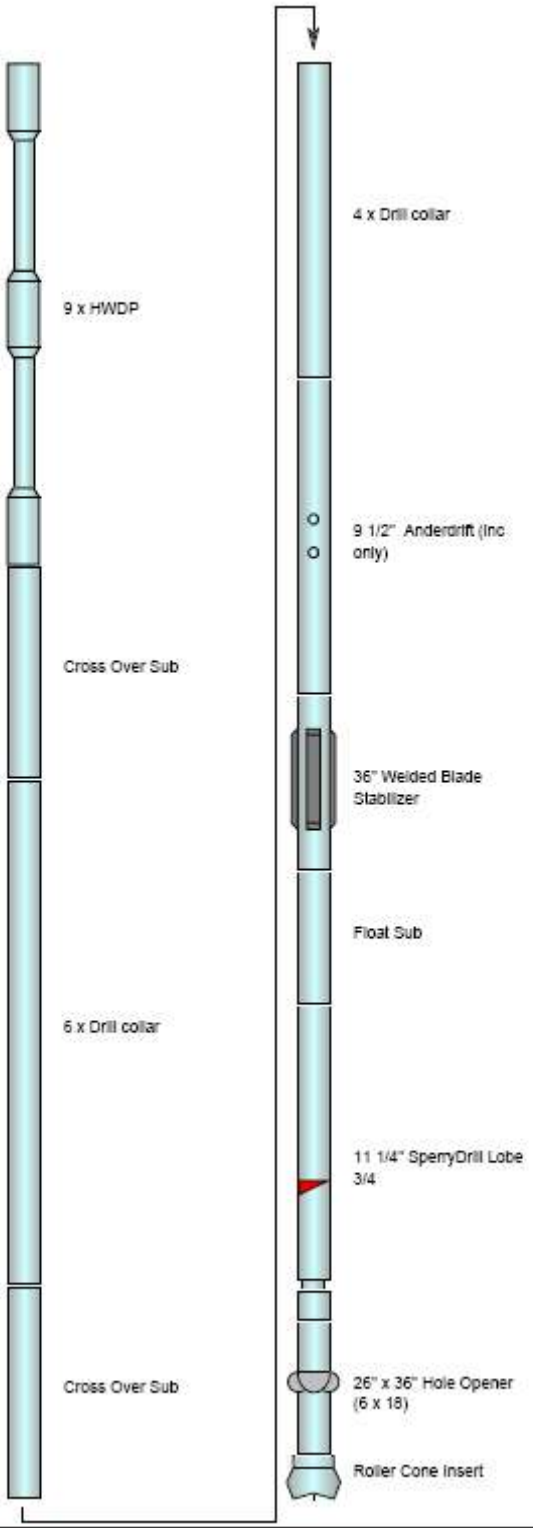
36" Spud Assembly#2

BHA Configuration

O.D.	Length	Description
17.5"	0.41m	Roller Cone Insert
36"	3.94m	26" x 36" Hole Opener (6 x 18)
11.25"	9.43m	11 1/4" SperryDrill Lobe 3/4
9.375"	0.91m	Float Sub
9.5"	2.57m	36" Welded Blade Stabilizer
9.375"	3.08m	9 1/2" Anderdrift (inc only)
9.5"	37.71m	4 x Drill collar
9.25"	1.19m	Cross Over Sub
8"	55.02m	6 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

Drill from seabed at 114m to 178m. 36" hole to 175.5m .
Drilling Hours: 2.9hrs
Circulating Hours: 10.2hrs
Avg ROP: 21.0m/hr
Bit Grade:1-1-WT-A-E-I-BU-TD
Bit Revs: 25.7krevs



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 2**

BHA# 2 : Date In :14-12-20(**MD In (m) :** 114 **TVD In (m) :** 114 **Date Out** 16-12-2008 **MD Out (m):** 176 **TVD Out (m):** 176

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
1rr1	17.500	Security DBS	XTD12DSCL	755262	1x16, 2x18, 6x18	2.184	1-1-WT-A -E-I-BU-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs
2	11.250	SDS	SperryDrill	1125026			3.4	12.50

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Insert	755262	17.500	3.000	17.500		P 7-5/8" Reg	0.41	
2	26" x 36" Hole Opener (6 x 18)	OWS-HO-3615	36.000	3.000	36.000		B 7-5/8" Reg	3.94	
3	11 1/4" SperryDrill Lobe 3/4	1125026	11.250	6.132		354.29	B 7-5/8" Reg	9.43	
4	Float Sub	OWS91201	9.375	3.000		314.18	B 7-5/8" Reg	0.91	
5	36" Welded Blade Stabilizer	74467	9.500	3.000	36.000	323.58	B 7-5/8" Reg	2.57	17.49
6	9 1/2" Anderdrift (inc only)	ADB983	9.375	3.000		314.18	B 7-5/8" Reg	3.08	
7	4 x Drill collar		9.500	3.250		316.92	B 7-5/8" Reg	37.71	
8	Cross Over Sub		9.250	3.000		304.91	B 6-5/8" Reg	1.19	
9	6 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	55.02	
10	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
11	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								200.40	

Parameter	Min	Max	Ave
WOB (t) :	0.00	4.00	1.34
RPM (rpm) :	35	70	46
Flow (L/min) :	2000	4500	3637
SPP (bar) :	21.0	95.0	68.4

Activity	Hrs
Drilling :	8.00
Reaming :	0.50
Circ-Other :	3.50
Total :	12.00

BHA Weight	(kg)
In Air (Total) :	57162
In Mud (Total) :	48082
In Air (Bel Jars) :	0
In Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	

PERFORMANCE

	In	Out
Inclination (deg)	0.00	0.34
Azimuth (deg)	0.00	134.89

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	10.00	8			0.00
Rotated :	52.00	8	0.00	0.00	
Total :	62.00	8	0.17	0.00	0.17

COMMENTS

Drill from seabed at 114m to 178m. 36" hole to 175.5m .
Drilling Hours: 2.9hrs
Circulating Hours: 10.2hrs
Avg ROP: 21.0m/hr
Bit Grade:1-1-WT-A-E-I-BU-TD
Bit Revs: 25.7krevs

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 2**

OBJECTIVES:

To spud the well and drill 36" hole from the seabed to 175.5m maintaining verticality.

RESULTS:

After tagging bottom low flow of 2000 lpm was used to spud the well with no surface rotation. No WOB was observed initially and the flow rate was staged up to 4500 lpm. The new Anderdrift produced variable results initially but improved as the hole got deeper.
After the 36" stabiliser was in the hole surface rotation of 35 rpm was started and drilling continued with Hi Vis sweeps of 10m3 being pumped every 15m to clean the hole. Boulders were encountered frequently with only low WOB of 2 -3t being utilised to ensure no excessive inclination was picked up. These boulder intervals required extensive reaming to clean up.

The angle of the hole varied between 1 to 1 1/2 degrees. This was kept on the lower limit by reaming and drilling with low weight.

After drilling to a TD of 178.7m (36" hole to 175.5m) the hole was swept clean with a Hi-Vis pill before being displaced to 1.50 sg mud. A wiper trip was then performed with no fill being seen.

The Anderdrift was showing initially angles of up tp 4 degrees which caused some concern. However, further investigations found that the tool delivered was in fact a 0 -2.5 degree tool and not the usual 0 - 5 degree. This halved the observed results and allowed the drilling to continue to TD.

No paperwork was available on the rig to show which tool had been delivered and the manual made available only mentioned a 5 degree tool. Also the 5 degree tool had been delivered on previous wells .
Performance of the Anderdrift was seen to be inconsistent with the tool sometimes showing a single pulse, several pulses or missed pulses out altogether.

On surface the bit and lower cutters on the hole opener were seen to be heavily balled although no wear was present on the bit. On the lower 26" section on the hole opener fairly severe wear was observed on the cutters with one cutter in particular having 50% of the cutter height worn down together with a rounded gauge section.

RECOMMENDATIONS:

The Anderdrift should be clearly marked which flask it has inside it and the paperwork available on the rig should highlight this fact.

The Anderdrift is becoming increasingly unreliable and should therefore be replaced with a Sperry 1200 DWD system. This would allow multiple surveys to be sent without cycling the pumps and also allow some inclination quality control.

sperry-sun DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 3

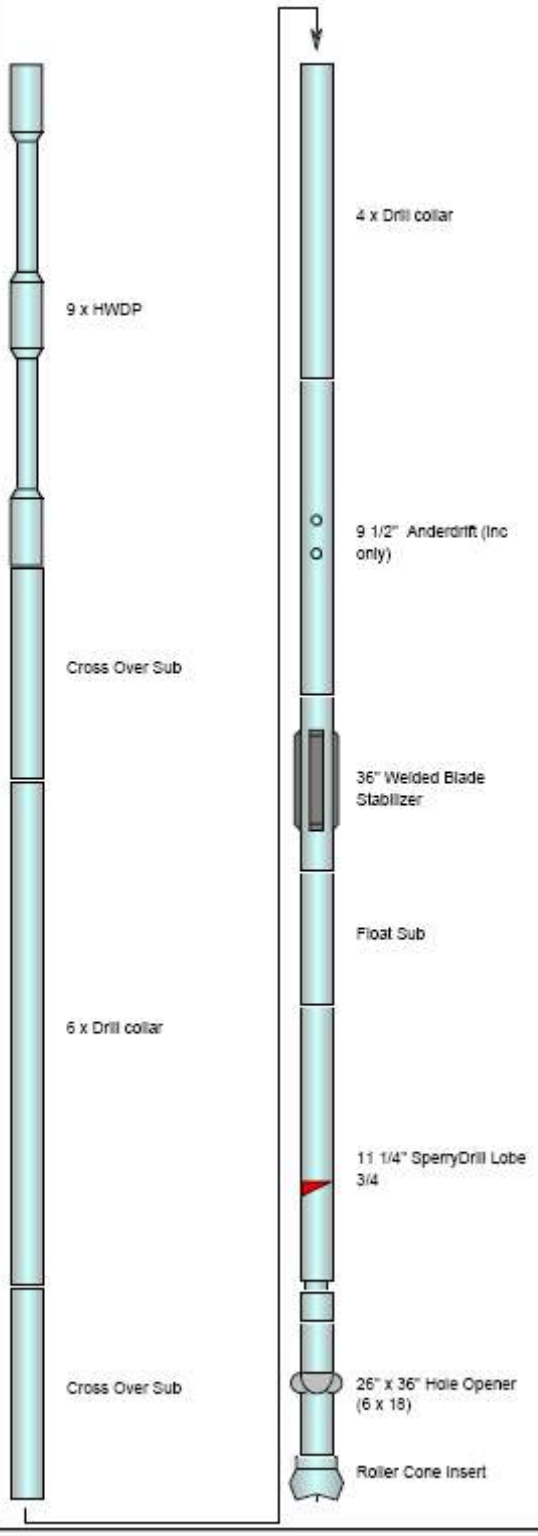
36" Cleanout Assembly

BHA Configuration

O.D.	Length	Description
17.5"	0.41m	Roller Cone Insert
36"	3.94m	26" x 36" Hole Opener (6 x 18)
11.25"	9.43m	11 1/4" SperryDrill Lobe 3/4
9.375"	0.91m	Float Sub
9.5"	2.57m	36" Welded Blade Stabilizer
9.375"	3.08m	9 1/2" Anderdrift (Inc only)
9.5"	37.71m	4 x Drill collar
9.25"	1.19m	Cross Over Sub
8"	55.02m	6 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

The assembly was re-run to check the hole prior to running conductor after waiting on weather for 3 days.
Circulating hours: 3.7hrs.



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 3**

BHA# 3 : Date In :17-12-20(**MD In (m) :** 176 **TVD In (m) :** 176 **Date Out** 18-12-200 **MD Out (m):** 176 **TVD Out (m):** 176

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
1rr2	17.500	Security DBS	XTD12DSCL	755262	1x16, 2x18, 1x20	1.000	1-1-WT-A -E-I-BU-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs
3	11.250	SDS	SperryDrill	1125026				17.00

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Insert	755262	17.500	3.000	17.500		P 7-5/8" Reg	0.41	
2	26" x 36" Hole Opener (6 x 18)	OWS-HO-3615	36.000	3.000	36.000		B 7-5/8" Reg	3.94	
3	11 1/4" SperryDrill Lobe 3/4	1125026	11.250	6.132		354.29	B 7-5/8" Reg	9.43	
4	Float Sub	OWS91201	9.375	3.000		314.18	B 7-5/8" Reg	0.91	
5	36" Welded Blade Stabilizer	74467	9.500	3.000	36.000	323.58	B 7-5/8" Reg	2.57	17.49
6	9 1/2" Anderdrift (inc only)	ADB983	9.375	3.000		314.18	B 7-5/8" Reg	3.08	
7	4 x Drill collar		9.500	3.250		316.92	B 7-5/8" Reg	37.71	
8	Cross Over Sub		9.250	3.000		304.91	B 6-5/8" Reg	1.19	
9	6 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	55.02	
10	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
11	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								200.40	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	0.00
Reaming :	3.00
Circ-Other :	1.50
Total :	4.50

BHA Weight	(kg)
In Air (Total) :	57162
In Mud (Total) :	48082
In Air (Bel Jars) :	0
In Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	

PERFORMANCE

	In	Out
Inclination (deg)	0.34	0.34
Azimuth (deg)	134.89	134.89

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

The assembly was re-run to check the hole prior to running conductor after waiting on weather for 3 days.
Circulating hours: 3.7hrs.

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 3**

OBJECTIVES:

To cleanout the 36" hole to TD prior to running 30" conductor.This run was made after a 3 day wait on weather due to a storm.

RESULTS:

The ROV found an elliptical crater 15m long, 5 m wide and 2m deep .They were not able to locate the hole.
The bit was centralised in this crater.
Attempting to find the hole was met with failure when 5 ton was appiled to the bit. The String was dragged sideways as far as was possible and the string stabbed in every quadrant with up to 8 ton. This was again met without success. The ROV reported that the bit had moved 1m sideways each time this was attempted.
After consultation with town it was decided to carefully drill ahead with low flow rate and slow rotation.
The angle was seen to be about 1.5 degrees and initially due to the softness of formation little weight was seen. An increase of differential pressure was seen however. After about 15m parameters seemed to indicate that the old hole had been re-entered and the BHA was run to bottom with light reaming. A few spots were noticed where repeated reaming was required. A wiper trip was made without problem and the hole filled up with 1.50 SG mud.
Bit and hole opener were found to be in the same condition as the previous BHA

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 4

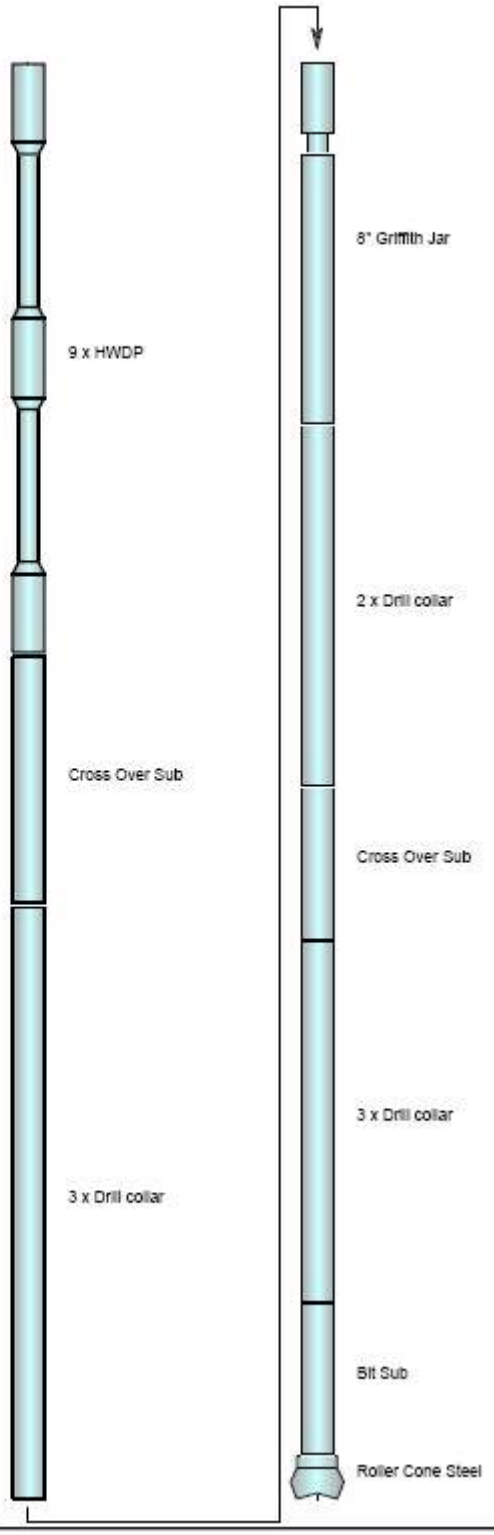
24" Cleanout Assembly

BHA Configuration

O.D.	Length	Description
24"	0.56m	Roler Cone Steel
9.5"	0.88m	Bit Sub
9.5"	28.25m	3 x Drill collar
9.25"	1.19m	Cross Over Sub
8"	18.07m	2 x Drill collar
8"	9.7m	8" Griffith Jar
8"	27.56m	3 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

Drill cement, shoe and rat hole. Losses observed .POOH, PU cement stinger.
Circulating hours 3.7 hours 1.4 hours on bottom.
Rev 19.5krevs on btm 6.5 krevs.



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 4**

BHA# 4 : Date In :20-12-200 **MD In (m) :** 176 **TVD In (m) :** 176 **Date Out** 20-12-2006 **MD Out (m):** 176 **TVD Out (m):** 176

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
2	24.000	Security DBS	XT1DSLC115	10730375	1x18, 2x20, 1x22	1.233	1-1-WT-A -E-I-NO-HP

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	10730375	24.000	3.000	17.500		P 7-5/8" Reg	0.56	
2	Bit Sub	OWSBS17142	9.500	3.000		323.58	B 7-5/8" Reg	0.88	
3	3 x Drill collar		9.500	3.250		316.92	B 7-5/8" Reg	28.25	
4	Cross Over Sub	1361	9.250	3.000		304.91	B 6-5/8" Reg	1.19	
5	2 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	18.07	
6	8" Griffith Jar	41180658	8.000	3.000		219.04	B 6-5/8" Reg	9.70	
7	3 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	27.56	
8	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
9	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								172.35	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.50
Circ-Other :	2.50
Total :	3.00

BHA Weight	(kg)
In Air (Total) :	29636
In Mud (Total) :	24929
In Air (Bel Jars) :	14898
In Mud (Bel Jars) :	12531

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	4

PERFORMANCE

	In	Out
Inclination (deg)	0.34	0.34
Azimuth (deg)	134.89	134.89

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

Drill cement, shoe and rat hole. Losses observed .POOH, PU cement stinger.
Circulating hours 3.7 hours 1.4 hours on bottom.
Rev 19.5krevs on btm 8.5 krevs.

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 4**

OBJECTIVES:

Clean out cement .Drill shoe and rathole. Be aware of shallow gas.

RESULTS:

Drill cement from 170m. Drill shoe and rat hole. Losses observed .POOH, PU cement stinger.
Circulating hours 3.7 hrs.
Rev 19.5krevs on btm 8.5 krevs.

