

**Final Well Report
6403/6-1 & 6403/6-U-1
Edvarda PL322**

MYN-LET 00378

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Table of contents

1	Introduction.....	7
1.1	Well data record.....	7
1.2	Well objectives.....	9
1.3	Result of the well.....	9
1.4	Drilling summary.....	9
1.4.1	Casing.....	9
1.4.2	Drilling fluids.....	10
1.5	Data acquisition summary.....	11
2	Exemptions.....	12
3	Health, safety, environment and quality (HSE&Q).....	13
3.1	<i>Synergi</i>	13
3.1.1	Synergi details.....	13
3.2	<i>Experience listing</i>	16
3.3	<i>Incidents by service and company</i>	34
3.4	<i>Time distribution</i>	39
4	Geology and formation evaluation report.....	42
4.1	Geological setting.....	42
4.2	Shallow gas results.....	42
4.3	Stratigraphy.....	43
4.4	Lithostratigraphic description.....	44
4.5	Hydrocarbon indications.....	49
4.6	Geophysical results.....	52
4.7	Data acquisition.....	54
4.7.1	Cuttings and mud samples.....	54
4.7.2	Conventional coring.....	55
4.7.3	MWD.....	56
4.7.4	Wireline logging.....	57
4.7.5	Data quality.....	58
4.8	Formation pressure.....	59
4.8.1	Reservoir pressure summary and sampling.....	60
4.9	Leak off test.....	61
4.10	Formation temperature.....	61
4.11	Experiences / recommendations.....	62
5	Drilling operations report.....	71
5.1	NO 6403/6-1, MOVE (03.04.2006 08:00).....	71
5.2	NO 6403/6-U-1, 8 1/2" (05.04.2006 06:00).....	71
5.3	NO 6403/6-1, 42" x 36" (11.04.2006 00:00).....	72
5.4	NO 6403/6-1, 26" (14.04.2006 22:00).....	72
5.5	NO 6403/6-1, 17 1/2" x 20" (30.04.2006 14:30).....	74
5.6	NO 6403/6-1, 14 3/4" x 17 1/2" (12.05.2006 23:30).....	76
5.7	NO 6403/6-1, 12 1/4" (23.05.2006 09:30).....	79

5.8	NO 6403/6-1, 8 1/2" (01.06.2006 08:00)	80
5.9	NO 6403/6-1, 6" (05.07.2006 16:30)	83
5.10	NO 6403/6-1, PERM P&A (12.07.2006 18:30).....	84
5.11	Figures and tables.....	85
5.11.1	Well schematic	86
5.11.2	P&A wellbore schematic	87
5.11.3	Time/depth curve	88
5.11.4	Timeplanner	89
5.11.5	Wellhead system	96
5.11.6	Drilling fluids.....	97
5.11.7	Cementing data	99
5.11.8	Bottom hole assemblies	100
5.11.9	Bit record.....	113
6	Appendices	118
App A	Extract of daily activities (DBR summary of activities)	118
App B	Directional data, survey listing	125
App C	List of contractors	132
App D	MDT pressure measurements	133
App E	NPD standard sheet for reporting shallow gas – 6403/6- 1	134
App F	Listing of other reports.....	135
7	Enclosures	136
	Wellsite sample descriptions	136
	Sidewall core descriptions	136
	Conventional Core descriptions	136
	Composite log, well 6403/6-1	136
	Formation evaluation log, well 6403/6-1	136

List of figures and tables

Figure 1-1 : Location map	8
Figure 1-2 : Formation evaluation	11
Figure 3-1 : Downtime distribution	34
Figure 3-2 : Time distribution	40
Figure 3-3 : Drilling performance	41
Figure 4-1 : Hydrocarbon indications	51
Figure 4-2 : W-E Seismic line (time scale)	53
Figure 4-3 : Regional structural setting	64
Figure 4-4 : Well stratigraphy	65
Figure 4-5 : Prognosed vs. Actual	66
Figure 4-6 : Pressure plot	67
Figure 4-7: Composite plot – geological logs	68
Figure 4-8: Composite plot – drilling parameters	69
Figure 4-9: Formation temperature	70
Figure 5-1 : Well Schematic	86
Figure 5-2 : P&A Schematic	87
Figure 5-3 : Time/Depth curve	88
Figure 5-4 : Wellhead System Schematic	96
Table 1-1 : Casing programme summary	10
Table 1-2 : Drilling fluids summary	10
Table 2-1 : Exemption	12
Table 3-1 : Summary synergi	13
Table 3-2 : Synergi details 6403/6-1	13
Table 3-3 : Time distribution (1)	39
Table 3-4 : Time distribution (2)	41
Table 4-1 : Chronostratigraphy	43
Table 4-2: Lithostratigraphy – well 6403/6-U-1	43
Table 4-3: Lithostratigraphy – well 6403/6-1	44
Table 4-4 : Gas peaks (driller depth)	50
Table 4-5 : Cuttings and mud sampling	54
Table 4-6 : Gas samples	54
Table 4-7 : Coring summary	55
Table 4-8 : MWD logging – Well 6403/6-U-1	56
Table 4-9 : MWD logging – Well 6403/6-1	56
Table 4-10 : Wireline logging programme	58
Table 4-11 : Well 6403/6-1 - Measured and corrected formation temperatures	61
Table 5-1 : Project planner	89
Table 5-2: Summary of Drilling fluids program	97
Table 5-3 : Summary of Cementing data	99
Table 5-4 : Bottom hole assemblies	100
Table 5-5 : Bit run listing, well 6403/6-1	113



Table 5-6 : Bit run listing, well 6403/6-U-1	116
Table 6-1 : MDT pressure points.....	133

1 Introduction

1.1 Well data record

Well name : 6403/6-1
NPD Reg. no. : L-1111
Type of well : Wildcat
Prospect : Edvarda
Country : Norway
Area : Norwegian Sea
License : PL 322
Licencees : Statoil ASA (Operator) 90 %
Norske Shell ASA 10 %

Drilling unit : Eirik Raude
Type : Semi submersible rig (DP)
Water depth : 1721.0 m MSL
Air gap : 25 m
On license : 10.04.2006
Rig released : 25.07.2006
Formation at TD : Kvitnos Formation (Lysing member)

Geographical coordinates:

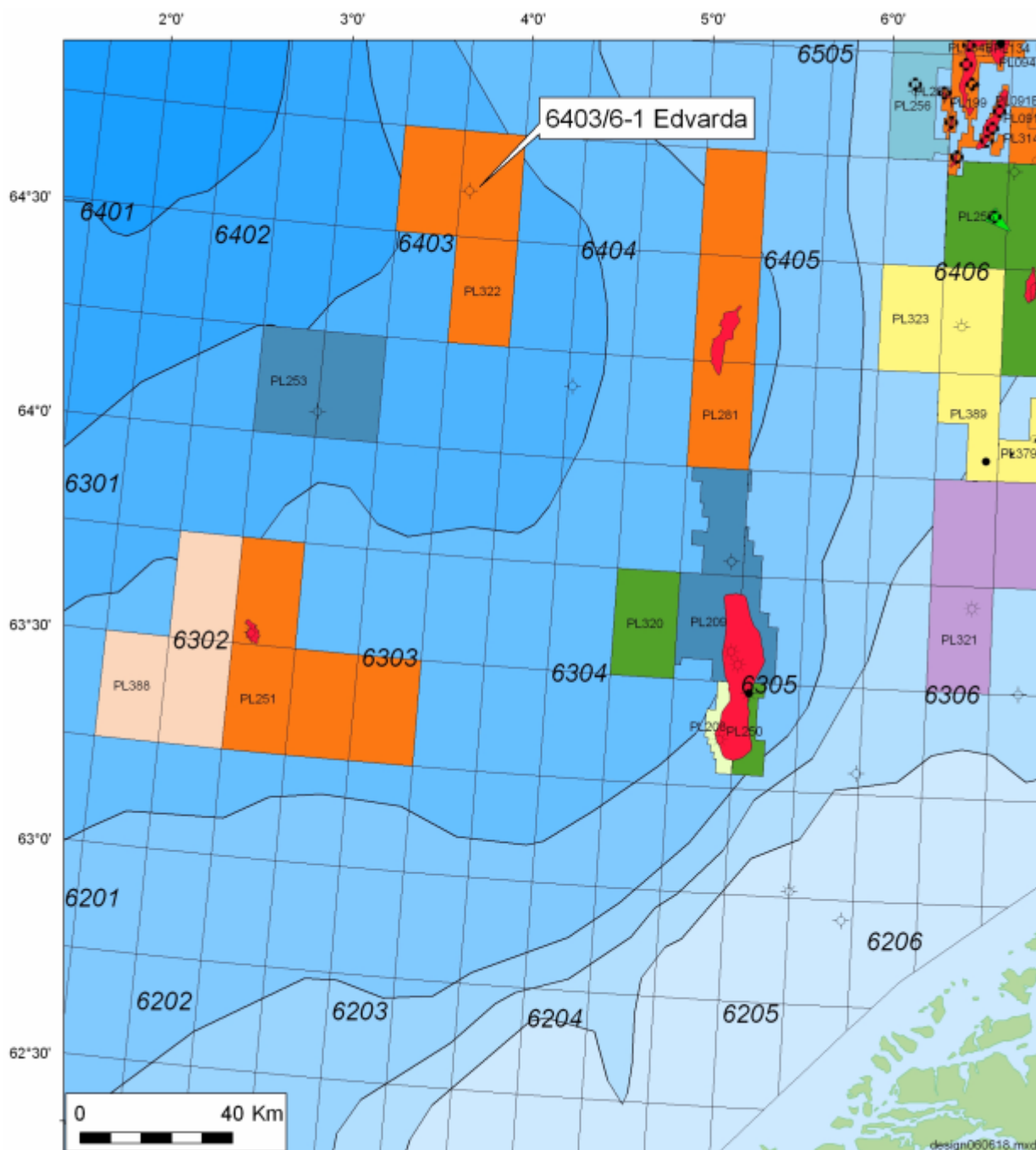
	6403/6-U-1	6403/6-1
Geographic coordinates (Surface)	Lat. 64° 36' 31.694"N	Lat. 64° 36' 30.461"N
	Lon. 03° 43' 08.561"E	Lon. 03° 43' 09.582"E
Datum / Spheroid	ED50 / INT.1924	
UTM coordinates	7 165 231m N	7 165 193m N
	534 404m E	534 418m E
Zone	Zone 31 CM03° E	

Seismic location:

	6403/6-1
3D survey	Inline 3428
	Crossline 4342

Unless otherwise written, all depths in this report are logger's depth with reference to RKB (Rotary Kelly Bushing). An exception to this is chapter 5 (Drilling operations report) that refers to drillers depth from RKB unless otherwise stated.

Figure 1-1 : Location map



1.2 Well objectives

The objective of the well was to verify the presence of hydrocarbons in reservoir formations of Campanian age in the Nise Formation and the Lysing member of the Kvitnos Formation. An additional objective was to test for the presence of reservoirs in Paleocene and Maastrichtian deposits.

1.3 Result of the well

An 8 ½" pilot hole, designated 6403/6-U-1, was drilled to a total depth of 2400 mMD prior to drilling the main hole. The objective of the pilot hole was to detect for possibly overpressured sands in the shallow formations whilst secondarily, to get good logging data of the upper section.

Well 6403/6-1 was spudded 44 m from the pilot hole location in 1721 mMSL of water depth. The well was drilled vertically through Quaternary, Tertiary and upper Cretaceous formations to a total depth of 4120 mMD, in the Lysing member.

The primary Nise Formation target was penetrated at 3047.5 mMD and consisted of interbedded sandstones, siltstones and shales. One core was cut from 3058 mMD to 3084.5 mMD. Extensive wireline data acquisition was performed, including MDT pressure testing and sidewall cores. No fluid samples were acquired due to the very tight nature of the sands. No shows were recorded.

The secondary target, the Lysing member, was encountered at 4018 mMD, the base not being penetrated. This formation consisted of interbedded shales and sands with very poor reservoir properties. The coring criteria were not met, but an extensive wireline data acquisition program was performed. The reservoir quality was such that neither pretests nor fluid samples could be acquired.

1.4 Drilling summary

1.4.1 Casing

Table 1-1 : Casing programme summary

Casing	Shoe depth [mMD RKB, drillers depth]	LOT / FIT [Equivalent mud weight]
Well 6403/6-1		
30"	1837.7 / 1843	
20"	2394	LOT : 1.19 g/cm ³ @ 2403 mMD
16"	2548.2	LOT : 1.29 g/cm ³ @ 2563mMD
13 3/8"	2740.8	LOT : 1.34 g/cm ³ @ 2752 mMD
9 5/8"	2982.8	LOT : 1.46 g/cm ³ @ 2986 mMD
7"	3768	LOT : 1.50 g/cm ³ @ 3768 mMD
	4120 TD	

1.4.2 Drilling fluids

Table 1-2 : Drilling fluids summary

Section	Section TD [m MD RKB]	Max mud weight [g/cm ³]	Mud type
Pilot hole 6403/6-U-1			
8 1/2"	2400	1.03	Seawater/Bentonite
Main hole 6403/6-1			
36"	1845	1.03	Seawater/CMC
26"	2394	1.03	Seawater/CMC
17 1/2"x20"	2560	1.08 (2403 - 2413mMD) 1.10 (2413 - 2560 mMD)	Ultradrigill
14 3/4"x17 1/2"	2748	1.13 (2560 – 2563 mMD) 1.15 (2563 – 2673 mMD) 1.17 (2673 – 2697 mMD) 1.19 (2697 – 2748 mMD)	Ultradrigill
12 1/4"	2983	1.19 (2749 – 2775 mMD) 1.24 (2775 – 2878 mMD) 1.22 (2878 – 2983 mMD)	Ultradrigill DW
8 1/2"	3775	1.23 (2983 – 2986 mMD) 1.25-1.23 (2986 – 3138 mMD) 1.19 (3138 – 3775 mMD)	Ultradrigill DW Ultradrigill
6"	4120	1.21 (3775 – 3782 mMD) 1.22 (3782 – 3960 mMD) 1.29 (3960 – 4120 mMD)	Ultradrigill

1.5 Data acquisition summary

Figure 1-2 : Formation evaluation

System	Series	Group	Formations/ Seismic markers m TVD RKB	Lithology	Casing	Depth m RKB	Coring Program	Sampling Program	Logging Program
			Seabed 1746			1800			
Tertiary	Qa.	Pleist/Plio.	Naust Fm.			1800			
			Kai Fm. 1786		30"	1838m			
	Miocene	Nordland	Brygge Fm. 1906			2000			
			Opal A/CT 2015			2200		Returns to seabed ROV sampling in 26" section	MWD : GR – RES WIRELINE Run 1A : Look-ahead VSP at 20".
	Eocene	Hordaland	Tare Fm. 2140			2200			
			Tang Fm. 2256		20"	2394m			
Cretaceous	Paleoc.	Rogaland	Springar Fm. 2438.5		16"	2548m		One bulk (5l) of unwashed and one washed and dried sample collected at each interval. - Every 5m from 2400 – 2500m. - Every 10m from 2500 – 2983m. - Every 3m from 2983 – 4120m (TD of the well).	MWD : GR – RES WIRELINE : Run 2A : PEX – DSI – HNGS – HRLA Run 2A : MSCT-GR
					13 3/8"	2741m			MWD : GR – RES WIRELINE : Run 3B : PEX – DSI – HRLA – HNGS Run 3B : VSP-GR
	Maastrichtian				9 5/8"	2983m			MWD : GR – RES – APX WIRELINE : Run 4C : PEX – DSI – HRLA – HNGS
			Nise Fm. 3047.5			3200	Core 1: 3058 -3084.4m	1l mud sample every 100m.	MWD : GR – RES WIRELINE : Run 5C : VSP – GR Run 6A : MDT – GR Run 7B : MDT – GR Run 8D : PEX – DSI – HRLA – ECS Run 8A : HNGS – FMI – MSIP Run 8C : MDT – GR Run 8B : MSCT – GR
	Campanian	Shetland	Kvitnos Fm. 3475		7"	3768m		Gas sampling in gas-tight bags at gas peak.	
						4000			MWD : GR – RES WIRELINE : Run 9E : PEX– HRLA - HNGS Run 9D : ZVSP Run 9C : MSCT - GR Run 9B : MSIP - FMI
	Santonian								
	Coniacien								
			Lysing Mb. 4018			4200			
			TD at 4119.5 m TVD RKB (4120 m MD RKB)			4200			

2 Exemptions

Table 2-1 : Exemption

Exception from	Report no	Date	Title
WR0436	41875	11.08.2006	Dispensation from 14 day interval test of BOP
ST050	41227	03.05.2006	Running 16" liner manually as a consequence of no availability of inserts for the BX elevator
WR0436	40320	13.02.2006	Testing of the wellhead connector to maximum well design pressure when testing the 13 3/8" production casing.
WR0436	40260	03.02.2006	Drilling 8 1/2" pilot hole 200m into potential pressure build up zone (1,05sg) with seawater
ST058	40259	03.02.2006	Running the 13 3/8" as casing without casing shearing capability in the BOP when using a DP vessel.
NPD	None	None	None

3 Health, safety, environment and quality (HSE&Q)

3.1 Synergi

Table 3-1 : Summary synergi

Type (colour code)	Synergi code	Number of
Undefined		1
Red	2	1
Green	4	6
Green	5	11
Yellow	3	2
Sum		21

3.1.1 Synergi details

WELLBORE: NO 6403/6-1

Table 3-2 : Synergi details 6403/6-1

Synergi no	Hazard	Description
386202	2	Synergi 386202 (Closed) - 24.04.2006 - Near miss - Guide from slick riserjoint broke and fell into the sea. When running riser with BOP, a steering fin on a slick riser joint broke off due to movement in riser. A heavy wave hit the riser and pushed the riser to the side, causing a steering fin to break off and fall into the sea. Ref attachments.
383365	3	Synergi 383365 (Closed) - 13.04.2006 - Near miss - Bolt fell from 3,3m Two roustabouts working to prepare riser for running BOP. Scaffolding was used to reach the riser ends and to remove the protectors. One roustabout was up on the scaffolding and was about to remove the protector when a 4 kg bolt fell down to deck. (This bolt has probably been left inside the protector since the riser joints arrived and was landed on rig- see comments) The other roustabout was working on deck appr. 0.5 m away from the dropp point of the bolt. Fall height from riser end to deck: appr. 3,3 meter. No person injured - No material damage. Comment: After investigation of the incident, the Deck foreman night, informs that they have had a lot of problems with the riser end protectors because they are mounted in wrong position. The protector has a larger blackout on the top, if this is not mounted in correct position (with the larger blackout on top), there is a problem to loosen and disconnect shackles and bolts. In this case the protector has been in wrong pos. and the bolt has fallen down inside the protector- and the crew has forgotten to recover the bolt. When the protector was taken off, the bolt fell out on deck.
389723	3	Synergi 389723 (Closed) - 17.05.2006 - Near miss - Washing of deck beneath top drive At 06:00 while tripping out of the hole a Roughneck walked underneath the elevators as they were descending towards drillfloor. This is a blind area for the operator (Driller). A person observed the roughneck and got him into a safe area.
385923	4	Synergi 385923 (Closed) - 26.04.2006 - Other non-conformities - Cut and Slip Drill line due to excessive wear Cut and Slip Drill line due to excessive wear

Synergi no	Hazard	Description
386364	4	Synergi 386364 (Closed) - 29.04.2006 - Other non-conformities - Forgot to open shear ram after kick drill. Hit shear ram with bit on way in. Forgot to open shear ram after kick drill. Hit shear ram with bit on way in. Ref attached UER ACC2006-0056
386845	4	Synergi 386845 (Closed) - 02.05.2006 - Near miss - Canvas curtain in moonpool fell down. Overhead crane in moonpool damaged rail for canvas curtain. Canvas curtain fell down. For a detailed description please see attachments.
392457	4	Synergi 392457 (Closed) - 30.05.2006 - Near miss - Manual block retract valve handle Slipped and cut drill line, the blocks were still hung off. Servicing the TDS. A roughneck was in the aft man riding tugger in a riding belt greasing the back of the dollies. Where he accidentally knocked against the manual block retract valve handle, causing the retract system to retract slightly (5 to 10 cm aprox). This is a deadman handle which when released stops the operation from being performed. There were at the time 2 men in the casing stabbing basket greasing the forward side of the dollies. When the retract system moved, they contacted the driller and asked what was happening, it was then that they discovered that the manual handle had been accidentally knocked. At the time of the incident there were no persons in between the blocks and the dollies.
397799	4	Synergi 397799 (Closed) - 28.06.2006 - Other non-conformities - MWD for 6" section flew in from abroad and when arriving not set up to spec. MWD for 6" section flew in from abroad and when arriving not set up to spec. 380 - 1200 lpm when arriving on the rig eventhough it had been planned for.
398321	4	Synergi 398321 (Closed) - 30.06.2006 - Near miss - Dropped Bolt from Torque Wrench Die Carrier Incident Pulling out of hole with DP. Driller had just racked back 1 std and was coming down with empty retracted blocks. A roughneck heard something bounce off the rig floor. Driller was immediately informed and stopped operations. It was discovered a bolt had dropped from Torque Wrench.
383024	5	Synergi 383024 (Closed) - 09.04.2006 - Accident - Hit toe Hit 1. toe, right foot with the door when standing on door step inside cabin. Toe nail was partly ripped off. IP went to see medic immediately after incident.
383366	5	Synergi 383366 (Closed) - 15.04.2006 - Other non-conformities - Fuel loading hose cut off in the vessels thruster After receiving fuel from Northern Corona the fuel hose was caught and cut off in the vessels thruster. The fueling operation was finished and the hose drained when the incident occurred. No spill to sea.
389441	5	Synergi 389441 (In process) - 13.05.2006 - Other non-conformities - Foreign object found in bulk hose Inspection of Boat hook up end revealed that there was small piece of rubber and small plaxtice item lodged in check vavle on end of bulk Mud\fluid loading hose.
389462	5	Synergi 389462 (In process) - 15.05.2006 - Near miss - Dropped steel into the sea While installing an extension to the hatch coaming in the ROV moonpool a 2,5m x 50mm x 5 mm length of steel flatbar was dropped into the sea.
390773	5	Synergi 390773 (Closed) - 23.05.2006 - Near miss - Dropped big-bag. The task was to put a big-bag up to the mixer with the forklift. As the big-bag was lifted by the handles, one of the handles gradually laddered and the bag fell down on the floor. The bag was filled with salt. The hight of the fall was between 1 - 1,8 m and the weight approximately 1000 kg. The area was barred off when the work was carried out. 3 persons were inside the area, one operating the worklift, one 4 m away from the bag and the third 5 m away.
390998	5	Synergi 390998 (Closed) - 21.05.2006 - Other non-conformities - Intermitted fault to the iron roughneck jaws, possibly linked to a low battery in the remote control Upper (make-up/ break up) was taken off, lower jaw was used to hold it, spinners were put on to spin it out, lower jaw was functioned to release FOSV, lower jaw opened and closed causing damage to the pin end of the FOSV.
392528	5	Synergi 392528 (Closed) - 31.05.2006 - Other non-conformities - Rain water contamination in heli fuel tank Yesterday when I joined the rig I noticed that the heli fuel tank #2407-21 had the dip stick lid left open. I closed the lid which is about 8" in diameter. There was a lot of rain that morning so I figured the heli fuel was contaminated with rain water. Today I took 8 x 4liter samples and still I never got a good one.

Synergi no	Hazard	Description
392993	5	Synergi 392993 (Closed) - 03.06.2006 - Other non-conformities - HIPAP TRANSPONDER NO.4 came loose Standby boat Viking Avant reported at 15:30 something looking like a transponder floating at the surface close to the rig. Viking Avant contacted the control room on the rig and asked if it could belong to Eirik Raude. The DP operator checked transponder array and found transponder #4 to be missing. Viking Avant recovered the transponder from sea.
394362	5	Synergi 394362 (Closed) - 08.06.2006 - Condition - Knife left on top of gantry crane A knife was inadvertently left on top of the gantry crane. It was discovered and brought down later.
396848	5	Synergi 396848 (Closed) - 22.06.2006 - Near miss - Object dropped of pallet in Provisions area While lowering a hydraulic Ram for the Iron roughneck from the adjacent deck area down to the provisions handling area, the pallet contacted a pipe at the lower part of the hatch entrance and became snagged resulting in the pallet getting tilted on angle. This large angle resulted in the object rolling from under the strap and the object (100 kg. hydraulic cylinder) fell about 6 meters. The unit has a mass of about 100kg and it landed on the deck of the provisions area and put a dent in the deck plating. The Load (Ram) was on a small pallet and it had been secured to this with a blue 2" ratchet strap. The pallet was being lifted with two wire straps (slings) that were choked off. When contact was made with the pipe the pallet tilted in a direction that allowed the ram to slip out from under the ratchet strap. There were two men in the area, one Ocean Rig Banks man to receive the pallet and one Oiltools hand who had been informed to remain clear of area until lift complete. The area was also barriered off with plastic chains.
397176	5	Synergi 397176 (Closed) - 24.06.2006 - Other non-conformities - Lost item in hole Hole cover was placed over open hole when it was removed it was noticed a section of the handle was missing, and presumed dropped into the well. As wire line personnel were preparing equipment for next wire line run, drill crew prepared to lay out the core barrel that was standing in derrick. The hole cover was removed to run in and break down / lay out core barrel. Upon removing the hole cover it was noticed a section of the Handle was missing and presumed in the well. Supervisors were immediately informed. The surrounding area and storage location on rig floor for the hole cover was thoroughly searched without results. Confirming that in all likely hood the object is probably in the well.

3.2 *Experience listing*

Subject:	T2 adapter stuck in BCPM	
Section:	NO 6403/6-U-1, 8 1/2"	
Rep date:	07.04.2006	
Keywords:	MWD/LWD	
Downtime:		Pot time improvements:
Comp inv:	Baker Hughes Inteq	
References:		
Synergi no:		Cost:
Synergi title:		

Description:

When changing out the BCPM (pulsing unit) on the MWD the T2 sealing adapter was stuck inside the BCPM. The T2 sealing adapter is there to minimise risk of washing out vital components inside the BCPM.

Immediate solution:

The rig mechanic made an improvised pulling tool which enabled removal of the T2 sealing adapter.

Future recommended solution:

Baker Hughes Inteq should have this sort of tool available on the rig in case the sealing adaptor becomes stuck again.

Subject:	Unable to receive signals from the BCPM	
Section:	NO 6403/6-U-1, 8 1/2"	
Rep date:	07.04.2006	
Keywords:	MWD/LWD	
Downtime:		Pot time improvements:
Comp inv:	Baker Hughes Inteq	
References:		
Synergi no:		Cost:
Synergi title:		

Description:

Prior to drilling the 8 1/2" pilot hole the MWD was tested above seabed. Changed out the receiver unit on the stand pipe manifold. Found a loose cable on the receiver unit which was attached properly. Still unable to receive signals from the MWD and decided to try and drill 7-8 m and try again. Still no change in the signals from the MWD and decided to POOH and replace the BCPM.

Ran back to seabed after changing out the BCPM. Tested the MWD above seabed, but still did not receive proper signals from the MWD.

The signals seen at surface had been interpreted to come from noise only. This is based on the fact that the signals from the MWD should have a higher amplitude than what was being recorded. Hence, it looks like the same problem as in run no 1.

Immediate solution:

It is believed that the oil used in the BCPM is influenced by the low temperature at seabed (-0,5 deg C) and in the top of the well and that the oil therefore is thicker and more viscous than it should normally be. This may result in the pulsing unit (BCPM) not pulsing as it should and the signals therefore not possible to decode at surface.

It is believed that the BCPM will start to function as soon as the temperature of the oil becomes higher (However that was not the case)

Decision made to continue drilling to planned depth of 2400 m based on the following reasons:

- * Able to fulfil the main objective with the pilot hole 1) MWD data can be provided in memory 2) Identification of potential shallow water flow. Flow checks will be implemented on every second stand down to 2000m and on every stand from 2000 m to 2400 m.
- * Gas classification Zero
- * Potential gas will be identified on the ROV. Short time for bottoms up.
- * Baker H. Inteq and Statoil project members evaluate the risk for building inclination with this BHA as low. Inclination data will be provided in memory.

Future recommended solution:

Investigate whether this is can be a potential problem at the other MWD companies.

Subject: Sea temperature measurements using the ROV

Section: NO 6403/6-U-1, 8 1/2"

Rep date: 10.04.2006

Keywords: ROV

Downtime:

Pot time improvements:

Comp inv:

References:

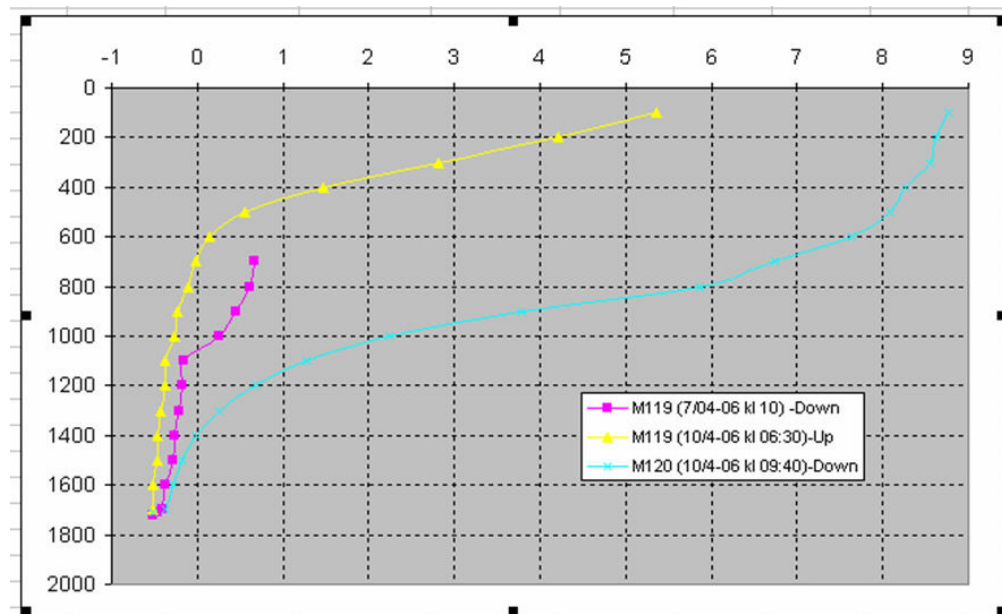
Synergi no:

Cost:

Synergi title:

Description:

In order to get an idea of how the sea temperature varies over different ranges of water depth, the ROV crew was asked to take sea temperature measurements for every 100 m.



Immediate solution:

Future recommended solution:

Subject:	Cementing through BHA and bit
Section:	NO 6403/6-U-1, 8 1/2"
Rep date:	11.04.2006
Keywords:	MWD/LWD
Downtime:	
Comp inv:	Statoil
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

After drilling the 8 1/2" pilot hole to 2400 m a planned cementing through the BHA and bit was performed. The reason behind was to eliminate any doubt of communication between the pilot hole and below the 20" shoe in the main well.

The slurry was a 1,50 sg G-cement slurry which was set as a balanced plug using 1,43 sg spacer and seawater as displacement (under-displaced +/- 1300 L which gave +/- 10 bar over-pressure on the DP side). The cement slurry that was pumped is relatively thin and is believed to flow easily past the stabilizer behind the 8 1/2" bit when start pulling out. This was one of the reasons why the cement plug was set as a balanced cement plug. The pump-and-pull method was not considered as the selected method for placing the plug as it will be difficult to have full control over the volumes being pumped (u-tube to annulus, riser less, etc.).

Baker H. Inteq issued a written Customer notification prior to the job where it was recommended to reduce flow to 50% of recommended start-up flow before the cement reaches the MWD. For this MWD tool this rate is 700 LPM. The cement job was carried out and cement was displaced at 1500 LPM.

Pulled out of the cement at 3 min/stand to 50 m above theoretical TOC. Flushed a string volume with seawater (+/- 20 m3) at 2500 LPM and the displaced the hole to 1,35 sg.

Immediate solution:

Future recommended solution:

No visible signs of cement on the outside of the tool when at surface. No tool problems experienced when servicing the tool onshore as a result of this operation.

Subject:	Survey problems using the Anderdrift
Section:	NO 6403/6-1, 42" x 36"
Rep date:	11.04.2006
Keywords:	OTHER
Downtime:	
Comp inv:	Statoil
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

Not able to get a proper test of the Anderdrift above the seabed. At survey flow rate the pressure increased, but dropped down again without being able to read any pulses.

Immediate solution:

Tried rotating the string at 50-60 RPM for a couple of minutes. Stopped rotation and tried taking a survey again. Did not work (worked on the Tulipan well). Tried a number of different survey procedures at different survey flow rates while consulting Andergauge 24 hour duty phone (51942880). Still no success.

It is believed that the motor in the BHA creates a back-pressure which influences the Anderdrift pulsing in addition to the great water depth which seems to decrease the amplitude of the pulses (only 4-5 bars which is difficult to see).

Decision made to start drilling and take a new survey when the Anderdrift was below seabed. The motor will then require more flow to rotate the BHA and might not influence the Anderdrift the same way.

In addition, a totco ring was included in the BHA for a single shot to be dropped when at TD.

Future recommended solution:

Include a totco ring in the BHA so that a single shot can be dropped when at TD.

Use Geoservices actively to assist in counting the pulses. Increase resolution of the SPP plot and use max sampling rate.

A modified survey procedure is attached

It was later discovered (in the investigation report from the workshop) that the Anderdrift pulsing head was defective.

Subject: Insufficient amount of 8 1/4" DC when making up the 26" BHA

Section: NO 6403/6-1, 26"

Rep date: 15.04.2006

Keywords: BHA

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no: 383390

Cost: 3000

Synergi title:

Insufficient amount of 8 1/4" DC when making up the 26" BHA

Description:

Immediate solution:

Future recommended solution:

Subject: Lack of communication between Drill Quip onshore and offshore staff in relation to running the 20" casing with inner string.

Section: NO 6403/6-1, 26"

Rep date: 15.04.2006

Keywords: WELLHEAD/ASA

Downtime:

Pot time improvements:

Comp inv: Drill Quip

References:

Synergi no: 383389

Cost: 3000

Synergi title:

Lack of communication between Drill Quip onshore and offshore staff in relation to running the 20" casing with inner string.

Description:

Ref. synergi no 383389

Immediate solution:

Future recommended solution:

Subject: ROV umbilical entangled around the DP

Section: NO 6403/6-1, 26"

Rep date: 16.04.2006

Keywords: ROV

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no: 383483

Cost:

780000

Synergi title:

ROV cage umbilical entangled around the DP

Description:

Ref. synergi 383483

Immediate solution:

Stopped drilling and pulled back up into the 30" shoe to untangle ROV umbilical from the DP. Held meeting with all involved personnel where a common understanding was reached and plans made for how the communication should be.

Future recommended solution:

Only the ROV supervisor to verify whether a change in the rig heading can be performed with regards to using the ROV without high risk of entangling the umbilical around the DP. The ROV crew must clearly communicate that drilling must stop if there is a risk of entangling the umbilical around the DP.

Subject: Unable to make up 18 3/4" Wellhead due to damaged threads

Section: NO 6403/6-1, 26"

Rep date: 20.04.2006

Keywords: CASING/LINER

Downtime: 9

Pot time improvements: 9

Comp inv: Weatherford Norge AS

References:

Synergi no: 384320

Cost:

1080000

Synergi title:

Unable to make up 18 3/4" wellhead to 20" casing.

Description:

Ref. synergi no 384320

Immediate solution:

Laid out primary wellhead and replaced with back-up. Laid out one casing joint and replaced with a spare.

Future recommended solution:

- 1) Look into using other threads than Tenaris ER N80 or at least a cross over from Tenaris ER N80 box end to Drill-Quip E60 Multithread pin end. Other operators are using these threads as a consequence of Tenaris seems causing problems i.e. high failure rate.
- 2) Time (2-3hours) was spent on changing the bore protector and RT from primary wellhead to back-up manually on the deck. If the back-up wellhead had been installed with bore protector the 9 hours NPT would have been reduced with 2 - 3 hours.

Subject: Retrieving wellhead housing running tool

Section: NO 6403/6-1, 26"

Rep date: 21.04.2006

Keywords: WELLHEAD/ASA

Downtime:

Pot time improvements:

Comp inv: Drill Quip

References:

Synergi no:

Cost:

Synergi title:

Description:

When retrieving the well head running tool a left hand torque of 4 -6 kft-lb need to be applied to the running string to shear the pins. Maximum to be applied is 8kft-lb.

The drill string is made up to 29 kft-lb and if any of the connections in the string or a Drill-Quip connection are not made up properly (has happened once in DQ history) we could have a disconnection. This could give us a disconnected drill string on seabed - 1721m water depth!

Immediate solution:

The WH RT was disconnected according to plans and no worries.

Future recommended solution:

Approach DQ for a more 'fool safe' way to do disconnect the RT. ?

Important to have focus on make-up torque when making up the running string.
Have a certificate from DQ for their make-ups from the workshop.

Subject:	17 1/2"x20" Anderreamer not activating
Section:	NO 6403/6-1, 17 1/2" x 20"
Rep date:	04.05.2006
Keywords:	HOLE OPENING/UNDERREAMING
Downtime:	Pot time improvements:
Comp inv:	Andergauge
References:	
Synergi no:	Cost:
Synergi title:	

Description:

After drilling 17 1/2" pilot hole from 2400 to 2560m and logging the section, the plan was to underream the section to 20" using Anderreamer. When attempting to activate the Anderreamer below the 20" casing shoe, no indications on pressure was identified that could indicate the tool was activated. The tool was then pulled up against the 20" shoe with flow but no drag was seen coming into the 20". The Anderreamer version used was the "Shoe-driller", and due to the possibility of activating the tool with weight if the first stage was activated, it was reamed to bottom and 10ton put on the bit. No change in pressures or torque when re-reaming the last stand from bottom. No PDC cuttings were seen on surface and the mud loss was less than expected if 20" hole was obtained. When back at surface, the tool was found not activated.

Immediate solution:

Future recommended solution:

Ref. Anderreamer investigation report in synergi no 387626

Subject:	14 3/4" bit 1/8" undergauge
Section:	NO 6403/6-1, 14 3/4" x 17 1/2"
Rep date:	18.05.2006
Keywords:	BIT
Downtime:	Pot time improvements:
Comp inv:	Reed-Hycalog
References:	
Synergi no:	Cost:
Synergi title:	

Description:

When POOH with 14 3/4" x 17 1/2" BHA through the 16" shoetrack, severe problems were experienced. String took weight and torqued up. Several attempts and lots of working pipe up (up to 40 T over pull) and down plus reaming was required to pull the BHA through the shoetrack.

When BHA was retrieved to surface, the 14 3/4" bit was found to be 1/8" undergauge and might very well be the reason behind the problems pulling out of the shoetrack. The 14 3/4" stabilisers were all found to be in gauge. There was no obvious dull on the gauge cutters nor the gauge protection on the bit.

The DOP states that all BHA components to be gauged prior to RIH. Nothing in the handover papers between the drillers that the bit was found undergauge.

Immediate solution:

Future recommended solution:

Subject:	Pressure testing of BOP using casing hanger running tool
Section:	NO 6403/6-1, 14 3/4" x 17 1/2"
Rep date:	23.05.2006
Keywords:	BOP/WB/BP
Downtime:	
Comp inv:	
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

Pressure tested LAP, UAP, LPR, UPR kill &choke valves against seal assembly before release of casing hanger running tool to save one run with BOP test tool. The landing string was sufficiently cleaned with the circulation from the displacement volume for cement= 7 times landing string volume. Max flowrate: 2500 lpm.

Immediate solution:

Future recommended solution:

Subject:	High quality cement job
Section:	NO 6403/6-1, 14 3/4" x 17 1/2"
Rep date:	23.05.2006
Keywords:	CEMENTING
Downtime:	
Comp inv:	
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

Achieved a good LOT and had firm cement in shoetrack. Landing string: 1742 m. 13 3/8" casing length: 997 m. Use a two plug system. Pumped 20 m3 1.19 SG spacer and 13 m3 1.90 SG cement. Mudsystem / mud weight: Ultradrill WBM/ 1.19 SG. Observed deep U-tube before dart caught cement in landingstring and displaced dart with 13 m3 instead of calculated 11,7 m3 to shear top plug. Increased rate to 2500 lpm when spacer and cement enter the shoe, despite almost no returns observed. Had calculated pressure increase. Plug pumped on strokes. Had no centralisers.

Immediate solution:

Future recommended solution:

Subject:	Ultradrill mud system / Ultrafree NS
Section:	NO 6403/6-1, 14 3/4" x 17 1/2"
Rep date:	23.05.2006
Keywords:	DRILLING FLUID
Downtime:	
Comp inv:	M-I Drilling Fluids
References:	

Pot time improvements:

Synergi no:
Synergi title:

Cost:

Description:

Drilled with 1.13 SG -1.19 SG mudweight. Drilled from 2548 - 2749 m. Under-reamed hole from 14 3/4" x 17 1/2". ECD while drilling with 4000 lpm varied with 0.02 -0.04 SG. Had to ream hole out and perform a wipertrip after logging tool stood up inside casing. The reason for this is unknown, most probably mechanical. Lots of cuttings coming over shakers on wipertrip, No tight hole observed. Indicates that hole cleaning parameters may improve in a 1740m long riser. LGS kept low. No foaming problems. Good volume control achieved on low weight system. Cuttings were in parts soft, soluble and sticky. Had forming of "golf balls" over the shakers. BHA had some clay on one stabilisers and bit, but too little to be called balled. Had minor losses in well after one incident with underreaming into the shoe. Casing and cement job went very well and a good LOT was achieved. All pressure tests got stable, indicating a good system with very little air. Most of the formation drilled was clay, in parts sticky. Mud compressibility: 18,8 litre/(bar*m3)

Immediate solution:

Future recommended solution:

Subject: Flair gas detection system
Section: NO 6403/6-1, 14 3/4" x 17 1/2"
Rep date: 23.05.2006
Keywords: MUD GAS READINGS
Downtime:
Comp inv: Geoservices
References:
Synergi no:
Synergi title:

Pot time improvements:

Cost:

Description:

Detection of percentage with recirculated gas was useful to divide between background gas while drilling.

Immediate solution:

Future recommended solution:

Subject: Ultradrill DW mud system performance in 12 1/4" section
Section: NO 6403/6-1, 12 1/4"
Rep date: 04.06.2006
Keywords: DRILLING FLUID
Downtime:
Comp inv: M-I Drilling Fluids
References:
Synergi no:
Synergi title:

Pot time improvements:

Cost:

Description:

The new Ultradrill DW system was prepared on the rig while drilling the previous section. A total of 639 m3 at 1.19 SG was ready when the cement was tagged. The well was displaced by pumping 14 m3 high viscosity DW pill from the slug pit, followed by 530 m3 of Ultradrill DW. The return Ultradrill mud (632 m3) was transferred for storage to the pontoon tanks.

The new Ultradrill DW mud was made up according to the programmed concentrations and all the properties were in specification when checked.

The funnel viscosity showed a lot of variation, from 104 to 119, when drilling began. The rheology was checked and found to be the same, showing that the funnel viscosity is not an accurate indicator of changes in the rheology of the system.

The concentrations of the inhibitors varied little from the make-up, and the addition of new mud and premix was sufficient to maintain the programmed specifications.

The inhibition mechanism worked well as there were no sticky cuttings on the shakers. Also the cuttings remained dry internally. When crushed together to form a ball, they broke back into single cuttings when placed on the shakers, indicating that accretions did not occur. None of the so called "golf balls" observed on the previous interval were noted on this section.

The filtrate which was initially 2,8 mls dropped rapidly to 1,6 mls when a small amount of drilled solids were picked up in the system.

Treatment with citric acid (1,23kgs/m³) and sodium bicarbonate (1,10 kgs/m³) maintained the pH value between 9,3 and 9,5 when drilling out the cement in the shoe track and the rathole.

Blocky cavings were observed coming from the rathole area. When drilling ahead also long splintery cavings (pressure type) were noted at the shakers. The pore pressure was evaluated and it was decided to weight up to 1,24 SG. This was done and the rheology of the system increased by only 2 to 3 points.

Losses, seepage to partial, occurred from 2847 to 2925m. Initially a seepage pill was pumped which was effective when spotted, but as soon as drilling continued the losses restarted. No formation changes were identified from the MWD logs.

LCM was added directly to the active when drilling. The most effective method for limiting the losses was to pump a 3 m³ seepage pill (80kgs/m³) every few hours.

Later it was discovered that the hole was ballooning, as mud gains were observed on connections. The mud weight was reduced by one point using a 30 m³ drillwater premix containing all the chemical products. This was decided upon after checking with M-I regarding the limits of the system for hydrate inhibition if the salt and MEG contents were decreased.

Using the standard premix would have required a dilution of 150 m³, which was not practical from a logistics standpoint.

Adding the Duovis Plus and Ultracap direct to the active to condition the system, gave problems with the fine shaker screens. The screens had to be changed from 140 back to 84 for two circulations until the polymers were sheared through the bit.

If practical, depending on the amount of polymer the system requires, all polymers should be premixed and sheared, and then bled into the system.

The wireline logs showed that the hole (excluding the rathole) was mostly in gauge, indicating that the clays from the wellbore were not dissolving or dispersing into the mud.

Immediate solution:

Future recommended solution:

Subject:	BCPM could not work in the given flow range (2226 - 4128 lpm)
Section:	NO 6403/6-1, 12 1/4"
Rep date:	23.05.2006
Keywords:	BHA
Downtime:	
Comp inv:	Baker Hughes Inteq
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

A 'normal flow' BCPM was used in the 12 1/4" section with a given flow range of 2226-4128 lpm. When pumping 2400 lpm severe decoding problems were encountered and the result was that no useable data could be obtained when the flow was below 2800 lpm.

The reason for the tool did not work in the low end flow regime from BHI was probably due to the cold mud.

Immediate solution:

Had to stop drilling due to losses / gains

Future recommended solution:

Subject: Wrong unit realtime MWD sonic data
Section: NO 6403/6-1, 12 1/4"
Rep date: 29.05.2006
Keywords: GEOLOGY
Downtime:
Comp inv: Baker Hughes Inteq
References:
Synergi no:
Synergi title:

Pot time improvements:

Cost:

Description:

The realtime sonic data was sent to Geoservices and InterAct in $\mu\text{s/m}$ instead of $\mu\text{s/ft}$. This meant that we could not see the realtime data from 2749 m to 2850 m. The realtime data is used in Predict to evaluate pore pressure and the data sent to Interact is used by many people on shore to follow up on the well during drilling. Despite several occasions of pointing this out to Baker, we had to solve this problem ourselves.

Immediate solution:

Change unit from microsec/m to microsec/ft

Future recommended solution:

Change unit from microsec/m to microsec/ft

Subject: Apparent good cement squeeze below 7" shoe
Section: NO 6403/6-1, 8 1/2"
Rep date: 03.07.2006
Keywords: CEMENT PLUG
Downtime:
Comp inv:
References:
Synergi no:
Synergi title:

Pot time improvements:

Cost:

Description:

Due to the low LOT of 1.48 SG (minimum required 1.51 SG), a cement squeeze was performed. It was planned to squeeze 1 m³. Pumped 10m³ spacer, 4m³ cement and displaced with 31.1m³. Pulled above cement plug and circulated 1.5 BU to riser (cement above BOP) and then circulated out with booster pump. Started squeezing 3 hours after initially pumping cement. Started squeezing at 100 bar, 85 lpm (maximum pressure 105 bar). Squeezed 1450 litres, and returned 532 litres. Held pressure at 83 bar. Returns 10m³ of spacer and only traces of cement.

Immediate solution:

Future recommended solution:

Subject: High LOT on the 9 5/8" shoe
Section: NO 6403/6-1, 8 1/2"
Rep date: 04.06.2006
Keywords: GEOLOGY
Downtime:
Comp inv:

Pot time improvements:

References:

Synergi no:
Synergi title:

Cost:

Description:

The prognosed LOT at the 9 5/8" shoe at 2983m was 1,37 sg EMW. However, the LOT gave 68 bar surface pressure which corresponds to an EMW of 1,46 sg. Continued drilling with 1,25 sg mud, but ECD kept increasing once the bit was on bottom and drilling. Good torque, WOB, RPM and flowrate, however both SPP and ECD increased quite significantly over only a few meter drilled. The ROP was kept to around 10-15 m/hour. From the trendlines the SPP and ECD behaviour looked like clay was choking the flow over the stabilizers intermittently. Maximum ECD experienced was 1,377 sg EMW. After this, losses were observed to the formation.

Even though a high LOT was achieved, the formation was weaker deeper below.

Immediate solution:

Future recommended solution:

Subject: Not able to get desired FIT.

Section: NO 6403/6-1, 8 1/2"

Rep date: 05.06.2006

Keywords: GEOLOGY

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no: 393020

Cost:

3000

Synergi title:

Squeezed cement into formation below 9 5/8" shoe

Description:

Immediate solution:

Future recommended solution:

Subject: ECD fingerprints at 2914m (inside 9 5/8" liner)

Section: NO 6403/6-1, 8 1/2"

Rep date: 05.06.2006

Keywords: DRILLING

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no:

Cost:

Synergi title:

Description:

Performed ECD fingerprints inside 9 5/8" liner at 2914m at 1600 - 2200 LPM and RPM 100-200 to check difference in ECD at different rotational speeds. Fingerprints show that the ECD is almost independent of flow and RPM.

During drilling cement below 9 5/8" shoe, the ECD was creeping up to 1,34-1,35 sg. Best cure was found to be to pick off bottom, circulate, pull up into the 9 5/8" casing and rotate BHA at high RPM while circulating. ECD dropped down to 1,308 sg by doing this.

Immediate solution:

Future recommended solution:

Fingerprinting is worth spending time on. Reference for further drilling.

Subject:	Comments to the usage of Ultradril DW in the 8 1/2" section
Section:	NO 6403/6-1, 8 1/2"
Rep date:	12.06.2006
Keywords:	DRILLING FLUID
Downtime:	
Comp inv:	M-I Drilling Fluids
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

The 1,23 sg Ultradril DW system from the 12 1/4" section was used to drill out the cement in the 9 5/8" liner. The chemical concentrations were as followed: EMI-939 3,5 % by vol, Ultracap 2,0% kg/m3 and Ultrafree 2,0% by vol.

The cement was treated with Sodium Bicarb and Citric Acid. The pH did not exceed 10,0. While drilling the cement a reduction of the EMI-939 and Ultrafree concentrations was observed. Maintained the concentration by additions to the active system.

Drilled new formation to 2986 and performed a LOT to 1,47 SG.

The mud system was weighted up to 1,25 sg and the hole drilled to 3007 m. While drilling the ECD increased and mud was lost to the formation. A 4 m3 LCM pill containing 150 kg/m3 was pumped. While pumping through the MWD, the signals were lost and finally the string was pulled out of hole.

Found clay and cuttings sticking on the BHA.

The hole was plugged with cement. The cement was drilled out and a new FIT to 1,33 sg was performed.

The cement was treated with Sodium Bicarb. Only for pH over 10,0 Citric Acid was used. It was anticipated that usage of Citric Acid would decrease the performance of the EMI-939. Reduction of this content was also observed while drilling and treating cement in the 9 5/8" shoe.

Increased content of EMI-939 to 4.2 % and Ultrafree to 2,5 % to avoid accretion

Drilled 11 m of new formation to 3038 m. Got the same indications of balled BHA this time.

Performed FIT to 1,335 pulled out and found BHA covered by clay.

Started to mix and shear a drill water based premix with excess of Ultracap. Well sheared it was possible to get 75 kg/m3 of Ultracap into the premix. Pilot test were run and the rheology was estimated to be increased just by some few points by adding this premix to the active system.

While running in the surface system and the riser volume was treated with the Ultracap premix. In addition the EMI-939 concentration was increased from 4,2% to 4,5% and the Ultrafree volume increased from 2.5% to 3%. To strengthen the filter cake, 15 kg/m3 Calcium Carbonate Medium and 7,5 kg/m3. More G-Seal was ordered for later increasing this concentration up to 15 kg/m3. Circulated up the casing/liner volume and treated this volume to the same concentrations.

Pulling the BHA on the following trips, no signs of accretion was observed. It was anticipated that the increased concentration of Ultracap, combined with increasing the EMI 939 and Ultrafree had solved the problem.

After the logging run at 3058 m it was decided to decrease the mud weight to 1,235 sg. Due to lack of chemicals the unweighted premix was made up without NaCl. The minimum level of NaCl in the mud for gas inhibition was set to 200 kg/m3. Cut the mud weight back to 1,235 SG while circulating prior to coring. This dilution cut back the NaCl level to 205 kg/m3.

While coring the mud weight was increasing to 1,245 sg due to ultra fine solids from the core head passing the shaker screens. No more premix was added at the end of cutting the core for keeping the concentration of NaCl.

The centrifuge had been tried during this section, but it was not taking out any solids. Work on it was still going on.

Immediate solution:

Future recommended solution:

Subject:	Change of mud system from Ultradrill DW to regular Ultradrill
Section:	NO 6403/6-1, 8 1/2"
Rep date:	19.06.2006
Keywords:	DRILLING FLUID
Downtime:	
Comp inv:	
References:	
Synergi no:	
Synergi title:	

Pot time improvements:

Cost:

Description:

As a result of the high and constantly increasing ECD during drilling 8 1/2" hole, it was decided to change mud system to regular Ultradrill. Drilling with the Ultradrill DW system with 1,235 sg mud weight did not allow for a ROP higher than 3-4 m/hour without having to stop drilling, pick off bottom and circulate (and wiper trips up into the shoe) to decrease the ECD.

Changed to Ultradrill with mud weight 1,19 sg at 3177 m (there was no reservoir which allowed drilling with lower mud weight). The reason behind the poor performance using the Ultradrill DW is not altogether conclusive. However, the regular Ultradrill (without hydrate inhibition) allowed drilling with 7-8 m/hour without the ECD creeping upwards in the same manner as with the Ultradrill DW mud. The ECD in clean hole seem to be of the same with both systems.

Immediate solution:

Circulate hole clean.

180 RPM, 2500 LPM, Drilling on "auto feed". Start up with low ROP (3-4 m/hour), increase in steps of 0,5m/hour (hold for 1 hour), if ok: increase another 0,5 m/hour. Increase the ROP to maximum without the ECD start building up too much and can be hold steady.

Future recommended solution:

Subject:	Improper sub / no float installed
Section:	NO 6403/6-1, 8 1/2"
Rep date:	28.06.2006
Keywords:	BHA
Downtime:	6
Comp inv:	Baker Hughes Inteq
References:	398042
Synergi no:	
Synergi title:	

Pot time improvements: 6

Cost:

Description:

While RIH it was suspected the bit sub w/float was leaking. Circulated and picked up stand to allow mud to drain. Ran back in stand and single and did not observe mud in DP. It was assumed that maybe a flapper valve was slightly jammed with debris initially. Continued RIH and observed trip tank displacement was off. Made up TDA and filled pipe and noticed pressure when pump brought on indicating float was leaking. POOH and broke out bit sub and discovered no float was installed. The sub was not suitable for float. This BHA was pre-made in town by Inteq.

Immediate solution:

Make up new cross overs and installed float.

Future recommended solution:

Have Inteq verify proper BHA make-up.

Subject: ECD fingerprints 3709m before drilling out 7" liner
Section: NO 6403/6-1, 8 1/2"
Rep date: 29.06.2006
Keywords: OTHER
Downtime:
Comp inv: Statoil
References:
Synergi no:
Synergi title:

Pot time improvements:

Cost:

Description:

ECD fingerprints were done to investigate the influence of RPM & Flow inside the 7" liner (ID=6.08") which is close to the planned 6.0" OH. From data it appears that flow has significantly more impact than RPM with this mud (Ultradrill - MW 1.20 SG). The mud was not conditioned (cold) which may explain the slight discrepancy when ECD decreased from 1.261 to 1.259 from 50 RPM to 100 RPM (900 lpm)
Depth 3709m inside 7" liner (top of cement at 3714m)

Flow	ECD	SPP	RPM
900	1.261	135	50
900	1.259	137	100
900	1.263	137	150
1100	1.265	182	50
1100	1.266	184	100
1100	1.272	185	150
1300	1.272	235	50
1300	1.273	235	100
1300	1.273	235	150

Immediate solution:

Future recommended solution:

Subject: FMI-MSIP logging run
Section: NO 6403/6-1, 6"
Rep date: 18.07.2006
Keywords: WIRELINE ELECTRICAL
Downtime:
Comp inv: Schlumberger
References:
Synergi no:
Synergi title:

Pot time improvements:

Cost:

Description:

FMI - MSIP (RUN 6D/RUN6E)

*1'st run: could not power up the FMI at casing shoe, it was decided to POOH and lay out FMI.
No FMI backup was made available originally.

*2'nd run was only with MSIP and the telemetry link was intermittent and finally fully lost when starting main log from TD. It was decided to POOH and at surface it was found the electrical connectors inside the cable head assembly was severely burn. This was completely refurbished and with a fresh new backup FMI arriving just in time the FMI-MSIP 3rd run was completed without any problems.

The FMI-MSIP is a tool suite requiring maximum data transmission rates and heavy electric loads on power consumption. However, the MSCT-GR was run before the FMI-MSIP, also requiring heavy electric loads. It was noticed a tendency of lacking power at the very last stations of sidewall coring.

The focus point was troubleshooting on the complex tool operation, while the simpler factors like faulty electric connectors, mechanical parts and seals were rather down on the list of possible origin of problems.

If was found out that the cable head was likely to be faulty from the start.

The instability on these two main factors was stressing the engineer to a few second of hesitance to detect that he had not retracted the caliper arm on the MSIP before he was requesting the cable operator to run back to TD for another attempt to engage logging from TD.

