Final Well Report
PL 128,Well 6608/10-7

April
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Grafisk/02/15009

Exploration and Production (UPN), Norway

January 2002

HYDRO

Eni GROUP Norsk Agip

Enterprise Oil

Final Well Report
Well 6608/10-7
PL128

02D94*0718

STATOIL

Title:
Final Well Report **Well 6608/10-7** **PL128**

Document no.:	Contract no./project no.:	Filing no.:
02D94*0718		

Classification:	Distribution:
Restricted	**According to distribution list**

Distribution date:	Rev. date:	Rev. no.:	Copy no.:
	2002-01-15	0	

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Subjects:

General information

Health, environment, safety and quality

Geology and formation data report

Drilling operations report

Remarks:

Valid from:	Updated:

Responsible publisher:	Authority to approve deviations:

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WELL 6608/10-7

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Table of contents

1 General well data 5
1.1 Well data record 5
1.2 Purpose of the well 7
1.3 Result of the well 7
1.4 Well history 8
1.4.1 Casing 8
1.4.2 Sidewall cores 8
1.4.3 Conventional cores 8
1.4.4 Mud logging 8
1.4.5 Logging 10
1.4.5.1 Electrical Logging 10
1.4.5.2 MWD Logging 11
1.4.6 Velocity survey 12
1.4.7 Sampling 12
2 Exemptions and non-conformances 13
3 Health, safety, environment and quality (HSE&Q) 14
3.1 General HSE objectives 14
3.2 Well specific HSE objectives 14
3.2.1 Synergi reporting 14
3.2.2 Experience listing 16
3.2.3 Time distribution 24
4 Geology and formation data report 26
4.1 Geological setting 26
4.2 Stratigraphy 26
4.2.1 Table of Chronostratigraphy 27
4.2.2 Table of lithostratigraphy 28
4.3 Lithological description 29
4.3.1 General information 29
4.3.2 Geological Summary 29
4.4 Hydrocarbon indications 39
4.5 Geological result 40
4.6 Formation pressure 40
4.6.1 Reservoir pressure summary 41
4.7 Leak off test 45
4.8 Formation temperature 45
5 Drilling Report 53
5.1 Rig move and positioning 53
5.1.1 Summary 53
5.1.2 Experience / recommendations 53
5.2 36” hole section 54
5.2.1 Summary 54

5.2.2 Experiences / recommendations 55
5.3 17 1/2" hole section 57
5.3.1 Summary 57
5.3.2 Experiences / recommendations 57
5.4 8 ½" hole section 59
5.4.1 Summary 59
5.4.1.1 Well testing operations 59
5.4.2 Experiences / recommendations 60
5.5 Permanently Plug and Abondment 62
5.5.1 Summary 62
5.5.2 Experiences / recommendations 62
5.6 Directional data 63
5.6.1 Survey listing 63
5.7 Operational experience 64
5.7.1 Operational listing 64
5.8 Figures and tables 65
5.8.1 Well schematic 65
5.8.2 Time vs depth curve 66
5.8.3 Timeplanner 67
5.8.4 Bit record 68
5.8.5 Bottom hole assemblies (BHA) 69
5.8.6 Drilling fluids summary 70
5.8.7 Cementing summary 71
5.8.8 P&A well schematic 72
5.8.9 Wellhead system 73

Appendix 1: Wellsite sample description
Appendix 2: Core descriptions
Appendix 3: Info til OD, Grunn gass

Enclosures: Composite log
Formation evaluation log
Pressure evaluation log

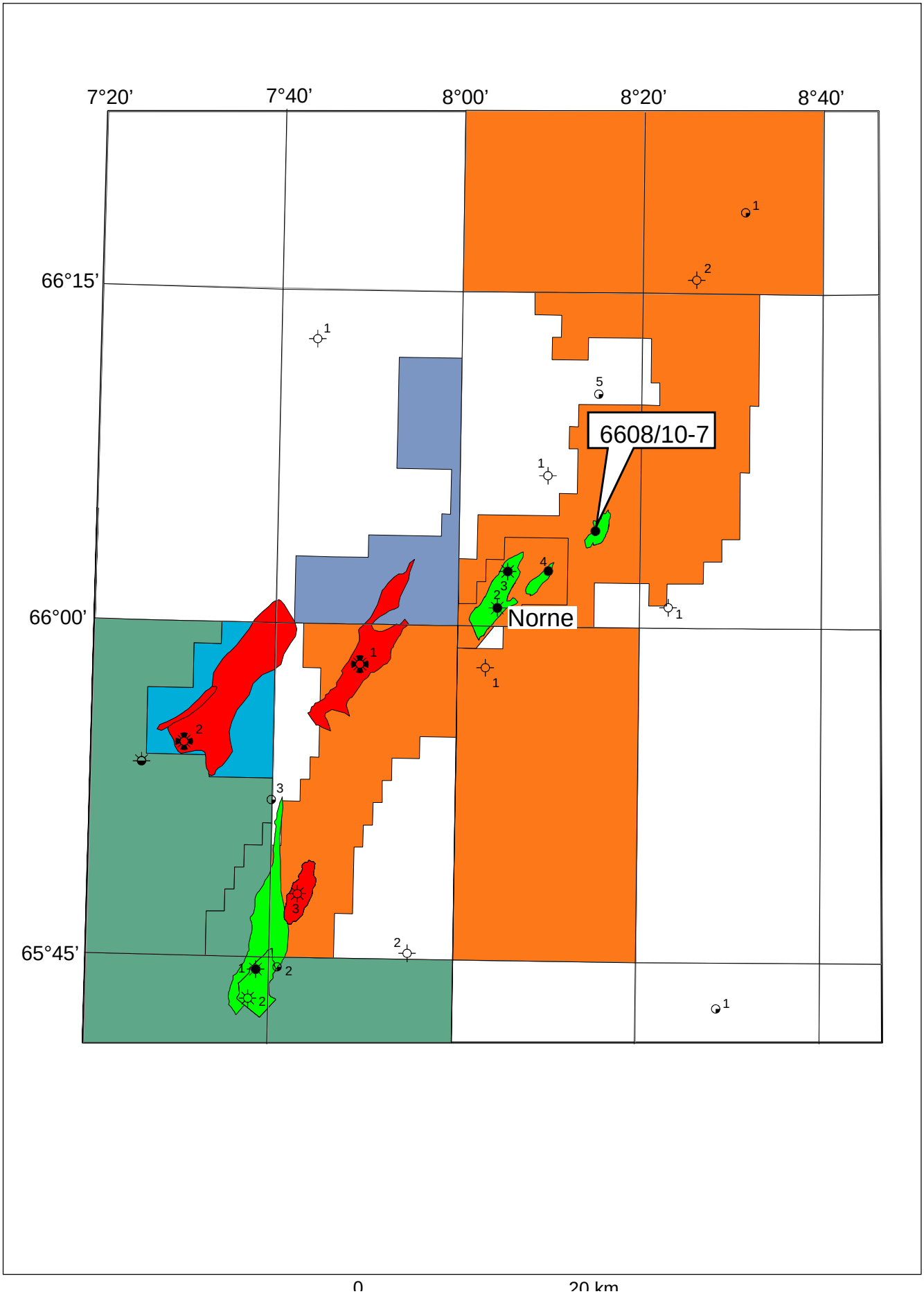
1 General well data

1.1 Well data record

Well name	:	6608/10-7
Type of well	:	Appraisal
Prospect	:	Svale
Country	:	Norway
Area	:	Nordland II
License	:	PL 128
Licensees	:	Statoil ASA 65%
		Norsk Hydro 13.5%
		Norsk Agip 11.5%
		Enterprise Oil 10%
Drilling unit	:	Borgland Dolphin
Type	:	Semi submersible drilling rig
Water depth	:	377 mMSL
Air gap	:	31 m
On license	:	26.03.01
Rig release	:	23.05.01
Formation at TD	:	Åre Formation
Geographic co-ordinates	:	66^{o} 04' 41.50" N
		08^{o} 14' 43.28" E
Datum/Spheroid	:	ED-1950 / Int. 1924
UTM	:	UTM Zone 32, CM 09^{o} E
		7 329 017N
		465 853E
Seismic location	:	Seismic survey ST9301, Inline 2448, Crossline 2344

All depths in this report refer to RKB (Rotary Kelly Bushing) unless otherwise stated.

PL128, Well 6608/10-7
INDEX MAP



1.2 Purpose of the well

The main objective of well 6608/10-7 was to test the extent of hydrocarbons in Upper to Lower Jurassic sandstones in the Melke- and Åre Formation, downflanks of well 6608/10-6, and if possible prove fluid contacts.
Another objective, originally designated to a possible sidetrack of well 6608/10-7, was to perform an interference test in the Åre Formation towards well 6608/10-6. A side track was to be drilled if analysis of formation water samples confirmed high content of Barium. This would demand information about communication towards 6608/10-6 from a position further downflanks than the 6608/10-7 position.

1.3 Result of the well

The well was spudded in a water depth of 408 m and drilled to a total depth of 2319 mMD. No shallow gas was observed by the ROV at the wellhead.

Two reservoir zones were penetrated, the Melke Formation Sandstone member and the Åre Formation. A silty/sandy Not Formation was also encountered, but it did not have the same reservoir quality as the two previously mentioned. The sandstone sequence of the Melke Formation proved to be oil bearing. The main part of the oil bearing reservoir zone was cored. No oil-water contact was encountered. Oil was observed down to 2007 mMD in the Melke Formation. Weak hydrocarbon shows were seen in core chips from the Not Formation. The Åre Formation proved to be water filled up to 2018 mMD.

The water samples proved to have a Barium content lower than the limit set for requiring the sidetrack to be drilled.

The observed formation tops were not in accordance with the prognosis. The difference between the prognosis and the observations for Tertiary and Cretaceous formation tops seem to vary a bit. Typically, the Tertiary and Cretaceous formation tops, as well as the base Cretaceous unconformity were encountered deeper than prognosed. The top of the Melke Formation sandstone sequences, the Not Formation and the Åre Formation were encountered shallower than prognosed, but within the given uncertainties. (Ref. Fig. 4.3)

1.4 Well history

1.4.1 Casing

Table 1.1

Casing	Shoe depth	Leak Off Tests
30"	468 mMD RKB	
13 3/8"	1305.6 mMD RKB	1.56 g/cc

1.4.2 Sidewall cores

No sidewall cores were taken in this well.

1.4.3 Conventional cores

Table 1.2

Core no.	Cored interval (m)	Recovered			Barrel length	Date	Comments
		interval (m)	m	%			
1	1955-1973.5	1955-1966.1	11,1	60	27m	17-apr-01	Core Jammed
2	1973.5-1987	1973.5-1987	13,5	100	27m	18-apr-01	Core Jammed
3	1987-1993.5	1987-1993.66	6,66	102,5	27m	19-apr-01	Core Jammed
4	1993.5-1998.3	1993.5-1998.66	5,16	107,5	27m	20-apr-01	Core Jammed
5	1998.3-2024	1998.3-2024.15	25,85	100,6	27m	20-apr-01	Core Jammed
6	2024-2052	2024-2052.2	28,2	100,7	27m	21-apr-00	Full barrel
7	2052-2074	2052-2074	22	100	27m	22-apr-01	Core Jammed
8	2074-2101	2074-2101	27	100	27m	23-apr-01	Full barrel

The results are also summarised in figure 1.2 on the following page.

1.4.4 Mud logging

A standard mud logging unit was used for the well (details in End of Well Report, Baker Hughes Inteq). Cuttings were sampled every 10 m from 1318 mMD to 1850 mMD, and every 3 m from 1850 mMD to 1955 mMD and from 2101 mMD to TD.

Coring success

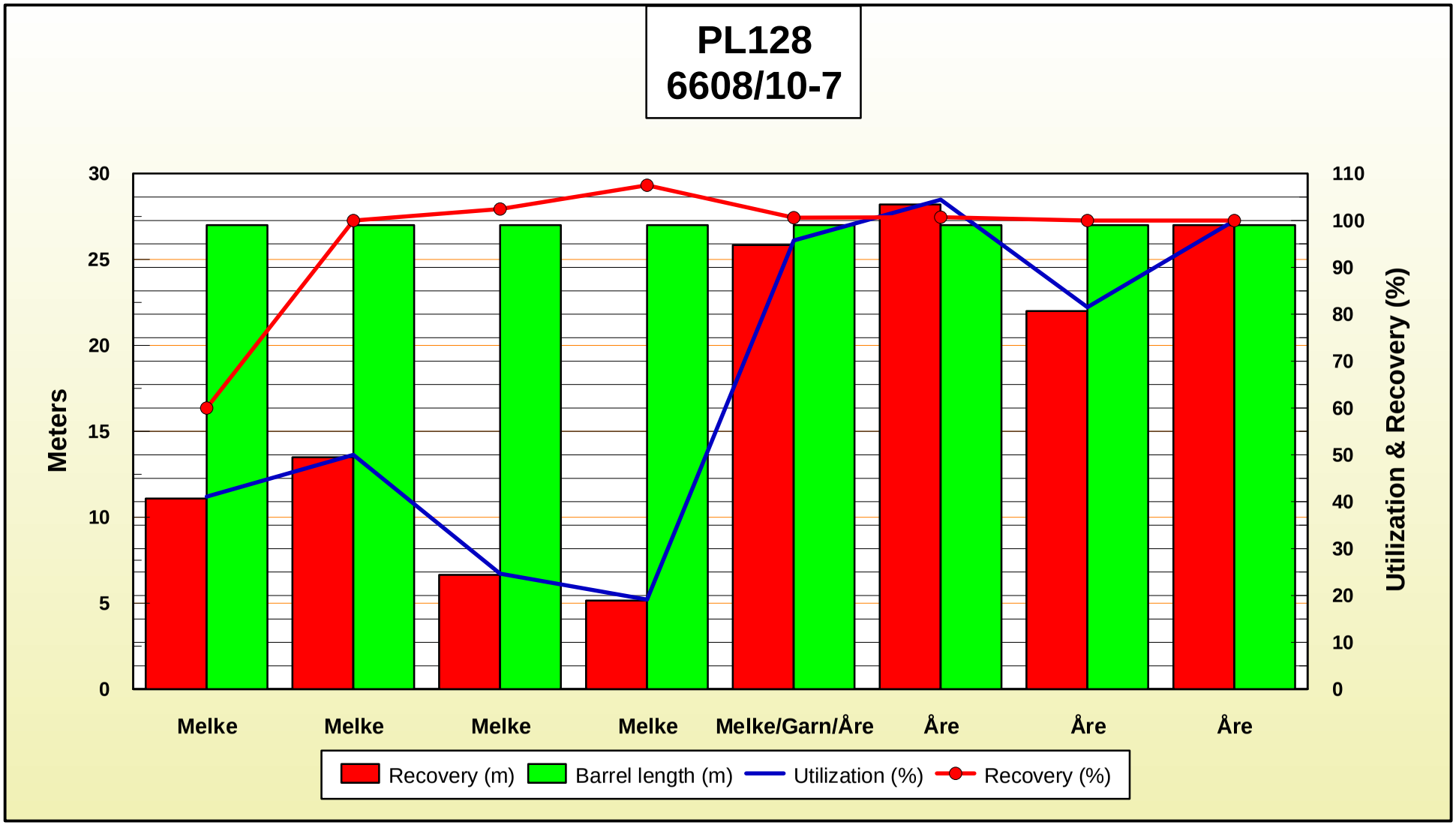


Fig. 1.2

1.4.5 Logging

1.4.5.1 Electrical Logging

Schlumberger was the contractor for electrical wireline logging, except for the VSP, which was run by Read on the Schlumberger cable.

Table 1.3

LOGGING PROGRAM			
#	TOOL COMBINATION	RUN	INTERVAL mMD RKB.
1	PEX/HRLA	1A	2320 - 1305.5 m
2	MDT/GR (pretests+water sample Åre Fm.)	1A	1951.9 - 2248.5 m
3	CMR/ECS/HNGS	1A	2310 - 1790 m
4	FMI/DSI/GR	1A	DSI: 2317 - 780 m (P&S mode in casing) FMI: 2317 - 1790 m FMI-caliper: 2317 - 1305 m (csg. shoe)
5	MDT - GR (sampling attempts and pretests in Lyr Fm)	1B	Sampling failed due to seal+sand problems 3 pretest attempts, 1808.4-1810.6 m
6	MDT - GR - dual packer (Oil and water sample)	1C	1967.8 m (oil sample) 2155.5 m (water sample)
7	ZVSP	1A	2310 - 800m, 104 levels. 6 level delta (4C) tool.

1.4.5.2 MWD Logging

The MWD-logging was performed by Halliburton Sperry Sun. The BAT sonic tool was run in memory mode in the 8 1/2" section as a part of this tool commercial qualification program.

Table 1.4

Run no.	Depth interval mMD	Collar diam.	Tool type	Comments
100	465 - 1315	9 1/2"	DGR/EWD/PWD	
200	1276 - 1319	6 3/4"	PWD	PWD to verify XLOT
300	1319 - 1955	6 3/4"	DGR/EWR/PWD/BAT	BAT qualification run
400	1975 - 1988	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
500	1988 - 1994	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
600	1994 - 1998	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
700	1998 - 2025	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
800	2025 - 2052	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
900	2052 - 2074	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
1 000	2074 - 2102	6 3/4"	DGR/EWR-4/PWD	RLL on core barrel for information while coring
1 100	2102 - 2319	6 3/4"	DGR/EWR/PWD/BAT	BAT qualification run

1.4.6 Velocity survey

A zero-offset VSP was run by Read on the Schlumberger cable. Shot 104 levels from 2310 - 800 mMD with a 6 level delta (4C) tool.

1.4.7 Sampling

Table 1.5

No	Run	Depth mMD	Form.	Pumped volume ltr	Draw Down Bar	Fluid	Sampled	Remarks
	1A	2052.2	Åre	352	9	Water	6 x MPSR	
	1C	1967.8	Melke	186	10	Oil	4x SPMC+1x MPSR +1gal	1 x SPMC failed
	1C	2155.5	Åre	214	-	Water	1 x MPSR + 1gal	

MPSR: Schlumberger multisampler chamber 0.45 litre
SPMC: Oilphase single phase sample chamber 0.25 litre

Samples were transferred to transport and storage bottles offshore by Petrotech (MPSR and 1 gallon samples) and Oilphase (SPMC). Petrotech performed sample validation and preliminary analysis offshore. The quality of the oil samples was generally good, with one SPMC bottle failing. The quality of the formation water samples was excellent, with very little contamination from mud filtrate.

Water samples were transferred to PVT, plastic and glass (samples stabilized with HCl acid) bottles. The Melke Formation MPSR oil sample and three SPMC samples were transferred to PVT bottles and the 1 gallon chamber was transferred to a 4 litre PVT oil bottle. These samples were shipped onshore for further analysis. One SPMC sample was flashed offshore for analysis.

2 Exemptions and non-conformances

Exemption from	Report no.	Title
KP 10 - K100, 4.3.10	6608_10_07_01	The XLOT was taken with seawater, however with a 10 m^3 1.30 g/cc bentonite pill at TD for compensation.
KP10 - K110, 4.6.2.2	6608_10_07_02	The perforated interval in Åre will not be squeeze cemented. Regarded as a zonal isolation only.
KP10 - K240, 4.2.5	6608_10_07_03	6 monthly BOP pressure test only to 690 bar (not 1034 max rating of BOP).
Guidelines to drilling regulations, § 35	6608_10_07_04	Tripping without the use of the normal triptank (not enough flowcapacity, damaged pump). Compensated with active pit, and special "Tripping without triptank" procedure.

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

3.1 General HSE objectives

- Operations efficiency higher than 90 %. Obtained - 94 %.
- Zero lost time accidents. Obtained.
- Further safety culture and zero philosophy. Obtained.
- Rest waste less than 30 %. Obtained.
- Service companies to report 30 % of the RUHs, to be representative of the number of personnel onboard. Not met, 6 % reported by service companies, although pushed in all relevant meetings.

Conclusion: Almost all general HSE objectives were met.

3.2 Well specific HSE objectives

- Reduce frequency of falling objects to less than 26 per million working hours. We had 3 incidents during 55 days / 55.000 manhours, representing a frequency of 54, which is approximately as before.
- No unintended spills, and the discharge permit known to all participants. We had 3 spills to sea of hydraulic oil, helifuel and diesel. The discharge permit was distributed to all service provider coordinators and taken up on all monthly HSE meetings as a topic.
- Any job to be a success. For most of the operations this became true. Two exceptions: 1)The spud and the boulder problems had been thoroughly planned and discussed on beforehand. Still we had to respud twice. 2) The Melke production test was a failure due to the unexpected breakthrough of injected seawater to Melke during the Åre injection test.

Conclusion: None of the well specific objectives were met in full.

3.2.1 Synergi reporting

A total of 145 Synergy reports were filed during the drilling of the well.
A general impression is that in addition to the individual reports with recommended corrective actions per incident, a higher level handling (as in the monthly HSE meetings) is necessary in order to catch the broader and root causes for the various events and attitudes.

Number of Synergi reports:	131
Number of these on quality	26
Number of actual HSE / damage	20
Number of potential HSE / Damage	85
Number of incidents in "red" area	0
Number of first aid incidents	3
Number of oil spill incidents	3
Number of falling objects incidents	0 red, 0 yellow, 3 green
Number of lost time accidents	0

2 formal investigations performed.

QRS reports were filed as required by the PRS system, and learnings included in the experience listing.

3.2.2 Experience listing

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Rig move and positioning					
Preparations during rig move	"Lost" time: 10-27	The Drilling Contractor had so many upgrading and maintenance activities to "catch up" on, and therefore the project specific preparations list necessarily was pushed to second priority.	Re-prioritize project specific activities to a bare minimum, focused on the spud section (36" / 30") alone.	Reduced rig rate for rigs under move if the contractor has to perform activities that block proper preparations for operation, that should / could have been done othertimes.	Rig move activity lists 1, 2, 3 and 4
Anchoring	2 - 3	Anchor #3 slip. During tensioning the anchor # 3 slipped. Anchor packed with clay.	Anchor was rerun, and a piggyback put on.	Be ready for piggyback needs for future operations with anchored drilling units in this area.	
36" section					
Drilling / boulders	15	Due to boulders from 420 - 440 m, the hole built angle up to 5°+ from this point on till TD. Two mill-tooth cutters on the 36" HO were lost.	The well was first respudded 15 m to the East. The second hole was also drilled very patient and with max. 1-4 tons WOB from the top, and with a lot of rattling and shaking to get to TD. On the third try (second respud to the West) we made it.	If boulders are experienced in topholes, it seems like the best solution is to drill a 17 1/2" pilot hole to TD + length of an additional DC, and later opened up with a 26" x 36" holeopener assembly, with a drill collar below the HO to guide along the predrilled hole and add straightening weight. Anderdrift to verify that we follow th pilothole. Consider to use insert teeth on the HO if excessive boulderlayer thickness is expected and known in area.	Ref. Updated detailed procedure 3.4.01

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Drilling / reaming		Made several attempts to reduce the angle build up by reaming the hole after each single, and wiper tripping, but this gave none or very little effect.	Reaming and wiper tripping does not seem to give any effect once an (too high) angle is established. The angle reading variations during the first 20 - 30 m penetration seems quite inexplainable, however, if proper (boulder) drilling parameters are maintained (low WOB, slowly increaing flow), the angle at TD might still be OK for conductor running. Even the 17 1/2" pilot hole quickly built angle to 1.75 - 2 degrees, but drilling practices kept this level until at bottom of section.	If the hole build angle above 2.5° in the top part, consider to respud well immediately. The rate of success with dropping the well back to vertical after reaming seems very low.	
Drilling / inclination measurements	48	The **Anderdrift** tool and the bulls eye used were the 2.5 - 3 degree range. This was not conclusive enough to show that the real angle at TD and seabottom was above 5 degrees. **Single shot** surveys were inconclusive (movements?) or failures / misruns.	Ran 0 - 5 degree bulls eye on ROV as verification.	Anderdrift tool should be set in the 0 - 5 degree range in boulder areas, and read every 5 m. It is not to be expected to be able to "correct" for a bad hole by pulling the conductor sideways using the rig.. Single shot equipment should be verified in good condition before operations, however, blurred pictures to be expected due to movements in string.	Ref. 30" Decision tree, developed and refined for this operation 4.4.01.
Drilling / cementing		Tried to release weight on 30" in order to possibly release running tool early and save time; but conductor started tilting immediately, from 0.75 to 1.75 degrees with 2 tons weight still held in string.	Back to existing policy: Reestablished tension in running string and held 30" in tension and moved rig aft port during cement set-up (8 hours).	Existing standard policy seems smart, ref. 30" decision tree in well database.	