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 5

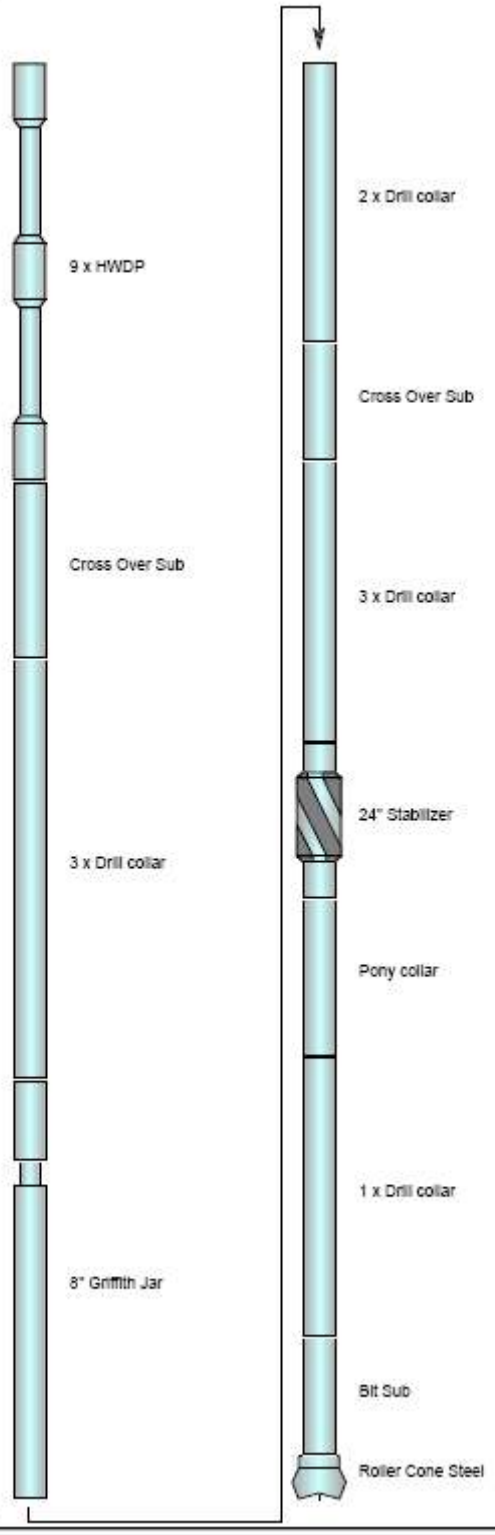
24" Dress Cement#1

BHA Configuration

O.D.	Length	Description
24"	0.56m	Roller Cone Steel
9.5"	0.88m	Bit Sub
9.5"	9.46m	1 x Drill collar
9.5"	3.77m	Pony collar
9.5"	2.29m	24" Stabilizer
9.5"	28.25m	3 x Drill collar
9.25"	1.19m	Cross Over Sub
8"	18.07m	2 x Drill collar
8"	9.7m	8" Griffith Jar
8"	27.56m	3 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

Dress cement. Monitor losses.
Circulation 1.6 hours. 0.5 drilling cement
2krevs total 1 krevs on cement.



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 5

BHA# 5 : Date In :21-12-200 MD In (m) : 176 TVD In (m) : 176 Date Out 21-12-2006 MD Out (m): 176 TVD Out (m): 176

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
2rr1	24.000	Security DBS	XT1DSLC115	10730375	1x18, 2x20, 1x22	1.233	1-1-WT-A -E-I-NO-HP

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	10730375	24.000	3.000	24.000		P 7-5/8" Reg	0.56	
2	Bit Sub	OWSBS17142	9.500	3.000		323.58	B 7-5/8" Reg	0.88	
3	1 x Drill collar		9.500	2.810		327.33	B 7-5/8" Reg	9.46	
4	Pony collar	67117	9.500	2.810		327.33	B 7-5/8" Reg	3.77	
5	24" Stabilizer	62991	9.500	3.000	24.000	323.58	B 7-5/8" Reg	2.29	15.73
6	3 x Drill collar		9.500	3.250		316.92	B 7-5/8" Reg	28.25	
7	Cross Over Sub	1361	9.250	3.000		304.91	B 6-5/8" Reg	1.19	
8	2 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	18.07	
9	8" Griffith Jar	41180658	8.000	3.000		219.04	B 6-5/8" Reg	9.70	
10	3 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	27.56	
11	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
12	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								187.67	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	0.00
Reaming :	2.00
Circ-Other :	0.00
Total :	2.00

BHA Weight	(kg)
In Air (Total) :	34708
In Mud (Total) :	29195
In Air (Bel Jars) :	19969
In Mud (Bel Jars) :	16797

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	

PERFORMANCE

	In	Out
Inclination (deg)	0.34	0.34
Azimuth (deg)	134.89	134.89

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

Dress cement. Monitor losses.
Circulation 1.6 hours. 0.5 drilling cement.
2krevs total 1 krevs on cement.

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 BHA# 5

OBJECTIVES:

Due to losses at the shoe (communication to sea bed). The hole was cemented.
This assembly is to drill cement and monitor losses.

RESULTS:

Some cement found at shoe but nothing found beyond shoe. Total losses were encountered. POOH to cement.
Circulation 1.6 hours. 0.5 drilling cement.
REVS 2krevs total 1 krevs on cement.

sperry-sun DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 6

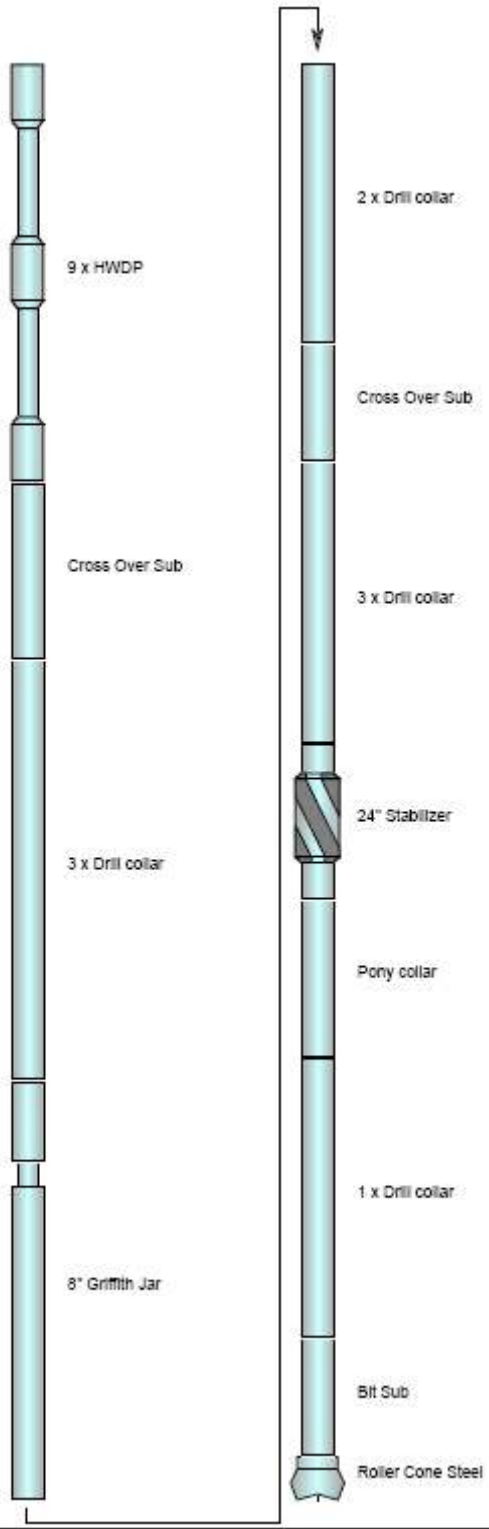
24" Dress Cement#2

BHA Configuration

O.D.	Length	Description
24"	0.56m	Roller Cone Steel
9.5"	0.88m	Bit Sub
9.5"	9.46m	1 x Drill collar
9.5"	3.77m	Pony collar
9.5"	2.29m	24" Stabilizer
9.5"	28.25m	3 x Drill collar
9.25"	1.19m	Cross Over Sub
8"	18.07m	2 x Drill collar
8"	9.7m	8" Griffith Jar
8"	27.56m	3 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

Meterage: 12m
Drilling Hours: 1.1hrs
Circulating Hours: 8.1hrs
Avg ROP: 29.1m/hr
Bit Grade: 1-1-WT-A-E-I-NO-TD
Bit Revs: 109krevs



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 6

BHA# 6 : Date In :22-12-200 MD In (m) : 176 TVD In (m) : 176 Date Out 22-12-2005 MD Out (m): 176 TVD Out (m): 176

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
2rr2	24.000	Security DBS	XT1DSLC115	10730375	1x18, 2x20, 1x22	1.233	1-1-WT-A -E-I-NO-BHA

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	10730375	24.000	3.000	24.000		P 7-5/8" Reg	0.56	
2	Bit Sub	OWSBS17142	9.500	3.000		323.58	B 7-5/8" Reg	0.88	
3	1 x Drill collar		9.500	2.810		327.33	B 7-5/8" Reg	9.46	
4	Pony collar	57117	9.500	2.810		327.33	B 7-5/8" Reg	3.77	
5	24" Stabilizer	62991	9.500	3.000	24.000	323.58	B 7-5/8" Reg	2.29	15.73
6	3 x Drill collar		9.500	3.250		316.92	B 7-5/8" Reg	28.25	
7	Cross Over Sub	1361	9.250	3.000		304.91	B 6-5/8" Reg	1.19	
8	2 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	18.07	
9	8" Griffith Jar	41180658	8.000	3.000		219.04	B 6-5/8" Reg	9.70	
10	3 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	27.56	
11	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
12	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								187.87	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.00
Circ-Other :	6.00
Total :	6.00

BHA Weight	(kg)
In Air (Total) :	34708
In Mud (Total) :	29195
In Air (Bel Jars) :	19969
In Mud (Bel Jars) :	16797

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	

PERFORMANCE

	In	Out
Inclination (deg)	0.34	0.34
Azimuth (deg)	134.89	134.89

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

Meterage: 12m
Drilling Hours: 1.1hrs
Circulating Hours: 8.1hrs
Avg ROP: 29.1m/hr
Bit Grade: 1-1-WT-A-E-I-NO-TD
Bit Revs: 109krevs

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 BHA# 6

OBJECTIVES:

After a second cement run the assembly was used to dress of cement and drill a few meters of formation if losses were cured.

RESULTS:

No losses seen. Drilled ahead to 190 m to confirm the well was stable.

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 7

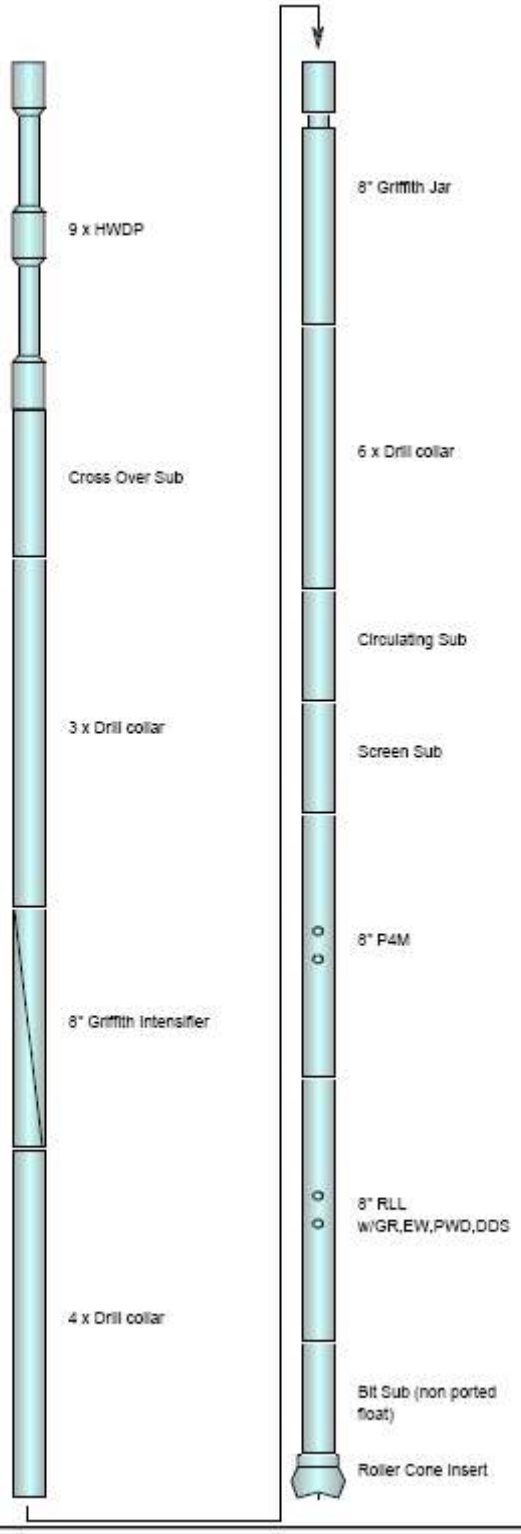
9-7/8" Pilot Hole

BHA Configuration

O.D.	Length	Description
9.875"	0.27m	Roller Cone Insert
8"	0.81m	Bit Sub (non ported float)
8"	8.83m	8" RLL w/GR,EW,PWD,DDS
8"	4.77m	8" P4M
8"	2.37m	Screen Sub
8"	0.83m	Circulating Sub
8"	54.74m	6 x Drill collar
8"	9.7m	8" Griffith Jar
8"	36.49m	4 x Drill collar
8"	8.35m	8" Griffith Intensifier
8"	27.95m	3 x Drill collar
8"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

Meterage: 513m
Drilling Hours: 18.8hrs
Circulating Hours: 27.3hrs
Avg ROP: 27.3m/hr
Bit Grade:1-1-WT-A-E-I-NO-TD
Bit Revs: 119.8krevs
MWD sensors: RES 10.88m, GR 7.27m and PWD 6.42m



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 7

BHA# 7 : Date In :22-12-200 MD In (m) : 176 TVD In (m) : 176 Date Out 25-12-2006 MD Out (m): 703 TVD Out (m): 703

BIT DATA

Bit #	OD (In)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
3	9.875	Security DBS	EBXs12DS	10749342	4x20	1.227	1-1-WT-A -E-I-NO-BHA

MOTOR DATA

Run #	OD (In)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (In)	ID (In)	Gauge (In)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Insert	10749342	9.875	3.000	9.875	352.51	P 6-5/8" Reg	0.27	
2	Bit Sub (non ported float)	OWSBS006	8.000	4.000		191.16	B 6-5/8" Reg	0.81	
3	8" RLL w/GR,EW,PWD,DDS	90092816HG GUR8	8.000	1.920		240.20	B 6-5/8" Reg	8.83	
4	8" P4M	205314	8.000	2.250		234.72	B 6-5/8" Reg	4.77	
5	Screen Sub	10703967	8.000	4.000		191.16	B 6-5/8" Reg	2.37	
6	Circulating Sub	063030	8.000	1.920		240.20	B 6-5/8" Reg	0.83	
7	6 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	54.74	
8	8" Griffith Jar	41180658	8.000	3.000		219.04	B 6-5/8" Reg	9.70	
9	4 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	36.49	
10	8" Griffith Intensifier	43480009	8.000	2.750		224.76	B 6-5/8" Reg	8.35	
11	3 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	27.95	
12	Cross Over Sub		8.000	3.000		219.04	B N.C. 50	1.10	
13	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								241.25	

Parameter	Min	Max	Ave
WOB (t) :	2.00	4.00	2.30
RPM (rpm) :	70	85	74
Flow (L/min) :	2000	3000	2927
SPP (bar) :	40.0	107.0	101.8

Activity	Hrs
Drilling :	26.00
Reaming :	1.50
Circ-Other :	3.00
Total :	30.50

BHA Weight	(kg)
In Air (Total) :	41222
In Mud (Total) :	35250
In Air (Bel Jars) :	16360
In Mud (Bel Jars) :	13990

Drill String	OD(In)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	462

PERFORMANCE

	In	Out
Inclination (deg)	0.34	0.51
Azimuth (deg)	134.89	61.72

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	527.00	20			
Total :	527.00	20	0.01	0.00	0.03

COMMENTS

Meterage: 513m
Drilling Hours: 18.8hrs
Circulating Hours: 27.3hrs
Avg ROP: 27.3m/hr
Bit Grade:1-1-WT-A-E-I-NO-TD
Bit Revs: 119.8krevs
MWD sensors: RES 10.88m, GR 7.27m and PWD 6.42m

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 7**

OBJECTIVES:

To drill a 9 7/8" pilot hole from the 30" conductor shoe at 173 m to 700m keeping the well bore vertical.

RESULTS:

Drilling started at 190m with 2000 lpm initially and 10 - 20 m/hr. When no losses where seen the flow was increased to 3000 lpm and ROP increased to 40 m/hr with 140 RPM. The well remained vertical with the maximum inclination seen being 0.41 degrees.
The ECD was seen to rise on several occasions and it was necessary to circulate to reduce it to an acceptable level. The well was drilled to section TD of 700m.
No shallow gas was seen.

sperry-sun DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 8

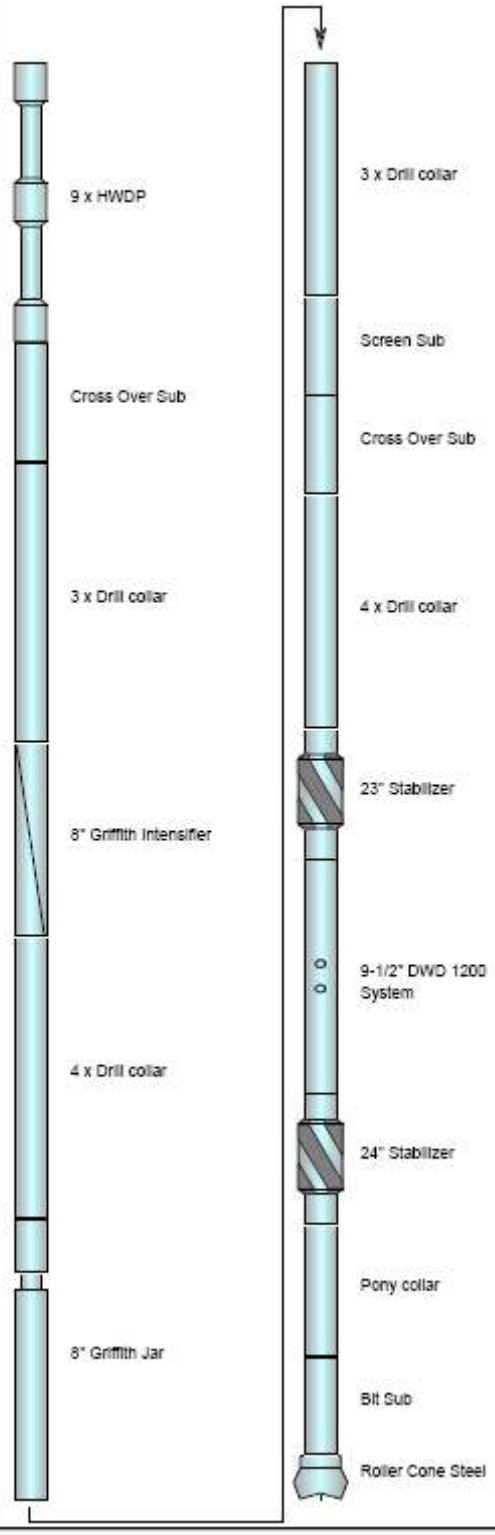
24" Hole Opener

BHA Configuration

O.D.	Length	Description
24"	0.56m	Roller Cone Steel
9.375"	0.88m	Bit Sub
9.375"	3.77m	Pony collar
9.5"	2.29m	24" Stabilizer
9.625"	4.75m	9-1/2" DWD 1200 System
9.5"	2.74m	23" Stabilizer
9.625"	37.71m	4 x Drill collar
9.25"	1.19m	Cross Over Sub
7.938"	2.49m	Screen Sub
8"	27.18m	3 x Drill collar
8"	9.7m	8" Griffith Jar
8"	36.49m	4 x Drill collar
8.016"	8.35m	8" Griffith Intensifier
8"	27.95m	3 x Drill collar
7.875"	1.1m	Cross Over Sub
5"	85.04m	9 x HWDP