Immediate solution:

Future recommended solution:

Subject:	PDM in casing cutting assembly	
Section:	NO 6403/6-1, PERM P&A	
Rep date:	17.07.2006	
Keywords:	BHA	
Downtime:		Pot time improvements:
Comp inv:	Weatherford Norge AS	
References:		
Synergi no:		Cost:
Synergi title:		

Description:

The 13 3/8" casing cutting assembly was equipped with a 9 5/8" National PDM that requires high flow (2000-4000lpm). In case casing is being cut against closed BOP, the required flow rate is too high and is likely to fracture the formation when the casing has been cut through.

Immediate solution:

Future recommended solution:

Order a PDM with reduced flow regime. E.g. from 1500 LPM and up. Possibly a 6 5/8" motor in stead of a 9 5/8".

Subject:	Cutting of 13 3/8" casing	
Section:	NO 6403/6-1, PERM P&A	
Rep date:	18.07.2006	
Keywords:	PLUGBACK/KICK-OFF	
Downtime:		Pot time improvements:
Comp inv:		
References:		
Synergi no:		Cost:
Synergi title:		

Description:

The cutting operation on the 13 3/8" casing was not performed as originally planned with closed upper annular preventer and returns up kill and choke lines. Ocean Rig did not accept to close the upper annular preventer due to risk of steel swarf in the kill/choke valves.

This exception to the common best practice should have been discussed prior to and not just before the final stage of the rig operation.

All equipment mobilised for the job was designed for having the annular closed during cutting.
Weatherford could not at this late stage redress their equipment in order to perform this operation differently.

Immediate solution:

Future recommended solution:

Limitations and constrains from the rig company, which are notable different to the common practice, should have been raised during the well planning phase and not during the on-set of the rig operation.

Subject: Tank cleaning prior to rig handover

Section: NO 6403/6-1, PERM P&A

Rep date: 18.07.2006

Keywords: OTHER

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no:

Cost:

Synergi title:

Description:

Substantial problems occurred when the cleaners was approaching the project of cleaning the mud pits containing a thick layer of well settled weight material.

A sample of the material was taken in order to suggest alternative actions to the tedious mechanical removal and hand carrying of the entire settled residue volume up several stories from the tank bottom.

The collected substance was identified as a solidified residue of barite and illmenite weight material and other fine silty solids from drilled formation, in water wet state with only minor amounts of emulsifying agents.

A quick test of the substances reaction to a surfactant like common dish-washing liquid was undertaken. An immediate effect was noticed, although the Ecolen Ph7 detergent is a low end surfactant. The collected sample became transformed into a very dispersed fluid from the previous semi solid state.

A larger scale test was undertaken using rig wash Superrigg OK 2047, a far more potent detergent and surfactant. A concentration of 1:1 mix with fresh water was applied using a pressured hand jetting bottle directly on the surface of the settled fine solids. After short time of exposure a fire hose was used to test the ability to disperse the material for vacuum suction. This was now possible without any further mechanical action.

Immediate solution:

Future recommended solution:

The lesson learned from this is another proof of common laws in physics and chemistry relating molecular and crystalline adhesion and surface tension of water. Here playing the trick of making the settled fine heavy aggregates almost an impossible task of removing, certainly with vacuum.

The use of detergent solved this problem quite adequately in order to commence tank cleaning onboard with reasonable progress.

Tank cleaning is in general time consuming, so it should be planned and started in due time.

Subject: Retrieve wearbushing and cut 13 3/8" casing in the same run

Section: NO 6403/6-1, PERM P&A

Rep date: 18.07.2006

Keywords: PLUGBACK/KICK-OFF

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no:

Cost:

Synergi title:

Description:

The BHA for cutting the 13 3/8" casing was equipped with a PDM and Dril-Quip's MPT (multi purpose tool) spaced out to retrieve the wear bushing in the same run. It was agreed upfront the job to land the MPT in the wear bushing and stay with the MPT in the wearbushing until the casing was cut. Then shear out and retrieve wear bushing and casing cutting BHA to surface.

The MPT was also spaced out with a 3-5m DP pup below to be able to make a connection below and lay MPT and wear bushing out on the deck, small enough to go in a basket.

In hindsight, cutting the casing and retrieval of the wear bushing in the same run went well. However, it turned out that the weight of the cut casing was about the same as the required weight to shear out the wear bushing (42 mT required to shear out). This could have led to the cut casing coming out with the cutting BHA.

(One blow with the jar was required to be able to retrieve the casing afterwards in a separate run with spear assy. 175mT upweight recorded on the driller's weight indicator).

Immediate solution:

Future recommended solution:

For dual purpose runs like this, the MPT should be landed in the wearbushing, sheared out and landed again before start cutting the 13 3/8" casing.

Subject:	VX ring left on wellhead when BOP was retrieved		
Section:	NO 6403/6-1, PERM P&A		
Rep date:	23.07.2006		
Keywords:	BOP/WB/BP		
Downtime:	Pot time improvements:		
Comp inv:	Ocean Rig ASA		
References:			
Synergi no:	Cost:		
Synergi title:			

Description:

When the BOP was retrieved, the VX ring remained on the wellhead. This made it impossible for the MOST tool to engage the wellhead.

Used angle grinder on the ROV for cutting the VX ring. One cut required, 2/3 depth cut when VX ring released.

The actual reason for why the VX ring was not retrieved with the BOP is unknown.

Type of VX ring used: Vetco VX-2 Moly coated: Pat pending x 113/05 111053-1K SS. This is the same type as used on previous wells with Ocean Rig.

Immediate solution:

Cut the VX ring using the angle grinder on the ROV. Two grinding disks were required for cutting 2/3 of the thickness.

Future recommended solution:

Dril-Quip (and Vetco) has made a special tool for retrieving the VX ring on DP. Acquire drawings from Dril-Quip and evaluate to make a VX ring retrieval tool for future deep-water wells.

Subject:	Problems engaging wellhead with the MOST tool		
Section:	NO 6403/6-1, PERM P&A		
Rep date:	23.07.2006		
Keywords:	PLUGBACK/KICK-OFF		
Downtime:	Pot time improvements:		
Comp inv:	Weatherford Norge AS		
References:			
Synergi no:	401262	Cost:	780000
Synergi title:	Problems engaging MOST tool		

Description:

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 33 of 177
0

Immediate solution:

Activated lock-down dogs using the ROV

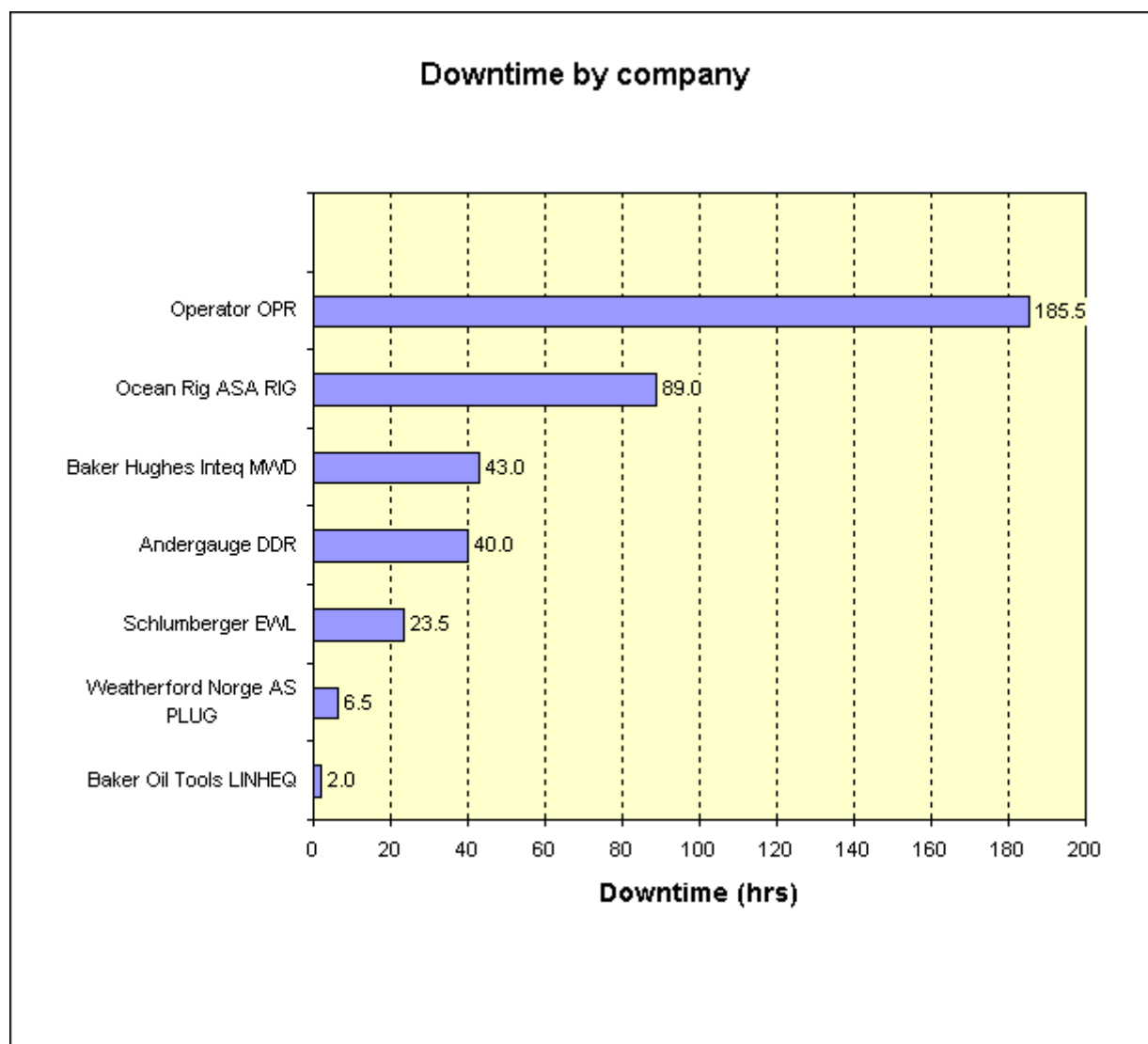
Future recommended solution:

Investigate why the MOST tool had problems to engage. Morvin well also experienced similar problems.
Same tool used on Morvin as on Edvarda?

Weatherford has been asked to present an investigation report.

3.3 Incidents by service and company

Figure 3-1 : Downtime distribution



SERVICE COMPANY: Directional Drilling DDR Andergauge
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
05.05.2006 08:00:00	DDR-E20 Other 3rd party eq. fail. *	387626	Ander Reamer failed to activate.	40,0	100	40,0
			Total			40,0

SERVICE COMPANY: Electric Wireline Logging EWL Schlumberger
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
11.07.2006 11:30:00	EWL-E04 Cables/Heads & Assoc.	400083	Had to pull out of hole due to electric failure cable head.	23,5	100	23,5
			Total			23,5

SERVICE COMPANY: Liner Hanger Equipment LINHEQ Baker Oil Tools
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
08.05.2006 00:30:00	LINHEQ-E01 Other equipment	387921	Problems releasing running tool for 16x20" liner hanger.	2,0	100	2,0
			Total			2,0

SERVICE COMPANY: Measurement While Drilling MWD Baker Hughes Inteq
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
14.04.2006 07:00:00	MWD-E02 Decoding	383369	Changed out pre installed BCPM with BCPM suited for low temperatures.	1,0	100	1,0
31.05.2006 15:00:00	MWD-E26 Poor real time data quality	392534	MWD decoding problems.	13,0	100	13,0
28.06.2006 15:00:00	MWD-E30 Other	398042	Suspected float leaking, was no float installed.	6,0	100	6,0

WELLBORE: NO 6403/6-U-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
06.04.2006 14:00:00	MWD-E02 Decoding	382279	Unable to receive signals from the MWD	23,0	100	23,0
			Total			43.0

SERVICE COMPANY: Operator OPR Operator
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
10.04.2006 20:30:00	DDR-E28 Other downhole eq.	383019	Troubleshooting Anderdrift survey tool	1,5	100	1,5
13.04.2006 20:30:00	CEM-20 Other failures	383268	Grouted 30" conductor	2,0	100	2,0
15.04.2006 06:00:00	DDR-08 Other	383483	ROV cage umbilical entangled around the DP	6,5	100	6,5
19.04.2006 10:00:00	CAS-01 Procedure	384320	Unable to make up 18 3/4" wellhead to 20" casing.	9,0	100	9,0
15.05.2006 21:00:00	EWL-E01 Primary mechanical	389843	Wipertrip to clean shoetrack area after logging tool stood up inside 16" liner	39,5	100	39,5
18.05.2006 06:00:00	RIG-E347 Pipe handling equ/sys other	390204	Unable to break saver sub with top drive torque wrench	3,5	100	3,5
01.06.2006 16:00:00	MWD-E08 Pressure While Drilling (ECD)	393013	High ECD during drilling of 8 1/2" section	23,0	100	23,0
30.06.2006 06:00:00	DDR-08 Other	398320	Incorrect cross-over used with bi-centre bit caused reamer to mill liner	28,0	100	28,0
02.07.2006 14:30:00	RIG-02 Doc./Spec.	400572	Lower than anticipated LOT 1.48	64,5	100	64,5
16.07.2006 04:00:00	RIG-06 Lost circulation	400645	Mud losses after cut 13 3/8" casing	8,0	100	8,0
			Total			185,5

SERVICE COMPANY: Plug PLUG Weatherford Norge AS
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime
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				Total hrs	Comp share %	Comp share hrs
22.07.2006 11:00:00	PLUG-E07 Other equipment	401262	Problems engaging MOST tool	6,5	100	6,5
			Total			6.5

SERVICE COMPANY: Rig Operations RIG Ocean Rig ASA
WELLBORE: NO 6403/6-1

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
14.04.2006 00:00:00	RIG-E341 Vert pipe handling system	383269	2 stand 5" DP fell out of finger board and across derrick	0,5	100	0,5
15.04.2006 00:00:00	RIG-E14 Mud pumps	383370	Changed oil filter on MP 3, tighten leak module on MP 2.	0,5	100	0,5
15.04.2006 19:30:00	RIG-E14 Mud pumps	383486	Pressure Safety Valve (PSV) on all mud pumps leaked	3,0	100	3,0
16.04.2006 06:00:00	RIG-E07 Top drive	383571	Not able to break connection with TDS.	3,0	100	3,0
21.04.2006 23:00:00	RIG-E03 BOP stack/valves	384646	Leakage in yellow conduit flush valve on Subsea BOP while pressure testing.	6,0	100	6,0
26.04.2006 18:30:00	RIG-E305 Hoisting equipment other	385923	Cut and Slip Drill line due to excessive wear	6,5	100	6,5
29.04.2006 07:00:00	RIG-03 Procedure not followed	386364	Forgot to open shear ram after kick drill. Hit shear ram with bit on way in.	1,0	100	1,0
02.05.2006 17:30:00	RIG-E341 Vert pipe handling system			0,5	100	0,5
06.05.2006 22:30:00	RIG-E347 Pipe handling equ/sys other	387738	Repaired damaged extend cylinders on fingerboard	2,5	100	2,5
08.05.2006 14:30:00	RIG-E341 Vert pipe handling system	388872	Changing out slew bearing on Hydraracker	42,5	100	42,5
08.06.2006 21:30:00	RIG-E345 Elevator	394051	Repair safety chain on BX elevator.	0,5	100	0,5
09.06.2006 02:30:00	RIG-E304 Drillstring compensator	394352	CMC (crown mounted compensator) malfunctioned.	6,0	100	6,0
03.07.2006 00:00:00	RIG-E341 Vert pipe handling system	398746	Hydraracker gripper head replaced.	8,5	100	8,5

Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
11.07.2006 10:30:00	RIG-E304 Drillstring compensator	399921	Repair leak on AHC accumulator.	1,0	100	1,0
20.07.2006 14:00:00	RIG-E10 Drawwork	401073	Malfunction on drawwork breaks.	2,0	100	2,0
23.07.2006 00:00:00	RIG-E342 Drillfloor tub handle system	401264	Bursted hydraulic piping on Iron Roughneck	1,5	100	1,5
23.07.2006 02:30:00	RIG-E341 Vert pipe handling system	401266	Bursted hydraulic hose on Hydraracker upper gripping head	1,0	100	1,0

WELLBORE: NO 6403/6-U-1

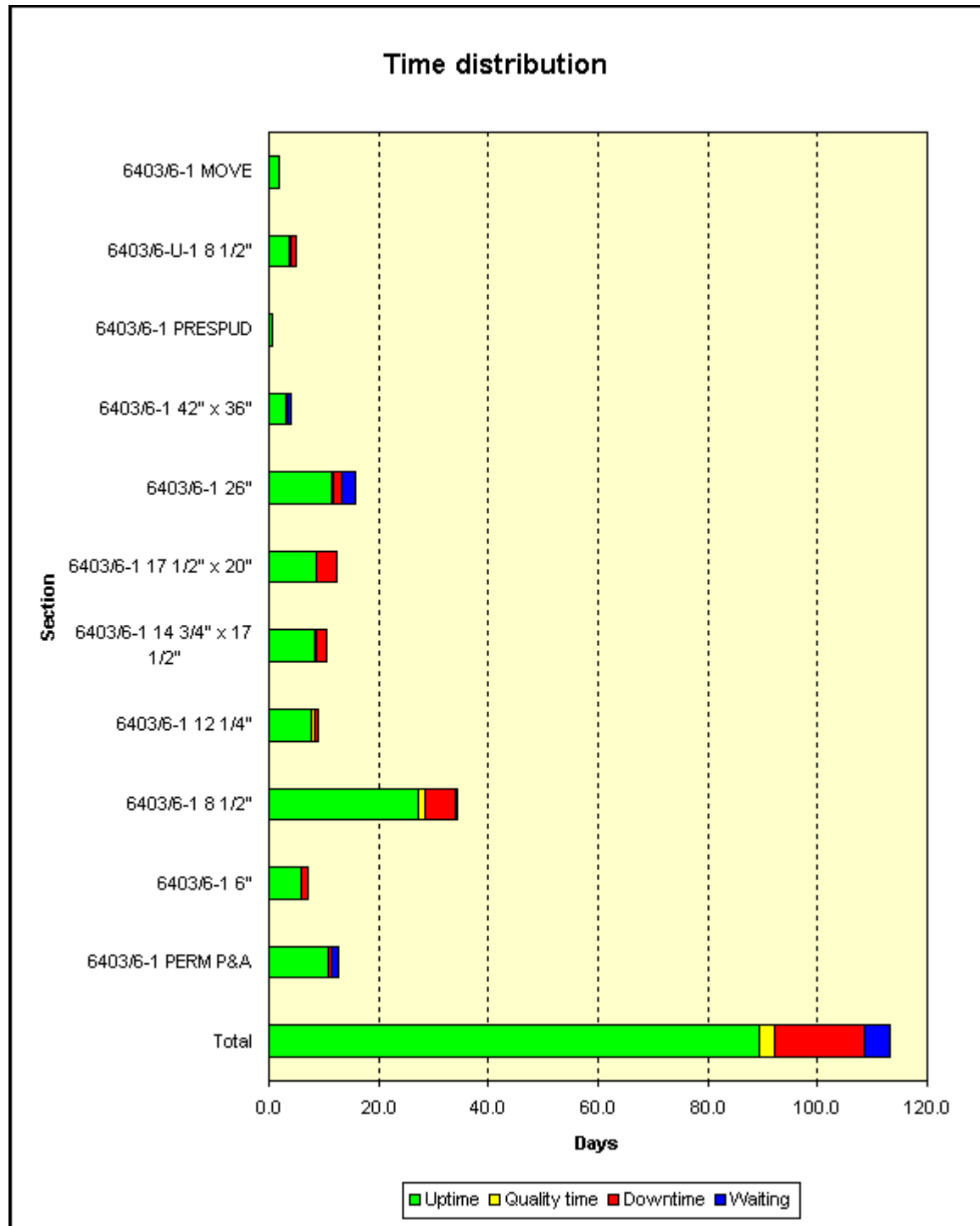
Incident start time	Failure code	Synergi no	Title	Downtime		
				Total hrs	Comp share %	Comp share hrs
05.04.2006 16:00:00	RIG-E341 Vert pipe handling system	381944	Leakage on racker head	1,0	100	1,0
10.04.2006 03:30:00	RIG-E388 General	382633	Serviced drawworks and TDS	1,5	100	1,5
			Total			89.0

3.4 Time distribution

Table 3-3 : Time distribution (1)

Section	Start time	Length m	Budget		TL		Actual		Ops (f)
			hrs	days	hrs	days	hrs	days	
NO 6403/6-1 MOVE	03.04.2006 08:00	0,0	36,0	1,5	24,0	1,0	46,0	1,9	100,0
NO 6403/6-U-1 8 1/2"	05.04.2006 06:00	654,0	176,0	7,3	98,0	4,1	120,0	5,0	78,8
NO 6403/6-1 PRESPUD	10.04.2006 06:00	0,0	13,6	0,6	9,0	0,4	18,0	0,8	91,7
NO 6403/6-1 42" x 36"	11.04.2006 00:00	97,0	127,1	5,3	85,0	3,5	94,0	3,9	96,2
NO 6403/6-1 26"	14.04.2006 22:00	560,0	342,0	14,3	206,0	8,6	376,5	15,7	88,8
NO 6403/6-1 17 1/2" x 20"	30.04.2006 14:30	157,0	216,5	9,0	151,0	6,3	297,0	12,4	70,5
NO 6403/6-1 14 3/4" x 17 1/2"	12.05.2006 23:30	189,0	337,2	14,1	228,0	9,5	250,0	10,4	82,8
NO 6403/6-1 12 1/4"	23.05.2006 09:30	237,0	358,8	15,0	206,0	8,6	214,5	8,9	93,9
NO 6403/6-1 8 1/2"	01.06.2006 08:00	796,0	687,6	28,7	465,0	19,4	824,5	34,4	83,3
NO 6403/6-1 6"	05.07.2006 16:30	338,0	215,0	9,0	183,0	7,6	168,0	7,0	85,4
NO 6403/6-1 PERM P&A	12.07.2006 18:30	0,0	370,0	15,4	351,0	14,6	307,5	12,8	93,8
Sum			2879,8	120,2	2006,0	83,6	2716,0	113,2	

Figure 3-2 : Time distribution

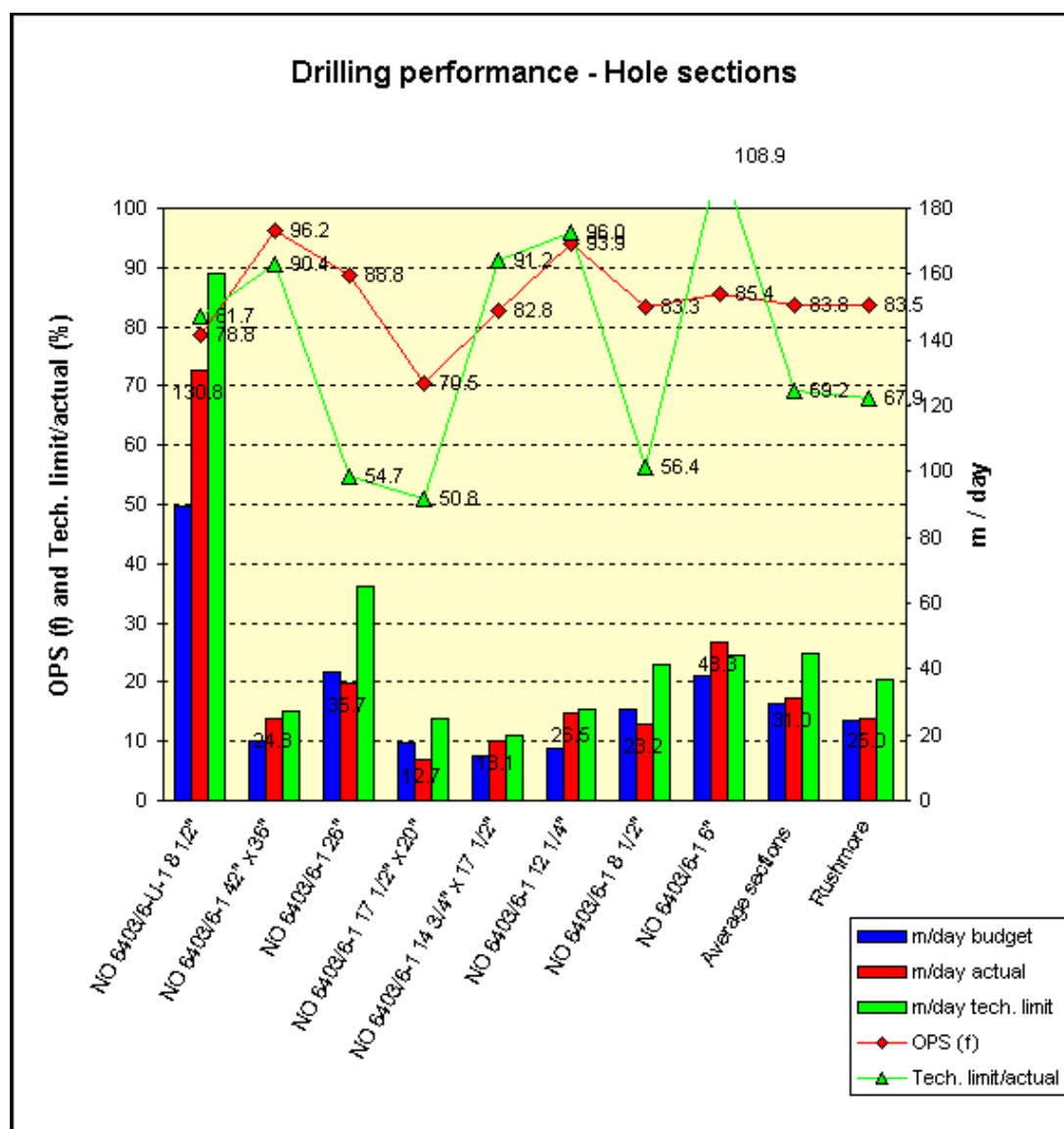


The graph is based on the following details (see next page):

Table 3-4 : Time distribution (2)

Section	Downtime	Uptime	Quality time	Waiting time	Total time
6403/6-1 MOVE	0,0	1,9	0,0	0,0	1,9
6403/6-U-1 8 1/2"	1,1	3,8	0,2	0,0	5,0
6403/6-1 PRESPUD	0,1	0,7	0,0	0,0	0,8
6403/6-1 42" x 36"	0,1	3,2	0,0	0,6	3,9
6403/6-1 26"	1,5	11,3	0,4	2,5	15,7
6403/6-1 17 1/2" x 20"	3,6	8,7	0,0	0,0	12,4
6403/6-1 14 3/4" x 17 1/2"	1,8	8,3	0,4	0,0	10,4
6403/6-1 12 1/4"	0,5	7,7	0,7	0,0	8,9
6403/6-1 8 1/2"	5,8	27,2	1,2	0,3	34,4
6403/6-1 6"	1,0	6,0	0,0	0,0	7,0
6403/6-1 PERM P&A	0,8	10,7	0,0	1,3	12,8
Total	16,3	89,4	2,8	4,6	113,2

Figure 3-3 : Drilling performance



4 Geology and formation evaluation report

4.1 Geological setting

The Edvarda structure is located along the Jan-Mayen Lineament in the transition zone between the Møre Basin in the south and the Vøring Basin in the north. The structure comprises two separate 4-way dip closures at Campanian (Nise formation) and Coniacian (Lysing Member) levels, constituting the main and secondary targets of the well with the same structures also being mapped at Maastrichtian and Paleocene levels.

The Edvarda structure is assumed to be located in a more proximal position compared to the previously drilled wells in the area (e.g. Havsule and Ellida), in relation to sediments derived from gravity flows from a westerly source area (East-Greenland). Hence it was assumed that the structure would contain more sandy sediments than the reference wells. The Edvarda well is located approximately 80m downflank of the crest of the structure at Nise Formation level and approximately 100m downflank of the crest at the deeper Lysing Member level.

4.2 Shallow gas results

No shallow gas was predicted anywhere within the site survey area for the well. The well was therefore classified as Shallow Gas Class 0.

No indications of shallow gas were detected by the ROV sonar and MWD whilst drilling the 36x42" and the 26" hole sections.

The standard NPD shallow gas form is presented in appendix E.

4.3 Stratigraphy

The stratigraphical zonation is based on interpretation of the biostratigraphic report, log curves and on correlation with nearby wells. The stratigraphy of the entire well is shown in Table 4.1 and Figure 4.4.

Table 4-1 : Chronostratigraphy

Stratigraphic succession		Interval (m MD) (drillers depth)	
Interval studied for biostrat: 1773 (ROV) - 4120 m		From	To
Tertiary	Middle Miocene	1802	1861
	Lower Oligocene	1946	1977
	Middle Eocene	2035	2092
	Lower Eocene	2151	2286
	Upper Paleocene	2312	2410
	Lower Paleocene (Danian)	2410	2440
Cretaceous	Upper Maastrichtian	2450	2465
	Lower Maastrichtian	2470	2770
	Upper Campanian	2780	2820
	Middle Campanian	2830	2960
	Lower Campanian	2970	3477
	Upper-Middle Santonian	3480	3681
	Lower Santonian	3684	3795
	Upper-Middle Coniacian	3798	3951
	Middle Coniacian	3960	4119 (TD)

These depths are Statoil's interpretation and may differ from Petrostrat's study.

Table 4-2: Lithostratigraphy – well 6403/6-U-1

Table of lithostratigraphy				
Period	Group / Formation	Observed depth		
		m MD	m TVD	m MSL
QUATERNARY	NORDLAND GROUP (Sea Floor)			
	Naust Formation	1746	1746	1721
TERTIARY	Kai Formation	1788	1788	1763
	HORDALAND GROUP			
	Brygge Formation	1909	1909	1884
	Opal A/CT	2018	2018	1993
	ROGALAND GROUP			
	Tare Formation	2140.5	2140.5	2115.5
	Tang Formation	2256	2256	2231
	TD	2400	2400	2375

Table 4-3: Lithostratigraphy – well 6403/6-1

Table of lithostratigraphy					
Period	Group / Formation	Observed depth			TWT (from VSP) msec
		m MD RKB (uncertainty)	m TVD RKB	m TVD MSL	
QUATERNARY	NORDLAND GROUP				
	Naust Formation	1746	1746	1721	2340
TERTIARY	Kai Formation	1786	1786	1761	2388
	HORDALAND GROUP				
	Brygge Formation	1906	1906	1881	2550
	Opal A/CT	2015	2015	1990	2688
	ROGALAND GROUP				
	Tare Formation	2140	2140	2115	2838
	Tang Formation	2256	2256	2231	2955
	TEoMFS170	2283.5	2283.5	2258.5	2984
	TPaMFS115	2352.5	2352.5	2327.5	3061
	TPaMFS75	2403.5	2403	2378	3119
	TPaMFS60	2417.5	2417.5	2392.5	3134
CRETACEOUS	SHETLAND GROUP				
	Springar Formation	2438.5	2438.5	2413.5	3156
	KMaMFS129	2466.5 (-0/+15)	2466	2441	3185
	KMaMFS127	2520 (-20/+20)	2520	2495	3237
	KMaMFS125	2632.5 (-50/+50)	2632	2607	3347
	KMaMFS123	2717.5 (-30/+30)	2717.5	2692.5	3424
	KMaMFS122	2773.5 (-20/+20)	2773.5	2748.5	3475
	KCaMFS118	2787 (-10/+20)	2787	2762	3487
	KCaMFS115	2870 (-30/+0)	2869.5	2844.5	3558
	Nise Formation	3047.5	3047.5	3022.5	3704
	KCaMFS113	3212 (-20/+20)	3211.5	3186.5	3829
	Kvitnos Formation (KCaMFS 110)	3475 (-15/+45)	3475	3450	4018
	KSaMFS106	3583.5 (-30/+30)	3583	3558	4093
	KSaMFS100	3782 (-40/+80)	3782	3757	4224
	KCoMFS97	3993.5 (-30/+0)	3993.5	3968.5	4361
	Lysing Member	4018	4018	3993	4376
	TD	4120	4119.5	4094.5	4439

4.4 Lithostratigraphic description

Lithological descriptions are based on cuttings, sidewall cores and core descriptions. (See separate enclosures). A list of samples taken by the ROV samples in the top hole is also enclosed.

NORDLAND GROUP

1746 – 1906 m MD (1721 – 1881 m TVD MSL)

The Hordaland Group was composed of the Naust and Kai formations.

Naust Formation

1746 – 1786 m MD (1721 – 1761 m TVD MSL)

System: Quaternary

Series: Pleistocene – Holocene

Quaternary units were represented by the Naust Formation, which was encountered from first returns. A sample was collected on the seabed by the ROV but only 51 grams were recovered to the surface. The Naust Formation is usually characterized by soft clays in the upper meter with stiff/overconsolidated, and partly remoulded glaciomarine clays below. No boulders were encountered in this well.

Kai Formation

1786 – 1906 m MD (1761 – 1881 m TVD MSL)

System: Tertiary

Series: Miocene-Oligocene

Top Kai was picked in the pilot hole as a decrease in gamma-ray, resistivity and density readings as the well entered ooze-prone formations. Three samples were collected by the ROV for biostratigraphic dating purposes. The formation was comprised of claystone and siliceous ooze.

HORDALAND GROUP

1906 – 2140 m MD (1881 – 2115 m TVD MSL)

The Hordaland Group consisted of Brygge Formation.

Brygge Formation

1906 – 2140 m MD (1881 – 2115 m TVD MSL)

System: Tertiary

Series: Oligocene – Lower Eocene

The top Brygge Formation is identified on the seismic at 1905 m MD. The gamma-ray and resistivity variations between 1906 and 1920 m MD mark the presence of a fault zone. The formation consisted of claystones and siliceous oozes with the Opal A/CT boundary being clearly identified at 2018 m in the pilot hole and at 2015 m MD in the main hole as a sharp increase in density, gamma-ray, resistivity and sonic data.

ROGALAND GROUP

2140 – 2438.5 m MD (2115 – 2413.5 m TVD MSL)

The Rogaland Group consisted of the Tare and Tang formations

Tare Formation

2140 – 2256 m MD (2115 – 2231 m TVD MSL)

System: Tertiary

Serie: Lower Eocene – Upper Paleocene

The top Tare Formation was identified from correlation with neighbouring wells by a gradual increase in resistivity, density and sonic logs. On the other hand, top Tare should be taken at MFS170, which is interpreted at 2284 m MD RKB. Three samples were collected from the sea bed by the ROV during connections. These formations consisted of claystones and varicoloured tuffaceous claystones.

Tang Formation

2256 – 2438.5 m MD (2231 – 2413.5 m TVD MSL)

System: Tertiary

Serie: Paleocene

The top of the Tang Formation was observed as a decrease in resistivity, density and sonic data compared to the overlying Tare Formation. However, in sequence stratigraphy, top Tang is taken at MFS115, which is interpreted at 2353 m MD RKB. Cuttings were again returned to sea bed, but six samples were collected at connections, again using the ROV.

First returns with cuttings were collected whilst drilling the 17 ½" section from 2400 m MD. These consisted of claystones, tuffaceous claystones and minor amounts of basalt and rhyolite extrusives.

The tuffaceous claystone were described as medium grey to olive grey, firm, calcareous, pyritic, and microglauconitic. Tuffic white specks and stringers of rhyolite were occasionally observed. The claystones were described as being of a medium dark grey, dark grey and olive grey to olive black colour and of a firm, partly silty, occasionally glauconitic and calcareous nature. Traces of thin limestones of a white, soft to firm and cryptocrystalline nature and loose, milky white to translucent, medium grained, angular to rounded quartz grains were also observed.

SHETLAND GROUP

2438.5 – 4120 m MD (2413.5 – 4095 m TVD MSL)

The Shetland Group consisted of the Springar, Nise, Kvitnos and Lysing Formations

Springar Formation **2438.5 – 3047.5 m MD (2413.5 – 3022.5 m TVD MSL)**

System: Cretaceous

Serie: Upper Cretaceous

Stage: Maastrichtian – Campanian

Depositional environment: Marine shelf – upper bathyal

The top of Springar Formation was identified on the logs as a slight increase in resistivity and density readings. However in biostratigraphy, the MFS129 marking the top Cretaceous is placed at 2466.5 m (-15/+0m). The formation was dominated by claystones with minor amounts of limestone and a few sand grains.

The claystones were of a medium dark grey to grey colour, becoming light grey to olive grey with depth and of an amorphous to subblocky, occasionally blocky, soft to occasionally hard nature with a waxy to silky texture, non to moderately calcareous.

Occasional silty intervals grading to very fine grained sandstones with occasional occurrences of glauconite and micropyrrite were also observed.

Thin limestones of white to yellow white or greenish white colour and soft to firm, of cryptocrystalline nature with occasional microglauconite were also observed. These limestones occasionally graded into light brown grey to pale yellowish brown, hard, brittle, subblocky, microcrystalline and occasionally argillaceous dolomitic limestones, especially at 2770 m MD.

Sands were only observed in two samples (2490 m MD and 2620 m MD) as occasional clear to translucent, medium to very coarse, rounded to subrounded quartz grains

Nise Formation **3047.5 – 3475 m MD (3022.5 – 3450 m TVD MSL)**

System: Cretaceous

Serie: Upper Cretaceous

Stage: Campanian

Depositional environment: Marine shelf - upper bathyal

The top of the Nise Formation was identified by a resistivity increase and a slight gamma-ray and sonic drop at 3047.5 m MD with traces of sand being identified in the cuttings from 3048.5 m. However the reservoir itself was not identified until a drilling break was observed at 3053 m MD.

The Nise Formation consisted mainly of claystone with minor amounts of limestone, sandstone and dolomite.

The claystones were of a medium light grey to medium grey colour, soft to firm, amorphous to blocky, occasionally crumbly, sticky, slightly silty in nature that occasionally graded into very fine grained sand with a clay matrix and occasional micromica and microglauconite. The claystone was occasionally soluble and sticky with traces of micropyrrite and slightly calcareous in places.

The thin dolomites were observed as light to medium brown grey, hard, brittle and crypto- to microcrystalline units that graded into pale yellow white to white, soft to firm, amorphous to subblocky, microglauconite, micritic limestones.

The sandstones were only observed as traces (5%) of light grey, colourless to milky white, very fine to fine grained, subrounded and well sorted loose quartz. Occasional light grey aggregates of very fine to fine grained quartz with a weak, friable, silica or slightly calcitic cement occurred. Microglauconite and either microcarbonaceous or micromicaceous matter were also observed.

Kvitnos Formation

3475 – 4018 m MD (3450 – 3993 m TVD MSL)

System: Cretaceous

Serie: Upper Cretaceous

Stage: Santonian – Coniacian

Depositional environment: Marine shelf – upper to middle bathyal

The top of the Kvitnos Formation was defined by biostratigraphy at the Santonian/Campanian transitional boundary. The MFS 110 was originally placed at 3491 m MD +/-30m, but top Kvitnos was picked within the uncertainty at 3475 m based on a change in logs behaviour. The formation consisted mainly of claystones interbedded with silty sandstone and siltstone with minor stringers of limestone. The lowest part of the unit resembles a typical turbidite sequence.

The claystones were of a brownish grey to medium/dark grey to dark greenish grey or olive grey colour. They were generally of a hard nature with several lamination intervals, silty in parts with micropyrrite, mica and glauconite associated with very arkosic silty units (>25% feldspar). In parts it was slightly calcareous.

The siltstones varied in colour between olive grey, light to dark grey, or from medium dark grey to brownish grey. They were of a moderately hard nature with occasional hard cemented laminae. The upper part of the formation contained more sandy units than the lower interval. These sandy units also contained micropyrrite, mica, glauconite and common pale green chlorite minerals associated with a kaoline matrix. The lower part of the formation became more argillaceous and arkosic and graded into an arenitic kaolinite clay.

The sandstones varied in colour from very light grey, olive grey, greenish grey and pinkish grey to dark grey. They were observed as thin, soft to firm laminations of translucent to milky white, silt to fine grained well sorted quartz with associated mica, chlorite, dark green glauconite and micropyrrite. The upper parts appeared to be silica cemented whilst lower units had calcite cement.

Lysing Member **4018 – 4120 m MD (3993 – 4094.5 m TVD MSL)**
System: Cretaceous
Serie: Upper Cretaceous
Stage: Coniacian
Depositional environment: Marine shelf - upper to middle bathyal

Top Lysing was identified on logs by a drop in gamma-ray readings and a resistivity increase at 4018 m. No change was identified on drilling parameter, i.e. drilling break but the well was being controlled drilled at the time because of high ECD problems.

The Lysing Member was mainly comprised of claystones interbedded with and grading into sandstones and siltstones.

The claystones were of a medium grey to dark olive grey colour and a soft to firm, subblocky to blocky, occasionally amorphous, non to slightly calcareous nature. They were often observed to be very silty to sandy where they graded into siltstones and very fine sandstones.

The sandstones were generally of a medium grey to olive grey colour, with very fine to fine grained, subangular to subrounded, moderately well sorted quartz and with a mushy dirty argillaceous or kaolinitic matrix and non to occasionally calcareous cement. Occasionally abundant chlorite and glauconite were observed. It was generally presumed to be tight with no inferred visible porosity as it typically graded into claystone.

The siltstones were of a light grey to brownish grey, soft to firm, subblocky to amorphous and predominantly non to slightly calcareous nature with occasional silt to very fine quartz.

Some thin hard limestone laminae and stringers were also observed consisting of firm to hard micritic sandy limestones and clean sparry calcite that resembled quartz when observed in cuttings assemblage which gave a distinct wireline density log character.

4.5 Hydrocarbon indications

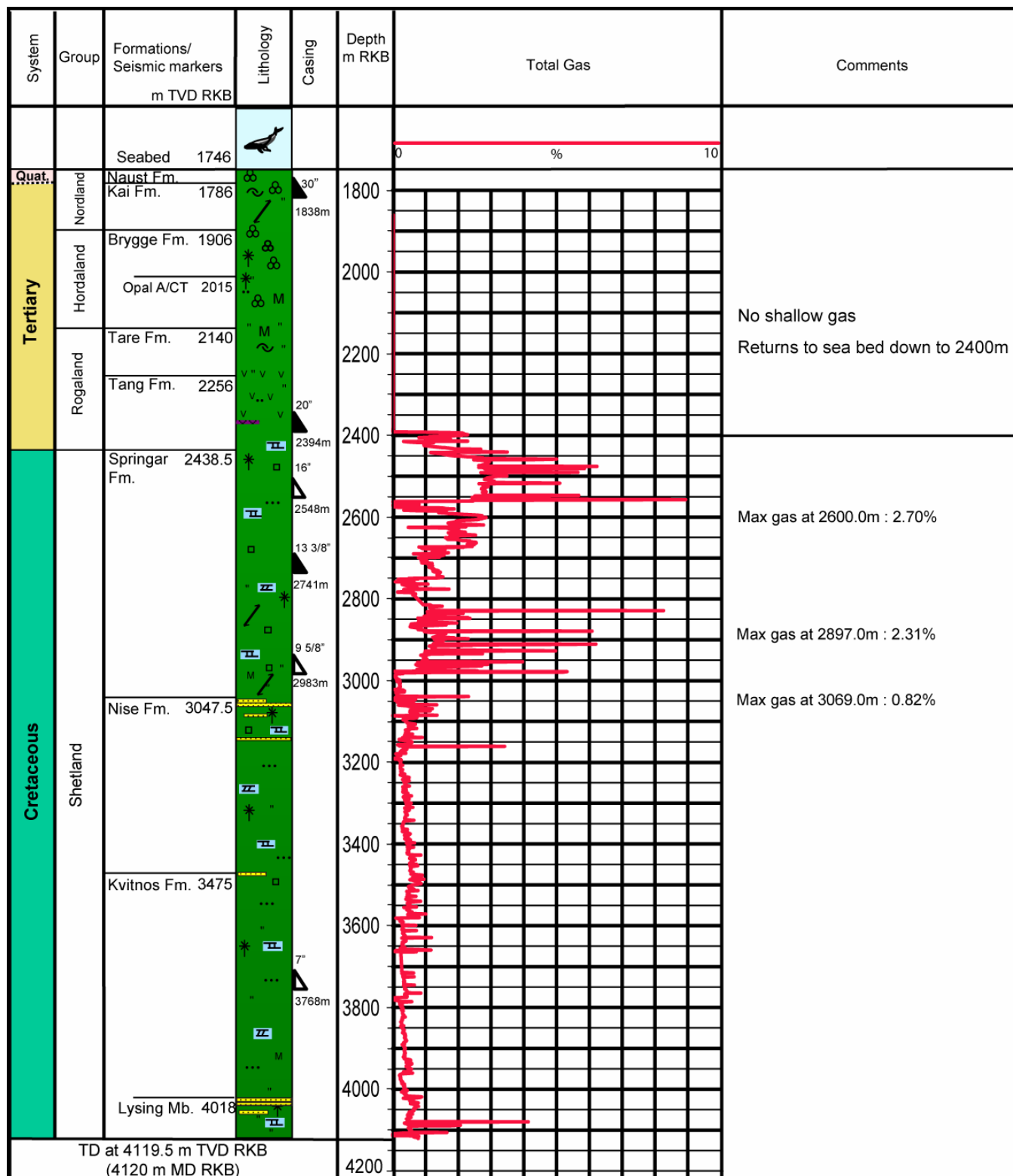
All cuttings were returned to seabed while drilling down to 2400 m. No indications of gas were observed by the ROV, either in the pilot hole or in the in main well.

No hydrocarbon indications were observed in the cuttings and because of a high overbalance and poor reservoir properties, gas levels were very low throughout.

Although a water-based mud was used, a high amount of gas re-circulation occurred. The Geoservices Flair gas measurement system analysed both the gas in and gas out of the wellbore and managed to quantify the recycling to between 60 to 70% in parts.

Table 4-4 : Gas peaks (driller depth)

Depth mMD	Depth mTVD	Peak %	Type	Backgr. %	Chromatographic analysis (ppm)						
					C1	C2	C3	i-C4	n-C4	i-C5	n-C5
2412	2412	1.25	Formation gas	0.8	7077	56	13	4	3	5	2
2413	2413	2.23	Formation gas	0.8	21000	66	13	2	2		
2600	2600	2.7	Formation gas	1.5	25315	346	91	15	14	4	2
2749	2749	3.5	Trip gas	0.48	32660	520	180	41	42	13	10
2790	2790	1.45	Pumps off gas	0.79	17796	273	21	9	10	1	2
2806	2806	1.3	Formation gas	0.86	11871	190	51	8	7	1	2
2817	2817	1.51	Short trip gas	1.1	13689	245	57	8	8	2	2
2820	2820	1.25	Connection gas	1	11484	198	40	7	6	2	1
2859	2859	1.63	Pumps off gas	0.5	15025	245	70	9	10	2	2
2878	2878	1.87	Pumps off gas	0.89	17698	247	67	9	10	1	2
2878	2878	1.09	Connection gas	0.87	10000	167	51	7	8	2	2
2885	2885	1.61	Formation gas	1.11	14969	278	79	11	11	2	3
2895	2895	1.87	Formation gas	1.15	17037	337	94	12	14	2	3
2897	2897	2.31	Formation gas	1.22	21408	316	72	9	8	2	2
2906	2906	1.18	Connection gas	0.12	14085	247	66	9	9	2	2
2953	2953	1.13	Formation gas	0.83	10388	210	58	8	9	2	1
2963	2963	2.81	Connection gas	0.86	25074	646	116	13	12	3	2
2965	2965	2.09	Formation gas	0.86	19490	274	67	8	8	2	2
2969	2969	1.07	Formation gas	0.69	9911	193	50	7	7	2	2
2983	2983	10.8	Pumps off gas	0.73	98115	1203	221	22	22	4	2
2983	2983	5.32	Pumps off gas	2.54	47267	791	173	19	20	4	3
2983.1	2983.1	10.38	Pumps off gas	1.57	96266	1263	243	26	25	5	3
3055	3054.8	0.29	Formation gas	0.16	2848	53	13	1	1	1	1
3069	3068.8	0.82	Formation gas	0.16	5083	110	27	5	4	5	3
3085	3085	0.78	Formation gas	0.48	7653	142	32	4	3	1	14
3107	3107	0.69	Formation gas	0.42	6653	127	32	4	4	1	1
3139	3138.8	0.9	Formation gas	0.2	8827	128	26	4	3		
3390	3389.8	0.54	Formation gas	0.36	5366	96	32	6	7	3	2
3477	3476.4	0.9	Formation gas	0.55	8901	163	58	11	11	4	2
3579	3578.4	0.41	Trip gas	0.05	4010	73	33	7	6	2	1
3738	3337.8	0.69	Formation gas	0.43	6772	127	43	8	8	3	2
3788	3787.8	0.23	Formation gas	0.2	1910	24	11	1	2	1	1
3830	3829.7	0.28	Formation gas	0.2	2335	48	25	4	3	1	1
3866	3865.7	0.38	Formation gas	0.3	3297	71	39	5	5	1	1
3881	3880.7	0.42	Formation gas	0.37	3549	76	44	5	6	2	1
3951	3950.7	0.57	Formation gas	0.35	4781	118	67	7	9	2	2
4003	4002.7	0.44	Formation gas	0.3	3794	93	47	4	6	2	1
4025	4024.7	0.63	Formation gas	0.3	5486	115	48	4	7	2	2
4033	4032.6	0.78	Formation gas	0.35	6692	139	57	5	8	2	2
4042	4041.6	0.78	Formation gas	0.35	6806	151	63	5	9	2	2
4069	4068.6	0.55	Formation gas	0.35	4783	117	49	4	7	2	1



4.6 Geophysical results

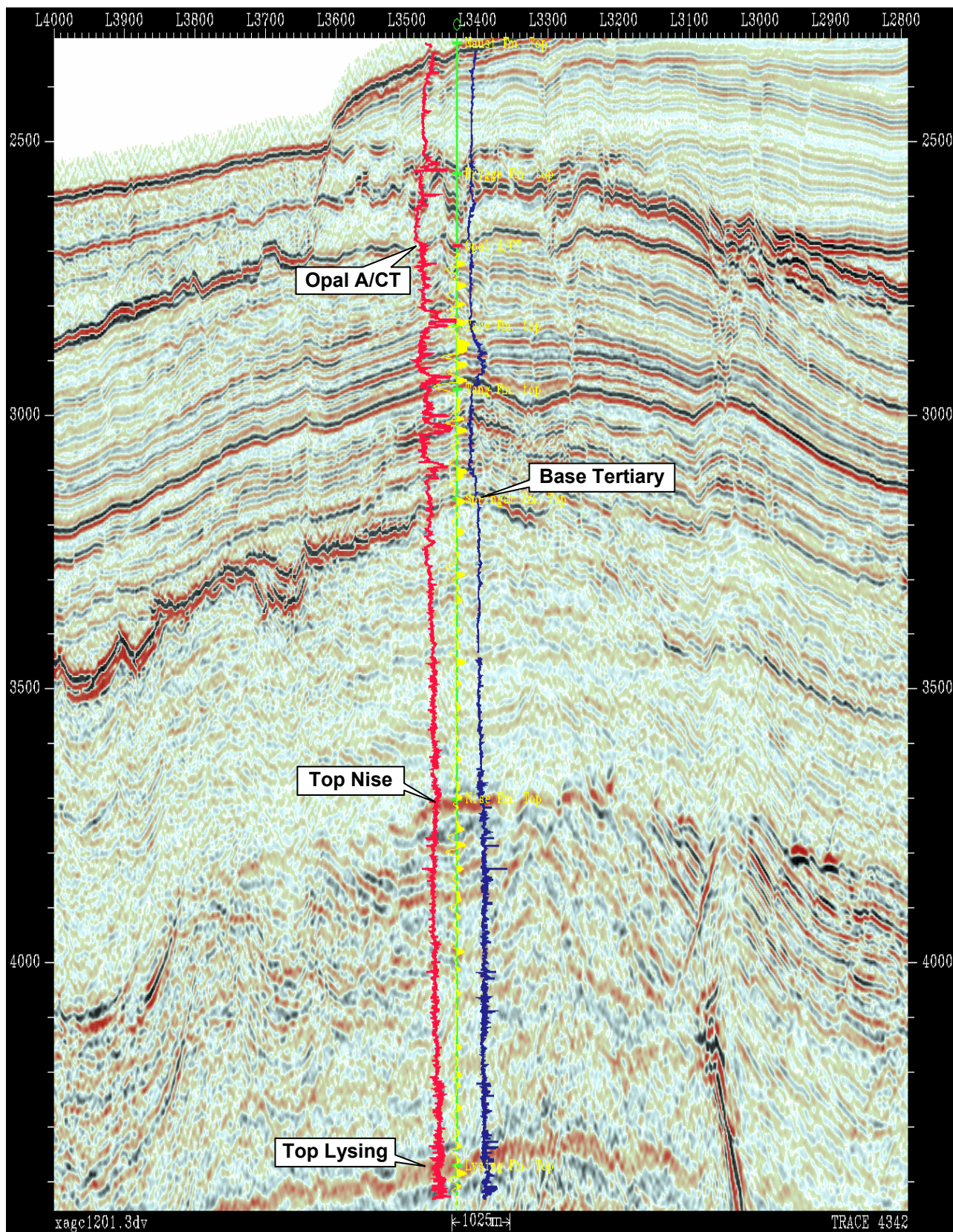
All the markers down to the Springar Formation were encountered within 15 m of their prognosed depth. A first look-ahead VSP was run at the 20" casing shoe to check for the presence of sand at the base of the Tertiary. This VSP showed no gas indication and identified only possible minor sand.

A second VSP was shot at the end of the 14 3/4" section to reduce the uncertainty on the depth of the reservoir: top Nise was re-evaluated at 3050 m, 59 m shallower than originally prognosed.

Integrated travel time was extracted from sonic LWD to reduce the uncertainty of top Nise while drilling. The objective was to get the 9 5/8" liner as close to top Nise as possible, because of a small margin between pore and fracture pressure. However, the 12 1/4" section was TD'ed due to operational issues (loss/gain). Compressional data from LWD does not reproduce satisfactorily the trends observed in the compressional data from wireline.

Due to operational issues related to small margins between prognosed pore pressure in Nise Formation and observed LOT pressure, a look-ahead VSP was run at 3038 m. This gave a final estimate of Top Nise Formation at 3053 m. A drillbreak was experienced at that depth, but on the logs Top Nise Formation appears to be at 3047.5 m. From this third VSP, the top of the Lysing Formation was interpreted much shallower than originally prognosed at 3875 m (instead of 4125 m). The 7" liner was therefore set at 3775 m (100 m above top Lysing). Reprocessing of the VSP with sonic logs from 8 1/2" section gave a revised estimate of top Lysing at 4020 m. Top Lysing was identified on the logs at 4018 m. A last zero-offset VSP was run at TD.

Figure 4-2 : W-E Seismic line (time scale)



4.7 Data acquisition

4.7.1 Cuttings and mud samples

No cuttings were collected in the pilot hole.

In well 6403/6-1, samples were collected by the ROV during connections in the 26" hole section and were mainly used for biostratigraphy analysis.

Cuttings were first collected in the upper part of the 17 1/2" section from 2400 m MD to 2500 m MD at an interval of every 5m prior to being collected every 10m down to the end of the 12 1/4" section. In the 8 1/2" and 6" sections the sampling interval was reduced down to 3m. Cuttings descriptions are attached in chapter 7 Enclosure.

Mud samples were collected every 100m and at the various sections' TD. In addition, spot samples were collected in the Nise formation at 3040m, 3056m, 3060m, 3120m and 3230m.

Table 4-5 : Cuttings and mud sampling

Depth/interval mMD (driller depth)	Cuttings interval	Mud
2400 – 2500	5	100
2500 – 2983	10	100
2983 – 4120	3	100

Gas bags were collected at gas peaks. Table 4.5 shows the sampling depths.

Table 4-6 : Gas samples

Depth (mMD)	% Gas
2 405.00	
2 413.00	2.23
2 417.00	
2 440.00	
2 587.00	
2 598.00	2.7
2 742.00	
2 820.00	1.25
2 858.00	
2 886.00	1.61
2 907.00	1.18
2 944.00	
2 977.00	
2 983.00	10.8
3 091.00	

Depth (mMD)	% Gas
3 437.00	
3 490.00	
3 496.00	
3 919.00	
3 928.00	
3 982.00	
4 003.00	
4 019.00	

In addition to the standard mud logging services, enhanced gas logging was performed using the Geoservices Flair system (details in Final Well Reports, Flair - Geoservices).

4.7.2 Conventional coring

Table 4-7 : Coring summary

Core #	Bit #	Cored interval (mMD RKB)	Rec. (m)	Rec. (%)	Shifted interval (mMD RKB)	Barrel length	Barrel util. (%)
1	18	3058-3084.5	26.35	99.4	3058.3-3084.5	27m	97.6

The depth shift is mainly based on the image log.

The coring was done using conventional coring equipment with fluted aluminium inner tubes. Tritium tracer was added to the active mud system prior to coring. A single core was cut from 3058m to 3084.5m with a 27m core barrel. Average ROP during coring was around 5.9 m/hr. Core recovery was 26.35m out of 26.5m cut (99.4 %).

The handling of the core on the drillfloor and pipe deck went according to plan. Further handling such as marking and 1-meter cutting was also done on the rig.

4.7.3 MWD

Table 4-8 : MWD logging – Well 6403/6-U-1

RUN no.	Depth interval (m driller depth)	COLLAR DIAM.	TOOL TYPE	COMMENTS
1	1746 – 1758	6 ¾"	OnTrack – ORD – CCN - APX	POOH due to tool failure. Change out BCPM pulse tool.
2	2122 – 2122	6 ¾"	OnTrack – ORD – CCN - APX	No signal from MWD tool. Memory data ok.