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
17 1/2" section					
Drilling / BHA	6 - 9	Semi-controlled drilling rate (31 - 26 m/hr overall, 39 m/hr drlg). The section was drilled and steered with motor BHA, mill-tooth bit and high flowrate (4500 lpm), and controlled parameters in order to stay as vertical as possible in order to hit small target.	The section consisted of very soft formations, and was drilled problemfree in 29,5 hours. Steering brought the well back to almost bull's eye in relation to originally planned spud location at TD of the 17 1/2" section, as intended for maximum target tolerances.	If high ROP is a target in this section in future wells (which was not the primary target this time), it should be drilled with a powerful motor and as high flowrate as possible. The dirctional control needed was obtained by the used drilling parameters (max WOB limit, and steering intervals).	
Drilling / Holesize	1	Drilled out 30" with 17 1/2", verifying shoe track cement passage every meter drilled.	Carefull verification of free passage by moving pipe every meter drilled.	No problems later with 30" shoe track, verifying that this method of drilling 17 1/2" hole out of a 30" will cause no problems.	
Drilling / wiper trip	5 - 6	Tight spots around 1150 - 1050 m and 870 m (as for quite a few of the offset wells) was experienced when POOH.	A wiper trip was performed prior to running the 13 3/8" casing. 1 m fill.	Wiper trip should notbe necessary if the section is drilled with high flowrate (4500 lpm), and no indications of poor hole cleaning are experienced when pulling out of hole.	
Casing running	3 - 4	Difficult to get gastight connections properly made up on first attempts due to rig and casing movements in open sea, and sensitive connections	Had to rerun (re-connect) 71 connections on the 13 3/8" casing, the worst one 7 times.	Careful evaluation if gastight connections are needed. Guiding system for casing through splash zone / open sea. If weather conditions had been worse, considerable time could have been lost trying to run casing. This time we were lucky and had reasonably calm weather. First class conditions required, and well prepared pipe to be sent offshore is important, ref. also 7" liner connections comments.	

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Cementing / Halliburton SSR cmt. head	2-4 hrs drilling extra cmt.	Observed no indication of dart shearing top plug even after displacing 1.5 of theoretical landing string volume. Tagged cement and top plug 20 m too high.	Displaced the rest with the mud pumps, and the expected pressure was observed. Stopped displacing after theoretical volume minus landing string volume to avoid over displacing.	Reference is made to Halliburton report.	
8 1/2" section					
Marine / BOP	7	Snapped blue pod wire due to failure to operate winch during lowering of BOP	BOP pulled back out and re-run after blue pod wire was reconnected..	Procedural failure. The failure was put on Dolphin downtime.	
Marine / BOP	8	Leaks in K/C line stabs in support ring. Support ring fell down till taut tension wire, due to icing.	Straightened up support ring and secured to slip joint, again. Tested again, found still leaking. Identified ice as the cause.	Will be taken care of in the cold climate procedure for Borgland Dolphin.	
Drilling / extended LOT & MWD ECD	3	An extended LOT equal to 1.60 g/cc leak off pressure for the 1. cycle and 1.56 g/cc for the 2. cycle was performed. Breakdown pressure 1.94 g/cc. Least horizontal stress 1.49 g/cc.	1.56 g/cc was set as the LOT / fracture reopening pressure and upper limit for the ECD while drilling. The MWD ECD showed values up to 1.50 SG after 70 m of drilling (large OD of 5 1/2" drillpipe).	The XLOT test was performed with seawater with a 10 m^3 bentonite pill at TD.	
Drilling / BOP	luckily no lost opr. time	Re-classified to 690 bar (up from 345 at Statfjord drilling).	Semi-annual pressure test originally intended to be 1035 bar according to requirements, however, this was reduced to 690 bar, to cover maximums needed for Norne completion later in 2001.	Do not test BOPs to more then needed semi-annual pressures, as long as reclassification is only to perform an upgraded pressure test.	
Calsium carbonate weighting material	Improved sampling environment	In order to avoid sulphate contamination of the formation water, calsium carbonate, $CaCO_3$, was used as weighting material	The choice of weighting material proved a success, and it is also assumed that the problem free logging and sampling later was due to the good properties of the weighting material.	Use in future where high quality water samples are a must, and the logging and sampling program is quite heavy. Max potential 1.30 g/cc.	

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Drilling / bits	improved hydraulics	Vortex nozzles bit gave good hydraulics and clean bit. No whirl, no vibrations, no plugging.	Onsite optimization engineer offshore during this drilling, and potentially saved a quarter of a day by improved surveillance and on rig communication	Similar bit / surveillance recommended for future wells.	
Drilling / bit balling	1	One instance of bit balling tendency at 1450 m.	Lifted off bottom, spun string at 200 rpm, work bit, circulate and clean before continuing.	Active surveillance needed to spot such tendencies, Drilling Optimization Engineer onboard spotted this.	
Drilling / BHA / LOT	4 - 8	High ECD coupled with the XLOT results of fracture reopening level of 1.56 g/cc at shoe, cause a lot of extra circulation and cleaning and holding back on the circ. rates	Drilled slower, circulation stops, used lower than maximum hydraulics. Drilling rates overall drilling varied between 40 - 25 m/hr, on bottom drilling ROP was 36.7 m/hr.	Future 8 1/2" sections should if possible from a rig logistics standpoint be planned for 5" drillpipe drilling, not 5 1/2" with 7 1/4" tooljoints.	
Drilling / Tripping	? 4 - 8	Flow capacity of return line from bell nipple to trip tank too low	Special procedural tripping precautions, using an active pit and mud pump on booster line, flow checking during trips, and accepting slower tripping speeds than should be.	Needs to be fixed for future drilling operations.	
Formation evaluation / Sampling	2	Forgot to circulate tritium in together with sodiumtiocyanate (unclear if both tracers were needed)	Circulated in tritium in an extra circulation before coring.	Specify clearer in the program that BOTH tracers are needed for proper sample quality evaluation	
Coring / bits	Lost at least 3 runs, 1.5 days	First 4 cores jammed off, after 5 - 12 meters. First bit "pushed" too far due to no-jam expectations (causing lost recovery). Aggressive 8 and 9 bladed PDC core bits are unsuited in this area's shaly and interbedded loose sands. Third run "bit was kind of balled".	After 4 cores changed to less aggressive Tripax bits, with good success, higher ROP, higher recoveries and full core barrels. memory MWD / GR / Res / PWD data were collected duringcoring and gave valuable stratigraphc information for further detailed planning. Ref. special coring efficiency analysis. All cores cut with glasfiber inner barrel, after long discussions of fluted aluminium versus glasfiber relative advantages.	The use of less aggressive Tripax corebits proved beneficial for these formations at this shallow depth, no vibrations, no balling. ROP equal to and higher than (!) PDC core bits, up to 10 - 11 m/hr. PDC core bits should only be used when geological certainty of uniform sand and thickness are reasonably high.	

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Drilling / stuck pipe	1 - 15	Drilled from below reservoir to TD without any problems and high ROPs in 8 1/2 hours. Tight spots encountered through reservoir when RIH for core 7, and during POOH from final TD. Stuck 22 minutes on one occasion.	Worked hole, wiper trip backreaming to the 13 3/8" shoe. Reduced mud weight to 1.26 g/cc (when sticking was believed to be differential), later increased back to 1,30 (diagnosis: clay swelling and instability). Stable hole.	During drilling the ECD had been much higher than 1,26 g/cc on the formation, 1.28 - 1.30 g/cc seems lik a good weight for these formations.	
Formation Evaluation					
MDT logging		Lost MDT pressure seal with Martineau probe during sampling at 2052,2 m on run # 1.	Changed to large diameter probe and finished sampling with good results. Sampling at 2019.2 m failed due to loss of seal and sand in pump (formation related).		
MDT Logging		Lost MDT pressure seal with Martineau probe during sampling at 1808 - 1811 m on run # 5.	Both types probe had problems due to loss of seal and sand invasion (formation related).		
VSP logging	1 ?	Noise and distubing sounds created by crane operations backloading supply boat.	Slower than planned logging. Delay backloading.	Do not plan for crane operations or noisy operations during VSP logging over side of rig.	
Åre injection test		Higher injection pressure needed than simulated (295 bar / 2500 lpm)	Accept situation and continue injecting. All systems pressure tested to 345 bar.	Analyse scenarios where the flowpath may take other directions when applying varying injection pressures.	
Testing / Pressure requirements	5	Due to well design, and wellhead extension rated to only 274 bar, we could not test the whole well to the requiret DST pressure testing requirements of 345 bar.	We used an RTTS tool in the clean-out assembly and tested the 13 3/8" top section to 225 bar, and below to 345 bar.	Important to remember for test pressure planning.	
Testing / Tubulars	10	Leaking 4 3/4" drillcollars with damaged box ends, beveled out.	Laid out six DC joints and replaced them, also laid out 2 ea PH6 joints during preinspection onboard.	Better inspection required. Use DCs with extra seal element for testing	

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Melke production test	4 days	Well not flowing on it's own power. Produced injected seawater from Åre formation.	Discontinue production test. GR / CCL log run to verify the perforated interval.	Test Melke in 6608/10-6R2 well.	
Casing and cementing					
Liner / Running	1 - 2	Halliburton 7" shoe run on liner plugged up at 1850 m. Normally Weatherford 7" liner shoes are used, however, the special liner connections forced us to use a Halliburton shoe, which has a very open nose, and therefore prone to contamination and damage	Extra circulation, up to 80 bar over, and cleaning and short tripping when RIH. Wash and work string down to avoid replugging. Stopped at 2313 m, and decided as OK TD.	Use Weatherford liner cementing shoe until Halliburton shoe is improved.	
Liner / Testing	2 - 3	Could not test 7" liner to 345 bar after cement plug bumping. In normal circumstances it shall be possible to test the liner immediately after cement plug bumping, however, due to too low weight in running string the test failed and had to be done later. Too low weight causes the string to be pumped out during the test.	Postphone liner pressure test untill later, after cement set, as also is normal procedure. Had to run RTTS below wellhead extension to test well to this high pressure later.	Proper Weatherford liner running procedures with enough weight specified and run in the running string. Simulations and running string specifications to be included in running WF procedures. Also heave compensator function during pressure testing accounted for.	
Liner / Connectors	1	7" liner AMS-28 threads were heavily corroded when received onboard the rig. Nine rejects.	The threads were manually ground and brushed and cleaned in order to get them in running conditions. A lot of effort was put into this. This work ensured that only a few joints (still) had to be laid out during running of the string, due to improper shouldering up.	Better shorebase inspection and preparation of "old vintage" casing stock before sending offshore.	

System / event	D-time + lost / quality time, hrs	Experience	Immediate solution	Solution recommended	Ref.
Liner / Running	1	Could not get deeper than 2313 m (TD was 2319 m)	Lay out drillpipe and set liner where it stopped. Fill probably washed loose as we were pumping into the hole to avoid blocking the Halliburton shoe.	Use Weatherford shoe. Always have a minimum acceptable setting depth ready.	
Abandonment / Cementing		Used sponge wiper balls to clean cementing strings after pumping cement plugs	Seemed to work fine. No problems.	Recommended for future operations as well.	
Abandonment / Cutting and retrieving	6	MOST tool of Weatherford cut and retrieve system could not engage wellhead due to locking arms on MOST packed with swarf, could not retrieve immediately after cut.	Run in with ABB CART wellhead retrieving tool and pulled wellhead and casings stubs.	MOST tool need to be redesigned to better cater for swarf, in order to save an extra trip. Agreed and ongoing with Weatherford.	

3.2.3 Time distribution

Distribution of down time	Hrs	Cause of waiting time	hrs
Statoil operations (1)	42,5	WOW (anchor handl, cond running, testing)	24,5
Dolphin (4)	29	WOC (30" in tension)	8.5
Sperry MWD (comm. cable)	1		
Halliburton Testing (bad DCs, LV XO)	11		
TOTAL D-TIME	83,5	**TOTAL W-TIME**	33

Activity parameters	Days	Hrs	%
Budget time (2) (excl. Melke production test)	51,4		
Actual time (3) (of which 17.5 days testing)	55,1		
Days ahead of Budget (51.4 + 10 - 55.1=)	6,3		
Total D+W-time		116,5	6
Op. factor / Efficiency = $\frac{TotalTime-DownTime-WOW}{TotalTime-WOW}$			94

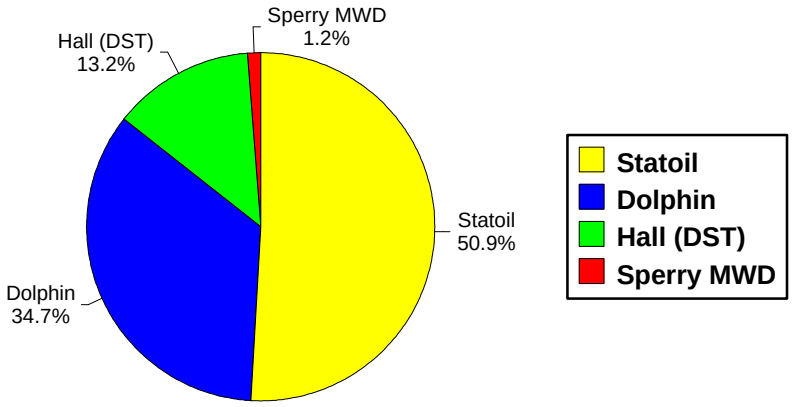
(1) includes respud 1 and partly 2 of 36" hole (40.5 t), extra circulation due to adding thiocyanate (2).

(2) original budget time of 51.4 days included the potential sidetrack downdip for injection, which due to good sampling practices did not have to be drilled. Budget time did NOT include sailing time from Statfjord to location, which must be distributed over Norne / Svale activities later, 26th March 06:00 - 28th March 20:00, 62 hours. Budget time did NOT include Melke testing, later budgeted to 7-10 days.

(3) includes everything on the well, anchoring, drilling, logging, coring, injection testing Åre and production testing Melke, abandonment. Total DST time for Åre and Melke DSTs was 17.5 days. Excludes travel time from Statjord, 62 hours.

(4) includes HTV, Drillview, LTV, cement manifold, broken pod wire during running, rerunning BOP, K/C lines testing, dropped slip joint support ring and had ice on C/K stabs, wire on shute, TDS gearbox, broken hydraulic hose, snapped wire, guide roller, wash pipe on TDS.

Downtime 6608/10-7



4 Geology and formation data report

4.1 Geological setting

The structural framework on the Dønna Terrace was established during the Upper Jurassic/Lower Cretaceous extensional tectonics in the region. Later structuring is mainly related to the Cretaceous and Tertiary basinal subsidence. The prospect is defined on a gently dipping fault block. The structure has faults on three sides, but is open to the north.

Block 6608/10 is situated in the southern part of the Nordland II area. The NE-SW trending Revfallet Fault Complex separates the block in two structural provinces; the Nordland Ridge and the Dønna Terrace. Well 6608/10-7 is located in the SE part of the block 6608/10.

Well 6608/10-7 penetrates rocks of Quaternary, Tertiary, Cretaceous and Jurassic age. TD is in rocks of Jurassic age (Åre Formation).

4.2 Stratigraphy

The chrono- and lithostratigraphy in the well are given in Figures 4.1 and 4.2, respectively.

4.2.1 Table of Chronostratigraphy

The stratigraphical division is based on the biostratigraphic report and on correlation with nearby wells.

Table 4.1.

Stratigraphic succession		mMD	
		From	**To**
Tertiary	Pliocene - Upper Miocene (top not seen)	1410	1500
	Middle Miocene - Lower Miocene	1500	1560
	Upper Oligocene	1580	1600
	Upper Eocene	1610	1620
	Middle Eocene	1630	1640
	Lower Eocene	1650	1720
	Upper Paleocene	1730	1770
---------- Stratigraphic break ---------			
Cretaceous	Upper Cretaceous	1770	1770
	Lower Maastrichtian	1780	1790
	Middle Campanian	1800	1810
	---------- Stratigraphic break ---------		
	Upper Barremian	1820	1880
	Lower Barremian	1886	1898
---------- Unconformity ---------			
Jurassic	Upper Jurassic	1904	
	Lower Kimmeridgian	1907	1910
	Upper Callovian	1910	1913
	Lower Callovian - Upper Bathonian	1913	1918
	Lower Bathonian	1918	1946
	Upper Bajocian	1949	1985.5 (c)
	Lower Bajocian	1987.4 (c)	1990.5 (c)
	Upper Aalenian	1992.9 (c)	1993.6 (c)
	Middle Aalenian	1996.7 (c)	2017.7 (c)
	---------- Stratigraphic break ---------		
	Lower Pliensbachian	2019.7 (c)	2030.0 (c)
	Upper Sinemurian	2034.7 (c)	2183
	Lower Sinemurian	2189	2261
	Lower Hettangian	2273	2303
	TD	2319	

4.2.2 Table of lithostratigraphy

Table 4.2

Table of lithostratigraphy					
Period	**Group / Formation**	**Observed depth**			**TWT**
		mMD	**m TVD**	**m MSL**	**sec.**
QUATERNARY	NORDLAND GROUP. (Sea Floor)	408	408	377	511,7
TERTIARY	Naust Formation	709,5	709,5	678,5	
	Kai Formation	1 408,5	1 408	1 377	1372,7
	HORDALAND GROUP	1 529	1 528,5	1 497,5	
	Brygge Formation	1 529	1 528,5	1 497,5	1467,1
	ROGALAND GROUP	1 602	1 601,5	1 570,5	
	Tare Formation	1 602	1 601,5	1 570,5	1554,0
	Tang Formation	1 744,5	1 744	1 713	1677,6
CRETACEOUS	SHETLAND GROUP	1 763	1 762,5	1 731,5	
	Springar Formation	1 763	1 762,5	1 731,5	1712,0
	CR. KNOLL GROUP	1 802,5	1 802	1 771	
	Lyr Formation	1 802,5	1 802	1 771	
JURASSIC	VIKING GROUP	1 902	1 901,5	1 870,5	
	Melke Formation	1 902	1 901,5	1 870,5	1825,0
	Melke Fm, Sst mbr	1 947,5	1 947	1 916	
	FANGST GROUP	2 007	2 006,5	1 975,5	
	Not Formation	2 007	2 006,5	1 975,5	
	BÅT GROUP	2 018	2 017,5	1 986,5	
	Åre Formation	2 018	2 017,5	1 986,5	1900,0
	TD	2 319	2 318,5	2 287,5	

4.3 Lithological description

4.3.1 General information

System, Series and Stage: Partly based on biostratigraphy and partly on log interpretation and correlation.

Lithology: The lithological description is based on the cuttings and cores descriptions, see Appendix I - III.

Depositional environment: Based on biostratigraphic and regional reports. The depths are in meters with drill floor as datum unless otherwise stated.

4.3.2 Geological Summary

NORDLAND GROUP 408 - 1529 mMD (377 - 1497.5 mTVD MSL)
The Nordland Group comprises the Quaternary, the Naust and the Kai Formations. The upper part of the Nordland Group, including Quaternary and the major part of the Naust Formation, was drilled with all returns to the seafloor. Lithology down to 1308m is inferred from the recorded Sperry-Sun MWD memory log.

Naust Formation 709.5 - 1408.5 mMD (678.5 - 1377 mTVD MSL)
System: Tertiary

The most of the Naust Formation was drilled with returns to the sea floor and it is interpreted from the MWD logs and information from the offset wells.

The boundary to the overlying Quaternary sediments is picked below a slight undulating feature on the resistivity log, consistent with previous wells in the area. The MWD logs suggest that the predominant lithology in the Naust Formation is claystone, slightly sandy and silty in parts, with no distinct sandstone units. The lower part of the formation consists of claystone and sand.

Cuttings were described below 1318 mMD.
The claystone is medium grey to slightly greenish grey and occasionally pale yellow brown grey towards the base. The claystone is very soft to soft, amorphous, silty to sandy with occasional very fine carbonaceous specks. It is also slightly to very calcareous and hygroturgid.

The sand is generally seen as loose quartz which is very fine to coarse, though becoming more medium grained. The quartz grains are clear, transparent, milky white, translucent, occasionally smoky and rarely orange red. The sand is poorly sorted, angular to subangular, occasionally subrounded and generally becoming more subangular. There are occasional metamorphic rock fragments and pebble fragments which are generally dark grey, black, and medium grey. They are also mottled, very hard, shiny, vitreous in part, and frequently micaceous.

There are traces of shale and forams, pyrite and glauconite.

Kai Formation **1408.5 - 1529 mMD (1377 - 1497.5 mTVD MSL)**
System: Tertiary
Series: Lower Miocene - Lower Pliocene
Depositional environment: Marine, inner, mid to outer shelf

The top of the Kai Formation is picked at a shift in trend to lower resistivity log readings associated with a sharp trough in the gamma ray followed by a higher gamma ray response than seen in the overlying Naust Formation. The Kai Formation consists mainly of claystone with some sandstone in parts.

In the upper part of the formation the claystone is medium green grey and slightly brownish grey. In the lower part the claystone becomes predominantly olive grey to dark brown grey. The claystone is soft to firm, silty in parts and soluble in parts. There are trace to abundant amounts of glauconite specks, traces of pyrite, traces of micromica and it is non calcareous.

The sand is present as loose quartz grains which are clear, transparent, milky white and translucent in colour. The sand is composed of fine to very coarse grains, though it is predominantly coarse to very coarse. It is poorly sorted, angular to subrounded, has moderate to poor sphericity, traces of pyrite and of micromica and is non calcareous. The sand also contains dark green to black glauconite grains, traces of shell and fossil fragments, traces of pyrite and traces of dark grey to medium grey metamorphic rock fragments and pebbles.

HORDALAND GROUP 1529 - 1602 mMD (1497.5 - 1570.5mTVD MSL)

The Hordaland Group is comprised of the Brygge Formation on the Mid Norwegian Shelf.
The top of the Hordaland Group/Brygge Formation is picked at the base of an increasing gamma ray sequence and a slight decreasing trend in resistivity. The gamma log response at the top of the Brygge Formation follows a gradually decreasing trend.

Brygge Formation 1529 - 1602 mMD (1497.5 - 1570.5 mTVD MSL)
System: Tertiary
Series: Upper Oligocene - Lower Miocene
Depositional environment: Marine, mid to outer shelf to upper bathyal

The Brygge Formation consists of claystone with some siltstone and minor amounts of sand.

The claystone is predominantly medium to dark green grey and medium dark olive grey in colour. It is soft to firm with abundant glauconite specks and it is non calcareous.

The siltstone is composed of a pale green argillaceous matrix, it is firm, blocky, predominantly grading to claystone, and it is non calcareous.

The sand is present predominantly as loose quartz grains similar to those seen in the overlying Kai Formation. The grains are clear, transparent, milky white and translucent in colour. The sand is composed of fine to very coarse grains, though it is predominantly coarse to very coarse. It is poorly sorted, angular to subrounded, has moderate to poor sphericity. The sand also contains glauconite, shell and fossil fragments and pyrite.

ROGALAND GROUP **1602 - 1763 mMD (1570.5 - 1731.5 mTVD MSL)**

The top of the Rogaland Group is picked at the base of a high gamma ray sequence. The gamma log response drops abruptly and then follows a gradual decreasing trend in the upper part of the Tare Formation. The resistivity log response is generally lower and more variable in the Tare Formation than in the overlying Brygge Formation. In this well the Rogaland Group consists of the Tare and the Tang Formations.

Tare Formation **1602 - 1744.5 mMD (1570.5 - 1713 mTVD MSL)**
System: Tertiary
Series: Upper Paleocene - Upper Eocene
Depositional environment: Marine, outer shelf

The Tare Formation is composed of claystone and tuffaceous claystone with minor stringers of dolomite, limestone and sand.

In the upper part of the Tare Formation the claystone is medium dark grey to medium dark olive grey. It is soft to firm with abundant glauconite specks. The claystone gradually becomes slightly calcareous, and increasingly more tuffaceous looking from 1630 mMD to 1660 mMD. It then has a pale green grey to bluish grey colour and a slightly waxy appearance.

The tuffaceous claystone is found predominantly from 1660 mMD to 1700 mMD. It is mainly pale to medium green grey to blue grey and moderate brown in colour. It is firm and has a waxy appearance. Below 1700 mMD the claystone has the same characteristics as the claystone above the tuffaceous layer.

The traces of sand are seen as loose quartz grains. The traces of limestone and dolomite are pale grey and brown. Traces of pyrite are also found.

Tang Formation **1744.5 - 1763 mMD (1713 - 1731.5 mTVD MSL)**
System: Tertiary
Series: Upper Paleocene
Depositional environment: Marine, outer shelf

The top of the Tang Formation is picked at an increase in the gamma log response. There is little change in the resistivity log. The Tang Formation consists predominantly of claystone with traces of limestone.