BHA Discussion

Meterage: 513m
Drilling Hours: 17.6hrs
Circulating Hours: 28.3hrs
Avg ROP: 29.1m/hr
Bit Grade:1-1-WT-A-E-I-NO-TD
Bit Revs: 109.0krevs



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 8

BHA# 8 : Date In :25-12-200 MD In (m) : 189 TVD In (m) : 189 Date Out 27-12-2006 MD Out (m): 703 TVD Out (m): 703

BIT DATA

Bit #	OD (In)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
2rr3	24.000	Security DBS	XT1DSLC115	10730375	1x18, 2x20, 1x22	1.233	1-1-WT-A -E-I-NO-TD

MOTOR DATA

Run #	OD (In)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (In)	ID (In)	Gauge (In)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	10730375	24.000	3.000	24.000		P 7-5/8" Reg	0.56	
2	Bit Sub	OWSBS17142	9.375	3.000		314.18	B 7-5/8" Reg	0.88	
3	Pony collar	67117	9.375	2.875		317.11	B 7-5/8" Reg	3.77	
4	24" Stabilizer	62991	9.500	3.000	24.000	323.58	B 7-5/8" Reg	2.29	6.27
5	9-1/2" DWD 1200 System	179930	9.625	3.000		333.10	B 7-5/8" Reg	4.75	
6	23" Stabilizer	OWS3911	9.500	3.000	23.000	323.58	B 7-5/8" Reg	2.74	13.56
7	4 x Drill collar		9.625	3.000		333.10	B 7-5/8" Reg	37.71	
8	Cross Over Sub	1361	9.250	3.000		304.91	B 6-5/8" Reg	1.19	
9	Screen Sub	10704792	7.938	2.813		219.43	B 6-5/8" Reg	2.49	
10	3 x Drill collar		8.000	2.875		221.96	B 6-5/8" Reg	27.18	
11	8" Griffith Jar	41180658	8.000	2.875		221.96	B 6-5/8" Reg	9.70	
12	4 x Drill collar		8.000	2.875		221.96	B 6-5/8" Reg	36.49	
13	8" Griffith Intensifier	80801	8.018	2.813		224.51	B 6-5/8" Reg	8.35	
14	3 x Drill collar		8.000	2.813		223.37	B 6-5/8" Reg	27.95	
15	Cross Over Sub		7.875	3.250		204.91	B N.C. 50	1.10	
16	9 x HWDP		5.000	3.000		73.35	B N.C. 50	85.04	
								252.19	

Parameter	Min	Max	Ave
WOB (t) :			3.00
RPM (rpm) :			110
Flow (L/min) :			4500
SPP (bar) :			180.0

Activity	Hrs
Drilling :	26.00
Reaming :	3.00
Circ-Other :	5.00
Total :	34.00

BHA Weight	(kg)
In Air (Total) :	50283
In Mud (Total) :	42999
In Air (Bel Jars) :	25449
In Mud (Bel Jars) :	21763

Drill String	OD(In)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	451

PERFORMANCE

	In	Out
Inclination (deg)	0.41	0.51
Azimuth (deg)	134.89	61.72

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

Meterage: 513m
Drilling Hours: 17.6hrs
Circulating Hours: 28.3hrs
Avg ROP: 29.1m/hr
Bit Grade:1-1-WT-A-E-I-NO-TD
Bit Revs: 109.0krevs

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 8**

OBJECTIVES:

Open up the 9 7/8" hole to 24", keeping as close to vertical as possible.

RESULTS:

The bit was washed carefully through the 30" shoe and down to 190m with 1000 lpm but was gradually staged up to 4500 lpm as opening of the hole commenced. Typical ROP was 35 m/hr with 110 RPM being used. Average WOB was 4t with 6 - 8t being required below 600m. Some torque peaks was seen in harder sand layers.
After an initial survey of 0.7 the angle remained below 0.5 degrees at all times confirming that the old hole was followed.
At TD the hole was circulated clean before being displaced to 1.15 KCL mud and a wiper trip performed with no drag or fill being observed.
The BHA was then pulled out of hole to run 20" casing.

RECOMMENDATIONS:

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 9

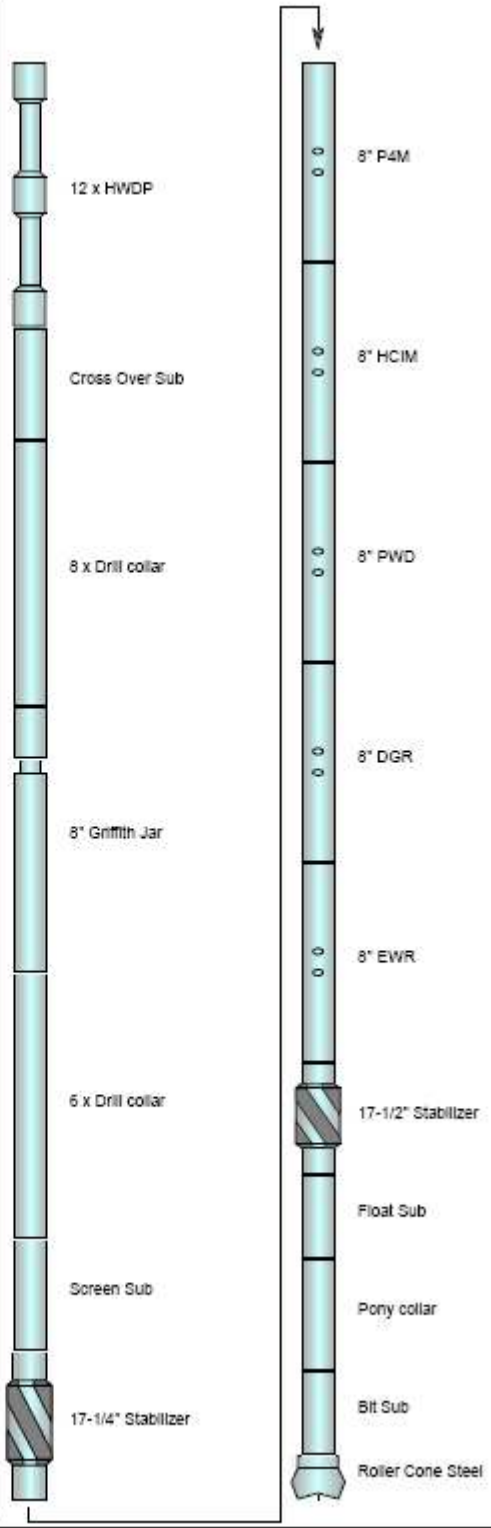
17½" Hole

BHA Configuration

O.D.	Length	Description
17.5"	0.44m	Roler Cone Steel
9.625"	1.2m	Bit Sub
7.875"	3.59m	Pony collar
7.937"	1.07m	Float Sub
8"	1.97m	17-1/2" Stabilizer
8"	4.37m	8" EWR
8"	1.52m	8" DGR
8"	1.33m	8" PWD
8"	1.62m	8" HCIM
8.062"	4.78m	8" P4M
7.875"	1.99m	17-1/4" Stabilizer
8"	2.01m	Screen Sub
8"	54.35m	6 x Drill collar
8.187"	9.7m	8" Griffith Jar
8"	73.68m	8 x Drill collar
8.875"	1.1m	Cross Over Sub
5"	113.36m	12 x HWDP

BHA Discussion

Meterage: 804m
Drilling Hours: 33.1hrs (2.2hrs cement)
Circulating Hours: 127.4hrs
Avg ROP: 24.2m/hr
Bit Grade:1-1-WT-A-E-I-BU-TD
Bit Revs: 280.3krevs (6.8krevs cement)
MWD sensors: RES 10.40m, GR 13.57m and PWD 14.42m



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 9

BHA# 9 : Date In :29-12-200 MD In (m) : 703 TVD In (m) : 703 Date Out 06-01-2006 MD Out (m): 1507 TVD Out (m): 1507

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
4	17.500	Security DBS	EBXT1GSLC	10779727	2x20, 1x18, 1x22	1.233	1-1-WT-A -E-I-BU-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	10779727	17.500	3.000	17.500		P 7-5/8" Reg	0.44	
2	Bit Sub	OWSXO 126	9.625	4.000		305.22	B 6-5/8" Reg	1.20	
3	Pony collar	67160	7.875	3.000		211.13	B 6-5/8" Reg	3.59	
4	Float Sub	149154	7.937	3.000		215.04	B 6-5/8" Reg	1.07	
5	17-1/2" Stabilizer	74418	8.000	2.750	17.500	224.76	B 6-5/8" Reg	1.97	7.19
6	8" EWR		8.000	1.920		240.20	B 6-5/8" Reg	4.37	
7	8" DGR		8.000	1.920		240.20	B 6-5/8" Reg	1.52	
8	8" PWD		8.000	1.920		240.20	B 6-5/8" Reg	1.33	
9	8" HCIM	90092816	8.000	1.920		240.20	B 6-5/8" Reg	1.62	
10	8" P4M	205319	8.062	2.250		238.68	B 6-5/8" Reg	4.78	
11	17-1/4" Stabilizer	62991	7.875	2.875	17.250	214.06	B 6-5/8" Reg	1.99	22.66
12	Screen Sub	174912	8.000	4.000		191.16	B 6-5/8" Reg	2.01	
13	6 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	54.35	
14	8" Griffith Jar	41180658	8.187	3.000		231.09	B 6-5/8" Reg	9.70	
15	8 x Drill collar		8.000	2.810		223.18	B 6-5/8" Reg	73.88	
16	Cross Over Sub		8.875	3.250		271.62	B N.C. 50	1.10	
17	12 x HWDP		5.000	3.000		73.35	B N.C. 50	113.36	
								278.28	

Parameter	Min	Max	Ave
WOB (t) :	4.00	12.00	7.86
RPM (rpm) :	140	140	140
Flow (L/min) :	2950	4150	3852
SPP (bar) :	107.0	281.0	227.4

Activity	Hrs
Drilling :	46.50
Reaming :	48.50
Circ-Other :	26.50
Total :	121.50

BHA Weight	(kg)
In Air (Total) :	45866
In Mud (Total) :	36832
In Air (Bel Jars) :	18522
In Mud (Bel Jars) :	14874

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	1229

PERFORMANCE

	In	Out
Inclination (deg)	0.51	0.64
Azimuth (deg)	61.72	35.63

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	804.00	17			
Total :	804.00	17	0.00	0.00	0.01

COMMENTS

Meterage: 804m
Drilling Hours: 33.1hrs (2.2hrs cement)
Circulating Hours: 127.4hrs
Avg ROP: 24.2m/hr
Bit Grade:1-1-WT-A-E-I-BU-TD
Bit Revs: 280.3krevs (6.8krevs cement)
MWD sensors: RES 10.40m, GR 13.57m and PWD 14.42m

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Maersk Giant
Job # : NR-DD-0003862265 **BHA# 9**

OBJECTIVES:

To drill 17 1/2" hole from the 20" casing shoe to the 13 3/8" casing setting depth maintaining a vertical wellbore.

RESULTS:

The top plug was tagged at 682m. The well was displaced to 1.40sg mud while drilling cement. Due to hard cement the shoetrack and shoe required 6 hours to drill.
After the FIT the drilling continued with immediate losses over the shakers that required the flow to be cut back to 3000 lpm. This problem persisted and required the ROP to be controlled at 20 m/hr. No drilling problems where encountered and the inclination remained at 0.6 towards the east.
Once the mud was conditioned it was possible to increase the flow to 4100 lpm and increase the ROP to 35 - 40 m/hr with 12 - 14t WOB. Surveys showed a small build tendency of 0.07 deg/30m had been initiated corresponding to the increased WOB.

After drilling to 1326m the MWD failed with only occasional pulses seen. However, the decision was made by Paladin do drill on. The MWD worked intermittently and two further surveys were obtained including one at section TD. The well was drilled to section TD at 1492m with a maximum inclination of 0.93 deg and a final inclination of 0.80 deg.

A 20 m3 hi vis was pumped at section TD and the well circulated for 4hrs until clean. While pulling out 30t overpull was seen at 1395m. Backreaming commenced to 1366m where the hole packed off and circulation was lost. Worked the string and eventually regained circulation and it was possible to backream very slowly.
Hole problems continued with pack off's and tight hole. Cavings were observed over the shakers indicating the mud weight was too low. Over the next 3 days the mud was therefore weighted up to 1.55 sg. Periods with massive amounts of cuttings coming over the shakers. Mostly blocky and some sharp cavings. At 852m several large rounded cavings (max size 30cm) came over the shakers. After tripping back in from the casing shoe 30m of fill was seen. After washing down to TD at 1492m 15m of fresh formation was drilled to 1507m and the hole circulated for 7.5hrs until clean once again.

After extensive mud conditioning the BHA was pulled out of hole with a maximum of 5t drag. Several tight spots required working but otherwise the trip out was free of problems. On reaching surface the stabilisers were badly balled and the bit partially balled although in good condition. The assembly was racked back to run 13 3/8" casing.

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 10

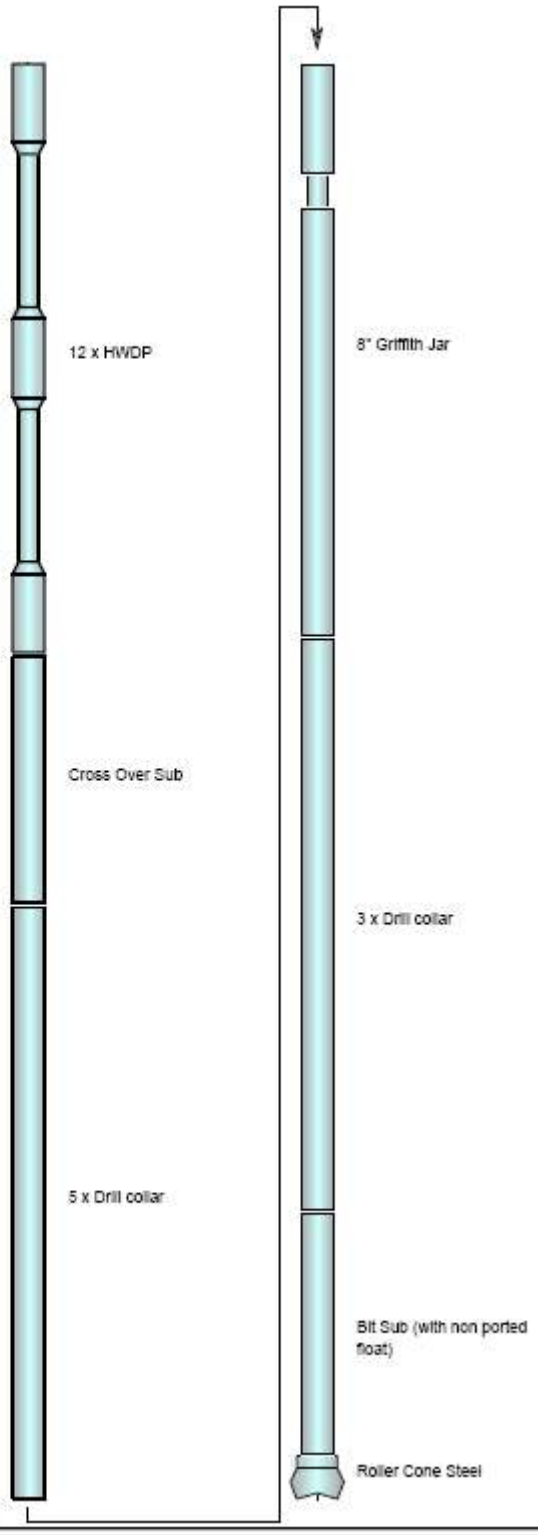
13-3/8" Casing Cleanout

BHA Configuration

O.D.	Length	Description
12.25"	0.3m	Roller Cone Steel
7.875"	0.97m	Bit Sub (with non ported float)
8"	27.17m	3 x Drill collar
8.187"	9.7m	8" Griffith Jar
8"	46.32m	5 x Drill collar
8"	0.94m	Cross Over Sub
5"	113.36m	12 x HWDP

BHA Discussion

Meterage: 3m (41m cement)
Drilling Hours: 0.1hrs (3.3hrs cement)
Circulating Hours: 10.0hrs
Avg ROP: 15.0m/hr
Bit Grade: 0-0-NO-A-E-I-NO-BHA
Bit revs: 0.8krevs (90.8krevs cement)



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 10

BHA# 10 : Date In :09-01-200 MD In (m) : 1507 TVD In (m) : 1507 Date Out 10-01-2006 MD Out (m): 1510 TVD Out (m): 1510

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
5	12.250	Security DBS	EBXC1S	10702082	2x20, 1x18, 1x22	1.233	0-0-NO-A -E-I-NO-BHA

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	Roller Cone Steel	10702082	12.250	3.000	12.250	561.78	P 6-5/8" Reg	0.30	
2	Bit Sub (with non ported float)	OWSBS 136	7.875	4.000		183.26	B 6-5/8" Reg	0.97	
3	3 x Drill collar		8.000	2.813		223.37	B 6-5/8" Reg	27.17	
4	8" Griffith Jar	41180658	8.187	2.750		236.82	B 6-5/8" Reg	9.70	
5	5 x Drill collar		8.000	2.813		223.37	B 6-5/8" Reg	46.32	
6	Cross Over Sub		8.000	3.000		219.04	B N.C. 50	0.94	
7	12 x HWDP		5.000	3.000		73.35	B N.C. 50	113.36	
								198.76	

Parameter	Min	Max	Ave
WOB (t) :	4.00	4.00	4.00
RPM (rpm) :	120	120	120
Flow (L/min) :	3315	3315	3315
SPP (bar) :	183.0	183.0	183.0

Activity	Hrs
Drilling :	0.50
Reaming :	0.50
Circ-Other :	9.50
Total :	10.50

BHA Weight	(kg)
In Air (Total) :	27579
In Mud (Total) :	22147
In Air (Bel Jars) :	6415
In Mud (Bel Jars) :	5152

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	1311

PERFORMANCE

	In	Out
Inclination (deg)	0.64	0.63
Azimuth (deg)	35.63	34.56

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	3.00	6			
Total :	3.00	6	-0.13	0.00	0.00

COMMENTS

Meterage: 3m (41m cement)
Drilling Hours: 0.1hrs (3.3hrs cement)
Circulating Hours: 10.0hrs
Avg ROP: 15.0m/hr
Bit Grade: 0-0-NO-A-E-I-NO-BHA
Bit revs: 0.8krevs (90.8krevs cement)

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 10**

OBJECTIVES:

Drill out 13 3/8" shoetrack, clean rathole and drill 3m of new formation.

RESULTS:

Tagged cement at 1465m. Drilled firm cement down to the shoe at 1497m. WOB of 5-10 tonnes gave an ROP of 10 m/hr. Cleaned out the rathole in 1m intervals down to 1507m without any resistance or problems. Drilled 3m new formation to 1510m, and reamed the interval 1505m to 1510m well, to round off any shoulders between 17 1/2" and 12 1/4" holes. Made a LOT to 1.81 sg. Displaced the hole to 1.55 sg OBM and pulled out of hole.