Table 4-9 : MWD logging – Well 6403/6-1

RUN no.	Depth interval (m drillers depth)	Collar diameter	Tool type	Comments
3	1843 - 2400	9 ½"	OnTrack	Data were sent to InterAct via Geoservices
4	2395 - 2557	9 ½"	OnTrack – ECD-GR- RES- Dir	Drilled 17½" hole. Good real time data.
5	2395 - 2542	9 ½"	OnTrack – ECD-GR- RES- Dir	RIH with 17 ½"x20 HO
6	2395 - 2544	9 ½"	OnTrack – ECD-GR- RES- Dir	RIH with 17 ½"x20 HO
7	2560 - 2749	9 ½"	OnTrack – ECD-GR- Dir	Drilled to TD. No problem with RT data to surface, however there was discrepancy between corrected GR and data on the riglink.
8		9 ½"	LWD/MWD Tool	Clean up run as Wireline tool string was stuck
9	2749 - 2983	9 ½"	OnTrack – ECD – GR – APX - Dir	Drilled to TD
10	2983 - 2986	6 ¾"	OnTrack – ECD-GR- RES- Dir	Tool failure
11	2986 - 3027	6 ¾"	OnTrack – ECD-GR- RES- Dir	Tool failure. Lost communication with the tool after pumping LCM
12	3027 - 3027	6 ¾"	OnTrack – ECD-GR- RES- Dir	POOH prior to squeeze cement job
13	3027 - 3038	6 ¾"	OnTrack – ECD-GR- RES- Dir	POOH because of low FIT
14	3038 - 3045	6 ¾"	OnTrack – ECD-GR- RES- Dir	POOH because of low FIT
15	3045 - 3058	6 ¾"	OnTrack – ECD-GR- RES- Dir	POOH for coring
16	3058 - 3775	6 ¾"	OnTrack – ECD-GR- RES- Dir	Reaming over cored interval and drilling to section TD
17		4 ¾"	OnTrack – ECD-GR- RES- Dir	POOH from 675 m due to float missing. RIH again. Drilled cement & milled casing. POOH due to wrong sub.
18	3775 - 3782	4 ¾"	OnTrack – ECD-GR- RES- Dir	Drilled cement, shoe and new formation. POOH due to slow ROP & low LOT
19	3782 - 4120	4 ¾"	OnTrack – ECD-GR- RES- Dir	Drilled to TD of the well.

4.7.4 Wireline logging

Schlumberger performed open-hole wireline logging in all the sections below the 20" casing shoe and a cased hole VSP in the 20" casing. In the 8 ½" section, 3 intermediate logging runs were performed: 2 MDT and 1 VSP. It was rigged up for logging 9 times, in total seventeen successful runs and three misruns were performed.

Data acquisition went according to plan and the data quality was generally good although density logs were influenced by poor hole conditions in certain sections.

Operational problems were experienced when logging the 14 ¾" x 17 ½" and the 6" sections. When running in hole for logging 14 ¾" x 17 ½" obstructions inside 16" liner were experienced. The logging string could not get into open hole. At surface sticky clay was found on the bottom of the tool, leading to a wiper trip prior to running in hole again. No further problems were experienced in this section. The second problem was experienced when logging the FMI-MSIP in the 6" open hole. Two misruns were conducted before the root cause of the problem was identified to be damaged electrical connectors inside the cable head assembly.

A complete overview over the logging runs is shown in Table 4-10. Composite logs are presented in Figure 4.7 and in the enclosures.

Table 4-10 : Wireline logging programme

LOGGING PROGRAM			
No#	TOOL COMBINATION	RUN	INTERVAL (m MD RKB)
20" section			
1	VSI – GR	1A	2348 – 1758. Zero Offset VSP survey was run.
17 ½" section			
1	DSI-HRLA-PEX-HNGS	2A	2560.3 – 1883
2	MSCT-GR	2A	2545 – 2405 (22/25)
14 ¾" x 17 ½" section			
1	DSI-HRLA-PEX-HNGS	MISRUN	Stood up at 2470m MD. POOH. Performed clean up run. Rerun the tool combination.
2	DSI-HRLA-PEX-HNGS	3B	2750 - 2464
3	VSI – GR	3B	2740 - 2150
12 ¼" section			
1	DSI-PEX-HRLA-HNGS	4C	2976.5 - 2740
8 ½" section			
1	VSI – GR	5C	3029.6 – 2654.1. Zero Offset VSP survey was run.
2	MDT	6A	2983 – 3050.5. Attempted 6 pre-tests, none stabilised.
3	MDT	7B	2983 – 3066. 10 pre-tests, 2 successful
4	PEX-HRLA-ECS	8D	3772.5 – 2983. High GR reading due to ECS – Tool configuration.
5	MSIP-FMI-HNGS	8A	3772.5 - 2983
6	MSCT-GR	8B	2993 – 2762.2 (46/46)
7	MDT-Dual Packer-GR	8C	3053.1 – 3235.2. 12 pre-tests, none stabilised.
6" section			
1	PEX-HRLA-HNGS	9E	4120 - 3768
2	ZVSP-GR	9D	4110 – 2347.5
3	MSCT-GR	9C	4112.5 – 3784.25 (45/50)
4	FMI-MSIP	MISRUN	Could not power up FMI
5	MSIP	MISRUN	Telemetry link was lost at TD
6	FMI-MSIP	9B	4120 – 3768

4.7.5 Data quality

Data quality is generally good throughout the well, although data in some sections are influenced by hole conditions or operational problems.

The MWD data quality is satisfactory. The data from the pilot hole however, was of variable quality, mainly due to hole conditions in poorly consolidated formations and very low density oozes.

The 14 3/4" x 17 1/2" section showed a high MWD corrected gamma-ray reading compared to the Wireline logging (30 API higher).

In the 12 1/4" section, sonic while drilling was acquired, and qualification of slow shear was attempted. Realtime compressional deviates from same data from wireline. Post processed shear data did not meet the qualification criteria.

Wireline data are generally of good quality.

Zero offset VSP was run four times in the well, behind 20" casing, and in the 14 3/4" x 17 1/2", 8 1/2" and 6" (TD) sections, covering the well from 1758 m to TD. The data quality is generally very good and VSP has been a very useful tool for operational planning and risk management. MSCT was run in three sections, high tool performance and recovery was experienced. The tool had to be modified slightly before running in 6" hole, without it affecting the performance. The FMI tool used in the 6" section presented a very high percentage of dead buttons on both pad and flap of the arm 3. The processing has improved the quality of the image but not as much as expected.

Density logs are of variable quality mainly due to hole conditions.

Gamma-ray readings in the first run of mainlogging of 8 1/2" section were influenced by the ECS source in the logging tool string. The gamma-ray readings were 50 gAPI higher than LWD and subsequent logging runs.

The core cut in Nise Formation was of good quality and high recovery was achieved.

4.8 Formation pressure

A detailed realtime pore pressure analysis was undertaken for this well. Available real time data, drilling parameters and MWD/LWD data were used in combination with reference data to estimate the pore pressure whilst drilling. Pore pressure revisions based on wireline log data (sonic and resistivity) were done at each section TD below the 20" casing (2394 m), which to some degree, confirmed pressure measurements taken with the MDT in the Nise Formation. Consistencies are seen between the resistivity and the sonic data for pore pressure calculations and hence MWD resistivity data combined with the drilling information confirmed to be useful during the real time pore pressure follow up.

The estimated shale pressure prognosis for the Edvarda well was based on input from seismic 3D data. This interpretation compares fairly well with the final shale pore pressure interpretation down to approx. 3800 m. At this depth the 3D data indicated a significant velocity anomaly indicating the possibility of increased shale pressures. However, this anomaly was not confirmed on the sonic log data and hence the estimated shale pressure could be reduced in the lower part of the well compared with the prognosis. Some of the reference wells have indicated excess sand reservoir pressure of close to 34 bars compared to the interpreted overlaying shale pressure. This excess pressure was not experienced during the drilling of this well.

The Pressure profile is presented in Figure 4-6. Normal pore pressure gradient is estimated from seabed and down to approx. the top Tare Formation at 2140 m. During drilling of the pilot hole, weak flow from the well was observed at the connections at 2213 m and 2241 m, which was not observed during the drilling of the 26" main hole through the same interval. However a minor increase in pore pressure gradient when entering the Tare Formation associated with a gradual increase from the base Tare Formation into the Tang Formation to a maximum of 1.08 g/cm^3 at approximately 2400 m, was interpreted based on realtime log data (resistivity and sonic) and gas readings below the 20" casing. A slight regression in pore pressures from 1.08 g/cm^3 to 1.07 g/cm^3 was then observed towards the base of the Tang Formation, continuing to 1.05 g/cm^3 at around 2550 m in the upper part of the Springar Formation. From this depth, a gradual increase through the Springar Formation to a maximum of 1.12 g/cm^3 at the base of the Springar Formation and into the Upper Nise Formation was interpreted.

MDT pressure measurements in the top Nise Formation indicated a tight - or supercharged formation pressures, but the most reliably of these pressure measurements confirmed a pressure of 1.12 g/cm^3 , the same as that being estimated of between 1.11 and 1.12 g/cm^3 in the Nise formation down to approximately 3300 m.

A gradual increase to 1.15 g/cm^3 towards the base of the Nise Formation and into the top Kvitnos Formation at 3388 m was interpreted from the available realtime log data, with a stable or minor increase in pressure for the next 400 m to an estimated $1.17 - 1.18 \text{ g/cm}^3$ at 3790 m. From here a slightly more rapid pressure gradient was interpreted, reaching 1.22 g/cm^3 to 1.24 g/cm^3 when entering the top Lysing member at 4018 m. These pressures were estimated to continue until TD of the well was reached.

Drilling parameters were of no use in interpreting pressure regimes whilst only weak gas readings were observed in the Nise, Kvitnos and Lysing Formations.

No pressure measurements were taken in the Lysing member to confirm the pressure interpretation from the realtime logs, due to a lack of permeable formation.

4.8.1 Reservoir pressure summary and sampling

The sandstones in the Nise and Lysing Formations were of very poor quality. In the Nise Formation pressure stabilised in only 2 of 28 attempted pressure points was established. Formation pressures were also attempted with dual-packers without good results. Due to the tight nature of the formation, no fluid samples were acquired. Based on experience from Nise Formation and results from wireline logs, neither pretest survey nor fluid sampling were attempted in the Lysing member.

A table with the pressure points is enclosed in Appendix D.

4.9 Leak off test

Five leak-off tests were performed in this well at: 2403 m (below the 20" casing), 2563 m (below the 16" liner), 2752 m (below the 13 3/8" casing), 2986 m (below the 9 5/8" liner) and 3778 m (below the 7" liner). The results of these LOT are displayed in table 1-1. The first four tests indicated formation break down pressures close to, or above the calculated overburden pressure from the density log.

The LOT below the 9 5/8" shoe indicated a breakdown pressure of 1.46 g/cm³. However, when drilling the 8 1/2" section with a 1.25 g/cm³ mud, mud losses were experienced at 3027m. A cement-squeeze job was run and a first FIT was run that leaked off at 1.33 g/cm³. The well was drilled down to 3038.5 m, where a second FIT was performed. The formation leaked off at 1.34 g/cm³. These low results may be due to the presence of a fault zone.

The LOT below the 7" liner gave a leak-off pressure of 1.48 g/cm³, which is far lower than the prognosed 1.57 g/cm³. Cement was squeezed into the formation and a FIT was performed, which leaked off at 1.50 g/cm³. These tests show less formation strength in Kvitnos Formation than prognosed.

4.10 Formation temperature

Table 4-11 : Well 6403/6-1 - Measured and corrected formation temperatures

Tool Combination	Run	MD RKB	Measured Temperature (degC)	Circulation time (Hrs)	Horner-Corrected temperature
Temperature at sea bottom			-0.5		
VSI	1A	2348	42*		
DSI-HRLA-PEX-HNGS	2A	2560.3	23.3	13:00	
MSCT-GR	2A	2545	20		
DSI-HRLA-PEX-HNGS	3B	2748.3	28	06:30	
DSI-PEX-HRLA-HNGS	4C	2976.5	41	40:30	
VSI-GR	5C	3032.7	48	02:30	
MDT-GR	6A	3050	51	12:30	
MDT-GR	7B	3066	56	06:00	
PEX-HRLA-ECS	8 D/A	3772.5	78	10:00	80degC@3772.5m
MSIP-FMI-HNGS	8A	3772.5	78		
MSCT-GR	8B	3764.5	79		
MDT-Dual Packer- GR	8C	3235.2	80		
PEX-HRLA-HNGS	9E/B	4119.7	100	09:30	118degC@4120m
ZVSP-GR	9D	4110	102		
MSCT-GR	9C	4112.2	110		
MSIP-FMI	9B	4103.5	112		

* This temperature was measured when running a VSP behind the 20" casing.

4.11 Experiences / recommendations

Drilling mud (Ultradrill and Ultradrill Deepwater)

- No hole stability problems were experienced throughout the entire operation. The hole was still in good condition after 103 hours of wireline logging in the 8 ½" section and after 109 hours in the 6" section.
- High ECD levels were experienced in the 8 ½" and 6" sections (up to 12 points over the mud weight in the 8 ½" hole) due to clay balling on the BHA. This was solved by drilling at a controlled rate with high flow rate and high RPM.
- The Ultrafree NS is a Linear Alfa Olefin (LAO) component added to the mud. MI supported Statoil with a gas chromatogram of the LAO. This showed clearly two (not one) major olefins present. Statoil carried out special gas chromatographic analysis of the Ultrafree NS LAO component that showed the presence of many more organic compounds. Based on this experience it is important to take reference samples of unused Ultrafree NS mud and prior to HC sampling.
- The presence of hydrocarbon components in the mud gave very high level of gas recycling for a water-based mud. In addition the cracking of some mud chemicals by the FLAIR system gave erroneous gas readings.

Tracer

- The tracer concentration was successfully kept constant around 200 Bq/ml in the first part of the 8 ½" section. However, when changing the mud system back to Ultradrill at 3177m, no tracer was added because of a wrong interpretation of the discharge permit. The issue was solved when drilling the 6" section.

Realtime data transmission:

- All data were displayed realtime in InterAct, Schlumberger's system. The LWD data from BHI was transferred in WITS format to InterAct via Geoservices, hence no realtime update was possible. The corrections applied by the MWD engineer were not displayed, which gave in particular a very poor corrected gamma-ray.
- Some problems were experienced displaying certain MWD data in the InterAct system due to the interface between BHI and Geoservices.

Data acquisition

- Cutting samples were collected by the ROV at connections during the 36" and 26" section.
 - Out of 20 planned samples, 3 were cancelled due to poor visibility. Of the remaining 17, 5 weighed less than 150grams and were therefore of limited use.
 - The samples were sent to land in steel boxes and it is therefore recommended that analysis be undertaken as soon as possible by Reslab due to problems with corrosion of the steel boxes.
 - ROV Samples proved useful for dating and confirming the geological model in the uppermost sediments.
- MWD logs: Overall good log quality. However the sonic run whilst drilling in the 12 ¼" section to reduce the uncertainty on the Top Nise gave confusing results. If LWD sonic

is to be used for wireline replacement, post processing of compressional data is recommended.

- In the 17 ½" section, it was necessary to wait 30 – 40 min downhole before taking the sidewall cores to allow the hydraulic oil in the MSCT tool to heat up. The long riser with low temperature mud appeared to cool the oil in the tool below its recommended operating temperature.
- MSCT: 3 sidewall core runs were performed in the 17 ½", 8 ½" and 6" sections, all with a very good core recovery.
- Good VSP data was collected over the entire well.
- The FMI was used to log the 8 ½" and 6" sections. The data quality was good for the first run in the 8 ½" section. In the 6" section, a tool failure occurred with the first FMI tool and the back up tool arriving from the Ocean Vanguard presented arm 3 pad and flap with high dead buttons percentage. The processing has improved the quality of the image and allowed an interpretation to be done.
- ECS: because of bad string configuration in 8 ½" section we had a very high gamma-ray response, which could have been corrected by adding a gamma-ray sensor.
- The advanced gas measurement and interpretation tool, (Flair system), was used in this well. This proved useful to quantify the amount of gas recycling and to characterise the impact of mud additives to the gas reading.

Pore pressure estimation.

- MWD resistivity was used for real-time pore pressure interpretation. Post well analysis show good correspondence between the pore pressure interpretation from resistivity and sonic logs.
- The d-exponent was useless as a pore pressure indicator: the Geoservices weight sensor had to be moved because a larger Ocean Rig instrument had been installed. The new sensor location was not optimal and the data engineer had to re-set the weight measurement every shift with the driller, which resulted in abrupt changes in the d-exponent trend.
- Gas readings were very low over the entire well because of a high overbalance. The gas level could therefore not be used as pressure indicator.
- The look-ahead VSPs proved useful to update the pore pressure prognosis, especially when re-evaluating the reservoir pressure before entering the Lysing member.

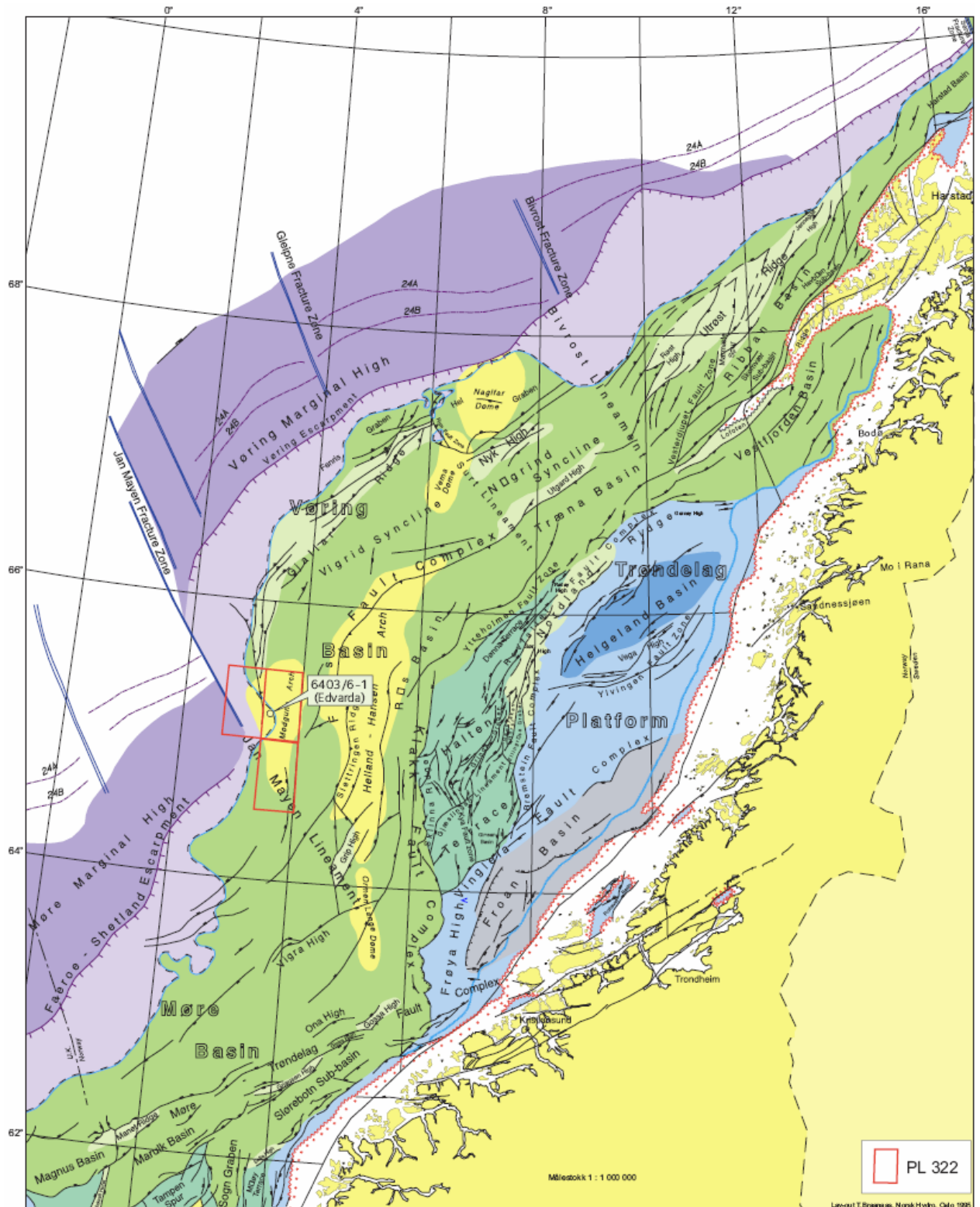


Figure 4-4 : Well stratigraphy

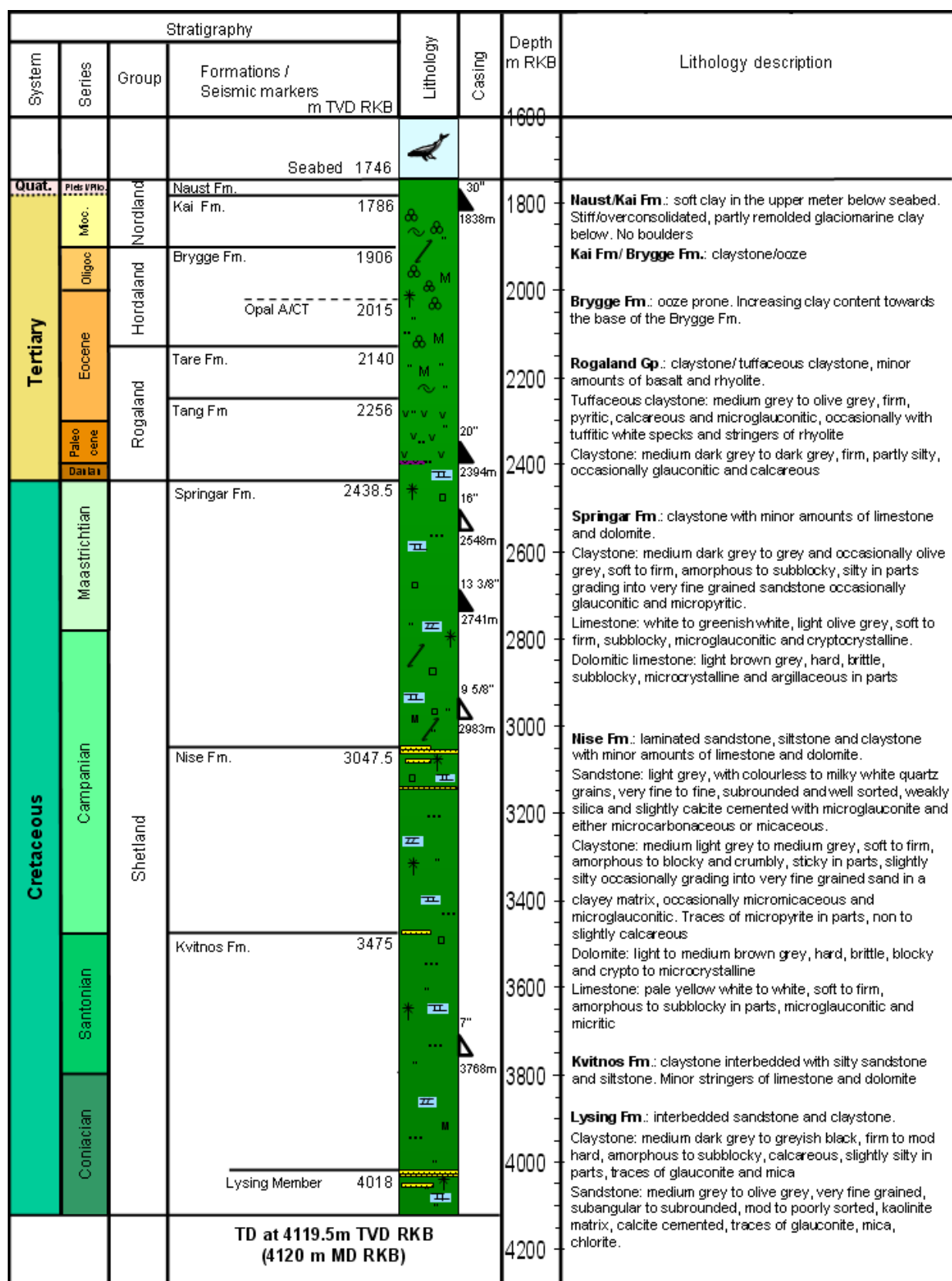


Figure 4-5 : Prognosed vs. Actual

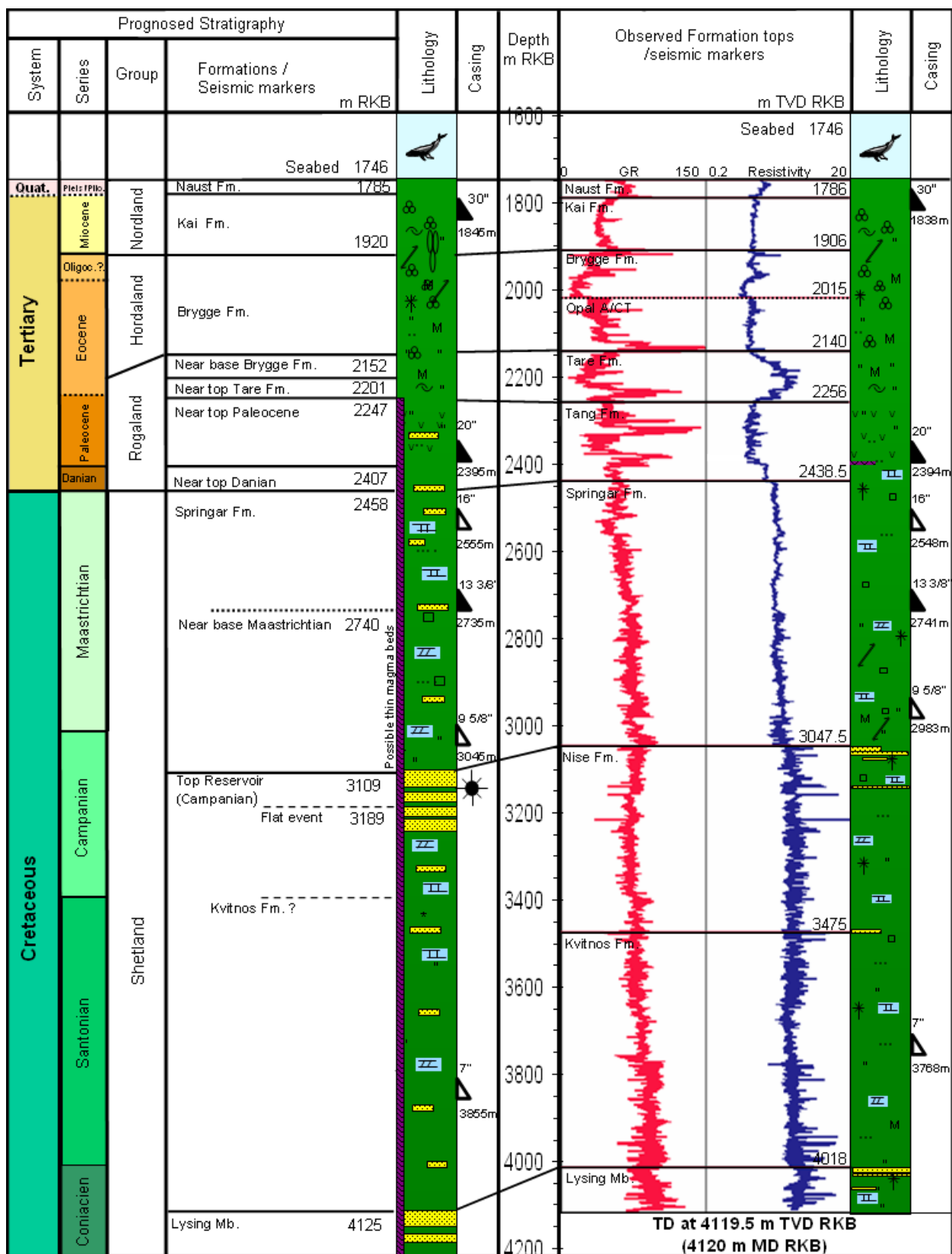


Figure 4-6 : Pressure plot

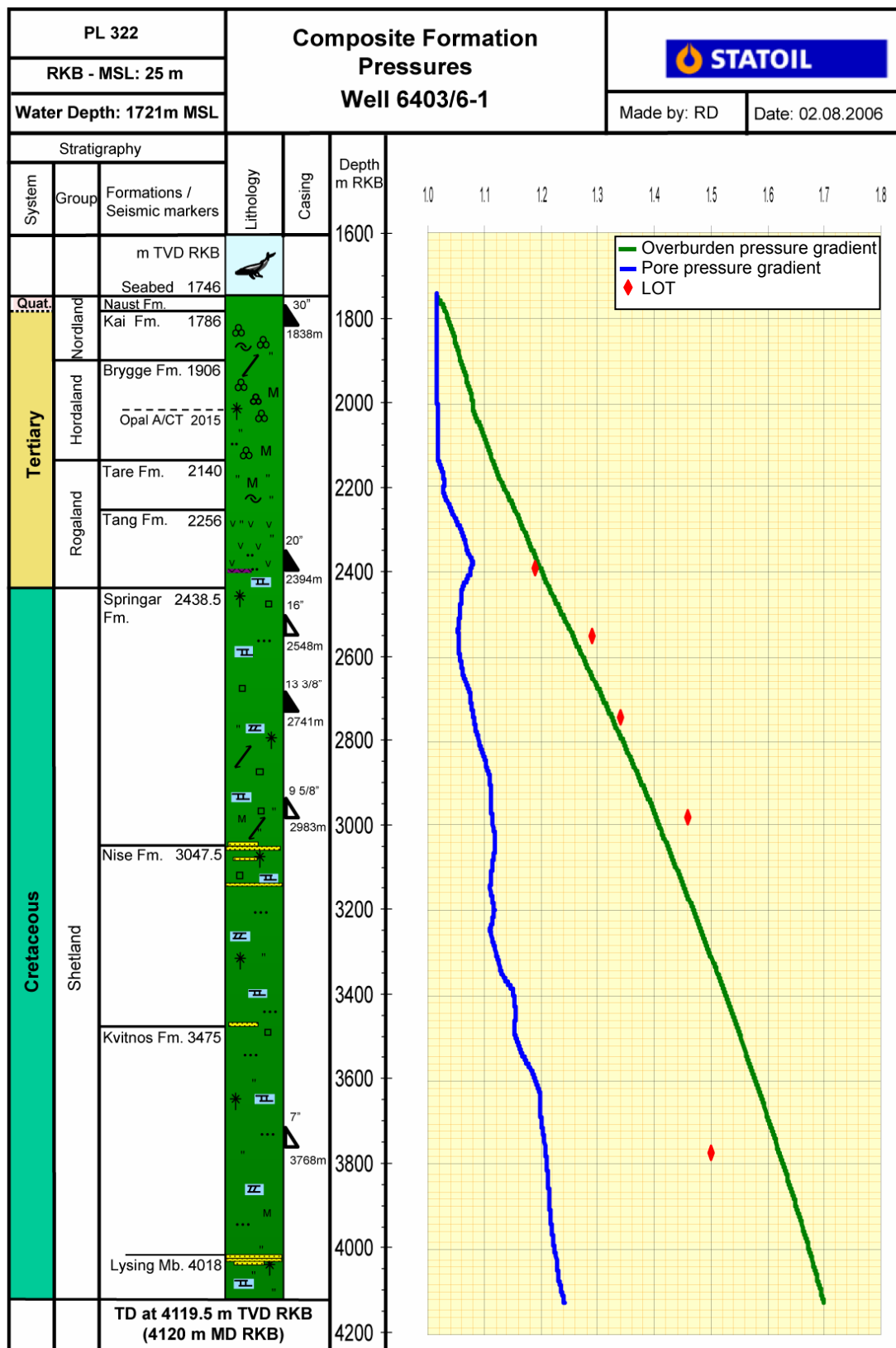


Figure 4-7: Composite plot – geological logs

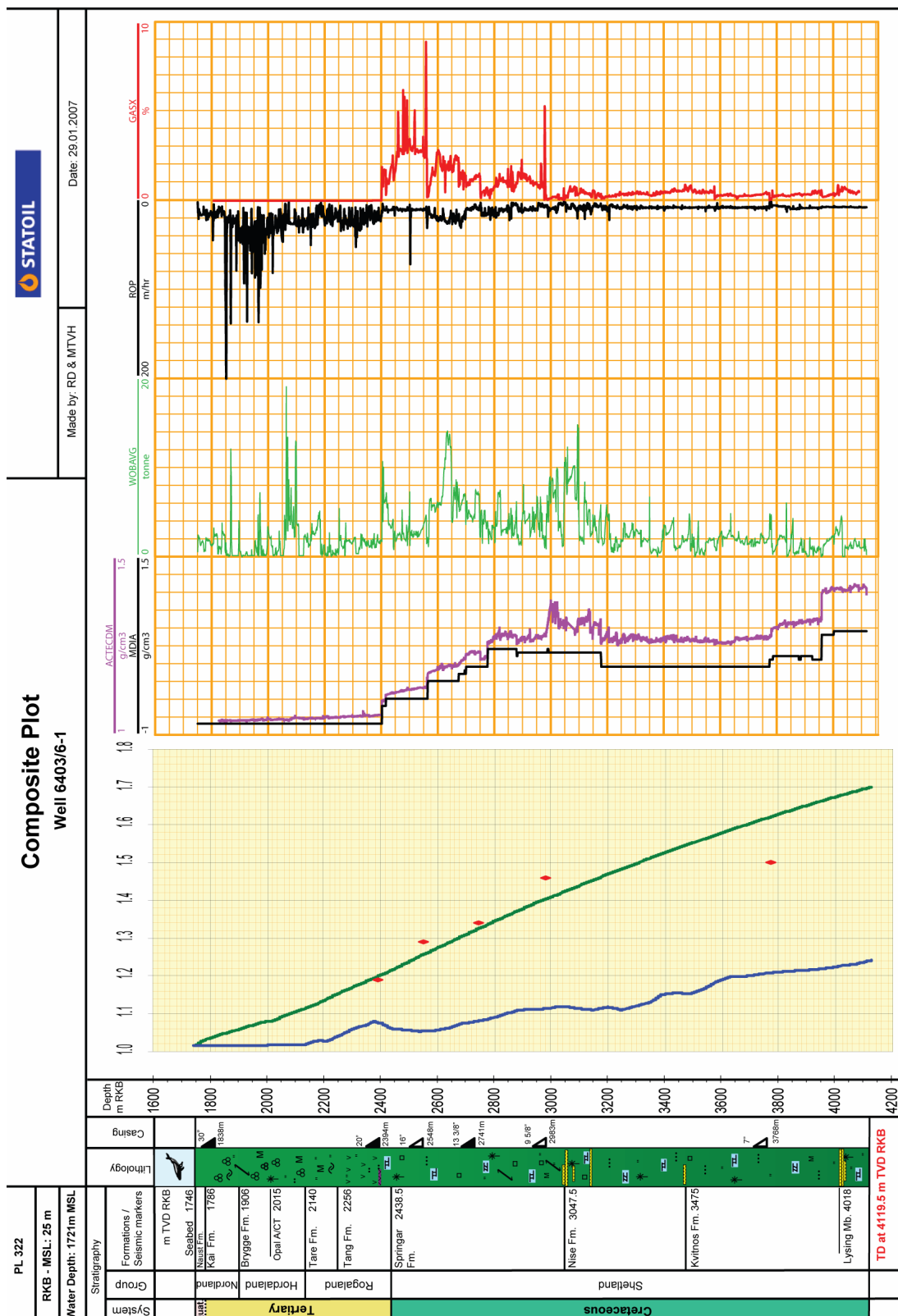


Figure 4-8: Composite plot – drilling parameters

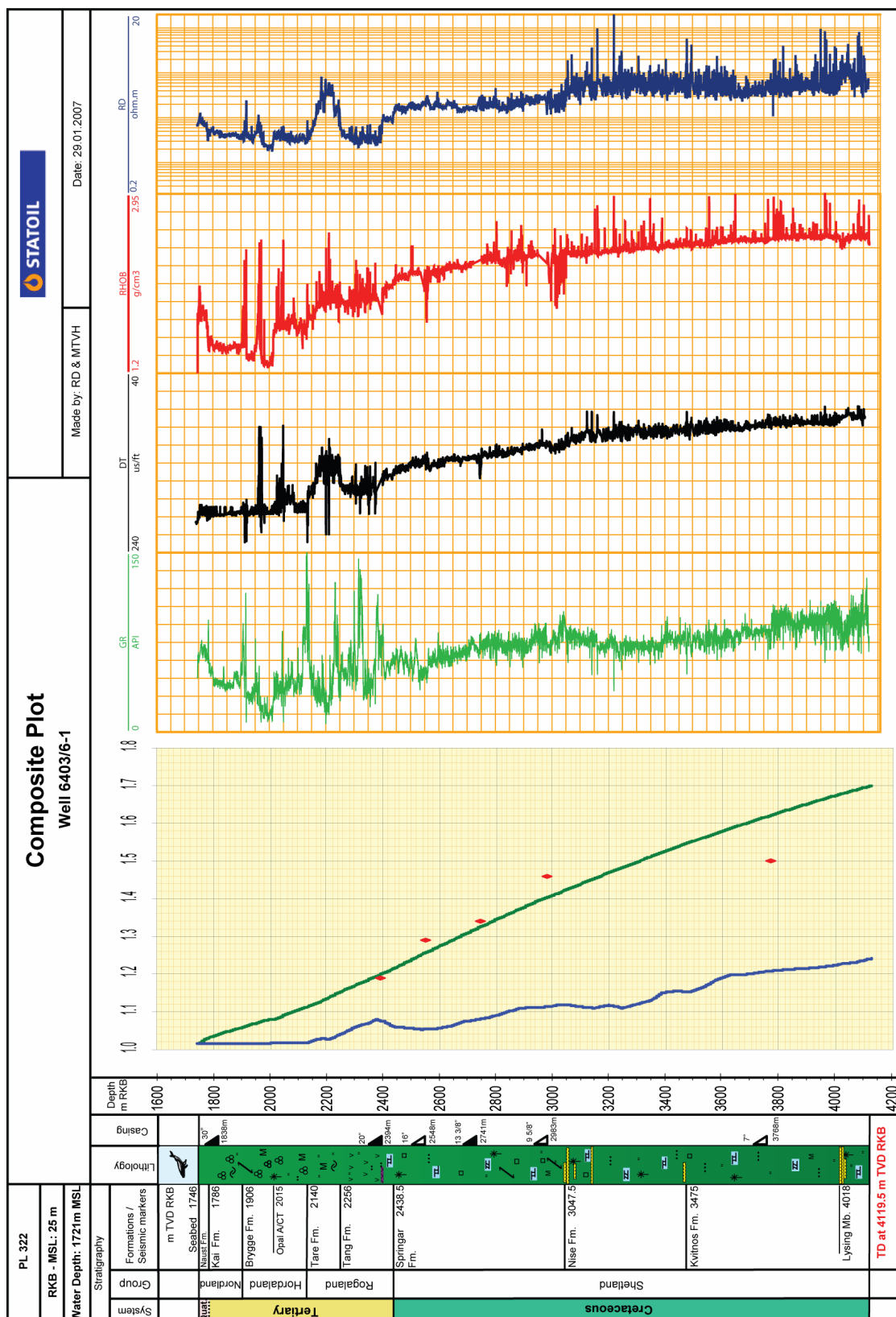
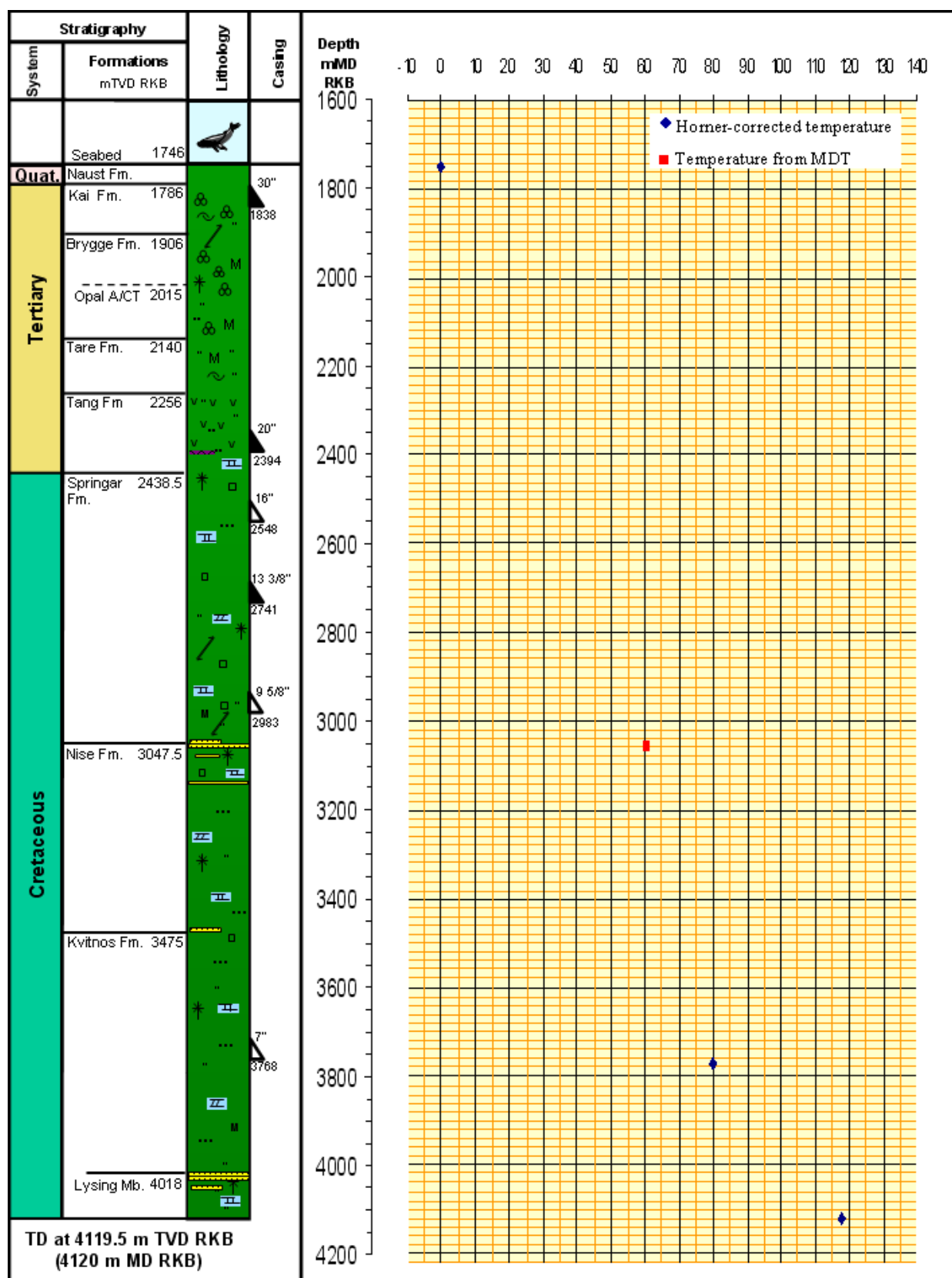


Figure 4-9: Formation temperature



5 Drilling operations report

5.1 NO 6403/6-1, MOVE (03.04.2006 08:00)

START: 03.04.2006 08:00 - 0 mMD RKB

END : 05.04.2006 06:00 - 0 mMD RKB

OBJECTIVE

Move rig from KSU and position rig at Edvarda.

5.2 NO 6403/6-U-1, 8 1/2" (05.04.2006 06:00)

START: 05.04.2006 06:00 - 1746 mMD RKB

END : 10.04.2006 06:00 - 2400 mMD RKB

OBJECTIVE

Drill 8 1/2" pilot hole to 2400 m. Flow check every sands penetrated for pressurised water or gas.

DRILLING SUMMARY

Ran down with 8 1/2" drilling BHA to 1735 m. Tested MWD and experienced problems receiving signals from the BCPM. Evaluated the situation and decided to try and drill a few meters and then test the MWD tool again. Tagged bottom and recorded the water depth to 1721m, tide corrected. Tested the MWD again at 1758 m, still did not get any decodable signals from the BCPM. Decided to POOH and replace the BCPM.

Ran back to seabed after changing out the BCPM. Tested the MWD above seabed, but still did not receive proper signals from the MWD. Decided to continue drilling down to 2400 m (ref. experience listing on this matter).

Re-entered the 8 1/2" pilot hole without problems. The crater was easily spotted on the seabed. Stabbed in and washed down to 1757 m (1 m above total depth for the first drilled section).

The drilling of the pilot hole went generally very well. According to the positioning data, the rig was only 5 m offset from the spud location and very little current on the seabed. Despite this, the visibility at seabed was surprisingly good. No indication of severe drill string whirling. A few stringers were drilled from 1960 m to 1980 m and a few below 2000 m as well.

Due to no real-time data, flow checks were implemented on every second stand down to 2000 m and thereafter flowchecks for 15 min on every connection. Observed a little flow on connection at 2213 m and 2242 m, however the following flowchecks didn't show any flow (including the flow check at TD).

CEMENTING

Pumped 10 m3 1.50 sg cement slurry through the BHA and bit. Spotted the cement plug as a balanced plug. Pulled slowly out of the cement at 3 min/stand to 50 m above the TOC. Circulated string with seawater at 2500 LPM before switching over to pumping 1,35 sg mud on the fly. Displaced the annulus above the cement to 1,35 sg mud before start pulling out. Stopped and topped up well with 1,35 sg mud when half the BHA was above the seabed and before last stand was pulled out of hole. Flushed the string with seawater at 2500 lpm for 30 min before start pulling up to surface.

5.3 NO 6403/6-1, 42" x 36" (11.04.2006 00:00)

START: 11.04.2006 00:00 1746 mMD RKB

END : 14.04.2006 22:00 1843 mMD RKB

OBJECTIVE

Drill 42"x36" hole to 1840 m and run 6 joints of 30" conductor (including the shoe) and 19 m of 36" WH housing on the top.

Foam cement the conductor in place using DWFS cement blend.

DRILLING SUMMARY

Drilled the 36" x 42" hole to 1840 m. No surface rotation until the 42" HO was 1 m above the seabed and from there on rotated string at 60 RPM. No particular problems drilling this section except for a few hard stringers and using the Anderdrift survey tool as described in the experience log.

On TD, due to the Anderdrift problems dropped a single shot which landed in the totco ring. Single shot showed 1 deg inclination when retrieved to surface.

5.4 NO 6403/6-1, 26" (14.04.2006 22:00)

START: 14.04.2006 22:00 1843 mMD RKB

END : 30.04.2006 14:30 2403 mMD RKB

OBJECTIVE

Drill 26" hole to 2400 m

Displace hole to 1,35 sg mud

Run and foam cement 20" casing

DRILLING SUMMARY

WOC for 12 hours before released conductor running tool and stabbed cement stinger on the outside of the 36" WH housing. Tagged TOC 3,5 m below seabed and prepared for grouting the conductor.

Made up 26" drilling BHA and replaced BCPM with a new one designed for low temperatures. Tested MWD above seabed successfully this time.

Stabbed into the 36" WH housing with 26" drilling BHA assisted by the ROV. Ran in and tagged TOC at 1837 m, 6 m above expected TOC. Applied almost no WOB while drilling out the shoe track.

Drilled 26" hole from 1842 m to 1993 m when it was discovered that the ROV umbilical was entangled around the DP. Stopped drilling and pulled back into the shoe. Back reamed through tight spots at 1985 - 1975m and 1970 m. Untangled ROV umbilical and RIH again. Luckily no damage was caused on the ROV or the umbilical. Ref. experience in DBR for more details.

When drilling at 2050 m the motor stalled out on a stringer. Pump pressure increased to 310 bar and the Pressure safety valve (PSV) on MP 2 opened. Hung up on stringer with 30 ton overpull. Sat jar and jarred once to free pipe. Pumped hi-vis sweep and reamed area. Found all three PSVs leaking and had to use the cement unit for pumping down the string while repairing the PSVs.

When reaching TD at 2400 m the decision was made to perform a wiper trip due to several hard stringers and possible ledges in the hole. Pumped out of open hole at 500 LPM and POOH without taking considerable amount of weight. ON the way down however, the BHA hung up (sometimes on the bit and sometimes on the stabilizers) and excessive reaming was required to get down to bottom.

Generally, the drilling of the 26" hole went a little slower than anticipated. This was due to hard stringers and downtime on the drilling equipment.

DRILLING FLUID

Seawater and CMC hi-vis pills. Pumped 1-2 x 10m3 hi-vis pills on every stand

CASING

Ran and cemented 20" 133 ppf Tenaris ER with shoe at 2394 m.

CEMENTING

Foamed cemented 20" casing successfully from 2394m to seabed.

Pumped 20m3 of spacer down drillstring, mixed and pumped 148m3 of 1.70sg DWFS slurry at 800 lpm. Lost Nitrogen injection after 129 m3 slurry pumped. Opened kelly cock and displaced with seawater using rig pumps. Total displacement of 20.8 m3.
Equalized pressure on lines and checked for backflow, ok.

5.5 NO 6403/6-1, 17 1/2" x 20" (30.04.2006 14:30)

START: 30.04.2006 14:30 2403 mMD RKB

END : 12.05.2006 23:30 2560 mMD RKB

OBJECTIVE

Time drill 17 1/2" hole. Due to potential overpressure zones

Log

UR hole to 20"

Run 16" liner and cement

DRILLING SUMMARY

RIH with BHA. Stopped above BOP shut in BOP with BSR. Performed kick/choke drill with night crew, sea water in well, circulating down choke line and up kill line. Continued to RIH with BHA due to slow operation, and to ensure day shift got a kick/choke drill. Stopped shut in BOP and performed kick/choke drill with day shift. Seawater in the well. Continued to RIH tagged cement @ 2352 m. Drilled soft too hard cement from 2352 - 2380 mMD. Displaced well to 1,08 SG Ultradill mud.

Performed new kick/choke drill with 1,08 sg mud. Performed fingerprinting

Drilled shoe track and cleaned out rathole, tight when cleaning out rat hole. Max gas when drilling 3 m new formation was 2.2 %. This was circulated down to approximately 0.6 % before LOT was performed. Used long time drilling hard stringer with tuffaceous claystone interbedded with basalt from 2403-2404mMD. Drilling parameters 10-12 WOB, 65 RPM, 4000 LPM 181bar SPP.

Drilled 10 m new formation. From 2403-2413 m MD, gas values while drilling were approximately 1.65%. Pulled into casing and circulated, gas values reduced to below 1 %. RIH to TD and circ b/u. Gas peak of 2.2 to 2.3%. PP was assumed to be close to or slightly above the existing MW of 1.07 to 1.08 sg. MW was increased to 1.10 sg. PP close to MW was also suggested from the increase in torque when run in hole to TD (2413m), indicating that the clay probably where starting to creep in on the hole. Gas readings reduced after displacement indicating hole was in overbalance. However, gas increased gradually from 0.28% to 1.3-2.2% while performing pump off tests. Time drilled to TD @ 2560 mMD, max ROP 10 m/h. gas level rose to approximately 2.5% and stayed there. Average drilling parameters from 2404-2560 mMD 2-4 WOB, 70 RPM, 4000 LPM, 181bar SPP.

Started to circulate hole clean, had a max gas of 3.29% with a background gas of 2.3-2.7% gas consisting of mainly C1-C3. Increased the mud weight to 1.12 sg in order to make the gas go down and to keep the hole in shape after loosing the effective circulating mud weight density (ECD). When pulling out of hole. The gas level went down to 1.3-1.7% after having circulated for some time. Just before pulling out the gas level levelled off at app. 1%. Geologist re-evaluated the pore pressure to 1,08 sg. At the end of the circulation it was discovered that only one of the degassers was functional. Geoservices flare measured the flow into the well and found 66% off the gas was re-circulated.

POOH and found the hole to be in good condition. Just minor amount of packed claystone was found on the stabilisers, proving that the mud had good inhibitive properties. The bit was in good condition and was graded 1-1 in gauge, but as seal failure had occurred on one cone it was laid out.

The 17 1/2"x20" underreamer assembly was made up and ran in hole. With the underreamer out of the 20" casing shoe, no positive feedback on pressures could be gained proving that the tool had activated. In order to evaluate whether activation actually had taken place, the reamer was pulled up against the 20" shoe with pumps on, no rotation, but no overpull was seen. There is a potential for activating the underreamer with weight if the first stage is completed. Based on this assumption it was drilled and reamed to TD with 3800 lpm and 40 m/hr after some more attempts to activate the tool. Some torque (3-6 kNm) and WOB was seen while "reaming", but less than expected. No PDC cuttings were seen on surface and the mud loss volume did not indicate that the hole size was 20" and after pulling the BHA to surface the tool was tested and found not to be activated. A back-up tool was therefore picked up and fitted with one shear pin calculated to shear at 1600 lpm.

The section was successfully underreamed to 20", after activating the tool with 3300 lpm. After activation, the circulation rate required to keep the cutter blocks activated should have been ~2200 lpm. TB cont in Bit run section.

The torque resulting from reaming with 3800 lpm indicated that 2200 lpm was insufficient to keep the cutter blocks extended. The section was reamed with 3800 lpm/240bar, 100 rpm/3-27 kNm torque and ECD 1.148-1.158 sg (mw-1.13 sg).

Geoservices data showed 50% of the gas was recirculated while reaming. Gas value while reaming was steady around 1%.

Rigged up and ran 16" liner to 230 m. No problems handling or making up liner hanger assembly despite length and weight. When running the liner hanger assembly through the wellhead, with extremely close tolerances (restriction: 17.562", max OD liner hanger 17.52"), drag of 6-8 ton was seen. This is probably caused by the hydraulic lock when the liner is run below wellhead with virtually no by-pass for the fluid to bleed off.

The liner was run to 2659 m with no restrictions seen in open hole (1m calculated pipe stretch), tagged bottom and was pulled 1m off bottom. Circulation was established and it was verified 1200 lpm could be obtained without losses. The liner hanger was set and weight slacked off to confirm the hanger was set. To release the liner hanger running tool, 10 ton was set down on the hanger and the string turned 20 right-hand turns. Pumped 20 m³ 1.13 sg spacer ahead of the cement. Cement operations went with no problems, mixed pumped 1.56 sg gas-tight lead and 11m³ 1.90 sg tail with 800 lpm. Dropped the dart and sheared the wiper plug with 14 bar. The wiper plug bumped at 97% pump efficiency and the pressure was accidentally brought up to 85 bar on bump. Bled the pressure down to 65 bar and verified pressure integrity on the liner for 5 min prior to checking the floats.

When attempting to pull the running tool out of the liner hanger, the up-weight confirmed that the liner hanger running tool was still engaged in the hanger. It was at this point attempted to release the running tool with 15-18 turns with various weights sat down with no success. Based on the belief something else was hanging up than the release threads, pressure was set on the liner to engage the hanger slips in the 20" casing wall and overpull applied to attempt to pull the running tool free. At 35bar pressure and 190 ton upweight, the string moved quickly up 3m. It was believed at this point the running tool had disengaged and an attempt to set the liner top packer was done. After this point, normal procedure is to pull the seal stinger out of the pack-off bushing with pressure to see when the stinger is out of the PBR and circulation can be initiated. It was pulled out the planned 7m, but it was not reacted upon the fact that the up-weight was identical to prior to hanging off the liner and the liner was actually not hung off. After having totally pulled the liner up 10m, 2 RH turns were performed with weight down on the hanger and the running tool came free. Circulated spacer and excess cement out of the hole and attempted again to set the packer with no obvious shears seen indicating the packer was set. When inspecting the liner hanger running tool on surface nothing abnormal could be identified.

DRILLING FLUID

Section was drilled with 1,08 - 1,10 sg Ultradrill Total formation volume drilled is 25 m³ (excluding any washouts). Losses prior to POOH for logging was approx 17 m³ at the shakers. So far on this section this equal 0.68 m³ of mud loss per m³ cuttings. The dilution factor for this section is set to 1.7 m³ mud / m³ cuttings. This means that only 340 kg of Ultrafree NS (-focus point ref discharge permit) was lost at the shakers. (Discharge permit = 1300 kg).

Cuttings integrity has been very good. The amount of reactive clay in the mud (MBT test) is 7 kg/m³ which is a good indication of the Ultradrill inhibition performance. When underreaming the section to 20", dry PDC cuttings on the shakers.

No problems with the mud pumps, caused by foaming, have been seen with the Ultradrill on this section.

At TD the weight was taken up to 1.12sg and it drifted further to 1.13sg due to poor observations on the shakers where several screens had holes. All through the section the mud parameters were very stable with low changes in rheology and chemical stability. The cold rheology measurements (-2 up to 50 C) have low values compared to other deepwater drilling fluid alternatives and has as such provide lower surge and swab pressures.

Total volume lost on the shakers was 31m³, of which 7m³ were lost while unsuccessfully attempting to open the section to 20" during which a lot of fines were generated. Dilution rate is 0.95m³ mud/m³ cuttings. Centrifuge has been used to aid cutting the mud weight after 1.13sg resulted from shaker screen holes.

5.6 NO 6403/6-1, 14 3/4" x 17 1/2" (12.05.2006 23:30)

START: 12.05.2006 23:30 2560 mMD RKB

END : 23.05.2006 09:30 2749 mMD RKB

OBJECTIVE

Drill and underream 14 3/4" x 17 1/2" hole to 2749 m

2 wireline logging runs

Run and cement 13 3/8" casing.

DRILLING SUMMARY

RIH with 14 3/4" x 17 1/2" BHA compensated through top of PBR at 2306,5 m and drilled out drillable pack-off bushing inside 16" liner at 2313 m. Spent approximately 6 hours on drilling this out. Continued to RIH and tagged top of wiper plug at 2323 m. Spent a total of 12 hours drilling out the wiper plug. The bit kept spinning on the wiper plug. String stalled up several times while drilling out the remainder of the shoetrack and an overpull of 50 T was required to come loose after being stuck at a time. It is believed that rubber from the plugs caused the stuck pipe.

As a result of drilling out the shoe with the Cuda XR reamer in the string, 2900 lpm was set as a maximum for not activating the UR arms inside the liner. The shear pins was set to shear at 70 bar.