The claystone is predominantly pale green in colour, though it is also pale greenish grey, light grey, brownish grey, occasionally green and there are traces of medium dark grey

claystone. It is soft to firm, and occasionally moderately hard, it is angular, blocky, amorphous and has a waxy appearance in parts. The claystone is glauconitic with traces of micropyrite and rare traces of micromica. It is also non calcareous.

The limestone is white to pale grey, soft to moderately hard, blocky and angular. It is also occasionally chalky, microcrystalline in part with traces of micropyrite.

Traces of sand are seen as loose quartz and traces of pyrite are also present.

SHETLAND GROUP 1763 - 1802.5 mMD (1731.5 - 1771 mTVD MSL)

The top of the Shetland Group is picked at a high gamma ray peak followed by a continuously high, uniform gamma log response interrupted by low gamma troughs due to limestone stringers. The top of the Shetland Group represents a trend shift in the resistivity log response to higher levels than seen in the overlying Tang Formation. In this well the Shetland Group is comprised of only the Springar Formation.

Springar Formation 1763 - 1802.5 mMD (1731.5 - 1771mTVD MSL)
System: Cretaceous
Series: Upper Cretaceous
Stage: Middle Campanian - Maastrichtian
Depositional environment: Marine, outer shelf

The Springar Formation consists of claystone with minor limestone stringers.

The claystone is predominantly pale greenish grey in colour. It is also light grey and becomes medium grey, medium dark grey to brownish grey in the lower part of the formation (at around 1780 mMD). The claystone is soft to firm and occasionally moderately hard, it is angular and occasionally blocky. The claystone is slightly silty in parts, it is also micropyritic, micromicaceous, non calcareous and has traces of glauconite.

Possible traces of brown oil stain are seen in the silty claystone.

The limestone is generally white to pale grey, it is soft, blocky, chalky in parts and grades to marl in parts.

Traces of sand are seen as loose quartz, and glauconite is seen as both grains and occasionally nodules. Traces of pyrite are also found.

CROMER KNOLL GROUP 1802.5 - 1902 mMD (1771 - 1870.5 mTVD MSL)

The top of the Cromer Knoll Group, which comprises the Lyr Formation in this well, is defined by markedly higher resistivity values compared to the Shetland Group. Apart from the possible hydrocarbon effect in the upper 10 m , the resistivity logs read a diagnostic 2-3 ohmm throughout the Lyr Formation. The change in lithological properties is also reflected in the MWD sonic log.

Lyr Formation 1802.5 - 1902 mMD (1771 - 1870.5 mTVD MSL)
System: Cretaceous
Series: Lower Cretaceous
Stage: Lower Barremian - Middle Campanian
Depositional environment: Marine, outer shelf

The Lyr Formation consists of claystone with interbedded sandstone and limestone and dolomite stringers.

The claystone of the Lyr Formation can be divided into an upper non calcareous claystone and a lower calcareous claystone. In the upper part of the formation (down to approx. 1850 mMD) the claystone is varicoloured, generally medium grey, but also pale green grey, green, greenish grey, blue-grey and brownish medium grey in colour. The claystone is soft, very silty and grades to siltstone in parts, it is also occasionally sandy. It is micromicaceous, micropyritic and non calcareous. There are rare traces of faint brown oil stain.

The calcareous claystone found from 1850 mMD to 1902.5 mMD is medium grey to medium dark grey and slightly bluish greenish grey in colour. It is very soft, amorphous, silty in parts and micromicaceous. The claystone is calcareous to very calcareous, and grades to marl in parts. It is also present as pale yellow brown to cream, very soft to firm dolomitic claystone.

The sandstone is composed of clear, milky white and opaque quartz grains. It is very fine to very coarse, moderately to poorly sorted, angular to subrounded and has moderate sphericity.

The limestone is white to pale grey, mostly soft but occasionally hard. In parts the limestone is chalky and marly in texture.

The dolomite is light yellow brown, pale yellow brown, medium to dark grey brown, brownish grey and occasionally greenish grey in colour. It is hard, angular, slightly

argillaceous in part and microcrystalline. The dolomite occasionally grades to dolomitic claystone and also has occasional thin, black, carbonaceous laminae.

Traces of chert are seen which are dark brown, slightly translucent, angular and very hard. There are also traces of pyrite as nodules and occasionally as cubes as well as glauconite.

VIKING GROUP 1902 - 2007 mMD (1870.5 - 1975.5 mTVD MSL)

The top of the Viking Group is picked at a drop in the resistivity log readings associated with an increase in the gamma log response. The Viking Group is comprised of the Melke Formation in this well. The lower part of the Melke Formation was cored (cores #1, #2, #3 and #4).

Melke Formation 1902 - 2007 mMD (1870.5 - 1975.5 mTVD MSL)
System: Jurassic
Series: Middle Jurassic
Stage: Middle Aalenian - Lower Kimmeridgian
Depositional environment: Marine, inner shelf

The Melke Formation can be divided into three parts, an upper section comprised mainly of claystone, middle section comprised mainly of sandstone and siltstone and a lower section comprised of claystone.

The uppermost section of the Melke Formation is composed of claystone with limestone stringers. This extends down to approximately 1950 mMD.

The claystone is predominantly medium grey, brownish grey in parts and occasionally pale yellow brown and cream in colour. It is very soft, amorphous, silty in parts and marly in parts. It is also micromicaceous, micropyritic and calcareous. The claystone is also occasionally medium dark grey to dark grey, firm to moderately hard, angular, non calcareous. The claystone is glauconitic in parts.

The limestone is pale yellow brown and cream, it is soft, occasionally moderately firm, occasionally crumbly, has thin, black carbonaceous laminae and grades to marl in parts.

Traces of sand are seen as loose quartz. They are loose, transparent, clear, and occasionally milky in colour. The sand is very fine to fine, occasionally medium and occasionally coarse grained, it is poor to moderately sorted, is subangular to subrounded

and has moderate sphericity. There are also traces of siltstone which is dark grey, friable, very micaceous and grading to claystone with traces of pyrite which are nodular in parts.

The middle section of the Melke Formation, from approximately 1950 mMD to 1987 mMD, is comprised of sandstone with thin siltstone beds and dolomite stringers.

The sandstone is composed of a very dark grey argillaceous matrix and clear to pale brown quartz grains. The sandstone is silty to fine grained, though predominantly very fine, it is well sorted, angular to subangular and subrounded in parts. It is also moderately silty, non calcareous, loose, friable, contains mica and pyrite, has local carbonaceous specks and no visible porosity.

The siltstone is dark grey brown and varies from soft and crumbly to hard and brittle. It is micromicaceous, carbonaceous, non calcareous, has sandy laminae in parts and locally grades to claystone.

The dolomite is brown to brown grey in colour, microcrystalline, very hard, with pyrite specks and no visible porosity.

The lower part of the Melke Formation, from 1987 mMD to 2008 mMD, is comprised of claystone.

The claystone is dark grey to grey black, firm to moderately hard and fissile in part. It is locally very silty and grades to siltstone in part. It has carbonaceous specks, is micaceous, slightly to moderately calcareous in part and silica cemented in part.

FANGST GROUP 2007 - 2018 mMD (1975.5 - 1986.5 mTVD MSL)

The Fangst Group is underlying the Viking Group discordantly. The top of the Fangst Group is seen as a decrease in the gamma ray readings, the resistivity is lower in the Not Formation than in the overlying Melke Formation sandstone due to the hydrocarbon effect. The Fangst Group consists only of a thin Not Formation in this well. Core #5 was taken in the Not Formation.

Not Formation **2007 - 2018 mMD (1975.5 - 1986.5 mTVD MSL)**
System: Jurassic
Series: Middle Jurassic
Stage: Middle Aalenian
Depositional environment: Marginal marine

The Not Formation consists mainly of siltstone with claystone present at the top and base of the formation.

The siltstone is medium light grey to medium dark grey and brownish grey, very fine grained, grading to claystone in parts. The siltstone is firm, laminated, calcareous and very micaceous.

The claystone is medium light grey, laminated, firm and friable. It is amorphous, calcareous and very micaceous, in parts grading to micaceous siltstone. At the base of the formation the claystone becomes medium dark brownish grey in colour, it is firm, laminated, fissile, micaceous, calcareous in part and has carbonaceous specks.

BÅT GROUP **2018 - 2319 mMD (1986.5 - 2287.5 mTVD MSL)**

The top of the Båt Group is seen as a sharp decrease in the gamma ray log response and also a decrease in the resistivity log readings to a fairly uniform low level in the top of the Åre Formation. The Båt Group consists only of the Åre Formation in this well. Cores number #6, #7 and #8 were taken in the Åre Formation.

Åre Formation **2018 - 2319 mMD (1986.5 - 2287.5 mTVD MSL)**
System: Jurassic
Series: Lower Jurassic
Stage: Lower Hettangian - Lower Pliensbachian
Depositional environment: Marginal marine

The Åre Formation is comprised of interbedded sandstone, siltstone and claystone with occasional coal beds.

The sandstone is medium light to moderate grey in colour and is comprised of clear, light brown quartz grains which are predominantly fine to medium grained, but also are medium to coarse grained in parts. The sandstone also grades to siltstone locally. The sandstone is crumbly in parts to moderately hard in places, is poor to moderately sorted, predominantly loose and the grains are angular to subrounded. There is a clay matrix in parts and traces of mica and pyrite. Locally there is abundant carbonaceous material,

comprised of coal and plant remnants. In places the sandstone is well cemented with no visible porosity. In the more coarser grained sections the sandstone is less well cemented, has good visible porosity and is a very clean sand.

The siltstone is medium grey to brownish grey and brownish black in colour, it is moderately hard to firm, and also soft in parts. The siltstone is laminated, fissile, micaceous, non calcareous and very carbonaceous in parts. Locally the siltstone grades to very fine sandstone and in places it grades to claystone.

The claystone is grey to white grey, moderate grey to moderate brownish grey and greenish grey in colour. The claystone is soft to firm and hard in parts, it is fissile and is in part laminated with more silty claystone. It is also calcareous, micromicaceous, carbonaceous and has traces of pyrite in places.

The coal is black, shiny, blocky and brittle.

Traces of limestone are seen near the top of the formation. They are light grey to white in colour and firm. Trace amounts of pyrite nodules are also seen in the Åre Formation.

TD **2319.0 mMD (2287.5 mTVD MSL)**

4.4 Hydrocarbon indications

No shows occur in the sediments above 1780 mMD. Shows and other hydrocarbon indicators are seen in a 20 mMD section immediately below this depth, which correspond to the top of the Cromer Knoll Group, Lyr Formation, as well as in the sandstone sequences in the Melke Formation. The shows recorded in the Lyr Formation are seen as high gas and resistivity readings as well as direct and cut fluorescence from the cuttings. Shows are recorded in the Melke Formation below 1946 mMD but good shows are recorded from 1955 mMD. The cores were partly bleeding oil and the sediments had an good HC odour and a medium brown oil stain. The direct fluorescence is spotty to even bright yellow to orange. There are a slow to fast streaming white cut fluorescence and a pale yellow cut fluorescence visible in the best sandstones. A yellow white residual fluorescence and an occasionally pale yellow residual fluorescence occur in parts of the sandstone. Below 1994 mMD the shows become weaker and no shows are present below 2018 mMD.

The background gas increased from negligible to ~0.1% when entering the Melke sandstones, with a maximum gas peak of 0.44% at 1954 mMD. In the Åre Formation the background gas is reduced to <0.03%. Major gas peaks are listed in Table 4.3.
For complete gas peak list and details, see Baker Hughes Inteq Final Well Report.

Table 4.3 Gas peaks: (FID)

DEPTH m RKB	GAS %	C_1 ppm	C_2 ppm	C_3 ppm	iC_4 ppm	nC_4 ppm	TYPE	BG %	COMMENTS
1 817	0.06	388	8	13	0	0	F	0.02	
1 890	0.14	809	15	16	8	11	F	0.02	
1 909	0.10	622	11	9	0	5	F	0.06	
1 918	0.17	1 088	26	26	10	15	F	0.06	
1 930	0.10	723	14	10	0	6	F	0.06	
1 936	0.14	1 015	22	16	5	8	F	0.06	
1 946	0.25	1 853	43	30	10	14	F	0.06	
1 954	0.44	3 506	76	50	17	23	T	0.06	
1 955	0.10	587	12	11	5	7	T	0.06	
1 975	0.11	892	26	24	11	14	T	0.04	
1 992	0.14	730	17	16	9	14	F?	0.04	9 ppm C5 as well. (after trip)
1 993	0.10	694	16	15	9	7	F	0.02	5 ppm C5 as well
2 147	0.14	955	12	0	0	0	F	0.02	BG 0.02-0.06%
2 220	0.17	1 331	25	5	0	0	F	0.02	BG 0.02-0.06%

COMMENTS:
Generally gas levels appeared abnormally low. System was checked very thoroughly more than once, including the extraction system. Header box arrangement not the best but limited by header box design.

4.5 Geological result

Refer to Figure 4.3.

The observed Tertiary and Cretaceous formation tops were not in accordance with the prognosis. Typically, the Tertiary and Cretaceous formation tops, as well as the base Cretaceous unconformity were encountered deeper than prognosed. The top of the Melke Formation sandstone sequences, the Not Formation and the Åre Formation were encountered shallower than prognosed, but within the given uncertainties.

4.6 Formation pressure

Figures 4.4 and 4.5 show the estimated pore pressure gradient, extended leak-off test values and overburden gradient from well 6608/10-7. The pore pressure evaluation is mainly based on the sonic log using the Skagen method. Drilling parameter also indicate a similar pressure profile. Pressure data from the MDT log is used in the reservoir section.

The overpressured formations in this area represent the lower part of Tertiary and Cretaceous sections. Most of these formations are poorly developed or not present in the well, and therefore only a minor section with relatively low overpressure was observed.

A normal pore pressure gradient of 1.03 g/cc equivalent mud weight (EMW) is estimated down to approximately 1410 mMD where an increase starts (Figure 4.4). At 1640 mMD the pressure gradient is calculated to 1.19 g/cc EMW which is the maximum pore pressure gradient for the well. From this depth a decline starts and in the shale just above the Melke Formation,Sandstone Member, a gradient of 1.06 g/cc EMW is estimated.

The overburden calculation down to the 13 3/8" casing shoe at 1305 mMD is based on density logs from wells 6608/10-1, 6608/10-5 and 6506/12-1. Density values from well 6608/10-7 are used from the casing shoe to TD.

4.6.1 Reservoir pressure summary

Three MDT runs were performed during the final logging of the well. During the first run, pressure measurements were taken in sands in the Melke, Not and Åre Formations, in addition to collecting a water sample in the Åre Formation The second run unsuccessfully attempted pressure tests in the Lyr Formation and also failed in collecting fluid samples from Melke and Åre Formations due to formation collapse trying both a Martineau probe and a large diameter probe. Eventually the tool experienced pump problems due to plugging with fine sand. To improve the chance of recovering samples, a dual packer module was used on the MDT tool on the third run. An oil sample from the Melke Formation and a water sample from the Åre Formation were successfully collected using this tool configuration. A plot of MDT pretest pressures versus depth is shown in Figure 4.5.

At the top of the Melke sandstone the pore pressure gradient was measured at approximately 1.063 g/cc EMW (203.54 bar at 1951.9 mMD). Linear regression through all good points gave a fluid gradient of 0.089 bar/m (~0.91 g/cc EMW), while a gradient between the top and bottom point gave 0.087 bar/m (~0.89 g/cc EMW). These gradients indicate considerably heavier fluids than the measured density at reservoir conditions from the PVT analysis (0.82 g/cc) made on the Melke oil sample collected at 1967.8 mMD. It must be noted that pretest pressures were taken going up and down in the Melke Formation thereby reducing the accuracy of these pressure measurements and the derived gradients. However, possibly two or more different pressure regimes exist in the Melke Formation and fluid gradients calculated on the basis of the pressure measurements are uncertain. No water zone pressure was available to evaluate oil-water contacts in this formation.

Three attempts failed to obtain reliable pretest pressure measurements in the Not Formation The formation acts as a pressure barrier between the Melke Formation and the Åre Formation, with the pore pressure gradient dropping from 1.061 g/cc EMW to 1.032 g/cc EMW across this formation.

Pore pressure in the top of the Åre Formation was found to be equivalent to 1.032 g/cc EMW. (204.415 bar at 2019.2 mMD). The pressure gradient decreases towards 1.028 g/cc EMW at the bottom. Density measured on water samples indicate 1.037 g/cc at 15 °C, which can be converted to approximately 1.029 g/cc at downhole conditions (207.7 bar and 78.3°C at 2052.2 mMD). Plotting all the pressure points, they line up to form a fluid pressure gradient of 0.0962 bar/m (0.981 g/cc EMW). Gradients calculated over shorter intervals indicate slightly heavier fluids (1.000 to 1.025 g/cc), but still lighter than the measured formation water density. It thus appears that several different pressure regimes exist in the Åre Formation. This was also observed in well 6608/10-6.

Sampling in the Åre Formation started on the first run with the Martineau probe at 2052.2 mMD. Two 0.45 litre MPSR sample chambers were filled, but after pumping 176 litres the seal was lost. The tool was moved to position the large diameter probe at the same depth, and pumping resumed. Clean-up was quicker, apparently benefiting from pumping with the Martineau probe, and after pumping an additional 176 litres the remaining 4 MPSR chambers had been filled. The tool was then moved to 2019.2 mMD to fill the 1 gallon chamber, but sampling was aborted after losing seal and experiencing pump problems. No sample was collected. A dual packer was used for collecting oil samples in the third MDT-run. Four SPMC's, 1 MPSR and a 1 gallon chamber were filled in the Melke Formation at 1987.6 mMD after pumping . One MPSR bottle and one 1 gallon chamber were filled with water in the Åre Formation, at 2155.5 mMD after pumping 214 litres.

The quality of oil and water samples was good. The contamination of the water samples was measured to less than 2.7% for the sample taken at 2052.2 mMD and 2.6% for the sample taken at 2155.5 mMD.

Table 4.4 MDT pretest pressure measurements, Run 1A

FORMATION PRESSURE -MDT WELL: 6608/10-7				**RUN: 1A**			**DATE: 27.04.01 - 28.04.01**			
TEST #	**ZONE NAME**	**DEPTH mMD RKB**	**DEPTH m TVD MSL**	**RES. PRESS (BAR)**	**PORE PRESS (g/cc) ref. RKB**	**HYD. PRESS BEF. (BAR)**	**HYD PRESS AFTER (BAR)**	**MOB. mD/CP**	**TEMP °C**	**COMMENTS**
1	Melke Fm.	1966.5	1935.0	204.94	1.063	253.04	253.03	91.4	44.1	Good
2	Melke Fm.	1971.7	1940.2	205.33	1.062	253.67	253.66	72.6	47.2	Good
3	Melke Fm.	1953.5	1922.0	204.93	1.070	251.33	251.29	0.8	49.0	Not Stable 1.4 cc
4	Melke Fm.	1954.9	1923.4	204.45	1.067	251.51	251.49	5.0	49.3	Not Stable 4.4 cc
5	Melke Fm.	1961.0	1929.5	204.29	1.062	252.16	252.14	149.9	50.3	Good
6	Melke Fm.	1967.5	1936.0	204.89	1.062	252.99	253.00	56.1	51.2	Good
7	Melke Fm.	1972.9	1941.4	205.35	1.061	253.67	253.70	32.5	51.6	Good
8	Melke Fm.	1974.0	1942.5	205.47	1.061	253.82	253.82	36.7	52.1	Good
9	Melke Fm.	1951.9	1920.4	203.54	1.063	251.01	251.01	20.7	51.3	Good
10	Melke Fm.	1954.9	1923.4	-	-	251.41	251.41	-	51.2	Tight, aborted
11	Melke Fm.	1953.5	1922.0	204.12	1.066	251.24	251.25	0.7	51.6	Tight/supercharge , not stabilised, aborted
12	Not Fm.	2008.0	1976.5	207.86	1.056	258.14	258.14	0.3	53.6	Tight/supercharge , not stabilised, aborted
13	Not Fm.	2011.3	1979.8	204.81	1.038	258.57	258.57	0.2	54.5	Tight/supercharge , not stabilised, aborted
14	Not Fm.	2014.7	1983.2	207.17	1.049	259.01	259.01	0.5	54.9	Tight/supercharge , aborted
15	Åre Fm	2019.2	1987.7	204.42	1.032	259.58	259.60	972.4	55.4	Very Good
16	Åre Fm	2033.7	2002.2	205.85	1.032	261.44	261.45	98.1	56.6	Good
17	Åre Fm	2043.0	2011.5	206.81	1.032	262.64	262.65	15.0	57.4	Good
18	Åre Fm	2052.2	2020.7	207.71	1.032	263.83	263.84	397.6	58.1	Very good
19	Åre Fm	2059.5	2028.0	208.42	1.032	264.76	264.76	2805.7	58.7	Very good
20	Åre Fm	2077.8	2046.3	210.21	1.032	267.09	267.10	1635.2	59.3	Very good
21	Åre Fm	2091.0	2059.5	211.48	1.031	268.75	268.75	685.6	59.9	Very good
22	Åre Fm	2118.5	2087.0	214.20	1.031	272.27	272.27	13.8	60.9	Good
23	Åre Fm	2135.5	2103.9	215.90	1.031	274.43	274.43	1897.3	61.6	Very good
24	Åre Fm	2155.1	2123.5	217.56	1.029	276.92	276.93	1281.8	52.4	Very good
25	Åre Fm	2164.5	2132.9	218.49	1.029	278.13	278.14	2503.7	53.3	Very good
26	Åre Fm	2188.5	2156.9	220.76	1.029	281.19	281.19	2123.7	64.3	Very good
27	Åre Fm	2204.5	2172.9	222.30	1.028	283.25	283.26	1370.9	65.1	Very good
28	Åre Fm	2248.5	2216.9	226.62	1.028	288.87	288.88	1456.0	66.2	Very good
	Åre Fm	2052.2	2020.6	207.53	1.031	263.76		15.2		Pressure test before sampling
	Åre Fm	2052.2	2020.6	207.57	1.031	263.81		38.0		New pressure test before sampling
	Åre Fm	2052.2	2020.6	207.67	1.032	263.89		203.8	59.9	Pressure bef. sampling w/large diam. probe
	Åre Fm	2019.2	1987.6	204.33	1.032	259.58				Poor, new pressure test after probe plugging
	Åre Fm	2019.2	1987.6	204.32	1.032	259.59				Large diameter probe, mobility questionable
	Åre Fm	2019.2	1987.6	204.38	1.032	259.63		316	59.6	Good mobility

Number of pretests: 28 + pretests prior to sampling	Good pretests: 21, (+6 before sampling) Tight/supercharge: 7 No seal: 0	No. of samples: 6 x 450cc water samples from depth 2052.2 m. (see Table 1.5 for further information)
Hydrostatic gradient in logging interval: 1.031 g/cc		
Max. pore pressure gradient in interval ref. RKB: 1.07 g/cc		
Min. pore pressure gradient in interval ref. RKB: 1.03 g/cc		

COMMENTS: MDT run 1A pretests were taken using the Large diameter probe. Water sampling at 2052.2 m was started with the Martineau probe (filled 2 x 450 cc). Seal was lost and tool was moved to sample the last 4 x 600 cc bottles with use of Large diameter probe.