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 11

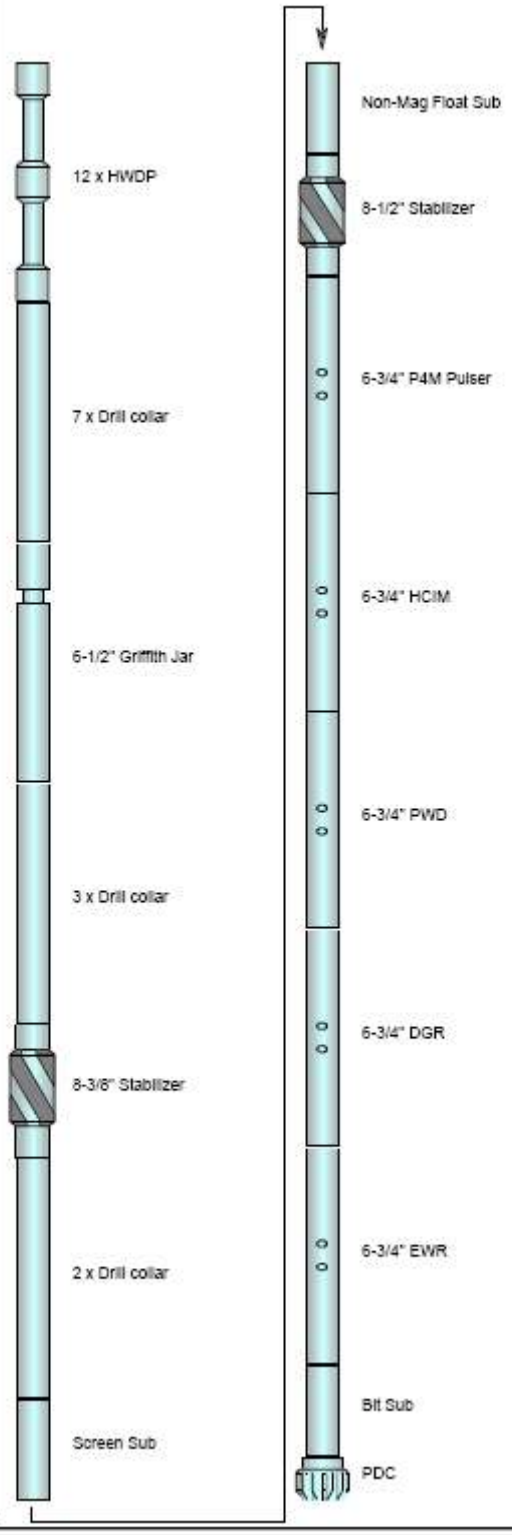
8½" Rotary Assembly#1

BHA Configuration

O.D.	Length	Description
8.5"	0.28m	PDC
6.5"	0.91m	Bit Sub
6.75"	4.35m	6-3/4" EWR
6.75"	1.38m	6-3/4" DGR
6.75"	1.34m	6-3/4" PWD
6.75"	1.45m	6-3/4" HCIM
6.75"	5.83m	6-3/4" P4M Pulser
6.375"	2.03m	8-1/2" Stabilizer
6.688"	0.91m	Non-Mag Float Sub
6.75"	2.49m	Screen Sub
6.75"	18.84m	2 x Drill collar
6.5"	1.82m	8-3/8" Stabilizer
6.75"	28.13m	3 x Drill collar
6.625"	9.72m	6-1/2" Griffith Jar
6.75"	66.23m	7 x Drill collar
5"	113.36m	12 x HWDP

BHA Discussion

Meterage: 1631m
Drilling Hours: 51.4
Circulating Hours: 79.0hrs
Avg ROP: 31.7m/hr
Bit Grade: 5-2-BT-N-X-I-WT-BHA
Bit Revs: 387.5krevs
Jar release down 12.7t + 2.5t POF
MWD sensors: RES 3.35m, GR 6.39m and PWD 7.26m



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 11

BHA# 11 : Date In :10-01-20(MD In (m) : 1510 TVD In (m) : 1510 Date Out 15-01-200 MD Out (m): 3141 TVD Out (m): 3140

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
6	8.500	Security DBS	FM3755Z	10696608	4x20	1.227	5-2-BT-N -X-I-WT-BHA

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	PDC	10696608	8.500	3.000	8.500	251.89	P 4-1/2" Reg	0.28	
2	Bit Sub	IOT23057	6.500	3.000		132.42	P N.C. 50	0.91	
3	6-3/4" EWR		6.750	1.920		166.77	B N.C. 50	4.35	
4	6-3/4" DGR		6.750	1.920		166.77	B N.C. 50	1.38	
5	6-3/4" PWD		6.750	1.920		166.77	B N.C. 50	1.34	
6	6-3/4" HCIM		6.750	1.920		166.77	B N.C. 50	1.45	
7	6-3/4" P4M Pulser		6.750	1.920		166.77	B N.C. 50	5.83	
8	8-1/2" Stabilizer	OWS 24021	6.375	3.000	8.500	126.01	B N.C. 50	2.03	16.42
9	Non-Mag Float Sub	70372-01	6.688	4.000		114.41	B N.C. 50	0.91	
10	Screen Sub		6.750	4.000		117.73	B N.C. 50	2.49	
11	2 x Drill collar		6.750	2.875		148.53	B N.C. 50	18.84	
12	8-3/8" Stabilizer	OWS4589	6.500	3.000	8.375	132.42	B N.C. 50	1.82	40.73
13	3 x Drill collar		6.750	2.875		148.53	B N.C. 50	28.13	
14	6-1/2" Griffith Jar	4286577800	6.625	2.188		155.73	B N.C. 50	9.72	
15	7 x Drill collar		6.750	2.875		148.53	B N.C. 50	66.23	
16	12 x HWDP		5.000	3.000		63.72	B N.C. 50	113.36	
								259.07	

Parameter	Min	Max	Ave
WOB (t) :	1.00	13.00	2.05
RPM (rpm) :	60	148	137
Flow (L/min) :	2000	2070	2051
SPP (bar) :	148.0	202.0	179.0

Activity	Hrs
Drilling :	74.75
Reaming :	3.75
Circ-Other :	6.75
Total :	85.25

BHA Weight	(kg)
In Air (Total) :	29029
In Mud (Total) :	23312
In Air (Bel Jars) :	10455
In Mud (Bel Jars) :	8396

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	2882

PERFORMANCE

	In	Out
Inclination (deg)	0.63	3.18
Azimuth (deg)	34.56	15.32

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	1631.00	22			
Total :	1631.00	22	0.05	0.00	0.05

COMMENTS

Meterage: 1631m
Drilling Hours: 51.4
Circulating Hours: 79.0hrs
Avg ROP: 31.7m/hr
Bit Grade: 5-2-BT-N-X-I-WT-BHA
Bit Revs: 387.5krevs
Jar release down 12.7t + 2.5t POF
MWD sensors: RES 3.35m, GR 6.39m and PWD 7.26m

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 11**

OBJECTIVES:

Drill vertically down to the reservoir at approximately 3131m. Evaluate for hydrocarbon shows. If shows, there will be coring. If no shows, drilling will continue to TD at 3415m.

RESULTS:

After M/U the 8 1/2" BHA and tripping to bottom, drilling commenced from 1510m to 1530m with 40 m/hr ROP and practically no WOB. Pulled back and reamed transition area between 17 1/2" and 8 1/2" hole several times.
Continued drilling down to 1647m with the same parameters. At 1647m the hole showed some pack-off tendencies, but reaming and wiping of tight spot solved the problem. Drilling commenced down to 1905m without any change in parameters, except for some stringers that needed up to 13t WOB to get through. Experienced some pack-off tendencies, similar to the one at 1647m, on the way down, but it was easily cured by reaming and wiping.
The MWD tool turned itself off at regular intervals on the way down, but started again when the pumps were cycled.
At 1905m, a wiper trip was done back to the 13 3/8" casing shoe. Except for a tight interval between 1810m to 1794m, the wiper trip went fine without any problems.
Drilling continued with a ROP of 40 m/hr down to 2302m, where the ROP was gradually increased to 50 m/hr, and further on to 60 m/hr at 2416m.
The inclination had been stable around 0.3deg to 0.9deg down to 2300m, but started increasing as ROP was increased. It increased up to 3.32deg, where it levelled out, and stayed just above 3deg for the rest of the run.
At 3000m the ROP was reduced to 15m/hr while looking for the Balder formation. It was found at 3053m. ROP was controlled between 3-5m/hr for the last part of the drilling, and Sele formation was found at 3094m, and top reservoir at 3134m.
Drilling was stopped at 3141m, and it was decided to pull out of hole for coring.
The trip out of hole went well without any problems.
At surface, about 50% of the bit cutters were broken off, and there were some signs of metal damage on top of the blades. The bit was not re-runable.

RECOMMENDATIONS:

The bit FM3755Z was performing very well during this BHA run. The ROP was kept between 40 and 60m/hr with very little WOB, and also limestone stringers were drilled through at acceptable ROPs. As good as no vibrations were seen, and the directional stability was excellent. Even if the bit had been taking some beating, it was drilling well until the end of the run.

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 12

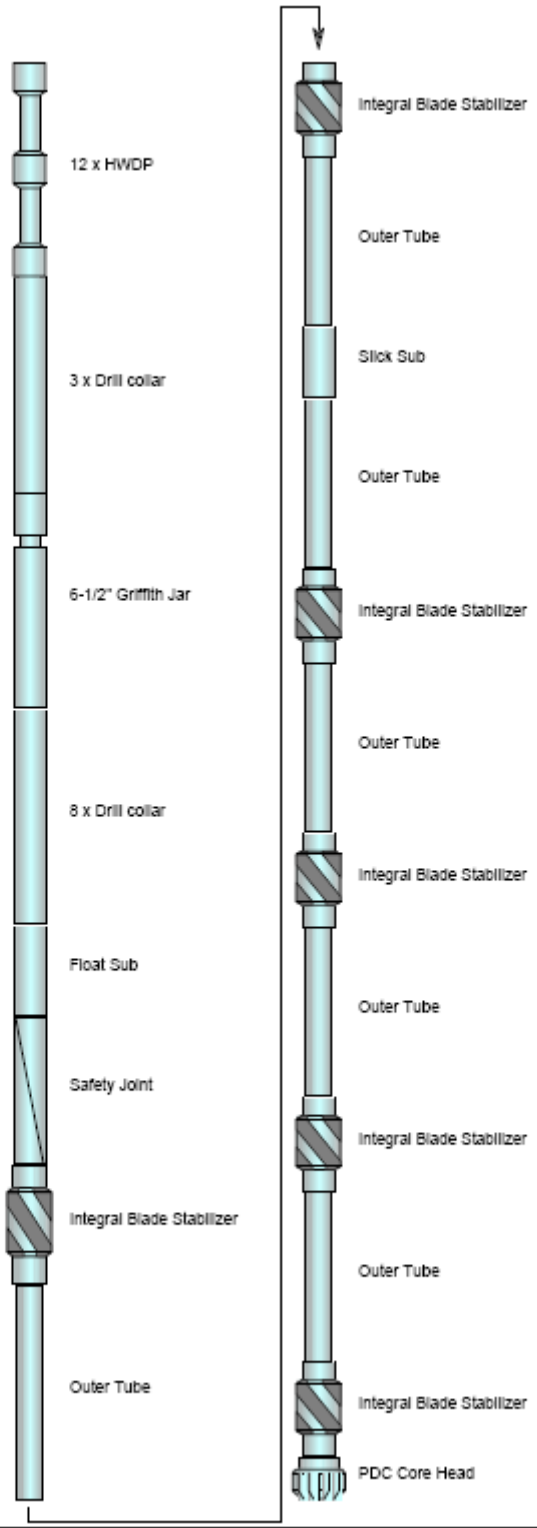
8½" Core Assembly

BHA Configuration

O.D.	Length	Description
	0.36m	PDC Core Head
	1.22m	Integral Blade Stabilizer
	3.35m	Outer Tube
	1.22m	Integral Blade Stabilizer
	3.35m	Outer Tube
	1.22m	Integral Blade Stabilizer
	7.92m	Outer Tube
	1.22m	Integral Blade Stabilizer
	7.92m	Outer Tube
	1.22m	Slick Sub
	7.92m	Outer Tube
	1.22m	Integral Blade Stabilizer
	7.92m	Outer Tube
	1.22m	Integral Blade Stabilizer
	1.44m	Safety Joint
	0.75m	Float Sub
6.5"	72m	8 x Drill collar
6.5"	9.72m	6-1/2" Griffith Jar
6.5"	27m	3 x Drill collar
5"	108m	12 x HWDP

BHA Discussion

Meterage: 46m
Drilling Hours: 3.5hrs
Circulating Hours: 3.5hrs
Avg ROP: 30.7m/hr
Bit Grade: 1-1-CT-N-X-I-CT-TD
Bit Revs: 185revs



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 12

BHA# 12 : Date In :15-01-200 MD In (m) : 3141 TVD In (m) : 3140 Date Out 17-01-2006 MD Out (m): 3187 TVD Out (m): 3186

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
0							1-1-CT-N -X-I-CT-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	PDC Core Head						P 4-1/2" Reg	0.36	
2	Integral Blade Stabilizer						B N.C. 50	1.22	0.97
3	Outer Tube						B N.C. 50	3.35	
4	Integral Blade Stabilizer						B N.C. 50	1.22	5.54
5	Outer Tube						B N.C. 50	3.35	
6	Integral Blade Stabilizer						B N.C. 50	1.22	10.11
7	Outer Tube						B N.C. 50	7.92	
8	Integral Blade Stabilizer						B N.C. 50	1.22	19.25
9	Outer Tube						B N.C. 50	7.92	
10	Slick Sub						B N.C. 50	1.22	
11	Outer Tube						B N.C. 50	7.92	
12	Integral Blade Stabilizer						B N.C. 50	1.22	37.53
13	Outer Tube						B N.C. 50	7.92	
14	Integral Blade Stabilizer						B N.C. 50	1.22	46.67
15	Safety Joint						B N.C. 50	1.44	
16	Float Sub						B N.C. 50	0.75	
17	8 x Drill collar		6.500	2.813		136.88	B N.C. 50	72.00	
18	6-1/2" Griffith Jar		6.500	2.750		138.14	B N.C. 50	9.72	
19	3 x Drill collar		6.500	2.813		136.88	B N.C. 50	27.00	
20	12 x HWDP		5.000	3.000		73.35	B N.C. 50	108.00	
								266.19	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	1.50
Reaming :	1.00
Circ-Other :	0.00
Total :	2.50

BHA Weight	(kg)
In Air (Total) :	
In Mud (Total) :	
In Air (Bel Jars) :	0
In Mud (Bel Jars) :	0

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	2921

PERFORMANCE

	In	Out
Inclination (deg)	3.18	3.11
Azimuth (deg)	15.32	13.67

	Distance(m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	46.00	0			
Total :	46.00	31	-0.05	-1.07	0.07

COMMENTS

Meterage: 46m
Drilling Hours: 3.5hrs
Circulating Hours: 3.5hrs
Avg ROP: 30.7m/hr
Bit Grade: 1-1-CT-N-X-I-CT-TD
Bit Revs: 185revs

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

1/2-2

BHA ID #: 13

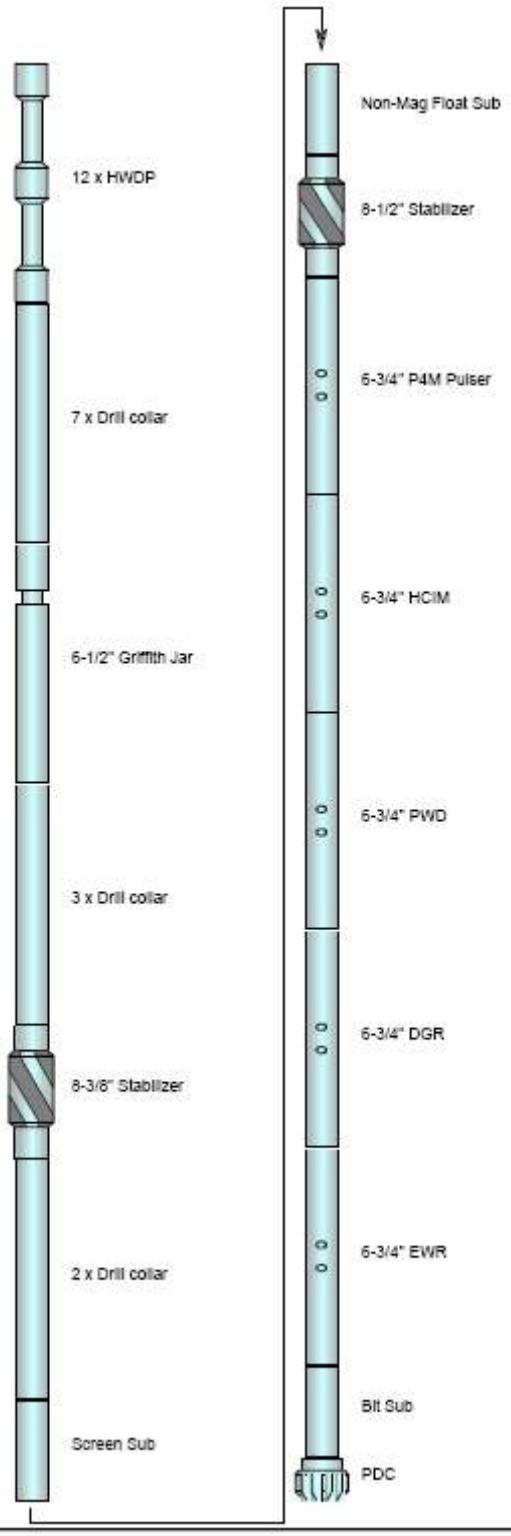
8½" Rotary Assembly#2

BHA Configuration

O.D.	Length	Description
8.5"	0.25m	PDC
6.5"	0.91m	Bit Sub
6.75"	4.35m	6-3/4" EWR
6.75"	1.36m	6-3/4" DGR
6.75"	1.34m	6-3/4" PWD
6.75"	1.45m	6-3/4" HCIM
6.75"	5.76m	6-3/4" P4M Pulser
6.375"	2.03m	8-1/2" Stabilizer
6.688"	0.91m	Non-Mag Float Sub
6.75"	2.49m	Screen Sub
6.75"	18.84m	2 x Drill collar
6.5"	1.82m	8-3/8" Stabilizer
6.75"	28.13m	3 x Drill collar
6.625"	9.72m	6-1/2" Griffith Jar
6.75"	66.23m	7 x Drill collar
5"	113.36m	12 x HWDP

BHA Discussion

Meterage: 247m
Circulating Hours: 31.4hrs
Drilling Hours: 3.5hrs
Avg ROP: 13.2m/hr
Bit Grade: 1-3-WT-T-X-I-NO-TD
Bit Revs: 154revs
Jar release down 12.7t + 2.5t POF
MWD sensors: RES 3.32m, GR 6.36m and PWD 7.23m



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 13

BHA# 13 : Date In :17-01-200 MD In (m) : 3187 TVD In (m) : 3186 Date Out 19-01-2006 MD Out (m): 3434 TVD Out (m): 3432

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
7	8.500	Security DBS	FM3743Z	10758479	4x18, 2x13	1.253	1-3-WT-T -X-I-NO-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	PDC	10758479	8.500	3.000	8.500	251.89	P 4-1/2" Reg	0.25	
2	Bit Sub	IOT23057	6.500	3.000		132.42	P N.C. 50	0.91	
3	6-3/4" EWR		6.750	1.920		166.77	B N.C. 50	4.35	
4	6-3/4" DGR		6.750	1.920		166.77	B N.C. 50	1.38	
5	6-3/4" PWD		6.750	1.920		166.77	B N.C. 50	1.34	
6	6-3/4" HCIM		6.750	1.920		166.77	B N.C. 50	1.45	
7	6-3/4" P4M Pulser		6.750	1.920		166.77	B N.C. 50	5.78	
8	8-1/2" Stabilizer	OWS 24021	6.375	3.000	8.500	126.01	B N.C. 50	2.03	16.34
9	Non-Mag Float Sub	70372-01	6.688	4.000		114.41	B N.C. 50	0.91	
10	Screen Sub		6.750	4.000		117.73	B N.C. 50	2.49	
11	2 x Drill collar		6.750	2.875		148.53	B N.C. 50	18.84	
12	8-3/8" Stabilizer	OWS4589	6.500	3.000	8.375	132.42	B N.C. 50	1.82	40.65
13	3 x Drill collar		6.750	2.875		148.53	B N.C. 50	28.13	
14	6-1/2" Griffith Jar	4286577800	6.625	2.188		155.73	B N.C. 50	9.72	
15	7 x Drill collar		6.750	2.875		148.53	B N.C. 50	66.23	
16	12 x HWDP		5.000	3.000		63.72	B N.C. 50	113.36	
								258.99	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	21.00
Reaming :	3.00
Circ-Other :	4.00
Total :	28.00

BHA Weight	(kg)
In Air (Total) :	29013
In Mud (Total) :	23299
In Air (Bel Jars) :	10439
In Mud (Bel Jars) :	8383

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	3175

PERFORMANCE

	In	Out
Inclination (deg)	3.11	2.45
Azimuth (deg)	13.67	31.77

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :	0.00	0			
Rotated :	247.00	0			
Total :	247.00	12	-0.08	2.20	0.13

COMMENTS

Meterage: 247m
Circulating Hours: 31.4hrs
Drilling Hours: 3.5hrs
Avg ROP: 13.2m/hr
Bit Grade: 1-3-WT-T-X-I-NO-TD
Bit Revs: 154revs
Jar release down 12.7t + 2.5t POF
MWD sensors: RES 3.32m, GR 6.36m and PWD 7.23m

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265

BHA# 13

OBJECTIVES:

Drill vertically down to the planned TD xxm into the hhhaggag formation.