When having drilled out of the shoe, hard cement was found all the way down to TD 20" hole (2557m). Drilled 3 m new formation to 2563 m, pulled back up into the 16" shoe and performed LOT to 40,3 bar, equivalent to 1,29 sg (0,05 sg higher than prognosed).

RIH and drilled 14 3/4" hole to 2568 m with reduced flow rate and 3-4 kNm torque. Pulled up from 14 3/4" hole, initiated 50 PRM and sheared UR by bringing pumps up to 4000 lpm. Torque increased to 11-12 kNm when UR arms extended. Reamed down a couple of meters. Pulled up, RPM=0, 4000 lpm and sat down 7 T with the arms on the shoulder to confirm opened. Then pulled up again, no flow, RPM=0 and RIH past the shoulder to verify arms had been opened. UR arms now confirmed open at 4000 lpm.

Drilled and UR 14 3/4" x 17 1/2" hole to section TD at 2749 m. No particular issues experienced.

At TD, circulated 3 BU and decided to perform a 5 stand short trip due to high gas levels in the well. With the pumps off, took 15 T weight with the bit at 2704 m. Ran back in and established circulation and backreamed through the tight spot. Several tight spots were observed when attempting to POOH and therefore back-reamed all the way up into the 16" liner shoe. Just below the shoe there was a 2 m cement restriction from after the 16" cement job which was not reamed through from the beginning of the UR. Reamed the cement from underneath with 3000 lpm. Max ECD (PWD sensor 17m above bit, inside casing) showed 1,276 sg. PH in the mud increased as a result of cement in the mud.

Also backreamed inside the 16" liner with 200-300 lpm (for not extending UR arms). Took weight several times and had to work pipe free. Reamed up on the stabilisers and string torqued

up. Maximum overpull 20 T. Worked string to come free. Eventually came out of the shoe track and POOH. Did not observe any particular damage to the bit nor the stabilisers on surface. However, the bit was found to be 1/8" undergauge. The stabilisers were all gauge. Might be the reason behind all problems in the shoetrack?

Ran WL logs but was unable to pass 2472 m (WL depth). String hung up and multiple attempts for no success. When logging tools was inspected one of the centraliser was found defective (bent spring and scratched rubber). However, it had been able to pass the bushings in the rotary with ID of 10 1/4"

RIH with 14 3/4" (new bit, checked with same bit gauge ring as the undergauge bit). Ran in compensated through the top of the 16" liner. Did not take any weight when RIH until at 2476m where the string took 5 T. Worked BHA through restriction and RIH to the shoe. Reamed the 16" liner shoetrack 3 times before RIH to TD, without rotation and pumping. Took no weight, found approx 2,5 m fill on bottom. Washed down to 2749 m and circulated well clean. 3,5 % gas peak when circulating bottoms up. Pumped out into shoe and backreamed out of 16" liner to clear away debris. POOH.

Ran WL DSI and VSP without any obstruction.

CASING

RIH with wearbushing RT with 2 stands 5" HWDP and jetsub below. Jet washed BOP and wellhead. Pulled bore protector and POOH.

RU casing handling equipment and MU shoe, intermediate joint, float joint, casing and hanger. RIH with 13 3/8" casing without any obstruction on 5" V-150 landingstring. Upweight at TD: 203 ton. Downweight: 189 ton. Sat seal assembly, pressure tested LPR, UPR, LAP, UAP, kill and choke lines to 345 bar/ 10 min and released casing hanger running tool. L/D 5" V-150 landing string while POOH.

RIH and set wear bushing. POOH. Pressure tested casing, connector, lower shear ram and upper blind shear ram to 35/5 min 345 bar/10 min. POOH.

CEMENTING

Established circulation in steps to 500 lpm. Brought pumps up to 1850 lpm. Unable to establish loss free circulation before cement job. Mixed and pumped 20m3 1.19 SG spacer and 13 m3 1.90 SG cement. Displaced cement with 2500 lpm when spacer entered shoe. Had minor return. Observed 11 bar pressure increase when cement rised in annulus. Bumped plug on strokes. 97% pump efficiency /23,7 l/m. Lost a total of 52 m3 of mud while displacing the cement.

Pump pressure at the end of displacement indicated sufficient hydrostatic height of the cement.

5.7 NO 6403/6-1, 12 1/4" (23.05.2006 09:30)

START: 23.05.2006 09:30 2749 mMD RKB

END : 01.06.2006 08:00 2983 mMD RKB

OBJECTIVE

- Drill 12 1/4" hole to 3050m or 2 x TVD uncertainty
- Log according to programme
- Run & cement 9 5/8" liner

DRILLING SUMMARY

Performed LOT to 1.34sg and drilled 12 1/4" hole from 2752 to 2775 m. Increased MW from 1.19sg to 1.24sg and continued drilling to 2844m where losses were observed, 12m³.

Pumped LCM and continued drilling with reduced flow rate to 3000 lpm, no losses. Increased flowrate to 3500 lpm where 1m³ was lost after drilling 1m. Reduced flowrate to 3000 lpm but still losses.

Pumped 10m³ LCM, and continued drilling with 2500 lpm from 2848 to 2850 m with poor MWD signals but no losses. Increased flow rate to 2800 lpm and lost 3m³.

Continued drilling 12 1/4" hole from 2850 m to 2935 m. Treated mud with LCM materials due to losses. Average loss rate 9 m³/hrs at 2800 lpm. Reduced MW from 1.24 sg to 1.22 sg and continued drilling.

Continued drilling 12 1/4" hole from 2935 m to 2983 m. closed in well due to pit gain (expected caused by ballooning). Circulated bottoms up through choke line. Bled off 6.4 m³ mud from annulus. Opened BOP and circulated clean. Max gas at 10.8% on bottoms up. Flow checked well - ok.

Pumped out hole 2983 m to 2930 m, 100 lpm, 40 bar. Took 5 - 8 ton weight at 2930 m. Reamed tight section and ran back to bottom.

Circulated bottoms up, 2500 lpm, 139 bar, 80 rpm 3-4 kNm, 1900 lpm on booster pump. Max gas at 3.5%.

Pumped out of hole for casing running. Lost circulation at 2847 m. Attempted to regain circulation with various parameters without success. Lost 30 m³ in total. RIH to 2870 m. Stopped the pumps and gained in total 16m³ before the trip tank levelled out.

Pumped/reamed OOH from 2870 m to 2740 m while working every stand due to hole partly packing off. Continued pumping OOH to 2534 m. Circulated hole clean, max gas at 2.3%. RIH to TD and circulated hole clean before POOH to surface while re-logging with APX from 2983 m to 2963 m, Max gas at 6.8%

Ran WL: DSI7PEX-HRLA/ACTS/HNGS7ERCDC from 2983 to 2640m (casing shoe).

Ran and cemented 9 5/8" liner on 5 1/2" drill pipe with shoe 2694 m at 2982.8 m and TOL at 2694 m. P/tested liner to 240 bar - ok. POOH RT. RIH and p/tested BOPs.

BIT RUNS

One bit (milled tooth) used through this section:

Security DBS, type EBXSC1S, 117W (IADC: 117W).

The bit performed well. ROP restrictions due to G&G sampling.

Grading: 2-2-ct-2-1-i-FC-TD

DRILLING FLUID

This section was drilled with Ultradrill DW mud with hydrate inhibition.

The shakers were run as dry as possible in order to reduce mud lost on cuttings i.e. no discharge.

The mud performed well and was treated according to program.

CEMENTING

Pumped 25 m3 DW followed by 20 m3 of 1.23 sg 3T spacer at 1300 lpm, 43 bar.

Mixed and pumped 10.2 m3, 1.80 sg G cement, 800 lpm, 18 bar.

Displaced cement with 39,8 m³ 1,23 sg mud. 1270 l/min, 26-45 bar. Sheared out wiper plug with 121 bar. Reduced flowrate to 1000 l/min, 37 bar and bumped plug with 70 bar above FCP. Pressure tested 9 5/8" liner to 240 bar 10 minutes. Bled off pressure and checked for back flow. Total loss during cement job 4 M3.

5.8 NO 6403/6-1, 8 1/2" (01.06.2006 08:00)

START: 01.06.2006 08:00 2986 mMD RKB

END : 05.07.2006 16:30 3782 mMD RKB

OBJECTIVE

- Drill 8 1/2" hole to top reservoir at 3060 m +/- 20m
- Drill 8 1/2" hole to core point
- Cut Core(s)
- Drill 8 1/2" hole to section TD at approx. 3860 m
- WL logging

DRILLING SUMMARY

Drilled out firm cement in the 9 5/8" shoetrack and 3 m new formation to 2986 m. Circulated hole clean and performed a LOT equivalent to 1,46 sg. Prognosed LOT at this depth was 1,37 sg.

Started drilling and noticed increasing ECD. Expected ECD was 0,05 sg with 2500 lpm, however once bit on bottom the ECD and SPP increased gradually (erratically at times) as drilling commenced. Good torque readings and nothing unusual to the gas readings. Below 3010 m, the ECD picked up to 1,376 sg and drilled picked off bottom. Reduced flowrate to 2000 lpm and observed a drop of about 0,02 sg in ECD and about 50 bar in SPP (from 218 bar to 164 bar). Continued drilling, but ECD kept creeping up until it was 1,36 sg. Pulled BHA back up into the shoe and rotated string at 200 RPM while circulating at 2000 lpm. ECD then dropped down to 1,308 sg. Ran back to bottom and started drilling. ECD increased in the same manner as before. Observed mud losses to the formation and decreased flowrate to 1600 lpm and prepared for pumping a LCM pill. Pumped 3,9 m³ 150 kg/m³ LCM pill (Maximum LCM concentration for the OnTrack MWD is 114 kg/m³). Unable to receive signals from the MWD and discussed further actions with land.

Decided to pull out of hole and reconfigure the BHA to lower ECD.

When BHA came to surface no clay could be seen clogging onto the 3 stabilisers. However, a layer of clay (approximately 1 inch in thickness) was covering the DCs, which had to be cleaned using a string wire.

RIH with modified BHA (pendulum BHA) to top of 9 5/8" liner and performed ECD fingerprints at different flowrates (1600 - 2500 lpm). Washed down 9 5/8" liner to TD at 3027 m and performed new ECD fingerprints at different flow rates. Maximum ECD at TD 1.28 sg. Circulated hole clean and prepared for FIT. FIT leaked off at 20,4 bar equivalent to 1,33 sg EMW. Discussed further actions with town and decided to pull out of hole and squeeze cement.

RIH with 3 1/2" (233 m), 5" DP (1726 m) and rest 5 1/2" DP cement stinger and sat balanced cement plug from 3026-2890m. Pulled up dry a stand above theoretical TOC and squeezed approx. 500 L into the formation. Had to increase squeeze pressure to 100 bar. Hesitation squeezed cement with 10 min intervals. Hold pressure on cement according to Halliburton recommendations until 7 hours after start pumping cement.

POOH and RIH with the modified BHA and drilled out cement. Tagged TOC at 2935 m, 1650 L down inside the 9 5/8" liner. Believed a total of approx 2 m³ has been squeezed into formation. Drilled out medium hard to hard cement to 3027m being careful not kicking off on the plug in OH. Maximum inclination almost 1 deg, however only minor traces of formation in the returns, mostly cement. Circulated hole clean and pulled into the 9 5/8" shoe and performed a new FIT. Pressure leaked off at 1,33 sg EMW (pumping at 50 LPM). Performed a new FIT/LOT pumping at 100 LPM and got a LOT equivalent to 1,32 sg EMW. Continued drilling to 3037 m with limited ROP and 1600 LPM. Maximum ECD around 1,31 sg. Circulated hole clean, pulled back up into the shoe and performed a new FIT/LOT at 100 LPM to 1,34 sg

EMW. Discussed further matters with shore and decided to get hold of VSP equipment. A VSP log at this depth may tell us the top of reservoir with as low as 5 m uncertainty.

Estimated top of the reservoir to 3053 +/- 4 m. Also re-evaluated pressure prognosis based on the gathered data from the well. As a result, decreased the prognosed maximum pressure in the reservoir to from 1,27 sg to 1,24 sg. Continued drilling. Hit top reservoir at 3053 m. Drilled 5 m to core point and POOH for coring operation. Took core from 3053m to 3084,5 m. Only shale in the core (very little sand).

Continued controlled drilling to 3138 m due to high ECD. At 3138 m, the ECD picked up to 1,34 sg and when driller picked off bottom ECD increased to 1,35 sg and started loosing mud to the formation.

Decreased pump rate in steps to maximum loss free rate at 960 LPM. Recorded about 4,5 m³ loss to the formation the first 10 mins after ECD increased to 1,35 sg. Very slowly started to pull back up into the shoe with only 20 RPM on the string and pumping at 960 LPM. Maximum 73 bar pressure on the drillers panel before initiating losses to formation (no MWD signals at this flow rate). When up into the shoe, increased flow to clean out cuttings above. Also pulled back up above the 9 7/8" liner lap. ECD went back to normal (about 5 points) while circulating at 2000-2500 LPM.

Ran back in to 3131m while circulating at 2500 lpm. No losses. SPP suddenly decreased from 278 bar to 235 bar. 5 mins later, the red stick slip alarm on the MWD came on and lasted for about 20 sec. 10 mins later the torque became erratic; from being steady at 2,7 kNM to vary between 2,2 - 3,6 kNM. No change was seen on the ECD while this was happening. A sudden increase in the SPP also took place earlier at 3085 m where the SPP increased from 178 bar to 215 bar for no obvious reason. This did not affect the ECD either.

Drilled to 3177m. ECD still high. Decided to change to Ultradril mud system (without hydrate inhibition to see whether it is the salt that is causing the high ECD). Mudweight reduced from 1,22 sg to 1,19 sg. Continued drilling, but still ECD is creeping upwards with low ROP. Maximum ECD when having drilled to 3200 m was 1,30 sg i.e. 11 points and somewhat more than double of the expected ECD. Drilling with low ROP, 180 RPM and 2500 LPM seems to help keeping the ECD fairly stable. Continued drilling with 180 RPM and 2500 LPM and 7-8 m/hour. No problems holding the ECD steady around 1,25-1,26 sg. Drilled to 3560 m, performed a 1 hour flow check to fingerprint annulus fluid expansion with only 100 L flow back over 1 hour. Performed a wipertrip up to the shoe to verify hole in good condition. Took 8 T at 3239 and backreamed out of hole into the 9 5/8" shoe. RIH to bottom and hole in good condition. Continued drilling with 1,19 sg mud.

Drilled from 3560 m to section TD at 3775 m without problems an average ROP of +/- 7 m/hrs. Circulated 3 x bottoms up and performed a 5 stand short trip to 3635 m. RIH to 3775 m, circulated clean and pumped out of hole into the shoe above the 9 5/8" liner to 3670 m. No obstructions observed. Continued POOH and prepared for WL logging.

DRILLING FLUID

Increased the concentration of Ultrafree NS to improve clay inhibition and prevent stickiness.

MWD/BHA

- #1: Packed 8 1/2" rotary assembly with 3 stabilisers (last one 15 m behind the bit) - Failure on BCPM
- #2: Same BHA - Failure on BCPM
- #3: Modified BHA for lower ECDs (Pendulum assembly) with one stabiliser 15m behind the bit.
- #4: 3 1/2" cement stinger
- #5: As run #3
- #6: same
- #7: Same, but an extra float sub
- #8: Coring assembly
- #9: As run #7

LOGGING

Ran four logs on wireline:

- #1: PEX-HRLT-ECS (9 hours in total inc. rig up/down)
- #2: MSIP-FMI (10 hours in total)
- #3: MSCT, took and retrieved 46 cores and 100% recovery (20.5 hours in total)
- #4: MDT-LFA, no pressure points achieved (22 hours in total)

5.9 NO 6403/6-1, 6" (05.07.2006 16:30)

START: 05.07.2006 16:30 3782 mMD RKB

END : 12.07.2006 18:30 4120 mMD RKB

OBJECTIVE

- Drill 6" hole to core point at top of reservoir at 4020m (+/-50m)
- Core Lysing reservoir
- Drill to TD at approximately 4120m
- WL logging

SUMMARY

A 6x7 bicenter bit CSD+322 was used to drill out due to ECD concerns. The bit has a pass through drift of 6in as long as the maximum BHA components OD are 4.75" or less. An x/o sub was needed due to bi-center bit having a non-standard pin connection. The x/o used was 4-15/16". While attempting to drill out the shoe track, the reamer arm was milling the 7in liner. This caused very low ROP and high stick-slip. POOH & RIH with DSX516M-B1 (6" PDC). Drilled shoe track and 3m of new formation from 3775 m-3778 m. Drilling cement 10-12 m/hr with 1-3 tons. Drilling shoe 1½ hours and was very slow. It appears the bit was severely damaged when drilling shoe. Drilled 7 m rate hole and 3 m of new formation at 1 m/hr. LOT was 1.48 SG which was 3 pts below minimum required and 12 pts below anticipated. Drilled 4m of new formation from 3778m-3782m and spotted LCM pill. Second LOT was 1.48 SG.

POOH due to low ROP (bit graded 8-8). RIH w/cmt stinger and set cement balance plug including squeezing 1m³. RIH with new DXS516M-B1 (PDC) / BHA and easily drilled cement 20+ m/hr with 0-1 ton and 3m of new formation from 3782m-3785m. LOT # 3 was 1.50 SG. Continued drilling ahead with 1.22 SG mud limiting ROP to 8 m/hr to reduce packing off around BHA. Flow was at maximum limit for MWD just under 1300 lpm. The high flowrate helped the BHA from packing off and no vibrations recorded. Drilled to 3960 m and stopped drilling until MW increased from 1.22 SG to 1.29 before entering reservoir. Continued drilling into reservoir while limiting ROP to 8 m/hr with 1-3 tons, 1285 lpm (riser - 2 pumps 2700lpm), 155 rpm. No good, thick clean sands were encountered (by MWD) so planned coring was eliminated. Drilled to TD at 4120m. POOH after flow checking and pulling 5 stands wet. The hole appeared to be in very good shape. The bit showed no wear (0-0-WT-A-In-X-NO-TD).

DRILLING FLUID

Ultradrill water base mud was used for the section. Drilled out with 1.19 SG. Increased MW to 1.28 SG before entering reservoir.

MWD/BHA

- #1 6"x7" rotary drilling assembly with 2 stabs @16m & 27m behind bi-center bit
- #2 6" rotary drilling assembly as above but 2 stabs @ 14m & 25m behind bit
- #3 3-1/2" cement stinger
- #4 same as run #2 but with new bit

LOGGING

- WL#1 PEX-HLRA-HNGS (resistivity, neutron, density, GR)
- WL#2 ZSVP (seismic)
- WL#3 MSCT (sidewall cores)
- WL#4 FMI-MSIP (sonic, resistivity imaging)

5.10 NO 6403/6-1, PERM P&A (12.07.2006 18:30)

START: 12.07.2006 18:30 4120 mMD RKB

END : 25.07.2006 14:00 4120 mMD RKB

SUMMARY

Sat 2 OH cement plugs of 250 m each, +/- 150m into the 7" liner. Lay down 3 1/2" DP (1660m) and 5" DP (1730m) on the way out. Closed shear ram and pressure tested cement plug #2 to 70bar above 7" LOT. RIH with 13 3/8" EZSV (dressed with bridge plug) and installed plug at 2685 m, load tested to 10T and pressure tested. Placed 100m cement on top. Reduced mudweight to 1,22sg (LOT 16" shoe is 1,29sg).

POOH and ran in with 13 3/8" casing cutter assy with mud motor and Dril-Quip MPT for retrieval of wearbushing. Landed off MPT in wearbushing prior to start cutting. As a result of Ocean Rig refusal of cutting the casing against closed BOP and returns up kill/choke lines (in case of steel swarf in the kill/choke valves), the casing was cut with returns up the riser. Cut for approx. 3-4 min, then closed UAP and flow checked well. Opened UAP, cut for another 3-4

min, flow checked and so on. Cut 13 3/8" casing at +/- 2370 m and observed losses to formation. Loss rate 2,25 m3/min. Monitored well and filled after with 1.22 sg mud while monitoring fluid level in the riser using the BOP pressure gauge. Lost 15,7 m3 before well stable. Closed UAP and sheared out wearbushing with 42T overpull. No losses at this point.

Pulled out with wearbushing and casing cutter assy to 1409 m and recorded losses to the formation. Recorded an initial loss rate of 114 m3/hour first hours. Topped up riser with 1.22 sg mud before start cutting mud weight in riser to 1.18sg. No returns to surface with booster pump running. Topped up riser until empty of all surface mud. Continued topping up using seawater. Losses reduced. With the ability of monitoring the fluid level in the riser (BOP pressure gauge) and the BOP as the second barrier decided to come out of the hole with the casing cutter assy and wearbushing and RIH to retrieve the 13 3/8" casing.

RIH with 16" EZSV (Dressed as retainer due to size and weight) to secure 16"x20" annulus. Sat 16" EZSV at 2360m and pressure- and load tested. Pressure test limited to 16" liner pressure test. Displaced well to seawater and placed 2 x 280m cement on top, reaching to 44m below seabed.

Pulled BOP and riser.

RIH with MOST tool to cut 20" and 36" +/-5 m below seabed. Attempted to engage MOST without success. Pulled cutting assy above wellhead and discovered that the VX ring was still in place. Retrieved ROV to surface to get the angle grinder tool. Cut VX ring. Engaged MOST tool and cut 20"x36" casings. Retrieved cut casings to surface.

5.11 Figures and tables

5.11.1 Well schematic

Figure 5-1 : Well Schematic

WELL SCHEMATIC											
Well: 6403/6-1 Field: PL 322, Edvarda Rig: Eirik Rautde											
HOLE	SIZE	TYD MD		CASING			LOT / FIT	TOC	CSG. SHOE		M.V. [SG]
		TYD	MD	SIZE	TYPE / RAD. MARKERS	CENTRALIZERS			TYD	MD	
SB		1746						Sea bed			
42" x 36"		1838		30"	Interval: 1744 - 1838 m (34 m) Type: 303.7 lb/ft, X-52, SL-60 Drift: 26.875" * Included 36" X-52, 15" wall extension joint (15m).		N/A		1838	1838	sea water - 1.35
26"		2400		20"	Interval: 1746 - 2400 m Type: 133 lb/ft, N-60, Tenaris ER Drift: 18.542"	1x Bow type 4 first joints	LOT 1.19	Sea bed	2306	2306	sea water - 1.35
17 1/2" x 20"		2560		16"	Interval: 2400 - 2560 m Type: 84 lb/ft, C-35, BTC Drift: 14.9" Hanger depth depending on 20" shoe depth.	N/A	LOT 1.23		2334	2334	1.08 - 1.13
14 3/4" x 17 1/2"		2741		13 3/8"	Interval: 2560 - 2741 m Type: 72 lb/ft, P-110, Vam Top Drift: 12.25"	N/A	LOT 1.34	2565	2546	2546	1.15 - 1.19
12 1/4"		2983		9 5/8"	Interval: 2741 - 2983 m Type: 53.5 lb/ft, P-110, Vam Top Drift: 8.5"	1x Springlifter 4 first joints	LOT 1.46	2635	2741	2741	1.19 - 1.23
8 1/2"		3768		7"	Interval: 2983 - 3768 m Type: 32.0 lb/ft, P110, Vam Top Drift: 6.0"	1x Springlifter 4 first joints	LOT 1.59	2907	2907	2907	1.23 - 1.19
6"		4120		N/A	Interval: 3768 - 4120 m				3768	3768	1.22 - 1.23

Rev 2 - 01.05.06

SURV OH

LVD LOGS

M.V. [SG]

Formation Temperature :
RKB
- 9.5°C

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MD

TYD

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TEST PRESS [BAR]

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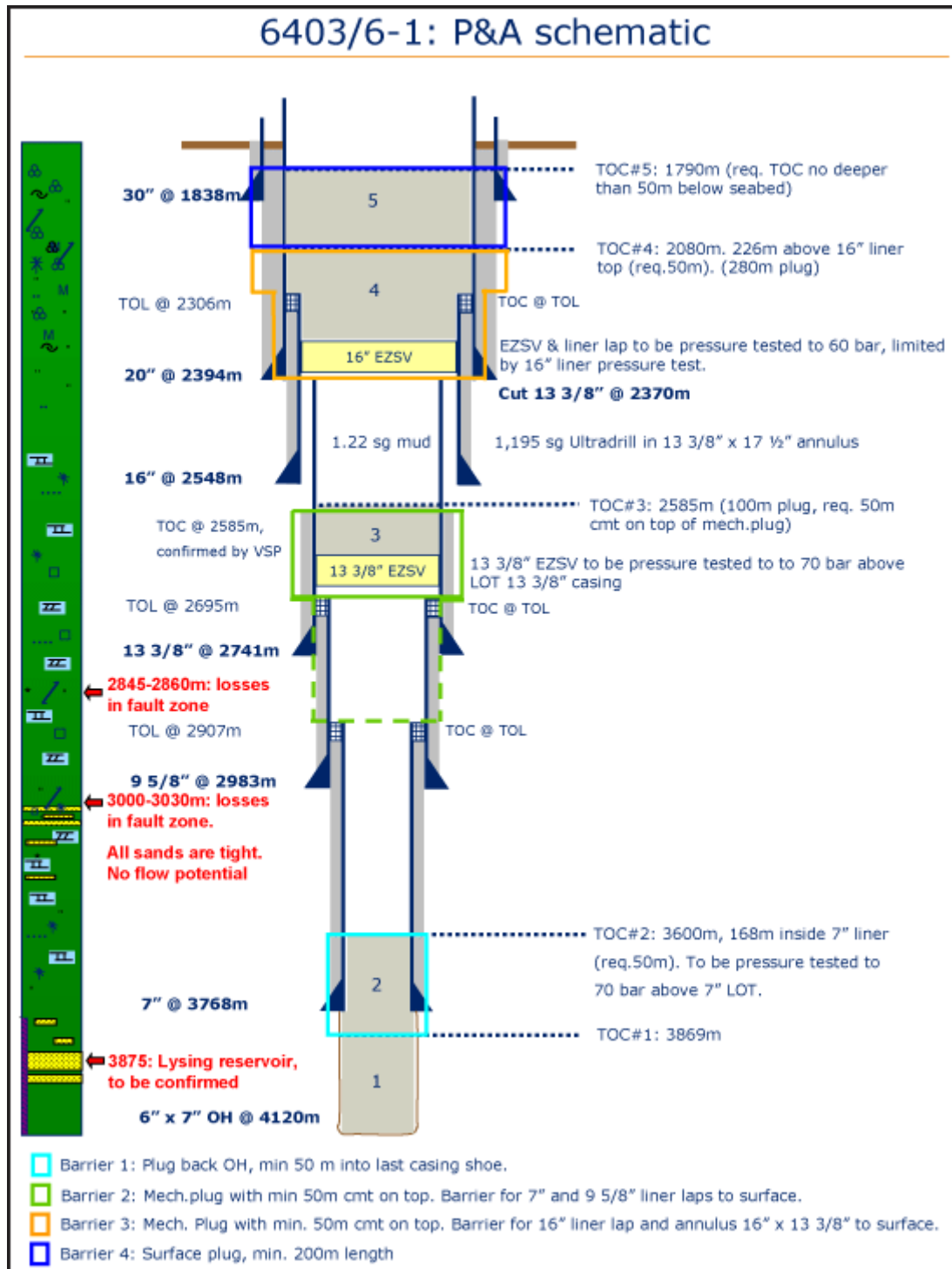
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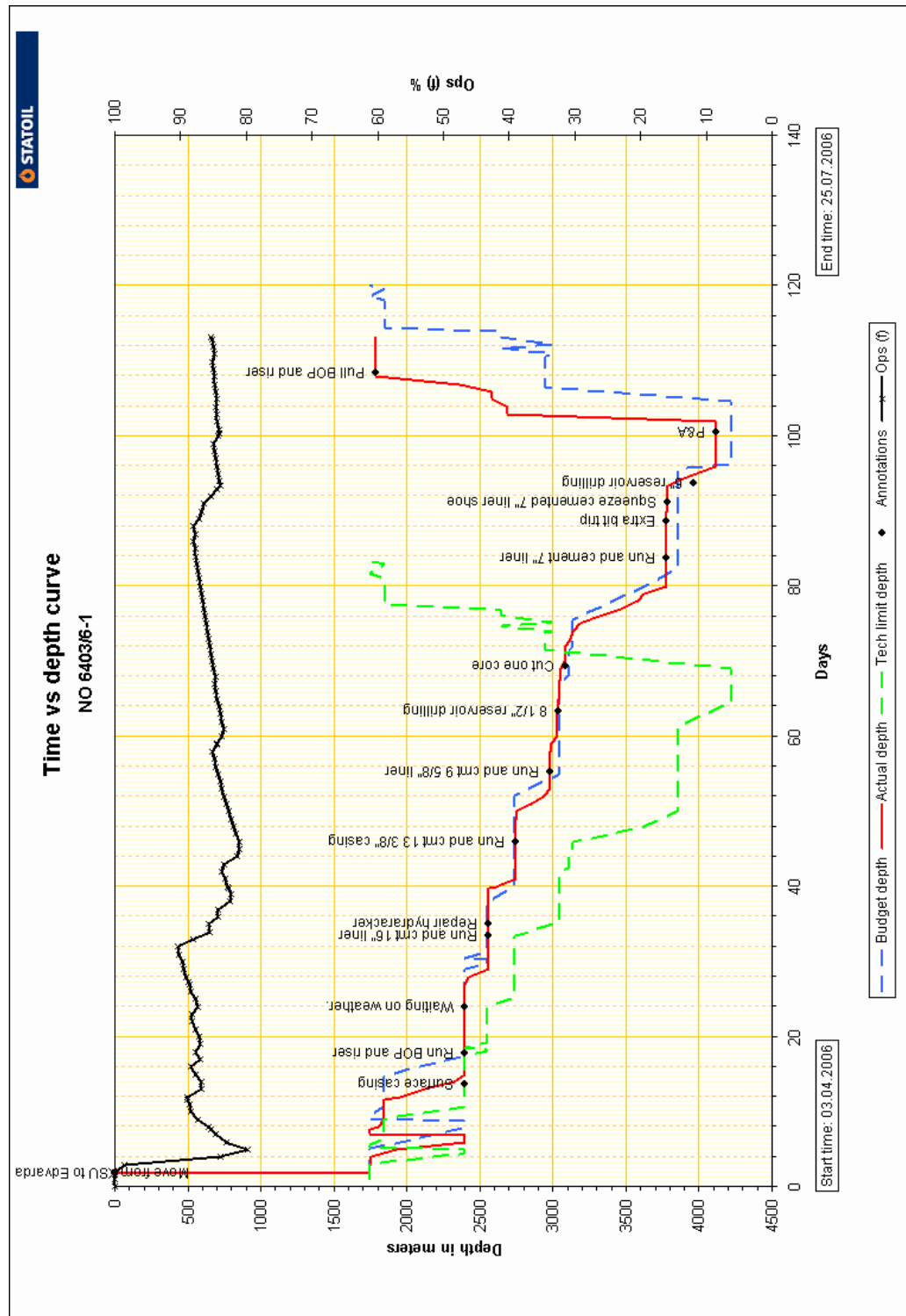
5.11.2 P&A wellbore schematic

Figure 5-2 : P&A Schematic



5.11.3 Time/depth curve

Figure 5-3 : Time/Depth curve



Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted
 Doc. no.
 MYN-LET 00378
 Date
31.01.2007



Rev. no. 89 of 177
0

5.11.4 Timeplanner

Table 5-1 : Project planner

PROJECT NAME: Edvarda (O322A)
PROJECT NUMBER: T.O322A.AP.20100

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
03.04.2006 08:00	05.04.2006 06:00	36,0	1,5	24,0	1,0	41,0	46,0	1,9	0,0	MOVE [NO 6403/6-1]	
03.04.2006 08:00	05.04.2006 06:00	36,0	1,5	24,0	1,0	41,0	46,0	1,9	0,0	4 Move rig from KSU to Edvarda	OR
05.04.2006 06:00	10.04.2006 06:00	176,0	7,3	98,0	4,1	69,0	120,0	5,0	25,5	8 1/2" [NO 6403/6-U-1]	
05.04.2006 06:00	05.04.2006 12:00	10,5	1,9	6,0	1,3	2,0	6,0	2,2	0,0	5 MU 8 1/2" BHA.	OR
05.04.2006 11:59	05.04.2006 12:00	20,8	2,8	12,0	1,8	12,0	0,0	2,2	0,0	6 Set out transponders. Perform DP test. Ballast rig to drilling draft.	Ocean,OR
05.04.2006 12:00	06.04.2006 10:30	19,0	3,6	10,0	2,2	0,0	22,5	3,1	1,0	7 PU 15 stands + 46 stands 5" landing string	OR
06.04.2006 10:30	06.04.2006 15:30	33,0	5,0	18,0	2,9	3,0	5,0	3,3	1,0	8 RIH while PU 1400 m 5 1/2" DP	BHI,OR
06.04.2006 15:30	06.04.2006 16:30	3,0	5,1	1,0	3,0	1,0	1,0	3,4	0,0	9 Spud in and place marker buoys.	BHI,BHI,Geo,OR,Weir,Ocean
06.04.2006 16:30	09.04.2006 14:30	62,0	7,7	35,0	4,4	35,0	70,0	6,3	22,0	10 Drill pilothole to 2400 m.	BHI,BHI,Ocean,OR,Weir
09.04.2006 14:30	10.04.2006 06:00	27,7	8,8	16,0	5,1	16,0	15,5	6,9	1,5	11 Circulate and cement. POOH. L/d BHA	BHI,BHI,Geo,Hall,Ocean,OR
10.04.2006 06:00	11.04.2006 00:00	13,6	0,6	9,0	0,4	9,0	18,0	0,8	1,5	PRESPOD [NO 6403/6-1]	
10.04.2006 06:00	10.04.2006 08:00	3,0	9,0	2,0	5,2	2,0	2,0	7,0	0,0	12 MU 30" running tool & cement stand. R/B	DQ,OR,Hall
10.04.2006 08:00	10.04.2006 17:30	3,0	9,1	2,0	5,3	2,0	9,5	7,4	0,0	13 MU 36" x 42" BHA	OR,Hall,BHI,BHI
10.04.2006 17:30	11.04.2006 00:00	7,6	9,4	5,0	5,5	5,0	6,5	7,7	1,5	14 Run 36" BHA down to sea bed. Spud. Marker bouys	OR,Hall,BHI,Ander,BHI
11.04.2006 00:00	11.04.2006 12:30	30,2	10,7	20,0	6,3	15,0	12,5	8,2	0,0	15 Drill 36" hole from 1746 m to 1840 m.	Ocean,MI,OR,Hall,BHI,Geo,Ander,BHI
11.04.2006 00:00	14.04.2006 22:00	127,1	5,3	85,0	3,5	77,0	94,0	3,9	3,5	42" x 36" [NO 6403/6-1]	
11.04.2006 12:29	11.04.2006 12:30	1,5	10,7	1,0	6,3	0,0	0,0	8,2	0,0	16 Remove conductor handling eq. RU for landingstring	DQ,Ocean,OR,Hall,Geo
11.04.2006 12:29	11.04.2006 12:30	2,0	10,8	1,0	6,4	1,0	0,0	8,2	0,0	17 Rig maintenance	OR,Hall
11.04.2006 12:29	11.04.2006 12:30	1,5	10,9	1,0	6,4	1,0	0,0	8,2	0,0	18 Clear and clean rig floor	OR,Hall
11.04.2006 12:30	11.04.2006 15:00	4,5	11,1	3,0	6,5	3,0	2,5	8,3	0,0	19 Circulate hole clean and displace to 1.35 sg mud.	Ocean,MI,OR,Hall,BHI,Geo,BHI

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 90 of 177
0

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
11.04.2006 15:00	11.04.2006 21:30	9,1	11,4	6,0	6,8	6,0	6,5	8,6	0,0	20 POOH, top up hole with 1,35 sg mud from below sea bed.	Ocean,MI,OR,Hall,BHI,Geo,BHI
11.04.2006 21:30	12.04.2006 01:00	3,0	11,6	2,0	6,9	2,0	3,5	8,7	0,0	21 L/D 36"x42" BHA.	OR,Hall,BHI,BHI
12.04.2006 01:00	12.04.2006 15:30	3,0	11,7	3,0	7,0	2,0	14,5	9,3	0,0	22 Rig up and run 30*36" conductor .	DQ,Weath,Ocean,OR,Hall,Geo
12.04.2006 15:30	12.04.2006 19:00	3,0	11,8	2,0	7,1	3,0	3,5	9,5	0,0	23 Install c plate. MU stinger and R/T. Install bullseyes.	DQ,Ocean,OR,Hall,Geo
12.04.2006 19:00	13.04.2006 03:00	7,6	12,1	5,0	7,3	5,0	8,0	9,8	0,0	24 RIH w/ 36"x 30" conductor	Ocean,OR,Hall,Geo
13.04.2006 03:00	13.04.2006 05:30	6,0	12,4	4,0	7,5	4,0	2,5	9,9	0,0	25 Stab in and land conductor. Verify 2 m stick up. Install cement stand	DQ,Ocean,OR,Hall,Geo
13.04.2006 05:30	13.04.2006 08:30	4,5	12,6	3,0	7,6	3,0	3,0	10,0	0,0	26 Circulate, pump and displace foam cement.	Ocean,OR,Hall,Geo
13.04.2006 08:30	13.04.2006 19:30	12,1	13,1	8,0	7,9	12,0	11,0	10,5	0,0	27 WOC	Ocean,OR,Hall
13.04.2006 19:30	13.04.2006 23:30	6,0	13,3	4,0	8,1	4,0	4,0	10,6	2,0	28 Release RT and wash conductor housing.	DQ,Ocean,OR,Hall
13.04.2006 23:30	14.04.2006 05:30	6,0	13,6	4,0	8,3	4,0	6,0	10,9	0,5	29 POOH. LD running tool and stinger	OR,Hall,DQ,Ocean
14.04.2006 05:30	14.04.2006 07:00	3,0	13,7	2,0	8,3	1,0	1,5	11,0	0,0	30 MU cementhead stand and PU 20" Hanger stand and rack.	OR,Hall
14.04.2006 07:00	14.04.2006 19:00	21,1	14,6	14,0	8,9	9,0	12,0	11,5	1,0	31 MU and RIH with 26" assembly. PU 5 1/2" DP while RIH.	Ocean,OR,Hall,BHI,Geo,BHI
14.04.2006 19:00	14.04.2006 22:00	3,0	14,7	2,0	9,0	2,0	3,0	11,6	0,0	32 Drill out 30" conductor shoe and clean out rat hole.	Ocean,MI,OR,Hall,BHI,Geo,BHI
14.04.2006 22:00	30.04.2006 14:30	342,0	14,2	206,0	8,6	249,0	376,5	15,7	35,5	26" [NO 6403/6-1]	
14.04.2006 22:00	17.04.2006 18:30	65,0	17,4	40,0	10,7	40,0	68,5	14,4	13,0	33 Drill 26" hole to 2400 m. (13,5 m/hr)	Ocean,MI,OR,BHI,Geo,BHI
17.04.2006 18:30	18.04.2006 03:30	0,0	17,4		10,7	5,0	9,0	14,8	0,0	34 Perform wiper trip to 30" csg shoe.	MI,Geo,BHI,Ocean,BHI
18.04.2006 03:30	18.04.2006 07:00	3,4	17,5	2,0	10,7	2,0	3,5	15,0	0,0	35 Circulate hole clean and displace to 1.35 SG mud	OR,BHI
18.04.2006 07:00	18.04.2006 19:00	11,8	18,0	7,0	11,0	7,0	12,0	15,5	0,0	36 POOH and rack 26" BHA	OR,BHI
18.04.2006 19:00	18.04.2006 22:00	0,0	18,0		11,0	3,0	3,0	15,6	0,0	37 Cut and slip drill line	
18.04.2006 22:00	19.04.2006 00:00	6,8	18,3	4,0	11,2	4,0	2,0	15,7	0,0	38 RU to run 20" casing.	DQ,Weath,OR
19.04.2006 00:00	19.04.2006 20:00	27,1	19,5	16,0	11,9	16,0	20,0	16,5	9,0	39 Run 20" casing. Fill casing with seawater.	Weath,Ocean,OR,Geo
19.04.2006 20:00	19.04.2006 20:30	1,7	19,5	1,0	11,9	1,0	0,5	16,5	0,0	40 Clear and clean rig floor	OR
19.04.2006 20:30	20.04.2006 06:30	8,5	19,9	5,0	12,1	5,0	10,0	16,9	0,0	41 RU for 5 " landingstring. Run to seabed while PU	DQ,Weath,Ocean,OR,Geo
20.04.2006 06:29	20.04.2006 06:30	1,7	19,9	1,0	12,2	0,0	0,0	16,9	0,0	42 Displace 20" casing to 1.35 SG weighted mud.	Ocean,MI,OR,Geo
20.04.2006 06:30	20.04.2006 15:30	6,8	20,2	4,0	12,3	4,0	9,0	17,3	0,0	43 Enter well and RIH to TD. Top up casing with 1,35 sg mud.	Ocean,OR,Geo
20.04.2006 15:29	20.04.2006 15:30	1,7	20,3	1,0	12,4	1,0	0,0	17,3	0,0	44 Check float. Do not pressure test. Float will fail.	Ocean,OR,Hall,Geo
20.04.2006 15:30	20.04.2006 22:00	20,3	21,1	12,0	12,9	12,0	6,5	17,6	0,0	45 Circulate mud, mix and displace cement	Ocean,OR,Hall,Geo

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted
Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 91 of 177
0

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
20.04.2006 22:00	21.04.2006 02:30	3,4	21,3	2,0	13,0	2,0	4,5	17,8	0,0	46 Rack cement stand. Apply rigid lock down. Release R/T and wash WH area.	DQ,Ocean,OR,Geo
21.04.2006 02:30	21.04.2006 09:30	8,5	21,6	5,0	13,2	7,0	7,0	18,1	0,0	47 POOH. L/D cement head and R/T	DQ,Ocean,OR,Hall,Geo
21.04.2006 09:30	21.04.2006 11:30	33,8	23,1	20,0	14,0	20,0	2,0	18,1	0,0	48 Prepare to run BOP	OR
21.04.2006 11:30	21.04.2006 13:00	0,0	23,1		14,0	5,0	1,5	18,2	0,0	49 Top drive maintenance. Electrician to check torque problem	Geo,Ocean,Hall,DQ
21.04.2006 13:00	21.04.2006 22:00	0,0	23,1		14,0	18,0	9,0	18,6	0,0	50 a. Prepare to run BOP	Geo,Ocean,Hall,DQ
21.04.2006 22:00	28.04.2006 02:30	81,1	26,4	48,0	16,0	59,0	148,5	24,8	12,5	51 Run BOP/riser (WOW)	Ocean,OR,Hall
28.04.2006 02:29	28.04.2006 02:30	5,1	26,6	3,0	16,1	3,0	0,0	24,8	0,0	52 Cut and slip. Rig maintenance	OR
28.04.2006 02:30	28.04.2006 13:00	20,3	27,5	12,0	16,6	12,0	10,5	25,2	0,0	53 Land BOP and pressure test. Post-landing activities.	Ocean,OR,Hall
28.04.2006 13:00	28.04.2006 14:00	1,7	27,6	1,0	16,7	1,0	1,0	25,3	0,0	54 Clear and clean rigfloor.	Ocean,OR,Hall
28.04.2006 14:00	28.04.2006 20:30	12,0	28,1	8,0	17,0	8,0	6,5	25,5	0,0	55 RU and run VSP	Ocean,Hall
28.04.2006 20:30	29.04.2006 12:30	11,8	28,6	7,0	17,3	7,0	16,0	26,2	1,0	56 MU and RIH with 17 1/2" BHA	Weir,OR,BHI,BHI,Geo
29.04.2006 12:30	30.04.2006 07:00	4,4	28,7	4,0	17,5	4,0	18,5	27,0	0,0	57 Hold kick drill. Drill out shoetrack w/sw and pills. Drill 3m new formation	MI,Weir,OR,BHI,BHI,Geo
30.04.2006 07:00	30.04.2006 14:30	5,1	28,9	3,0	17,6	3,0	7,5	27,3	0,0	58 Circulate and perform LOT.	MI,Weir,OR,Hall,Geo
30.04.2006 14:30	12.05.2006 23:30	216,5	9,0	151,0	6,3	438,5	301,0	12,5	87,5	17 1/2" x 20" [NO 6403/6-1]	
30.04.2006 14:30	02.05.2006 02:30	15,0	29,6	10,0	18,0	20,0	36,0	28,8	0,0	59 Drill 17 1/2" hole to 2560 m	BHI,BHI,Geo,Weir
02.05.2006 02:29	02.05.2006 02:30	15,0	30,2	10,0	18,4	0,0	0,0	28,8	0,0	60 Drill 17 1/2" hole to 2550 m	BHI,BHI,Geo,Weir
02.05.2006 02:29	02.05.2006 02:30	4,5	30,4	3,0	18,5	0,0	0,0	28,8	0,0	61 Displace well to Ultradrill mud	MI,Geo,Hall,OR,BHI,BHI
02.05.2006 02:30	03.05.2006 04:30	21,0	31,3	14,0	19,1	14,0	26,0	29,9	0,5	62 Circulate. POOH and rack BHA.	Geo,OR
03.05.2006 04:30	03.05.2006 21:00	8,0	31,6	6,0	19,4	24,0	16,5	30,5	0,0	63 Wireline logging	Geo,OR,Schlum
03.05.2006 21:00	04.05.2006 09:00	15,0	32,2	10,0	19,8	10,0	12,0	31,0	0,0	64 RIH, w/ 20" UR	Geo,OR
04.05.2006 09:00	04.05.2006 15:30	15,0	32,8	10,0	20,2	10,0	6,5	31,3	0,0	65 Open up to 20" hole	Ander,BHI,Geo,OR,Weir,BHI
04.05.2006 15:30	05.05.2006 09:00	21,0	33,7	14,0	20,8	14,0	17,5	32,0	0,0	66 Circulate. POOH and rack BHA.	Ander,BHI,BHI,Geo,OR
05.05.2006 09:00	05.05.2006 21:00	0,0	33,7		20,8	10,0	12,0	32,5	11,0	67 RIH with 20" UR	OR,Geo,BHI,Ander,BHI
05.05.2006 21:00	06.05.2006 04:00	0,0	33,7		20,8	10,0	7,0	32,8	7,0	68 Open up to 20" hole	Ander,BHI,BHI,Geo,OR
06.05.2006 04:00	07.05.2006 04:30	0,0	33,7		20,8	14,0	24,5	33,9	24,5	69 Circulate, POOH.	Ander,BHI,BHI,OR
07.05.2006 04:30	07.05.2006 12:30	15,0	34,3	10,0	21,2	10,0	8,0	34,2	0,0	70 RU and run 16" liner	BOT,OR,Weath,Geo
07.05.2006 12:30	07.05.2006 21:30	21,0	35,2	15,0	21,8	15,0	9,0	34,6	0,0	71 Run liner on 5 1/2" DP.	BOT,Geo,OR
07.05.2006 21:30	08.05.2006 06:00	15,0	35,8	10,0	22,3	10,0	8,5	34,9	2,0	72 Set hanger. Cement and set packer	Hall,BOT,Geo,OR
08.05.2006 06:00	08.05.2006 15:00	7,0	36,1	5,0	22,5	5,0	9,0	35,3	0,0	73 POOH with R/T.	BOT,Geo,OR
08.05.2006 15:00	09.05.2006 05:00	0,0	36,1		22,5	72,0	14,0	35,9	14,0	74 Repair hydraracker	OR
09.05.2006 05:00	09.05.2006 20:00	15,0	36,8	15,0	23,1	15,0	15,0	36,5	0,0	75 Pressure test BOP	DQ,Geo,Hall,OR

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378

Date
31.01.2007



Rev. no. 92 of 177
0

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
09.05.2006 20:00	09.05.2006 21:30	0,0	36,8		23,1	58,0	1,5	36,6	1,5	76 repair hydra racker	Geo,DQ,Hall
09.05.2006 21:30	10.05.2006 00:30	0,0	36,8		23,1	4,0	3,0	36,7	0,0	77 POOH with BOP test tool.	Geo,DQ,Hall
10.05.2006 00:30	10.05.2006 03:00	0,0	36,8		23,1	56,5	2,5	36,8	2,5	78 repair Hydra racker.	Geo,DQ,Hall
10.05.2006 03:00	10.05.2006 05:00	0,0	36,8		23,1	2,0	2,0	36,9	0,0	79 POOH with BOP test tool. L/D same.	Geo,Hall,DQ
10.05.2006 05:00	10.05.2006 06:30	0,0	36,8		23,1	2,0	1,5	36,9	0,0	80 Pressure test Upper, lower IBOP and mud hose.	
10.05.2006 06:30	11.05.2006 11:00	0,0	36,8		23,1	42,0	28,5	38,1	24,5	81 Repair hydra racker.	
10.05.2006 08:00	10.05.2006 11:00	5,0	37,0	3,0	23,2	3,0	3,0	38,3	0,0	82 Cut and slip. Rig maintenance	OR
10.05.2006 13:00	10.05.2006 14:00	0,0	37,0		23,2	1,0	1,0	38,3	0,0	83 Pressure test BSR and 16" liner.	
11.05.2006 11:00	11.05.2006 12:00	0,0	37,0		23,2	1,0	1,0	38,3	0,0	84 Make up cement stand.	
11.05.2006 12:00	11.05.2006 20:30	14,0	37,6	9,0	23,6	9,0	8,5	38,7	0,0	85 RIH w/ 14 3/4" x 17 1/2" BHA	BHI,BHI,Hall,Geo,OR
11.05.2006 20:30	12.05.2006 17:00	5,0	37,8	4,0	23,8	4,0	20,5	39,5	0,0	86 Hold kick drill. Drill out shoetrack. Drill 3m new formation	BHI,BHI,Hall,MI,OR,Geo
12.05.2006 17:00	12.05.2006 23:30	5,0	38,0	3,0	23,9	3,0	6,5	39,8	0,0	87 Circulate and perform LOT.	MI,BHI,BHI,Hall,OR,Geo
12.05.2006 23:30	14.05.2006 04:30	44,0	39,8	30,0	25,1	30,0	29,0	41,0	0,0	88 Drill 14 3/4" x 17 1/2" hole from 2550m-2740 m	MI,OR,BHI,BHI,Geo,Hall
12.05.2006 23:30	23.05.2006 09:30	337,2	14,0	228,0	9,5	234,0	250,0	10,4	43,0	14 3/4" x 17 1/2" [NO 6403/6-1]	
14.05.2006 04:29	14.05.2006 04:30	51,0	41,9	36,0	26,6	0,0	0,0	41,0	0,0	89 N/A (RIH and UR to 17 1/2" POOH)	MI,Geo,BHI,BHI
14.05.2006 04:30	15.05.2006 18:30	20,7	42,8	14,0	27,2	14,0	38,0	42,6	0,0	90 Circulate hole clean. Pooh and rack bha.	MI,OR,BHI,BHI,Geo,Hall
15.05.2006 18:30	16.05.2006 01:30	0,0	42,8	0,0	27,2	30,0	7,0	42,9	2,5	91 Wireline logging	Schlum,OR,Geo
16.05.2006 01:30	17.05.2006 13:00	0,0	42,8	0,0	27,2	24,0	35,5	44,4	33,5	92 Clean up run 14 3/4" BHA	Geo
17.05.2006 13:00	18.05.2006 05:30	44,4	44,6	30,0	28,5	30,0	16,5	45,1	3,5	93 Wireline logging	Geo
18.05.2006 05:30	19.05.2006 03:30	11,8	45,1	8,0	28,8	8,0	22,0	46,0	3,5	94 Pull nominal bore protector	OR,Geo,DQ
19.05.2006 03:30	20.05.2006 02:00	59,2	47,6	40,0	30,5	40,0	22,5	46,9	0,0	95 Run 13 3/8" casing	DQ,Weath,MI,OR
20.05.2006 01:59	20.05.2006 02:00	3,0	47,7	2,0	30,5	0,0	0,0	46,9	0,0	96 N/A MU 9 5/8" hanger and cement stand	MI,OR,Hall,Geo,DQ,Weath
20.05.2006 02:00	21.05.2006 11:00	26,6	48,8	18,0	31,3	18,0	33,0	48,3	0,0	97 Cement 13 3/8" casing. Set seal assy and test BOP. L/D 63 stands 5" DP on way out.	DQ,OR,Hall,Geo
21.05.2006 11:00	21.05.2006 22:00	29,6	50,1	20,0	32,1	8,0	11,0	48,8	0,0	98 Run wear bushing	DQ,Weath,MI,OR,Hall,Geo
21.05.2006 22:00	22.05.2006 03:30	18,0	50,8	12,0	32,6	8,0	5,5	49,0	0,0	99 M/U 12 1/4" bha. P/U dp from deck if req'd.	MI,OR,BHI,BHI,Geo
22.05.2006 03:30	22.05.2006 09:30	12,0	51,3	7,0	32,9	12,0	6,0	49,2	0,0	100 RIH with 12 1/4" BHA to 2700m. Kick drill.	MI,OR,BHI,BHI,Geo
22.05.2006 09:30	23.05.2006 09:30	11,9	51,8	8,0	33,3	12,0	24,0	50,2	0,0	101 Displace. Drill out shoetrack/ rathole. Take LOT.	MI,OR,Hall,BHI,BHI,Geo
22.05.2006 11:50	22.05.2006 11:50	5,0	52,0	3,0	33,4	0,0	0,0	50,2	0,0	102 Cut &slip rig maintenance	Geo,MI,OR,BHI,BHI
23.05.2006 09:30	01.06.2006 08:00	358,8	15,0	206,0	8,6	137,0	214,5	8,9	13,0	12 1/4" [NO 6403/6-1]	
23.05.2006 09:30	26.05.2006 15:00	70,4	54,9	40,0	35,0	35,0	77,5	53,5	0,0	103 Drill 12 1/4" hole to 3000 m. Circulate hole clean	MI,OR,Hall,BHI,BHI,Geo
26.05.2006 15:00	27.05.2006 10:00	0,0	54,9	0,0	35,0	0,0	19,0	54,3	0,0	104 Perform wiper trip up into the 13 3/8" shoe. Circulate hole clean.	Geo,BHI,MI,Hall,BHI

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted
Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 93 of 177
0

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
27.05.2006 10:00	28.05.2006 01:00	49,3	57,0	28,0	36,2	10,0	15,0	54,9	0,0	105 POOH and rack bha (Pump out of OH into 13 3/8" shoe)	MI,OR,BHI,BHI,Geo
28.05.2006 01:00	28.05.2006 09:00	52,8	59,2	30,0	37,5	12,0	8,0	55,2	0,0	106 Wireline logging	Schlum,OR,Geo
28.05.2006 09:00	28.05.2006 18:30	30,0	60,5	17,0	38,2	8,0	9,5	55,6	0,0	107 R/U and run 9 5/8" casing joints, R/D handling eq.	MI,OR,Geo
28.05.2006 18:30	29.05.2006 05:00	14,0	61,0	8,0	38,5	8,0	10,5	56,0	0,0	108 Run 9 5/8" casing on 5 1/2" dp	Weath,Weath,OR,Geo
29.05.2006 05:00	29.05.2006 11:00	24,7	62,1	14,0	39,1	4,0	6,0	56,3	0,0	109 Cement 9 5/8" liner	Weath,MI,OR,Hall,Geo
29.05.2006 11:00	29.05.2006 16:30	17,6	62,8	10,0	39,5	8,0	5,5	56,5	0,0	110 Pull out with landing string. L/D hanger running tool.	Weath,OR,Geo
29.05.2006 16:30	30.05.2006 10:30	40,0	64,5	25,0	40,5	20,0	18,0	57,3	0,0	111 Test BOP. LD 12 1/4" BHA. Cut & slip. Change wash pipe	Weath,OR,Geo
30.05.2006 10:30	30.05.2006 13:00	0,0	64,5		40,5	3,0	2,5	57,4	0,0	112 L/o 12 1/4" BHA.	Geo,Weath,OR
30.05.2006 13:00	31.05.2006 02:00	14,1	65,1	8,0	40,9	12,0	13,0	57,9	0,0	113 M/U 8 1/2" BHA. P/U 5" dp. RIH.	MI,OR,Hall,BHI,BHI,Geo
31.05.2006 02:00	31.05.2006 05:30	7,1	65,3	4,0	41,0	3,0	3,5	58,1	0,0	114 Hold kick drill. Take fingerprinting data.	MI,OR,Hall,BHI,BHI,Geo
31.05.2006 05:29	31.05.2006 05:30	14,1	65,9	8,0	41,4	0,0	0,0	58,1	0,0	115 N/A Pull wearbushing	
31.05.2006 05:30	01.06.2006 08:00	24,7	67,0	14,0	42,0	14,0	26,5	59,2	13,0	116 Drill out shoetrack/rathole. Take LOT. Increase MW	MI,OR,Hall,BHI,BHI,Geo
01.06.2006 08:00	05.07.2006 16:30	687,6	28,6	465,0	19,4	525,0	829,0	34,5	138,0	8 1/2" [NO 6403/6-1]	
01.06.2006 08:00	06.06.2006 12:30	24,0	68,0	10,0	42,4	10,0	124,5	64,4	23,0	117 Drill to core point. Circ hole clean. (drill cement)	MI,OR,BHI,BHI,Geo
06.06.2006 12:30	07.06.2006 09:00	0,0	68,0		42,4	12,0	20,5	65,2	0,0	118 Run VSP log (Waited on personel)	OR,Geo,BHI,MI,BHI
07.06.2006 09:00	08.06.2006 02:00	0,0	68,0		42,4	18,0	17,0	65,9	0,0	119 RIH .Drill to core point.	OR,MI,Geo,BHI,BHI
08.06.2006 02:00	08.06.2006 09:30	32,3	69,3	15,0	43,0	15,0	7,5	66,2	0,0	120 Pooh, rack bha.	MI,OR,BHI,BHI,Geo
08.06.2006 09:30	08.06.2006 21:30	0,0	69,3		43,0	12,0	12,0	66,7	0,0	121 Re- evaluate pres prognosis etc. PU 3 1/2" DP	Geo,BHI,MI,BHI,OR
08.06.2006 21:30	09.06.2006 16:30	0,0	69,3		43,0	7,0	19,0	67,5	6,5	122 RIH 8 1/2" BHA.	MI,Geo,BHI,BHI,OR
09.06.2006 16:30	09.06.2006 19:00	0,0	69,3		43,0	4,0	2,5	67,6	0,0	123 Circulate, take ECD measurments.	Geo,BHI,MI,BHI,OR
09.06.2006 19:00	10.06.2006 01:30	0,0	69,3		43,0	8,0	6,5	67,9	0,0	124 Drill 8 1/2" hole to core point.	Geo,BHI,MI,BHI,OR,BOT
10.06.2006 01:30	10.06.2006 05:00	0,0	69,3		43,0	2,5	3,5	68,0	0,0	125 Circulate bottoms for sample	MI,BOT,Geo,BHI,BHI
10.06.2006 05:00	10.06.2006 14:00	0,0	69,3		43,0	5,0	9,0	68,4	0,0	126 Circulate and make short trip	BOT,Geo,BHI,MI,BHI
10.06.2006 14:00	11.06.2006 01:00	0,0	69,3		43,0	7,5	11,0	68,9	0,0	127 POOH, rack BHA	Geo,BHI,MI,BHI,OR
11.06.2006 01:00	11.06.2006 11:30	0,0	69,3		43,0	10,0	10,5	69,3	0,0	128 Run MDT log	MI,Geo,BHI,BHI
11.06.2006 11:30	11.06.2006 13:30	17,2	70,0	8,0	43,3	4,0	2,0	69,4	0,0	129 Pu core barrel	MI,OR,BHI,BHI,Geo
11.06.2006 13:30	12.06.2006 03:30	30,1	71,3	14,0	43,9	10,0	14,0	70,0	0,0	130 RIH to core point (+/- 3050m)	MI,OR,BHI,BHI,Geo
12.06.2006 03:30	12.06.2006 14:00	12,9	71,8	6,0	44,2	6,0	10,5	70,4	0,0	131 Cut core	MI,OR,Geo
12.06.2006 14:00	13.06.2006 03:30	35,0	73,3	16,0	44,8	12,0	13,5	71,0	0,0	132 Pooh core assembly	MI,OR,Geo
13.06.2006 03:30	13.06.2006 06:30	12,9	73,8	6,0	45,1	6,0	3,0	71,1	0,0	133 L/D core barrel	MI,OR,Geo
13.06.2006 06:30	13.06.2006 19:30	0,0	73,8		45,1	10,0	13,0	71,6	0,0	134 Run MDT log	MI,Geo
13.06.2006 19:30	14.06.2006 11:00	0,0	73,8		45,1	16,0	15,5	72,3	0,0	135 Pressure test BOP	MI,Geo
14.06.2006 11:00	14.06.2006 12:00	12,9	74,4	6,0	45,3	3,0	1,0	72,3	0,0	136 M/U 8 1/2" BHA	MI,OR,Geo