Table 4.5 MDT pretest pressure measurements, Run 1B

FORMATION PRESSURE -MDT WELL: 6608/10-7				**RUN: 1B**			**DATE: 29.04.01 - 29.04.01**			
TEST #	**ZONE NAME**	**DEPTH mMD RKB**	**DEPTH m TVD MSL**	**RES. PRESS (BAR)**	**PORE PRESS (g/cc) ref .RKB**	**HYD. PRESS BEF. (BAR)**	**HYD PRESS AFTER (BAR)**	**MOB. mD/CP**	**TEMP °C**	**COMMENTS**
1	Lyr Fm	1814.5	1783.0	-	-	233.35		-		No seal
2	Lyr Fm	1810.6	1779.1	224.20 ?	1.26 ?	232.84	232.86	0.1	53.6	Tight, pressure not stable
3	Lyr Fm	1808.4	1776.9	-	-	232.57		-		Seal failure, pressure build up to hydrostatic
	Melke Fm	1971.7	1940.2	205.00	1.060	253.80		12.0	60.0	Pretest before sampling
	"	1961.0	1929.5	204.16	1.061	252.24		43.3	58.3	Pretest before sampling
	"	1961.0	1929.5			252.32				Pretest before sampling
	"	1960.9	1929.4	204.03	1.061	252.29				Pretest before sampling
	"	1960.9	1929.4	204.03	1.061			20.0		Pretest before sampling
	"	1961.0	1929.5	204.04	1.061	252.16		11.0		Pretest before sampling
	"	1961.1	1929.6	204.05	1.061	252.15		10.7		Pretest before sampling
	"	1961.2	1929.7	204.55	1.064	252.16		11.0		Pretest before sampling
	"	1961.3	1929.8	204.83	1.065	252.19		144.9		Pretest before sampling
	Åre Fm	2155.1	2123.6	217.50	1.029			107.7	67.1	Pretest before sampling
	"	2155.1	2123.6	217.48	1.029					Pretest before sampling
	"	2157.5	2126.0	217.77	1.029					Pretest before sampling

Number of pretests: 3 (+12 pretests before sampling attempts, all of these were good)	Good pretests: 0 (+12 before sampling)) Tight/supercharge: 1 No seal: 2	Number of samples: Sampling did not succeed due to seal / pump problems

Table 4.4 MDT pressure measurements, Run 1C

FORMATION PRESSURE -MDT WELL: 6608/10-7				**RUN: 1C**			**DATE: 29.04.01 - 30.04.01**			
TEST #	**ZONE NAME**	**DEPTH mMD RKB**	**DEPTH m TVD MSL**	**RES. PRESS (BAR)**	**PORE PRESS (g/cc) ref .RKB**	**HYD. PRESS BEF. (BAR)**	**HYD PRESS AFTER (BAR)**	**MOB. mD/CP**	**TEMP °C**	**COMMENTS**
	Melke Fm	1967.8								Oil sample
	Åre Fm	2155.5								Water sample
Number of pretests: 0 (sampling run with dual packer)			Good pretests: -				Number of samples: 1967.8 m (oil): 4 x SPMC-bottles 250 cc (1 inert), 1 x 450 cc bottle, 1 x 1gallon chamber 2155.5 m (water): 1 x 450 cc bottle, 1 x 1 gallon chamber (see Table 1.5 for further information)			

A summary of the collected samples is listed in Table 1.5 in Chapter 1.4.7

4.7 Leak off test

Estimated fracture gradients at the 13 3/8" casing shoe and at the top of the Åre Formation injection interval are plotted in Figure 4.4.

The XLOT at the 13 3/8" casing shoe at 1305 mMD showed a value of 1.56 g/cc EMW. The first cycle indicated 1.60 g/cc EMW, but this value was considered uncertain. Please refer to the XLOT report (XLOT in well 6608/10-7 (Svale 2), Doc. no F&T/200104190001) for further details.

A minifrac test was performed in the perforated interval in the Åre Formation before start of the injection test. This minifrac test indicated a value of 1.60 g/cc EMW. Please refer to the minifrac report (*Minifrac in well 6608/10-7, Doc. no 01D94x0447*) for further details.

4.8 Formation temperature

Based on information from surrounding wells, an average temperature gradient of 4.35 ^{o}C/100 meter is calculated from seabed down to the top of the Melke sandstone at 1947 mMD. Below this depth a temperature gradient of 3.5 ^{o}C/100 meter is assumed. This lower gradient in the reservoir is based on temperature from DST's in the area.

Temperature data have been corrected using the Horner plot technique. Temperature data from the MDT are used, as measurements from thermometers on the logging head appear to be in error. The evaluated temperature agrees with the results from previous wells.

Measured and extrapolated temperatures from wireline logs are listed in Table 4.6, and presented in Figure 4.6.

Table 4.6

Log combination	Depth of measurement mMD RKB.	Recorded max temperature ^{0}C	Time since last circulation hrs	Evaluated temperature
PEX-HRLA	2290	67	15.1	80 °C @ 2168 mTVD MSL
MDT Run 1A	2248.5	66.2	27.1	
CMR	2290	67	49.2	
FMI-DSI	2280	67	61	
MDT Run 1B	2123.6	67.1	75.3	
MDT Run 1C	2155.5	72.4	93.6	

PL 128

RKB - Sea: 31 m

Water Depth: 377 m MSL

Stratigraphy
WELL 6608/10-7

STATOIL

Made by: JG

Date: 04.09.2001

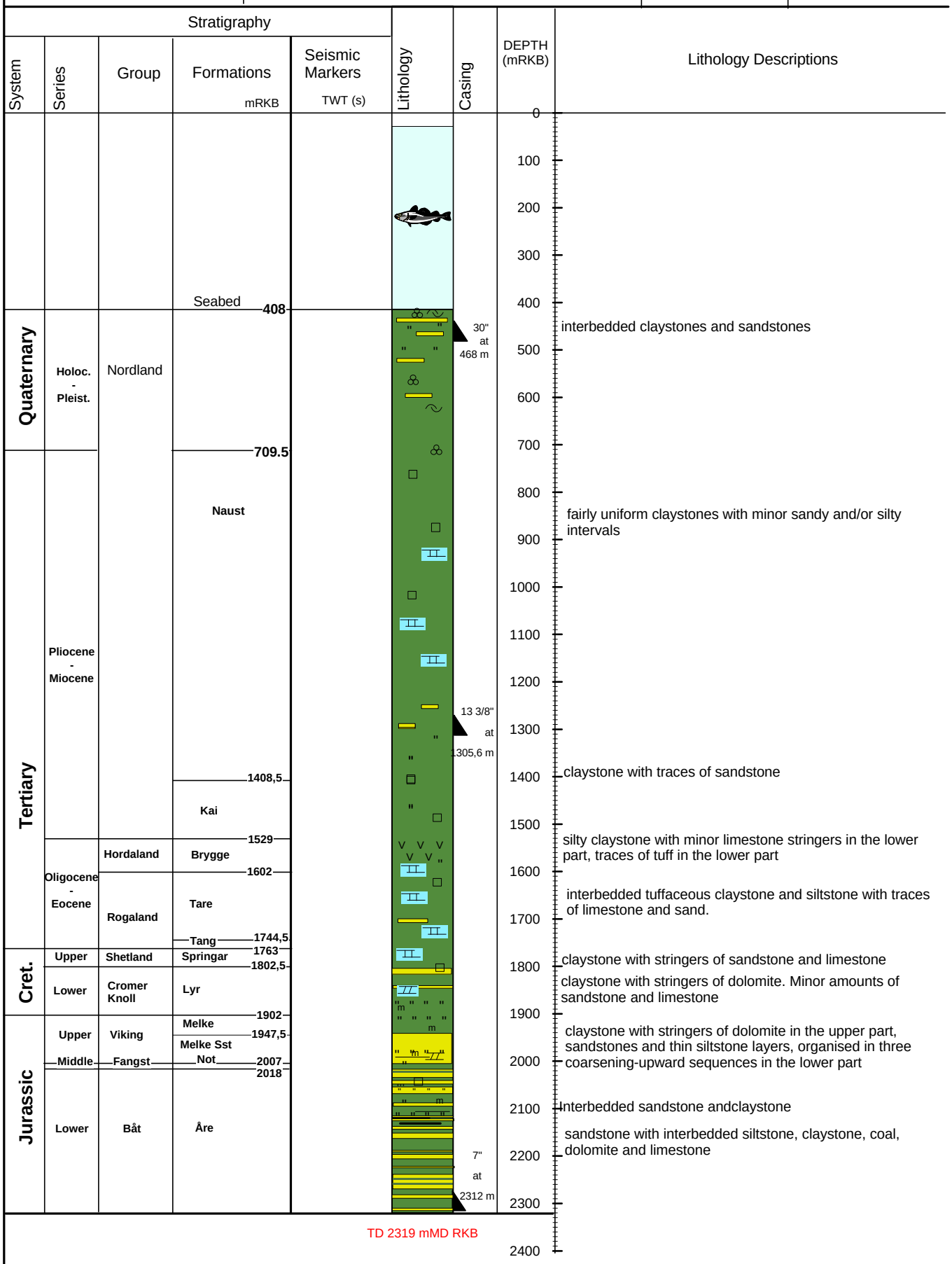


Fig. 4.1

PL 128

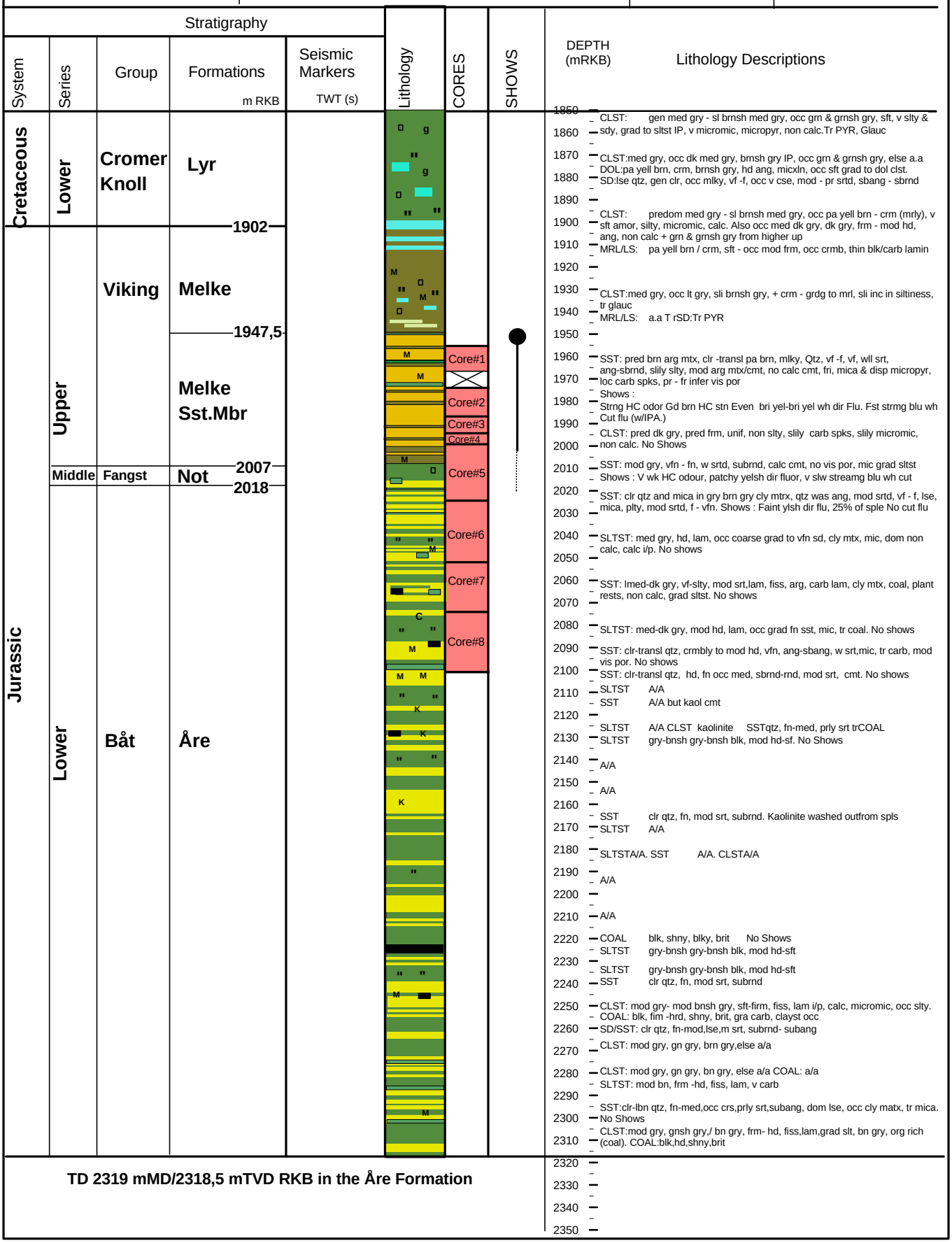
RKB - Sea: 31 m

Water Depth: 377 m

Stratigraphy
WELL 6608/10-7

STATOIL

Made by: JG | Date: 05.09.2001



TD 2319 mMD/2318,5 mTVD RKB in the Åre Formation

Fig. 4.2

PL 128

RKB - Sea: 31 m

Water Depth: 377 mMSL

WELL 6608/10-7

Prognosis vs. actual stratigraphy

STATOIL

Made by: JG

Date: 04.09.2001

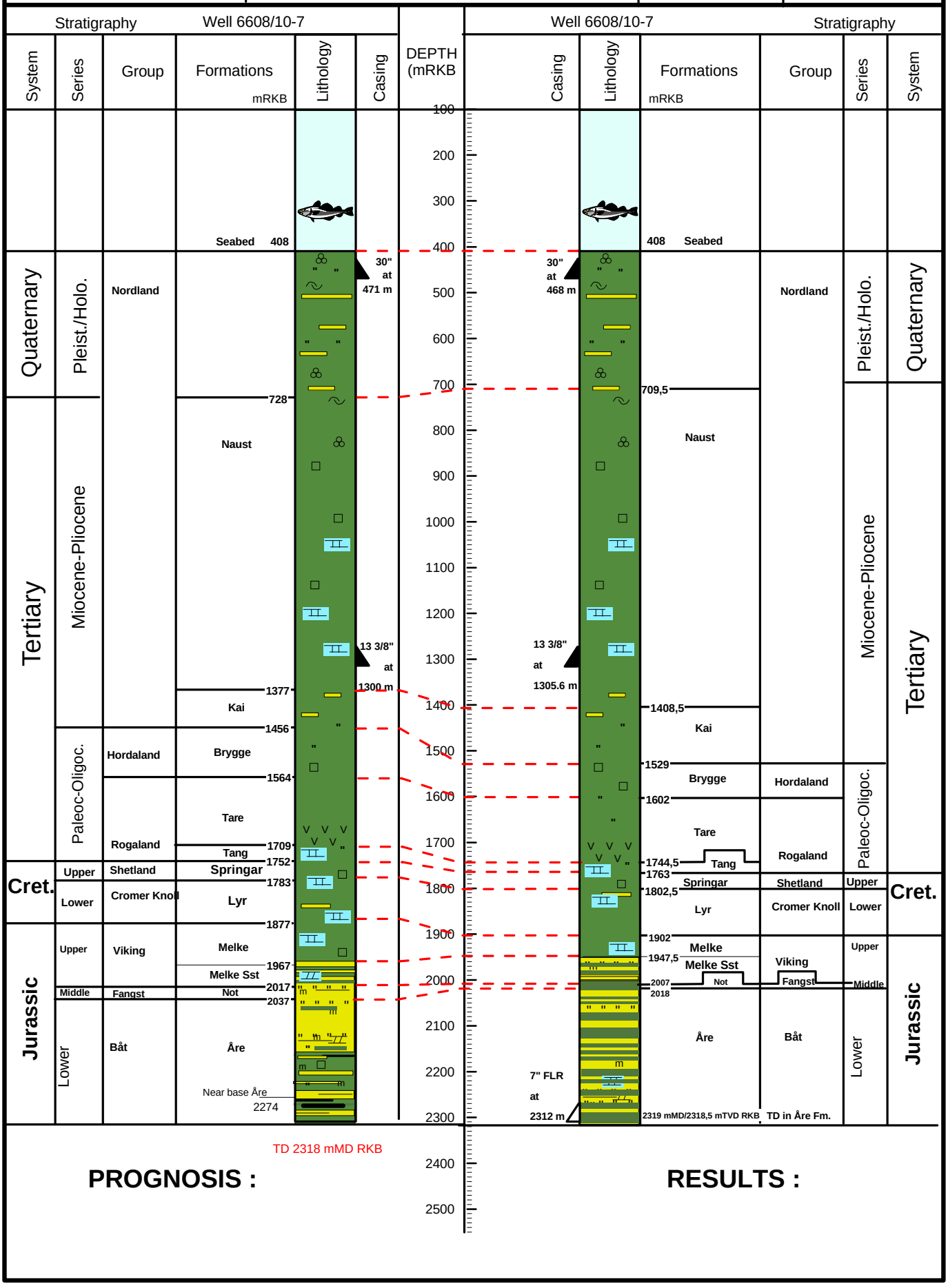


Fig. 4.3

PL 128, WELL: 6608/10-7

RKB - Sea: 31 m

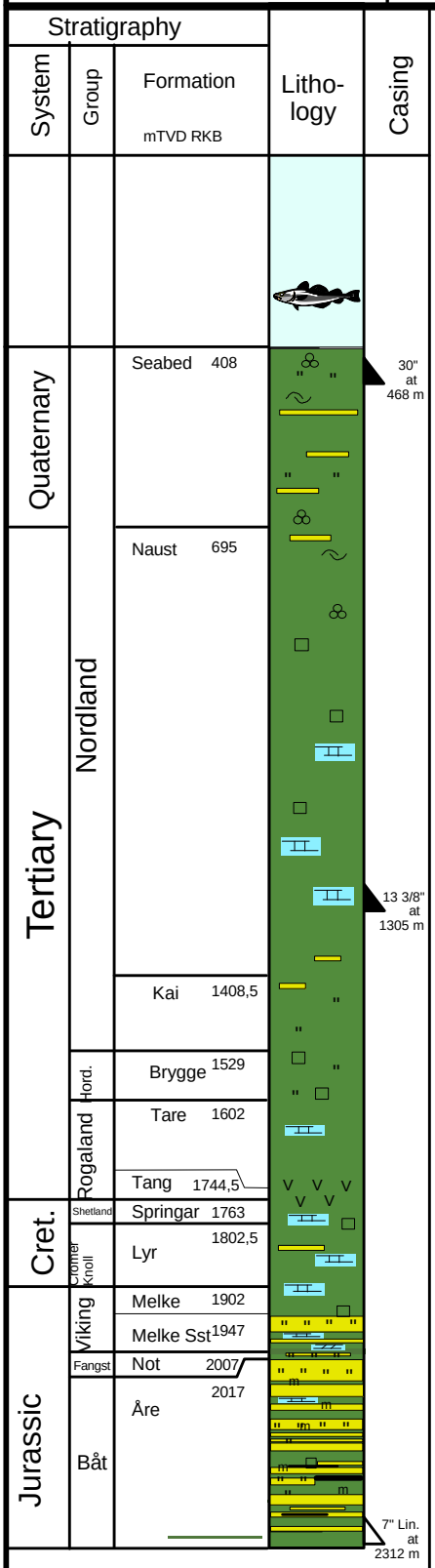
Water Depth: 377 m MSL

Pressure plot
Well 6608/10-7

STATOIL

Made by: PS

Date: 02.11.01



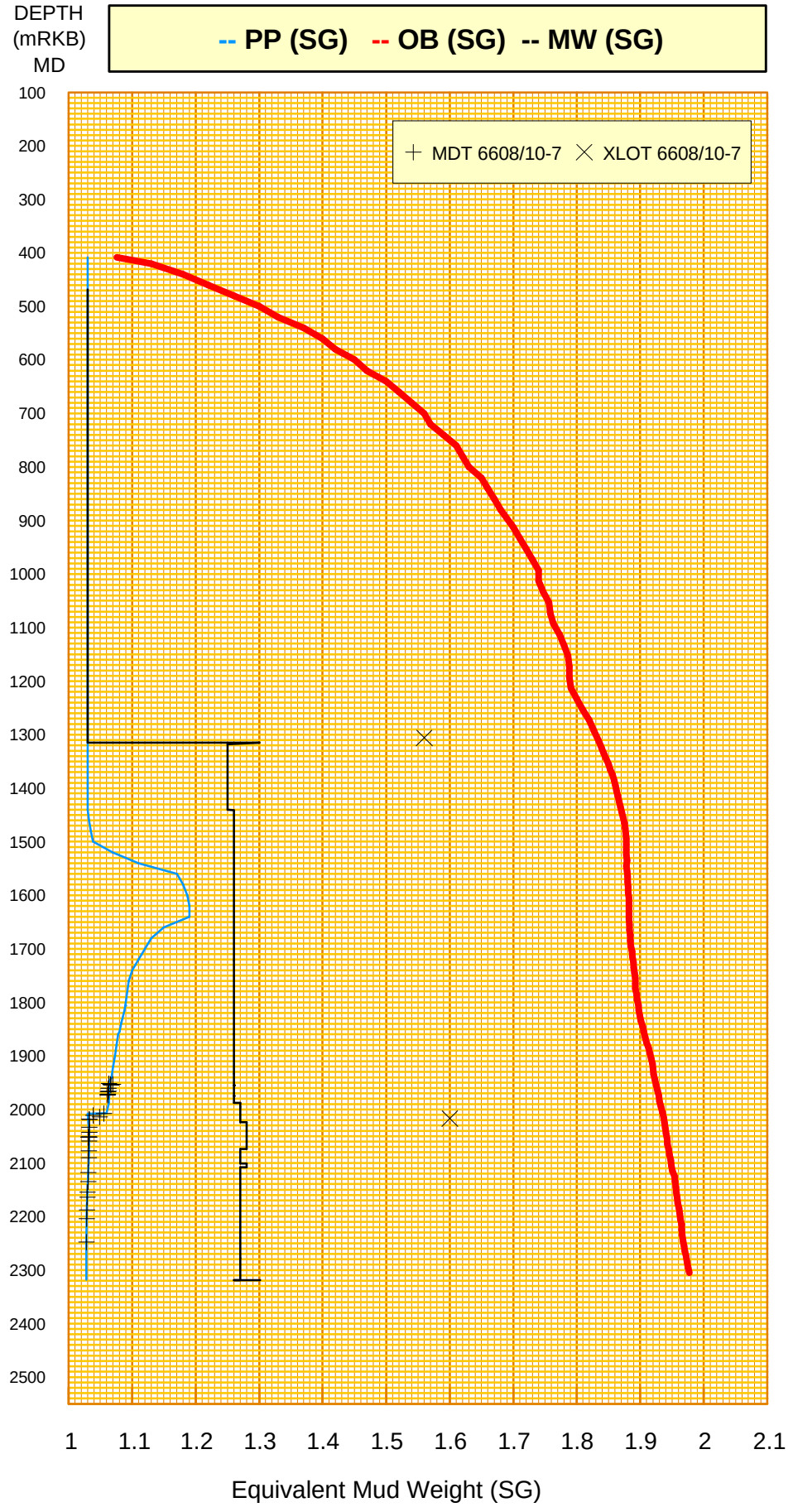


Fig. 4.4

PL 128, WELL: 6608/10-7	Pressure plot Well 6608/10-7	STATOIL
RKB - Sea: 31 m		Made by: PS / Date: 15.11.01
Water Depth: 377 m MSL		