RESULTS:

This pendulum assembly managed to keep the well vertical almost all the way to TD. The inclination started increasing above 1deg from 2295m, which coinsided with an increase in ROP from 40m/hr to 60m/hr. At approx. 2700m the ROP was cut back to 40m/hr again, and the inclination levelled out just above 3deg, which was held to TD. Well ended up approx. 48-49m away from target centre, which was well inside the target specifications. A very good assembly for this kind of wells.

The bit FM3755Z was performing very well during this BHA run. The ROP was kept between 40 and 60 m/hr with very little WOB. Also limestone stringers were drilled through at acceptable ROP's. As good as no vibrations were seen, and the directional stability was excellent. At surface it was evident that the bit had been taking some beating, but it was still drilling well until the end of the run.

sperry-sun
DRILLING SERVICES

BHA Schematic

Paladin

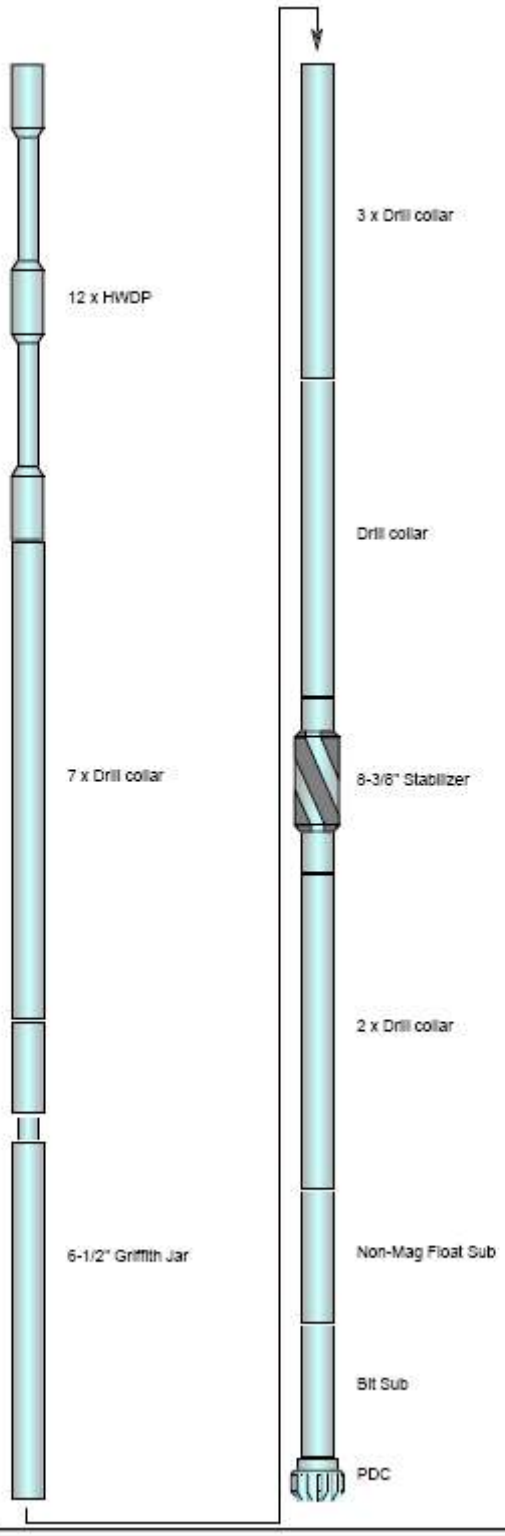
1/2-2

BHA ID #: 14

8½" Clean Out Assembly

BHA Configuration

O.D.	Length	Description
8.5"	0.25m	PDC
6.5"	0.91m	Bit Sub
6.5"	0.91m	Non-Mag Float Sub
6.75"	18.5m	2 x Drill collar
6.5"	1.82m	8-3/8" Stabilizer
6.75"	9.14m	Drill collar
6.75"	28.13m	3 x Drill collar
6.625"	9.72m	6-1/2" Griffith Jar
6.75"	66.23m	7 x Drill collar
5"	113.36m	12 x HWDP



sperry-sun DRILLING SERVICES

BHA Report

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Maersk Giant
Job # : NR-DD-0003862265

BHA# 14

BHA# 14 : Date In :19-01-200 MD In (m) : 3434 TVD In (m) : 3432 Date Cur 21-01-200 MD Cur (m): 3434 TVD Cur (m): 3432

BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in²)	Dull Condition
7rr1	8.500	Security DBS	FM3743Z	10758479	4x18, 2x13	1.253	1-3-WT-T -X-I-NO-TD

MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (bar)	Cum Circ Hrs

COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (kg/m)	Top Con	Length (m)	Bit - Center Blade (m)
1	PDC	10758479	8.500	3.000	8.500	251.89	P 4-1/2" Reg	0.25	
2	Bit Sub	IOT23057	6.500	3.000		132.42	B N.C. 50	0.91	
3	Non-Mag Float Sub	70372-01	6.500	4.000		104.54	B N.C. 50	0.91	
4	2 x Drill collar		6.750	2.813		150.28	B N.C. 50	18.50	
5	8-3/8" Stabilizer	OWS4589	6.500	3.000	8.375	132.42	B N.C. 50	1.82	21.48
6	Drill collar		6.750	2.813		150.28	B N.C. 50	9.14	
7	3 x Drill collar		6.750	2.875		148.53	B N.C. 50	28.13	
8	6-1/2" Griffith Jar	4286577800	6.625	2.188		155.73	B N.C. 50	9.72	
9	7 x Drill collar		6.750	2.875		148.53	B N.C. 50	66.23	
10	12 x HWDP		5.000	3.000		63.72	B N.C. 50	113.36	
								248.97	

Parameter	Min	Max	Ave
WOB (t) :			
RPM (rpm) :			
Flow (L/min) :			
SPP (bar) :			

Activity	Hrs
Drilling :	0.00
Reaming :	0.00
Circ-Other :	4.50
Total :	4.50

BHA Weight	(kg)
In Air (Total) :	27426
In Mud (Total) :	22024
In Air (Bel Jars) :	8852
In Mud (Bel Jars) :	7109

Drill String	OD(in)	Len (m)
DP(S)-NC50(XH)-19.50#	5.000	3185

PERFORMANCE

	In	Out
Inclination (deg)	2.45	2.45
Azimuth (deg)	31.77	31.77

	Distance (m)	ROP (m/hr)	Build (°/30m)	Turn (°/30m)	DLS (°/30m)
Oriented :					
Rotated :					
Total :					

COMMENTS

sperry-sun DRILLING SERVICES

BHA Report page 2

Customer : Paladin
Well : 1/2-2
Field : Hummer 1/2
Location : Hummer 1/2
Rig : Mærsk Giant
Job # : NR-DD-0003862265 **BHA# 14**

OBJECTIVES:

Clean out the hole after the wire-line logs held up at 1554m.

RESULTS:

2000 ltr / Zero rpm , slide in t/1580 mts. Pump Hi-Vis pills and backream at 140 rpm to the shoe.
RIH to TD. POOH and worked the transition zone between 17-1/2", 12-1/4" and 8-1/2" hole before pulling for wire-line logs.
The wire-line logs were successfully run to TD after the clean out trip.

16 DIRECTIONAL DRILLING, DRILLING PARAMETERS AND DEVIATION DATA

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Page : 1

Customer : Paladin
Well : 1/2-2
Rig : Mærsk Giant

Field : Hummer 1/2
Location : Hummer 1/2
Job # : NR-DD-0003862265

North Ref : Grid **Declination** : -2.07° **VS Dir** : 0.00° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS								
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (t)	RPM	Flow Rate (L/min)	Stand Pipe (bar)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	BHA No. (#)	Comment
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00									Tieon
114.15	0.00	0.00	114.1	0.0	0.0	0.0	0.00	0.00	0.00	0.00		2000	21.0	114	114		2	
240.63	0.70	134.89	240.6	-0.5	-0.5	0.5	0.17	0.17	0.00	3.00	85	3000	102.0	114	124		7	
269.69	0.35	90.95	269.7	-0.7	-0.7	0.8	0.53	-0.36	0.00	3.00	85	3000	102.0				7	
354.56	0.09	342.14	354.6	-0.6	-0.6	1.0	0.14	-0.09	0.00	2.00	70	2950	107.0				7	
411.19	0.44	350.75	411.2	-0.4	-0.4	1.0	0.19	0.19	0.00	2.00	70	2950	107.0				7	
439.83	0.35	330.36	439.8	-0.2	-0.2	0.9	0.17	-0.09	0.00	2.00	70	2950	107.0				7	
525.58	0.35	34.00	525.6	0.3	0.3	0.9	0.13	0.00	0.00	2.00	70	2950	107.0				7	
610.15	0.44	221.03	610.1	0.2	0.2	0.8	0.28	0.03	0.00	2.00	70	2950	107.0				7	
693.36	0.62	42.43	693.4	0.3	0.3	0.9	0.38	0.06	0.00	2.00	70	2950	107.0				7	
711.70	0.48	84.36	711.7	0.4	0.4	1.1	0.68	-0.23	0.00	5.00	140	2950	107.0				9	
740.47	0.50	67.73	740.5	0.5	0.5	1.3	0.15	0.02	0.00	5.00	140	2950	107.0				9	
768.64	0.50	84.85	768.6	0.5	0.5	1.5	0.16	0.00	0.00	4.00	140	3250	153.0				9	
797.02	0.61	71.90	797.0	0.6	0.6	1.8	0.18	0.12	0.00	4.00	140	3250	153.0				9	
825.02	0.56	93.73	825.0	0.6	0.6	2.1	0.24	-0.05	0.00	4.00	140	3250	153.0				9	
853.34	0.66	90.66	853.3	0.6	0.6	2.4	0.11	0.11	0.00	4.00	140	3890	215.0				9	
881.87	0.66	78.35	881.9	0.6	0.6	2.7	0.15	0.00	0.00	4.00	140	3890	215.0				9	
910.72	0.62	83.60	910.7	0.7	0.7	3.0	0.07	-0.04	0.00	4.00	140	3890	215.0				9	
938.52	0.59	76.76	938.5	0.7	0.7	3.3	0.08	-0.03	0.00	5.00	140	3890	215.0				9	
967.81	0.57	77.61	967.8	0.8	0.8	3.6	0.00	-0.02	0.00	5.00	140	3890	215.0				9	
997.23	0.63	68.42	997.2	0.9	0.9	3.9	0.12	0.06	0.00	5.00	140	3890	215.0				9	
1026.35	0.49	67.51	1026.3	1.0	1.0	4.2	0.14	-0.14	0.00	5.00	140	3890	215.0				9	
1052.26	0.52	61.87	1052.2	1.1	1.1	4.4	0.07	0.03	0.00	5.00	140	3890	215.0				9	
1080.27	0.58	74.79	1080.2	1.2	1.2	4.6	0.15	0.06	0.00	5.00	140	3890	215.0				9	
1108.82	0.56	63.79	1108.8	1.3	1.3	4.9	0.12	-0.02	0.00	6.00	140	4000	240.0				9	
1137.60	0.55	62.54	1137.6	1.4	1.4	5.1	0.00	-0.01	0.00	6.00	140	4000	240.0				9	
1166.46	0.53	59.34	1166.4	1.6	1.6	5.4	0.04	-0.02	0.00	6.00	140	4000	240.0				9	
1195.02	0.61	69.65	1195.0	1.7	1.7	5.6	0.14	0.08	0.00	12.00	140	4150	270.0				9	
1223.34	0.67	62.09	1223.3	1.8	1.8	5.9	0.11	0.06	0.00	12.00	140	4150	270.0				9	

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Page : 2

Customer : Paladin
Well : 1/2-2
Rig : Mærsk Giant

Field : Hummer 1/2
Location : Hummer 1/2
Job # : NR-DD-0003862265

North Ref : Grid Declination : -2.07° VS Dir : 0.00° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS								
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (t)	RPM	Flow Rate (L/min)	Stand Pipe (bar)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	BHA No. (#)	Comment
1251.52	0.75	58.67	1251.5	2.0	2.0	6.2	0.10	0.09	0.00	12.00	140	4150	270.0				9	
1279.62	0.80	57.73	1279.6	2.2	2.2	6.5	0.06	0.05	0.00	12.00	140	4150	270.0				9	
1307.72	0.78	63.02	1307.7	2.4	2.4	6.9	0.08	-0.02	0.00	12.00	140	4150	270.0				9	
1435.03	0.93	51.09	1435.0	3.4	3.4	8.5	0.05	0.04	0.00	12.00	140	4050	281.0				9	
1473.36	0.80	45.05	1473.3	3.8	3.8	8.9	0.12	-0.10	0.00	12.00	140	4050	281.0				9	
1523.42	0.57	29.19	1523.4	4.3	4.3	9.3	0.18	-0.14	0.00	2.00	130	2010	152.0				11	
1551.45	0.61	29.47	1551.4	4.5	4.5	9.4	0.04	0.04	0.00	2.00	120	2010	151.0				11	
1580.06	0.39	23.05	1580.0	4.7	4.7	9.5	0.24	-0.23	0.00	2.00	120	2000	148.0				11	
1607.89	0.33	24.18	1607.8	4.9	4.9	9.6	0.07	-0.06	0.00	2.00	125	2010	150.0				11	
1637.11	0.47	36.77	1637.0	5.1	5.1	9.7	0.17	0.14	0.00	2.00	130	2010	150.0				11	
1665.70	0.53	36.93	1665.6	5.3	5.3	9.8	0.06	0.06	0.00	2.00	132	2010	148.0				11	
1694.16	0.72	36.07	1694.1	5.5	5.5	10.0	0.20	0.20	0.00	2.00	129	2020	154.0				11	
1720.64	0.64	23.19	1720.6	5.8	5.8	10.2	0.19	-0.09	0.00	1.00	133	2020	151.0				11	
1750.80	0.94	21.85	1750.7	6.2	6.2	10.3	0.30	0.30	0.00	1.00	130	2010	153.0				11	
1779.11	0.94	25.43	1779.0	6.6	6.6	10.5	0.06	0.00	0.00	1.00	130	2010	151.0				11	
1807.24	0.75	20.87	1807.2	7.0	7.0	10.7	0.21	-0.20	0.00	1.00	130	2010	151.0				11	
1866.19	0.76	9.39	1866.1	7.7	7.7	10.9	0.08	0.01	0.00	2.00	130	2020	154.0				11	
1893.38	0.77	16.58	1893.3	8.1	8.1	11.0	0.11	0.01	0.00	2.00	130	2020	154.0				11	
1922.11	0.57	19.30	1922.0	8.4	8.4	11.1	0.21	-0.21	0.00	1.00	130	2050	165.0				11	
1950.96	0.55	17.17	1950.9	8.7	8.7	11.2	0.03	-0.02	0.00	1.00	130	2050	165.0				11	
1979.57	0.39	3.19	1979.5	8.9	8.9	11.2	0.21	-0.17	0.00	1.00	130	2050	165.0				11	
2007.61	0.48	14.96	2007.5	9.1	9.1	11.2	0.14	0.10	0.00	1.00	130	2050	170.0				11	
2035.22	0.31	33.01	2035.1	9.3	9.3	11.3	0.23	-0.18	0.00	1.00	130	2050	170.0				11	
2063.15	0.44	15.06	2063.1	9.5	9.5	11.4	0.19	0.14	0.00	1.00	130	2050	170.0				11	
2092.85	0.44	37.79	2092.8	9.7	9.7	11.5	0.18	0.00	0.00	2.00	137	2060	175.0				11	
2120.98	0.56	23.74	2120.9	9.9	9.9	11.6	0.18	0.13	0.00	2.00	137	2060	175.0				11	
2148.67	0.44	36.16	2148.6	10.1	10.1	11.7	0.17	-0.13	0.00	2.00	137	2060	181.0				11	
2176.73	0.31	13.48	2176.6	10.2	10.2	11.8	0.21	-0.14	0.00	2.00	137	2060	181.0				11	
2205.65	0.31	12.62	2205.5	10.4	10.4	11.8	0.00	0.00	0.00	2.00	137	2060	181.0				11	