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted
Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 94 of 177
0

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
14.06.2006 12:00	14.06.2006 21:30	25,8	75,4	12,0	45,8	12,0	9,5	72,7	1,5	137 RIH to cored depth.	OR
14.06.2006 21:30	21.06.2006 06:00	107,0	79,9	50,0	47,9	50,0	152,5	79,1	0,0	138 Ream cored interval and drill 8 1/2" hole to 3625 m.	MI,OR,BHI,BHI,Geo
21.06.2006 06:00	22.06.2006 06:00	58,0	82,3	48,0	49,9	36,0	24,0	80,1	0,0	139 Drill 8 1/2" hole to 3775 m (Extension of TD; 5 m/hr)	BHI,BHI,Geo,OR
22.06.2006 06:00	22.06.2006 16:00	13,0	82,8	6,0	50,2	8,0	10,0	80,5	0,0	140 Circulate hole clean	MI,OR,BHI,BHI,Geo
22.06.2006 16:00	23.06.2006 07:30	32,3	84,2	15,0	50,8	13,0	15,5	81,1	0,0	141 POOH and rack 8 1/2" BHA.	MI,OR,BHI,BHI,Geo
23.06.2006 07:30	23.06.2006 08:30	6,5	84,5	3,0	50,9	3,0	1,0	81,2	0,0	142 Clear rig floor and prepare for wireline logging	OR,Hall
23.06.2006 08:30	25.06.2006 23:00	103,2	88,8	48,0	52,9	30,0	62,5	83,8	0,0	143 Wireline logging	Schlum,OR
25.06.2006 23:00	26.06.2006 12:30	31,0	90,1	20,0	53,8	20,0	13,5	84,4	0,0	144 R/U and run 7" liner, R/D handling eq.	Geo,Weath,OR
26.06.2006 12:30	26.06.2006 23:30	23,0	91,0	15,0	54,4	8,0	11,0	84,8	0,0	145 Run 7" liner on 5 1/2" DP	Geo,OR,Weath
26.06.2006 23:30	27.06.2006 05:30	18,0	91,8	12,0	54,9	4,0	6,0	85,1	0,0	146 Cement 7" liner	OR,Geo,Hall
27.06.2006 05:30	27.06.2006 15:00	18,0	92,5	12,0	55,4	12,0	9,5	85,5	0,0	147 Set packer. POOH.	Weath,Geo,OR
27.06.2006 15:00	28.06.2006 10:00	25,0	93,6	16,0	56,0	15,0	19,0	86,3	0,0	148 Pressure test BOP	Hall,OR
28.06.2006 10:00	28.06.2006 14:30	15,0	94,2	10,0	56,5	10,0	4,5	86,4	0,0	149 MU 6" BHA incl. MWD, 4 3/4" DC, 3 1/2" HWDP.	OR
28.06.2006 14:30	29.06.2006 03:00	11,0	94,6	9,0	56,8	6,0	12,5	87,0	1,5	150 RIH while PU 3 1/2" DP (need 1400m)	BHI,OR,Geo
28.06.2006 20:00	29.06.2006 00:30	0,0	94,6	6,0	57,1	6,0	4,5	87,1	4,5	151 POOH and check/repair float.	BHI,Geo
29.06.2006 03:00	29.06.2006 12:30	8,5	95,0	7,0	57,4	7,0	9,5	87,5	0,0	152 RIH on 5" x 5 1/2" DP	Geo,OR
29.06.2006 12:30	29.06.2006 20:00	10,0	95,4	8,0	57,7	10,0	7,5	87,9	0,0	153 Drill out shoetrack/rathole.	BHI,BHI,Geo,MI,OR
29.06.2006 20:00	29.06.2006 21:00	5,0	95,6	4,0	57,9	4,0	1,0	87,9	0,0	154 Held kick drill. Cut&slip. Rig maintenance.	OR
29.06.2006 21:00	30.06.2006 11:30	0,0	95,6	10,0	58,3	10,0	14,5	88,5	0,5	155 Drill out shoe track/rat hole. Take LOT.	BHI,Geo,OR
30.06.2006 11:30	01.07.2006 18:00	0,0	95,6	15,0	58,9	18,0	30,5	89,8	27,5	156 Trip out to change from bi-center bit to PDC bit. Cut & slip.	Geo,OR
01.07.2006 18:00	02.07.2006 16:00	0,0	95,6	6,0	59,2	6,0	22,0	90,7	0,5	157 Drill out shoetrack/rathole. Take LOT.	OR,BHI,Hall
02.07.2006 16:00	03.07.2006 14:00	0,0	95,6	8,0	59,5	13,0	22,0	91,6	22,0	158 POOH	OR
03.07.2006 14:00	04.07.2006 09:30	0,0	95,6	18,0	60,3	18,0	19,5	92,4	19,5	159 RIH with cement stinger. Pump and squeeze cement.	
04.07.2006 09:30	04.07.2006 17:30	0,0	95,6	10,0	60,7	8,0	8,0	92,8	8,0	160 POOH with cement stinger	
04.07.2006 17:30	05.07.2006 03:00	0,0	95,6	10,0	61,1	10,0	9,5	93,1	9,5	161 Run in hole with 6" BHA.	
05.07.2006 03:00	05.07.2006 16:30	0,0	95,6	6,0	61,3	10,0	13,5	93,7	13,5	162 Drill out cement. Perform LOT.	
05.07.2006 16:30	12.07.2006 18:30	215,0	9,0	183,0	7,6	169,0	170,0	7,1	24,5	6" [NO 6403/6-1]	
05.07.2006 16:30	06.07.2006 21:00	15,0	96,2	72,0	64,3	48,0	28,5	94,9	0,0	163 Drill 6" hole to 3960m (4,0 m/hr)	BHI,BHI,Geo,MI,OR
06.07.2006 21:00	07.07.2006 02:30	0,0	96,2		64,3	10,0	5,5	95,1	0,0	164 Increase mw.	Geo,BHI,MI,BHI
07.07.2006 02:30	07.07.2006 06:00	15,0	96,9	15,0	65,0	15,0	3,5	95,3	0,0	165 Drill 6" hole to top Lysing at 4020m (4,0 m/hr)	MI,Geo,BHI,BHI
07.07.2006 05:59	07.07.2006 06:00	0,0	96,9	0,0	65,0	0,0	0,0	95,3	0,0	166 POOH, RIH with core BHA, cut core, POOH (change in SOW: approx 48 hours)	Geo,BHI,MI,BHI
07.07.2006 06:00	08.07.2006 07:00	65,0	99,6		65,0	24,0	25,0	96,3	0,0	167 Drill 6" hole to TD at 4120m (4,0 m/hrs)	
08.07.2006 07:00	09.07.2006 10:30	29,0	100,8	24,0	66,0	24,0	27,5	97,5	0,0	168 Circulate hole clean, POOH	BHI,BHI,Geo,OR

Final Well Report
NO 6403/6-1
Edvarda, PL322

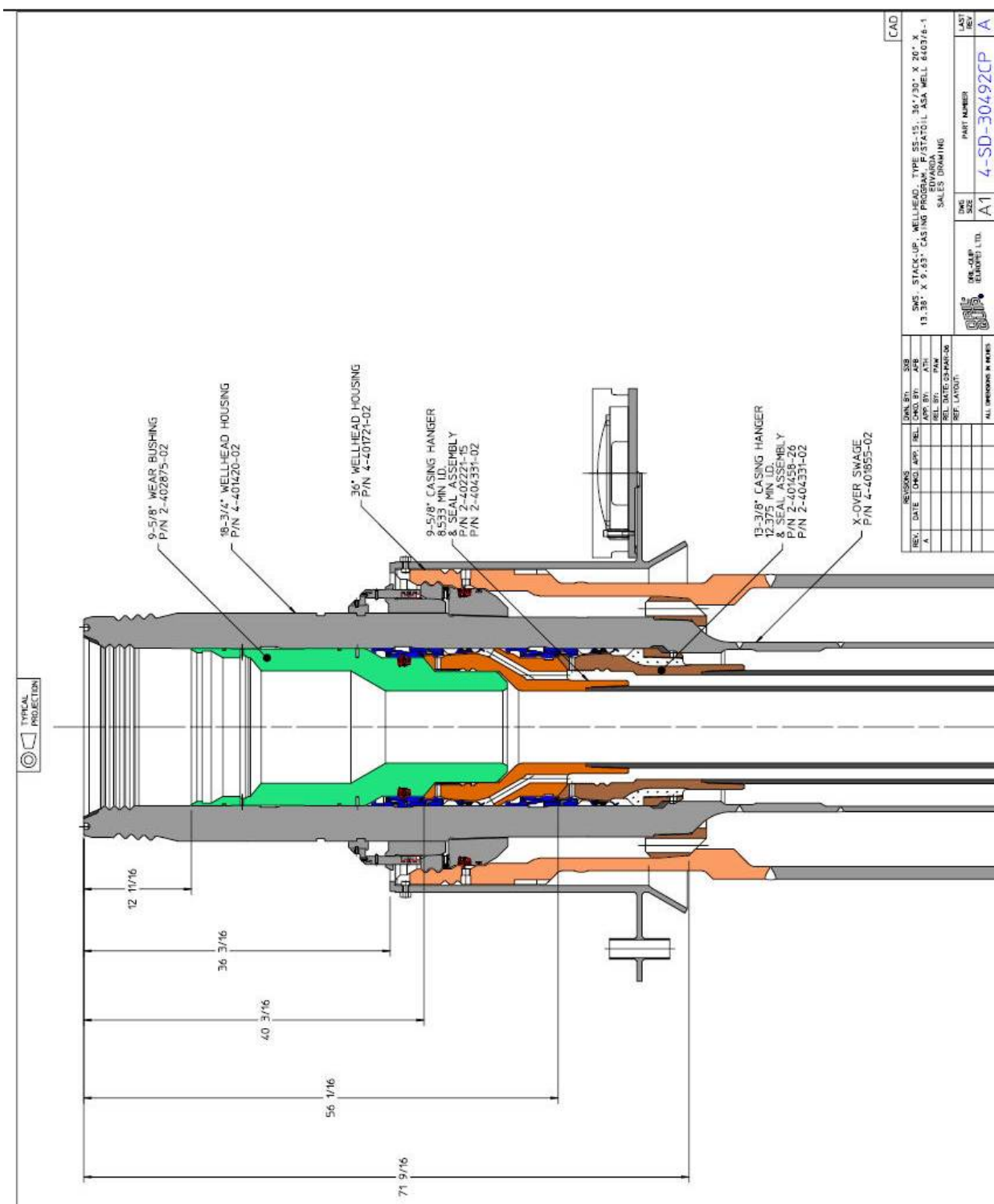
Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 95 of 177
0

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
09.07.2006 10:29	09.07.2006 10:30	43,0	102,6	36,0	67,5	0,0	0,0	97,5	0,0	169 Extra bit trip	BHI,BHI,Geo,MI,OR
09.07.2006 10:30	12.07.2006 18:30	48,0	104,6	36,0	69,0	48,0	80,0	100,8	24,5	170 Wireline logging	Geo,Schlum,OR
12.07.2006 18:30	25.07.2006 14:00	370,0	15,4	351,0	14,6	241,0	307,5	12,8	19,0	PERM P&A [NO 6403/6-1]	
12.07.2006 18:30	13.07.2006 19:30	46,0	106,5	60,0	71,5	26,0	25,0	101,8	0,0	171 RIH with cmt stinger and set 2 OH cmt plugs	OR,Hall,Geo,MI
13.07.2006 19:30	14.07.2006 21:30	9,0	106,9	10,0	71,9	18,0	26,0	102,9	0,0	172 POOH and L/D 3 1/2" DP.	MI,Geo,Hall,OR
14.07.2006 21:30	15.07.2006 07:30	58,0	109,3	0,0	71,9	8,0	10,0	103,3	0,0	173 RIH w/ 13 3/8" EZSV. Pressure test cmt plug below. Set EZSV and load test. Pressure test.	Hall,Geo,MI,OR
15.07.2006 07:30	15.07.2006 14:00	30,0	110,5	48,0	73,9	8,0	6,5	103,6	0,0	174 Set cementplug and reduce mw. while circulate hole clean.	Hall,OR,Geo,MI
15.07.2006 14:00	15.07.2006 20:30	10,0	111,0	0,0	73,9	6,0	6,5	103,9	0,0	175 POOH and L/D " DP (Optimised on rig)	Hall,Geo,MI,OR
15.07.2006 20:30	16.07.2006 22:00	18,0	111,7	20,0	74,7	15,0	25,5	104,9	8,0	176 Cut 13 3/8" casing and retrieve Wearbushing	OR,Weath,Geo,MI,DQ
16.07.2006 21:59	16.07.2006 22:00	10,0	112,1	9,0	75,1	0,0	0,0	104,9	0,0	177 N/A see # 177 (RIH and retrieve wearbushing).	OR,Geo,MI,DQ
16.07.2006 22:00	18.07.2006 02:30	23,0	113,1	25,0	76,1	15,0	28,5	106,1	0,0	178 Pull 13 3/8" casing	Weath,Weath,MI,OR,Geo,DQ
18.07.2006 02:30	19.07.2006 01:00	18,0	113,8	20,0	77,0	14,0	22,5	107,1	0,0	179 Set 16" EZSV. Displace to sw,set cement plug above	OR,MI,Hall
19.07.2006 01:00	19.07.2006 12:00	12,0	114,3	12,0	77,5	10,0	11,0	107,5	0,0	180 Set surface plug. POOH. LD DP on way out	OR,Hall,MI
19.07.2006 12:00	21.07.2006 16:00	87,0	118,0	85,0	81,0	64,0	52,0	109,7	2,0	181 Pull BOP and riser	Ocean,OR
21.07.2006 16:00	23.07.2006 08:00	14,0	118,5	15,0	81,6	25,0	40,0	111,4	9,0	182 Cut wellhead. LD 5 1/2" DP on way out.	OR,Ocean,Weath
23.07.2006 08:00	24.07.2006 01:00	27,0	119,7	30,0	82,9	12,0	17,0	112,1	0,0	183 LD tubulars	OR
24.07.2006 01:00	24.07.2006 06:00	8,0	120,0	8,0	83,2	10,0	5,0	112,3	0,0	184 Retrieve transponders and perform ROV area survey.	OR
24.07.2006 06:00	25.07.2006 14:00	0,0	120,0	9,0	83,6	10,0	32,0	113,6	0,0	185 Tank cleaning and deballasting rig	
25.07.2006 14:00	25.07.2006 14:00	0,0	120,0	0,0	83,6	0,0	0,0	113,6	0,0	186 Hand over rig to Ocean Rig on location	



DRILLING FLUIDS PROGRAMME

SUMMARY -END OF WELL

CASING SIZE	MUD TYPE	MV [SG]	LGS [KG/m ³] [P-s]	10 sec. [P-s]	10 min. [P-s]	Fann 100 rpm	Fann 3 rpm	FV [cP]	PV [mPa·s]	API FL [mL]	pH	MBT [KG/m ³] [WPS]	KCl [WPS]	Glec. [%]	MEG [%]	Ca++ mol/l	Total volume Old volume New volume Uruse [m ³]
30"	1838 High vis. Swveeps SilditKCI displ fluid 1838	103 135	-	-	<12	200	-	-	8	-	-	-	-	-	-	-	1319 182 1137 467
COMMENTS: 8 1/2" pilot hole hole is included under the 36" section. Sections were drilled by use of sea water pumping hivis pills. Pills 10-12 m³ pumped every 15 m drilled or as hole condition dictated. In the pilot hole pill size were reduced to 6-8 m³. Pills were mixed up by CMC-EHV - this was used in order to improve quality of Mv/D readings. At TD the holes were circulated clean by pumping a 30 m³ CMC hivis pill around and then the holes were displaced to 135 sg SilditKCI fluid used on previous well in the Barentssea. A total of 182 m³ of this mud was re-used on these two sections.																	
For further details please see M-I detailed Drilling Fluid Program																	
20"	2394 High vis. Swveeps SilditKCI displ fluid 2394	103 135 16	-	-	<12	200	-	-	8	-	-	-	-	-	-	-	1160 516 644 824
COMMENTS: The section was drilled by using sea water - pumping hivis CMC-EHV swveeps. Pill size 10-12 m³ pumped every 10 m drilled (3 pills per stand). At TD the hole was cleaned by pumping a 30 m³ hivis pill around and thereafter the hole was displaced to 135 sg SilditKCI fluid (used on the previous well drilled in the Barentssea) by pumping 13 the hole volume. Before start drilling the section, 100 m³ of SilditKCI fluid (Barentssea fluid) was weighed up to 18 sg and stored as kill fluid.																	
For further details please see M-I detailed Drilling Fluids Summary																	
16"	2548 Ultradrill 2548	108 1125	0 34	4.5 5.5	6.5 7.5	<30 10	8 -	13 18	2.9 3.8	8.9 9.4	0 7	n/a n/a	n/a n/a	n/a n/a	n/a n/a	<1000	830 0 830 73
COMMENTS: The section was drilled by use of Ultradrill. Due to required fingerprint operation, the fluid was displaced to the well when drilling out the shoe track, therefore the system was pre-treated with Sodium Bicarbonate and Citric Acid in order to avoid cement contamination. Start weight was 108 sg and final density at the end of the section was 1,125. The Ultradrill fluid was not designed as hydrate inhibitive fluid - due to density limitation - prognosed frac gradient. Therefore - as a contingency in case of a kick, 70 m³ of Ultradrill D/W mud was prepared. Very low dilution rates were encountered, only the EMI 939 was depleting when drilling, and the system was maintained by smaller addition of fresh premix and smaller additions of EMI 939. The shakers were dressed with 84 mesh while displacing and later upgraded to 140 and finally to 165 mesh. Very good cuttings integrity and the hole was reported to be in gauge. No problems when running logs - casing and cementing.																	
For further details please see M-I detailed Drilling Fluids Summary																	

3338-	2741 2741	115 -	34 46	5 7	6 9	<30 11	10 11	17 19	2.4 2.6	9.4 9.8	9 9	n/a n/a	n/a n/a	<1000 45	802 757
COMMENTS: The section was drilled by use of Ultradrill fluid transferred from previous section. Start weight was 115 sg and final density at the end of the section was 1.19. The Ultradrill fluid was not designed as hydrate inhibitive fluid - therefore the 70 m3 of Ultradrill DW mud mixed up in the previous section was transferred to this section. Very low dilution rates were encountered, only the EMI 939 was depleted when drilling, and the system was maintained by smaller addition of fresh premix and smaller additions of EMI 939, the shakers were dressed with 84 mesh while drilling the cement and later upgraded to 140 and finally to 165 mesh. Very good cuttings integrity and the hole was reported to be in gauge. No problems when running logs - casing and cementing.															
For further details please see M-1 detailed Drilling Fluids Summary															
958-	2983 2983	119 123	12 47	3.5 3.5	5 5	<30 5	7 8	15 16	2.8 1.6	9.3 9.4	0 9	n/a 258	n/a 20	<1000 872	872 0 872 186
COMMENTS: The section was drilled by use of Ultradrill DW, displaced to the well when drilling shoe track. Treatment with Citric Acid (1.23 kg/m3) and Sodium Bicarbonate (1.2 kg/m3) maintained the pH at ~7.5 when drilling out the shoe track. The concentrations of the inhibitors varied little from the make up, and addition of new mud and premix was sufficient to maintain programmed specs. The filtrate was initially 2.8 mls, but dropped to 1.6 mls when a small amount of drilled solids were picked up in the system. Losses occurred at 2844 m and a 3 m3 seepage pill (80 kg/m3 LCM) were pumped every few hours. Addition of polymers directly to active is not recommended due to problems with blinding of shaker screens - preferably all chemicals (except Ultrafree NS) should be premixed and bled into active. Very good rheology profile recorded, gauge hole, good hole cleaning.															
Ref. M-1 Detailed Drilling Fluids Summary for further details.															
7-	3855 3855	119 125	34 46	5 7	6 9	<30 11	10 11	15 19	2.4 2.6	9.4 9.8	9 10	n/a 240	n/a 20	<1000 2438	2131 307 198
COMMENTS: The section was started out drilled by use of Ultradrill DW transferred from the previous section. The system was weighted up to 1.25 sg and pre-treated with Citric Acid and Sodium Bicarbonate in order to reduce cement contamination when drilling out the shoe track. Due to observed high ECD, probably as an effect of some accretion problems (two BHA was covered with sticky clay when pulled to surface), it was decided to displace the hole to the standard Ultradrill system used in the 20" and the 17 1/2" sections. Increased the concentration of Ultrafree from original 2.2 kg/m3 to 6.5 kg/m3, the EMI 939 from 3.5% to 4.5% and the Ultrafree NS from 2% to 2.5%. The ECD readings were still higher than simulated/acceptable - and the displacement (to 119 standard Ultradrill) were performed. Both Ultradrill DW and Ultradrill is easily maintained by smaller addition of new mud and premixes, very stable fluid with very good rheology profile even at low temperatures, good hole cleaning (despite the accretion problems), gauge hole, no problems with logging - coring - casing/liner running and no problem with cementing operations. Good cuttings integrity. OOC measurements performed by independent lab show only 0.09% OOC as an average - and therefore this concern is not an actual subject any longer.															
Ref. M-1 Detailed Drilling Fluids Summary for further details.															
N/A		122 129	49 92	4 5	6 9	<30 10	8 10	15 16	2.6 3.4	9.7 9.8	14 16	n/a 50	n/a 20	<1000 1580	1429 151 473
COMMENTS: The section was drilled by use of the Ultradrill system transferred from previous section. The system was pretreated with Citric Acid and Sodium Bicarbonate in order to reduce cement contamination and control the pH below 10 when drilling out the shoe track and rat hole. Also a premix with high concentrations of the two inhibitors was prepared and bled into active after the cement was drilled out. The mud properties remained stable during drilling and logging operations. Some variations in ECD might have been caused by sticking, and Ultrafree NS was added. After that there were no tendencies to sticking.															
Ref. M-1 Detailed Drilling Fluids Summary for further details.															

5.11.7 Cementing data

Table 5-3 : Summary of Cementing data

CEMENT PROGRAMME																	
Well: 6403/6-1 Field: PL 322, Edvarda Rig: Erik Raude																	
Final - 31.07.06																	
HOLE		CASING SHOE		TOC	VOLUME/ EXCESS	Components	Lead (lit./m³) el	Tail (lit./m³) el	Density (kg/l)	Yield (lit./m³) el	Stat. / Circ. Temp (°C)	Thickness (mm) el	API Free Water (%)	API Field Loss (mm) el	24 hr C.S. 1 sec 1 sec	SPACER	DISPLACEMENT Fluids and Rates
SIZE TYD MD	SIZE TYD MD	TYD MD															
8 1/2" Pilot hole	2400					Norcem "G"-0.1% EZ-FLO Econolite Halsd-400L NF-6 Sea water		9.00 6.00 0.10 105.20	1.50	151.38 PC-slurry 151.38	32 / 15 (Welltest)	03/19	0	100	250	10 m³ 1,43 SG Tuned Spacer	Sea water +/- 1000 lpm
	2400	P1uq back	2386 2386	2150 2150	10 m³ 20 %												
42" x 36"	1838	30"	1838 1838	Sea bed 200% OH Sea bed	59 m³ (DHV) 200% OH (DHV = down hole volume)	DVFS-MS cement CaCl2 liquid Sea water Zonesal 4000		3.38 64.20 1.34	base slurry 1.70 down hole 1.41	100.15 VOBIS 100.15	2 / 5 (Welltest)	06/45	0	N/A	232	40 m³ Sea water	Sea water +/- 1000 lpm
	1843	30" Grouting	1838 1838	Sea bed Sea bed	10 m³ 150 %	Norcem "G"-0.1% EZ-FLO CaCl2 liquid NF-6 Sea water		4.35 0.10 33.56	1.35	75.06 Code:STT10	-1 / 3 (Welltest)	+/- 4	N/A	N/A	+/- 200	Sea water	Sea water +/- 1000 lpm
26"	2400	20"	2334 2334	Sea bed Sea bed	181 m³ (DHV) 100% OH	DVFS-MS cement HR-5L HR-601L Gascen Freshwater Zonesal 4000		0.26 0.26 2.12 61.52 1.28	base slurry 1.70 down hole 1.41	36.72 VOBIS 36.72	30 / 10 (Welltest)	03/10	0	N/A	1200	22 m³ 1,38 SG Tuned Spacer	Sea water 3000 lpm
	2400																
17" x 20"	2560	16"	2548 2548	2317 2317	Lead: 10 m³ Tail: 11 m³ 20% OH	Norcem "G"-0.1% EZ-FLO Gascen Halsd-400L Halsd-39LE+ HR-4L NF-6 Freshwater	10.00 6.00 2.00 0.50 0.10 77.31	- - 1.00 0.50 0.10 44.12	L: 1.56 T: 1.90	126.43 Code:MET14 76.80	38 / 18 (Welltest)	L: 4.47 T: 4.41	0 1.04	40 N/A	200 1500	20 m³ 1,13 SG Tuned Spacer E+	Med 1000 - 1200 lpm
	2560																
17 1/2"	2141	13 3/8"	2141 2141	2578 2578	13 m³ 0 %	Norcem "G"-0.1% EZ-FLO Halsd-39LE+ HR-4L NF-6 Freshwater		1.00 1.00 0.10 43.72	1.90	76.31 Code:MET105	47 / 25 (Welltest)	04/12	0.24	N/A	1130	20 m³ 1,13 SG Tuned Spacer E+	Med 2500 lpm
	2141																

5.11.8 Bottom hole assemblies

WELLBORE: NO 6403/6-1

BHA NO: 1

BHA KIND:

DESCRIPTION: Drill 36x42" hole from 1746-1840m

BHA NAME: 3

Table 5-4 : Bottom hole assemblies

String component	OD in	ID in	Length m	Acc length m
GS03BDODGVCPD~17 1/2"	17,500		0,40	0,40
BIT SUB W/FLOAT	9,625	3,000	0,92	1,32
HOLE OPENER~36"	36,000	3,000	3,87	5,19
X-TREME MOTOR	25,750		11,84	17,03
LWD/MWD TOOL	9,500		2,90	19,93
DRILL COLLAR	9,500	3,000	56,70	76,63
X-OVER	9,500	3,000	0,37	77,00
HOLE OPENER~38 1/4"	42,000	3,000	2,57	79,57
X-OVER	9,500	3,000	1,21	80,78
DRILL COLLAR	8,250	2,875	56,17	136,95
X-OVER	8,000	2,875	0,87	137,82
HWLT DRILL PIPE	5,500		84,06	221,88

BHA NO: 2

BHA KIND:

DESCRIPTION: Drilled 17 1/2" hole from 2400-2560m.

BHA NAME: 5

String component	OD in	ID in	Length m	Acc length m
GS03BDODGVCPD~17 1/2"	17,500		0,44	0,44
BIT SUB	9,500	3,000	0,98	1,42
STOP SUB	9,438	3,500	0,60	2,02
LWD/MWD TOOL	9,625	3,500	5,43	7,45
BCPM	9,500		3,66	11,11
SAVER SUB	9,500	3,500	0,55	11,66
STRING STAB	17,500	3,062	2,26	13,92
DRILL COLLAR	9,500	2,875	9,48	23,40
STRING STAB	17,500	3,062	1,93	25,33
XO SUB	9,313	2,500	1,09	26,42
FLOAT SUB	7,938		1,22	27,64
CIRCULATION SUB	8,000	3,062	0,65	28,29
DRILL COLLAR	8,250	2,875	75,09	103,38
HYDRAULIC JAR	8,000	2,750	9,74	113,12
DRILL COLLAR	8,250	2,875	28,03	141,15
XO SUB	8,000	2,875	0,87	142,02
HW DRILL PIPE	5,500	3,250	84,06	226,08
DART SUB	7,563	2,125	0,73	226,81
DRILL PIPE	5,500	3,750	28,70	255,51
DRIFT SUB	6,875	3,250	1,18	256,69

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 101 of 177
0

BHA NO: 3
BHA KIND:
DESCRIPTION: Drilled 26" hole from 1840-2400m.
BHA NAME: 4

String component	OD in	ID in	Length m	Acc length m
MG04C~24"	26,000		0,66	0,66
X-TREME MOTOR	25,750	3,000	10,92	11,58
STRING STAB	25,750	3,000	2,22	13,80
X-OVER	9,500	3,000	0,60	14,40
ONTRAK	9,500	3,000	5,42	19,82
BCPM	9,500	3,000	3,69	23,51
X-OVER	9,500	3,000	0,54	24,05
STRING STAB	24,750	3,000	2,12	26,17
DRILL COLLAR	9,500	3,000	28,37	54,54
X-OVER	9,500	3,000	0,56	55,10
DRILL COLLAR	8,250	2,875	47,04	102,14
JAR	8,000	2,750	9,74	111,88
DRILL COLLAR	8,250	2,875	28,03	139,91
X-OVER	8,000	2,875	0,87	140,78
HWLT DRILL PIPE	5,500		84,06	224,84

BHA NO: 5
BHA KIND:
DESCRIPTION: Missed attempt on underreaming to 20"
BHA NAME: 6

String component	OD in	ID in	Length m	Acc length m
XR+VC~17 1/2"	17,500		0,44	0,44
BIT SUB W/FLOAT	9,500	3,000	0,98	1,42
ANDERREAMER~9 7/8"	14,500	2,000	8,23	9,65
PONY COLLAR	9,500	3,000	4,23	13,88
STRING STAB	17,500	3,062	2,26	16,14
STOP SUB	9,625	3,500	0,60	16,74
ONTRAK	9,625	3,500	5,43	22,17
BCPM	9,500		3,66	25,83
SAVER SUB	9,500	3,500	0,55	26,38
STRING STAB	16,750	3,062	1,93	28,31
X-OVER	9,313	2,500	1,09	29,40
FLOAT SUB	7,938	1,500	1,22	30,62
FLOAT SUB	8,000	2,750	1,23	31,85
CIRCULATION SUB	8,000	3,062	0,65	32,50
DRILL COL	8,250	2,875	75,09	107,59
JAR	8,000	2,750	9,74	117,33
DRILL COLLAR	8,250	2,875	28,03	145,36
X-OVER	8,000	2,875	0,87	146,23
HW DRILL PIPE	5,500		84,06	230,29
DART SUB	7,563	2,125	0,73	231,02
DRILL PIPE	5,500	4,778	28,86	259,88
DRIFT SUB	6,875	3,250	1,18	261,06

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 102 of 177
0

BHA NO: 6
BHA KIND:
DESCRIPTION: Open up 17 1/2" section to 20"
BHA NAME: 7

String component	OD in	ID in	Length m	Acc length m
XR+VC~17 1/2"	17,500		0,44	0,44
BIT SUB W/FLOAT	9,500	3,000	0,98	1,42
ANDERREAMER~9 7/8"	20,000	2,000	6,00	7,42
PONY COLLAR	9,500	3,000	4,23	11,65
STRING STAB	17,500	3,062	2,26	13,91
STOP SUB	9,625	3,500	0,60	14,51
ONTRAK	9,625	3,500	5,43	19,94
BCPM	9,500		3,66	23,60
SAVER SUB	9,500	3,500	0,55	24,15
STRING STAB	16,750	3,062	1,93	26,08
X-OVER	9,313	2,500	1,09	27,17
FLOAT SUB	7,938	1,500	1,22	28,39
FLOAT SUB	8,000	2,750	1,23	29,62
CIRCULATION SUB	8,000	3,062	0,65	30,27
DRILL COL	8,250	2,875	75,09	105,36
JAR	8,000	2,750	9,74	115,10
DRILL COLLAR	8,250	2,875	28,03	143,13
X-OVER	8,000	2,875	0,87	144,00
HW DRILL PIPE	5,500		84,06	228,06
DART SUB	7,563	2,125	0,73	228,79
DRILL PIPE	5,500	4,778	28,86	257,65
DRIFT SUB	6,875	3,250	1,18	258,83

BHA NO: 7
BHA KIND:
DESCRIPTION: 14 3/4" x 17 1/2" drilling assembly
BHA NAME: 8

String component	OD in	ID in	Length m	Acc length m
T11C~24"	14,750		0,38	0,38
BIT SUB W/FLOAT	9,500	2,000	0,89	1,27
STAB STRING	14,750	3,000	1,98	3,25
X-OVER	8,000	3,000	0,90	4,15
CUDA XR-1200 UNDERREAMER~	17,500	3,000	2,75	6,90
X-OVER	9,375	3,000	1,01	7,91
PONY COLLAR	9,500	3,000	4,24	12,15
STAB STRING	14,750	3,000	1,98	14,13
X-O PIN X PIN	9,625	3,500	0,60	14,73
LWD/MWD TOOL	9,625	3,500	5,43	20,16
BCPM	9,500		3,66	23,82
SAVER SUB	9,500	3,500	0,55	24,37
X-OVER	9,313	2,500	1,09	25,46
FLOAT SUB	7,938	1,500	1,22	26,68
FLOAT SUB	8,000	2,750	1,23	27,91
STRING STAB	14,500	2,813	2,49	30,40
DRILL COL	8,250	2,875	75,09	105,49
JAR	8,000	2,750	9,74	115,23

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378

Date
31.01.2007



Rev. no.
0

103 of 177

String component	OD in	ID in	Length m	Acc length m
DRILL COLLAR	8,250	2,875	28,03	143,26
X-OVER	8,000	2,875	0,87	144,13
HW DRILL PIPE	5,500		84,06	228,19
DART SUB	7,563		0,73	228,92

BHA NO: 8

BHA KIND:

DESCRIPTION: 14 3/4" Clean up assembly

BHA NAME: 9

String component	OD in	ID in	Length m	Acc length m
T43CDHLKPR~17 1/2"	14,750		0,38	0,38
BIT SUB W/FLOAT	9,500	2,000	0,89	1,27
STAB STRING	14,750	3,000	1,98	3,25
X-O PIN X PIN	9,625	3,500	0,60	3,85
LWD/MWD TOOL	9,625	3,500	5,43	9,28
BCPM	9,500		3,66	12,94
SAVER SUB	9,500	3,500	0,55	13,49
X-OVER	9,313	2,500	1,09	14,58
FLOAT SUB	7,938	1,500	1,22	15,80
FLOAT SUB	8,000	2,750	1,23	17,03
STRING STAB	14,500	2,813	2,49	19,52
DRILL COL	8,250	2,875	75,09	94,61
JAR	8,000	2,750	9,74	104,35
DRILL COLLAR	8,250	2,875	28,03	132,38
X-OVER	8,000	2,875	0,87	133,25
HW DRILL PIPE	5,500		84,06	217,31
DART SUB	7,563		0,73	218,04

BHA NO: 9

BHA KIND:

DESCRIPTION: 12 1/4" drilling assembly

BHA NAME: 10

String component	OD in	ID in	Length m	Acc length m
EBXSC1S~12 1/4"	12,250		0,31	0,31
BIT SUB	8,250	2,813	0,99	1,30
STOP SUB	9,500	3,000	0,49	1,79
ONTRAK	9,500	3,000	5,52	7,31
STABILIZER	9,500	2,500	3,63	10,94
BCPM	9,500	1,000	3,58	14,52
STABILIZER	9,500		1,82	16,34
XO SUB	9,000	2,000	1,04	17,38
APX	8,250	3,000	9,81	27,19
SAVER SUB	8,250	3,000	0,77	27,96
STABILIZER	8,000	2,813	1,64	29,60
FLOAT SUB	8,000	1,500	1,22	30,82
FLOAT SUB	8,000	1,500	1,23	32,05
DRILL COLLAR	8,250	2,813	75,09	107,14
JAR	8,000	3,000	9,74	116,88
DRILL COLLAR	8,250	2,813	28,03	144,91

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378

Date
31.01.2007



Rev. no.
0

104 of 177

String component	OD in	ID in	Length m	Acc length m
XO SUB	8,000	3,000	0,87	145,78
HW DRILL PIPE	5,500	4,778	84,06	229,84
DART SUB	7,250	2,750	0,73	230,57
DRIFT SUB	7,000	3,375	1,18	231,75
DP 5 1/2"	5,500	4,778		231,75

BHA NO: 10

BHA KIND:

DESCRIPTION: 8 1/2" drilling assembly

BHA NAME: 11

String component	OD in	ID in	Length m	Acc length m
MFDGH~NA	8,500		0,25	0,25
STABILIZER	7,563	2,250	1,41	1,66
ONTRAK	6,938	3,000	5,12	6,78
STABILIZER	6,250	2,250	2,50	9,28
BCPM	7,000	1,000	3,22	12,50
STOP SUB	7,000	2,500	0,45	12,95
STABILIZER	8,375	3,000	1,59	14,54
FLOAT SUB	6,625	3,000	0,65	15,19
FLOAT SUB	7,000	2,875	0,97	16,16
DRILL COLLAR	6,750	2,875	56,62	72,78
JAR	6,750	2,250	9,77	82,55
DRILL COLLAR	6,750	2,875	28,36	110,91
HW DRILL PIPE	5,000		84,27	195,18
DP 5"	5,000		9,62	204,80
DART SUB	6,375	2,750	0,51	205,31
DP 5"	5,000		1718,88	1924,19
XO SUB	6,375	2,750	1,04	1925,23

BHA NO: 11

BHA KIND:

DESCRIPTION: 8 1/2" drilling assembly

BHA NAME: 12

String component	OD in	ID in	Length m	Acc length m
MFDGH~NA	8,500		0,25	0,25
STABILIZER	7,563	2,250	1,41	1,66
ONTRAK	6,938	3,000	5,12	6,78
STABILIZER	6,250	2,250	2,50	9,28
BCPM	7,000	1,000	3,25	12,53
STOP SUB	7,000	2,500	0,45	12,98
STABILIZER	8,375	3,000	1,59	14,57
FLOAT SUB	6,625	3,000	0,65	15,22
FLOAT SUB	7,000	2,875	0,97	16,19
DRILL COLLAR	6,750	2,875	56,62	72,81
JAR	6,750	2,250	9,77	82,58
DRILL COLLAR	6,750	2,875	28,36	110,94
HW DRILL PIPE	5,000		84,27	195,21
DP 5"	5,000		9,62	204,83
DART SUB	6,375	2,750	0,51	205,34

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 105 of 177
0

String component	OD in	ID in	Length m	Acc length m
DP 5"	5,000		1718,88	1924,22
XO SUB	6,375	2,750	1,04	1925,26

BHA NO: 12
BHA KIND:
DESCRIPTION: 8 1/2" drilling assembly
BHA NAME: 13

String component	OD in	ID in	Length m	Acc length m
TD13KPR~8 1/2"	8,500		0,25	0,25
BIT SUB W/FLOAT	6,250	2,500	0,99	1,24
STOP SUB	6,750	2,500	0,49	1,73
ONTRAK	6,937	3,000	5,12	6,85
BCPM	7,000	1,000	3,16	10,01
LWD/MWD TOOL	7,000	2,500	0,45	10,46
STRING STAB	8,375	2,250	1,59	12,05
FLOAT SUB	7,000	2,875	0,97	13,02
DRILL COLLAR	6,750	2,875	18,91	31,93
HYDRAULIC JAR	6,750	2,250	9,77	41,70
DRILL COLLAR	6,750	2,875	28,36	70,06
HW DRILL PIPE	5,000	4,237	111,62	181,68
DP 5"	5,000	4,237	9,62	191,30
DART SUB	6,375	2,750	0,51	191,81
DP 5"	5,000	4,237	1718,88	1910,69
X-OVER	6,375	2,750	1,04	1911,73

BHA NO: 13
BHA KIND:
DESCRIPTION: 3 1/2" cement stinger
BHA NAME: 14

String component	OD in	ID in	Length m	Acc length m
DP 3 1/2"	3,500	2,937	232,00	232,00
X-OVER	6,875		1,04	233,04

BHA NO: 14
BHA KIND:
DESCRIPTION: 8 1/2" drilling assembly.
BHA NAME: 15

String component	OD in	ID in	Length m	Acc length m
TD13KPR~8 1/2"	8,500		0,25	0,25
BIT SUB W/FLOAT	6,250	2,500	0,99	1,24
STOP SUB	6,750	2,500	0,49	1,73
ONTRAK	6,937	3,000	5,12	6,85
BCPM	7,000	1,000	3,16	10,01
LWD/MWD TOOL	7,000	2,500	0,45	10,46
STRING STAB	8,375	2,250	1,59	12,05
FLOAT SUB	7,000	2,875	0,97	13,02

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 106 of 177
0

String component	OD in	ID in	Length m	Acc length m
DRILL COLLAR	6,750	2,875	18,91	31,93
HYDRAULIC JAR	6,750	2,250	9,77	41,70
DRILL COLLAR	6,750	2,875	28,36	70,06
HW DRILL PIPE	5,000	4,237	111,62	181,68
DP 5"	5,000	4,237	9,62	191,30
DART SUB	6,375	2,750	0,51	191,81
DP 5"	5,000	4,237	1718,88	1910,69
X-OVER	6,375	2,750	1,04	1911,73

BHA NO: 15
BHA KIND:
DESCRIPTION: 8 1/2" drilling assembly
BHA NAME: 16

String component	OD in	ID in	Length m	Acc length m
TD13KPR~8 1/2"	8,500		0,25	0,25
BIT SUB W/FLOAT	6,250	2,500	0,99	1,24
STOP SUB	6,750	2,500	0,49	1,73
ONTRAK	6,937	3,000	5,12	6,85
BCPM	7,000	1,000	3,16	10,01
LWD/MWD TOOL	7,000	2,500	0,45	10,46
STRING STAB	8,375	2,250	1,59	12,05
FLOAT SUB	7,000	2,875	0,97	13,02
DRILL COLLAR	6,750	2,875	18,91	31,93
HYDRAULIC JAR	6,750	2,250	9,77	41,70
DRILL COLLAR	6,750	2,875	28,36	70,06
HW DRILL PIPE	5,000	4,237	111,62	181,68
DP 5"	5,000	4,237	9,62	191,30
DART SUB	6,375	2,750	0,51	191,81
DP 5"	5,000	4,237	1718,88	1910,69
X-OVER	6,375	2,750	1,04	1911,73

BHA NO: 16
BHA KIND:
DESCRIPTION: 8 1/2" drilling assembly
BHA NAME: 17

String component	OD in	ID in	Length m	Acc length m
MFDGH~NA	8,500		0,25	0,25
BIT SUB	6,250	2,500	0,99	1,24
STOP SUB	6,750	2,500	0,49	1,73
ONTRAK	6,937	3,000	5,12	6,85
BCPM	7,000	1,000	3,16	10,01
LWD/MWD TOOL	7,000	2,500	0,45	10,46
STRING STAB	8,375	2,250	1,59	12,05
FLOAT SUB	7,000	2,875	0,97	13,02
FLOAT SUB	7,000	2,875	0,65	13,67
DRILL COLLAR	6,750	2,875	18,91	32,58
HYDRAULIC JAR	6,750	2,250	9,77	42,35
DRILL COLLAR	6,750	2,875	28,36	70,71
HW DRILL PIPE	5,000	4,237	111,62	182,33

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 107 of 177
0

String component	OD in	ID in	Length m	Acc length m
DP 5"	5,000	4,237	9,62	191,95
DART SUB	6,375	2,750	0,51	192,46
DP 5"	5,000	4,237	1718,88	1911,34
X-OVER	6,375	2,750	1,04	1912,38

BHA NO: 17
BHA KIND:
DESCRIPTION: 8 1/2" coring assembly
BHA NAME: 18

String component	OD in	ID in	Length m	Acc length m
FC284LI~NA	8,500		0,36	0,36
STABILIZER	8,468	5,375	1,22	1,58
CORE BARREL	6,750	5,375	3,35	4,93
STABILIZER	8,468	5,375	1,22	6,15
CORE BARREL	6,750	5,375	3,35	9,50
STABILIZER	8,468	5,375	1,22	10,72
CORE BARREL	6,750	5,375	7,92	18,64
STABILIZER	8,468	5,375	1,22	19,86
CORE BARREL	6,750	5,375	7,92	27,78
STABILIZER	8,468	5,375	1,22	29,00
TOP SUB	6,750	5,375	0,86	29,86
TOP SUB	6,750	5,375	0,59	30,45
FLOAT SUB	7,000	2,875	0,65	31,10
FLOAT SUB	7,000	2,875	1,48	32,58
DRILL COLLAR	6,750	2,875	28,36	60,94
STRING STAB	8,375	2,875	2,21	63,15
DRILL COLLAR	6,750	2,875	28,36	91,51
HYDRAULIC JAR	6,750	2,250	9,77	101,28
DRILL COLLAR	6,750	2,875	18,81	120,09
HW DRILL PIPE	5,000	4,237	111,62	231,71
DP 5"	5,000	4,237	0,00	231,71
DART SUB	6,375	2,750	0,51	232,22
DP 5"	5,000	4,237	1718,88	1951,10
X-OVER	6,375	2,750	1,04	1952,14
DRILL PIPE, PUP	5,500	0,000	4,51	1956,65

BHA NO: 18
BHA KIND:
DESCRIPTION: 8 1/2" Drilling assembly
BHA NAME: 19

String component	OD in	ID in	Length m	Acc length m
MA89VEPX~8 1/2"	8,500		0,34	0,34
BIT SUB	6,250	2,500	0,99	1,33
STOP SUB	6,750	2,500	0,49	1,82
ONTRAK	6,940	3,000	5,12	6,94
BCPM	7,000	1,000	3,16	10,10
LWD/MWD TOOL	7,000	2,500	0,45	10,55
STRING STAB	8,380	2,300	1,59	12,14
FLOAT SUB	7,000	2,875	0,97	13,11

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 108 of 177
0

String component	OD in	ID in	Length m	Acc length m
FLOAT SUB	7,000	2,875	0,65	13,76
DRILL COLLAR	6,750	2,875	56,61	70,37
HYDRAULIC JAR	6,750	2,250	9,77	80,14
DRILL COLLAR	6,750	2,875	18,81	98,95
HW DRILL PIPE	5,000	4,237	111,62	210,57
DP 5"	5,000	4,237	9,62	220,19
DART SUB	6,375	2,750	0,51	220,70
DP 5"	5,000	4,237	1718,88	1939,58
X-OVER	6,375	2,750	1,04	1940,62

BHA NO: 19
BHA KIND:
DESCRIPTION: 6" x 7" drilling assembly
BHA NAME: 20

String component	OD in	ID in	Length m	Acc length m
CSD+322~6X7"	6,000		0,58	0,58
X-OVER	4,938		0,96	1,54
X-OVER	4,750	1,750	0,88	2,42
BIT SUB W/FLOAT	4,750	1,500	0,92	3,34
ONTRAK	5,000		7,05	10,39
BCPM	5,000		4,26	14,65
STRING STAB	5,875	1,563	1,49	16,14
DRILL COL	4,750	2,375	9,21	25,35
STRING STAB	5,875	2,063	1,50	26,85
DRILL COL	4,750	2,375	44,63	71,48
JAR	4,750	2,250	8,80	80,28
DRILL COL	4,750	2,375	27,91	108,19
HW DRILL PIPE	3,500	2,375	27,87	136,06
DRILL PIPE	3,500		9,72	145,78
DART SUB	5,000		0,46	146,24
DRILL PIPE	3,500		1327,08	1473,32
X-OVER	4,750		1,02	1474,34
DRILL PIPE	5,000		144,36	1618,70
X-OVER	6,375	2,750	1,04	1619,74

BHA NO: 20
BHA KIND:
DESCRIPTION: 6" drilling assembly#1
BHA NAME: 21

String component	OD in	ID in	Length m	Acc length m
DSX516M-B1~6"	6,000	0,000	0,20	0,20
BIT SUB W/FLOAT	4,750	1,500	0,92	1,12
ONTRAK	4,750		7,05	8,17
BCPM	4,750		4,26	12,43
STRING STAB	5,875	1,563	1,49	13,92
DRILL COL	4,750	2,375	9,21	23,13
STRING STAB	5,875	2,063	1,50	24,63
DRILL COL	4,750	2,375	44,63	69,26
JAR	4,750	2,250	8,80	78,06

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 109 of 177
0

String component	OD in	ID in	Length m	Acc length m
DRILL COL	4,750	2,375	27,91	105,97
HW DRILL PIPE	3,500	2,375	27,87	133,84
DRILL PIPE	3,500		9,72	143,56
DART SUB	5,000		0,46	144,02
DRILL PIPE	3,500		1327,08	1471,10
X-OVER	4,750		1,02	1472,12
DRILL PIPE	5,000		144,36	1616,48
X-OVER	6,375	2,750	1,04	1617,52

BHA NO: 21
BHA KIND:
DESCRIPTION: 3 1/2" cement stinger.
BHA NAME: 22

String component	OD in	ID in	Length m	Acc length m
DRILL PIPE	3,500	2,937	904,68	904,68
X-OVER	6,375	2,750	1,02	905,70
DRILL PIPE	5,000		863,99	1769,69
X-OVER	6,375	2,750	1,04	1770,73

BHA NO: 22
BHA KIND:
DESCRIPTION: 6" drilling assembly#2
BHA NAME: 23

String component	OD in	ID in	Length m	Acc length m
DSX189GUW A1~6"	6,000	0,000	0,20	0,20
BIT SUB W/FLOAT	4,750	1,500	0,92	1,12
ONTRAK	4,750		7,05	8,17
BCPM	4,750		4,26	12,43
STRING STAB	5,875	1,563	1,49	13,92
DRILL COL	4,750	2,375	9,21	23,13
STRING STAB	5,875	2,063	1,50	24,63
DRILL COL	4,750	2,375	44,63	69,26
JAR	4,750	2,250	8,80	78,06
DRILL COL	4,750	2,375	27,91	105,97
HW DRILL PIPE	3,500	2,375	27,87	133,84
DRILL PIPE	3,500		9,72	143,56
DART SUB	5,000		0,46	144,02
DRILL PIPE	3,500		1327,08	1471,10
X-OVER	4,750		1,02	1472,12
DRILL PIPE	5,000		432,69	1904,81
X-OVER	6,375	2,750	1,04	1905,85

BHA NO: 23
BHA KIND:
DESCRIPTION: 3 1/2" cement stinger
BHA NAME: 24

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378

Date
31.01.2007



Rev. no.
0

110 of 177

String component	OD in	ID in	Length m	Acc length m
CEMENT STINGER	3,500	2,937	2,90	2,90
DRILL PIPE	3,500	2,937	1655,90	1658,80
X-OVER	3,500	2,937	1,02	1659,82
DRILL PIPE	5,000	4,270	1728,50	3388,32
X-OVER	6,375	2,750	1,04	3389,36

BHA NO: 24
BHA KIND:
DESCRIPTION: 13 3/8" EZSV
BHA NAME: 25

String component	OD in	ID in	Length m	Acc length m
EZSV	13,375		3,26	3,26
XO SUB	5,500		0,98	4,24

BHA NO: 25
BHA KIND:
DESCRIPTION: 13 3/8" casing cutter assembly
BHA NAME: 26

String component	OD in	ID in	Length m	Acc length m
BULLNOSE W/5 NOZZLES	8,000	2,000	1,10	1,10
CASING CUTTER	12,000		1,83	2,93
TOP SUB	10,000	3,500	0,90	3,83
FLOAT SUB	8,000	2,750	0,66	4,49
X-OVER	8,000	2,750	0,96	5,45
DOWNHOLE MOTOR	10,750	2,500	8,30	13,75
X-OVER	8,000	3,000	0,98	14,73
SPACER SUB	7,000	2,750	2,44	17,17
DP 5 1/2"	5,500	4,700	614,53	631,70
X-OVER	6,375	2,750	1,03	632,73
PULLING TOOL	13,375		2,06	634,79
XO SUB	6,375	2,750	0,80	635,59

BHA NO: 26
BHA KIND:
DESCRIPTION: 13 3/8" casing spear assembly
BHA NAME: 27

String component	OD in	ID in	Length m	Acc length m
PACK OFF	12,400		0,95	0,95
ITCO SPEAR	12,400		1,34	2,29
STRING STAB	12,400		2,30	4,59
SPEAR STOP SUB	14,125		0,86	5,45
BUMPER SUB	8,000	3,000	4,40	9,85
FISHING JAR	8,000	3,000	4,13	13,98
DRILL COLLAR	8,250	2,875	28,05	42,03
ACCELERATOR	8,000	3,000	5,34	47,37
X-OVER	8,000	3,000	0,87	48,24

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 111 of 177
0

BHA NO: 27
BHA KIND:
DESCRIPTION: 16" EZSV
BHA NAME: 28

String component	OD in	ID in	Length m	Acc length m
EZSV	13,968	1,660	2,71	2,71
XO SUB	6,500	2,250	0,97	3,68

BHA NO: 30
BHA KIND:
DESCRIPTION: Cut and retrieve wellhead
BHA NAME: 29

String component	OD in	ID in	Length m	Acc length m
BULLNOSE	8,000	1,000	0,39	0,39
CASING CUTTER	12,000	2,000	1,82	2,21
TOP SUB	10,000	2,000	0,80	3,01
STABILIZER NON ROTATING	9,625	2,750	1,66	4,67
SPACER SUB	8,000	2,812	1,69	6,36
X-OVER	8,000	2,812	0,96	7,32
DOWNHOLE MOTOR	7,750	2,750	8,83	16,15
MOST TOOL	39,000	9,625	0,00	16,15
DRILL COLLAR	8,250	2,812	55,90	72,05
X-OVER	8,250	2,812	0,87	72,92
HWDP 5 1/2"	5,500	3,500	56,04	128,96

WELLBORE: NO 6403/6-U-1
BHA NO: 1
BHA KIND:
DESCRIPTION: 8 1/2" pilot BHA
BHA NAME: 1

Table 5.3 Bottom hole assemblies

String component	OD in	ID in	Length m	Acc length m
MFDGH~NA	8,500		0,25	0,25
MWD	8,375		1,41	1,66
ON TRAK	7,000	2,125	5,09	6,75
BCPM	7,000	2,125	3,19	9,94
MWD, STAB	8,375		1,22	11,16
ORD	6,750	2,250	2,86	14,02
CCN	6,750	2,250	2,02	16,04
APX	6,750	2,563	9,80	25,84
STOP SUB	6,750	2,250	0,43	26,27
STRING STAB	8,250	2,813	1,41	27,68
CIRC. SUB	6,750	2,813	2,63	30,31
DRIL COL	6,750	2,875	56,62	86,93
JAR	6,750	2,250	9,77	96,70
DRIL COL	6,750	2,875	103,81	200,51
HWDP 5"	5,000		84,27	284,78
DP 5"	5,000		518,95	803,73
X-OVER	7,000	3,000	0,47	804,20

Final Well Report
NO 6403/6-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 112 of 177
0