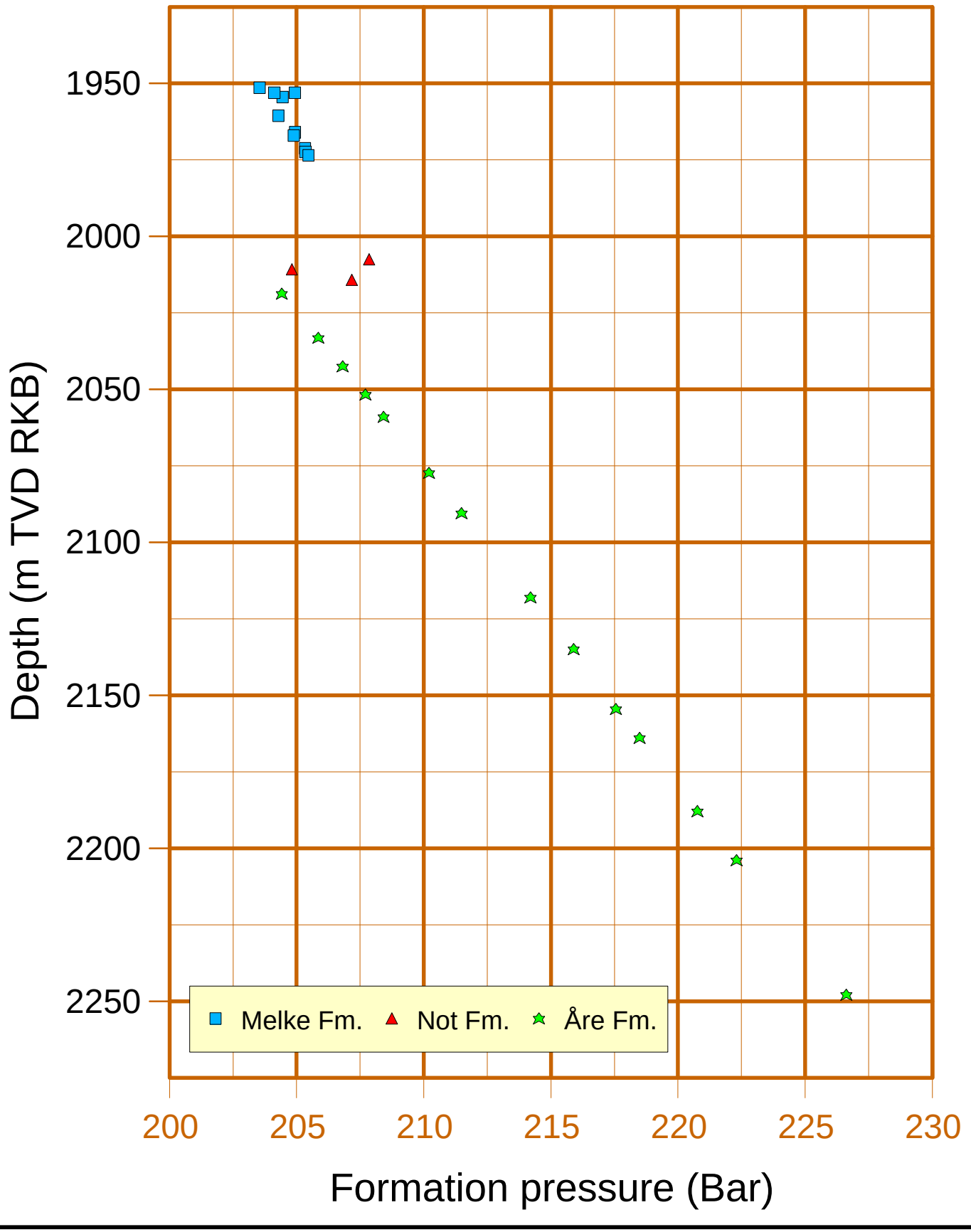


Fig. 4.5

PL 128, WELL: 6608/10-7

RKB - Sea: 31 m

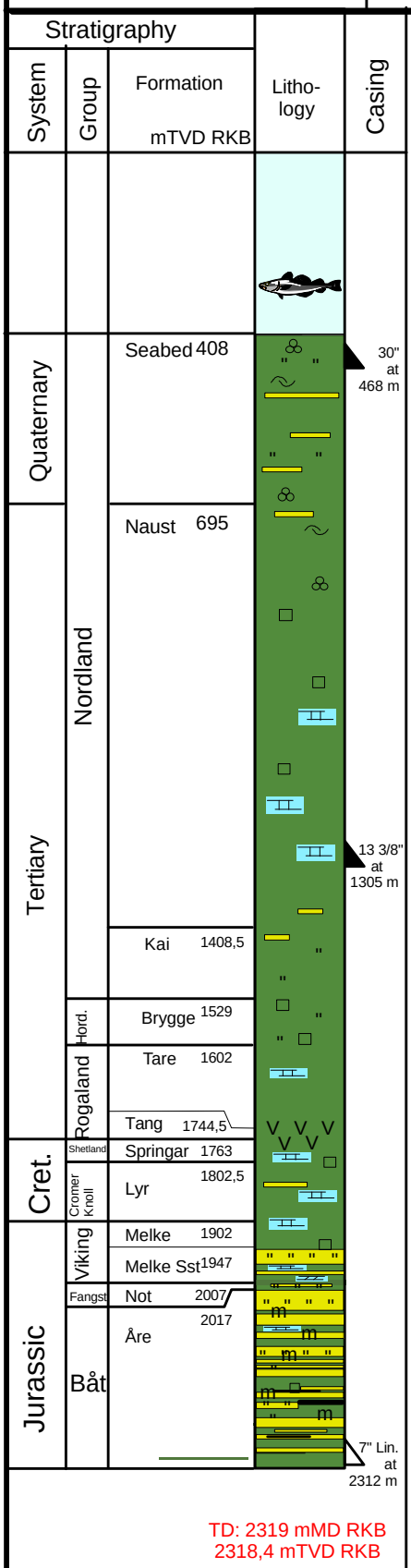
Water Depth: 377 m MSL

Temperature plot Well 6608/10-7

STATOIL

Made by: PS

Date: 02.11.01



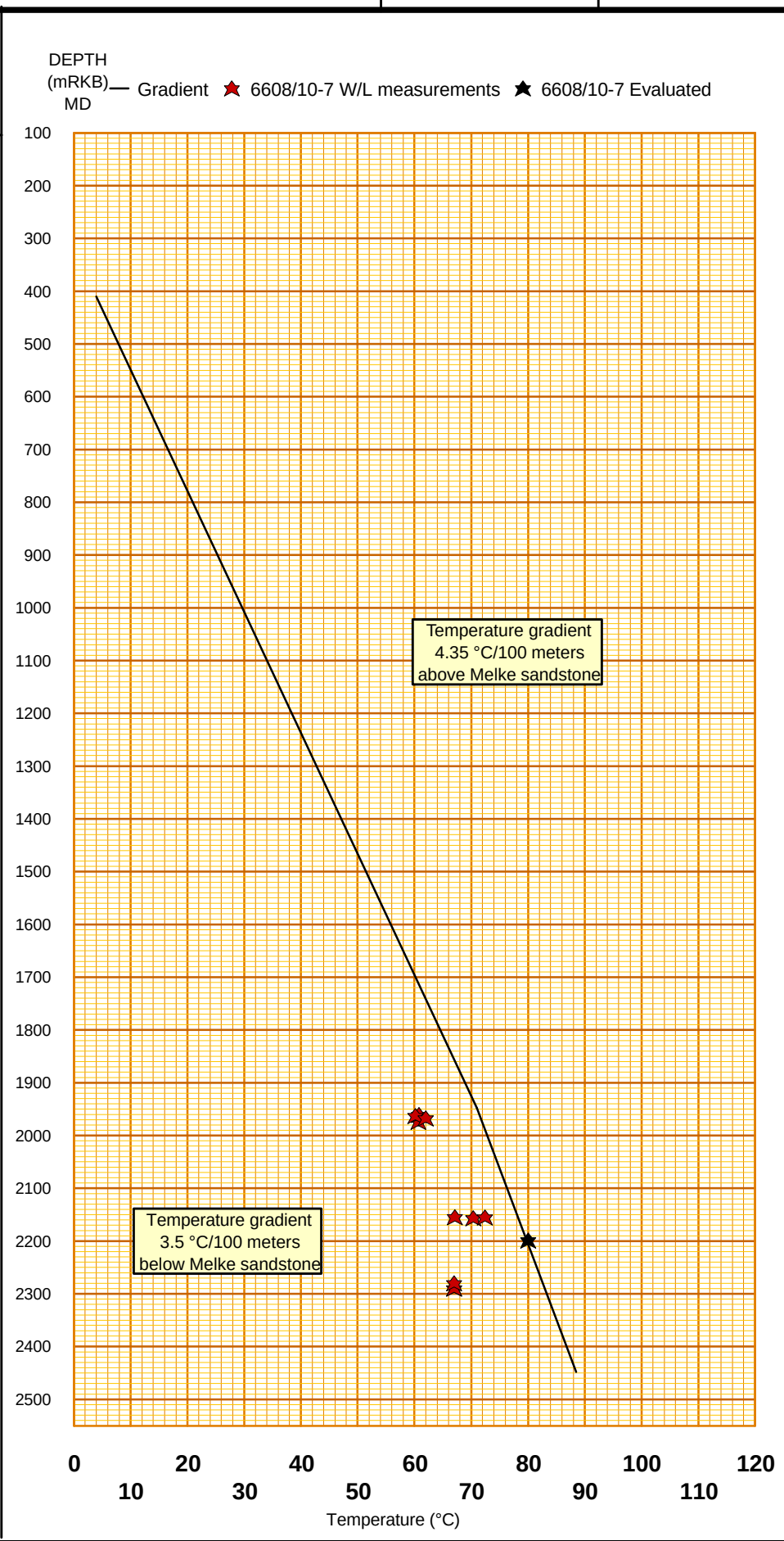


Fig. 4.6

5 Drilling Report

All depths are referred to ***m MD*** if not otherwise stated.

5.1 Rig move and positioning

5.1.1 Summary

Borgland Dolphin sailed/was towed the 329 nautical miles from Statfjord Øst M-template, to 6608/10-7 (Svale), in 62 hours, from 26th March 06:00 to 28th March 20:00, with an average speed of 5.3 nm/hr or knots. During the tow Dolphin had a lot of rig maintenance and upgrading work to do, and therefore the well specific project preparation activities had second priority. Transit speed in deballasted position was up to 6.5 knots, in ballasted position 2.9 - 3.4 knots.

It has been agreed that the time for sailing from and back to Statfjord will be evenly distributed between the Norne and Svale licences according to work performed/time spent on the two licence areas. This distribution will be performed when the Borgland Dolphin activities in the Svale / Norne areas are completed in the Autumn 2001.

The primary anchoring operations at the 6608/10-7 location took 26 hours, with minor BD anchor winch problems during setting of anchor no. 4, and backchasing problems on anchor no. 3. Five hours was also spent on resetting and piggy-backing anchor no. 3. The anchor handling tugs carried 300 (- 400) m of chain in their own lockers. Shackling up the chain took on average 42 minutes for each anchor.

Pulling anchors when leaving the location was performed with excellent efficiency in 8.5 hours.

5.1.2 Experience / recommendations

Ref. Rig Move program, most of the operations went as planned.
See 2.2.2 - Experience listing.

5.2 36” hole section

5.2.1 Summary

First tophole:
Tagged seabed at 408 m. Washed from 408 - 411 m, low inclination 0 - 0.25 degrees. Drilled to 420 m, inclination 1 degree. Drill string stalled out at 422 m, and jumped out of hole after 80 t overpull. Restabbed, string stalled out at 420.5 m repeatedly. Managed to drill to 424 m, string stalled again, pulled free, but tagged bottom 1-3 m higher every time. Reposition for respud.

First respud:
Moved rig 14 m to the southeast of original location, 128 degres. Rearranged marker buoys. Tagged seabed at 407 m, penetrated 2.5 m. Washed down first few meters, drilled to 417 m, 1.25 degrees. Drilled to 436 m, high torque and string stalling out several times. Pulled free 6 times, up to 60 t overpull. Inclination 2.5+ degrees, reamed, still 2.5+ degrees. Drilled to 469,5 m. Displaced hole to 1.30 g/cc drilling fluid. Wipertrip and surveying, all surveys 2.5+ degrees. Drilled to 470 m, 36" at 467.5 m, circulated in 1.30 g/cc drilling fluid. Single shot not conclusive, 2 - 3 degrees. Ran 30" to 467.5 m, washed through tight spots. Moved rig, bulls eye still 2.5 degrees (the Anderdrift measuring interval was 0 - 2.5 degrees). Ran new bulls eye on ROV, all measurements showing +/- 5 degrees. Pulled out with conductor.

Second respud, final well position:
Moved rig 16 m to southwest of original position, 232 degrees. RIH with 17 1/2" drilling assembly, and drilled, reamed and surveyed to 487 m. Inclination increasing from 0.25 to 1.75 - 2 degrees. Displaced hole to 1.30 g/cc drilling fluid. Single shot misrun. Opened hole to 36" by an 17 1/2" x 36" assembly to 481 m, surveys up to 1.25 degrees. Quite some rattling and shaking this time as well, but the assembly made it to TD. Displaced hole to 1.30 g/cc drilling fluid. Wiper trip, no tight spots. Had lost 2 ea rollers off the 36" holeopener. Ran 30" conductor to 468 m, with 2 m stickup. Bulls eye 0.75 degree. Pumped cement, and started to release weight, bulls eye readings increasing to 1.75 degree, held 30" in tension with 0.5 degree inclination for cement to set.

The first tophole and first respud was drilled with a BHA consisting of a 17 1/2" mill tooth bit, a two-stage 26" x 36" IPE mill-tooth hole opener and an (2 1/2 degree) Anderdrift inclination tool. The hole was drilled with sea water in combination with high viscosity pills every 10-15 m. The second respud was drilled with a 17 1/2" pilothole and later 17 1/2" x 36" holeopener assembly.

Even though the visibility was poor with the ROV on the seabed, it was possible to confirm the returns to seabed from the cementing with the ROV.

5.2.2 Experiences / recommendations

See 2.2.2 - Experience listing.

Drilling

- The entire section in both the holes was dominated with hard boulders that caused very low progress compared to other offset wells in the area, although the Falk well, 6608/11-1 experienced similar problems.
  Especially a very hard boulder bed around 420 - 436 m in the first two spuds caused very low progress and very high, erratic torque readings, and high hole inclinations. The problems was not totally unexpected due to the Falk well, however, the precautions taken on drilling parameters were not enough.
  Recommendations:
  a) In the longer term it will pay off to get seismic resolutions and tools to better indicate boulder accumulations in the first 60 - 70 meters below seabed. Then we can better select a problem free spud location.
  b) Before we in the third attempt went to 17 1/2" pilot hole, we were very patient and accepted progress as low as 1-2 m/hr and applied max. 4 tons in the beginning to avoid the bit to "kick off" on the boulders. This is not a bad practice, but it doesn't seem enough on its own.
  c) In known boulder area, drill a 17 1/2" hole first with parameters as above, to a depth allowing a DC underneath as guide when opening up later. Opening up to be done by a 26" x 36" holeopener assembly.

- It is also considered essential to get a vertical start of the hole to get the rest of the hole within 1.5°. This is not easy, hole angle seem to be building very rapidly during the first single.
  Recommendation: Stay patient, keep on drilling with as much pendulum effect as possible.

- In the second hole when the angle started to build from 1.5° and up to above 2.5°, much time was spent trying to reduce the angle by reaming several times on each stand. Little or no effect of the reaming was observed.
  Recommendation: If boulders cause an uncontrolled build up in the start of a tophole, the well should be respudded immediately instead of using many hours on reaming the hole. The rate of success dropping the well back to vertical after reaming is very low.

- Both the bulls-eye brackets broke off. This made it impossible to get a proper angle reading after the conductor was landed.
  Recommendation: Ensure proper communication prior to landing the 30" conductor to avoid incidents of this kind.

5.3 17 1/2" hole section

5.3.1 Summary

A 17 1/2" motor assembly was used to drill directly out of the 30" conductor and to TD of the section at 1315 m. Through the cement free passage was verified every meter. Due to the small target, and the requirement for rotary drilling in the 8 1/2" section, some steering was done in order to line up the bottom 300 m of the 17 1/2" section. The section was drilled with seawater and hi-vis pills every 15 m. ROV and sonar monitoring for shallow gas.

Prior to pull out of hole, the hole was displaced to 1.30 g/cc KCl. Indications of tight hole were worked around 1150 - 1050 m and at 870 m, and a wiper trip to TD performed, 1 m fill. The well was displaced to 1.30 g/cc KCl drilling fluid again. The 18 3/4" wellhead, 20" extension, 20 x 13 3/8" crossover and the 13 3/8" casing string was run directly without any problems to 1305.5 m. Cementing was performed and plug bumped with 135 bar.

The BOP was reclassified / tested to 690 bar, and run. One of the pod wires snapped during running, and the BOP had to be pulled to surface again from 83 m.

5.3.2 Experiences / recommendations

Ref. Drilling Program, most of the operations went as planned.
See 2.2.2 - Experience listing.

Drilling

- No problems were experienced when drilling directly out of the 30" conductor shoe with the 17 1/4" motor assembly, nor when running through the shoe with 13 3/8" casing. Normal practice has been to make an extra roundtrip with a 26" x 17 1/2" holeopener to drill out the 30" conductor shoe.
  Recommendation : Based on the experience from this well, this direct drilling practice can be recommended in wells with similar casing design to save an extra bit trip. To get a "smooth" transition zone, the shoe and the rathole was drilled with a controlled rate in minor intervals, reaming every meter and circulating clean prior to drilling ahead.

- A motor BHA was used in the 17 1/2" section to be able to line up the wellpath due to very small target tolerances in the 8 1/2" section. Because the well was respudded 15 m off the well target, the well angle was steered up to a maximum of 3.5° at 800 m and dropped back to vertical without any problems. The MK1XL motor was set with an AKO of 0.8°, which theoretical should give a dogleg of 3°/30 m. Due to the very soft formations, the motor gave only 1.7°/30m. In rotary mode the BHA was holding.
  Recommendation : Consider to use a motor BHA in this section to achieve a higher penetration rate in addition to be able to adjust the wellpath if small targets makes it necessary.

5.4 8 ½" hole section

5.4.1 Summary

The 13 3/8" casing shoe and 3 m of new formation was drilled with a 12 1/4" bit, and an extended LOT equal to 1.56 g/cc was performed with a 10 m^3 1.30 g/cc bentonite pill at TD. The hole was then displaced to 1.25 g/cc Aquadrill KCl drilling fluid, using $CaCO_3$ as weighting material to keep sulphates as low as possible, and to obtain non-polluted water samples from the formation for barium testing. The 8 1/2" hole was then drilled using a rotary assembly, including the new sonic BAT tool, to core point at 1955 m, limiting the WOB in order not to build angle, and further limiting the ROP to below 20 m/hr from 1850 m due to 3 m sampling. Also high ECD readings due to small clearence between 5 1/2" DP (7 1/4" tooljoints) caused reduced drilling rate. Experienced one instance of bit balling tendencies around 1450 m. The analyses during drilling and coring showed sulpate values between 25 - 59, with the average of 33, which is regareded as extremely good compared to sulphate control in previous wells.

A total of 8 cores were cut in the reservoirs from 1955 m to 2101.5 m.

After the coring was completed, the section was drilled to a final TD at 2319 m. Tight spots at 2175m, 2160 m and 2105 m. Stuck at 2075 m (22 minutes). Reduced drilling fluid weight from 1.27 g/cc to 1.26 g/cc. Wiper trip and backreamning to 13 3/8" shoe. More tight spots going in. Increased mud weight to 1.30 g/cc.

The section was then logged with a total of 6 wireline and pressure point runs, and a VSP. The problem free logging seems to lend an indication that $CaCO_3$ as weighting material gives favourable hole conditions for logging. Result; good data collected, objecives obtained, smooth operations, no lost time.

Ran and cemented 7" liner to 2313 m, top of liner PBR at 1174 m. RIH with RTTS to 444 m and tested well to 345 bar. RIH with cleanout string.

5.4.1.1 Well testing operations

Åre injection test
Performed mini frac and 10.000 m^3 water injection test in Åre, 2069 - 2018 m. The use of gel drasticly reduced the pressure losses and thereby injection pressure initially.

Melke production test
Performed production test from Melke, 1980 - 1950 m. The initial pressure in Melke when initiating the test was 10 bar above the logged MDT pressure. One Halliburton and one Altinex pressure gauge failed. Hard to detect flow when using nitrogen cushion.

5.4.2 Experiences / recommendations

Ref. Drilling Program, most of the operations went as planned.
See 2.2.2 - Experience listing.

Extended LOT

- Prior to displacing the well to 1.25 g/cc Aquadrill KCl mud an extended LOT with seawater in the hole and a 10 m^3 bentonite pill on the bottom was performed. This is a "two-cycled" LOT, and the purpose was to get a better understanding of the formation stresses for future field development. The max break down pressure in the first cycle was equal to 1.94 g/cc, meanwhile the second cycle was equal to 1.56 g/cc.
  This last value is reported as the LOT and was used as the upper limit for the ECD while drilling continued with mud in the hole. At 1600 m the ECD started creeping up towards 1.6 at 1800 m, without any losses, but then it was circulated down to around 1.45 g/cc levels. With the large OD 5 1/2" drillpipe it was not easy to limit the ECD to below 1.50 g/cc.
  Recommendation: The 1.56 g/cc from the second cycle is in theory the pressure needed to open the already initiated crack and is a number between the initial opening pressure and the lowest horizontal pressure.
  When the well has been displaced to mud and started to build filter cake over time again, it seems like the hole will sustain a higher than the 1.56 g/cc, at least up to 1.60 g/cc by proven record in this well, more probably around 1.65 g/cc.
  Operationally it therefore seems like the 1.56 g/cc XLOT value is too conservative.

Coring:

- Based on the experiences from the 6608/10-6 well with very uniform sand, the aggressive ARC422 bit was used in the two first core runs to achieve a high ROP. But the sand was not as uniform as indicated, and both cores jammed off in shaly sands.
  Recommendation: Aggressive bits are unsuited if shaly or interbedded sands are drilled, as it will increase the possibility of jamming off. It should only be used when geological certainty of sand thickness are reasonably high.

Logging:

- Logging with Aquadrill drilling fluid proved an excellent logging fluid. No problems / no sticking / good results.
- Prior to displacing the well to 1.25 g/cc Aquadrill KCl mud an extended LOT with seawater in the hole and a 10 m^3 bentonite pill on the bottom was performed. This is a "two-cycled" LOT, and the purpose was to get reliable formation strength data.

5.5 Permanently Plug and Abondment

5.5.1 Summary

Reference is made to *section 6.11.8 - "P&A well schematic"* and *section 6.11.9 - "P&A cementing program"*.

The Åre reservoir was permanently plugged with an EZSV bridge plug at 2006 m.

The Melke reservoir was permanently plugged and abandoned with an EZSV retainer mechanically set at 1937 m, 16 tons overpull - 10 ton weight set down. A total of 7 m^3 cement was squeezed below the EZSV and into the perforations, and 3 m^3 (150 m) cement left on top of the retainer. This plug was pressure tested to 220 bar.

A hivis pill of 1.26 g/cc drilling fluid was placed from 1450 - 1221 m, and a 10 m^3 cement plug was set from 1248 m - 1063 m across the liner lap. This plug was dressed off and load tested with 10 tons and pressure tested to 110 bar.

Then a 13 3/8" EZSV was run and set, and load tested, at 680 m. The 19 m3 cement was placed on top of the EZSV from 680 - 430 m.

Wellhead was then cut at 413 m, 5 m below the seabed.

5.5.2 Experiences / recommendations

Ref. Abandonment Program, most of the operations went as planned.
See 2.2.2 - Experience listing.

- **Pressure and load tests.** In order to avoid forgetting to load and pressure test the plugs that should be load and pressure tested according to the rules and regulations and requirements, it is wise to include such test requirements in the detailed work plan.
- **MOST tool.** Could not engage Weatherford MOST tool for the pulling of the cut wellhead. Using ABB's 18 3/4" wellhead retrieving tool (CART) fixed the problem.Only 4 tons overpull to get free, 49 ton weight of total wellhead and stubs.