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Page : 3

Customer : Paladin
Well : 1/2-2
Rig : Mærsk Giant

Field : Hummer 1/2
Location : Hummer 1/2
Job # : NR-DD-0003862265

North Ref : Grid **Declination** : -2.07° **VS Dir** : 0.00° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS								
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (t)	RPM	Flow Rate (L/min)	Stand Pipe (bar)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	BHA No. (#)	Comment
2234.27	0.55	4.44	2234.2	10.6	10.6	11.9	0.26	0.25	0.00	2.00	137	2060	181.0				11	
2262.98	0.50	15.54	2262.9	10.9	10.9	11.9	0.12	-0.05	0.00	2.00	137	2060	181.0				11	
2291.37	0.67	3.77	2291.3	11.1	11.1	12.0	0.22	0.18	0.00	2.00	137	2060	181.0				11	
2319.57	1.02	356.40	2319.5	11.6	11.6	12.0	0.39	0.37	0.00	2.00	137	2060	181.0				11	
2348.22	1.14	355.86	2348.1	12.1	12.1	11.9	0.13	0.13	-0.57	2.00	137	2060	194.0				11	
2376.94	1.33	353.17	2376.8	12.7	12.7	11.9	0.21	0.20	-2.81	2.00	137	2060	186.0				11	
2405.16	1.50	355.07	2405.0	13.4	13.4	11.8	0.19	0.18	2.02	2.00	137	2060	186.0				11	
2433.53	1.48	356.76	2433.4	14.1	14.1	11.7	0.05	-0.02	1.79	2.00	133	2060	187.0				11	
2461.88	1.60	358.01	2461.7	14.9	14.9	11.7	0.13	0.13	1.32	2.00	130	2060	183.0				11	
2489.94	1.58	352.00	2489.8	15.7	15.7	11.6	0.18	-0.02	-6.43	2.00	137	2060	187.0				11	
2518.65	1.69	348.06	2518.5	16.5	16.5	11.5	0.16	0.11	-4.12	3.00	139	2060	189.0				11	
2546.65	1.91	345.91	2546.5	17.3	17.3	11.3	0.25	0.24	-2.30	3.00	139	2060	189.0				11	
2574.66	2.20	345.50	2574.5	18.3	18.3	11.0	0.31	0.31	-0.44	3.00	139	2060	189.0				11	
2603.04	2.34	344.68	2602.8	19.4	19.4	10.8	0.15	0.15	-0.87	3.00	139	2060	194.0				11	
2631.74	2.60	345.59	2631.5	20.6	20.6	10.4	0.27	0.27	0.95	3.00	139	2060	194.0				11	
2660.33	2.68	347.99	2660.0	21.9	21.9	10.1	0.14	0.08	2.52	3.00	142	2070	198.0				11	
2688.91	2.93	350.73	2688.6	23.2	23.2	9.9	0.30	0.26	2.88	1.00	146	2070	202.0				11	
2717.47	3.01	351.06	2717.1	24.7	24.7	9.6	0.09	0.08	0.35	1.00	146	2070	202.0				11	
2745.99	3.06	353.14	2745.6	26.2	26.2	9.4	0.13	0.05	2.19	1.00	146	2070	198.0				11	
2745.99	3.06	353.14	2745.6	26.2	26.2	9.4	0.00	0.00	0.00	1.00	146	2070	198.0				11	
2774.64	3.32	357.84	2774.2	27.8	27.8	9.3	0.39	0.27	4.92	2.00	142	2070	197.0				11	
2802.44	3.29	2.10	2802.0	29.4	29.4	9.3	0.27	-0.03	4.60	1.00	144	2070	195.0				11	
2830.94	3.24	6.08	2830.4	31.0	31.0	9.4	0.24	-0.05	4.19	2.00	144	2070	196.0				11	
2859.12	3.21	10.51	2858.5	32.6	32.6	9.7	0.27	-0.03	4.72	2.00	142	2070	195.0				11	
2887.42	3.13	7.98	2886.8	34.1	34.1	9.9	0.17	-0.08	-2.68	2.00	145	2070	197.0				11	
2915.27	3.25	7.64	2914.6	35.7	35.7	10.1	0.13	0.13	-0.37	2.00	145	2070	197.0				11	
2944.19	3.16	6.94	2943.5	37.3	37.3	10.3	0.10	-0.09	-0.73	3.00	144	2070	196.0				11	
2972.52	3.09	3.83	2971.8	38.8	38.8	10.5	0.19	-0.07	-3.29	4.00	144	2070	198.0				11	
3001.14	3.10	5.53	3000.3	40.3	40.3	10.6	0.10	0.01	1.78	3.00	146	2070	200.0				11	

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Page : 4

Customer : Paladin
Well : 1/2-2
Rig : Mærsk Giant

Field : Hummer 1/2
Location : Hummer 1/2
Job # : NR-DD-0003862265

North Ref : Grid **Declination** : -2.07° **VS Dir** : 0.00° (from Wellhead)

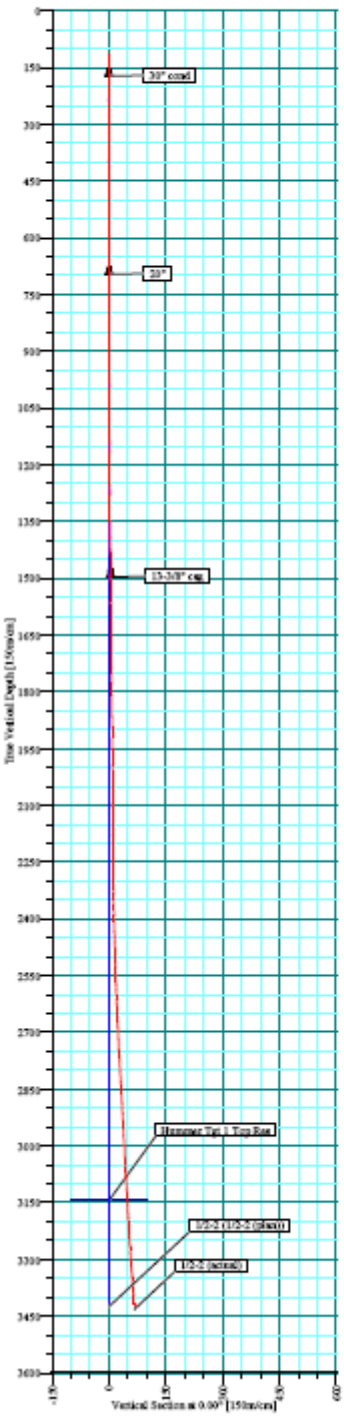
WELLBORE SURVEY										DRILLING PARAMETERS								
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (t)	RPM	Flow Rate (L/min)	Stand Pipe (bar)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	BHA No. (#)	Comment
3029.62	3.17	7.77	3028.8	41.9	41.9	10.8	0.15	0.07	2.36	3.00	146	2070	200.0				11	
3058.12	3.15	11.59	3057.2	43.4	43.4	11.0	0.22	-0.02	4.02	2.00	147	2070	200.0				11	
3086.57	3.29	14.24	3085.6	45.0	45.0	11.4	0.22	0.15	2.79	5.00	148	2070	200.0				11	
3114.93	3.29	14.41	3114.0	46.6	46.6	11.8	0.00	0.00	0.18	5.00	148	2070	200.0				11	
3144.17	3.17	15.43	3143.2	48.2	48.2	12.2	0.14	-0.12	1.05								12	
3172.97	3.05	15.97	3171.9	49.7	49.7	12.6	0.13	-0.12	0.56								12	
3200.85	3.18	11.49	3199.8	51.1	51.1	13.0	0.30	0.14	-4.82								13	
3228.84	3.63	10.74	3227.7	52.8	52.8	13.3	0.48	0.48	-0.80								13	
3257.06	3.84	9.63	3255.9	54.6	54.6	13.6	0.24	0.22	-1.18								13	
3285.20	4.09	6.83	3283.9	56.5	56.5	13.9	0.34	0.27	-2.99								13	
3313.99	4.27	7.24	3312.6	58.6	58.6	14.2	0.19	0.19	0.43								13	
3342.78	4.16	11.66	3341.4	60.7	60.7	14.5	0.36	-0.11	4.61								13	
3370.83	4.51	12.97	3369.3	62.7	62.7	15.0	0.39	0.37	1.40								13	
3399.19	4.98	10.97	3397.6	65.0	65.0	15.5	0.53	0.50	-2.12								13	
3421.71	2.45	31.77	3420.1	66.4	66.4	15.9	3.77	-3.37	27.71								13	
3434.00	2.45	31.77	3432.3	66.9	66.9	16.2	0.00	0.00	0.00								14	

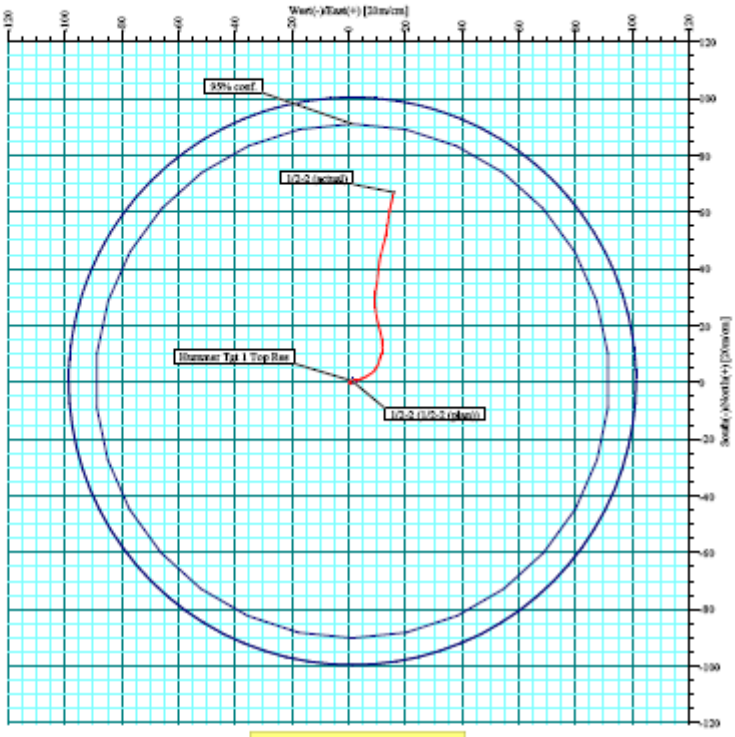
Paladin Resources (Norway) Limited

Field: Exploration
Site: PL143CS Hummer
Well: 1/2-2
Wellpath: 1/2-2 (actual)

HALLIBURTON
Sperry Drilling Services

LEGEND
1/2-2 (1/2-2 (plan))
1/2-2 (actual)





SITE DETAILS

PL143CS Hummer

Site Centre Northing: 6316774.59
Easting: 469410.16

Water Depth: 74.00
Positional Uncertainty: 0.00
Convergence: -0.42

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
1/2-2	0.00	0.00	6316774.59	469410.16	56°59'32.008N	002°29'47.663E	N/A

WELLPATH DETAILS

1/2-2 (actual)

Rig:
Ref Datum: M.Gisnt 40.15m

V.Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
0.00°	0.00	0.00	114.15

CASING DETAILS

No.	TVD	MD	Name	Size
1	173.00	173.00	30" cond	30.000
2	656.99	657.00	20"	20.000
3	1496.94	1497.00	13-3/8" csg	13.375

Wellpath: (1/2-2/1/2-2 (actual))

Created By: Lai Le Van Date: 27-01-2006

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Paladin Resources (Norway) Limited

Halliburton Company
Survey Report

HALLIBURTON
Sperry Drilling Services

Company:	PALADIN - Norway	**Date:** 03-02-2006	**Time:** 08:33:17	**Page:**	1
Field:	Exploration	**Co-ordinate(NE) Reference:**	Site: PL143CS Hummer, Grid North		
Site:	PL143CS Hummer	**Vertical (TVD) Reference:**	M.Glant 40.2		
Well:	1/2-2	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)		
Wellpath:	1/2-2	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Oracle

Field: Exploration

Norway

Map System:	Universal Transverse Mercator	**Map Zone:**	UTM Zone 31, North 0 to 6E
Geo Datum:	ED50 (International 1924)	**Coordinate System:**	Site Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	bggm2004

Site: PL143CS Hummer

Site Position:			**Northing:**	6316774.59	m	**Latitude:**	56	59	32.008 N
From:	Map		**Easting:**	469410.16	m	**Longitude:**	2	29	47.663 E
Position Uncertainty:		0.00 m				**North Reference:**			Grid
Water Depth:		74.00 m				**Grid Convergence:**			-0.42 deg

Well: 1/2-2 **Slot Name:**

Surface Position:	+N/-S	0.00 m	**Northing:**	6316774.59	m	**Latitude:**	56	59	32.008	N
	+E/-W	0.00 m	**Easting :**	469410.16	m	**Longitude:**	2	29	47.663	E
Position Uncertainty:		0.00 m								
Reference Point:	+N/-S	0.00 m	**Northing:**	6316774.59	m	**Latitude:**	56	59	32.008	N
	+E/-W	0.00 m	**Easting :**	469410.16	m	**Longitude:**	2	29	47.663	E
			Measured Depth:	114.15	m	**Inclination:**			0.00	deg
			Vertical Depth:	114.15	m	**Azimuth :**			0.00	deg

Wellpath: 1/2-2

			Drilled From:	Well Ref. Point	
			Tie-on Depth:	114.15	m
Current Datum:	M.Glant	**Height** 40.15 m	**Above System Datum:**	Mean Sea Level	
Magnetic Data:	16-12-2005		**Declination:**	-2.11	deg
Field Strength:	49981 nT		**Mag Dip Angle:**	70.65	deg

Vertical Section: Depth From (TVD) m	+N/-S m	+E/-W m	Direction deg
114.15	0.00	0.00	0.00

Survey Program for Definitive Wellpath
Date: 03-02-2006 **Validated:** No **Version:** 0

Actual From m	To m	Survey	Toolcode	Tool Name
240.63	693.36	24" MWD SDS (240.63-693.36)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
711.70	1473.36	17 1/2" MWD SDS (711.70-1473.3	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
1523.42	3421.71	8 1/2" MWD SDS (1523.42-3421.7	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
3434.00	3434.00	1/2-2 Extrapolation to TD (343	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)

Survey

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	VS m	DLS deg/30m	Build deg/30m	Turn deg/30m	Tool/Comment
114.15	0.00	0.00	114.15	0.00	0.00	0.00	0.000	0.000	0.000	TIE LINE
173.00	0.33	134.89	173.00	-0.12	0.12	-0.12	0.166	0.166	0.000	30" cond
240.63	0.70	134.89	240.63	-0.55	0.55	-0.55	0.166	0.166	0.000	Magnetic, std, mag-corr
269.69	0.35	90.95	269.69	-0.67	0.76	-0.67	0.526	-0.361	-45.362	Magnetic, std, mag-corr
354.56	0.09	342.18	354.55	-0.61	1.00	-0.61	0.137	-0.092	-38.449	Magnetic, std, mag-corr
411.19	0.44	350.00	411.18	-0.36	0.95	-0.36	0.186	0.185	4.143	Magnetic, std, mag-corr
439.83	0.35	330.36	439.82	-0.17	0.89	-0.17	0.169	-0.094	-20.573	Magnetic, std, mag-corr
525.58	0.35	34.00	525.57	0.27	0.90	0.27	0.129	0.000	22.265	Magnetic, std, mag-corr
610.15	0.44	221.03	610.14	0.24	0.84	0.24	0.280	0.032	-61.359	Magnetic, std, mag-corr
693.36	0.62	42.43	693.35	0.33	0.93	0.33	0.382	0.065	-64.391	Magnetic, std, mag-corr
697.00	0.57	48.83	696.99	0.36	0.96	0.36	0.678	-0.401	52.720	20"
711.70	0.48	84.36	711.69	0.41	1.07	0.41	0.678	-0.186	72.514	Magnetic, std, mag-corr
740.47	0.50	67.73	740.46	0.47	1.31	0.47	0.149	0.021	-17.341	Magnetic, std, mag-corr
768.64	0.50	84.85	768.63	0.53	1.54	0.53	0.159	0.000	18.232	Magnetic, std, mag-corr
797.02	0.61	71.90	797.01	0.59	1.81	0.59	0.176	0.116	-13.689	Magnetic, std, mag-corr
825.02	0.56	93.73	825.00	0.63	2.09	0.63	0.243	-0.054	23.389	Magnetic, std, mag-corr
853.34	0.66	90.66	853.32	0.62	2.39	0.62	0.111	0.106	-3.252	Magnetic, std, mag-corr
881.87	0.66	78.35	881.85	0.65	2.72	0.65	0.149	0.000	-12.944	Magnetic, std, mag-corr
910.72	0.62	83.60	910.70	0.70	3.03	0.70	0.074	-0.042	5.459	Magnetic, std, mag-corr
938.52	0.59	76.76	938.50	0.75	3.32	0.75	0.084	-0.032	-7.381	Magnetic, std, mag-corr
967.81	0.57	77.61	967.79	0.81	3.61	0.81	0.022	-0.020	0.871	Magnetic, std, mag-corr
997.23	0.63	68.42	997.20	0.90	3.91	0.90	0.115	0.061	-9.371	Magnetic, std, mag-corr

Paladin Resources (Norway) Limited

Halliburton Company
Survey Report

HALLIBURTON
Sperry Drilling Services

Company: PALADIN - Norway
Field: Exploration
Site: PL143CS Hummer
Well: 1/2-2
Wellpath: 1/2-2

Date: 03-02-2006 **Time:** 08:33:17 **Page:** 2
Co-ordinate(NE) Reference: Site: PL143CS Hummer, Grid North
Vertical (TVD) Reference: M.Glant 40.2
Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Oracle