BHA NO: 2
BHA KIND:
DESCRIPTION: 8 1/2" pilot BHA
BHA NAME: 19

String component	OD in	ID in	Length m	Acc length m
MFDGH~NA	8,500		0,25	0,25
MWD	8,375		1,41	1,66
ON TRAK	7,000	2,125	5,09	6,75
BCPM	7,000	2,125	3,24	9,99
MWD, STAB	8,375		1,22	11,21
ORD	6,750	2,250	2,86	14,07
CCN	6,750	2,250	2,02	16,09
APX	6,750	2,563	9,80	25,89
STOP SUB	6,750	2,250	0,43	26,32
STRING STAB	8,250	2,813	1,41	27,73
CIRC. SUB	6,750	2,813	2,63	30,36
DRIL COL	6,750	2,875	56,62	86,98
JAR	6,750	2,250	9,77	96,75
DRIL COL	6,750	2,875	103,81	200,56
HWDP 5"	5,000		84,27	284,83
DP 5"	5,000		518,95	803,78
X-OVER	7,000	3,000	0,47	804,25

5.11.9 Bit record

WELL: NO 6403/6-1

Table 5-5 : Bit run listing, well 6403/6-1

Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
1	26"/36"	1	1	HOLE OPENER		Odfjell Drilling AS
1	42"	1	1	HOLE OPENER		Odfjell Drilling AS
1	17 1/2"	1	1	GS03BDODGVCPD	415X	Smith Bits
2	26"	2	2	MG04C	415	Smith Bits
3	17 1/2"	1RR	1	GS03BDODGVCPD	415X	Smith Bits
4	26"	2	3	MG04C	415	Smith Bits
5	17 1/2"	3	2	GS03BDODGVCPD	415X	Smith Bits
6	17 1/2"	4	5	XR+VC	115	Smith Bits
7	17 1/2"	4RR	6	XR+VC	115	Smith Bits
8	14 3/4"	5	7	T11C	115	Reed-Hycalog
9	14 3/4"	6	8	T43CDHLKPR	M435	Reed-Hycalog
10	12 1/4"	7	9	EBXSC1S	117W	Security DBS
11	8 1/2"	8	10	MFDGH	137	Smith Bits
12	8 1/2"	8RR	11	MFDGH	137	Smith Bits
13	8 1/2"	9	12	TD13KPR	137	Reed-Hycalog
15	8 1/2"	9 RR	14	TD13KPR	137	Reed-Hycalog
16	8 1/2"	9RR2	15	TD13KPR	137	Reed-Hycalog
17	8 1/2"	8RR2	16	MFDGH	137	Smith Bits
18	8 1/2"	10	17	FC284LI		Security DBS
19	8 1/2"	11	18	MA89VEPX	M223	Smith Bits
20	6"	12	19	CSD+322	Bicenter	Reed-Hycalog
21	6"	13	20	DSX189GUW A1	232	Reed-Hycalog
23	6"	14	22	DSX189GUW A1	232	Reed-Hycalog

Run no	Bit size	Bit no	BHA no	Serial no	Nozzles (n/32")				Flow area in
					no x n	no x n	no x n	no x n	
1	26"/36"	1	1	3613	6 x 11	x	x	x	0,5570
1	42"	1	1	4201	x	x	x	x	0
1	17 1/2"	1	1	MX3422	2 x 18	1 x 16	1 x 14	x	0,8440
2	26"	2	2	MR6114	3 x 20	1 x 16	x	x	1,1170
3	17 1/2"	1RR	1	MX3422	2 x 18	1 x 16	1 x 14	x	0,8440
4	26"	2	3	MR6114	2 x 20	1 x 13	x	x	0,7440
5	17 1/2"	3	2	MX5774	3 x 20	1 x 15	x	x	1,0930
6	17 1/2"	4	5	MX2352	3 x 20	1 x 15	x	x	1,0930
7	17 1/2"	4RR	6	MX2352	3 x 20	1 x 15	x	x	1,0930
8	14 3/4"	5	7	D80393	3 x 18	1 x 16	x	x	0,9420
9	14 3/4"	6	8	H24562	3 x 18	1 x 16	x	x	0,9420
10	12 1/4"	7	9	10735561	2 x 18	1 x 20	1 x 14	x	0,9550
11	8 1/2"	8	10	MX1791	2 x 18	1 x 16	x	x	0,6940
12	8 1/2"	8RR	11	MX1791	2 x 18	1 x 16	x	x	0,6940
13	8 1/2"	9	12	L73901	2 x 18	1 x 16	x	x	0,6940
15	8 1/2"	9 RR	14	L73901	2 x 18	1 x 16	x	x	0,6940

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
 MYN-LET 00378

Date
 31.01.2007



Rev. no.
 0

114 of 177

Run no	Bit size	Bit no	BHA no	Serial no	Nozzles (n/32")				Flow area in
					no x n	no x n	no x n	no x n	
16	8 1/2"	9RR2	15	L73901	2 x 18	1 x 16	x	x	0,6940
17	8 1/2"	8RR2	16	MX1791	2 x 18	1 x 16	x	x	0,6940
18	8 1/2"	10	17	10627832	8 x 16	x	x	x	1,5710
19	8 1/2"	11	18	JT9899	6 x 12	x	x	x	0,6630
20	6"	12	19	2016595	6 x 10	x	x	x	0,4610
21	6"	13	20	111657	5 x 10	x	x	x	0,3840
23	6"	14	22	111657	5 x 10	x	x	x	0,3840

Run no	Bit size	Pump rate l/min	Pump press bar	Depth in mMD	Depth out mMD	Form drld m	Total drld m	Drld hrs	Circ hrs	ROP m/hrs
1	26"/36"	4000	150	1746,0	1840,0	94,0	94,0	7,9	14,5	11,9
1	42"			1746,0	1766,0	20,0	20,0	2,4	14,5	8,3
1	17 1/2"	4000	150	1746,0	1843,0	97,0	97,0	7,9	14,5	12,3
2	26"	4500	240	1843,0	2400,0	557,0	557,0	29,7	54,0	18,8
3	17 1/2"	4500	185	1746,0	1843,0	97,0	97,0	7,9	14,5	12,3
4	26"	4500	240	1843,0	2400,0	557,0		29,7	54,0	18,8
5	17 1/2"	4000	177	2400,0	2560,0	160,0	195,0	14,0	550,8	11,4
6	17 1/2"	3840	205	2560,0	2560,0	0,0	0,0	0,0	9,0	
7	17 1/2"			2560,0	2560,0	0,0			18,0	
8	14 3/4"	4000	274	2560,0	2749,0	189,0	214,0	25,5	51,0	7,4
9	14 3/4"			2749,0	2749,0	0,0				
10	12 1/4"	2800	163	2749,0	2983,0	234,0	274,0	29,6	93,5	7,9
11	8 1/2"	2000	149	2983,0	2986,0	3,0	31,0	1,0	2,9	3,0
12	8 1/2"	2500	219	2986,0	3027,0	41,0	41,0	4,7	15,5	8,7
13	8 1/2"			3027,0	3027,0	0,0	0,0	0,0	6,4	
15	8 1/2"	1591	117	3027,0	3038,0	11,0	103,0	10,5	29,8	1,0
16	8 1/2"	2500	222	2935,0	3045,0	110,0	110,0	25,0	38,1	4,4
17	8 1/2"	2000	164	3045,0	3058,0	13,0	49,0	8,0	29,0	1,6
18	8 1/2"	986	90	3058,0	3084,5	26,5	26,5	26,5	13,7	1,0
19	8 1/2"	2500	245	3084,0	3775,0	691,0	691,0	96,5	156,4	7,2
20	6"			3775,0	3775,0	0,0	26,0	0,0	25,0	
21	6"	1200	224	3775,0	3782,0	7,0		8,0	22,0	0,9
23	6"	1285	278	3782,0	4120,0	338,0		47,4	80,6	7,1

Run no	Bit size	Min WOB ton	Max WOB ton	Min RPM	Max RPM	Torque Min Nm	Torque Max Nm	Con drag Min 1000 daN	Con drag Max 1000 daN
1	26"/36"	1	2	69	92				
1	42"	1	2		60				
1	17 1/2"	1	2	69	92				
2	26"	0	10		160				
3	17 1/2"	1	2	0	60				
4	26"	0	10	60	160	4000	19000		
5	17 1/2"	3	12	50	60	4000	15000		
6	17 1/2"	0	2	0	50	3	7		
7	17 1/2"								
8	14 3/4"	4	10	120	120	4000	12000		
9	14 3/4"								
10	12 1/4"	3	10	50	120	2000	11000		
11	8 1/2"	2	6	50		3000	6000		
12	8 1/2"	8	10	95	100	2000	8000		

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 115 of 177
0

Run no	Bit size	Min WOB ton	Max WOB ton	Min RPM	Max RPM	Torque Min Nm	Torque Max Nm	Con drag Min 1000 daN	Con drag Max 1000 daN
13	8 1/2"								
15	8 1/2"	4	8	130	130	4000	8000		
16	8 1/2"	4	5	100	120	4000	6000		
17	8 1/2"	9	11	150	150	3000	7000		
18	8 1/2"	9	11	90	105	3000	7000		
19	8 1/2"	1	8	150	200	4000	10000		
20	6"								
21	6"	1	6	80	180	4000	10000		
23	6"	1	5	100	180	5000	7000		

Run no	Bit size	I	O	DC	L	B	G	OC	RP
1	26"/36"	1	1	NO	A	E	i	NO	TD
1	42"	1	1	NO	A	E	i	NO	TD
1	17 1/2"	1	3	CT	H	E	i	WT	TD
2	26"	2	3	BT	G	E	I	CT	TD
3	17 1/2"	1	3	CT	H	E	i	WT	TD
4	26"	2	3	BT	G	E	I	CT	TD
5	17 1/2"	1	1	WT	A	F	IN	NO	TD
6	17 1/2"	1	1	NO		0	I	NO	TD
7	17 1/2"	1	1	WT	A	E	In	NO	TD
8	14 3/4"	1	2	CT	S	E	2	WT	TD
9	14 3/4"	1	1	NO	A	E	I	NO	LOG
10	12 1/4"	2	2	CT	2	1	i	FC	TD
11	8 1/2"	1	1	NO		E	I	NO	DTF
12	8 1/2"	1	1	RR		E	I	NO	DTF
13	8 1/2"	0	0	NO		E	In	NO	HP
15	8 1/2"	1	1	WT	S	E	i	RR	LOG
16	8 1/2"								
17	8 1/2"	1	1	WT	A	E	I	RR	CP
18	8 1/2"	1	1	NO		X	I	NO	TD
19	8 1/2"	1	2	NO	A	X	I	PN	TD
20	6"	1	2	CT	G	X		WT	BHA
21	6"	8	8	CR	A	X	In	LT	PR
23	6"	0	0	NO	A	X	In	NO	TD

Run no	Bit size	Remarks
1	26"/36"	
1	42"	
1	17 1/2"	Statoil property. Re-run from from a previous well.
2	26"	Drilled cement from 1827 m to 1843 m. 7-8 broken teeth on outer row.
3	17 1/2"	Statoil property bit.
4	26"	
5	17 1/2"	Drilled soft/ firm cement in shoe track from 2365 m to 2395 m. One cone without any friction (turn around very easy). Statoil property bit.
6	17 1/2"	No drilling performed. Statoil property bit.
7	17 1/2"	No drilling performed with bit. Open hole from 17-1/2" to 20".
8	14 3/4"	Statoil property bit. Gauged bit to 14 5/8" (14.625"). 1st stab above bit gauged to 14 3/4" 2nd stab gauged to : 14 3/4" 3rd stab gauged to : 14 1/2"
9	14 3/4"	Clean up run

Run no	Bit size	Remarks
10	12 1/4"	
11	8 1/2"	Drilled shoe track from 2954 m to 2983 m. Drilled new formation from 2983 m to 2986 m. POOH and changed BCPm sub.
12	8 1/2"	POOH due to MWD failure.
13	8 1/2"	POOH to set balance cement plug and squeeze cement into formation.
15	8 1/2"	Drilled cement from 2935 m to 3027,5 m. Drilled formation from 3027,5 m to 3038 m.
16	8 1/2"	Drilled formation from
17	8 1/2"	
18	8 1/2"	Cut core from 3058 m to 3084,5. Recovered 26,35 m.
19	8 1/2"	Controlled drilled 7-8 m/hr for ECD.
20	6"	Drilled cement from 3714 m to 3740 m. POOH due to steel swarf on surface. XO above bit 5", maximum for using this bi-center bit is 4 3/4". Milled 7" liner.
21	6"	Appears bit was damaged drilling shoe. Drilled cement and shoe track from 3740m-3775m.
23	6"	Drilled soft cement from 3717m-3782m. Controlled drilled 7-8 m/hr.

WELL: NO 6403/6-U-1

Table 5-6 : Bit run listing, well 6403/6-U-1

Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
1	8 1/2"	1	1	MFDGH	137	Smith Bits
2	8 1/2"	1	2	MFDGH	137	Smith Bits
2	8 1/2"	1RR	2	MFDGH	137	Smith Bits

Nozzles (n/32")									
Run no	Bit size	Bit no	BHA no	Serial no	no x n	no x n	no x n	no x n	Flow area in
1	8 1/2"	1	1	MX5564	1 x 18	1 x 16	1 x 15	x	0,6180
2	8 1/2"	1	2	mx5564	1 x 18	1 x 16	1 x 15	x	0,6180
2	8 1/2"	1RR	2	MX5564	1 x 18	1 x 16	1 x 15	x	0,6180

Run no	Bit size	Pump rate l/min	Pump press bar	Depth in mMD	Depth out mMD	Form drld m	Total drld m	Drld hrs	Circ hrs	ROP m/hrs
1	8 1/2"	2500	150	1746,0	1758,0	12,0	12,5	1,2	3,8	10,0
2	8 1/2"			1758,0	2400,0	642,0	654,5	27,0	35,0	23,8
2	8 1/2"	2500	158	1758,0	2400,0	642,0	642,0	27,6	39,6	23,3

Run no	Bit size	Min WOB ton	Max WOB ton	Min RPM	Max RPM	Torque Min Nm	Torque Max Nm	Con drag Min 1000 daN	Con drag Max 1000 daN
1	8 1/2"	0	1	0	60				
2	8 1/2"								
2	8 1/2"	1	5	120	140	1	4		

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted
Doc. no.
MYN-LET 00378
Date
31.01.2007



Rev. no. 117 of 177
0

Run no	Bit size	I	O	DC	L	B	G	OC	RP
1	8 1/2"								
2	8 1/2"	2	3	WT	G	1	1	NO	TD
2	8 1/2"	2	3	WT	G	1	1	NO	TD

Run no	Bit size	Remarks
1	8 1/2"	
2	8 1/2"	
2	8 1/2"	

**Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322**

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007

Rev. no. 118 of 177
0

6 Appendices

App A Extract of daily activities (DBR summary of activities)

WELLBORE ID: NO 6403/6-1
INTERVAL: MOVE
START TIME: 03.04.2006 08:00
END TIME: 05.04.2006 06:00

Report date	Description
04.04.2006	Seafastened equipment and departed from Freifjorden for Edvarda. Ballasted down to 19 m due to wether conditions.
05.04.2006	Rig move to Edvarda well. Deployed transponders and verified accoustic array. Did DP testing of system. Ballasted down to 23,75 m. Meanwhile started to M/U new BHA.

WELLBORE ID: NO 6403/6-U-1
INTERVAL: 8 1/2"
START TIME: 05.04.2006 06:00
END TIME: 10.04.2006 06:00

Report date	Description
06.04.2006	P/u 8 1/2" pilot hole BHA. Picked up and racked back 40 stands of 5" V-150 landing string. Repaired leak on racker head.
07.04.2006	Picked up and racked back 5 ", 29,16 lbs/f V-150 DP. Ran in hole with 8 1/2" BHA on 5 1/2" Dp to 1735 m. Drilled 8 1/2" pilot hole from 1749 m to 1758 m. Troubleshoot BCPM, No signals from same. POOH. Changed out BCPM. Attempted to release T2 sealing adapter stuck in BCPM.
08.04.2006	Ran in hole to 1757 m. Drilled 8 1/2" hole from 1758 m to 1775 m. Pumped 10 M3 1,35 sg mud in attempt to activate MWD. No Go. Drilled 8 1/2" hole from 1775 m to 2010 m.
09.04.2006	Drilled 8 1/2" pilot hole from 2010 m to TD at 2400 m. Had indication of water flow from 2213 m to 2241 m. Flow checked 15 min on each connection. Pumped 10 M3 hi-vis pill and circulated hole clean.
10.04.2006	Flow checked well OK. POOH to 2335 m. Performed repeat section from 2335 m to 2390 m. Displaced well to 1,35 sg mud. Performed wipertrip to 1756 m. Sat balanced cement plug. POOH. Racked back BHA. Laid out 8 1/2" pilot hole BHA. Broke down cement assy. Serviced TDS and drawwork.

WELLBORE ID: NO 6403/6-1
INTERVAL: 42" x 36"
START TIME: 11.04.2006 00:00
END TIME: 14.04.2006 22:00

Report date	Description
11.04.2006	Made up and racked back 30" running tool. Made up cement stand. Made up and ran in hole with 42" x 36" BHA. Troubleshoot Anderdrift. Positioned rig. Spudded and drilled 36" hole from 1746 m to 1802 m.
12.04.2006	Drilled 36" hole to 1840 m. Circulated hole clean. Displaced hole to 1,35 sg mud. Pulled out of hole and laid out hole opener assemblies. Changed saver sub. Rigged up to run conductor. Inspected TDS and derrick for loose items after drilling.
13.04.2006	Ran 36" x 30" conductor on 5" landing string to 1837,7 m. Circulated prior to cement 36" x 30" conductor.

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
 MYN-LET 00378
 Date
 31.01.2007

Rev. no. 119 of 177
 0

Report date	Description
14.04.2006	Cemented 36" x 30" conductor. Held tension in conductor until cement sat up. Performed grouting. POOH. Changed to HT 55 saver sub. Broke off equalizer sub on 20" running tool.

INTERVAL: 26"

START TIME: 14.04.2006 22:00

END TIME: 30.04.2006 14:30

Report date	Description
15.04.2006	Made up and ran in hole with 26" BHA to 1808 m. Washed down and tagged cement at 1827 m. Held time out for safety meeting with focus on dropped objects. Drilled cement and cleaned out rat hole. Repaired mud pump 2 and 3. Drilled 26" hole from 1843 m to 1948 m.
16.04.2006	Drilled 26" hole from 1948 m to 1993 m. Pulled out to 1810 m. Untangled ROV tether. Ran in hole to 1993 m. Drilled 26" hole from 1993 m to 2050 m. Changed PSV's on all mud pumps. Drilled 26" hole from 2050 m to 2122.
17.04.2006	Drilled 26" hole from 2122 m to 2323 m. Took cutting samples with ROV as required. Trouble-shoot TDS motor.
18.04.2006	Drilled 26" hole from 2323 m to 2400 m. Circulated hole clean. Flow checked well. Pumped out of hole to 1834 m. Checked derrick, TDS and crown for loose items after drilling top hole. Ran/reamed in hole to TD at 2400 m. Circulated hole clean. Displaced well to 1,35 sg mud.
19.04.2006	Displaced well to 1,35 sg mud. Pumped out of hole. Reamed tight spots at 2182 m and 2012 m. Cut and slipped drill line. Rigged up to run 20" casing. Ran 20" casing to 313 m.
20.04.2006	Ran 20" casing. Total length; 640 m. Attempted to MU wellhead. No go due to crossed threads. Changed primary wellhead with secondary wellhead. Ran innerstring. Ran 20" casing on 5" landing string to 1646 m.
21.04.2006	Ran and cemented 20" casing with shoe at 2395 m. Locked in wellhead and released running tool. POOH inner/ landing string to 476 m.
22.04.2006	POOH inner/ landing string. Changed encoder on top drive. Rigged up for running BOP and risers. Ran BOP through splash zone at 22:10 hrs down to 68 m. Pressure tested kill/ choke/ conduit lines. Suspected leakage in yellow conduit return flush valve. Laid down one riser joint. Pulled BOP to surface and placed on trolley. Changed and tested flush valve. Ran BOP through splash zone at 05:10 hrs down to 68 m.
23.04.2006	Ran BOP stack to 206 m. WOW. Meanwhile; cleaned pits, mixed new mud system, performed PM and general maintenance.
24.04.2006	WOW. Changed damaged buoyancy riser with slick riser joint. Ran BOP from 206 m to 1071 m.
25.04.2006	Ran BOP and risers to 1614 m. Attached landing joints to support ring and hung off riser string on MRT's and CMC. Waited on weater.
26.04.2006	WOW with BOP at 1614 m. Meanwhile; performed PM's and general maintenance. PU landing joint and attempted to secure MRT support ring to diverter housing. No go due to pitch and roll.
27.04.2006	Waited on weater with BOP at 1614 m. Parked support ring in diverter housing and laid down landing joint. Ran BOP from 1600 m to 1622 m. Discovered and investigated excessive wear on drill line. Decision made to cut 375 m of drilling line. Cut and slipped 375 m drilling line. Ran BOP and risers to 1705 m. Commenced pressure testing.
28.04.2006	Pressure tested kill/ choke and conduit lines. PU and installed slip joint. Attached MRT support ring to slip joint and installed safety slings. Took 10 ton overpull on lock- down dogs on support ring. Attached goosenecks to slip joint. Moved rig across location and landed BOP. Stroked out slip joint inner barrel and LD landing joint. Installed diverter and LD riser handling tools.
29.04.2006	LD riser handling equipment. Pressure tested kelly hoses, kelly cocks and top drive valves. Installed drilling bails and elevator on to top drive. Performed VSP logging. MU and laid out cement head. LD BHA from 20" section. MU and RIH 17 1/2" BHA to 1233 m. Performed kick drill.
30.04.2006	Performed choke/ kick drill. RIH 17 1/2" BHA and tagged soft cement at 2352 m. Drilled soft cement to float collar at 2365 m. Drilled firm cement from 2365 m to 2380 m. Performed choke/ kick drill. Displaced hole and surface equipment from seawater to 1,08 sg mud. Established fingerprints. Drilled shoe track from 2380 m to 2395 m.

INTERVAL: 17 1/2" x 20"

START TIME: 30.04.2006 14:30

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
 MYN-LET 00378
 Date
31.01.2007

Rev. no. 120 of 177
0

END TIME: 12.05.2006 23:30

Report date	Description
01.05.2006	Cleaned rat hole and drilled 3 m new formation from 2400 m to 2403 m. Circulated conditioned mud and hole prio to LOT. Performed LOT to 1,18 emw. Circulated and raised mud weight from 1,07 sg to 1,10 sg. Flow checkked well statick. Circulated bottoms up from TD. Time drilled 17 1/2" from 2413 m to 2420 m.
02.05.2006	Time drilled (max 10 m/hrs) 17 1/2" hole from 2420 m to 2442 m. Performed pump off test and circulated bottoms up. Time drilled 17 1/2" hole from 2442 m to 2489 m. Performed SCR. Flushed kill and choke lines. Time drilled 17 1/2" hole from 2489 m to section TD at 2560 m. Circulated bottoms up.
03.05.2006	Circulated bottoms up. Flow checked well. Performed short trip in to 20" casing shoe at 2395 m. RIH to TD at 2560 m. Circulated bottoms up. Flow checked well static. POOH and racked back 17 1/2" BHA. RU wireline surface equipment. Ran toolstring #1:DSI/PEX/HRLA/ACTS/HNGS/ECRD to 500m.
04.05.2006	Performed DSI-HRLA-PEX-HNGS and MSCT logging. Made up cement stand. Made up and ran in hole with 17 1/2" x 20" BHA to 1537 m.
05.05.2006	Ran in hole with 17 1/2" x 20" BHA to 2402 m. Opened 17 1/2" hole to 20". Circulated hole clean. Pumped out of hole to 2390 m. Flow checked well OK. Slugged pipe and pulled out of hole to 145 m.
06.05.2006	Pulled out of hole from 145 m to surface. Changed out Ander Reamer. Ran in hole with 17 1/2" x 20" BHA. Function tested BOP. Opened 17 1/2" hole to 20" from 2395 m to 2557 m. Circulated hole clean.
07.05.2006	Circulated hole clean. Pumped out of hole to 20" casing shoe. Flow checked well. Slugged pipe and pulled out of hole. Repaired extend cylinder on fingerboard. Laid out 17 1/2" x 20" BHA. Rigged up for running 16" liner.
08.05.2006	Rigged up casing equipment. Ran 16" liner to 230 m. Ran in hole with 16" liner on 5 1/2" DP to 2558 m. Sat liner hanger and cemented liner. Troubleshoot releasing of liner running tool. Circulated out spacer and excess cement. Sat liner packer.
09.05.2006	Laid out cement stand. Flow checked well. Pulled out of hole. Laid out liner running tool. Welded lifting brackets on to hydra racker. Made up BOP test tool.
10.05.2006	Ran in hole with BOP test tool. Jet washed well head. Pressure tested BOP to 35/95 bar. POOH. Function tested diverter. Removed lower pin on Hydra racker, Removed bottom trolly and placed same on deck. Pressure tested upper/lower IBOP and mud hose to 35/345 bar.
11.05.2006	Replaced slew bearing on Hydra racker. Cut and slipped drill line. Pressure tested 16" liner against BSR to 65 bar. Installed trolley, bolt, hoses and cables on Hydra racker.
12.05.2006	Completed work on Hydra racker. Made up cement stand. Made up and ran in hole with 14 3/4" x 17 1/2" BHA. Performed choke drill with both crew. Drilled out drillable packer in PBR. Drilled on wiper plug / landing collar.

INTERVAL: 14 3/4" x 17 1/2"

START TIME: 12.05.2006 23:30

END TIME: 23.05.2006 09:30

Report date	Description
13.05.2006	Drilled wiper plugs, cement in shoetrack and cleaned out rathole. Drilled 3 m new formation and performed LOT. Increased MW to 1,15 sg. Drilled 14 3/4" x 17 1/2" hole from 2560 m to 2608 m.
14.05.2006	Drilled 14 3/4" x 17 1/2" hole from 2608 m to 2673 m. Increased MW from 1,15 sg to 1,17 sg. Drilled 14 3/4" x 17 1/2" hole from 2673 m to 2697 m. Increased MW from 1,17 sg to 1,19 sg. Drilled 14 3/4" x 17 1/2" hole from 2697 m to 2748 m. Circulated hole clean.
15.05.2006	Circulated BU. Reamed out of hole to 2554 m. Backreamed 2 m cement below 16" liner shoe. Pulled into shoe. Reamed down to TD at 2749 m. Circulated 2 times BU. POOH with wet pipe to 2548 m. Worked tight area from 2548 m to 2537 m. RIH to 2569 m and circulated hole clean.
16.05.2006	Washed/reamed out of 16" liner from 2548 m to 2306 m. POOH from 2306 m. RIH with wireline to 2472 m. Not able to pass 2472 m with wireline. POOH with wireline. MU 14 3/4" clean up assembly and RIH to 1018 m.
17.05.2006	RIH with 14 3/4" clean up assembly. Reamed/backreamed 16" liner from 2306 m to 2548 m. RIH to TD at 2749 m. Circulated hole clean. Pumped out of hole to 16" liner shoe at 2548 m. Backreamed to top of 16" liner at 2306 m. Circulated hole clean. POOH from 2300 m to 2118 m.
18.05.2006	Function tested BOP. POOH with 14 3/4" clean up assembly and LD same. Ran wireline logs, DSI and VSP.
19.05.2006	Changed out saver sub. MU cement stand. RIH and retrieved wear bushing. POOH with wear bushing. RU and ran 13 3/8" casing to 36 m.

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
 MYN-LET 00378
 Date
 31.01.2007

Rev. no. 121 of 177
 0

Report date	Description
20.05.2006	Ran 13 3/8" casing from 36 m to shoe depth at 2740,5 m. Circulated BU, observed loss to formation. Cemented 13 3/8" casing.
21.05.2006	Cemented 13 3/8" casing. Set and pressure tested seal assembly. Pressure tested BOP. POOH with 13 3/8" running tool at 140 m. LD 5" DP on the way out.
22.05.2006	POOH with 13 3/8" casing RT. RIH and set wear bushing. POOH with wear bushing RT. Pressure tested 13 3/8" casing to 345 bar. Pressure tested lower and upper shear rams. PU and MU 12 1/4" BHA and RIH to 1180 m.
23.05.2006	RIH with 12 1/4" BHA and tagged top of cement at 2713 m. Displaced well to 1,19 sg Ultradrill DW mud. Drilled float, shoetrack and shoe. Cleaned out rathole. Drilled new formation from 2749 m to 2751 m prior to LOT.

INTERVAL: 12 1/4"
START TIME: 23.05.2006 09:30
END TIME: 01.06.2006 08:00

Report date	Description
24.05.2006	Performed LOT to 1,34 sg. Drilled 12 1/4" hole from 2752 m to 2850 m. Circulated BU.
25.05.2006	Drilled 12 1/4" hole to 2935 m. Treated mud with LCM materials due to mud losses. Reduced mud weight from 1,24 sg to 1,225 sg.
26.05.2006	Drilled 12 1/4" hole from 2935 m to 2983 m. Closed in well due to pit gain,(expected caused by ballooning). Circulated bottom up through choke line. Bled off 6,37 M3 mud from annulus. Opened BOP.
27.05.2006	Circulated hole clean. Performed wiper trip to 2534 m. Circulated B/U at 2534 m. Ran in hole to 2978 m. Cleaned out fill from 2978 m to 2983 m.
28.05.2006	Circulated hole clean. Flow checked well. Pulled out of hole and racked back 12 1/4" BHA. Ran DSI/PEX-HRLA/ACTS/HNGS/ECRD logs.
29.05.2006	Pulled out of hole with wireline. Ran 9 5/8" liner to 289 m. Ran in hole with 9 5/8" liner on 5 1/2" DP to 2982,8 m. Circulated 1,5 times OH volume. Sat liner hanger. Circulated BU.
30.05.2006	Cemented 9 5/8" liner. Pressure tested liner to 240 bar. Sat liner packer. Pulled out of PBR and circulated out excess cement. Pulled out of hole with liner running tool. Pressure tested BOP. Changed wash pipe. Cut & slipped drill line.
31.05.2006	Cut & slipped drill line. Pressure tested valves on TDS. Laid down 12 1/4" BHA. Made up 8 1/2" BHA. Pressure tested 9 5/8" liner against BSR. Ran in hole with 8 1/2" BHA. Performed choke drill. Took fingerprint data.
01.06.2006	Drilled 9 5/8" shoe track and 3 m new formation to 2986 m. Circulated and conditioned mud and hole prior to LOT. Performed LOT to 1,46 EMW. POOH due to poor signals from MWD tool (BCPM sub). Down loaded MWD tool. Changed and function tested BCPM sub. RIH to TD at 2986 m. Displaced hole to 1,25 sg mud.

INTERVAL: 8 1/2"
START TIME: 01.06.2006 08:00
END TIME: 05.07.2006 16:30

Report date	Description
02.06.2006	Displaced hole to 1,25 sg mud. Drilled 8 1/2" hole from 2986 m to 3007m. Pumped out of hole into 9 5/8" liner at 2983 m to investigate high ECD readings. Circulated and rotated string to attempt to un-ball stabilizers to lower ECD. RIH to TD at 3007 m. Drilled 8 1/2" hole from 3007 m to 3027 m. Experienced mud losses to formation. Pumped LCM. Lost communication with MWD tool. Pumped out of hole into 9 5/8" liner at 2983 m. Circulated bottoms up while attempted to re- start MWD tool. POOH. Re- arranged BHA.
03.06.2006	Re- arranged 8 1/2" BHA. RIH to TD at 3027 m. Circulated bottoms up and took ECD readings at different flow rates. Attempted to perform FIT to 1,36 EWM. Formation leaked of at 1,33 EMW. Flow checked well static. POOH from 2983 m to 460 m.
04.06.2006	POOH 8 1/2" BHA. MU and RIH 3 1/2" stinger. Circulated boyyoms up. Set balanced cement plug from 3026 m to 2890 m. Squeezed cement into formation, and waited for cement to set up. POOH to 90 m.

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007

Rev. no. 122 of 177
0

Report date	Description
05.06.2006	POOH 3 1/2" cement stinger. MU and RIH 8 1/2" BHA. Tagged cement at 2935 m. Drilled firm cement from 2935 m to 3020 m. Circulated bottoms up into riser. Made short trip into 13 3/8" casing.
06.06.2006	Made short trip into 13 3/8" casing. Ran in and drilled cement from 3020 m to 3027,5 m. Circulated bottoms up. Performed FIT. Drilled 8 1/2" hole from 3027,5 m to 3038 m. Circulated bottoms up. Performed FIT. POOH 8 1/2" BHA from 2983 m to 1567 m. LD 36 joint of 5 1/2" DP on way out.
07.06.2006	POOH and racked back BHA. Down loaded MWD tool and cleaned rig floor. Waited on logging crew. Meanwhile maintainance rig. PU and racked core barrels. Checked wireline computer setup. RU and ran VSP tool string. Logged VSP from 3029 m to 2651 m. POOH VSP tool string to 1700 m.
08.06.2006	POOH VSP tool string. LD toolstring and surface equipment. RIH 8 1/2" BHA. Circulated at 2688 m. Washed down to 3033 m. Circulated bottoms up and logged hole from 3005 to 3033 m with MWD tool. Took ECD measurements. Drilled 8 1/2" hole from 3038 m to 3045 m. Circulated bottoms up priot to FIT. Pulled BHA into 9 5/8" liner at 2982 m. Performed FIT to 1,335 sg EMW. POOH 8 1/2" BHA to 1100 m.
09.06.2006	POOH 8 1/2" BHA. Re- evaluated pressure prognosis. RIH 8 1/2" BHA to 1614 m. Cut and slipped drilling line. Trouble shot CMC system.
10.06.2006	Trouble shoot and repaired CMC system. RIh to 3045 m. Took finger print measurments. Drilled 8 1/2" hole from 3045 m to 3058 m. Circulated bottoms up for samples. Performed pump off test. Circulated bottoms up.
11.06.2006	Performed pump off test and circulated bottoms up. Made short trip of 5 stand. RIH to TD at 3058 m. Circulated bottoms up and checked for gas. Pumped out to 13 3/8" casing. POOH 8 1/2" BHA. RU and ran MDT tool string. Logged hole downwards from 3044 m.
12.06.2006	Ran MDT logs. MU core barrel assembly. RIH 8 1/2" coring assembly to 2983 m. Cut mudweight from 1,25 sg to 1,235 sg. Washed and reamed from 2983 m to TD at 3058 m. Cut core from 3058 m to 3075 m.
13.06.2006	Cut 8 1/2" core from 3075 m to 3084,5 m. Flow checked well. Circulated bottoms up. Flow checked well. Pumped out of hole into 13 3/8" casing at 2692 m. Flow checked well. POOH. LD inner core barrel.
14.06.2006	Recoverd 26,35 m, 99,43% core. Ran MDT log. Pressure tested BOP.
15.06.2006	Pressure tested BOP. MU 8 1/2" BHA and RIH to 3038 m. Washed down from 3038 m to 3084 m. Drilled 8 1/2" hole from 3084 m to 3116 m.
16.06.2006	Drilled 8 1/2" hole from 3116 m to 3138 m. Pumped out of hole to top of 9 5/8" liner. Decreased MW from 1,235 sg to 1,22 sg. RIH with 8 1/2" BHA to TD at 3138 m.
17.06.2006	Reduced MW from 1,235 sg to 1,22 sg. Drilled 8 1/2" hole from 3138 m to 3177 m. Displaced well to 1,19 sg Ultradrill mud. Drilled 8 1/2" hole from 3177 m to 3188 m.
18.06.2006	Drilled 8 1/2" hole from 3188 m to 3203 m. Circulated hole clean. Drilled 8 1/2" hole from 3203 m to 3316 m.
19.06.2006	Drilled 8 1/2" hole from 3316 m to 3464 m.
20.06.2006	Drilled 8 1/2" hole from 3464 m to 3560 m. Circulated hole. Flowchecked well and fingerprinted termal expansion of mud. Circulated hole. Drilled 8 1/2" hole from 3560 m to 3579 m. Circulated hole clean.
21.06.2006	Circulated hole clean. Performed wipertrip to 9 5/8" shoe. Function tested BOP. RIH to TD. Drilled 8 1/2" hole from 3579 m to 3624 m.
22.06.2006	Drilled 8 1/2" hole from 3624 m to TD of section at 3775 m.
23.06.2006	Circulated hole clean. Pumped out of hole from 3775 m to 2670 m. POOH from 2670 m to 210 m. Racked 8 1/2" BHA in derrick.
24.06.2006	Racked back 8 1/2" BHA. RU and ran wireline logs.
25.06.2006	Ran MSCT wireline log. RU MDT - LFA wireline logging tools.
26.06.2006	Ran MDT - LFA wireline logs. RU and ran 7" liner to 278 m.
27.06.2006	RIH with 7" liner. Circulated hole. Set 7" liner hanger. Mixed and pumped 13 m3 1,80 sg cement. Pressure tested 7" liner to 215 bar. Set 7" packer. Circulated out excess cement.
28.06.2006	Circulated hole clean. POOH with 7" liner RT. Pressure tested BOP. POOH with BOP test tool.
29.06.2006	Laid out BOP test assembly. Pressure tested liner to 215 bar. Made up 6" BHA. Picked up 3 1/2" DP from deck. Pooh and installed float in BHA. Ran in hole with 6" BHA to 2482 m.
30.06.2006	Ran in hole with 6" BHA to 3714 m. Took finger printing data and SCR's. Drilled out shoe track from 3714 m to 3736 m. Performed choke drill with both crew.
01.07.2006	Drilled cement from 3736 m to 3740 m. Pumped out of hole from 3740 m to 2885 m. Circulated hole clean. Pulled out of hole. Changed out bit. Ran in hole to 1157 m. Cut and slipped drill line.
02.07.2006	Cut and slipped drill line. Ran in hole to 3740 m. Drilled cement from 3740 m to 3768 m. Cleaned out rathole and drilled 3 m new formation. Circulated hole clean.
03.07.2006	Performed LOT. Drilled 6" hole from 3778 m to 3782 m. Placed LCP pill and performed LOT. Pulled out of hole to 1355 m. Changed out gripper head on Hydra racker.

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007

Rev. no.
0

123 of 177

Report date	Description
04.07.2006	Completed work on Hydra-racker gripper head. Pulled out of hole. Made up cement stinger and ran in hole with same. Circulated bottoms up. Mixed, pumped and displaced balanced cement plug. Pulled above cement and circulated bottoms up. Squeezed cement.
05.07.2006	Held back pressure on cement plug, released pressure. POOH. Made up 6" BHA and ran in hole with same. Drilled cement from 3648 m to 3717 m.

INTERVAL: 6"

START TIME: 05.07.2006 16:30

END TIME: 12.07.2006 18:30

Report date	Description
06.07.2006	Drilled cement from 3717 m to 3782 m. Drilled 3 m new formation. Circulated hole clean. Performed LOT. Performed weekly BOP function test. Drilled 6" hole from 3785 m to 3854 m.
07.07.2006	Drilled 6" hole from 3854 m to 3960 m. Increased mud weight to 1,29 sg. drilled 6" hole from 3960 m to 3977 m.
08.07.2006	Drilled 6" hole from 3977 m to 4003 m. Weight up mud from 1,285 sg to 1,29 sg. Drilled 6" hole from 4003 m to 4113 m.
09.07.2006	Drilled 6" hole from 4113 m to 4120 m. Circulated hole clean. Pulled out of hole to 1211 m.
10.07.2006	Pulled out of hole from 1211 m. Ran wireline run 1 and 2.
11.07.2006	Ran wireline run # 2, ZVSP & # 3, MSCT.
12.07.2006	Recovered core samples from MSCT. Ran in hole with FMI-MSIP to 7" liner shoe at 3768 m. Pulled out of hole due to tool failure. Repaired leak on AHC accumulator. Ran in hole with MSIP to TD at 4120 m. Pulled out of hole due to tool failure. Trouble shoot MSIP tool.

INTERVAL: PERM P&A

START TIME: 12.07.2006 18:30

END TIME: 25.07.2006 14:00

Report date	Description
13.07.2006	Ran MSIP- FIM log. MU and RIH 3 1/2" cement stinger to 3387 m. Function tested BOP and diverter system. RIH cement stinger to TD at 4120 m. Circulated bottoms up.
14.07.2006	Circulated bottoms up prior to set balanced plug # 1. Set balanced cement plug " 1 from 4119 m to 3869m. POOH to 3850 m. Circulated bottoms up. Set balanced cement plug from 3850 m to 3600 m. POOH to 3580 m. Circulated bottoms up. POOH from 3580 m to 2685 m. LD 5" DP on way out. Circulated and cleaned setting depth for 13 3/8" EZSV.POOH and LD 5" DP from 2685 m to 1742 m.
15.07.2006	POOH and LD excess 5" and 3 1/2" DP. LD rental equipment from derrick. MU and RIH 13 3/8" EZSV tool to setting depth at 2685 m. Set EZSV plug at 2685 m. Pressure tested EZSV plug to 150 bar. Circulated bottoms up prior to set cement plug # 3.
16.07.2006	Circulated bottoms up. Set balanced cement plug from 2685 m to 2585 m. POOH from 2681 m to 2550 m. Cut mud weight from 1,29 sg to 1,22 sg. POOH. LD excess 5 1/2" DP on way out. MU 13 3/8" casing cutter assembly and wearbushing pulling tool. RIH casing cutter assembly to 2372,5 m. Landed MPT and cut 13 3/8" casing. Recorded mud losses to formation. Observed well.
17.07.2006	Flow checked well static. POOH to 1409 m. Recorded losses to formation. Observed losses. POOH MPT and 13 3/8" casing cutter assembly. MU and RIH 13 3/8" spear BHA to 1179 m. Cut and slipped drilling line. RIH and latched 13 3/8" casing. Latched on to casing and pulled casing free. Flow checked well.
18.07.2006	Flow checked well. POOH 13 3/8" casing on 5 1/2" DP. RU casing handling equipment. POOH and laid down 13 3/8" casing.
19.07.2006	RIH 16" EZSV ad sat at 2370 m. Displaced well to seawater and inflow tested well. Sat balanced cement plug from 2370 m to 2080 m, and from 2070 m to 1790 m. Circulated bottoms up. POOH to 1295 m

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
MYN-LET 00378
Date
31.01.2007

Rev. no.
0

124 of 177

Report date	Description
20.07.2006	POOH 16" EZSV setting tool from 1295 m. LD 57 jt of 5 1/2" DP on way out. RU riser handling equipment. Disconnected BOP at 22:56 hrs. Disconnectet service lines and secured MRT support ring. Disconnected slip joint from MRT support ring LD handling joint and slip joint.ng joint. Pulled BOP and LD risers.
21.07.2006	LD slip joint. Pulled BOP and LD risers to 1360 m. Repaired break system on drawwork. Pulled BOP and LD risers from 1360 m to 869 m. Repaired break system aon drawwork. Pulled BOP and LD risers from 869 m to 206 m.
22.07.2006	Pulled BOP and LD risers. MU and RIH 20" x 30" casing cutter assembly. Attempted to remove VX ring from wellhead,- no-go. Cut VX ring using angle grider attached to ROV.
23.07.2006	Cut and removed VX ring from wellhead. Cut and pulled 20" x 30 " casing. POOH cut wellhead to 1474 m. Repaired bursted hydraulic piping on IR. POOH cut wellhead from 1474 to 180. Changed bursted hydraulic hose on Hydrarackers upper racking head
24.07.2006	Retrieved wellhead cut. LD tubulars from derrick. Retrieved transponders from seabed. Cleaned tanks in pontoons.
25.07.2006	Positioning rig for ROV hull/ trusters survey. Surveyed hull and trusters. Cleaned fluid tanks in port pontoon.

Final Well Report
6403/6-1 & 6-U-1
Edvarda, PL322

Restricted

Doc. no.
 MYN-LET 00378
 Date
 31.01.2007

Rev. no.
 0

126 of 177

Survey listing for Well: 6403/6-1



Actual Wellpath Report

Definitive 6403/6-1 (TD@4120m Md)
 Page 1 of 4



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Statoil	Slot	6403/6-1
Area	Norway	Well	6403/6-1
Field	EXPLORATION ZONE 31	Wellbore	6403/6-1
Facility	Eirik Raude 6403/6-1		

REPORT SETUP INFORMATION			
Projection System	ED50 / UTM Zone 31 North	Software System	WellArchitect™ 1.2
North Reference	Grid	User	Skarfino
Scale	0.999615	Report Generated	10/25/06 at 14:57:38
Wellbore last revised	08/23/06	Database/Source file	WA_STATOIL_SERVER/6403_6-1.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North [meters]	East [meters]	Easting [meters]	Northing [meters]	Latitude [°]	Longitude [°]
Slot Location	0.00	0.00	534418.00	7165193.00	64 36 30.461N	3 43 09.582E
Facility Reference Pt			534418.00	7165193.00	64 36 30.461N	3 43 09.582E
Field Reference Pt			0.00	0.00	0 00 00.000	1 29 18.843W

WELLPATH DATUM			
Calculation method	Minimum curvature	Eirik Raude (RT) to Facility Vertical Datum	25.00 meters
Horizontal Reference Pt	Facility Center	Eirik Raude (RT) to Mean Sea Level	25.00 meters
Vertical Reference Pt	Eirik Raude (RT)	Facility Vertical Datum to Mud Line (Facility)	1721.00 meters
MD Reference Pt	Eirik Raude (RT)	Section Origin	N 0.00, E 0.00 m
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.00°



Actual Wellpath Report

Definitive 6403/6-1 (TD@4120m Md)
Page 2 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Statoil	Slot	6403/6-1
Area	Norway	Well	6403/6-1
Field	EXPLORATION ZONE 31	Wellbore	6403/6-1
Facility	Eirik Raude 6403/6-1		

WELLPATH DATA (80 stations) † = interpolated/extrapolated station							
MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]
0.00†	0.000	0.000	0.00	0.00	0.00	0.00	0.00
1746.00	0.000	0.000	1746.00	0.00	0.00	0.00	0.00
1869.50	0.300	172.250	1869.50	-0.32	-0.32	0.04	0.07
1897.40	0.270	182.870	1897.40	-0.46	-0.46	0.05	0.07
1926.20	0.450	205.230	1926.20	-0.63	-0.63	0.00	0.23
1955.20	0.720	211.340	1955.20	-0.89	-0.89	-0.14	0.29
1983.40	0.990	227.260	1983.39	-1.20	-1.20	-0.42	0.38
2013.20	1.240	218.100	2013.19	-1.63	-1.63	-0.80	0.31
2043.70	1.470	213.420	2043.68	-2.22	-2.22	-1.22	0.25
2072.80	1.450	225.920	2072.77	-2.79	-2.79	-1.69	0.33
2103.40	1.400	224.220	2103.36	-3.32	-3.32	-2.23	0.06
2132.80	1.640	223.050	2132.75	-3.89	-3.89	-2.77	0.25
2161.20	1.720	223.590	2161.14	-4.49	-4.49	-3.34	0.09
2190.10	1.440	238.060	2190.03	-5.00	-5.00	-3.95	0.50
2218.90	1.530	236.750	2218.82	-5.40	-5.40	-4.58	0.10
2248.40	1.430	237.070	2248.31	-5.82	-5.82	-5.21	0.10
2273.50	1.470	235.740	2273.40	-6.17	-6.17	-5.74	0.06
2305.20	1.410	235.050	2305.09	-6.62	-6.62	-6.40	0.06
2333.80	1.380	233.860	2333.68	-7.03	-7.03	-6.97	0.04
2362.40	1.480	242.070	2362.27	-7.40	-7.40	-7.57	0.24
2381.70	1.300	237.940	2381.57	-7.64	-7.64	-7.98	0.32
2406.30	1.320	251.980	2406.16	-7.87	-7.87	-8.48	0.39
2429.40	1.300	245.800	2429.25	-8.06	-8.06	-8.97	0.19
2464.30	1.190	246.300	2464.15	-8.37	-8.37	-9.67	0.10
2489.30	1.120	259.200	2489.14	-8.52	-8.52	-10.15	0.32
2518.40	0.460	229.320	2518.24	-8.65	-8.65	-10.51	0.78
2550.20	0.570	225.410	2550.04	-8.84	-8.84	-10.72	0.11
2566.00	0.540	226.120	2565.84	-8.95	-8.95	-10.83	0.06
2592.00	0.600	230.300	2591.83	-9.12	-9.12	-11.03	0.08
2622.10	0.460	197.250	2621.93	-9.34	-9.34	-11.18	0.33
2650.80	0.450	202.990	2650.63	-9.55	-9.55	-11.26	0.05
2681.70	0.460	207.000	2681.53	-9.77	-9.77	-11.36	0.03
2710.20	0.430	208.720	2710.03	-9.97	-9.97	-11.47	0.03
2727.30	0.380	203.350	2727.13	-10.08	-10.08	-11.52	0.11
2756.10	0.730	156.160	2755.93	-10.33	-10.33	-11.48	0.57
2784.00	0.480	147.540	2783.83	-10.59	-10.59	-11.35	0.29
2813.20	0.330	124.030	2813.03	-10.74	-10.74	-11.21	0.23
2869.90	0.410	109.950	2869.73	-10.91	-10.91	-10.89	0.06
2899.60	0.510	61.930	2899.42	-10.88	-10.88	-10.67	0.39
2927.70	0.290	51.370	2927.52	-10.78	-10.78	-10.51	0.25



Actual Wellpath Report

Definitive 6403/6-1 (TD@4120m Md)
Page 3 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Statoil	Slot	6403/6-1
Area	Norway	Well	6403/6-1
Field	EXPLORATION ZONE 31	Wellbore	6403/6-1
Facility	Eirik Raude 6403/6-1		

WELLPATH DATA (80 stations)							
MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]
2956.80	0.380	36.810	2956.62	-10.65	-10.65	-10.39	0.13
3009.80	0.200	65.760	3009.62	-10.47	-10.47	-10.20	0.13
3027.20	0.970	93.260	3027.02	-10.47	-10.47	-10.03	1.38
3049.70	0.860	95.480	3049.52	-10.50	-10.50	-9.67	0.15
3084.00	0.880	93.830	3083.82	-10.54	-10.54	-9.15	0.03
3095.60	0.810	92.950	3095.41	-10.55	-10.55	-8.98	0.18
3140.70	0.640	107.100	3140.51	-10.64	-10.64	-8.42	0.16
3169.80	0.570	100.910	3169.61	-10.72	-10.72	-8.12	0.10
3195.50	0.630	92.450	3195.31	-10.75	-10.75	-7.86	0.12
3224.70	0.560	100.130	3224.51	-10.78	-10.78	-7.55	0.11
3256.40	0.480	114.130	3256.20	-10.86	-10.86	-7.28	0.14
3285.40	0.390	110.750	3285.20	-10.94	-10.94	-7.08	0.10
3313.60	0.270	103.710	3313.40	-10.99	-10.99	-6.92	0.13
3341.60	0.260	105.380	3341.40	-11.03	-11.03	-6.80	0.01
3369.70	0.260	128.320	3369.50	-11.08	-11.08	-6.69	0.11
3399.60	0.230	74.380	3399.40	-11.11	-11.11	-6.58	0.22
3427.70	0.250	103.180	3427.50	-11.11	-11.11	-6.46	0.13
3458.00	0.240	105.530	3457.80	-11.14	-11.14	-6.34	0.01
3485.10	0.270	92.360	3484.90	-11.16	-11.16	-6.22	0.07
3511.90	0.300	60.920	3511.70	-11.13	-11.13	-6.09	0.18
3573.70	0.240	11.930	3573.50	-10.92	-10.92	-5.92	0.11
3601.80	0.200	348.200	3601.60	-10.81	-10.81	-5.92	0.11
3629.20	0.300	351.900	3629.00	-10.70	-10.70	-5.94	0.11
3659.50	0.510	349.930	3659.30	-10.49	-10.49	-5.98	0.21
3687.20	0.640	347.750	3687.00	-10.21	-10.21	-6.03	0.14
3717.90	0.980	350.570	3717.69	-9.79	-9.79	-6.11	0.33
3768.15	1.190	345.440	3767.94	-8.86	-8.86	-6.31	0.14
3795.60	1.140	332.240	3795.38	-8.34	-8.34	-6.51	0.30
3824.60	1.310	326.280	3824.37	-7.81	-7.81	-6.83	0.22
3852.70	1.400	319.570	3852.47	-7.28	-7.28	-7.23	0.19
3881.30	1.760	323.190	3881.05	-6.66	-6.66	-7.72	0.39
3911.90	2.000	323.300	3911.64	-5.86	-5.86	-8.32	0.24
3938.60	2.100	322.910	3938.32	-5.09	-5.09	-8.89	0.11
3968.70	2.400	320.750	3968.40	-4.17	-4.17	-9.63	0.31
3996.20	2.660	317.820	3995.87	-3.25	-3.25	-10.42	0.32
4025.00	2.700	316.160	4024.64	-2.26	-2.26	-11.34	0.09
4054.10	2.510	314.610	4053.71	-1.32	-1.32	-12.27	0.21
4084.00	2.470	315.750	4083.58	-0.40	-0.40	-13.18	0.06
4111.20	2.410	314.610	4110.76	0.42	0.42	-14.00	0.09
4120.00	2.410	314.610	4119.55	0.68	0.68	-14.26	0.00



Actual Wellpath Report Definitive 6403/6-1 (TD@4120m Md) Page 4 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Statoil	Slot	6403/6-1
Area	Norway	Well	6403/6-1
Field	EXPLORATION ZONE 31	Wellbore	6403/6-1
Facility	Eirik Raude 6403/6-1		

HOLE & CASING SECTIONS Ref Wellbore: 6403/6-1 Ref Wellpath: Definitive 6403/6-1 (TD@4120m Md)									
String/Diameter	Start MD [meters]	End MD [meters]	Interval [meters]	Start TVD [meters]	End TVD [meters]	Start N/S [meters]	Start E/W [meters]	End N/S [meters]	End E/W [meters]
42in Open Hole	1746.00	1840.00	94.00	1746.00	1840.00	0.00	0.00	-0.19	0.03
30in Conductor	1746.00	1837.70	91.70	1746.00	1837.70	0.00	0.00	-0.18	0.02
26in Open Hole	1840.00	2400.00	560.00	1840.00	2399.86	-0.19	0.03	-7.82	-8.35
20in Casing	1746.00	2394.00	648.00	1746.00	2393.86	0.00	0.00	-7.77	-8.22
20in Open Hole	2400.00	2560.00	160.00	2399.86	2559.84	-7.82	-8.35	-8.91	-10.79
16in Casing	2306.50	2548.20	241.70	2306.39	2548.04	-6.64	-6.43	-8.83	-10.71
17.5in Open Hole	2560.00	2749.00	189.00	2559.84	2748.83	-8.91	-10.79	-10.26	-11.51
13.375in Casing	1746.00	2740.80	994.80	1746.00	2740.63	0.00	0.00	-10.18	-11.53
12.25in Open Hole	2749.00	2983.00	234.00	2748.83	2982.82	-10.26	-11.51	-10.54	-10.29
9.625in Liner	2696.00	2982.80	286.80	2695.83	2982.62	-9.87	-11.42	-10.54	-10.29
8.5in Open Hole	2983.00	3775.00	792.00	2982.82	3774.78	-10.54	-10.29	-8.72	-6.35
7in Liner	2901.00	3768.00	867.00	2900.82	3767.79	-10.87	-10.66	-8.86	-6.31
6in Open Hole	3775.00	4120.00	345.00	3774.78	4119.55	-8.72	-6.35	0.68	-14.26

WELLPATH COMPOSITION Ref Wellbore: 6403/6-1 Ref Wellpath: Definitive 6403/6-1 (TD@4120m Md)				
Start MD [meters]	End MD [meters]	Positional Uncertainty Model	Log Name/Comment	Wellbore
1746.00	2381.70	NaviTrak (Magcor1, DLS)	6403/6-1 BHI MWD 26" (1746-2381.70m)	6403/6-1
2381.70	2550.20	NaviTrak (Magcor1, DLS)	6403/6-1 BHI MWD 17 1/2"x20" (2381.70-2550.20m)	6403/6-1
2550.20	2727.30	NaviTrak (Magcor1, DLS)	6403/6-1 BHI MWD 14 3/4"x17 1/2" (2550.20-2727.30m)	6403/6-1
2727.30	2956.80	NaviTrak (Magcor1, DLS)	6403/6-1 BHI MWD 12 1/4" (2727.30-2956.80m)	6403/6-1
2956.80	3768.15	NaviTrak (Magcor1, DLS)	6403/6-1 BHI MWD 8 1/2" (2956.80-3768.15m)	6403/6-1
3768.15	4111.20	NaviTrak (Magcor1, DLS)	6403/6-1 BHI MWD 6" (3795.60-4111.20m)	6403/6-1
4111.20	4120.00	NaviTrak (Standard)	6403/6-1 Extrapolation (TD@4120m)	6403/6-1

Survey listing for Well 6403/6-U-1



Actual Wellpath Report

Definitive 6403/6-U-1 (TD@2400m Md)
Page 1 of 2



REFERENCE WELLPATH IDENTIFICATION			
Operator	Statoil	Slot	6403/6-U-1
Area	Norway	Well	6403/6-U-1
Field	EXPLORATION ZONE 31	Wellbore	6403/6-U-1
Facility	Eirik Raude 6403/6-1		

REPORT SETUP INFORMATION			
Projection System	ED50 / UTM Zone 31 North	Software System	WellArchitect™ 1.2
North Reference	Grid	User	Devephi
Scale	0.999614	Report Generated	08/23/06 at 10:13:27
Wellbore last revised	05/03/06	Database/Source file	WA_STATOIL_SERVER/6403_6-U-1.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North [meters]	East [meters]	Easting [meters]	Northing [meters]	Latitude [°]	Longitude [°]
Slot Location	49.02	-11.00	534404.00	7165231.00	64 36 31.694N	3 43 08.561E
Facility Reference Pt			534415.00	7165182.00	64 36 30.107N	3 43 09.347E
Field Reference Pt			0.00	0.00	0 00 00.000	1 29 18.843W