5.6 Directional data

5.6.1 Survey listing

Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
0.00	0.00	0.00	0.00	9.73 S	12.87 W	-9.73	TIE-IN
408.00	0.00	0.00	408.00	9.73 S	12.87 W	-16.09	0.00
468.00	1.28	200.00	468.00	10.36 S	13.10 W	-16.62	0.64
510.90	1.58	202.35	510.88	11.36 S	13.49 W	-17.49	0.21
539.80	1.37	199.86	539.77	12.05 S	13.76 W	-18.09	0.23
568.60	1.01	175.87	568.57	12.63 S	13.85 W	-18.48	0.63
597.30	0.95	179.92	597.26	13.12 S	13.84 W	-18.73	0.10
627.60	0.70	177.63	627.56	13.55 S	13.83 W	-18.96	0.25
684.50	0.62	188.65	684.45	14.21 S	13.86 W	-19.34	0.08
713.70	0.64	187.69	713.65	14.52 S	13.91 W	-19.55	0.02
742.70	1.01	182.00	742.65	14.94 S	13.94 W	-19.80	0.39
771.40	0.96	114.59	771.35	15.29 S	13.73 W	-19.81	1.14
800.40	0.92	114.28	800.34	15.49 S	13.29 W	-19.56	0.04
829.60	1.33	90.30	829.54	15.58 S	12.74 W	-19.14	0.64
858.30	1.79	72.65	858.23	15.45 S	11.98 W	-18.43	0.69
886.80	1.75	78.97	886.71	15.24 S	11.13 W	-17.60	0.21
915.90	2.08	53.67	915.80	14.84 S	10.26 W	-16.66	0.93
946.00	2.54	39.90	945.87	14.00 S	9.40 W	-15.47	0.71
974.10	2.27	40.62	973.95	13.10 S	8.64 W	-14.35	0.29
1003.00	2.72	41.01	1002.82	12.15 S	7.81 W	-13.14	0.46
1031.50	2.82	45.24	1031.29	11.15 S	6.87 W	-11.81	0.24
1061.60	2.61	42.91	1061.35	10.13 S	5.88 W	-10.42	0.24
1090.10	2.77	46.03	1089.82	9.17 S	4.94 W	-9.12	0.23
1118.70	2.84	46.11	1118.39	8.20 S	3.94 W	-7.75	0.07
1148.40	2.80	44.33	1148.05	7.17 S	2.90 W	-6.32	0.10
1175.60	2.80	45.07	1175.22	6.23 S	1.97 W	-5.02	0.04
1204.80	2.96	40.78	1204.38	5.16 S	0.97 W	-3.60	0.28
1233.90	3.07	39.45	1233.44	3.99 S	0.02 E	-2.14	0.13
1263.20	2.16	39.94	1262.71	2.96 S	0.87 E	-0.87	0.93
1293.50	0.82	19.36	1293.00	2.32 S	1.31 E	-0.15	1.41
1345.60	0.69	21.62	1345.10	1.67 S	1.54 E	0.39	0.07
1374.60	0.69	24.07	1374.09	1.35 S	1.68 E	0.68	0.03
1403.30	0.75	26.89	1402.79	1.03 S	1.84 E	0.99	0.07
1430.50	0.72	24.75	1429.99	0.72 S	1.99 E	1.28	0.05
1461.80	0.77	28.43	1461.29	0.35 S	2.17 E	1.63	0.07
1489.90	0.75	32.58	1489.39	0.03 S	2.36 E	1.97	0.06
1517.80	0.72	31.59	1517.28	0.28 N	2.55 E	2.29	0.04
1546.40	0.62	34.74	1545.88	0.56 N	2.73 E	2.60	0.11
1574.90	0.69	32.69	1574.38	0.83 N	2.91 E	2.90	0.07
1604.60	0.54	40.16	1604.08	1.09 N	3.10 E	3.20	0.17

Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1633.10	0.57	47.27	1632.58	1.29 N	3.29 E	3.47	0.08
1662.30	0.50	54.98	1661.77	1.46 N	3.50 E	3.74	0.11
1689.40	0.48	65.59	1688.87	1.57 N	3.70 E	3.97	0.10
1746.50	0.28	127.56	1745.97	1.59 N	4.03 E	4.25	0.22
1775.00	0.33	152.68	1774.47	1.47 N	4.12 E	4.27	0.15
1801.80	0.08	69.52	1801.27	1.41 N	4.18 E	4.28	0.37
1834.60	0.30	86.97	1834.07	1.42 N	4.28 E	4.37	0.20
1863.90	0.09	334.97	1863.37	1.45 N	4.35 E	4.44	0.35
1920.50	0.26	346.24	1919.97	1.61 N	4.30 E	4.49	0.10
1940.90	0.20	19.04	1940.37	1.69 N	4.30 E	4.53	0.21
1978.70	0.30	343.68	1978.17	1.85 N	4.30 E	4.62	0.14
2008.00	0.23	333.74	2007.47	1.98 N	4.25 E	4.64	0.09
2037.20	0.28	6.73	2036.67	2.10 N	4.23 E	4.70	0.16
2066.10	0.35	28.87	2065.57	2.24 N	4.28 E	4.82	0.14
2095.20	0.41	41.90	2094.67	2.40 N	4.40 E	5.00	0.11
2123.90	0.68	26.65	2123.37	2.63 N	4.54 E	5.24	0.31
2152.50	0.56	24.57	2151.97	2.91 N	4.68 E	5.50	0.13
2181.60	0.64	43.24	2181.06	3.15 N	4.85 E	5.78	0.22
2210.90	0.87	55.58	2210.36	3.40 N	5.14 E	6.16	0.28
2239.90	1.26	63.20	2239.36	3.67 N	5.60 E	6.70	0.43
2268.20	1.54	60.77	2267.65	3.99 N	6.21 E	7.38	0.31
2297.20	1.96	55.39	2296.64	4.46 N	6.96 E	8.27	0.46
2306.60	2.07	55.94	2306.03	4.65 N	7.23 E	8.60	0.35

Directional Survey Data

CALCULATION BASED ON Minimum Curvature METHOD

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

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG CLOSURE OF 57.27 DEGREES (GRID)
A TOTAL CORRECTION OF -0.51 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2306.60 METRES
IS 8.60 METRES ALONG 57.27 DEGREES (GRID)