Survey

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	VS m	DLS deg/30m	Build deg/30m	Turn deg/30m	Tool/Comment
1026.35	0.49	67.51	1026.32	1.01	4.17	1.01	0.145	-0.144	-0.937	Magnetic, std, mag-corr
1052.26	0.52	61.87	1052.23	1.11	4.38	1.11	0.067	0.035	-6.530	Magnetic, std, mag-corr
1080.27	0.58	74.79	1080.24	1.21	4.62	1.21	0.147	0.064	13.838	Magnetic, std, mag-corr
1108.82	0.56	63.79	1108.79	1.31	4.89	1.31	0.117	-0.021	-11.559	Magnetic, std, mag-corr
1137.60	0.55	62.54	1137.57	1.43	5.14	1.43	0.016	-0.010	-1.303	Magnetic, std, mag-corr
1166.46	0.53	59.34	1166.43	1.56	5.38	1.56	0.038	-0.021	-3.326	Magnetic, std, mag-corr
1195.02	0.61	69.65	1194.99	1.68	5.63	1.68	0.136	0.084	10.830	Magnetic, std, mag-corr
1223.34	0.67	62.09	1223.30	1.81	5.92	1.81	0.110	0.064	-8.008	Magnetic, std, mag-corr
1251.52	0.75	58.67	1251.48	1.99	6.22	1.99	0.096	0.085	-3.641	Magnetic, std, mag-corr
1279.62	0.80	57.73	1279.58	2.19	6.55	2.19	0.055	0.053	-1.004	Magnetic, std, mag-corr
1307.72	0.78	63.02	1307.68	2.38	6.88	2.38	0.061	-0.021	5.648	Magnetic, std, mag-corr
1435.03	0.93	51.09	1434.97	3.42	8.46	3.42	0.055	0.035	-2.811	Magnetic, std, mag-corr
1473.36	0.80	45.05	1473.30	3.80	8.89	3.80	0.124	-0.102	-4.727	Magnetic, std, mag-corr
1497.00	0.69	38.89	1496.94	4.03	9.09	4.03	0.177	-0.146	-7.822	13-3/8" csg
1523.42	0.57	29.19	1523.35	4.27	9.26	4.27	0.177	-0.131	-11.010	Magnetic, std, mag-corr
1551.45	0.61	29.47	1551.38	4.52	9.40	4.52	0.043	0.043	0.300	Magnetic, std, mag-corr
1580.06	0.39	23.05	1579.99	4.74	9.51	4.74	0.238	-0.231	-6.732	Magnetic, std, mag-corr
1607.89	0.33	24.18	1607.82	4.90	9.58	4.90	0.065	-0.065	1.218	Magnetic, std, mag-corr
1627.00	0.42	33.37	1626.93	5.01	9.64	5.01	0.169	0.141	14.426	Hordaland Group
1637.11	0.47	36.77	1637.04	5.08	9.69	5.08	0.169	0.150	10.091	Magnetic, std, mag-corr
1665.70	0.53	36.93	1665.63	5.28	9.84	5.28	0.063	0.063	0.168	Magnetic, std, mag-corr
1694.16	0.72	36.07	1694.09	5.52	10.02	5.52	0.201	0.200	-0.907	Magnetic, std, mag-corr
1720.64	0.64	23.19	1720.57	5.80	10.18	5.80	0.195	-0.091	-14.592	Magnetic, std, mag-corr
1750.80	0.94	21.85	1750.72	6.18	10.34	6.18	0.299	0.298	-1.333	Magnetic, std, mag-corr
1779.11	0.94	25.43	1779.03	6.60	10.52	6.60	0.062	0.000	3.794	Magnetic, std, mag-corr
1807.24	0.75	20.87	1807.16	6.99	10.69	6.99	0.215	-0.203	-4.863	Magnetic, std, mag-corr
1813.00	0.75	19.74	1812.92	7.06	10.71	7.06	0.077	-0.002	-5.884	Top Oligocene
1866.19	0.76	9.39	1866.10	7.73	10.89	7.73	0.077	0.006	-5.838	Magnetic, std, mag-corr
1893.38	0.77	16.58	1893.29	8.08	10.97	8.08	0.106	0.011	7.933	Magnetic, std, mag-corr
1922.11	0.57	19.30	1922.02	8.40	11.07	8.40	0.211	-0.209	2.840	Magnetic, std, mag-corr
1950.96	0.55	17.17	1950.87	8.67	11.16	8.67	0.030	-0.021	-2.215	Magnetic, std, mag-corr
1979.57	0.39	3.19	1979.47	8.90	11.21	8.90	0.205	-0.168	-14.659	Magnetic, std, mag-corr
2007.61	0.48	14.98	2007.51	9.11	11.24	9.11	0.135	0.096	12.614	Magnetic, std, mag-corr
2035.22	0.31	33.01	2035.12	9.28	11.31	9.28	0.227	-0.185	19.591	Magnetic, std, mag-corr
2063.15	0.44	15.06	2063.05	9.45	11.38	9.45	0.187	0.140	-19.280	Magnetic, std, mag-corr
2092.85	0.44	37.79	2092.75	9.65	11.48	9.65	0.175	0.000	22.960	Magnetic, std, mag-corr
2120.98	0.56	23.74	2120.88	9.86	11.60	9.86	0.182	0.128	-14.984	Magnetic, std, mag-corr
2148.67	0.44	36.16	2148.57	10.07	11.72	10.07	0.174	-0.130	13.456	Magnetic, std, mag-corr
2176.73	0.31	13.48	2176.63	10.23	11.80	10.23	0.208	-0.139	-24.248	Magnetic, std, mag-corr
2205.65	0.31	12.62	2205.55	10.39	11.84	10.39	0.005	0.000	-0.892	Magnetic, std, mag-corr
2234.27	0.55	4.44	2234.17	10.60	11.87	10.60	0.259	0.252	-8.574	Magnetic, std, mag-corr
2262.98	0.50	15.54	2262.88	10.86	11.91	10.86	0.118	-0.052	11.599	Magnetic, std, mag-corr
2291.37	0.67	3.77	2291.26	11.14	11.95	11.14	0.219	0.180	-12.437	Magnetic, std, mag-corr
2319.57	1.02	356.40	2319.46	11.56	11.95	11.56	0.389	0.372	-7.840	Magnetic, std, mag-corr
2348.22	1.14	355.86	2348.11	12.09	11.91	12.09	0.126	0.126	-0.565	Magnetic, std, mag-corr
2376.94	1.33	353.17	2376.82	12.71	11.85	12.71	0.207	0.198	-2.810	Magnetic, std, mag-corr
2405.16	1.50	355.07	2405.03	13.40	11.78	13.40	0.187	0.181	2.020	Magnetic, std, mag-corr
2433.53	1.48	356.76	2433.39	14.14	11.73	14.14	0.051	-0.021	1.787	Magnetic, std, mag-corr
2461.88	1.60	358.01	2461.73	14.90	11.69	14.90	0.132	0.127	1.323	Magnetic, std, mag-corr
2489.94	1.58	352.00	2489.78	15.67	11.63	15.67	0.179	-0.021	-6.426	Magnetic, std, mag-corr
2518.65	1.69	348.06	2518.48	16.48	11.48	16.48	0.164	0.115	-4.117	Magnetic, std, mag-corr
2546.65	1.91	345.91	2546.47	17.34	11.28	17.34	0.247	0.236	-2.304	Magnetic, std, mag-corr
2549.00	1.93	345.87	2548.81	17.41	11.27	17.41	0.311	0.311	-0.499	Base Oligocene
2574.66	2.20	345.50	2574.46	18.31	11.04	18.31	0.311	0.311	-0.434	Magnetic, std, mag-corr
2603.04	2.34	344.68	2602.82	19.40	10.75	19.40	0.152	0.148	-0.867	Magnetic, std, mag-corr
2631.74	2.60	345.59	2631.49	20.59	10.43	20.59	0.275	0.272	0.951	Magnetic, std, mag-corr
2660.33	2.68	347.99	2660.05	21.87	10.13	21.87	0.143	0.084	2.518	Magnetic, std, mag-corr
2688.91	2.93	350.73	2688.59	23.25	9.87	23.25	0.298	0.262	2.876	Magnetic, std, mag-corr

Paladin Resources (Norway) Limited

Halliburton Company
Survey Report

HALLIBURTON
Sperry Drilling Services

Company:	PALADIN - Norway	**Date:** 03-02-2006	**Time:** 08:33:17	**Page:**	3
Field:	Exploration	**Co-ordinate(NE) Reference:**	Site: PL143CS Hummer, Grid North		
Site:	PL143CS Hummer	**Vertical (TVD) Reference:**	M.Glant 40.2		
Well:	1/2-2	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)		
Wellpath:	1/2-2	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Oracle

Survey

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	VS m	DLS deg/30m	Build deg/30m	Turn deg/30m	Tool/Comment
2717.47	3.01	351.06	2717.12	24.71	9.64	24.71	0.086	0.084	0.347	Magnetic, std, mag-corr
2745.99	3.06	353.14	2745.60	26.21	9.43	26.21	0.127	0.053	2.188	Magnetic, std, mag-corr
2774.64	3.32	357.84	2774.20	27.79	9.31	27.79	0.386	0.272	4.921	Magnetic, std, mag-corr
2802.44	3.29	2.10	2801.95	29.40	9.31	29.40	0.267	-0.032	4.597	Magnetic, std, mag-corr
2830.94	3.24	6.08	2830.41	31.01	9.42	31.01	0.244	-0.053	4.189	Magnetic, std, mag-corr
2859.12	3.21	10.51	2858.54	32.58	9.65	32.58	0.267	-0.032	4.716	Magnetic, std, mag-corr
2887.42	3.13	7.98	2886.80	34.13	9.90	34.13	0.171	-0.085	-2.682	Magnetic, std, mag-corr
2915.27	3.25	7.64	2914.61	35.66	10.11	35.66	0.131	0.129	-0.366	Magnetic, std, mag-corr
2944.19	3.16	6.94	2943.48	37.26	10.32	37.26	0.102	-0.093	-0.726	Magnetic, std, mag-corr
2972.52	3.09	3.83	2971.77	38.80	10.46	38.80	0.194	-0.074	-3.293	Magnetic, std, mag-corr
3001.14	3.10	5.53	3000.35	40.34	10.59	40.34	0.097	0.010	1.782	Magnetic, std, mag-corr
3029.62	3.17	7.77	3028.79	41.89	10.77	41.89	0.149	0.074	2.360	Magnetic, std, mag-corr
3058.12	3.15	11.59	3057.24	43.44	11.04	43.44	0.223	-0.021	4.021	Magnetic, std, mag-corr
3077.00	3.24	13.37	3076.09	44.46	11.26	44.46	0.215	0.146	2.835	Top Balder
3086.57	3.29	14.24	3085.65	44.99	11.39	44.99	0.215	0.150	2.714	Magnetic, std, mag-corr
3114.93	3.29	14.41	3113.96	46.57	11.80	46.57	0.010	0.000	0.180	Magnetic, std, mag-corr
3140.00	3.19	15.28	3138.99	47.94	12.16	47.94	0.137	-0.123	1.041	Top Forties
3144.17	3.17	15.43	3143.15	48.16	12.22	48.16	0.137	-0.123	1.080	Magnetic, std, mag-corr
3172.97	3.05	15.97	3171.91	49.67	12.64	49.67	0.129	-0.125	0.562	Magnetic, std, mag-corr
3200.85	3.18	11.49	3199.75	51.14	13.00	51.14	0.297	0.140	-4.821	Magnetic, std, mag-corr
3228.84	3.63	10.74	3227.69	52.77	13.32	52.77	0.485	0.482	-0.804	Magnetic, std, mag-corr
3245.00	3.75	10.09	3243.82	53.79	13.51	53.79	0.236	0.223	-1.208	Top Lista
3257.06	3.84	9.63	3255.85	54.58	13.64	54.58	0.236	0.224	-1.142	Magnetic, std, mag-corr
3285.20	4.09	6.83	3283.92	56.50	13.92	56.50	0.337	0.267	-2.985	Magnetic, std, mag-corr
3313.99	4.27	7.24	3312.64	58.59	14.18	58.59	0.190	0.188	0.427	Magnetic, std, mag-corr
3342.78	4.16	11.66	3341.35	60.67	14.52	60.67	0.357	-0.115	4.606	Magnetic, std, mag-corr
3370.83	4.51	12.97	3369.32	62.74	14.98	62.74	0.369	0.374	1.401	Magnetic, std, mag-corr
3399.19	4.98	10.97	3397.58	65.04	15.46	65.04	0.527	0.497	-2.116	Magnetic, std, mag-corr
3421.71	2.45	31.77	3420.05	66.41	15.90	66.41	3.765	-3.370	27.709	Magnetic, std, mag-corr
3434.00	2.45	31.77	3432.33	66.85	16.18	66.85	0.000	0.000	0.000	Magnetic, std, mag-corr

Casing Points

MD m	TVD m	Diameter in	Hole Size in	Name
173.00	173.00	30.000	36.000	30" cond
697.00	696.99	20.000	24.000	20"
1497.00	1496.94	13.375	17.500	13-3/8" csg

Formations

MD m	TVD m	Formations	Lithology	Dip Angle deg	Dip Direction deg
1627.00	1626.93	Hordaland Group		0.00	0.00
1813.00	1812.92	Top Oligocene		0.00	0.00
2549.00	2548.81	Base Oligocene		0.00	0.00
3077.00	3076.09	Top Balder		0.00	0.00
3140.00	3138.99	Top Forties		0.00	0.00
3245.00	3243.82	Top Lista		0.00	0.00

Paladin Resources (Norway) Limited

Halliburton Company
Survey Report - Geographic

HALLIBURTON
Sperry Drilling Services

Company:	PALADIN - Norway	**Date:** 03-02-2006	**Time:** 08:34:05	**Page:**	1
Field:	Exploration	**Co-ordinate(NE) Reference:**	Site: PL143CS Hummer, Grid North		
Site:	PL143CS Hummer	**Vertical (TVD) Reference:**	M.Glant 40.2		
Well:	1/2-2	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)		
Wellpath:	1/2-2	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Oracle

Field: Exploration

Norway

Map System:	Universal Transverse Mercator	**Map Zone:**	UTM Zone 31, North 0 to 6E
Geo Datum:	ED50 (International 1924)	**Coordinate System:**	Site Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	bggm2004

Site: PL143CS Hummer

Site Position:			**Northing:**	6316774.59	m	**Latitude:**	56 59 32.008	N
From:	Map		**Easting:**	469410.16	m	**Longitude:**	2 29 47.663	E
Position Uncertainty:		0.00 m				**North Reference:**		Grid
Water Depth:		74.00 m				**Grid Convergence:**		-0.42 deg

Well: 1/2-2 **Slot Name:**

Surface Position:	+N/-S	0.00 m	**Northing:**	6316774.59	m	**Latitude:**	56 59 32.008	N
	+E/-W	0.00 m	**Easting :**	469410.16	m	**Longitude:**	2 29 47.663	E
Position Uncertainty:		0.00 m						
Reference Point:	+N/-S	0.00 m	**Northing:**	6316774.59	m	**Latitude:**	56 59 32.008	N
	+E/-W	0.00 m	**Easting :**	469410.16	m	**Longitude:**	2 29 47.663	E
			Measured Depth:	114.15	m	**Inclination:**	0.00	deg
			Vertical Depth:	114.15	m	**Azimuth :**	0.00	deg

Wellpath: 1/2-2

			Drilled From:	Well Ref. Point	
			Tie-on Depth:	114.15	m
Current Datum:	M.Glant	**Height** 40.15 m	**Above System Datum:**	Mean Sea Level	
Magnetic Data:	16-12-2005		**Declination:**	-2.11	deg
Field Strength:	49981 nT		**Mag Dip Angle:**	70.65	deg

Vertical Section: Depth From (TVD) m	+N/-S m	+E/-W m	Direction deg
114.15	0.00	0.00	0.00

Survey Program for Definitive Wellpath

Date: 03-02-2006 **Validated:** No **Version:** 0

Actual From m	To m	Survey	Toolcode	Tool Name
240.63	693.36	24" MWD SDS (240.63-693.36)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
711.70	1473.36	17 1/2" MWD SDS (711.70-1473.3	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
1523.42	3421.71	8 1/2" MWD SDS (1523.42-3421.7	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
3434.00	3434.00	1/2-2 Extrapolation to TD (343	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)

Survey

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	Map Northing m	Map Easting m	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
114.15	0.00	0.00	114.15	0.00	0.00	6316774.59	469410.16	56 59 32.008 N	2 29 47.663 E
173.00	0.33	134.89	173.00	-0.12	0.12	6316774.47	469410.28	56 59 32.005 N	2 29 47.670 E
240.63	0.70	134.89	240.63	-0.55	0.55	6316774.04	469410.71	56 59 31.991 N	2 29 47.696 E
269.69	0.35	90.95	269.69	-0.67	0.76	6316773.92	469410.92	56 59 31.987 N	2 29 47.709 E
354.56	0.09	342.18	354.55	-0.61	1.00	6316773.98	469411.16	56 59 31.989 N	2 29 47.723 E
411.19	0.44	350.00	411.18	-0.36	0.95	6316774.23	469411.11	56 59 31.997 N	2 29 47.720 E
439.83	0.35	330.36	439.82	-0.17	0.89	6316774.42	469411.05	56 59 32.003 N	2 29 47.716 E
525.58	0.35	34.00	525.57	0.27	0.90	6316774.86	469411.06	56 59 32.018 N	2 29 47.717 E
610.15	0.44	221.03	610.14	0.24	0.84	6316774.83	469410.99	56 59 32.016 N	2 29 47.713 E
693.36	0.62	42.43	693.35	0.33	0.93	6316774.92	469411.09	56 59 32.019 N	2 29 47.718 E
697.00	0.57	48.83	696.99	0.36	0.96	6316774.95	469411.12	56 59 32.020 N	2 29 47.720 E
711.70	0.48	84.36	711.69	0.41	1.07	6316775.00	469411.23	56 59 32.022 N	2 29 47.727 E
740.47	0.50	67.73	740.46	0.47	1.31	6316775.06	469411.47	56 59 32.024 N	2 29 47.741 E
768.64	0.50	84.85	768.63	0.53	1.54	6316775.12	469411.70	56 59 32.026 N	2 29 47.755 E
797.02	0.61	71.90	797.01	0.59	1.81	6316775.18	469411.97	56 59 32.028 N	2 29 47.770 E
825.02	0.56	93.73	825.00	0.63	2.09	6316775.22	469412.25	56 59 32.029 N	2 29 47.787 E
853.34	0.66	90.66	853.32	0.62	2.39	6316775.21	469412.55	56 59 32.029 N	2 29 47.805 E
881.87	0.66	78.35	881.85	0.65	2.72	6316775.24	469412.88	56 59 32.030 N	2 29 47.824 E
910.72	0.62	83.60	910.70	0.70	3.03	6316775.29	469413.19	56 59 32.032 N	2 29 47.843 E
938.52	0.59	76.76	938.50	0.75	3.32	6316775.34	469413.48	56 59 32.033 N	2 29 47.860 E
967.81	0.57	77.61	967.79	0.81	3.61	6316775.40	469413.77	56 59 32.036 N	2 29 47.877 E

Paladin Resources (Norway) Limited

Halliburton Company
Survey Report - Geographic

HALLIBURTON
Sperry Drilling Services

Company:	PALADIN - Norway	**Date:** 03-02-2006	**Time:** 08:34:05	**Page:**	2
Field:	Exploration	**Co-ordinate(NE) Reference:**	Site: PL143CS Hummer, Grid North		
Site:	PL143CS Hummer	**Vertical (TVD) Reference:**	M.Giant 40.2		
Well:	1/2-2	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)		
Wellpath:	1/2-2	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Oracle