WELLPATH DATUM			
Calculation method	Minimum curvature	Eirik Raude (RT) to Facility Vertical Datum	25.00 meters
Horizontal Reference Pt	Facility Center	Eirik Raude (RT) to Mean Sea Level	25.00 meters
Vertical Reference Pt	Eirik Raude (RT)	Facility Vertical Datum to Mud Line (Facility)	1721.00 meters
MD Reference Pt	Eirik Raude (RT)	Section Origin	N 49.02, E -11.00 m
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.00°



Actual Wellpath Report

Definitive 6403/6-U-1 (TD@2400m Md)
Page 2 of 2



REFERENCE WELLPATH IDENTIFICATION

Operator	Statoil	Slot	6403/6-U-1
Area	Norway	Well	6403/6-U-1
Field	EXPLORATION ZONE 31	Wellbore	6403/6-U-1
Facility	Eirik Raude 6403/6-1		

WELLPATH DATA (24 stations) † = interpolated/extrapolated station

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]
0.00†	0.000	0.000	0.00	0.00	49.02	-11.00	0.00
1746.00	0.000	0.000	1746.00	0.00	49.02	-11.00	0.00
1777.40	0.710	64.260	1777.40	0.08	49.10	-10.83	0.68
1802.30	0.790	91.290	1802.30	0.15	49.17	-10.52	0.43
1829.90	0.790	72.580	1829.89	0.20	49.22	-10.15	0.28
1858.60	0.720	73.320	1858.59	0.31	49.33	-9.79	0.07
1886.70	0.400	74.850	1886.69	0.39	49.41	-9.52	0.34
1915.50	0.680	70.220	1915.49	0.47	49.49	-9.26	0.29
1944.00	0.660	73.100	1943.99	0.58	49.60	-8.95	0.04
1972.90	0.650	98.030	1972.89	0.60	49.62	-8.63	0.29
2001.90	0.760	95.960	2001.88	0.56	49.58	-8.27	0.12
2030.50	0.550	90.760	2030.48	0.54	49.56	-7.95	0.23
2057.30	0.510	106.530	2057.28	0.50	49.52	-7.70	0.17
2087.60	0.500	107.480	2087.58	0.42	49.44	-7.45	0.01
2117.80	0.360	110.610	2117.78	0.35	49.37	-7.23	0.14
2147.30	0.540	103.980	2147.28	0.28	49.30	-7.01	0.19
2174.20	0.570	108.530	2174.18	0.21	49.23	-6.76	0.06
2205.00	0.460	103.680	2204.97	0.13	49.15	-6.50	0.12
2233.60	0.540	89.050	2233.57	0.11	49.13	-6.25	0.16
2261.10	0.440	81.790	2261.07	0.13	49.14	-6.02	0.13
2321.90	0.540	84.260	2321.87	0.19	49.21	-5.50	0.05
2347.00	0.630	98.830	2346.97	0.18	49.20	-5.25	0.21
2375.70	0.560	90.440	2375.67	0.15	49.17	-4.95	0.12
2400.00	0.560	90.440	2399.97	0.15	49.17	-4.71	0.00

HOLE & CASING SECTIONS Ref Wellbore: 6403/6-U-1 Ref Wellpath: Definitive 6403/6-U-1 (TD@2400m Md)

String/Diameter	Start MD [meters]	End MD [meters]	Interval [meters]	Start TVD [meters]	End TVD [meters]	Start N/S [meters]	Start E/W [meters]	End N/S [meters]	End E/W [meters]
8.5in Open Hole	1746.00	2400.00	654.00	1746.00	2399.97	49.02	-11.00	49.17	-4.71

WELLPATH COMPOSITION Ref Wellbore: 6403/6-U-1 Ref Wellpath: Definitive 6403/6-U-1 (TD@2400m Md)

Start MD [meters]	End MD [meters]	Positional Uncertainty Model	Log Name/Comment	Wellbore
1746.00	2375.70	NaviTrak (Magcorr1, DLS)	6403/6-U-1 BHI MWD 8 1/2" (1761-2375.70m)	6403/6-U-1
2375.70	2400.00	NaviTrak (DLS)	6403/6-U-1 Extrapolation (TD@2400m)	6403/6-U-1

App C List of contractors

Service	Contractor
Biostratigraphy	Petrostrat
Casing Crew Service	Weatherford Norge AS
Cementing	Halliburton
Core handling and analysis	Reslab
Coring	Halliburton DBS Coring
Directional Drilling	Baker Hughes Inteq
Drilling Fluids	M-I Drilling Fluids
Electric Wireline Logging	Schlumberger
Liner Hanger Equipment	Weatherford Norge AS
Liner Hanger Equipment	Baker Oil Tools
Measurement While Drilling	Baker Hughes Inteq
Mud Logging	Geoservices
Mud tracer	Reslab
Plug	Weatherford Norge AS
Positionning and site survey	Fugro
Rig Operations	Ocean Rig ASA
ROV Systems	Oceaneering
Subsea WH/X-mas tree	Drill Quip
Underreamer	Andergauge

App D MDT pressure measurements

Table 6-1 : MDT pressure points

Test n°	Formation	Depth m MD RKB	Depth m TVD SS	Hydrost. Pressure Before bar	Formation Pressure bar	Hydrost. Pressure After bar	Gradient g/cc	Good Seal	Comments
1	Springar Fm.	3045.7	3020.5	378.154		378.148		Y	
2	Springar Fm.	3046	3020.8	378.158		378.197		Y	
3	Springar Fm.	3046.2	3021	378.116		378.197		Y	
4	Springar Fm.	3046.5	3021.3	378.143		378.216		Y	
5	Nise Fm.	3050.8	3025.6	378.913		378.885		Y	
6	Nise Fm.	3051.5	3026.3	379.105		379.069		Y	
7	Nise Fm.	3050.8	3025.6	378.916		379.329		Y	
8	Springar Fm.	3046	3020.8	378.139		378.157		Y	
1	Nise Fm.	3057	3031.8	375.275		375.268		Y	
2	Nise Fm.	3057	3031.8	375.226		375.27		Y	
3	Nise Fm.	3056.5	3031.3	375.273		375.208		Y	
4	Nise Fm.	3057.2	3032	375.247		375.254		Y	
5	Nise Fm.	3056.9	3031.7	375.167		375.235		Y	
6	Nise Fm.	3057.2	3032	375.293	336.143	375.204	1.12	Y	
7	Nise Fm.	3057.5	3032.3	375.25		375.336		N	
8	Nise Fm.	3057.2	3032	375.261	334.875	275.158	1.12	Y	
1	Nise Fm.	3053.1	3027.9	361.6		361.7		Y	Stopped, tight
2	Nise Fm.	3057.2	3032	362.12		362.15		Y	Stopped, tight
3	Nise Fm.	3067.1	3041.9	363.34		363.34		Y	Stopped, tight
4	Nise Fm.	3074.8	3049.6	364.23		364.2		Y	Stopped, tight
5	Nise Fm.	3090.4	3065.2	366.09		366.06		Y	Stopped, tight
6	Nise Fm.	3104.9	3079.7	367.77		367.77		Y	Stopped, tight
7	Nise Fm.	3114.3	3089.1	368.81		368.87		Y	Stopped, tight
8	Nise Fm.	3122.6	3097.4	369.83		369.81		Y	Stopped, tight
9	Nise Fm.	3122.7	3097.5	369.82		369.85		Y	Stopped, tight
10	Nise Fm.	3140.9	3115.7	371.92		371.95		Y	Stopped, supercharged
11	Nise Fm.	3234.6	3209.4	382.87		382.88		Y	Stopped, tight
12	Nise Fm.	3235.2	3210	382.94		382.94		Y	Stopped, tight

App E NPD standard sheet for reporting shallow gas – 6403/6- 1

1. Avstand fra boredekk til havnivå: 25m
2. Vanndyp: 1721 m MSL
- 3a. Settedyp for lederør: 1838 m MD RKB
- 3b. Evt. formasjonstyrketest (g/cc): N/A
- 4a. Settedyp for foringsrør hvorpå BOP settes: 2394.5 m MD RKB
6. *Dybdeintervall (mRKB og mTVD) og alder for sandlag grunnere enn 1000 m under havbunnen.
Oppgi hvilke lag som evt. inneholder gass.
Ingen tynne sandlag observert*
7. Grunn gass er ikke påvist i brønnen.
8. Sammensetning og opprinnelse til gassen: N/A
9. Beskriv alle målinger i gassførende lag: N/A
10. *Angi dyp (mRKB og TVG) til inkonformiteter i borehullsposisjonen*
11. Angi utbredelsen av sandlagene (kommunikasjon, kontinuitet, trunkering, etc.):
Ingen tynne sandlag observert
12. Angi utbredelsen av evt. gass- skygging ("gas blanking"): Ingen.
13. Angi eventuelle seismiske indikasjoner på at gassen stammer fra dypere nivå.
Beskrivelse dersom gassen stammer fra dypere nivå: -----
14. *Hvordan samsvarer tolkingen av borestedsundersøkelsen med borehullsdata mht. :*
- grunn gass
Stemmer bra. Ingen grunn gass prognosert i 36" og 26" hullseksjon og ingen grunn gass observert.

App F Listing of other reports

REPORTS	COMPANY
End of Well Report, Well 6403/6-1 – MWD & Survey	BAKER HUGHES INTEQ
Argillaceous sediment source well 6403/6-1	D.W. Jolley
Geological interpretation from FMI borehole Image	ERIKSFJORD AS
Edvarda 3D Regional Geohazard Assessment, Vol. 1	FUGRO
Edvarda Location specific Geohazard Assessment, planned well location, 6403/6-1, Vol. 2	FUGRO
Navigation and Positioning Report of the "Eirik Raude", Well 6403/6-1	FUGRO TGS NORGE
Geochemical Evaluation 6403/6-1	GEOLABNOR
Final Well Report, 6403/6-1 Edvarda & 6403/6-U-1	GEOSERVICES
Final Well Report, Flair Edvarda 6403/6-1	GEOSERVICES
Kjerneboringsrapport - Brønn 6403/6-1, included in Reslab's final report	HALIBURTON DBS
Core description and depositional modelling of the Nise Formation, well 6403/6-1, Edvarda prospect, NOCS	ICHRON LIMITED
Ichnological review of the cored Nise Formation, well 6403/6-1, Edvarda prospect, NOCS	ICHRON LIMITED
Biostratigraphy of the interval 1773m ROV – 4119m TD, Edvarda 6403/6-1	PETROSTRAT
Corimag Core photo, Whitelight/UV light, High/Medium/Low resolution - well 6403/6-1	RESLAB
Final report - Conventional core analysis, Well 6403/6-1	RESLAB
Zero Offset VSP processing report	SCHLUMBERGER
Current Measurements Edvarda	SINTEF
Final well report drilling - Well 6403/6-1 Edvarda (O322A) PL322	STATOIL
Permanent P&A Programme – PL322, Well 6403/6-1 – Edvarda	STATOIL
Petrography, diagenesis and reservoir quality, well 6403/6-1 (Edvarda), Norwegian Sea	STATOIL
Well Programme PL 322, Well 6403/6-1	STATOIL

7 Enclosures

Wellsite sample descriptions

Sidewall core descriptions

Conventional Core descriptions

Composite log, well 6403/6-1

Formation evaluation log, well 6403/6-1

WELLSITE SAMPLE DESCRIPTION

Page 137 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell ASA			
RKB: 25 meters		Geologist: John Wayne			
Hole size: 26"		Cut solvent: Iso Propyl Alcohol		Date: 18/04/06	
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

			The ROV samples were taken around the wellhead at connections, before the riser was installed	Sample weight
1773	Very poor recovery			51 gr
1802	Very poor recovery			75 gr
1831	Very poor recovery			33 gr
1861	100	Clst	med-dk gry brn, sft-frm, earthy-blky, mic, slty, no calc.	103 gr
	Tr	Cmt		
1886	Not done due to poor visibility			
1914	Not done due to poor visibility			
1946	100	Clst	lt gn gry, lt-med bl gn, sft-frm, earthy-sbblky, occ micropyr, glauc, non calc.	363 gr
	Tr	Ls	gry gn, v hd, brit, arg, glauc, tr mic, micritic.	
1977	Very poor recovery			95 gr
2035	100	Clst	lt gry gn-med gn gry, frm, blky, micropyr, glauc, non calc.	121 gr
	Tr	Tuff?	lt bl gry, sft, crumb, sl slty, microcarb.	
2092	100	Clst	lt gry gn, lt gry, occ rd brn, sft-frm, occ pyr cem mafic (carb?) frags, glauc, non calc.	407 gr
2151	100	Clst	gnsh gry-grysh gn, occ mod brn, frm, blky, non-sli calc, v pyr, Tr Glauc	353 gr
	Tr	Dol	mod yel brn, hd, blky, microxln	
	Tr	Ls	off wh-l gnsh gry, mod hd, blky, microxln	
2180	100	Clst	lt gn gry, lt gry, occ rd brn, sft-frm, occ v hd, blky-brit, non calc, occ siliceous?	205 gr
2194	Not done due to poor visibility			
2235	100	Clst	grysh gn-dk gnsh gry, occ mod brn, occ med dk gry, frm, sbblky, glauc, r Tr Pyr	375 gr
	Tr	Slst/Sst	lt gnsh gry, blky, hd, grad Sdst, vf Qtz, trns, sbrndd, wl cem	
	r Tr	Ls	off wh, blky, hd, microxln	
2259	100	Clst	lt gry gn, occ rd brn, com med-dk gry, tr pa yel wh, sft-frm, blky-crumb, pyr, occ carb, non calc	515 gr
	Tr	Ls	lt-med gry, mod hd, brit, arg, micr	
2286	100	Clst	gnsh gry- grysh gn, occ mod brn, occ gnsh bl gn-dsky bl gn, fm, sbblky, n-sli calc, glauc, Tr Pyr	343 gr
	Tr	Dol	brnsh gry-dk yel brn, mod hd, blky, microxln	
	Tr	Slst/Sst	lt gnsh gry, blky, hd, grad Sdst, vf Qtz, trns, sbrndd, wl cem	
	r Tr	Ls	off wh-lt gnsh gry, mod hd, blky, arg, micr	

WELLSITE SAMPLE DESCRIPTION

Page 138 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell ASA			
RKB: 25 meters		Geologist: John Wayne			
Hole size: 26"		Cut solvent: Iso Propyl Alcohol			Date: 18/04/06
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

2312	95	Clst	pred gnsh gry- grysh gn, occ dk grn gry, occ olv gry, r mod brn, r dsky bl gn, fm, sbblky, n-sli calc, r Glauc, v r Pyr	351 gr
	5	Sst	gnsh gry, blk, hd, vf, trns, sbang, wl srt, wl cem, n calc, also lse Qtz Grn, f-m, trns, sbang	
	r Tr	Ls	a.a.	
2350	100	Clst	predom lt gry, occ lt gn gry, lt gry gn, tr rd brn, sft-fm, blk-crumb, occ mod hd, tr glauc, non calc	377 gr
	Tr	Ls	lt-med gry, mod hd, brit, arg, micritic	
	Tr	Sd	lse, colorless, clr, m-crs, sbang, sbspher, wl srt	
2370	100	Clst	gnsh gry- lt gry, occ olv gry, r mod brn, sft-fm, n-sli calc, glauc, pyr	495 gr
	gd Tr	Sst	gnsh gry, blk, hd, vf, trns, sbang, wl srt, wl cem, n calc, also lse Qtz grn, f-crse, trns, sbang	
	r Tr	Dol	pa yel brn-mod yel brn, fm-mod hd, blk, microxln	
	r Tr	Ls	off wh-lt gnsh gry, mod hd, blk, arg, micr	
2400	100	Clst	lt-med gry, com gn gry, tr rd brn sft-fm, blk-crumb, occ mod hd, tr Glauc, carb i.p., non calc	401 gr
	Tr	Sd	lse, colourless, clr, m-crs, sbang, sbspher-sbelong, wl srt	

WELLSITE SAMPLE DESCRIPTION

Page 139 of 177

Country: Norway	Area: North Sea	Field: Edvarda
Well no: 6403/6-1	Company: Statoil ASA, AS Norske Shell	
RKB: 25 meters	Geologist: L. Rasmussen, T. Flatebø	
Hole size: 17 1/2" x 20"	Cut solvent: Iso Propyl Alcohol	Date: 30.04.2006

Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2403	100	Clst	med gry – dk gry, frm, blk, occ Micropyr, calc	
	TR	Bas	blk – dk gry, v hd, blk, microxln	
	Tr	tf Clst	med gry-olv gry, frm, blk, Pyr, Microglauc, calc, Tr Rhyolite i.p.	
2405	100	Clst	med dk gry, olv gry-olv blk, frm, sbblk-amor, i.p. slty, occ Glauc, calc	
	r Tr	Ls	wh, frm – sft, blk, cryptoxln	
2410	100	Clst	a.a.	
	r Tr	Ls	a.a.	
	v r Tr	Sst	lse Qtz Gr, trns, mlky, crs, ang-sbang, wl srt	
2413	100	Clst	a.a.	
	r Tr	Ls	a.a.	
2415	100	Clst	med gry, olv gry-dk gnsh gry, frm, sbblk-amor, slty-i.p. grad v f Sst, occ microglauc, Micropyr, calc	
	gd Tr	Ls	wh, frm-sft, sbblk, cryptoxln	
2420	a.a.			
2425	a.a.	v r Tr	clr-trns Qtz Gr, med, rndd-sbrndd	
2430	100	Clst	a.a.	
	Tr	Ls	also Glauc, else a.a.	
2435	100	Clst	sls less Micropyr, else a.a.	
	Tr	Ls	a.a.	
2440	100	Clst	a.a.	
2445	100	Clst	med dk gry-dk gry, frm, sbblk, slty, occ microglauc, calc	
2450	100	Clst	also med gry, else a.a.	
2455		a.a.		
2460	100	Clst	a.a.	
	Tr	Ls	wh-gnsh wh, frm-sft, sbblk, cryptoxln, microglauc	
	Tr		Pyr, Glauc	
2465	100	Clst	a.a.	
2470	100	Clst	also Micropyr, else a.a.	
	Tr		Pyr	
2475	100	Clst	no Micropyr, else a.a.	
	Tr	Ls	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 140 of 177

Country: Norway	Area: North Sea	Field: Edvarda
Well no: 6403/6-1	Company: Statoil ASA, AS Norske Shell	
RKB: 25 meters	Geologist: L. Rasmussen, T. Flatebø	
Hole size: 17 1/2" x 20"	Cut solvent: Iso Propyl Alcohol	Date: 30.04.2006

Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2480	100	Clst	med dk gry-gry, olv gry, med gry, frm, occ sft, sbblky, slty, r Glauc, r Micropyr, calc	
	Tr	Ls	a.a.	
2485	100	Clst	a.a.	
	r Tr	Ls	a.a.	
2490	100	Clst	med dk gry-gry, olv gry, med gry, frm, blky, slty, i.p. grad vf Sst, r Glauc, calc	
	r Tr	Ls	a.a.	
	v r Tr	Sst	crs else a.a.	
2495	100	Clst	r Micropyr else a.a.	
2500	100	Clst	med gry-gry, dk gry, frm, sbblky-blky, slty, r Glauc, calc	
2510	100	Clst	a.a.	
2520	100	Clst	r Micropyr else a.a.	
2530	100	Clst	a.a.	
	Tr	Ls	a.a.	
2540	100	Clst	a.a.	
2550	100	Clst	i.p. grad vf Sst	
2560	100	Clst	a.a.	
			TD for 17 1/2" x 20" section at 2560m MD RKB	

WELLSITE SAMPLE DESCRIPTION

Page 141 of 177

Country: Norway	Area: North Sea	Field: Edvarda
Well no: 6403/6-1	Company: Statoil ASA, AS Norske Shell	
RKB: 25 meters	Geologist: S. Greve, O. Hunnes	
Hole size: 14 3/4" 17 1/2"	Cut solvent: Iso Propyl Alcohol	Date: 13.05.2006

Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2570	100	Clst	lt gry – olv gry, sft-fm, sol i.p., silty, Tr Micropyr, gd Tr Glauc, calc	Cmt contam
	Sl Tr	Sd	lse Qtz Gr, med-crs, sbrnd-rnd	
2580	100	Clst	a.a., v sol i.p.	Cmt contam
	Sl Tr	Sd	a.a.	
2590			pred a.a.	
2600	100	Clst	pred olv gry, Tr dk gry, amor, occ sbblky, sft – frm, loc stky, sli – mod calc, Tr Glauc	Tr Cmt
	slit r	Ls	yel wh, sft – frm, micr	
	sli Tr	Pyr	Nod	
2610	100	Clst	amor – sbblky, else a.a.	
	slit tr	Sd	lse Qtz, v crs, rndd – sbrndd	
	slit r	Ls	a.a.	
2620	100	Clst	gen olv gry, Tr lt gn gry – gn gry, else a.a.	
	sli Tr	Ls	a.a.	
	slit Tr	Sd	a.a.	
2630	100	Clst	a.a.	
2640			a.a.	
2650	100	Clst	pred olv gry, non – sli calc, else a.a.	
	sli Tr	Ls	a.a.	
2660			lost	
2670	100	Clst	olv gry, Tr dk gn gry, amor – sbblky, sft – frm, sli – mod calc, sli Tr Micropyr	
	Tr	Ls	a.a.	
2680	100	Clst	a.a.	
2690	100	Clst	a.a.	
2700	100	Clst	a.a., gd Tr Glauc	
2710	100	Clst	a.a.	
2720	100	Clst	a.a.	
2730	100	Clst	a.a.	
2740	100	Clst	a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 142 of 177
Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: S. Greve, O. Hunnes		
Hole size: 14 3/4" 17 1/2"		Cut solvent: Iso Propyl Alcohol		Date: 13.05.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.
2748	100	Clst	olv gry, Tr dk gn gry, amor – sbblky, sft – frm, sli – mod calc, sli Tr Micropyr, gd Tr Glauc	
	Tr	Ls	yel wh, sft – frm, micr	
			TD of 14 3/4" x 17 1/2" @ 2748 mMD.	

WELLSITE SAMPLE DESCRIPTION

Page 143 of 177

Country: Norway	Area: North Sea	Field: Edvarda
Well no: 6403/6-1	Company: Statoil ASA, AS Norske Shell	
RKB: 25 meters	Geologist: S. Greve, B. Kjellin, J.S. Wayne, L.C. Nilssen.	
Hole size: 12 1/4"	Cut solvent: Iso Propyl Alcohol	Date: 23.05.2006

Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2760	100	Clst	med gry, olv gry, sft-fm, occ hd, lse-dns, amor-blky, slky-wxy Tex, calc i.p., Pyr, Tr carb Spk.	
	Tr	Sst	smky gry, clr-trnsl, lse Qtz Gr, f-crs, rndd-sbrndd.	
	Tr	Slst	lt olv gry, brit, amor, ea Tex, calc.	
2770	100	Clst	med gry, olv gry, sft-fm, occ hd, lse-dns, amor-blky, slky-wxy Tex, calc i.p., occ slty, Tr carb Spk.	
	Tr	Dol Ls	lt brn gry, hd, sbblky, microxln, arg.	
2780	100	Clst	Tr olv blk, else a.a.	
	Tr	Dol Ls	a.a.	
2790	100	Clst	dk gnsh gry, Pyr, else a.a.	
	Tr	Dol Ls	a.a.	
2800	100	Clst	Tr Glauc, else a.a.	
	Tr	Dol Ls	a.a.	
2802	a.a.			spot Spl
2810	95	Clst	Tr yelsh gry, else a.a.	
	5	Dol Ls	a.a.	
	Tr	Ls	lt olv gry, sft, sbblky, suc, arg.	
2820	95	Clst	a.a.	
	5	Dol Ls	a.a.	
	Tr	Ls	a.a.	
2830	100	Clst	a.a.	
	Tr	Dol	a.a.	
	r	Ls	a.a.	
2840	100	Clst	pred slty, r Glauc, else a.a.	
	Tr	Dol	a.a.	
	r	Ls:	a.a.	
2845	100	Clst	sft – frm, i.p. stky, sbblky – blky, non – r calc, else a.a.	
	Tr	Dol/Ls	a.a.	
2850	100	Clst	lt – med gry, sft – frm, blky, stky, calc	
	gd Tr	Ls	lt gry – lt yelsh brn, sft – frm, blky, micr	
2860	100	Clst	med gry-med dk gry, sft-fm, amor-sbblky, slily calc, Micropyr.	
	Tr	Dol/Ls	lt brn gry, hd, microxln, sbblky.	
2870	a.a.			
2880	90	Clst	lt-med gry, sft-fm, amor-blky, loc microcarb/micromic, Tr Pyr, n-slily calc.	

WELLSITE SAMPLE DESCRIPTION

Page 144 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: S. Greve, B. Kjellin, J.S. Wayne, L.C. Nilssen.			
Hole size: 12 ¼"		Cut solvent: Iso Propyl Alcohol		Date: 23.05.2006	
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	10	Dol/Ls	lt gry-dk brn, frm-hd, blk, brit, microxln.	
2890	100	Clst	lt-med gry, sft-frm, amor-blky, loc microcarb/micromic, Tr Pyr, n-slily calc.	
	Tr	Ls	lt gry – lt yelsh brn, sft – frm, blk, micr	
2900	a.a.			
2910	a.a.			
2920	a.a.			
2930	100	Clst	Micromic, slily calc i.p., Pyr, else a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
2940	100	Clst	slily slty i.p., else a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
2950	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
2960	100	Clst	lt gry, occ grn gry, a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
2970	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
2980	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
			TD of 12 ¼" section @ 2983 mMD.	

WELLSITE SAMPLE DESCRIPTION

Page 145 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

2990	100	Clst	med lt gry –med gry, sft-frm, amour, sbblky, non – sli calc	
	Tr		Pyr, microxln, Mic	
3000	100	Clst	a.a.	
	Tr	Pyr	a.a.	
	Tr	Mic		
	Tr	Dol	lt brn gry, hd, microxln, sbblky	
3010	100	Clst	a.a.	
	Tr	Mic		
3020	100	Clst	a.a.	
3024	100	Clst	a.a.	
3027	100	Clst	a.a., sli slty i.p.	
			All samples from 3027 to 3038m contained mainly cement and only traces of claystone and dolomite	
3039	100	Clst	med gry – med dk gry, sft – frm, amor – sbblky, n - sli calc	abd LCM, incl Mic,
	Tr	Dol	dk yel brn, hd, blk, microxln	gd Tr Cmt
3039.5	100	Clst	a.a.	Spot Spl
3041	100	Clst	a.a.	
	Tr	Dol	pa yel brn, sft-frm, sbblky	
3042	100	Clst	a.a.	
3043	100	Clst	a.a.	
	r Tr	Dol	a.a.	
3045	100	Clst	a.a.	
	Tr	Dol	a.a.	
3048.5	100	Clst	med lt gry-med gry, occ med dk gry, sft - frm, amor - sbblky, calc	
	Tr	Sst	lse Qtz Gr, vf-m, clr - trns, sbrndd, spher, mod wl srt, v r cse, trns, ang, elong	
	Tr	Dol	a.a.	
3049.5	95	Clst	a.a.	
	5	Sst 1	lse Qtz Gr, vf - m, clr - trns, sbrndd, spher, mod wl srt, r crs, trns, ang	
	Tr	Sst 2	gry, wl sil cmt, or-trns Qtz Gr, f - m, sbang - sbrndd, spher, mod wl srt	
	Tr	Dol	pa - mod yel brn, hd, sft i.p., blk, microxln	
3051	95	Clst	a.a.	
	5	Sst	lse Qtz Gr, f - m, clr - trns, sbang-sbrnd, spher, mod wl srt, v r crs, trns, ang	

WELLSITE SAMPLE DESCRIPTION

Page 146 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½”		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006	
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	Tr	Dol	pa - mod yel brn, hd, sft i.p., blkly, microxln	
3053	95	Clst	med lt gry-med gry, occ med dk gry, sft - frm, amor - sbblky, calc	
	5	Sst	lse Qtz Gr, f - m, clr - trnsl, sbang-sbrnd, spher, mod wl srt, v r crs, trnsp, ang	
	Tr	Dol	pa - mod yel brn, hd, sft i.p., blkly, microxln	
3054	95	Clst	a.a.	
	5	Sst	a.a., Tr Microglauc	
	gd Tr	Ls	yel gry, sft, sbblky, microxln	
	Tr	Dol	a.a.	
3057	95	Clst	a.a.	
	5	Sst	a.a.	
	Tr	Ls	a.a.	
3058	95	Clst	a.a.	
	5	Sst	a.a.	

Core point at 3058m MD RKB
Cut core # 1 3058-3084m 100% recovery (see core description sheets)

3087	100	Clst	lt-med gry, sft-frm, blkly-crumb, sli slty, Tr Pyr, Tr Glauc, non - v sli calc.	
	Tr	Sst	lse, clss - trnsp, f, sbang-sbrndd, wl srt.	
3090	100	Clst	a.a.	
	Tr	Sst	a.a.	
3093	100	Clst	a.a.	
3096	100	Clst	a.a. com f Glauc.	
	Tr	Sst	a.a.	
3099	100	Clst	a.a.	
	Tr	Sst	a.a.	
3102	100	Clst	a.a.	
	Tr	Sst	a.a.	
3105	100	Clst	a.a.	
	Tr	Dol/Lst	off wh, frm, crumb, micr	
3108	100	Clst	sli slty - occ grad v f Sd Gr in Cl Mtrx, occ sli stky, else a.a.	
	Tr	Sst	occ microglauc, else a.a.	
	Tr	Ls	wh - gry wh, frm, blkly, occ arg	
3111	a.a.			
3114	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 147 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 1/2"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3117	100	Clst	sli slty – occ grad v f Sd Gr in Cl Mtrx, occ sli stky, else a.a.	
	Tr	Sst	occ microglauc, else a.a.	
	Tr	Ls	wh – gry wh, frm, blk, occ arg	
	Tr	Dol	lt brnsh gry, frm – mod hd, blk, microxln	
3120	100	Clst	lt-med gry, sft-frm, blk-crumb, sli slty – occ grad v f Sd Gr in Cl Mtrx, occ sli stky, Tr Pyr, Tr Glauc, non- v sli calc.	
	Tr	Sst	lse, clss - trnsp, f, sbang-sbrn, wl srt, occ microglauc	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
3123	a.a.			
3126	100	Clst	a.a.	
	Tr	Sst	occ also v crs Qtz Gr, else a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
3129	100	Clst	also Tr dk gry, else a.a.	
	Tr	a.a.		
3132	a.a.			
3135	a.a.			
3138	a.a.			
3141	90	Clst	a.a.	No Shw
	10	Sst	occ calc cmt, else a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
3144	100	Clst	a.a.	
	Tr	Sst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
3147	a.a.			
3150	a.a.			
3153	a.a.			
3156	95	Clst	a.a.	No Shw
	5	Sst	a.a.	
	Tr	Ls, Dol	a.a.	
3159	100	Clst	a.a.	
	Tr	Sst	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 148 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½”		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	Tr	Ls	wh – gry wh, frm, blk, occ arg	
	Tr	Dol	lt brnsh gry, frm – mod hd, blk, microxln	
3162	90	Clst	lt-med gry, sft-frm, blk-crumb, sli slty – occ grad v f Sd Gr in Cl Mtrx, occ sli stky, Tr Pyr, Tr Glauc, non- v sli calc.	No Shw
	10	Sst	occ v crs, else a.a.	
	Tr	Dol	a.a.	
	Tr	Ls	a.a.	
3165	100	Clst	olv gry, sft-frm, earthy, slty, occ f Sd, microglauc, Micropyr, micro carb, sli calc	
	Tr	Ls	wh, sft, crumbly, Glauc, sli arg, Micr	
	Tr	Dol	med-dr brn, v hd, brit, cryptxln	
	Tr	Sst	lt gry, sft, crumbly, Qtz clss -mlky wh, vf-f, sbrndd, wl srt, lt gry arg Mtrx, wk sil Cmt, microglauc, microcarb	
3168	100	Clst	a.a.	
	gd Tr	Ls	a.a.	
	Tr	Dol	a.a.	
3171	100	Clst	lt gry, sft, amor a.a	
	Tr	Dol	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	lse, vf-f	
3174	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
	Tr	Dol	a.a.	
3177	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
	Tr	Sst	vf, a.a.	
3180	a.a.			
3183	a.a.			
3186	a.a.			
3189	Lost			
3192	a.a.			
3195	a.a.			
3198	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 149 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3201	100	Clst	olv gry, sft-frm, earthy, slty, occ f Sd, microglauc, Micropyr, micro carb, sli calc	
	Tr	Ls	wh, sft, crumbly, Glauc, sli arg, Micr	
	Tr	Dol	med-dr brn, v hd, brit, cryptxln	
	Tr	Sst	lt gry, sft, crumbly, Qtz cls -mlky wh, vf, sbrndd, wl srt, lt gry arg Mtrx, wk sil Cmt, microglauc, microcarb	
3204	a.a.			
3207	100	Clst		
	gd Tr	Sst		
	Tr	Ls, Dol		
3210	100	Clst		
	Tr	Sst, Ls		
3213	100	Clst	lt gry, sft, amor, slty, occ f Sd, microglauc, Micropyr, micro carb, sli calc	
3216	a.a.			
3219	a.a.			
3222	a.a.			
3225	a.a.			
3228	a.a.			
3231	100	Clst	a.a.	
	Tr	Ls	a.a.	
3234	100	Clst	a.a.	
	Tr	Ls	a.a.	
3237	100	Clst	a.a.	
	Tr	Ls	a.a.	
3240	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3243	100	Clst	med gry, sft, amor, slty, vf Sd, Glauc, microcarb, n calc	
	Tr	Ls	off wh, sft, amor, microglauc, micr	
	Tr	Dol	med brn, hd, brit, suc-cryptxln.	
3246	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 150 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3249	Lost			
3252	100	Clst	med gry, sft, amor, slty, vf Sd, Glauc, microcarb, n calc	
	Tr	Ls	off wh, sft, amor, microglauc, micr	
3255	100	Clst	a.a.	
	Tr	Ls	a.a.	
3258	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	lse, clss, v f, a.a.	
3261	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3264	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3267	100	Clst	med gry, sft, amor, slty, vf Sd, Glauc, microcarb, n calc	
	Tr	Ls	off wh, sft, amor, microglauc, micr	
	Tr	Sst	clss, v f, lse, sbang	
3270	Lost			
3273	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3276	Lost			
3279	a.a.			
3282	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Dol	a.a.	
	Tr	Sst	a.a.	
3285	a.a.			
3288	90	Clst	a.a.	
	10	Ls	a.a.	
	Tr	Sst	a.a.	
	Tr	Dol	a.a.	
3291	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 151 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½”		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	Tr	Dol	med brn, hd, brit, suc-cryptxln.	
3294	100	Clst	med gry, sft, amor, slty, vf Sd, Glauc, microcarb, n calc	
	Tr	Ls	off wh, sft, amor, microglauc, micr	
	Tr	Sst	clss, v f, lse, sbang	
	Tr	Dol	a.a.	
3297	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	occ med Gr Qtz, else a.a.	
3300	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	no med Gr Qtz, else a.a.	
3303	100	Clst	med gry, sft, amor – sbbly, slty – v f sdy, microglauc, microcarb/micromic, non calc	
	Tr	Ls	pa yel wh, sft, amor, microglauc, micr	
	Tr	Sst	lse, clss, v f, sbrndd, occ calc/sil Mtrx, wl srt	
	Tr	Dol	med brn gry, hd, brit, cryptoxln	
3306	a.a.			
3309	a.a.			
3312	100	Clst	a.a.	
	Tr	Ls	wh – pa yel wh, else a.a.	
3315	Lost			
3318	100	Clst	a.a.	
	Tr	Ls	a.a.	
3321	100	Clst	a.a.	
	Tr	Ls	a.a.	
	r Tr	Sst	a.a.	
3324	a.a.			
3327	a.a.			
3330	100	Clst	a.a.	
	Tr	Ls	a.a.	
3333	a.a.			
3336	a.a.			
3339	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 152 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3342	100	Clst	med gry, sft, amor – sbblky, slty – v f sdy, microglauc, microcarb/micromic, non calc	
	Tr	Ls	wh – pa yel wh, sft, amor, microglauc, micr	
3345	95	Clst	a.a.	
	5	Ls	a.a.	
3348	Lost			
3351	100	Clst	sft-frm, else a.a.	
	Tr	Ls	a.a.	
3354	a.a.			
3357	a.a.			
3360	a.a.			
3363	95	Clst	a.a.	
	5	Ls	a.a.	
3366	Lost			
3369	a.a.			
3372	100	Clst	med-dk gry, sft, sbblky-crumbly, slty, microcarb, n calc	
	Tr	Ls	off wh, sft-frm, crumbly, microglauc, micr	
3375	100	Clst	a.a.	
	Tr	Ls	a.a.	
3378	100	Clst	a.a.	
	Tr	Ls	a.a.	
3381	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	clss, vf-f, sbrndd, wl srt, lse	
3384	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
	Tr	Dol	med brn, hd, brit, suc, arg	
3387	100	Clst	med-dk gry, sft-frm, amor-blky, occ crumbly, slty, microcarb, n calc.	
	Tr	Ls	off wh, sft-frm, crumbly, Glauc, micr	
	Tr	Sst	lse, v f, sbrndd, wl srt	
3390	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 153 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

3393	100	Clst	med-dk gry, sft-frm, amor-blky, occ crumbly, slty, microcarb, n calc.	
	Tr	Ls	off wh, sft-frm, crumbly, Glauc, micr	
	Tr	Dol	dk brn, v hd, brit, arg, cryptxln.	
3396	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3399	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3402	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3405	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	lse, v f, sbrndd, wl srt	
3408	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3411	100	Clst	a.a. Tr Pyr	
	Tr	Ls	a.a.	
	Tr	Sst	lt gry, frm, crumbly, Qtz, clss, vf-f, sbang, wl srt, mod Calc cmt, microglauc, occ lse	
3414	100	Clst	a.a., Micropyr	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3417	Lost			
3420	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3423	100	Clst	lt-med gry, sft-frm, amor-blky, slty, microglauc, micromic, microcarb, Tr v f Sd, n calc	
	Tr	Ls	off wh, sft-frm, crumb, Tr Glauc, micr	
3426	Lost			
3429	100	Clst	a.a.	
	Tr	Ls	a.a.	
3432	100	Clst	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 154 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	Tr	Ls	off wh, sft-fm, crumb, Tr Glauc, micr	
3435	100	Clst	lt-med gry, sft-fm, amor-blky, slty, microglauc, micromic, microcarb, Tr v f Sd, n calc	
	Tr	Ls	a.a.	
3438	100	Clst	a.a.	
	Tr	Ls	a.a.	
3441	100	Clst	a.a.	
	Tr	Ls	a.a.	
3444	100	Clst	a.a.	
	Tr	Ls	a.a.	
3447	100	Clst	a.a.	
	Tr	Ls	a.a.	
3450	100	Clst	a.a.	
	Gd Tr	Ls	a.a.	
3453	100	Clst	a.a.	
	Gd Tr	Ls	a.a.	
3456	95	Clst	a.a.	
	5	Sst	lse Qtz, clss, vf-f, sbang, wl srt	
	Tr	Ls	a.a.	
3459	95	Clst	a.a.	
	5	Ls	a.a.	
	Tr	Sst	a.a.	
3462	100	Clst	a.a.	
	gd Tr	Ls	a.a.	
3465	100	Clst	a.a.	
	Tr	Ls	a.a.	
3468	a.a.			
3471	a.a.			
3474	a.a.			
3477	a.a.			
3480	a.a.			
3483	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 155 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 1/2"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3486	100	Clst	lt-med gry, sft-fm, amor-blky, slty, microglauc, micromic, microcarb, Tr v f Sd, n calc	
	Tr	Ls	off wh, sft-fm, crumbly, Tr Glauc, micr	
3489	a.a.			
3492	95	Clst	a.a.	
	5	Ls	a.a.	
3495	Lost			
3498	95	Clst	a.a.	
	5	Ls	a.a.	
3501	a.a.			
3504	a.a.			
3507	100	Clst	a.a.	
	Tr	Ls	a.a.	
3510	95	Clst	a.a.	
	5	Ls	a.a.	
3513	100	Clst	a.a.	
	Tr	Ls	a.a.	
3516	a.a.			
3519	95	Clst	a.a.	
	5	Ls	a.a.	
3522	a.a.			
3525	100	Clst	a.a.	
	Tr	Ls	a.a.	
3528	100	Clst	med-dk gry, sft-fm, crumbly, slty, microcarb, Tr Glauc, Tr vf Sd, n calc	
	Tr	Ls	off wh, sft-fm, crumb, microglauc, micr-suc	
3531	100	Clst	a.a.	
	Tr	Ls	a.a. off wh-lt yel	
3534	a.a.			
3537	a.a.			
3540	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 156 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½”		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

3543	100	Clst	med-dk gry, sft-frm, crumbly, slty, microcarb, Tr Glauc, Tr vf Sd, n calc	
	Tr	Ls	off wh-lt yel, sft-frm, crumb, microglauc, micr-suc	
3546	a.a.			
3549	100	Clst	a.a, loc grad Sltst	
	Tr	Ls	a.a.	
3552	a.a.			
3555	a.a.			
3558	100	Clst	a.a., Tr Pyr	
	Tr	Ls	a.a.	
3561	100	Clst	med-dk gry, sft-frm, crumb, slty, microcarb, Tr Glauc, Tr vf Sd, n calc	
	gd Tr	Ls	off wh, sft-frm, crumbly, microglauc, micr-suc	
3564	100	Clst	a.a.	
	Tr	Ls	a.a.	
3567	a.a.			
3570	a.a.			
3573	a.a.			
3576	a.a.			
3579	a.a.			
3582	100	Clst	med-dk gry, sft-frm, crumb, slty, microcarb, Tr Glauc, Tr vf Sd, n calc	
	Tr	Ls	off wh, sft-frm, crumbly, microglauc, micr-suc	
	Tr	Sst	lt gry-lt gn, frm, crumbly, Qtz, clss, sbrndd, wl srt, microglauc, wk-mod Calc/Sil Cmt	No Shw
	Tr	Dol	dk brn, hd, brit, arg, cryptxln.	
3585	90	Clst	a.a.	
	10	Ls	a.a.	
	Tr	Sst	a.a.	
3588	100	Clst	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
3591	100	Clst	lt-med gry, occ dk gry, a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 157 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3594	100	Clst	lt-med gry, occ dk gry, sft-frm, crumb, slty, microcarb, Tr Glauc, Tr vf Sd, Tr Pyr, n calc	
	Tr	Ls	off wh, sft-frm, crumbly, microglauc, micr-suc	
3597	100	Clst	no Pyr, else a.a.	
	Tr	Ls	a.a.	
3600	100	Clst	a.a.	
	Tr	Ls	occ lt brn, else a.a.	
3603	100	Clst	med -dk gry, else a.a.	
	r Tr	Ls	a.a.	
3606	100	Clst	med - dk gry, sft - frm, amor - sbblky, slty - occ v f sdy, Tr Microglauc	
	Tr	Ls	pa yel wh - wh, occ lt brn, occ crumbly, occ arg, Tr Microglauc, micr	
3609	a.a.			
3612	95	Clst	a.a.	
	5	Ls	a.a.	
3615	100	Clst	a.a.	
	Tr	Ls	a.a.	
3618	a.a.			
3621	a.a.			
3624	Lost			
3627	a.a.			
3630	a.a.			
3633	a.a.			
3636	a.a.			
3639	a.a.			
3642	a.a.			
3645	a.a.			
3648	a.a.			
3651	a.a.			
3654	Lost			

WELLSITE SAMPLE DESCRIPTION

Page 158 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3657	100	Clst	med – dk gry, sft – frm, amor – sbblky, slty – occ v f sdy, Tr Microglau	
	Tr	Ls	pa yel wh – wh, occ lt brn, occ crumbly, occ arg, Tr Microglau, mic	
3660	Lost			
3663	a.a.			
3666	a.a.			
3669	a.a.			
3672	a.a.			
3675	a.a.			
3678	a.a.			
3681	a.a.			
3684	a.a.			
3687	a.a.			
3690	a.a.			
3693	a.a.			
3696	100	Clst	sli calc i.p., Tr gn gry – dk gn gry, else a.a.	
	Tr	Ls	a.a.	
3699	a.a.			
3702	95	Clst	med – dk gry, Tr gn gry – dk gn gry, sft – frm, amor – sbblky, slty – occ v f sdy, Tr Microglau, Tr sli calc	
	5	Ls	pa yel wh – wh, occ lt brn, occ crumbly, occ arg, Tr Microglau, mic	
3705	a.a.			
3708	a.a.			
3711	a.a.			
3714	a.a.			
3717	100	Clst	less slty-sdy, else a.a.	
	Tr	Ls	a.a.	
3720	a.a.			
3723	a.a.			

WELLSITE SAMPLE DESCRIPTION

Page 159 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: L. Rasmussen, S. Greve			
Hole size: 8 ½”		Cut solvent: Iso Propyl Alcohol			Date: 21.06.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

3726	Lost			
3729	95	Clst	med – dk gry, Tr gn gry – dk gn gry, sft – frm, amor – sbblky, occ slty – v f sdy, Tr Microglauc, Tr sli calc	
	5	Ls	pa yel wh – wh, occ lt brn, occ crumbly, occ arg, Tr Microglauc, micr	
3732	Lost			
3735	100	Clst	slty, else a.a.	
	Tr	Ls	r yel brn, else a.a.	
3738	100	Clst	a.a.	
	Tr	Ls	occ microxln, else a.a.	
3741	a.a.			
3744	a.a.			
3747	95	Clst	med gry – olv gry, sft – frm, amor – sbblky, i.p. slty, gen non calc	
	5	Ls	yel wh – wh, occ lt brn, occ crumbly, occ arg, micr, occ microxln	
3750	95	Clst	a.a.	
	5	Ls	a.a.	
	Tr	Sd	lse Qtz, clr, v f	No Shw
3753	95	Clst	a.a.	
	5	Ls	a.a.	
3756	100	Clst	a.a.	
	Tr	Ls	a.a.	
3759	a.a.			
3762	a.a.			
3765	100	Clst	Tr dk gn gry, hd – v hd, else a.a.	
	Tr	Ls	a.a.	
3768	100	Clst	med gry – olv gry, sft – frm, amor – sbblky, i.p. slty, gen non calc	
	Tr	Ls	yel wh – wh, occ lt brn, occ crumbly, occ arg, micr, occ microxln	
3771	a.a.			
3774	a.a.			
3775	a.a.		(Bottoms Up)	
TD for 8 1/2" section at 3775.0 mMD/3774.8mTVD				

WELLSITE SAMPLE DESCRIPTION

Page 160 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer			
Hole size: 6"		Cut solvent: Iso Propyl Alcohol			Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

3777	100	Clst	med dk gry – olv gry, sft – frm, slty	Mainly Cmt, 5-10% Fm
3780	100	Clst	slty grad to Slst, else a.a.	ca. 30 % Fm
3783	80	Clst	med dk gry – med gry, dk gn gry, sft – mod hd, pred frm, sbblky, loc slty, Micropyr i.p., non calc	ca. 60 % Fm
	20	Slst	med gry – med dk gry, sft – frm, non calc	
	Tr	Ls	yel gry, sft, micr, arg Lam	
3786	100	Clst	dom med gry, sft – frm, sbblky, slily slty, non calc	>80 % Cmt Contam
3789	100	Clst	dom a.a.	~70% Cmt Contam
3792	100	Clst	dom a.a.	~70% Cmt Contam
3795	50	Cal Sst	clr – transl Cal, vf – f xln, mod hd, lse Gr	Contam from boosting of riser?
	50	Clst	dom med gry – med dk gry, brnsh gry, sft – frm, sbblky, slily slty, non calc	Gen v. unreliable cuttings during boostin
3798	50	Cal Sst	gen a.a.	
	50	Clst	a.a.	~70% Cmt Contam
3801	50	Cal Sst	gen a.a.	
	50	Clst	a.a.	~60% Cmt Contam
3804	50	Cal Sst	gen a.a.	v unreliable Spl
	50	Clst	a.a.	~90% Cmt Contam
3807	100	Clst	dom med gry – med dk gry, brnsh gry, sft – frm, sbblky, slily slty, non calc	~90% Cmt Contam
3810	100	Clst	a.a.	~90% Cmt Contam
	gd Tr	Ls/Cal		
3813	100	Clst	a.a.	~90% Cmt Contam
	gd Tr	Ls/Cal		
3816	100	Clst	a.a.	~90% Cmt Contam
	gd Tr	Ls/Cal		
3819	100	Clst	dom med gry – dk grnsh gry, gen frm, sbblky – Tr blky, i.p. slily slty, non – slily calc	~90% Cmt Contam
	Gdtr	Ls/Cal		
3822	65	Clst	a.a.	~80% Cmt Contam
	35	Ls/Cal	a.a.	
3825	80	Clst	a.a.	~90% Cmt Contam
	10	Ls/Cal	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 161 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer		
Hole size: 6"		Cut solvent: Iso Propyl Alcohol		Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3828	90	Clst	dom med gry – dk grnsh gry, gen frm, sbblky – Tr blkly, i.p. slily slty, non – slily calc, carb microlam	~90% Cmt Contam
	10	Ls/Cal	a.a.	Cont. boosting of
				marine riser w/2 pumps
3831	100	Clst	grad v slty, Tr Qtz Sd, sft, amor	~80% Cmt Contam
3834	100	Clst	v slty/sdy, sft, amor	~70% Cmt Contam
3837	100	Clst	v slty/sdy, sft, amor	~60% Cmt Contam
3840	100	Clst	slty	~80% Cmt Contam
3843	100	Clst	a.a. No Shw	~80% Cmt Contam
3846	100	Clst	a.a.	~80% Cmt Contam
3849	100	Clst	a.a.	~80% Cmt Contam
3852	100	Clst	a.a.	~80% Cmt Contam
3855	100	Clst	a.a.	~80% Cmt Contam
	Tr	Ls	mky wh, grysh wh, sft – frm, sbblky, i.p. arg, microxln	
3858	100	Clst	a.a.	~70% Cmt Contam
	Tr	Ls	a.a.	
3861	100	Clst	slty, slily calc, r Glauc	~60% Cmt Contam
	Tr	Ls	a.a.	
3864	100	Clst	a.a.	~50% Cmt Contam
	Tr	Ls	a.a.	
3867	100	Clst	a.a.	~50% Cmt Contam
	Tr	Ls	a.a.	
3870	a.a.			
3873	a.a.			No Shw
3876	100	Clst	m gry – m dk gry, olv gry, sft – frm, sbblky, slily calc, occ calc, slty, r Glauc	~30% Cmt Contam
	Tr	Ls	a.a.	
3879	a.a.			~20% Cmt Contam
3882	a.a.			
3885	Lost			

WELLSITE SAMPLE DESCRIPTION

Page 162 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer		
Hole size: 6"		Cut solvent: Iso Propyl Alcohol		Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3888	100	Clst	m gry – m dk gry, olv gry, sft – frm, sbblky, slily calc, occ calc, slty, r Glauc	
	Tr	Ls	mky wh, grysh wh, sft – frm, sbblky, i.p. arg, microxln	
3891	100	Clst	m gry – m dk gry, olv gry, sft – frm, sbblky, slily calc, occ slily calc, slty	No Fluor
	Tr	Ls	a.a.	Tr Cmt Contam only
3894	100	Clst	slily calc, a.a.	
	Tr	Ls	a.a.	
3897	100	Clst	slty – v slty, else a.a.	
	Tr	Ls	a.a.	
3900	a.a.			
3903	a.a.			
3906	100	Clst	slty – v slty, else a.a.	
	gd Tr	Ls	a.a.	
3909	a.a.			
3912	Lost			
3915	100	Clst	a.a., occ vf sdy, Tr Glauc, else a.a.	
	Tr	Ls	a.a.	
3918	100	Clst	pred a.a., i.p. v slty, grad Slst	
	Tr	Ls	a.a., also r Glauc	
3921	100	Clst	v slty, else a.a.	
	Tr	Ls	a.a.	
3924	100	Clst	pred sft, slily wxy, Tr Glauc	
	Tr	Ls	a.a.	
3927	a.a.			
3930	a.a.			
3933	100	Clst	incr pa gry, pred sft, aren & slily ark Lam	
	Tr	Ls	a.a.	
3936	100	Clst	a.a.	
	Tr	Sst	pa gry, v ark/arg Mtrx, vf-f, lse – fri, pred as thin Lam, grad Clst	
3939	a.a.			
3942	100	Clst	pred sft-frm, pred med dk gry dk gry, i.p. slily wxy app, Tr Glauc	

WELLSITE SAMPLE DESCRIPTION

Page 163 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer			
Hole size: 6"		Cut solvent: Iso Propyl Alcohol			Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	Tr	Ls	mky wh, grysh wh, sft – frm, sbblky, i.p. arg, microxln	
3945	95	Clst	pred sft-frm, pred med dk gry dk gry, i.p. slily wxy app, Tr Glauc	
	5	Ls	sdv micr, a.a	
3948	95	Clst	a.a.	
	5	Ls	sdv micr, a.a	
3951	100	Clst	dk gry – m dk gry, dk olv gry, sft – frm, sbblky, slily calc, occ slily calc, slily slty, occ slily sdv (ti, ark)	No Fluor
	Tr	Ls	off wh, sbblky, frm, slily sdv, micr, Tr Glauc Spk	
3954	a.a.			
3957	a.a.			
3960	a.a.			
				Incr MW to 1.29 s.g.
3963	100	Clst	pred a.a.	
	Tr	Ls	a.a.	
3966	100	Clst	a.a.	
	Tr	Ls	mky wh, sft – frm, sbblky, occ vf sdv, Glauc, microxln	
3969	100	Clst	dk gry – m dk gry, olv gry, sft – frm, sbblky, slily calc, occ calc, i.p. slty, Tr Glauc, r Pyr	
	Tr	Ls	a.a.	
3972	a.a.			
3975	100	Clst	a.a. slily calc	
	Tr	Ls	a.a.	
3978	a.a.			
3981	a.a.			
3984	a.a.			
3987	100	Clst	a.a.	
	Tr	Ls	a.a.	
	r Tr	Slst	olv gry – m lt gry, frm, sbblky, calc, vf sdv, Tr Glauc	
3990	100	Clst	a.a.	
	Tr	Ls	a.a.	
3993	90	Clst	a.a.	
	10	Slst	i.p. v sdv grad arg Sst else a.a.	
	Tr	Ls	a.a. also vf sdv	

WELLSITE SAMPLE DESCRIPTION

Page 164 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer		
Hole size: 6"		Cut solvent: Iso Propyl Alcohol		Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3996	90	Clst	dk gry – m dk gry, olv gry, sft – frm, sbblky, slily calc, occ calc, i.p. slty, Tr Glauc, r Pyr	
	10	Slst	i.p. v sdy grad arg Sst else a.a.	
	Tr	Ls	a.a. also vf sdy	
3999	a.a.			
4002	90	Clst	a.a.	
	10	Slst	v sdy grad arg Sst else a.a.	
	Tr	Ls	a.a.	
4005	80	Clst	med gry – m dk gry, olv gry, frm, sbblky-blky, slily calc, unif	No Fluor
	10	Slst/Kao	var sdy, v ark, pa gry- brnsh gry, gn Glauc Spk, sft-frm, sbblky-amor, slily calc – v calc, loc abd Glauc	
	10	Ls	off wh - mky wh, sft – frm, sbblky- blky, occ vf sdy, Glauc, microxln – cryptoxln micr, also xln Cal	
4008	a.a.			
4011	80	Clst	a.a.	
	15	Slst/Kao	sdv, pred grad arg (Kao) Sst, a.a.	
	5	Ls	a.a.	
4014	a.a.			
4017	70	Clst	a.a.	
	20	Slst/Kao	a.a, grad v sdy (Qtz), ti Kao Mtrx, (v ark/no Gr support)	
	10	Ls	a.a.	
4020	a.a.			
4023	a.a.			
4026	60	Clst	a.a.	
	10	Sst	pred clr – trnsf Qtz, vf-med, mod wl srt, lse – fri, calc cmt	
	25	Slst/Kao	a.a.	
	10	Ls	a.a.	
4029	a.a.			
4032	a.a.			
4035	75	Clst	a.a.	
	5	Sst:	pred clr – trnsf Qtz, vf-med,dom vf-f, mod wl srt, sbang - sbrnndd, lse – fri, calc cmt	
	15	Slst/Kao	gen a.a.	
	5	Ls	a.a.	
4038	70	Clst	a.a.	
	20	Slst/Kao	a.a.	

WELLSITE SAMPLE DESCRIPTION

Page 165 of 177

Country: Norway		Area: North Sea		Field: Edvarda	
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell			
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer			
Hole size: 6"		Cut solvent: Iso Propyl Alcohol			Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

	10	Ls	off wh - mky wh, sft - frm, sbblky- blky, occ vf sdy, Glauc, microxln - cryptoxln micr, also xln Cal	
	Tr	Sd/Sst	pred clr - trnsf Qtz, vf-med,dom vf-f, mod wl srt, sbang - sbrndd, lse - fri, calc cmt	
4041	80	Clst	med gry - m dk gry, olv gry, frm, sbblky-blky, slily calc, unif	
	15	Sltst/Kao	var sdy, v ark, pa gry- brnsh gry, gn Glauc Spk, sft-frm, sbblky-amor, slily calc - v calc, loc abd Glauc	
	5	Ls	a.a.	
4044	85	Clst	a.a.	
	15	Sltst/Kao	a.a.	
	Tr	Ls	a.a.	
4047	a.a.			
4050	a.a.			
4053	80	Clst	a.a.	No Fluor
	20	Sltst/Kao	mod sdy (Qtz/Glau), v ark, pa gry- brnsh gry, gn Glauc Spk, sft-frm, sbblky-amor, slily calc - v calc	
	Tr	Ls	off wh - mky wh, sft - frm, sbblky- blky, occ vf sdy, Glauc, microxln - cryptoxln micr, also xln Cal	
4056	70	Clst	a.a.	
	25	Sltst/Kao	a.a.	
	5	Ls	a.a.	
4059	a.a.			
4062	75	Clst	a.a.	
	15	Sltst/Kao	a.a.	
	5	Ls	a.a.	
	5	Sst	pred clr - trnsf Qtz, vf-med,dom vf-f, mod wl srt, sbang - sbrndd, lse - fri, calc cmt	
4065	90	Clst	a.a.	
	10	Sltst/Kao	a.a.	
	Tr	Ls	a.a.	
	Tr	Sst	a.a.	
4068	80	Clst	a.a.	
	20	Sltst/Kao	+ Tr Qtz	
	Tr	Ls	a.a.	
4071	80	Clst	a.a.	
	10	Sltst/Kao	a.a.	
	10	Ls	a.a.	
4074	75	Clst	a.a.	