5.7 Operational experience

5.7.1 Operational listing

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
26.03.2001.06:00	00:00	18.0		MNMU	OK		NORMAND BORG TOWING RIG TOWARDS THE SVALE FIELD.
27.03.2001.00:00	06:00	6.0		MNMU	OK		NORMAND BORG TOWING RIG TOWARDS THE SVALE FIELD. ESTIMATED TIME OF ARRIVAL: 28.03.01, 15:00 HRS. AVERAGE SPEED: 6 KNOTS.
27.03.2001.06:00	00:00	18.0		MNMU	OK		NORMAND BORG TOWING RIG TOWARDS THE SVALE FIELD. AVERAGE TRANSIT SPEED: 6.2 KNOTS.
28.03.2001.00:00	06:00	6.0		MNMU	OK		NORMAND BORG TOWING RIG TOWARDS THE SVALE FIELD. STARTED BALLASTING RIG DOWN TO SURVIVAL DRAFT DUE TO WEATHER COND. ESTIMATED TIME OF ARRIVAL: 28.03.01, 21:00 HRS. TRANSIT SPEED AFTER STARTED TO BALLST DOWN TO SURVIVAL DRAFT: 3.4 KNOTS. TOT. AVERAGE TRANSIT SPEED: 6.0 KNOTS.
28.03.2001.06:00	20:00	14.0		MNMU	OK		NORMAND BORG TOWED RIG TO THE SVALE FIELD. AVERAGE TRANSIT SPEED AFTER STARTING TO BALLAST DOWN RIG: 3.4 KNOTS. TOT. AVERAGE TRANSIT SPEED: 5.3 KNOTS.
28.03.2001.20:00	22:30	2.5		MNWW	OK		WAITED ON WEATHER TO START ANCHOR HANDLING.
28.03.2001.22:30	00:00	1.5		MNWW	OK		WAITED ON WEATHER TO START ANCHOR HANDLING. STARTED TO DEBALLAST RIG WHILE WAITING ON WEATHER.
29.03.2001.00:00	03:00	3.0		MNWW	OK		WAITED ON WEATHER TO START ANCHOR HANDLING. CONT. DEBALLASTING RIG.
29.03.2001.03:00	06:00	3.0		MNWW	OK		WAITED ON WEATHER TO START ANCHOR HANDLING. POSITIONED RIG TO PREPARE FOR ANCHOR HANDLING WHILE WAITING ON WEATHER.
29.03.2001.06:00	12:00	6.0		MARU	OK		NORMAND PROGRESS RAN OUT ANCHOR CHAIN # 4. ANCHOR # 4 ON SEABED 09:53 HRS. NORTHERN CORONA RAN OUT ANCHOR CHAIN # 5. ANCHOR # 5 ON SEABED 11:25 HRS.
29.03.2001.12:00	15:00	3.0		MARU	OK		NORMAND PROGRESS RAN OUT ANCHOR CHAIN # 8. ANCHOR # 8 ON SEABED 13:40 HRS. NORMAND BORG RELEASED FROM TOWING BRIDLE.
29.03.2001.15:00	19:00	4.0		MARU	OK		NORMAND BORG RAN OUT ANCHOR CHAIN # 1. ANCHOR # 1 ON SEABED 17:25 HRS. NORTHERN CORONA RAN OUT ANCHOR CHAIN # 6. ANCHOR # 6 ON SEABED 18:23 HRS.
29.03.2001.19:00	21:30	2.5		MARU	OK		NORMAND PROGRESS RAN OUT ANCHOR CHAIN # 3. ANCHOR # 3 ON SEABED 21:01 HRS. NORTHERN CORONA RAN OUT ANCHOR # 7. ANCHOR # 7 ON SEABED 21:10 HRS.
29.03.2001.21:30	00:00	2.5		MARU	OK		NORMAND BORG RAN OUT ANCHOR CHAIN # 2. ANCHOR # 2 ON SEABED 22:00 HRS. PROBLEM HOLDING TENSION W/ ANCHOR # 3. NORTHERN CORONA RESET ANCHOR. STILL PROBLEM HOLDING TENSION W/ ANCHOR # 3.
30.03.2001.00:00	01:30	1.5		MARU	OK		NORTHERN CORONA PULLED ANCHOR # 3 ON DECK. ANCHOR PACKED W/ CLAY. CLEANED ANCHOR.
30.03.2001.01:30	06:00	4.5		MARU	OK		BALLASTED RIG DOWN TO DRILLING DRAFT. RESET ANCHOR # 3. ANCHOR ON SEABED 04:21. RAN PIGGY BACK ON ANCHOR # 3. SURFACE BUOY IN WATER 05:15 HRS. SIMULTANEOUSLY M/U AND RACKED BACK 3 STAND W/ 5" V150 DP. STARTED P/U 5 1/2" DP. STARTED TO PERFORM TENSION TEST ON ANCHORS.
30.03.2001.06:00	07:30	1.5		MARU	OK		PERFORMED TENSION TEST ON ANCHORS. M/U 3 STAND W/ 5 1/2" DRILL PIPE.
30.03.2001.07:30	08:30	1.0		DTPU	OK		M/U 30" CART/RUNNING TOOL.
30.03.2001.08:30	10:30	2.0		DERD	E FAIL		TROUBLESHOT PROBLEM W/ HTV. REPAIRED HTV.
30.03.2001.10:30	11:30	1.0		DTPU	OK		M/U AND RACKED BACK CEMENT STAND.
30.03.2001.11:30	12:00	0.5		DTPU	OK		M/U AND RACKED BACK CEMENT STINGER.
30.03.2001.12:00	13:30	1.5		DTPU	OK		M/U AND RACKED BACK 4 STANDS W/ 5 1/2" HWDP.
30.03.2001.13:30	15:00	1.5		DTDU	OK		P/U 36" HOLE OPENER ASSEMBLY. RIH W/ 6 SINGLES W/ 9.5" DRILL COLLARS. MARKED PIPE 60 M ABOVE MID POINT BETWEEN 36" AND 26" HOLE OPENERS.
30.03.2001.15:00	17:00	2.0		DTDU	OK		P/U AND RIH W/ 6 JOINTS W/ 8" DRILL COLLARS AND 4 STAND W/ 5 1/2" HWDP
30.03.2001.17:00	18:00	1.0		DTDU	OK		P/U AND RIH W/ 18 JOINTS W/ 5 1/2" DRILL PIPE.
30.03.2001.18:00	19:00	1.0	408.0	DTPU	OK		P/U DRILLING PUP AND TAGGED SEABED AT 408 M. PENETRATED 2,5 M.
30.03.2001.19:00	20:00	1.0		DDRU	OK		CHECKED INCLINATION W/ ANDERDRIFT TOOL. INCLINATION 0-0.25 DEG. WASHED DOWN TO 411 M.
30.03.2001.20:00	00:00	4.0	420.0	DDRU	OK		DRILLED TO 420 M (36" HO AT 417.5 M, 17 1/2 BIT AT 420 M). 800 LPM,10 BAR, 40 RPM, 3000-5000 NM, 0-2 TON WOB. CHECKED INCLINATION W/ ANDERDRIFT AT 411 M. INCLINATION 1 DEG.
31.03.2001.00:00	01:30	1.5	422.0	DDRU	OK		CONT. DRILLING 36" HOLE. DRILLED TO 422 M. STRING TORQUED UP AND DRILL STRING STALLED OUT. PULLED STRING FREE W/ 80 TON OVERPULL. DRILL STRING ACCIDENTLY JUMPED OUT OF HOLE.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
31.03.2001.01:30	02:30	1.0	422.0	DDOU	OK		OBSERVED W/ ROV TO STAB BHA BACK INTO HOLE. WAITED FOR VISIBILITY TO IMPROVE. STABBED BHA BACK INTO HOLE.
31.03.2001.02:30	06:00	3.5	423.0	DDRU	OK		RIH. TOOK WEIGHT 418 M. WASHED/ROTATED DOWN TO 422 M. CONT. DRILLING TO 423 M. 5000 LPM, 130 BAR, 70-80 RPM, 3000-8000 NM, 1-2 TON WOB, STRING TORQUED UP AND STALLED OUT SEVERAL TIMES.
31.03.2001.06:00	08:30	2.5	424.0	DDRU	OK		CONT. DRILLING 36" HOLE. DRILLED TO 424 M. 5000 LPM, 130 BAR, 80 RPM, 4-6 KNM, 2 TON WOB. STRING TORQUED UP AND STALLED OUT SEVERAL TIMES. PULLED STRING FREE. WENT DOWN AND TAGGED BOTTOM 1-3 M HIGHER EVERY TIME.
31.03.2001.08:30	09:30	1.0	400.0	DDOU	OK		POOH. CHECKED HOLE OPENER ASSEMBLY W/ ROV. HOLE OPENER ASSEMBLY OK.
31.03.2001.09:30	10:00	0.5	400.0	DDOU	OK		MOVED RIG TO RESPUD WELL.
31.03.2001.10:00	10:30	0.5	408.0	DDOU	OK		TAGGED SEABED AT 407 M. PENETRATED 2.5 M. DEVIATION FROM INTENDED POSITION: 14 M, 128 DEG. REARRANGED MARKER BUOYS W/ ROV.
31.03.2001.10:30	13:00	2.5	417.0	DDRU	OK		WASHED DOWN FIRST METER W/ 36" HOLE OPENER ASSEMBLY. DRILLED TO 417 M. 800 LPM/ 50 RPM, 2 TON WOB. PERFORMED SURVEY W/ ANDERDRIFT AT 407 M. 6 PULSES, INCL. 1.25 DEG.
31.03.2001.13:00	23:00	10.0	436.0	DDRU	OK		CONT. DRILLING TO 436 M. 5000 LPM, 135 BAR, 90 RPM, 5-10 KNM, 5 TON WOB. SWEEPED HOLE W/ HI-VIS PILLS AS REQUIRED. PROBLEMS W/ HIGH TORQUE AND STRING STALLING OUT SEVERAL TIMES IN INTERVAL 422-427 M. PULLED STRING FREE 6 TIMES. MAX 60 TON OVERPULL.
31.03.2001.23:00	00:00	1.0	436.0	DCBK	OK		PERFORMED SURVEY W/ ANDERDRIFT AT 427 M. 1 PULSE, INCL. 2.5+ DEG. REAMED STAND SEVERAL TIMES TO REDUCE INCLINATION. PERFORMED NEW SURVEY: 1 PULSE, INCL. 2.5+ DEG.
01.04.2001.00:00	06:00	6.0	449.0	DDRU	OK		CONT. DRILLING TO 449 M. 5000 LPM, 135 BAR, 80-100 RPM, 5-10 KNM (40 KNM PEAKS), 2-4 TON WOB. SWEEPED HOLE W/ HI-VIS PILLS AS REQUIRED.
01.04.2001.06:00	09:00	3.0	466.0	DDRU	OK		CONT. DRILLING 36" HOLE. DRILLED TO 466 M. 5000 LPM, 135 BAR, 80-100 RPM, 6-10 KNM, 2-4 TON WOB. SWEEPED HOLE W/ HI-VIS PILLS AS REQUIRED.
01.04.2001.09:00	10:00	1.0	466.0	DCAU	OK		SWEEPED HOLE W/ HI-VIS PILL AND CHECKED DEPTH MARK ON DRILL STRING W/ ROV.
01.04.2001.10:00	11:30	1.5	469.5	DDRU	OK		CONT. DRILLING TO 469.5 M. SWEEPED HOLE W/ 15 M3 HI-VIS PILL. DISPLACED HOLE TO 1.30 S.G. BENT. MUD.
01.04.2001.11:30	13:00	1.5	469.5	DCWK	OK		PERFORMED WIPERTRIP TO 10 M BELOW MUDLINE. PERFORMED SURVEYS W/ ANDERDRIFT AT 446 M, 436 M, 426 M, 416 M AND 407 M. 1 PULSE MEASURED ON ALL SURVEYS. INCL. 2.5+ DEG.
01.04.2001.13:00	13:30	0.5	470.0	DDRU	OK		CONT. DRILLING TO 470 M. TD 36" HOLE AT 467.5 M, TD 17 1/2" AT 470 M.
01.04.2001.13:30	14:00	0.5	470.0	DCAU	OK		CIRC. B/U W/ 1.30 S.G. BENT. MUD. DROPPED SINGLE SHOT.
01.04.2001.14:00	16:30	2.5		DTCU	OK		POOH TO 10 M BELOW MUDLINE. TOPPED UP HOLE W/ 1.30 S.G. MUD. CONT. POOH W/ 36" BHA. OVERTORQUED CONNECTIONS ON 5 1/2" DRILL PIPE. HAD TO BREAK W/ RIG TONGS. IN EXCESS OF 90000 FT.LBS B/O TORQUE.
01.04.2001.16:30	17:30	1.0		DTCU	OK		RACKED BACK BHA AND L/D 36" HOLE OPENER ASSEMBLY.
01.04.2001.17:30	19:30	2.0		CAOU	OK		CLEARED RIG FLOOR. R/U CONDUCTOR RUNNING EQUIPMENT. PERFORMED PRE-JOB SAFETY MEETING AND PREPARED TO RUN 30" CONDUCTOR.
01.04.2001.19:30	00:00	4.5		CAWW	OK		STOPPED WORK TO RUN CONDUCTOR AND STARTED TO P/U 5 1/2" DRILL PIPE DUE TO WEATHER CONDITIONS. 40-50 KNOTS WIND AND MAX WAVE HEIGHT 9-10M. P/U 33 JOINTS AND M/U 11 STAND W/ 5 1/2" DRILL PIPE WHILE WAITING ON WEATHER.
02.04.2001.00:00	06:00	6.0		CAWW	OK		CONT P/U DRILL PIPE WHILE WAITING ON WEATHER. M/U 7 STAND W/ 5" V150 DRILL PIPE AND 5 STAND W/ 5 1/2" DRILL PIPE AND RACKED IN SETBACK.
02.04.2001.06:00	08:30	2.5		CAWW	OK		CONT P/U DRILL PIPE WHILE WAITING ON WEATHER. M/U 4 STANDS W/ 5 1/2" DRILL PIPE AND 3 STANDS W/ 5" V150 DRILL PIPE. PREPARED TO RUN CONDUCTOR. PERFORMED PRE-JOB SAFETY MEETING.
02.04.2001.08:30	10:00	1.5		CERU	OK		CHANGED ELEVATOR. R/U SHACKLES AND LIFTING SLINGS TO BAILS. INSTALLED RISER JAWS ON IRON ROUGHNECK.
02.04.2001.10:00	11:00	1.0		DERD	E FAIL		TROUBLE SHOT PROBLEM W/ DRILL VIEW SYSTEM.
02.04.2001.11:00	15:00	4.0		CARU	OK		P/U 30" CONDUCTOR SHOE. CHANGED MASTER BUSHINGS. M/U AND RAN 3 CONDUCTOR JOINTS. M/U 30" HOUSING JOINT. FILLED CASING BELOW SEA LEVEL.
02.04.2001.15:00	15:30	0.5		CARU	OK		CHANGED ELEVATORS. L/D SHACKLES AND SLINGS.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
02.04.2001.15:30	18:00	2.5		CARU	OK		P/U 3 1/2" STINGER FROM SETBACK. PLACED INSIDE CONDUCTOR AND SECURED W/ ELEVATOR ON TOP OF C-PLATE. P/U STAND W/ 5" DRILL PIPE AND M/U TO 3 1/2" STINGER W/ RIG TONGS. P/U 30" CART/RUNNING TOOL AND M/U TO STINGER W/ RIG TONGS.
02.04.2001.18:00	21:30	3.5	397.0	CARU	OK		REMOVED ELEVATORS AND BUSHINGS. LANDED CONDUCTOR INTO PGB. RAN 2 SINGLES W/ 5" V150 DRILL PIPE. FILLED CASING. RAN IN W/ CONDUCTOR TO 10 M ABOVE SEABED.
02.04.2001.21:30	22:00	0.5	397.0	CARU	OK		CHECKED BULLS EYE AND ORIENTATION OF PGB BEFORE ENTERING HOLE. POSITIONED RIG TO ENTER HOLE.
02.04.2001.22:00	23:00	1.0	456.0	CARU	OK		ENTERED HOLE W/ CONDUCTOR AND RAN IN TO 456 M WHILE PUMPING W/ 500 LPM. WORKED/WASHED CONDUCTOR THROUGH TIGHT SPOTS AT 420 M AND 450 M.
02.04.2001.23:00	00:00	1.0	467.5	CARU	OK		CHECKED ORIENTATION OF PBG W/ ROV WHILE P/U CEMENT STAND. RIH W/ CONDUCTOR TO 467.5 M WHILE PUMPING 500 LPM. WORKED/WASHED DOWN CONDUCTOR LAST 5 M.
03.04.2001.00:00	02:30	2.5	467.5	CARU	OK		CHECKED BULLS EYE READINGS W/ ROV. BULLS EYE READINGS +/- 2.5 DEG. PGB TURNED 45 DEG. CLOCKWISE WHILE RUNNING IN W/ CEMENT STAND. WORKED STRING SEVERAL TIMES W/ TORQUE TO ORIENTATE CONDUCTOR 45 DEG COUNTERCLOCKWISE. LAST PGB ORIENTATION APPROX. 10 DEG. RIG HEADING 47 DEG.
03.04.2001.02:30	04:30	2.0	467.5	CARU	OK		ATTEMPTED TO REDUCE BULLS EYE ANGLE ON PGB BY MOVING RIG 40 M OFF LOCATION. BULLS EYE READINGS STILL +/- 2.5 DEG.
03.04.2001.04:30	06:00	1.5	467.5	CARU	OK		MOVED RIG BACK APPROX. 20 M. ATTEMPTED TO REDUCE BULLS EYE ANGLE BY WORKING STRING UP AND DOWN 2-4 M WHILE PUMPING W/ 4000 LPM. BULLS EYE READINGS STILL +/- 2.5 DEG.
03.04.2001.06:00	07:00	1.0	468.0	CARU	OK		CONT. TO WORK CONDUCTOR WHILE CIRC. W/ 500 LPM. SET DOWN CONDUCTOR AT 468 M.
03.04.2001.07:00	10:00	3.0	468.0	ROVU	OK		PULLED ROV TO SURFACE. JUMPED ROV W/ NEW BULLS EYE. NEW BULLS EYE ANGLE INTERVAL 0-5 DEG. CHECKED BULLS EYE ANGLE ON PGB SEVERAL PLACES. ALL MEASUREMENTS SHOWING AN ANGLE OF +/- 5 DEG IN THE SAME DIRECTION.
03.04.2001.10:00	11:00	1.0	468.0	CAOU	OK		MOVED RIG TO WELL CENTRE.
03.04.2001.11:00	14:00	3.0		CAOU	OK		RACKED BACK CEMENT STAND. POOH W/ CONDUCTOR RUNNING STRING.
03.04.2001.14:00	16:00	2.0		CAOU	OK		LANDED AND SECURED CONDUCTOR/PGB ON 105 TON SKID IN MOONPOOL.
03.04.2001.16:00	23:00	7.0	236.0	DTDU	OK		M/U AND RIH W/ 17 1/2" BHA TO 236 M . MOVED RIG TO NEW SPUD POSITION. 15 M SOUTHWEST OF ORIGINAL SPUD POS.
03.04.2001.23:00	00:00	1.0	395.0	DTDU	OK		RIH W/ 17 1/2" BHA ON 5 1/2" DRILL PIPE TO 395 M.
04.04.2001.00:00	01:00	1.0	410.0	DTDU	OK		P/U DRILLING STAND. TESTED ANDERDRIFT ABOVE SEABED. 11 PULSES, INCL 0 DEG. CHECKED RIG POSITION. TAGGED SEABED AT 408 M RKB. PENETRATED FORMATION 2.5 M. INSTALLED MARKER BUOYS W/ ROV.
04.04.2001.01:00	02:00	1.0	418.0	DDRU	OK		WASHED DOWN ONE METER W/ 800 LPM. CONT DRILLING 17 1/2" PILOT HOLE TO 418 M. 800 LPM, 10 BAR, 80 RPM, 3-5 KNM, 0-2 TON WOB. PERFORMED SURVEY AT 418 M, ANDERDRIFT AT 413 M. 8 PULSES, 0.75 DEG.
04.04.2001.02:00	03:30	1.5	423.0	DDRU	OK		CONT DRILLING 17 1/2" PILOT HOLE TO 423 M. 800 LPM, 10 BAR, 80 RPM, 3-5 KNM, 0-2 TON WOB. INCR. PUMP RATE TO 4000 LPM AT 420 M. PERFORMED SURVEY AT 423 M. ANDERDRIFT AT 418 M 6-7 PULSES, 1.0-1.25 DEG. REAMED INTERVAL 417-423 M TWICE. PERFORMED NEW SURVEY. 7 PULSES. 1.0 DEG.
04.04.2001.03:30	04:30	1.0	429.0	DDRU	OK		CONT DRILLING 17 1/2" PILOT HOLE TO 429 M. 4000-4500 LPM, 150-160 BAR, 120-130 RPM, 4-8 KNM, 0-2 TON WOB. PERFORMED SURVEY AT 428 M. ANDERDRIFT AT 423 M 6 PULSES, 1.25 DEG. REAMED INTERVAL 417-429 M TWICE. PERFORMED NEW SURVEY. 7 PULSES. 1.0 DEG.
04.04.2001.04:30	06:00	1.5	434.0	DDRU	OK		CONT DRILLING 17 1/2" PILOT HOLE TO 434 M. 4500 LPM, 160 BAR, 120-130 RPM, 4-8 KNM, 0-2 TON WOB. PERFORMED SURVEY AT 434 M. ANDERDRIFT AT 429 M. 4 PULSES, 1.75 DEG. RACKED BACK DRILLING STAND AND P/U SINGLE TO REAM INTERVAL 418-434 M.
04.04.2001.06:00	07:00	1.0	434.0	DCBK	OK		REAMED INTERVAL 418-434 M. PERFORMED NEW SURVEYS. 3-4 PULSES, INCL. 1.75-2.0 DEG.
04.04.2001.07:00	08:00	1.0	445.0	DDRU	OK		L/D SINGLE DRILL PIPE. P/U DRILLING STAND. DRILLED FROM 434 M TO 445 M. 0-2 TON WOB, 4500 LPM, 160 BAR, 120-130 RPM. PERFORMED SURVEY W/ ANDERDRIFT AT 439 M, 4 PULSES, 1.75 DEG.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
04.04.2001.08:00	14:30	6.5	487.0	DDRU	OK		CONT. DRILLING 17 1/2" PILOT HOLE TO 487 M. 0-2 TON WOB, 3500 LPM, 120-130 RPM. PERFORMED SURVEY W/ ANDERDRIFT AT 452 M AND 470 M, 4 PULSES, 1.75 DEG AND 3 PULSES, 2 DEG.
04.04.2001.14:30	15:00	0.5	487.0	DCAU	OK		PERFORMED SURVEY AT 487 M, ANDERDRIFT AT 482 M, 3-4 PULSES, INCL. 1.75-2.0 DEG. DISPLACED WELL TO 1.30 S.G MUD.
04.04.2001.15:00	15:30	0.5	472.0	DUSU	OK		PULLED UP TO 472 M, TOTCO RING AT 466 M. DROPPED SINGLE SHOT.
04.04.2001.15:30	16:00	0.5	418.0	DTAK	OK		PULLED UP TO 10 M BELOW SEABED. FILLED UP HOLE W/ 1.30 S.G. MUD.
04.04.2001.16:00	18:30	2.5		DTAK	OK		POOH W/ 17 1/2" BHA.
04.04.2001.18:30	22:30	4.0		DTDU	OK		M/U 17 1/2" BIT, 17 1/4" STAB (UPSIDE DOWN) AND SINGLE 9.5" DC (UPSIDE DOWN).
04.04.2001.22:30	00:00	1.5		DTDU	OK		P/U AND M/U 26"X36" HOLE OPENER, BIT SUB AND ANDERDRIFT. INSTALLED TOTCO RING ON TOP OF ANDERDRIFT.
05.04.2001.00:00	02:00	2.0	196.0	DTDU	OK		CONT. M/U AND RUNNING IN W/ 36" BHA.
05.04.2001.02:00	03:30	1.5	397.0	DTDU	OK		CONT. RIH W/ 36" HOLE OPENER ASSEMBLY ON 5 1/2" DRILL PIPE TO 397 M. TESTED ANDERDRIFT IN SEA. 10 PULSES, 0.25 DEG.
05.04.2001.03:30	04:00	0.5	397.0	DTDU	OK		POSITIONED RIG OVER WELL. OBSERVED W/ ROV.
05.04.2001.04:00	04:30	0.5	417.0	DDUU	OK		ENTERED 17 1/2" HOLE AT 408 M. RIH UNTIL HOLE OPENER TAGGED SEABED. WASHED DOWN FROM 408 TO 413 W/ 36" HOLE OPENER, 800 LPM. ROTATED/WASHED DOWN W/ 36" HOLE OPENER TO 417 M, 45 RPM/ 800 LPM. 17 1/2" BIT 13 M DEEPER AT 430 M. TOOK TWO TON WEIGHT W/ 36" HOLE OPENER AT 417 M.
05.04.2001.04:30	05:00	0.5	421.0	DDUU	OK		CONT. OPENENING HOLE TO 36" FROM 417 M TO 421 M. 800-4000 LPM, 8-90 BAR, 50 RPM, 3-9 KNM, 1-4 TON WOB. PERFORMED SURVEY W/ ANDERDRIFT AT 416 M. 6 PULSES. 1.25 DEG.
05.04.2001.05:00	06:00	1.0	423.0	DDUU	OK		CONTINUED OPENING HOLE TO 36" FROM 421 M TO 423 M. 5000 LPM, 135 BAR, 50-60 RPM, 4-9 KNM. 1-4 TON WOB.
05.04.2001.06:00	14:30	8.5	468.0	DDUU	OK		CONT OPENING HOLE TO 36" FROM 423 TO 468 M W/5000 LPM/135 BAR/50 RPM/ 4-9 KNM/WOB 1-4 TONS.
05.04.2001.14:30	15:00	0.5	481.0	DCAU	OK		DISPLACED HOLE TO 1.30 SG MUD. PERFORMED WIPERTRIP TO 430 M. RIH TO 481 M. NO TIGHT SPOTS WERE SEEN.
05.04.2001.15:00	16:00	1.0	481.0	DCAU	OK		CIRC B/U. DROPPED SINGLE-SHOT W/5 TONS SET DOWN ON BOTTOM.
05.04.2001.16:00	16:30	0.5	430.0	DTCU	OK		POOH TO 430 M. TOPPED UP HOLE W/1.30 SG MUD.
05.04.2001.16:30	18:30	2.0		DTCU	OK		POOH. RACKED 8" DC. L/D 26" X 36" BHA. 2 CONES ON 26" HOLE OPENER WERE LOST IN HOLE.
05.04.2001.18:30	20:30	2.0		CARU	OK		CHANGED TO 5" HANDLING EQUIPMENT. PREPARED TO RUN 30" CONDUCTOR.
05.04.2001.20:30	23:00	2.5	400.0	CARU	OK		RAN 30" COND TO SEABED ON 5" DP.
05.04.2001.23:00	23:30	0.5	400.0	CARU	OK		CHECKED BULLSEYES ON PGB AND PGB-HEADING.
05.04.2001.23:30	00:00	0.5	456.0	CARU	OK		ADJUSTED RIG POSITION AND STABBED 30" COND INTO HOLE. RIH W/COND TO 456 M.
06.04.2001.00:00	01:30	1.5	467.0	CARU	OK		M/U CMT STAND. RIH TO 468 M AND SET DOWN 5 TONS. CHECKED BULLSEYE - 0.75 DEG FWD. P/U 1 M AND VERIFIED PGB APPROX. 2 M ABOVE SEABED USING ROV. HOOKED UP CMT HOSES.
06.04.2001.01:30	03:00	1.5	467.0	CSOD	E FAIL		ATTEMPTED TO TEST SURFACE LINES - LTV ON CMT STAND WAS LEAKING IN STEM. CHANGED OUT SAME.
06.04.2001.03:00	03:30	0.5	467.0	CSSU	OK		HELD PRE-JOB MEETING BEFORE CEMENTING. CONT CHANGING LTV.
06.04.2001.03:30	04:00	0.5	467.0	CSSU	OK		CIRC 30 M3 SEAWATER THROUGH TDS W/4000 LPM/55 BAR. MEANWHILE PRESSURE TESTED SURFACE CMT LINES TO 100 BAR/5 MIN.
06.04.2001.04:00	05:30	1.5	467.0	CSSU	OK		MIXED AND PUMPED 16.8 M3 1.56 SG LEAD SLURRY, FOLLOWED BY 21.8 M3 1.95 SG TAIL SLURRY. DISPLACED CMT W/6.5 M3 SEAWATER USING CMT PUMPS.
06.04.2001.05:30	06:00	0.5	468.0	CSSU	OK		CHECKED BULLSEYE - 0.75 DEG FWD. STARTED TO SET DOWN WEIGHT OF COND - BULLSEYE READING INCREASED TO 1.75 DEG FWD STARBOARD BEFORE SETTING OFF LAST 2 TONS. PICKED UP AGAIN - BULLSEYE READING 1 DEG FWD STARBOARD. MOVED RIG 10 M AFT AND PORT - BULLSEYE READING 0.5 DEG FWD STARBOARD.
06.04.2001.06:00	14:00	8.0	468.0	CSOU	OK		HELD CONDUCTOR IN PLACE WHILE CEMENT SET. MEANWHILE LOAD TESTED PAD EYES FOR TLC.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
06.04.2001.14:00	14:30	0.5	468.0	CSOU	OK		SLACKED OFF STRING WEIGHT. RELEASED 30" CART WITH 4.5 RIGHT-HAND TURNS. CHECKED BULLSEYE - NO CHANGE, STILL READING 0.5 DEG FWD STBD.
06.04.2001.14:30	17:30	3.0		CSOU	OK		POOH W/30" CART AND L/D SAME.
06.04.2001.17:30	18:00	0.5		CSOU	OK		RACKED 1 STAND 5" DP AND L/D 2 SINGLES OF 3 1/2" DP (CEMENT STINGER BELOW CART).
06.04.2001.18:00	20:00	2.0		CSOU	OK		P/U CMT STAND. B/O KELLY COCK, PUMP-IN SUB AND 1 SINGLE DP. M/U HALLIBURTON CMT HEAD.
06.04.2001.20:00	22:00	2.0		CSOU	OK		M/U AND RACKED BACK 18 3/4" CART.
06.04.2001.22:00	00:00	2.0		DEOU	OK		L/D 26"X36" HO BHA.
07.04.2001.00:00	00:30	0.5		DEOU	OK		CONT L/D 26"X36" BHA.
07.04.2001.00:30	01:30	1.0	10.0	DEOU	OK		P/U AND M/U MUD MOTOR AND 17 1/2" BIT. M/U 17 1/4" SLEEVE STAB.
07.04.2001.01:30	02:00	0.5	20.0	DEOU	OK		P/U AND M/U 17 1/4" STRING STAB AND RLL TOOL.
07.04.2001.02:00	02:30	0.5	26.0	DEOU	OK		P/U AND M/U MPT TOOL. CHECKED SCRIBE LINE. INSTALLED FLOAT IN TOP OF MPT TOOL.
07.04.2001.02:30	03:30	1.0	26.0	DEOD	E FAIL		ATTEMPTED TO LOAD MWD. HAD PROBLEMS WITH COMMUNICATIONS CABLE - CHANGED OUT SAME. MEANWHILE INSTALLED GUIDELINE #4.
07.04.2001.03:30	04:00	0.5	26.0	DEOU	OK		LOADED MWD TOOL.
07.04.2001.04:00	05:00	1.0	96.0	DEOU	OK		M/U 17 1/4" STRING STAB AND RIH W/2 STAND 8" DC. M/U JAR.
07.04.2001.05:00	06:00	1.0	235.0	DEOU	OK		P/U AND RIH W/3 SINGLES OF 8" DC. CONT RIH W/4 STANDS 5 1/2" HWDP.
07.04.2001.06:00	09:00	3.0	420.0	DEOU	OK		CONT RIH W/17 1/2" BHA ON 5 1/2" DP WHILE P/U SINGLES FROM DECK. INSTALLED GUIDEFRAME AND STABBED INTO WELL.
07.04.2001.09:00	09:30	0.5	465.0	DEOU	OK		CONT RIH - TAGGED CMT AT 465 M.
07.04.2001.09:30	10:00	0.5	465.0	DEOU	OK		HELD SHALLOW GAS MEETING WITH DAY CREW AND SIMULATED SHALLOW GAS SITUATION.
07.04.2001.10:00	13:30	3.5	481.0	DDTU	OK		DRILLED CMT AND SHOETRACK FROM 465 TO 481 M, VERIFYING FREE PASSAGE UP EVERY METER DRILLED.
07.04.2001.13:30	14:30	1.0	490.0	DDTU	OK		DRILLED 17 1/2" HOLE FROM 481 TO 490 M W/3500 LPM/100 BAR/120 RPM/ 5 KNM/3 TONS WOB.
07.04.2001.14:30	16:00	1.5	490.0	DDTU	OK		PUMPED 5 M3 HI-VIS PILL AND POOH TO SHOE. REAMED SHOETRACK AND RAT HOLE. RIH TO 488 M AND PERFORMED SURVEY.
07.04.2001.16:00	00:00	8.0	736.0	DDTU	OK		CONT DRILLING 17 1/2" HOLE FROM 490 TO 736 M W/4500 LPM/145 BAR/100 RPM/5-8 KNM/7-8 TONS WOB. REAMED EVERY STAND AND PUMPED 5 M3 HI-VIS PILL EVERY 15 M. HELD SHALLOW GAS MEETING WITH NIGHT CREW AND SIMULATED SHALLOW GAS SITUATION.
08.04.2001.00:00	06:00	6.0	920.0	DDTU	OK		CONT DRILLING 17 1/2" HOLE FROM 736 TO 920 M W/4500 LPM/160 BAR/ 100 RPM/7-9 KNM/5-6 TONS WOB. REAMED EVERY STAND AND PUMPED 5 M3 HI-VIS PILL EVERY 15 M.
08.04.2001.06:00	21:30	15.5	1315.0	DDTU	OK		DRILLED 17 1/2" HOLE FROM 920 TO 1315 M W/4500 LPM/175 BAR/120 RPM/ 14-16 KNM/8-18 TONS WOB.
08.04.2001.21:30	22:30	1.0	1315.0	DCAU	OK		PUMPED 30 M3 HI-VIS PILL AND DISPLACED SAME W/1.5 HOLE VOLUME W/4500 LPM/175 BAR. MEANWHILE PERFORMED SAFETY CHECK ON TDS DUE TO VIBRATION DURING DRILLING.
08.04.2001.22:30	00:00	1.5	1315.0	DCAU	OK		DISPLACED WELL TO 1.30 SG BENTONITE MUD. FLOWCHECKED W/ROV.
09.04.2001.00:00	03:00	3.0	460.0	DTCU	OK		POOH TO 30" SHOE. HAD UP TO 30 TONS OP AT 1150 - 1050 M AND AT 870 M. WORKED TIGHT SPOTS UNTIL OP DISAPPEARED.