Survey

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	Map Northing m	Map Easting m	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
997.23	0.63	68.42	997.20	0.90	3.91	6316775.49	469414.06	56 59 32.039 N	2 29 47.894 E
1026.35	0.49	67.51	1026.32	1.01	4.17	6316775.60	469414.33	56 59 32.042 N	2 29 47.910 E
1052.26	0.52	61.87	1052.23	1.11	4.38	6316775.70	469414.53	56 59 32.045 N	2 29 47.922 E
1080.27	0.58	74.79	1080.24	1.21	4.62	6316775.80	469414.78	56 59 32.049 N	2 29 47.937 E
1108.82	0.56	63.79	1108.79	1.31	4.89	6316775.89	469415.05	56 59 32.052 N	2 29 47.952 E
1137.60	0.55	62.54	1137.57	1.43	5.14	6316776.02	469415.30	56 59 32.056 N	2 29 47.967 E
1166.46	0.53	59.34	1166.43	1.56	5.38	6316776.15	469415.53	56 59 32.060 N	2 29 47.981 E
1195.02	0.61	69.65	1194.99	1.68	5.63	6316776.27	469415.79	56 59 32.064 N	2 29 47.996 E
1223.34	0.67	62.09	1223.30	1.81	5.92	6316776.40	469416.08	56 59 32.068 N	2 29 48.013 E
1251.52	0.75	58.67	1251.48	1.99	6.22	6316776.58	469416.38	56 59 32.074 N	2 29 48.031 E
1279.62	0.80	57.73	1279.58	2.19	6.55	6316776.78	469416.70	56 59 32.081 N	2 29 48.050 E
1307.72	0.78	63.02	1307.68	2.38	6.88	6316776.97	469417.04	56 59 32.087 N	2 29 48.070 E
1435.03	0.93	51.09	1434.97	3.42	8.46	6316778.01	469418.61	56 59 32.121 N	2 29 48.163 E
1473.36	0.80	45.05	1473.30	3.80	8.89	6316778.39	469419.05	56 59 32.134 N	2 29 48.188 E
1497.00	0.69	38.89	1496.94	4.03	9.09	6316778.62	469419.25	56 59 32.141 N	2 29 48.200 E
1523.42	0.57	29.19	1523.35	4.27	9.26	6316778.86	469419.41	56 59 32.149 N	2 29 48.210 E
1551.45	0.61	29.47	1551.38	4.52	9.40	6316779.11	469419.56	56 59 32.157 N	2 29 48.218 E
1580.06	0.39	23.05	1579.99	4.74	9.51	6316779.33	469419.67	56 59 32.164 N	2 29 48.225 E
1607.89	0.33	24.18	1607.82	4.90	9.58	6316779.49	469419.74	56 59 32.169 N	2 29 48.229 E
1627.00	0.42	33.37	1626.93	5.01	9.64	6316779.60	469419.80	56 59 32.173 N	2 29 48.232 E
1637.11	0.47	36.77	1637.04	5.08	9.69	6316779.66	469419.84	56 59 32.175 N	2 29 48.235 E
1665.70	0.53	36.93	1665.63	5.28	9.84	6316779.86	469419.99	56 59 32.181 N	2 29 48.244 E
1694.16	0.72	36.07	1694.09	5.52	10.02	6316780.11	469420.18	56 59 32.189 N	2 29 48.254 E
1720.64	0.64	23.19	1720.57	5.80	10.18	6316780.38	469420.33	56 59 32.198 N	2 29 48.264 E
1750.80	0.94	21.85	1750.72	6.18	10.34	6316780.77	469420.49	56 59 32.211 N	2 29 48.273 E
1779.11	0.94	25.43	1779.03	6.60	10.52	6316781.19	469420.68	56 59 32.224 N	2 29 48.284 E
1807.24	0.75	20.87	1807.16	6.99	10.69	6316781.57	469420.84	56 59 32.237 N	2 29 48.293 E
1813.00	0.75	19.74	1812.92	7.06	10.71	6316781.64	469420.87	56 59 32.239 N	2 29 48.295 E
1866.19	0.76	9.39	1866.10	7.73	10.89	6316782.32	469421.05	56 59 32.261 N	2 29 48.305 E
1893.38	0.77	16.58	1893.29	8.08	10.97	6316782.67	469421.13	56 59 32.272 N	2 29 48.309 E
1922.11	0.57	19.30	1922.02	8.40	11.07	6316782.99	469421.23	56 59 32.283 N	2 29 48.315 E
1950.96	0.55	17.17	1950.87	8.67	11.16	6316783.26	469421.32	56 59 32.291 N	2 29 48.321 E
1979.57	0.39	3.19	1979.47	8.90	11.21	6316783.49	469421.36	56 59 32.299 N	2 29 48.323 E
2007.61	0.48	14.98	2007.51	9.11	11.24	6316783.70	469421.40	56 59 32.306 N	2 29 48.325 E
2035.22	0.31	33.01	2035.12	9.28	11.31	6316783.87	469421.47	56 59 32.311 N	2 29 48.329 E
2063.15	0.44	15.06	2063.05	9.45	11.38	6316784.04	469421.54	56 59 32.317 N	2 29 48.333 E
2092.85	0.44	37.79	2092.75	9.65	11.48	6316784.24	469421.64	56 59 32.323 N	2 29 48.339 E
2120.98	0.56	23.74	2120.88	9.86	11.60	6316784.45	469421.76	56 59 32.330 N	2 29 48.346 E
2148.67	0.44	36.16	2148.57	10.07	11.72	6316784.66	469421.88	56 59 32.337 N	2 29 48.353 E
2176.73	0.31	13.48	2176.63	10.23	11.80	6316784.82	469421.96	56 59 32.342 N	2 29 48.358 E
2205.65	0.31	12.62	2205.55	10.39	11.84	6316784.97	469421.99	56 59 32.347 N	2 29 48.360 E
2234.27	0.55	4.44	2234.17	10.60	11.87	6316785.18	469422.02	56 59 32.354 N	2 29 48.361 E
2262.98	0.50	15.54	2262.88	10.86	11.91	6316785.44	469422.06	56 59 32.362 N	2 29 48.364 E
2291.37	0.67	3.77	2291.26	11.14	11.95	6316785.73	469422.11	56 59 32.371 N	2 29 48.366 E
2319.57	1.02	356.40	2319.46	11.56	11.95	6316786.14	469422.10	56 59 32.385 N	2 29 48.366 E
2348.22	1.14	355.86	2348.11	12.09	11.91	6316786.68	469422.07	56 59 32.402 N	2 29 48.363 E
2376.94	1.33	353.17	2376.82	12.71	11.85	6316787.30	469422.01	56 59 32.422 N	2 29 48.360 E
2405.16	1.50	355.07	2405.03	13.40	11.78	6316787.99	469421.94	56 59 32.445 N	2 29 48.355 E
2433.53	1.48	356.76	2433.39	14.14	11.73	6316788.72	469421.88	56 59 32.468 N	2 29 48.352 E
2461.88	1.60	358.01	2461.73	14.90	11.69	6316789.48	469421.85	56 59 32.493 N	2 29 48.349 E
2489.94	1.58	352.00	2489.78	15.67	11.63	6316790.26	469421.78	56 59 32.518 N	2 29 48.345 E
2518.65	1.69	348.06	2518.48	16.48	11.48	6316791.06	469421.64	56 59 32.544 N	2 29 48.336 E
2546.65	1.91	345.91	2546.47	17.34	11.28	6316791.92	469421.44	56 59 32.572 N	2 29 48.324 E
2549.00	1.93	345.87	2548.81	17.41	11.27	6316792.00	469421.42	56 59 32.574 N	2 29 48.323 E
2574.66	2.20	345.50	2574.46	18.31	11.04	6316792.89	469421.19	56 59 32.603 N	2 29 48.309 E
2603.04	2.34	344.68	2602.82	19.40	10.75	6316793.98	469420.90	56 59 32.638 N	2 29 48.291 E
2631.74	2.60	345.59	2631.49	20.59	10.43	6316795.17	469420.59	56 59 32.677 N	2 29 48.272 E
2660.33	2.68	347.99	2660.05	21.87	10.13	6316796.46	469420.29	56 59 32.718 N	2 29 48.254 E

Paladin Resources (Norway) Limited

Halliburton Company
Survey Report - Geographic

HALLIBURTON
Sperry Drilling Services

Company: PALADIN - Norway
Field: Exploration
Site: PL143CS Hummer
Well: 1/2-2
Wellpath: 1/2-2

Date: 03-02-2006 **Time:** 08:34:05 **Page:** 3
Co-ordinate(NE) Reference: Site: PL143CS Hummer, Grid North
Vertical (TVD) Reference: M.Giant 40.2
Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Oracle

Survey

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	Map Northing m	Map Easting m	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
2688.91	2.93	350.73	2688.59	23.25	9.87	6316797.83	469420.03	56 59 32.762 N	2 29 48.238 E
2717.47	3.01	351.06	2717.12	24.71	9.64	6316799.29	469419.80	56 59 32.810 N	2 29 48.223 E
2745.99	3.06	353.14	2745.60	26.21	9.43	6316800.79	469419.59	56 59 32.858 N	2 29 48.210 E
2774.64	3.32	357.84	2774.20	27.79	9.31	6316802.37	469419.47	56 59 32.909 N	2 29 48.202 E
2802.44	3.29	2.10	2801.95	29.40	9.31	6316803.97	469419.46	56 59 32.961 N	2 29 48.202 E
2830.94	3.24	6.08	2830.41	31.01	9.42	6316805.59	469419.58	56 59 33.013 N	2 29 48.208 E
2859.12	3.21	10.51	2858.54	32.58	9.65	6316807.16	469419.81	56 59 33.064 N	2 29 48.221 E
2887.42	3.13	7.98	2886.80	34.13	9.90	6316808.70	469420.06	56 59 33.114 N	2 29 48.235 E
2915.27	3.25	7.64	2914.61	35.66	10.11	6316810.24	469420.27	56 59 33.164 N	2 29 48.247 E
2944.19	3.16	6.94	2943.48	37.26	10.32	6316811.84	469420.48	56 59 33.216 N	2 29 48.258 E
2972.52	3.09	3.83	2971.77	38.80	10.46	6316813.38	469420.62	56 59 33.265 N	2 29 48.266 E
3001.14	3.10	5.53	3000.35	40.34	10.59	6316814.92	469420.75	56 59 33.315 N	2 29 48.273 E
3029.62	3.17	7.77	3028.79	41.89	10.77	6316816.46	469420.93	56 59 33.365 N	2 29 48.283 E
3058.12	3.15	11.59	3057.24	43.44	11.04	6316818.01	469421.19	56 59 33.415 N	2 29 48.298 E
3077.00	3.24	13.37	3076.09	44.46	11.26	6316819.04	469421.42	56 59 33.448 N	2 29 48.311 E
3086.57	3.29	14.24	3085.65	44.99	11.39	6316819.57	469421.55	56 59 33.466 N	2 29 48.318 E
3114.93	3.29	14.41	3113.96	46.57	11.60	6316821.14	469421.95	56 59 33.517 N	2 29 48.342 E
3140.00	3.19	15.28	3138.99	47.94	12.16	6316822.51	469422.31	56 59 33.561 N	2 29 48.362 E
3144.17	3.17	15.43	3143.15	48.16	12.22	6316822.73	469422.37	56 59 33.568 N	2 29 48.366 E
3172.97	3.05	15.97	3171.91	49.67	12.64	6316824.24	469422.80	56 59 33.617 N	2 29 48.390 E
3200.85	3.18	11.49	3199.75	51.14	13.00	6316825.71	469423.16	56 59 33.665 N	2 29 48.411 E
3228.84	3.63	10.74	3227.69	52.77	13.32	6316827.34	469423.47	56 59 33.717 N	2 29 48.429 E
3245.00	3.75	10.09	3243.82	53.79	13.51	6316828.36	469423.66	56 59 33.751 N	2 29 48.440 E
3257.06	3.84	9.63	3255.85	54.58	13.64	6316829.15	469423.80	56 59 33.776 N	2 29 48.448 E
3285.20	4.09	6.83	3283.92	56.50	13.92	6316831.07	469424.08	56 59 33.838 N	2 29 48.463 E
3313.99	4.27	7.24	3312.64	58.59	14.18	6316833.15	469424.33	56 59 33.906 N	2 29 48.477 E
3342.78	4.16	11.66	3341.35	60.67	14.52	6316835.24	469424.68	56 59 33.973 N	2 29 48.497 E
3370.83	4.51	12.97	3369.32	62.74	14.98	6316837.31	469425.13	56 59 34.040 N	2 29 48.523 E
3399.19	4.98	10.97	3397.58	65.04	15.46	6316839.60	469425.62	56 59 34.115 N	2 29 48.551 E
3421.71	2.45	31.77	3420.05	66.41	15.90	6316840.97	469426.06	56 59 34.159 N	2 29 48.576 E
3434.00	2.45	31.77	3432.33	66.85	16.18	6316841.42	469426.33	56 59 34.173 N	2 29 48.592 E

Casing Points

MD m	TVD m	Diameter in	Hole Size in	Name
173.00	173.00	30.000	36.000	30" cond
697.00	696.99	20.000	24.000	20"
1497.00	1496.94	13.375	17.500	13-3/8" csg

Formations

MD m	TVD m	Formations	Lithology	Dip Angle deg	Dip Direction deg
1627.00	1626.93	Hordaland Group		0.00	0.00
1813.00	1812.92	Top Oligocene		0.00	0.00
2549.00	2548.81	Base Oligocene		0.00	0.00
3077.00	3076.09	Top Balder		0.00	0.00
3140.00	3138.99	Top Forties		0.00	0.00
3245.00	3243.82	Top Lista		0.00	0.00

17 DRILLING CURVE

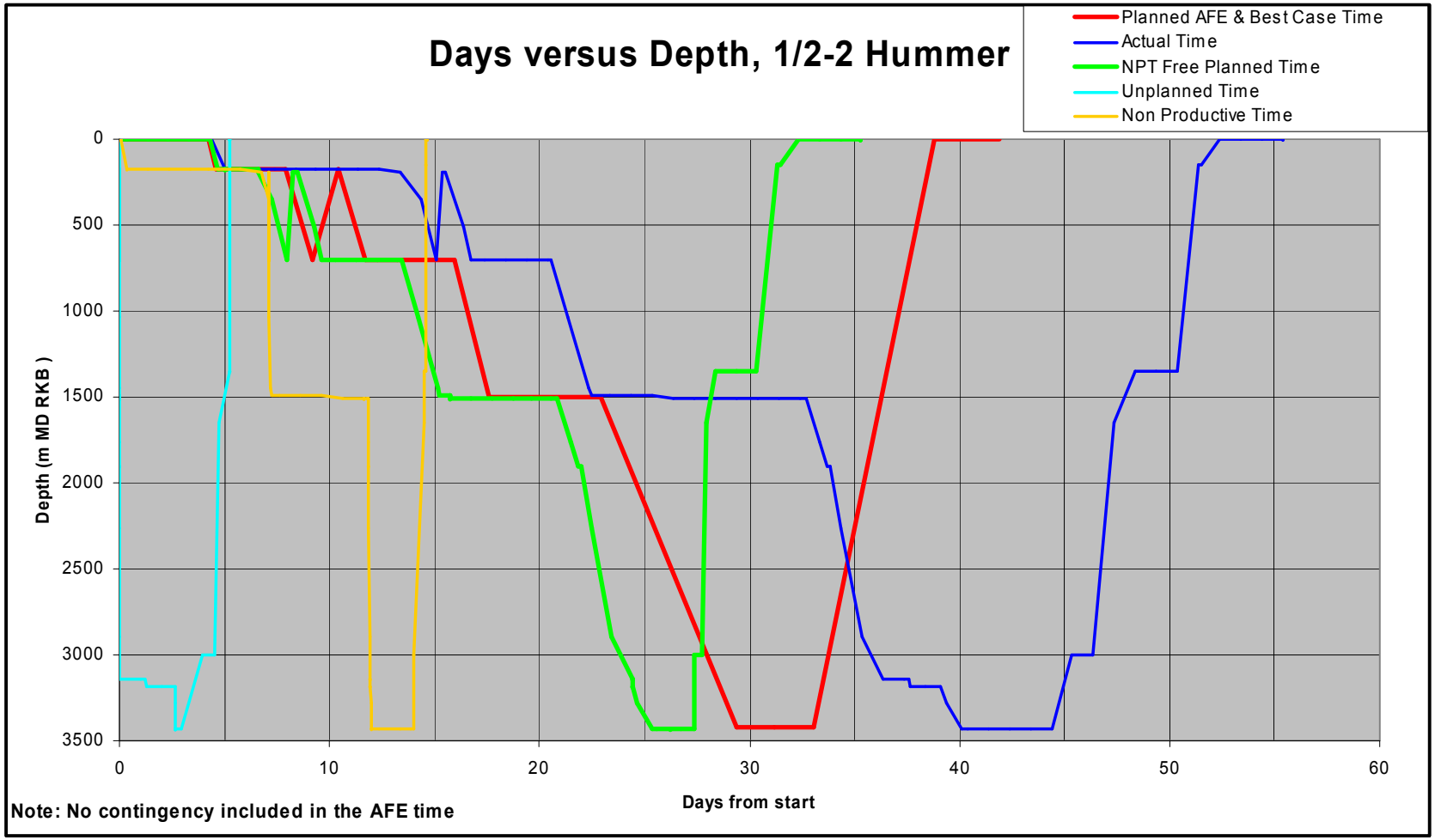
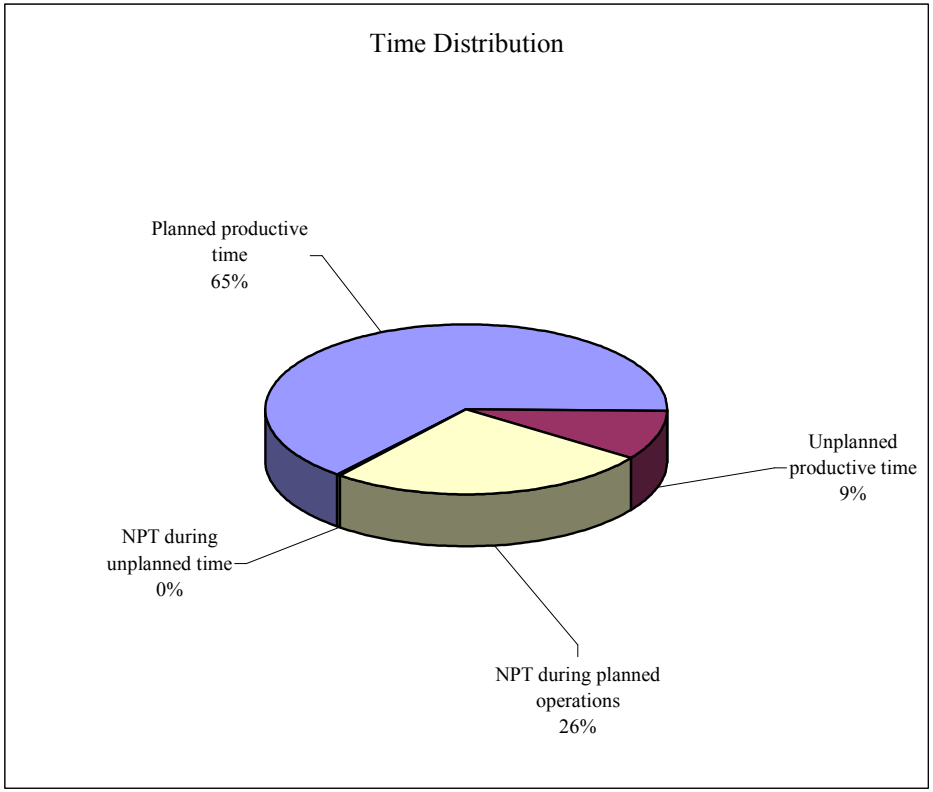
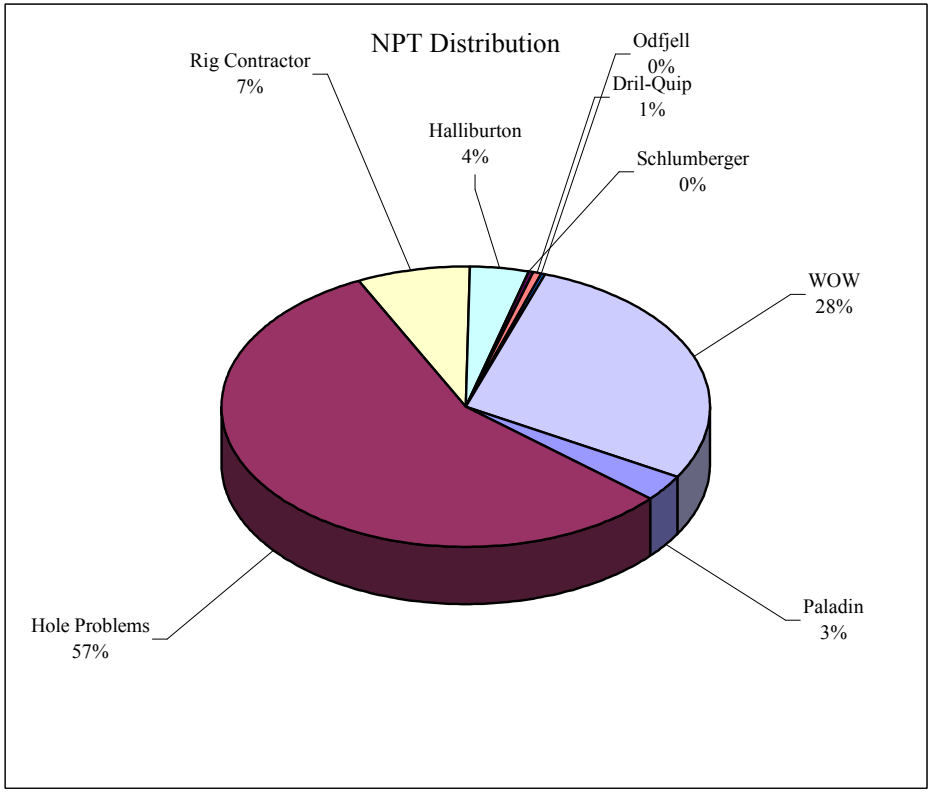


Figure 17-1 Drilling Curve

18 TIME SUMMARY





Total Days on location:	55.38 Days	Planned productive time is defined as operations covered by the AFE
Total Planned Operations:	35.52 Days	Unplanned productive time is defined as operations, not covered by the AFE
Total Unplanned Operation:	5.23 Days	
Total NPT during planned Operation:	14.42 Days	
Total NPT during Unplanned Operations:	0.21 Days	

Figure 18-1 Time Breakdown