Page 166 of 177

Country: Norway		Area: North Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, AS Norske Shell		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer		
Hole size: 6"		Cut solvent: Iso Propyl Alcohol		Date: 06.07.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

	20	Sltst/Kao	mod sdy (Qtz/Glau), v ark, pa gry- brnsh gry, gn Glauc Spk, sft-frm, sbblky-amor, slily calc – v calc	
	5	Ls	off wh - mky wh, sft – frm, sbblky- blkly, occ vf sdy, Glauc, microxln – cryptoxln micr, also xln Cal	
4077	75	Clst	med gry – m dk gry, olv gry, frm, sbblky-blky, slily calc, unif	
	20	Sltst/Kao	a.a.	
	5	Ls	a.a.	
4080	a.a.			
4083	70	Clst	a.a.	
	25	Sltst/Kao	a.a.	
	5	Ls	a.a.	
4086	a.a.			
4089	a.a.			
4092	a.a.			
4095	a.a.			
4098	a.a.			
4101	a.a.			
4104	Lost			
4107	Lost			
4110	60	Clst	a.a.	
	40	Sltst	a.a.	
	Tr	Ls	a.a.	
4113	70	Clst	a.a.	
	30	Sltst	a.a.	
	Tr	Ls	a.a.	
4116	a.a.			
4119	60	Clst	a.a.	
	40	Sltst	a.a.	
	Tr	Ls	a.a.	
			Well TD at 4120 m 07:00 8 July 2006	

SIDEWALL CORE DESCRIPTION

Page 167 of 174

Country: Norway		Area: Norwegian Sea		Field:	Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S			
RKB: 25 meters		Geologist: Håvard Høland, Lars Rasmussen			
Hole size: 17 ½" "		Cut solvent: Only UV light used			Date: 3 rd May 2006
Run no.: 1A		Reference log: DSI-HRLA-PEX-HNGS			
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Shows, cavings, mud additives, etc.	

1	2545.0	45	100	Clst: med dk gry-gry, olv gry-olv blk, frm, frm-occ sft, sbblky-amor, slty, r Glauc	No Fluor
2	2528.1	45	a.a.		a.a.
3	2527.5	45	a.a.		a.a.
4	2524.9	Empty		Empty	
5	2510.8	26	a.a.		a.a.
6	2510.1	45	a.a.		a.a.
7	2494.1	45	a.a.		a.a.
8	2494.0	45	a.a.		a.a.
9	2475.0	38	a.a.		a.a.
10	2461.0	39	a.a.		a.a.
11	2458.5	45	a.a.		a.a.
12	2458.0	45	a.a.		a.a.
13	2456.9	45	a.a.		a.a.
14	2450.0	40	a.a.		a.a.
15	2443.9	24	100	Clst: sft, else a.a.	a.a.
16	2437.8	42	100	Clst: frm, else a.a.	a.a.
17	2435.0	40	a.a.		a.a.
18	2429.0	45	a.a.		a.a.
19	2424.2	36	a.a.		a.a.
20	2420.0	44	a.a.		a.a.
21	2412.0	45	a.a.		a.a.
22	2410.5	35	a.a.		a.a.
23	2408.5	25	a.a.		a.a.

SIDEWALL CORE DESCRIPTION

Page 168 of 174

Country:	Norway	Area:	Norwegian Sea	Field:	Edvarda
Well no:	6403/6-1	Company:	Statoil ASA, Norske Shell A.S		
RKB:	25 meters	Geologist:	Håvard Høland, Lars Rasmussen		
Hole size:	17 ½” “	Cut solvent:	Only UV light used	Date:	3 rd May 2006
Run no.:	1A	Reference log:	DSI-HRLA-PEX-HNGS		
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

24	2408.2	20?	100	Clst: med dk gry-gry, olv gry-olv blk, frm, frm-occ sft, sbblky-amor, slty, r Glauc	No Fluor
25	2405.0	15	a.a.		a.a.

SIDEWALL CORE DESCRIPTION

Page 169 of 177

Country: Norway		Area: Norwegian Sea		Field:	Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S			
RKB: 25 meters		Geologist: S. Greve, A. M. Horn			
Hole size: 8 ½”		Cut solvent: Only UV light used		Date:	25 th June 2006
Run no.: 5B		Reference log: PEX- HRLA			
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Shows, cavings, mud additives, etc.	

1	2995	47	100	Clst: med dk gry, hd – v hd, slty, non calc	Frac alongside, no Fluor
2	3002	18	100	Clst: a.a.	a.a.
3	3044	48	100	Clst: v slty, else a.a.	a.a.
4	3050	46	100	Sst: gn gry – dk gn gry, hd, v f – SlT, Glauc, Mic, sil Cmt, pr vis por	No Fluor
5	3053.2	49	100	Sst: a.a.	a.a.
6	3056	48	100	Sltst: med dk gry, hd – v hd, occ v f Sd, non calc	Frac alongside & across, no Fluor
7	3056.5	50	100	Sst: dk gn gry, hd – v hd, v f – SlT, Glauc, Mic, calc Cmt, blk Spt (Min/carb?), no vis por	No Fluor
8	3056.7	49	100	Sltst: med dk gry - dk gry, v hd, v f Sd, Mic, occ Glauc, blk Spt (Min/carb?), sli calc	a.a.
9	3057	49	100	Sst: med dk gry – dk gn gry, v f – SlT, hd – v hd, Glauc, Mic, Tr Micropyr, calc Cmt, pr vis por	a.a.
10	3088.7	44		lam Sst/Sltst/Clst; Sst: med dk gry – dk gn gry, v f – SlT, hd – v hd, Glauc, Mic, non – sli calc, no vis por	a.a.
11	3122.7	45	100	Sdy Sltst: dk gn gry, hd – v hd, v f Sd, i.p. grad to slty Sst, Glauc, Mic, Tr Micropyr, gen sil Cmt, sli calc	a.a.
12	3124.7	50	100	Slty Sst: dk gn gry, hd – v hd, v f Sd, Glauc, Mic, gen sil Cmt, non - sli calc	a.a.
13	3140.9	46	100	Clst: med dk gry – dk gry, sli slty, hd – v hd, non calc	Frac alongside & across, no Fluor
14	3141	47	100	Clst: med dk gry, v hd, lam, slily slty, non calc	Frac alongside, no Fluor
15	3141.5	43		lam Sst/ Sltst Sst: yelsh gry, hd, v f – slty, Glauc, Mic, sli calc	No Fluor
16	3161.1	42	100	Sst: lt gnsh gry, v f, slty, hd, lam, Glauc, Mic, pr vis por, sil Cmt, sli calc	No Fluor
17	3165.7	38		lam Sst/ Sltst Sst: lt gnsh gry, v f - slty, hd, pr vis por, Glauc, Mic, non calc	No Fluor
18	3199.5	42	100	Clst: brnsh gry, v hd, slt slty, Mic, non calc	No Fluor

SIDEWALL CORE DESCRIPTION

Page 170 of 177

Country: Norway		Area: Norwegian Sea		Field:	Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S			
RKB: 25 meters		Geologist: S. Greve, A. M. Horn			
Hole size: 8 ½”		Cut solvent: Only UV light used			Date: 25 th June 2006
Run no.: 5B		Reference log: PEX- HRLA			
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

19	3219.3	43		lam Sst/ Sltst Sst: med lt gry, v f – slty, pr vis por, Mic, occ calc	Frac alongside No Fluor
20	3219.5	48	100	Ls: brnsh gry – lt gry, v hd, slty, xln	No Fluor
21	3234.7	43	100	Clst: lt gry – brnsh gry, lam, sil Cmt, hd, occ calc, Mic, Micropyr	No Fluor
22	3235	50	100	Sltst: brnsh gry - lt gry, mod hd, lam, sdy, Mic, occ calc	No Fluor
23	3240	40	100	Clst: med gry, mod hd, mod slty, non calc, sli sdy	broken in two, no Fluor, Frac ang trough S.W.C.
24	3247	48	100	Sst: lt gry, trnsf – mlky, vf – f, hd, wl srt, Glauc, calc Cmt, pr vis por	No Fluor
25	3283.1	50	100	Sst: lt gry – dk gry, v f – slty, lam, hd, trnsf, Sil cmt, glauc, pr vis por	No Fluor
26	3302	37	100	Clst: med gry, occ sdy, hd, Mic, sli calc	Frac alongside No Fluor
27	3325	39	100	Sst: olv gry, hd, v f, lam, no vis por, sil Cmt, Mic, Pyr, pr calc	
28	3360.2	32	100	Sltst: med gry, hd, Pyr, sli calc	broken in two pieces, Frac along & across, No Fluor
29	3392.4	47	100	Sltst: olv gry, mod hd, lam, Pyr, non calc	No Fluor
30	3407.5	47	100	Clst: brnsh gry, hd, slty, Pyr, sli calc	Frac alongside & ang, no Fluor
31	3477	41	100	Sst: olv gry – pkish gry, lam, slty; Qtz: trnsf – mlky, f – v f, wl srt, Mic, Glauc, sli calc	Frac alongside, no Fluor
32	3480	48	100	Ls: med gry – lt gry, hd, xln, lam, Glauc	No Fluor
33	3494	43	100	Clst: olv – gry, lam, Mic, slty, hd, Glauc, non calc	Frac alongside, no Fluor
34	3497.5	47	100	Clst: olv gry – yelsh gry, hd, lam, slty, Micropyr, Mic, Glauc, occ calc	No Fluor
35	3517	44	100	Clst: olv gry, hd, sli calc	Frac alongside & across No Fluor
36	3448.8	45	100	Sst: v lt gry – olv blk, lam, v f - slty, Mic, Glauc	Frac alongside
37	3558.2	41	100	Clst: med dk gry – dk gry, hd, wxy, non calc	lg Frac alongside & short across, no Fluor

SIDEWALL CORE DESCRIPTION

Page 171 of 177

Country: Norway		Area: Norwegian Sea		Field:	Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S			
RKB: 25 meters		Geologist: S. Greve, A. M. Horn			
Hole size: 8 ½”		Cut solvent: Only UV light used		Date:	25 th June 2006
Run no.: 5B		Reference log: PEX- HRLA			
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Shows, cavings, mud additives, etc.	

38	3559.6	50	100	Sdy Sltst: med dk gry, hd, v f Sd – slt, Glauc, Mic, occ Micropyr, non calc	Frac alongside No Fluor
39	3576.1	49	100	Sdy Sltst: Tr calc, else a.a.	a.a.
40	3579	40	100	Sltty Sst: med dk gry – dk gry, hd, v f Sd – slt, sli Glauc, Mic, Tr Micropyr, sil Cmt	a.a.
41	3594.7	49	100	a.a.	a.a.
42	3596.2	42	100	Sltst: dk gry, hd, sdy v f – slt, sli Glauc, Mic, non calc	a.a.
43	3649.9	44	100	Clst: dk gry, slty, occ Mic, non calc	a.a.
44	3701.7	43	100	Sltst: dk gry, hd, occ Mic, non calc	a.a.
45	3763	45	100	Tr Micropyr, else a.a.	No Fluor
46	3764.5	47		Sltst: dk gry, hd, arg lam, sdy lam v f - slt, Glauc, Mic, Tr Micropyr, non calc	Frac alongside No Fluor

SIDEWALL CORE DESCRIPTION

Page 172 of 177

Country: Norway		Area: Norwegian Sea		Field: Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S		
RKB: 25 meters		Geologist: Bjørn Kjellin, Olav Beyer, Christian Hay Opsahl		
Hole size: 6"		Cut solvent: ISOPROPANOL		Date: 11 th July 2006
Run no.: 6C		Reference log: PEX- HRLA		
Core no.	Depth (mRKB)	Lithological Description		Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Shows, cavings, mud additives, etc.

1	4044.95			EMPTY	
2	4042.35			EMPTY	
3	4038.45			EMPTY	
4	4031.25			EMPTY	
5	4027.25	21	100	Sst: lt-med gry, olv gry, vf, mod-p srt, sbang-sbrndd, Calc Cmt?, Kao Mtrx, Glauc, Chlor, Mic, Tr Micromic, v. ti, no vis por	Uncertain depth! No Fluor
6	4025.25	48	100	Sst: lt-med gry, olv gry, vf, mod-p srt, sbang-sbrndd, Calc Cmt?, Kao Mtrx, Glauc, Chlor, Mic, Tr Micromic, v.ti, no vis por	No Fluor
7	4024.75	45	100	Sst: lt-med gry, vf, mod-p srt, sbang-sbrndd, Calc Cmt?, Kao Mtrx, Glauc, Chlor, Tr Micromic, v.ti, no vis por	No Fluor
8	4024.25	40	100	Sst: lt-med gry, vf, mod-p srt, sbang-sbrndd, Kao Mtrx, Glauc, Chlor, Tr Micromic, Tr Pyr, v ti, no vis por	No Fluor
9	4019.75	35	100	Sst : lt gry, olv gry, vf, mod-p srt, sbang-sbrndd, Kao Mtrx, Glauc, Chlor, Tr Micromic, v ti, no vis por	No Fluor
10	4018.75	47	100	Sst: lt-med gry, olv gry, vf, mod-p srt, sbang-sbrndd, Kao Mtrx, Chlor, Glauc?, Tr Micromic, v ti, no vis por	No Fluor
11	4003.05	49	100	Slst: dk gry, frm-mod hd, amor, slily calc, Tr Glauc/Chlor, Tr Micromic	No Fluor
12	4000.25	36	100	Slst: dk gry, grysh blk, hd, amor, slily calc, Tr Chlor, Tr Micromic	No Fluor
13	3998.55	50	100	Sst: med dk gry, vf, mod-pr srt, sbang-sbrndd, Calc Cmt, Glauc, Chlor, Mic, Tr Micromic, v. ti, no vis por	No Fluor
14	3996.05	49	100	Sst: med dk gry, vf, mod-pr srt, sbang-sbrndd, Calc Cmt, Kao Mtrx, Glauc, Chlor, Mic, v. ti, no vis por	No Fluor
15	3993.75	49	100	Sst: lt-med gry, vf, mod-pr srt, sbang-sbrndd, Calc Cmt, Kao Mtrx, Glauc, Chlor, v. ti, no vis por	No Fluor
16	3981.45	50	100	Clst: dk gry-grysh blk, v hd, amor, v calc, calc Cmt?	No Fluor
17	3969.25	35	80	Clst: dk gry, frm-mod hd, amor, slily slty, non-slily calc, Tr Micromic	No Fluor
			20	Sst: dk gry, vf, mod-pr srt, sbang-sbrndd, Kao Mtrx, Tr Ls, Tr Glauc, Tr Chlor, Tr Ls, Tr Micromic	No Fluor

SIDEWALL CORE DESCRIPTION

Page 173 of 177

Country: Norway		Area: Norwegian Sea		Field:	Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S			
RKB: 25 meters		Geologist: Bjørn Kjellin, Olav Beyer, Christian Hay Opsahl			
Hole size: 6"		Cut solvent: ISOPROPANOL			Date: 11 th July 2006
Run no.: 6C		Reference log: PEX- HRLA			
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Shows, cavings, mud additives, etc.	

18	3964.05	50	100	Clst: dk gry-grysh blk, hd, amor, slily slty, non-slily calc, Tr Micromic, Tr Chlor	No Fluor
19	3949.75	43	100	Clst: dk gry-grysh blk, hd, amor, calc, Tr Ls, Tr Micromic, Tr Glauc	No Fluor
20	3949.25	40	100	Sst: dk gry, vf, mod-pr srt, sbang-sbrndd, Kao Mtrx, Tr Ls, Tr Glauc, Tr Chlor, Tr Micromic, v. ti, no vis por	No Fluor
21	3937.25	50	100	Sst: med gry, vf, mod-pr srt, sbang-sbrndd, Kao Mtrx, Calc Cmt, Tr Ls, Tr Glauc, Tr Chlor, Tr Micromic, v. ti, no vis por	No Fluor
22	3926.75	50	100	Clst: grysh blk, frm-mod hd, amor, calc, Tr Micromic, Tr Pyr	No Fluor
23	3912.25	40	100	Clst: dk gry-grysh blk, hd, amor, abd Calc Cmt, Tr Micromic, Pyr	No Fluor
24	3890.25	43	100	Clst: dk gry-grysh blk, hd, amor, abd Dol Cmt, Tr Glauc, Tr Micromic	No Fluor
25	4112.25	45	100	Sst: lt-med dk gry, vf-med, pr srt, sbang-sbrndd, Calc Cmt, Glauc, Chlor, v ti, no vis por	No Fluor
26	4111.25	45	100	Clst: dk gry-grysh blk, hd, amor, abd Dol Cmt, Tr Glauc, Tr Pyr, Tr Micromic, Mic	No Fluor
27	4109.25	48	100	Clst: dk gry-grysh blk, hd, amor, abd Dol Cmt, Tr Glauc, Tr Micromic	No Fluor
28	4104.25	46	100	Clst: med dk gry, hd, amor, abd Dol Cmt, Tr Glauc, Tr Mic, Tr Pyr, Tr Micromic	No Fluor
29	4099.25	49	100	Clst: dk gry-grysh blk, hd, amor, abd Calc/Dol Cmt, Tr Glauc, Tr Mic, Tr Micromic	No Fluor
30	4096.25	50	100	Clst: med-med dk gry, hd, amor, abd Dol Cmt, Tr Mic, Tr Micromic	No Fluor
31	4091.25	32	100	Sst: med lt gry, vf, mod-pr srt, sbang-sbrndd, abd Dol Cmt, Glauc, Chlor, Tr Micromic, no vis por	No Fluor
32	4079.25	49	100	Sst: med dk-olv gry, vf, mod-pr srt, sbang-sbrndd, abd Kao Mtrx, Tr Calc Cmt?, Glauc, Chlor, Tr Micromic, v. ti, no vis por	No Fluor
33	4064.05	49	100	Sst: med dk-olv gry, vf, mod-pr srt, sbang-sbrndd, abd Kao Mtrx, Tr Calc Cmt?, Glauc, Chlor, Tr Micromic, v. ti, no vis por	No Fluor
34	4062.85	49	100	Clst: dk gry-grysh blk, hd, amor, v calc, Calc/Ls Cmt?, Tr Chlor, Tr Glauc, Tr Micropyr	No Fluor

SIDEWALL CORE DESCRIPTION

Page 174 of 177

Country: Norway		Area: Norwegian Sea		Field:	Edvarda
Well no: 6403/6-1		Company: Statoil ASA, Norske Shell A.S			
RKB: 25 meters		Geologist: Bjørn Kjellin, Olav Beyer, Christian Hay Opsahl			
Hole size: 6"		Cut solvent: ISOPROPANOL			Date: 11 th July 2006
Run no.: 6C		Reference log: PEX- HRLA			
Core no.	Depth (mRKB)	Lithological Description			Remarks
		Recov. (mm)	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Shows, cavings, mud additives, etc.	

35	4059.45	50	100	Clst: grysh blk, hd, amor, abd Calc/Dol Cmt, Tr Micromic, Tr Chlor, Tr Glauc	No Fluor
36	4045.75	34	100	Sst: med-olv gry, vf, mod-pr srt, sbang-sbrndd, abd Kao Mtrx, Calc Cmt, Glauc, Chlor, Tr Micromic, no vis por	No Fluor
37	4083.45	43	100	Clst: med dk-dk gry, frm-mod hd, amor, slily slty, slily calc, Tr Mic, Tr Glauc, Tr Micropyr	No Fluor
38	3881.75	46	100	Clst: dk gry-grysh blk, mod hd-hd, amor, non-slily calc, Tr Mic, Tr Micropyr	No Fluor
39	3867.35	50	100	Clst: dk gry-grysh blk, mod hd-hd, amor, non-slily calc, Tr Mic, Tr Micropyr	No Fluor
40	3865.05	43	100	Clst: dk gry-grysh blk, mod hd-hd, amor, non-slily calc, slily slty, Tr Micropyr, Tr Mic	No Fluor
41	3861.25	49	100	Clst: med dk-dk gry, frm-mod hd, amor, slily slty, Tr Ls, Tr Mic, Tr Glauc, Tr Micropyr	No Fluor
42	3841.75	48	100	Clst: med dk-dk gry, frm-mod hd, amor, slily slty, non-slily calc, Tr Mic, Tr Micropyr	No Fluor
43	3840.75	40	100	Clst: med dk-dk gry, mod hd-hd, amor, slily slty, non-slily calc, Tr Mic, Tr Micropyr	No Fluor
44	3824.15	47	100	Clst: med dk-dk gry, mod hd-hd, amor, non-slily calc, Tr Glauc, Tr Mic, Tr Micropyr	No Fluor
45	3817.75	48	100	Clst: dk gry-grysh blk, mod hd-hd, amor, non-slily calc, Tr Glauc, Tr Mic, Tr Micropyr, Tr Micromic	No Fluor
46	3806.25	49	100	Clst: dk gry-grysh blk, mod hd-hd, amor, non-slily calc, Tr Glauc, Tr Mic, Tr Micropyr	No Fluor
47	3800.75	33	100	Clst: dk gry-grysh blk, hd, amor, non calc, Tr Glauc, Tr Mic, Tr Micropyr	No Fluor
48	3790.75	48	100	Clst: dk gry-grysh blk, mod hd, amor, non-slily calc, Tr Glauc, Tr Mic, Tr Micropyr	No Fluor
49	3787.25	40	100	Clst: med gry-med dk gry, mod hd, amor, non-slily calc, Tr Glauc, Tr Micromic, Tr Micropyr	No Fluor
50	3784.25	46	100	Clst: med gry-med dk gry, mod hd, amor, non-slily calc, Tr Glauc, Tr Micropyr	No Fluor

CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Møre basin				Field: Edvarda Prospect								
Well no: 6403/6-1		Formation: Nise Formation												
Core no: 1		Interval: 3058-3084.4m			Cored: 26.4m		Rec: 99.8%							
Core size: 4"		Geologists: L. Rasmussen, J. Wayne				Date: 12.06.06								
Depth (mRT)	Lithology/Grain size cly slt vf f m c yc							Shows		Φ	Lithological Description Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination	Remarks Shows, etc.		
								STAIN	FLUOR				CUT	POOR
3058												<u>CLST:</u> lt-med gry, frm-mod hd, blkly-sbfiss, muscov mic, micropyr, microglauc, slty, non-v sl calc.		
3059													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, muscov mic, microcarb, tr microglauc, slty, non-v sl calc.	
3060													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, micromic, pyr nod, calc min slickensides, slty, non-v sl calc.	
3061													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, micropyr, muscov mic, occ microglauc, slty, non calc.	
3062													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, micropyr, muscov mic, occ microglauc, occ microxln pyr nod, slty, trace v f sd lams, non calc.	
3063													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, pyr, muscov mic, microglauc, slty, non-sl calc.	
3064													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, pyr, muscov mic, abun glauc, slty, occ v thin stks/lams vf sd, non-sl calc.	
3065													<u>CLST:</u> med-dk gry, frm-mod hd, blkly-sbfiss, micropyr, muscov mic, occ microglauc, occ microxln pyr nod, slty, trace v f snd lams, non calc.	
3066													<u>CLST:</u> lt-med gn gry, frm-mod hd, blkly-sbfiss, muscov mic, abun microglauc, slty, non-v sl calc. Tr SST: pa brn, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, v f glauc, as v thin stks/lams.	
3067													<u>CLST:</u> med gry, frm-mod hd, blkly-sbfiss, muscov mic, occ glauc, slty, tr microcarb, non-sl calc.	
	cly slt vf f m c vc													

CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Møre basin				Field: Edvarda Prospect											
Well no: 6403/6-1		Formation:Nise															
Core no: 1		Interval: 3058-3084.4m				Cored: 26.4m		Rec: 99.8%									
Core size: 4"		Geologists: L. Rasmussen, J. Wayne				Date:		12.06.06									
Depth (mRT)	Lithology/Grain size cly slt vf f m c yc							Shows						Φ	Lithological Description Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct.,accessories, fossils, porosity, contamination	Remarks Shows, etc.	
								STAIN	FLUOR	CUT	POOR	FAIR	GOOD				
3068																CLST: med-dk gry, frm-mod hd, blkly-sbfiss, muscov mic, abun microglauc, slty, non-v sl calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3069																CLST: lt-med gry, frm-mod hd, blkly-sbfiss, muscov mic, abun microglauc, carb, slty, non-v sl calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3070																CLST: lt-med gn gry, frm-mod hd, blkly-sbfiss, muscov mic, occ glauc, slty, tr micarb, non calc.	
3071																CLST: med gry, frm-mod hd, blkly-sbfiss, muscov mic, tr glauc, slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3072																CLST: med gry, frm-mod hd, blkly-sbfiss, muscov mic, tr glauc, slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3073																CLST: med gry, frm-mod hd, blkly-sbfiss, muscov mic, pyr stks, tr glauc, slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3074																CLST: med gry, frm-mod hd, blkly-sbfiss, muscov mic, microglauc, slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3075																CLST: a/a Tr SST: a/a	
3076																CLST: lt gry, frm-mod hd, blkly-sbfiss, muscov mic, com microglauc, slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as v thin stks/lams.	
3077																CLST: lt gry, frm-mod hd, blkly-sbfiss, mic, microglauc, tr carb slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as com v thin stks/lams.	
	cly slt vf f m c yc																

CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Møre basin				Field: Edvarda Prospect										
Well no: 6407/6-1		Formation: Nise														
Core no: 1		Interval: 3058-3084.4m				Cored: 26.4m		Rec: 99.8%								
Core size: 4"		Geologists: L. Rasmussen, J. Wayne				Date: 12.06.06										
Depth (mRT)	Lithology/Grain size cly slt vf f m c vc							Shows						Φ	Lithological Description Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination	Remarks Shows, etc.
								STAIN	FLUOR	CUT	POOR	FAIR	GOOD			
3078	M														CLST: lt gry, frm-mod hd, blkly-sbfiss, muscov mic, occ glauc, slty, pyr strks, tr micarb, non calc.	
3079	C * M														CLST: lt gry, frm-mod hd, blkly-sbfiss, mic, microglauc, tr carb slty, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, as com v thin stks/lams.	
3080	C * M														CLST: lt gry, frm-mod hd, blkly-sbfiss, mic, microglauc, tr carb slty, tr pyr, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, tr carb, as v thin stks/lams.	
3081	M *														CLST: med-dk gry, frm-mod hd, blkly-sbfiss, muscov mic, occ glauc, slty, tr carb, non calc.	
3082	* M														CLST: med-dk gry, frm-mod hd, blkly-sbfiss, micro mic, occ glauc, slty, pyr stks, tr carb, non calc. CLST: med-dk gry, frm-mod hd, blkly-sbfiss, mic, microglauc, tr carb slty, tr pyr, non calc. Tr SST: lt gry, frm, crumb, clss qtz, v f, subang-sbrnd, w srt, mic, wk-mod sil cmt, lt gry arg mtx, occ glauc, tr carb, as v thin stks/lams.	
3083	C * M														CLST: a/a Tr SST: a/a	
3084	C * M														CLST: med-dk gry, frm-mod hd, blkly-sbfiss, micro mic, occ glauc, slty, tr microcarb, non calc.	
3084.35	C * M															
Core #1 ends at 3084.4 mMD																
	cly slt vf f m c vc															

20" Casing shoe @ 2394.0 mMD

2406.3mMD, 2406.2mTVD
Inc 1.32, Az 251.98

2429.4mMD, 2429.3mTVD
Inc 1.30, Az 245.80

2464.3mMD, 2464.1mTVD
Inc 1.19, Az 246.3

2489.3mMD, 2489.1mTVD
Inc 1.12, Az 259.20

Bit#3 17 1/2"
Type: GS03BDODGVCPD
Nozzles: 3x20, 1x15 (1x18)
In at 2400m, out at 2560m
made 160m in 17.0 hrs and 2.8 hrs cmnt
GRADING: 1 1 WT A F IN NO TD

Bit#4rr 17 1/2" x 20"
Type: XR + VC
Nozzles: 3x20, 1x12
In at 2400m, out at 2560m
made 160m in 3.7 hrs
GRADING: 1 1 NO - 0 I NO TD

CLST: gnsh blk, frm, amor,
calc, glauc, tf

CLST: grysh blk, mod hd,
sbbiky, calc, slty, glauc, tf,
pyr

CLST: brnsh gry, mod hd,
sbbiky, calc, pyr, glauc

CLST: lt olv gry-olv gry,
frm-mod hd, blk, calc, slty,
sdy i.p., pyr, glauc

2518.4mMD, 2518.2mTVD
Inc 0.46, Az 229.32

16" Liner shoe @ 2548.2 mMD

2550.2mMD, 2550.0mTVD
Inc 0.57, Az 225.41

2592.0mMD, 2591.8mTVD
Inc 0.60, Az 230.30

2622.1mMD, 2621.9mTVD
Inc 0.46, Az 197.25

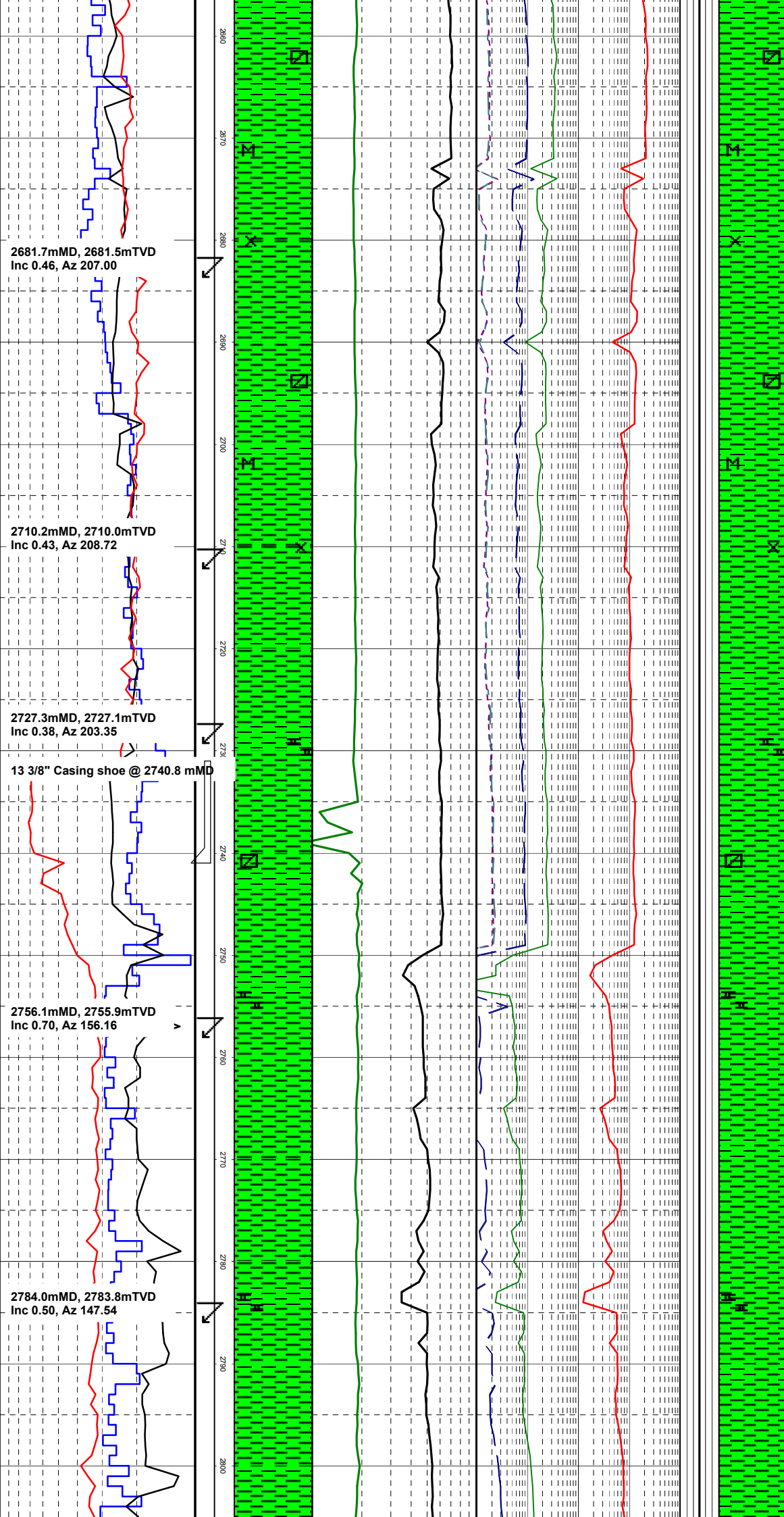
2650.8mMD, 2650.6mTVD
Inc 0.45, Az 202.99

CLST: lt olv gry-olv gry, med
gry, sft-frm, crumbly, blkly,
calc, slty, pyr, glauc, mic

Bit#5 14 3/4" * 17 1/2"
Type: T11C
Nozzles: 3x18, 1x16
In at 2560m, out at 2749m
made 189m in 14.61 hrs and 7.7 hrs cmnt
GRADING: 1 2 CT S E 2 WT TD

CLST: lt olv gry, sft-frm, amor,
calc, glauc, pyr, Tr Mic

CLST: lt olv gry, sft-frm,
sbbkly, calc, glauc, pyr, Tr Mic



CLST: lt olv gry, sft frm,
sbbkly, calc, glauc, pyr, Tr
Mic

CLST: lt olv gry, sft frm,
sbbkly, calc, tr slty/sndy,
glauc, pyr, Tr Mic

Bit#7 12 1/4"
Type: DBSEBXSC1SC
Nozzles: 2x18, 1x20, 1x14
In at 2749m, out at 2983m
made 234m in 29.6 hrs and 3.3 hrs cmnt
GRADING: 2 2 CT 2 1 I FC TD

CLST: lt gry,
lt olv gry-olv gry, r blk,
pred sticky, sft frm, occ hd,
sbbkly-amor, calc.

2813.2mMD, 2813.0mTVD
Inc 0.33, Az 124.03

2869.9mMD, 2869.7mTVD
Inc 0.41, Az 109.95

2899.6mMD, 2899.4mTVD
Inc 0.51, Az 61.93

2927.7mMD, 2927.5mTVD
Inc 0.29, Az 51.37

TR DOL: lt brnsh gry, frm,
sbbkly.

TR LS: yelsh gry, sft,
amor-sbbkly, microxin.

CLST: lt gry, lt olv gry-olv
gry, gnsh gry, pred stky,
sft-frm, occ hd, sbbkly-amor,
occ silty calc, r silty I.P.,
micropyr I.P

Lost 18.0m3

DOL: lt brn-lt brnsh gry, frm,
pred hd, sbbkly, microxin

LS: v lt gry, sft-frm, amor,
arg, silty I.P



Lost 3.5m3

CLST: lt gry, lt olv- olv gry,
gnsh gry, sft-frm, stky I.P.,

2956.8mMD, 2956.6mTVD
Inc 0.38, Az 36.81

9 5/8" Liner shoe @ 2982.8 mMD

3009.8mMD, 3009.6mTVD
Inc 0.20, Az 65.76

3027.2mMD, 3026.8mTVD
Inc 0.97, Az 93.26

3049.7mMD, 3049.5mTVD
Inc 0.86, Az 95.48

3084mMD, 3083.8mTVD
Inc 0.88, Az 93.83

3095.6mMD, 3095.41mTVD
Inc 0.81, Az 92.85

Bit#8 8 1/2"
Type: MFDGH
Nozzles: 2x18, 1x16
In at 2983m, out at 2986m
made 3m in 0.59 hrs and 2.69 hrs cmnt
GRADING: 1-1-NO-E-I-NO-DTF



Gained 2.3m3

Bit#8rr 8 1/2"
Type: MFDGH
Nozzles: 2x18, 1x16
In at 2986m, out at 3027m
made 41m in 4.7 hrs
GRADING: 1-1-RR-E-I-NO-DTF

CLST: m-lt gry, lt olv gry-olv
gry, occ gnsh gry, sft-frm,
sbbly-armor, slily calc, occ
micropy

Bit#9rr 8 1/2"
Type: TD 13 KPR
Nozzles: 2x18, 1x16
In at 3027m, out at 3038m
made 11m in 3.77 hrs
GRADING: 1-1-WT-S-E-I-RR-LOG



Lost 11.0m3

CLST: m gry - m dk gry, occ lt
olv gry, sbbly, slil - v calc

Bit#9rr3 8 1/2"
Type: TD 13 KPR
Nozzles: 2x18, 1x16
In at 3045m, out at 3058m
made 13m in 4.89 hrs
GRADING: 1-1-WT-A-E-I-RR-CP

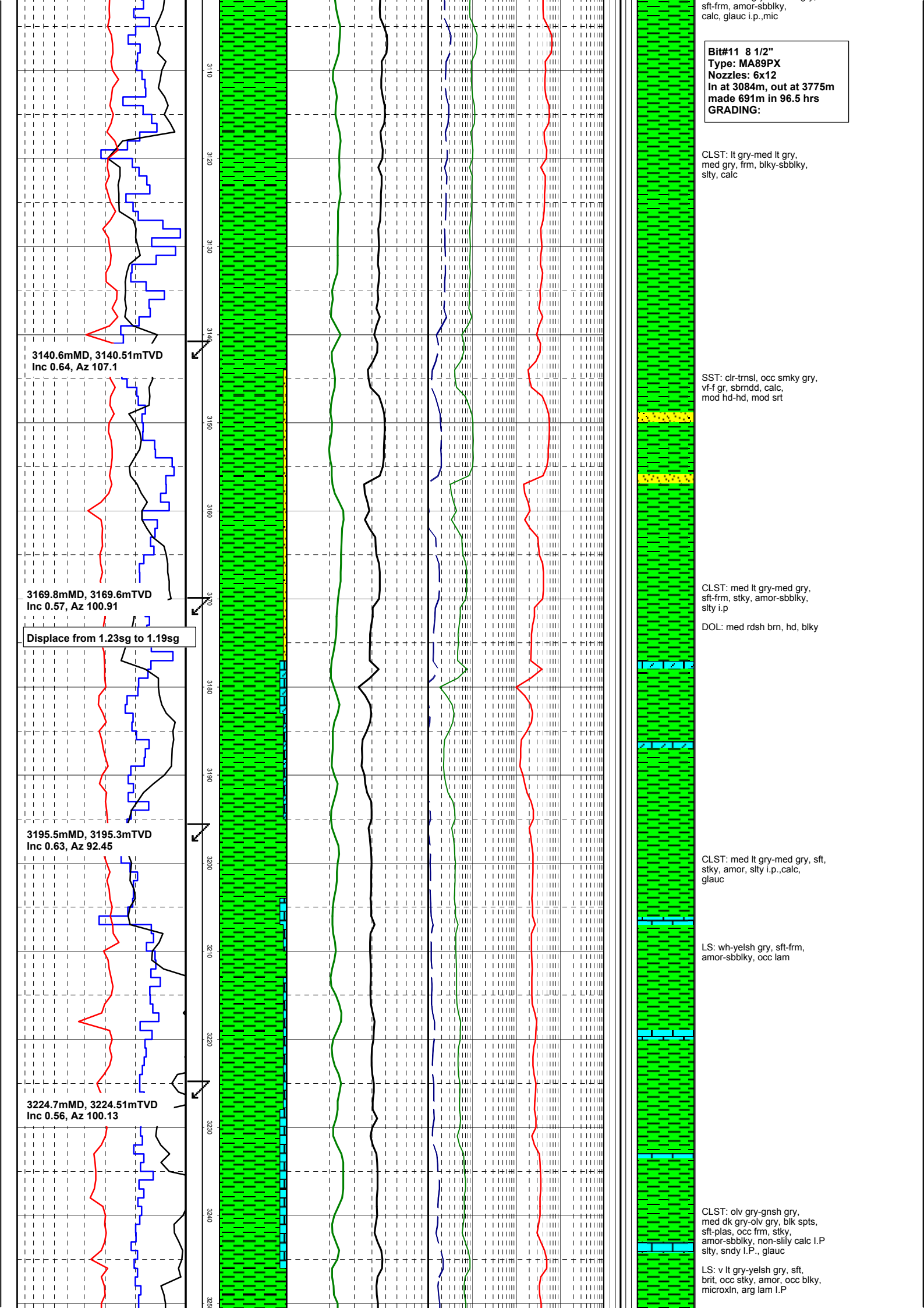
SST: clr - trnsl, occ smk gry,
v f - m gr, dom f gr, sbang -
sbrmdd, mod srtld, unconsl

Bit#10 8 1/2"
Type: CORE BIT
Nozzles: 1,8 TFA
In at 3058m, out at 3084m
made 26m in 4.54 hrs
GRADING: 1-1-NO-X-1-NO-TD

CLST: med lt gry-med gry,
occ blsh gry, frm, sbbly,
v calc, glauc i.p., mic

SST: clr-trnsl, occ smk gry,
vf-f gr, sbrmdd, calc, mod hd,
mod srt

CLST: med arv-med dk arv.



3256.4mMD, 3256.2mTVD
Inc 0.47, Az 114.13

3285.4mMD, 3285.2mTVD
Inc 0.39, Az 110.75

3313.6mMD, 3313.4mTVD
Inc 0.27, Az 103.71

3341.6mMD, 3341.4mTVD
Inc 0.26, Az 105.38

3369.7mMD, 3369.5mTVD
Inc 0.26, Az 128.32

20" Casing shoe @ 2394.0 mMD

3399.6mMD, 3399.4mTVD

CLST: olv gry-gnsh gry,
med dk gry-olv gry,
occ lt gry-lt gnsh gry,
blk spts, sft-frn, stky,
amor-sbblky, calc I.P., slty,
sndy I.P., glauc

LS: wh-v lt gry, occ yelsh gry,
sft, brit, occ stky, blk,
occ amor, microxln, arg lam I.P
occ glauc

CLST: med lt-med dk gry,
olv gry-dk gnsh gry, sft-frn,
crumbly, amor-sbblky, lam i.p.,
slty, calc i.p

CLST: olv gry-dk gnsh gry,
occ med lt gry, sft-frn,
amor-sbblky, slty, occ sli calc,
occ glauc

LS: wh-v lt gry, frm, brit,
amor-blky, microxln,
arg lam i.p

TR: SD: trnsi-mky wh,
sbrndd-rdd, vf

Inc 0.23, Az 74.38

3427.7mMD, 3427.5mTVD
Inc 0.25, Az 103.18

3458mMD, 3457.8mTVD
Inc 0.24, Az 105.53

3485.1mMD, 3484.9mTVD
Inc 0.27, Az 92.36

3511.9mMD, 3511.7mTVD
Inc 0.3, Az 60.92

CLST: olv gry-olv blk,
med dk gry-dk gry,
occ med lt gry-gnsh gry,
frm-mod hd, crumbly,
sbbiky-blky, slty, occ v slty,
non-silly calc

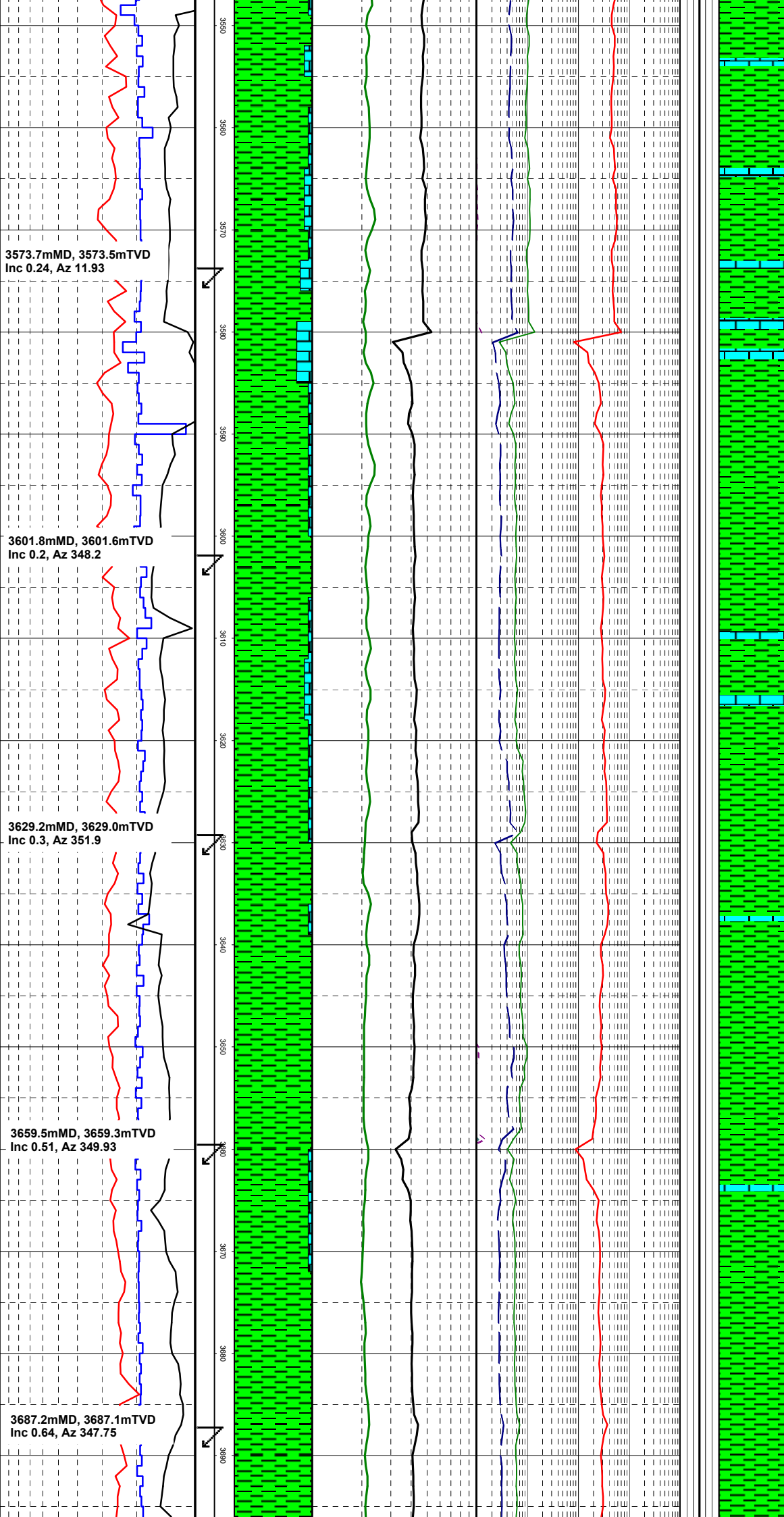
LS: wh-v lt gry, occ yelsh gry,
frm, brit, blky, microxln,
arg lam i.p

CLST: olv gry-olv blk, occ med
gry, frm-mod hd, crumbly,
sbbiky-blky, slty, calc, glauc
i.p

LS: wh-v lt gry, occ yelsh gry,
frm-mod hd, brit, blky,
microxln, arg lam i.p

CLST: olv gry-olv blk-
dk gnsh gry, occ med gry,
frm, brit-crumbly, sbbiky-blky,
slty i.p., occ calc

LS: wh-v lt gry, occ yelsh gry,
frm, brit, blky, occ lam,
microxln, arg lam i.p., glauc
i.p



CLST: olv gry-olv blk-
dk gnsh gry, occ med lt gry,
frm, brit-crumbly, sbblky-biky,
sly i.p., occ grad to SLT,
calc, v calc i.p., occ glauc

LS: wh-v lt gry, occ yelsh gry,
frm, brit, biky, microxln,
arg lam, glauc i.p

TR: DOL: mod brn-dk yelsh brn,
hd-v hd, biky

TR: SST: trnsi-mky wh, vf-f,
sbang-sbrmdd, fri agg,
lt gry-v lt gry, calc mtrx

CLST: olv gry-olv blk, occ med
gry,frm, occ mod hd, crumbly,
sbblky-biky, sly, calc i.p

TR: LS: wh-v lt gry, occ yelsh
gry, sft-frm, crumbly,
sbblky-biky, microxln, arg lam
i.p

CLST: olv gry-olv blk, occ med
gry,sft-frm, occ mod hd,
crumbly, occ sticky,
sbblky-biky, occ amor, sly
i.p., calc i.p

TR: LS: wh-v lt gry, occ yelsh
gry, sft-frm, crumbly,
sbblky-biky, microxln, arg lam
i.p. occ glauc i.p

3717.9mMD, 3717.7mTVD
Inc 0.98, Az 350.57

3768.2mMD, 3767.9mTVD
Inc 1.19, Az 345.44

7" Liner shoe @ 3768mMD

3795.6mMD 3795.4mTVD
Inc 1.14 Az 332.24

3824.6mMD, 3824.4mTVD
Inc 1.31 Az 326.28

Bit#12 6"
Type: CSD+322
Nozzles: 6x10
In at 3714m, out at 3740m
made 26m in 16.1 hrs in cmt
GRADING:

CLST: olv gry-olv blk, med gry,
sft frm, occ mod hd, crumbly,
sbbiky-blky, occ slty,
non-silly calc, lam I.P.,
occ glauc, occ pyr

TR: LS: wh-v lt gry, occ yelsh
gry, sft frm, brit,
sbbiky-blky, microxn, arg lam
i.p., occ glauc

Bit#13 6"
Type: DSX189VWA1
Nozzles: 5x10
In at 3775m, out at 3782m
made 7 +(35 in cmt)in 6.3+(3 in cmt)
GRADING:00 N0-E1N0 HP

CLST:med gry-med dk gry, occ lt
gry, occ dk gry, sft frm, occ
mod hd, sbbiky, ea, wxy, silky
I.P., silly calc-calc, occ
silty, Tr Glauca

Bit#14 6"
Type: DSX516M-81
Nozzles: 5x10
In at 3782m, out at 4120m
made 338 in 47,4 +(6 in cmt)
GRADING:

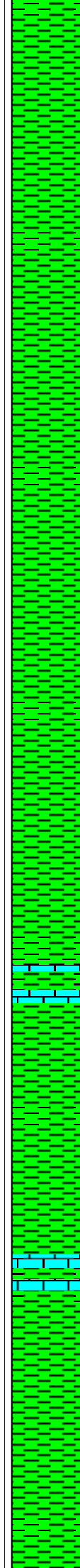
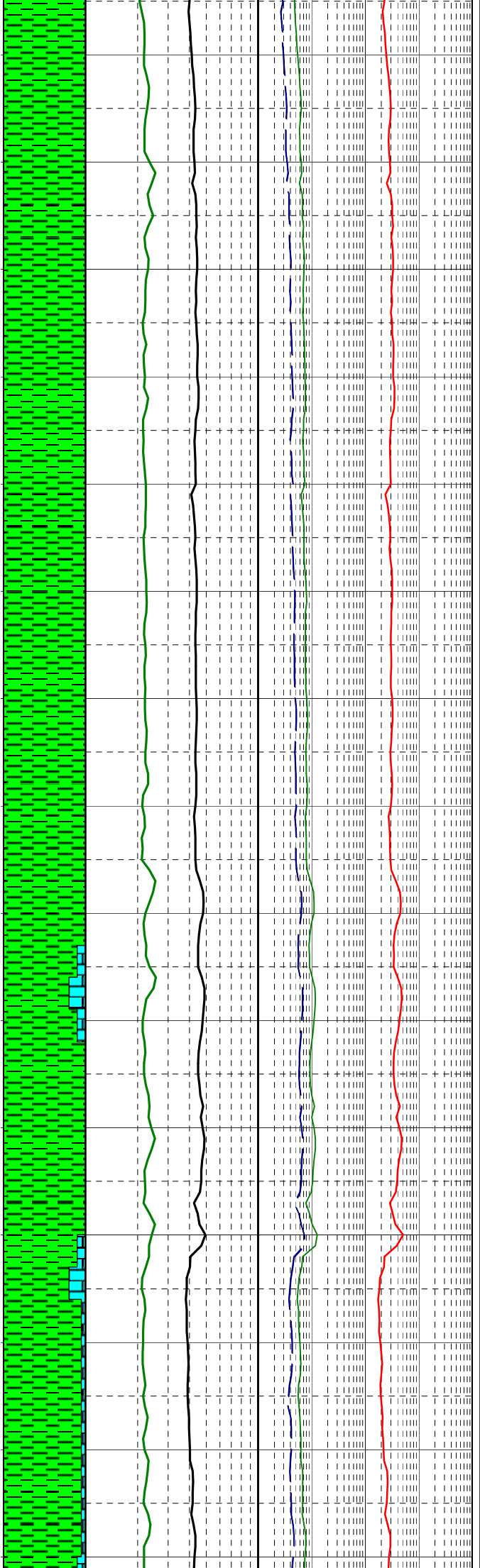
3852.7mMD, 3852.5mTVD
Inc 1.40 Az 319.57

3881.3mMD, 3881.1mTVD
Inc 1.76 Az 323.1

3911.9mMD, 3911.6mTVD
Inc 2.00 Az 323.30

3938.6mMD, 3938.32mTVD
Inc 2.10 Az 322.91

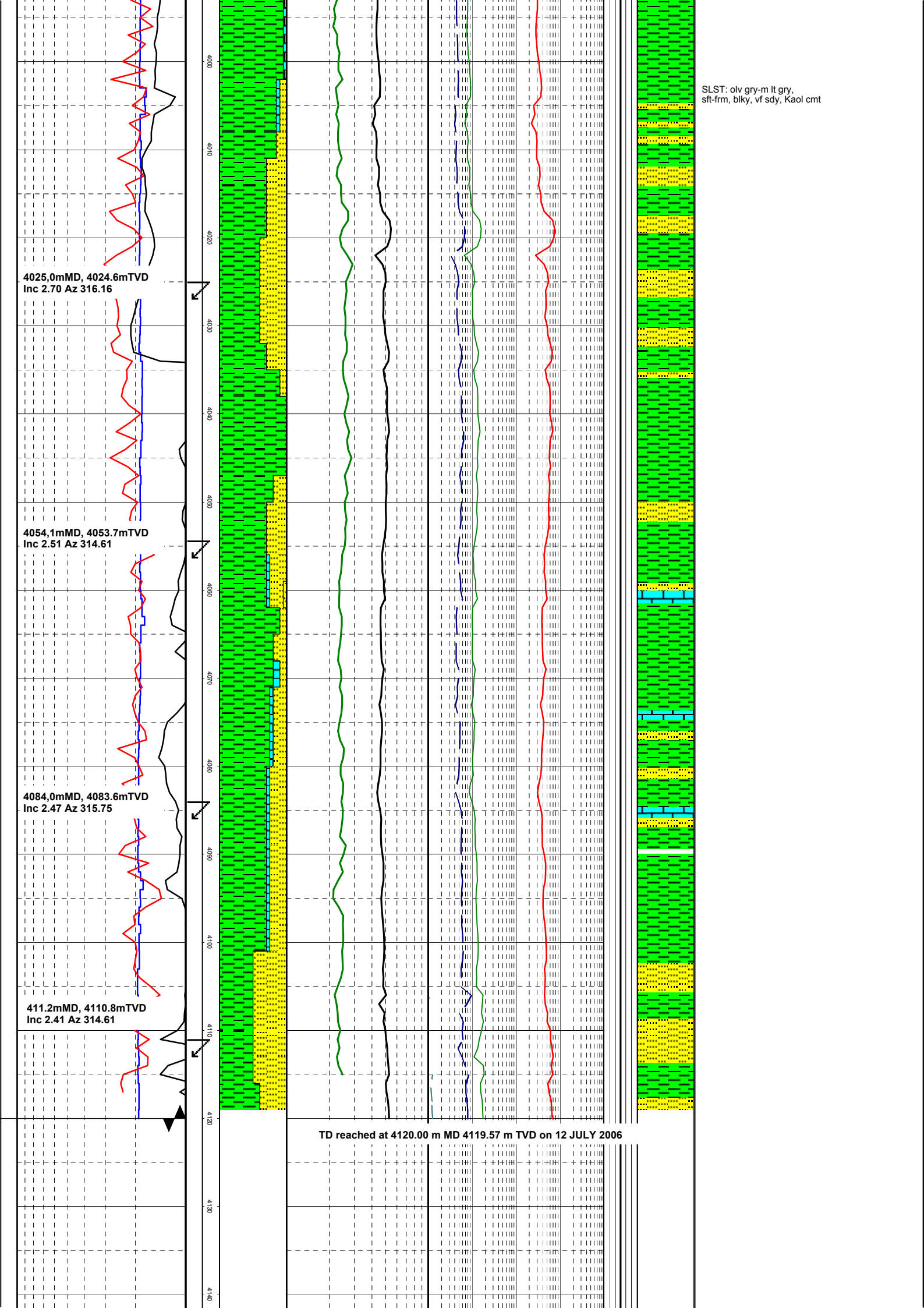
3968.7mMD, 3968.4mTVD
Inc 2.40 Az 320.75



CLST: med gry-med dk gry, occ lt gry, occ dk gry, sft frm, occ mod hd, sbblky, ea, wxy, silky I.P., non-silly calc, gr slty

LS: wh-v lt gry, sft frm, crumbly, sbblky-blky, microxn, arg lam i.p

LS: wh-lt brwn gry, sft frm, crumbly, sbblky-blky, microxn, arg lam i.p., dol



[illegible]