09.04.2001.03:00	05:30	2.5	1315.0	DTCU	OK		RIH TO TD. DID NOT TAKE WEIGHT ON ANY OF PREVIOUSLY SEEN TIGHT SPOTS. FOUND 1 M FILL AT TD - CLEANED OUT SAME.
09.04.2001.05:30	06:00	0.5	1315.0	DCAU	OK		CIRC B/U W/4500 LPM/190-175 BAR/45 RPM/7 KNM.
09.04.2001.06:00	07:00	1.0	1315.0	DCAU	OK		DISPLACED WELL TO 1.30 SG KCL MUD W/4500 LPM/155 BAR/50 RPM/5 KNM. FLOWCHECKED W/ROV.
09.04.2001.07:00	10:30	3.5	234.0	DTCU	OK		POOH FROM 1315 TO 324 M. CONNECTED TDS AND TOPPED UP HOLE W/MUD AT 430 M. JETTED PGB WITH BIT.
09.04.2001.10:30	13:00	2.5		DTCU	OK		RACKED BHA. DOWNLOADED MWD MEMORY. B/O BIT. RACKED PDM AND MWD.
09.04.2001.13:00	15:30	2.5		CERU	OK		CLEARED RIGFLOOR. CHANGED SAVERSUB AND ELEVATORS. REMOVED BUSHINGS AND INSTALLED FMS. INSTALLED CSG TONG AND CHANGED GRIPPER HEAD ON IR STABBING ARM. HELD PRE-JOB MEETING.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
09.04.2001.15:30	17:00	1.5	38.0	CARU	OK		P/U AND M/U SHOE JT, INT JT AND FLOAT JT. BAKERLOCKED FIRST 3 CONNECTIONS. CHECKED FLOATS FOR FLOW THROUGH AND BACKFLOW.
09.04.2001.17:00	00:00	7.0	450.0	CARU	OK		CONT RUNNING 13 3/8" CASING FROM 38 TO 450 M. USED GUIDEFRAME TO STAB INTO TOP OF 30" CONDUCTOR.
10.04.2001.00:00	04:30	4.5	887.0	CARU	OK		CONT RUNNING 13 3/8" CASING FROM 450 TO 887 M.
10.04.2001.04:30	06:00	1.5	887.0	CARU	OK		CHANGED TO 5" RUNNING GEAR. P/U AND M/U WH HOUSING. TOOK UP/DOWN-WEIGHTS: 96/93 TONS. L/D HANDLING RUNNING TOOL. MEANWHILE DRIFTED LANDING STRING AND CART TO 2 3/4".
10.04.2001.06:00	07:00	1.0	887.0	CARU	OK		INSTALLED WH RUNNING TOOL W/CMT PLUGS. FILLED WH HOUSING W/WATER BEFORE ENGAGING RUNNING TOOL.
10.04.2001.07:00	09:00	2.0	1300.0	CARU	OK		LIFTED WH OFF ROTARY AND REMOVED BUSHINGS. LOWERED WH THROUGH ROTARY AND INSTALLED MASTER BUSHINGS AND SLIPS. CONT RIH W/13 3/8" CSG ON 5" LANDING STRING UNTIL WH APPROX. 6 M ABOVE TOP OF 30" CONDUCTOR HOUSING.
10.04.2001.09:00	10:00	1.0	1300.0	CARU	OK		M/U CMT STAND. CONNECTED CMT HOSE AND CMT HEAD CONTROL HOSES.
10.04.2001.10:00	10:30	0.5	1305.5	CARU	OK		TOOK UP/DOWN WEIGHTS: 103/93 TONS. LANDED WH IN 30" CONDUCTOR HOUSING AND SET DOWN CASING WEIGHT PLUS 2 TONS. PERFORMED 25 TONS OVERPULL TEST - 128 TONS UPWEIGHT. ADJUSTED WEIGHT TO HAVE 3 TONS TENSION IN LANDING STRING.
10.04.2001.10:30	11:00	0.5	1305.5	CSOD	E FAIL		ATTEMPTED TO PRESSURE TEST SURFACE LINES FOR CMT - NO GO. FOUND LEAK IN CMT MANIFOLD.
10.04.2001.11:00	12:00	1.0	1305.5	CCCU	OK		FLUSHED AND PRESSURE TESTED SURFACE CMT LINES TO 250 BAR/5 MIN. CIRC ONE CASING VOLUME/73 M3 SEAWATER W/2400 LPM/60 BAR.
10.04.2001.12:00	14:30	2.5	1305.5	CSSU	OK		CLOSED KELLYCOCK ON TDS AND TRAPPED PRESSURE BEHIND. DROPPED BALL FOR BOTTOM WIPERPLUG. MIXED AND PUMPED 81.4 M3 1.56 SG LEAD SLURRY FOLLOWED BY 21.4 M3 1.90 TAIL SLURRY.
10.04.2001.14:30	15:00	0.5	1305.5	CSSU	OK		DROPPED DART FOR TOP WIPERPLUG AND DISPLACED SAME/SHEARED PLUG W/4770 L FRESHWATER USING CMT UNIT.SWITCHED TO RIG PUMPS AND DISPLACED CMT W/65.8 M3 SEAWATER W/3000 LPM/115-175 BAR. REDUCED RATE TO 1000 LPM/65 BAR LAST 200 STKS AND BUMPED PLUGS WITH 135 BAR.
10.04.2001.15:00	15:30	0.5	1305.5	CSSU	OK		BLED OFF PRESSURE AND CHECKED FOR BACKFLOW. DISCONNECTED CMT HOSE AND CMT HEAD CONTROL HOSES.
10.04.2001.15:30	16:00	0.5	1305.5	CARU	OK		RELEASED WH RUNNING TOOL W/4.5 RIGHT-HAND TURNS. B/O AND RACKED CMT STAND.
10.04.2001.16:00	16:30	0.5	400.0	CARU	OK		PULLED LANDING STRING ABOVE WH. WASHED WH/PGB USING ROV TO GUIDE END OF STRING.
10.04.2001.16:30	17:00	0.5		CARU	OK		POOH. DISCONNECTED GUIDELINES. STARTED MOVING RIG OFF LOCATION.
10.04.2001.17:00	18:00	1.0		CARU	OK		L/D PUP AND 1 SINGLE FROM LANDING STRING. RACKED BACK STAND WITH WH RUNNING TOOL. M/U PUP TO WH HANDLING TOOL (ABB PROPERTY).
10.04.2001.18:00	22:00	4.0		BBRU	OK		RIG 30 M OFF LOCATION. CHANGED TO LONG BAILS. REMOVED TORQUE WRENCH. INSTALLED RISER SPIDER. SKIDDED BOP INTO MOONPOOL.
10.04.2001.22:00	22:30	0.5		BBRU	OK		HELD PRE-JOB MEETING BEFORE RUNNING BOP.
10.04.2001.22:30	23:30	1.0		BBRU	OK		P/U 50' RISER PUP FROM DECK. CHANGED SEALS ON KILL/CHOKE/BOOSTER BORES. INSTALLED GUIDELINES ON BOP.
10.04.2001.23:30	00:00	0.5		BBRU	OK		M/U 50' RISER PUP TO BOP. ATTACHED YELLOW POD.
11.04.2001.00:00	00:30	0.5		BBRU	OK		P/U BOP. REMOVED FORKLIFT. LOWERED BOP INTO UHGS.
11.04.2001.00:30	02:30	2.0		BBRU	OK		REMOVED KOS FUNNELS FROM BOP. INSTALLED TRANSPONDERS. ATTACHED BLUE POD. TESTED KILL/CHOKE LINES. ARRANGED K/C-HOSES BEFORE RUNNING. RAN BOP THROUGH SPLASH-ZONE AT 0230 HRS.
11.04.2001.02:30	04:30	2.0	83.0	BBRU	OK		RAN BOP ON RISER TO 83 M. SUSPECTED BLUE POD WIRE SNAPPED OFF DUE TO FAILURE TO OPERATE WINCH DURING LOWERING. JUMPED ROV AND INSPECTED POD. MEANWHILE TESTED K/C LINES. ROV INSPECTION REVEALED BROKEN WIRE ON BLUE POD.
11.04.2001.04:30	06:00	1.5		BBRD	E FAIL		PULLED BOP TO SURFACE - BOP THROUGH SPLASH-ZONE AT 0530 HRS. CHANGED WIRE ANCHOR ON BLUE POD. INSPECTED BLUE POD FOR SIGNS OF DAMAGE - OK.
11.04.2001.06:00	07:00	1.0		BBRD	E FAIL		CONT PREPARING TO RE-RUN BOP.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
11.04.2001.07:00	07:30	0.5		BBRD	OK		HELD PRE JOB MEETING
11.04.2001.07:30	10:30	3.0		BBRD	OK		RAN BOP TO 83 METRE.
11.04.2001.10:30	13:30	3.0	193.0	BBRU	OK		CONTINUED RUNNING BOP TO 193 M. ATTEMTED TO TEST KILL/CHOKE LINE.
11.04.2001.13:30	14:00	0.5	193.0	BBRD	OK		TROUBLESHOOT POWER SUPPLY FROM CEMENT UNIT.
11.04.2001.14:00	22:30	8.5	375.0	BBRU	OK		CONT RUNNING BOP FROM 193 TO 385 M. HELD PRE-JOB MEETING W/NIGHT CREW Ø 2130 HRS.
11.04.2001.22:30	00:00	1.5	375.0	BBRU	OK		P/U AND M/U SLIPJOINT.
12.04.2001.00:00	02:30	2.5	375.0	BBRU	OK		CONT M/U SLIPJOINT. REARRANGED CLAMPS FOR KILL/CHOKELINE ON SLIPJT.
12.04.2001.02:30	04:00	1.5	390.0	BBRU	OK		P/U AND M/U LANDING JOINT. ATTACHED SLIP JT TO SUPPORT RING. PULL TESTED SAME TO 15 TONS. RELEASED SUPPORT RING. MOVED RIG OVER WELL.
12.04.2001.04:00	06:00	2.0	390.0	BBRD	E FAIL		ATTEMPTED TO TEST K/C-LINES - NEGATIVE. FOUND LEAK IN STABS ON SUPPORT RING. ATTEMPTED TO RE-RUN K/C-STABS - SUPPORT RING CAME LOOSE AND FELL DOWN UNTIL TIGHT RUCKER WIRES. PULLED RIG OFF LOCATION. INSPECTED FOR DAMAGE.
12.04.2001.06:00	08:00	2.0	390.0	BBRD	OK		STRAIGHTENED UP SUPPORT RING AND CONNECTED IT TO SLIP JOINT.
12.04.2001.08:00	09:00	1.0	390.0	BBRD	OK		ATTEMPTED TO TEST KILL/CHOKE LINES. NEGATIVE. RELEASED SUPPORT RING AND PULLED SLIP JOINT ABOVE ROTARY. INSPECTED SLIP JOINT AND FLUSHED THROUGH KILL AND CHOKE LINES. FOUND ICE ON STABS AND ON HANG-OFF SHOULDERS.
12.04.2001.09:00	10:00	1.0	390.0	BBRU	OK		CONNECTED SUPPORT RING TO SLIP JOINT. PRESSURE TESTED KILL AND CHOKE LINES TO 35/345 BAR 5/10 MINUTES.
12.04.2001.10:00	12:00	2.0	390.0	BBRU	OK		MOVED RIG OVER LOCATION. RELEASED SUPPORT RING FROM HOUSING. CONNECTED GUIDE LINES.
12.04.2001.12:00	12:30	0.5	404.7	BBRU	OK		LANDED BOP. LOCKED CONNECTOR AND PERFORMED A 25 MT OVERPULL TEST.
12.04.2001.12:30	13:30	1.0	404.7	BBRU	OK		EXTENDED SLIP JT. RACKED LANDING JT.
12.04.2001.13:30	14:30	1.0	404.7	BBRU	OK		INSTALLED DIVERTER.
12.04.2001.14:30	17:00	2.5		BBRU	OK		R/D RISER RUNNING GEAR. HOOKED UP SADDLES FOR POD-LINES. MEANWHILE CLOSED BSR AND PRESSURE TESTED CASING AND WELLHEAD CONNECTOR TO 35/225 BAR 5/10 MIN.
12.04.2001.17:00	21:30	4.5		DEOU	OK		L/D CART STAND AND CMT STAND. INSTALLED TORQUE WRENCH IN TDS. CHANGED TO 5 1/2" SAVERSUB. CHANGED TO DP CLAW ON IR TELESCOPIC ARM.
12.04.2001.21:30	23:30	2.0		DEOU	OK		M/U AND RACKED EDPHOT-STAND.
12.04.2001.23:30	00:00	0.5		DEOU	OK		R/U FOR TESTING IBOP/MANUAL KELLYCOCK ON TDS.
13.04.2001.00:00	01:30	1.5		DEOU	OK		PRESSURE TESTED IBOP AND MAN KELLY COCK ON TDS TO 35/345 BAR 5/10 MIN.
13.04.2001.01:30	04:00	2.5		DEOU	OK		L/D 17 1/2" BHA.
13.04.2001.04:00	06:00	2.0	20.0	DTDU	OK		M/U 12 1/4" CLEANOUT BHA W/MWD. PROGRAMMED MWD.
13.04.2001.06:00	07:00	1.0	77.0	DTDU	OK		CONT M/U 12 1/4" BHA. RIH W/12" STRING STAB AND 2 STAND 8" DC.
13.04.2001.07:00	07:30	0.5	77.0	DEOD	E FAIL		INVESTIGATED FAILURE ON SHUTE. FOUND ONE WIRE DAMAGED.
13.04.2001.07:30	08:00	0.5	86.0	DTDU	OK		P/U AND RIH W/JAR.
13.04.2001.08:00	09:30	1.5	86.0	DEOD	OK		CHANGED WIRE ON SHUTE.
13.04.2001.09:30	10:30	1.0	225.0	DTDU	OK		CONT M/U 12 1/4" CLEANOUT BHA.
13.04.2001.10:30	13:00	2.5	532.0	DTPU	OK		RIH W/12 1/4" CLEANOUT BHA FROM 225 TO 532 M ON 5 1/2" DP WHILE P/U SINGLES FROM DECK.
13.04.2001.13:00	13:30	0.5	532.0	DEOD	OK		ADJUSTED SHUTE AND ENCODER.
13.04.2001.13:30	16:30	3.0	1119.0	DTPU	OK		CONT RIH W/12 1/4" BHA WHILE P/U SINGLES FROM DECK. P/U A TOTAL OF 90 JTS OF 5 1/2" DP.
13.04.2001.16:30	17:00	0.5	1265.0	DTDU	OK		CONT RIH W/12 1/4" CLEANOUT BHA TO 1265 M.
13.04.2001.17:00	17:30	0.5	1276.0	DTDU	OK		FILLED PIPE AND WASHED DOWN FROM 1265 M W/2260 LPM/62 BAR. TAGGED CMT AT 1276 M.
13.04.2001.17:30	18:00	0.5	1276.0	DDOU	OK		HELD CHOKE DRILL W/DAY CREW.
13.04.2001.18:00	18:30	0.5	1276.0	BBDU	OK		FUNCTION TESTED BOP ON BOTH PODS.
13.04.2001.18:30	20:00	1.5	1280.0	DDRU	OK		DRILLED CMT FROM 1276 TO 1280 M W/4450 LPM/180 BAR/50 RPM/5 KNM/ 2-4 TONS WOB.
13.04.2001.20:00	20:30	0.5	1280.0	DDOU	OK		HELD CHOKE DRILL W/NIGHT CREW.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
13.04.2001.20:30	23:00	2.5	1306.0	DDRU	OK		CONT DRILLING CMT FROM 1280 TO 1306 M W/4450 LPM/180 BAR/50 RPM/5 KNM /2-4 TONS WOB. FELL THROUGH SHOE - NO CMT BELOW.
13.04.2001.23:00	00:00	1.0	1318.0	DDRU	OK		FLOWCHECKED. CLEANED OUT RAT HOLE AND DRILLED 3 M OF NEW FORMATION FROM 1315 TO 1318 M W/4450 LPM/190 BAR/80 RPM/6 KNM/2 TONS WOB. SWEPT HOLE WITH 10 M3 HI-VIS PILLS AS REQ.
14.04.2001.00:00	00:30	0.5	1318.0	DCAU	OK		CIRC OUT HI-VIS PILL W/4450 LPM/190 BAR.
14.04.2001.00:30	02:30	2.0	1300.0	EXLU	OK		SPOTTED BALANCED 10 M3 1.30 SG BENTONITE PILL. PULLED INTO CASING SHOE. CLOSED UPR. PERFORMED XLOT TO 1.54/1.46 SG. OPENED UPR.
14.04.2001.02:30	03:00	0.5	1318.0	EXLU	OK		FLOWCHECKED. CIRC OUT BENTONITE PILL.
14.04.2001.03:00	04:00	1.0	1318.0	DCAU	OK		DISPLACED TO 1.25 SG AQUADRILL MUD W/4450 LPM/170-270 BAR.
14.04.2001.04:00	05:00	1.0	1318.0	DEOU	OK		CLEANED SHAKERS AND FLOWLINE FOR CMT AND ILMENITE.
14.04.2001.05:00	06:00	1.0	1318.0	DCAU	OK		CIRC AND COND MUD WITH 3100 LPM/120 BAR.
14.04.2001.06:00	06:30	0.5	1318.0	DCAU	OK		CIRC AND COND MUD WITH 3100 LPM/120 BAR.
14.04.2001.06:30	07:00	0.5	1292.0	DTAK	OK		FLOWCHECKED WELL FOR 10 MIN. PUMPED SLUG AND POOH FROM 1318 TO 1292 M.
14.04.2001.07:00	08:30	1.5	225.0	DTAK	OK		CONT POOH FROM 1292M TO 225M.
14.04.2001.08:30	10:00	1.5	19.0	DTAK	OK		POOH WITH 12 1/4" BHA FROM 225 TO 19 M.
14.04.2001.10:00	12:30	2.5		DTAK	OK		BROKE OUT AND LAID DOWN 12 1/4" BHA. DOWNLOADED MWD TOOL.
14.04.2001.12:30	13:00	0.5		DTAK	OK		CLEANED AND TIDIED RIG FLOOR. CHANGED RUNNING GEAR.
14.04.2001.13:00	14:30	1.5	15.0	DTDU	OK		P/U AND M/U MWD TOOL. PROGRAMMED SAME.
14.04.2001.14:30	15:00	0.5	22.0	DTDU	OK		P/U AND M/U SONIC TOOL, 8 1/2" STABILISER AND 8 1/2" BIT.
14.04.2001.15:00	17:00	2.0	121.0	DTDU	OK		P/U AND RIH WITH DRILL COLLARS AND JAR.
14.04.2001.17:00	17:30	0.5	231.0	DTDU	OK		M/U AND RIH W/4 STANDS 5 1/2" HWDP.
14.04.2001.17:30	21:00	3.5	663.0	DTDU	OK		CONT RIH W/8 1/2" BHA ON 5 1/2" DP FROM 231 TO 663 M, PICKING UP SINGLES FROM DECK. PICKED UP A TOTAL OF 39 JTS.
14.04.2001.21:00	23:00	2.0	1318.0	DTDU	OK		CONT RIH W/8 1/2" BHA FROM 663 TO 1318 M.
14.04.2001.23:00	23:30	0.5	1318.0	DTDU	OK		CONNECTED DRILLING STAND. FILLED STRING.
14.04.2001.23:30	00:00	0.5	1329.0	DDRU	OK		DRILLED 8 1/2" HOLE FROM 1318 TO 1329 M W/2500 LPM/155 BAR/135 RPM/ 7 KNM/7 TONS WOB.
15.04.2001.00:00	06:00	6.0	1477.0	DDRU	OK		CONT DRILLING 8 1/2" HOLE FROM 1329 TO 1477 M W/2300 LPM/150 BAR/ 135 RPM/7-8 KNM/4-6 TONS WOB.
15.04.2001.06:00	08:30	2.5	1580.0	DDRU	OK		CONT DRILLING 8 1/2" HOLE FROM 1477 TO 1580 M W/2400 LPM/160 BAR/ 195RPM/4-7 KNM/2-4 TONS WOB.
15.04.2001.08:30	10:00	1.5	1580.0	DCAU	OK		ROTATED AND RECIPROCATED WHILE CIRC HOLE CLEAN W/2400 LPM/150 BAR/ 200 RPM/3-5 KNM.
15.04.2001.10:00	20:30	10.5	1817.0	DDRU	OK		CONT DRILLING 8 1/2" HOLE FROM 1580 TO 1817 M W/2330 LPM/175 BAR/ 180 RPM/8-10 KNM/6-9 TONS WOB. FROM 1900 TO 1930 HRS STOPPED DRILLING AND CIRC TO REDUCE ECD BELOW 1.60 SG.
15.04.2001.20:30	21:00	0.5	1817.0	DEOD	E FAIL		CHANGED OIL FILTER ON TDS GEARBOX TO IMPROVE FLOW THROUGH DUE TO HIGH OIL TEMPERATURE.
15.04.2001.21:00	00:00	3.0	1875.0	DDRU	OK		CONT DRILLING 8 1/2" HOLE FROM 1817 TO 1875 M W/2350 LPM/180 BAR/ 180 RPM/8-10 KNM/5-10 TONS WOB. HAD TO ADJUST DOWN TDS RPM FOR SHORTER INTERVALS TO ALLOW GEAROIL TEMPERATURE TO DECREASE.
16.04.2001.00:00	05:00	5.0	1955.0	DDLK	OK		CONT DRILLING 8 1/2" HOLE FROM 1875 TO 1955 M W/2400 LPM/185-200 BAR/ 150-225 RPM/7-11 KNM/WOB 5-12 TONS. LIMITED ROP TO APPROX 20 M/HR FROM 1850 M DUE TO 3 M FORMATION SAMPLING.
16.04.2001.05:00	06:00	1.0	1955.0	ECSU	OK		CIRC B/U FOR SAMPLES W/2400 LPM/180 BAR/75 RPM/4 KNM.
16.04.2001.06:00	07:00	1.0	1955.0	ECSU	OK		CIRC B/U FOR SAMPLES W/2400 LPM/180 BAR. CIRC HOLE CLEAN/BOOSTED RISER.
16.04.2001.07:00	07:30	0.5	1955.0	DCAU	OK		TOOK SCR. DISPLACED K/C-LINES TO 1.26 SG MUD.
16.04.2001.07:30	09:00	1.5	1955.0	DDOD	OK		CONT CIRCULATING HOLE CLEAN. ADDED SODIUMTIOCYANATE-TRACER IN MUD WHILE CIRC W/2280 LPM/160 BAR/39 RPM/3 KNM.
16.04.2001.09:00	09:30	0.5	1955.0	DDOU	OK		FLOWCHECKED WELL.
16.04.2001.09:30	10:30	1.0	1807.0	DTRU	OK		POOH FROM 1955 TO 1807 M - MAX OP 20 TONS.
16.04.2001.10:30	12:30	2.0	1288.0	DTRU	OK		SLUGGED PIPE AND CONT POOH FROM 1807 TO 1288 M. FLOWCHECKED WELL.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
16.04.2001.12:30	15:00	2.5	230.0	DTRU	OK		CONT POOH FROM 1288 TO 230 M.
16.04.2001.15:00	16:30	1.5		DTRU	OK		POOH W/8 1/2" BHA.
16.04.2001.16:30	17:00	0.5		DTRU	OK		B/O AND L/D 8 1/2" BHA.
16.04.2001.17:00	17:30	0.5		DTRU	OK		CLEARED RIGFLOOR.
16.04.2001.17:30	20:30	3.0		DEOD	E FAIL		REPAIRED PROXIMITY SENSOR ON CHUTE. CHANGED OIL ON TDS GEARBOX.
16.04.2001.20:30	21:30	1.0		DTRU	OK		CONT B/O AND L/D 8 1/2" BHA. L/D SONIC TOOL. L/D MPT/RLL IN ONE PIECE (15.5 M).
16.04.2001.21:30	00:00	2.5	60.0	ERCU	OK		M/U CORE BHA #1.
17.04.2001.00:00	01:30	1.5	265.0	ERCU	OK		CONT M/U CORE BHA #1.
17.04.2001.01:30	03:30	2.0	1305.0	ERCU	OK		RIH W/CORE BHA #1 ON DP FROM 265 TO 13 3/8" CSG SHOE AT 1305 M.
17.04.2001.03:30	04:00	0.5	1305.0	ERCU	OK		FILLED PIPE. FLOWCHECKED.
17.04.2001.04:00	05:30	1.5	1909.0	ERCU	OK		CONT RIH FROM 1305 TO 1909 M.
17.04.2001.05:30	06:00	0.5	1955.0	ERCU	OK		CIRC DOWN FROM 1909 W/950 LPM/47 BAR AND TAGGED BOTTOM AT 1955 M.
17.04.2001.06:00	08:00	2.0	1955.0	ERCU	OK		CIRCULATED ONE HOLE VOLUME W/1500 LPM/65 BAR WHILE ADDING TRITIUM- TRACER TO ACTIVE SYSTEM.
17.04.2001.08:00	08:30	0.5	1955.0	ERCU	OK		SPACED OUT FOR CORING. P/U 1 SINGLE AND 1 PUP JOINT.
17.04.2001.08:30	09:00	0.5	1955.0	ERCU	OK		CIRCULATED B/U W/1500 LPM/70 BAR/20 RPM/2-3 KNM TO TREAT TRACER IN THE ACTIVE SYSTEM. BOOSTED RISER WITH 1600 LPM. DISPLACED KILL/CHOKE LINES WITH FRESH MUD.
17.04.2001.09:00	09:30	0.5	1955.0	ERCU	OK		DROPPED BALL AND PUMPED DOWN SAME. TOOK SCR.
17.04.2001.09:30	12:30	3.0	1975.0	ERCU	OK		CUT CORE #1 FROM 1955 TO 1975 M W/980 LPM/80 BAR/80-120 RPM/5-10 KNM /1-7 TONS WOB. CORE JAMMED OFF AT 1975 M.
17.04.2001.12:30	13:00	0.5	1975.0	ERCU	OK		FLOWCHECKED WELL.
17.04.2001.13:00	13:30	0.5	1925.0	ERCU	OK		SLUGGED PIPE. RACKED BACK DRILLING STAND. INSTALLED ELEVATOR. L/O 2 SINGLES AND A PUP JOINT.
17.04.2001.13:30	16:00	2.5	1288.0	ERCU	OK		POOH FROM 1928 TO 1288 M. RE-SLUGGED PIPE AT 1523M. FLOWCHECKED WELL FOR 10 MIN INSIDE CSG SHOE.
17.04.2001.16:00	18:30	2.5	265.0	ERCU	OK		CONT POOH FROM 1288 TO 265 M W/PULLING SPEED 2.5 MIN/STAND FROM 350 M.
17.04.2001.18:30	20:30	2.0	27.0	ERCU	OK		POOH W/CORE BHA FROM 265 TO 27 M W/PULLING SPEED 5 MIN/STAND FROM 100 M.
17.04.2001.20:30	21:30	1.0		ERCU	OK		HELD PREJOB-MEETING PRIOR TO L/D CORE. L/D STRING STAB AND B/O COREHEAD.
17.04.2001.21:30	22:00	0.5		EESD	OK		UNABLE TO RUN CHUTE DUE TO SLACK WIRE ALARM. FOUND STEEL DEBRIS AROUND WIRE - REMOVED SAME.
17.04.2001.22:00	23:00	1.0		ERCU	OK		L/D CORE BARRELS ON DECK. RECOVERED A TOTAL OF 11.1 M/55.5 % OF CORE #1.
17.04.2001.23:00	00:00	1.0	30.0	ERCU	OK		M/U CORE BHA #2 AND RIH TO 30 M.
18.04.2001.00:00	02:00	2.0	272.0	ERCU	OK		CONT M/U CORE BHA #2, INCLUDING MWD RLL TOOL, AND RIH TO 272 M.
18.04.2001.02:00	05:00	3.0	1945.0	ERCU	OK		CONT RIH ON DP FROM 272 TO 1945 M. HELD PIT-DRILL W/NIGHT CREW AT 0330 HRS.
18.04.2001.05:00	06:00	1.0	1976.0	ERCU	OK		CONT RIH FROM 1945 M. WASHED DOWN AND TAGGED BOTTOM AT 1973.5 M 1.5 M HIGH). SPACED OUT FOR CORING. DROPPED BALL AND PUMPED DOWN SAME W/600 LPM/32 BAR. CUT CORE #2 FROM 1973.5 TO 1976 M W/1000 LPM/75 BAR /100 RPM/7 KNM/8 TON WOB.
18.04.2001.06:00	08:30	2.5	1988.0	ERCU	OK		CONT CUTTING CORE #2 FROM 1976 TO 1988 M W/1000 LPM/80 BAR/110 RPM/ 6-10 KNM/6-10 TONS WOB. GOT PRESSURE INCREASE TO 120 BAR - INDICATING CORE JAMMING OFF.
18.04.2001.08:30	09:00	0.5	1988.0	ERCU	OK		FLOWCHECKED.
18.04.2001.09:00	17:00	8.0	27.0	ERCU	OK		SLUGGED PIPE. POOH FROM 1988 TO 1300 M. FLOWCHECKED 15 MIN. CONT POOH FROM 1300 TO 272 M. RACKED BACK BHA.
18.04.2001.17:00	19:00	2.0	27.0	ERCU	OK		HELD PREJOB-MEETING. L/D CORE BARRELS ON DECK. RECOVERED A TOTAL OF 13.45 M/103.4% OF CORE #2.
18.04.2001.19:00	20:30	1.5	27.0	ERCU	OK		M/U CORE BARRELS FOR CORE RUN #3.
18.04.2001.20:30	22:00	1.5	272.0	ERCU	OK		CONT M/U CORE BHA #3.
18.04.2001.22:00	00:00	2.0	1340.0	ERCU	OK		RIH W/CORE BHA #3 ON DP FROM 272 TO 1340 M.
19.04.2001.00:00	02:00	2.0	1986.5	ERCU	OK		CONT RIH W/CORE BHA #3 FROM 1340 M. WASHED DOWN W/1000 LPM/48 BAR AND TAGGED BOTTOM AT 1986.5 M (1.5 M SHALLOW).
19.04.2001.02:00	02:30	0.5	1986.5	ERCU	OK		SPACED OUT FOR CORING.
19.04.2001.02:30	03:00	0.5	1986.5	ERCU	OK		DROPPED BALL AND PUMPED DOWN W/600 LPM/33 BAR.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
19.04.2001.03:00	05:00	2.0	1993.5	ERCU	OK		CUT CORE #3 FROM 1986.5 TO 1993.5 M W/1000 LPM/85 BAR/80-130 RPM/ 7-12 KNM/3-20 TONS WOB. GOT 20 KNM TORQUE PEAK AND PRESSURE INCREASE TO 105 BAR, INDICATING CORE JAMMING OFF. FLOWCHECKED.
19.04.2001.05:00	06:00	1.0	1876.0	ERCU	OK		POOH W/CORE BHA #3 FROM 1993.5 TO 1876 M.
19.04.2001.06:00	10:30	4.5	272.0	ERCU	OK		POOH W/CORE BHA # 3 FROM 1876M TO 272M. FLOWCHECKED WELL AT CASING SHOE.
19.04.2001.10:30	11:00	0.5	272.0	ERCU	OK		FLOW CHECKED WELL BEFORE PULLING BHA.
19.04.2001.11:00	12:30	1.5		ERCU	OK		POOH WITH BHA. RACKED BACK SAME.
19.04.2001.12:30	15:00	2.5		ERCU	OK		PERFORMED PREJOB MEETING. L/D CORE BARREL ON DECK. M/U CORE BARRELS FOR CORE RUN # 4 AND CHANGED BIT.
19.04.2001.15:00	16:30	1.5	272.0	ERCU	OK		CONT M/U CORE BHA #4 TO 272 M.
19.04.2001.16:30	21:00	4.5	1945.0	ERCU	OK		CONT RIH WITH BHA ON 5 1/2" DP FROM 272 M TO 1945 M.
19.04.2001.21:00	21:30	0.5	1993.5	ERCU	OK		BROKE CIRC. WASHED DOWN FROM 1945 M WITH 1000 LPM, 40 BAR. TAGGED BOTTOM AT 1993,5 M.
19.04.2001.21:30	23:30	2.0	1993.5	ERCU	OK		CIRC BOTTOMS UP AND COND MUD, 1500 LPM, 71 BAR.
19.04.2001.23:30	00:00	0.5	1993.5	ERCU	OK		SPACED OUT FOR CORING.
20.04.2001.00:00	00:30	0.5	1993.5	ERCU	OK		CONT SPACING OUT FOR CORING. DROPPED AND PUMPED DOWN BALL WITH 600 LPM, 30 BAR. PREPARED LINE FOR VETCO DEPTH MEASUREMENT.
20.04.2001.00:30	01:00	0.5		EESD	E FAIL		VETCO LINE SNAPPED OFF. REPLACED SAME.
20.04.2001.01:00	04:30	3.5	1998.0	ERCU	OK		SET VETCO MARK. CUT CORE NO 4 FROM 1993,5 M TO 1998,3 M, 1000 LPM, 73 BAR, 100 RPM, 8/10 MT.
20.04.2001.04:30	05:00	0.5	1998.0	ERCU	OK		PICKED OFF BOTTOM. TAGGED BOTTOM WITH 20 RPM. TOOK VETCO MEASUREMENT, 4,8 M CORED. FLOWCHECKED FOR 15 MIN.
20.04.2001.05:00	05:30	0.5		EESD	E FAIL		CHANGED BROKEN HYDRAULIC HOSE ON LOWER GUIDING ARM.
20.04.2001.05:30	06:00	0.5	1758.0	ERCU	OK		POOH WITH CORE NO 4 FROM 1998 M TO 1758 M.
20.04.2001.06:00	09:00	3.0	410.0	ERCU	OK		CONT POOH WITH CORE NO 4 FROM 1758M TO 410M.
20.04.2001.09:00	10:30	1.5		ERCU	OK		FLOWCHECKED WELL. POOH WITH BHA AND RACKED SAME.
20.04.2001.10:30	12:30	2.0		ERCU	OK		PERFORMED PREJOB MEETING. L/D CORE BARREL ON DECK. RECOVERY 5,16 M - 107 %. M/U CORE BARRELS FOR CORE RUN #5 AND CHANGED BIT.
20.04.2001.12:30	14:00	1.5	272.0	ERCU	OK		CONT M/U CORE BHA #5 TO 272M.
20.04.2001.14:00	17:00	3.0	1945.0	ERCU	OK		RIH WITH CORING BHA ON 5 1/2" DP FROM 272 M TO 1945 M.
20.04.2001.17:00	18:30	1.5	1998.0	ERCU	OK		WASHED DOWN FROM 1945 M WITH 1500 LPM, 78 BAR. TAGGED TD AT 1998,3 M. SPACED OUT FOR CORING. DROPPED AND PUMPED DOWN BALL. TOOK SCR. TOOK VETCO DEPTH MEASUREMENT.
20.04.2001.18:30	23:30	5.0	2024.0	ERCU	OK		CUT CORE NO 5 FROM 1998,3 M TO 2024,0 M, 950 LPM, 120 RPM, 6/9 KNM TORQUE, 10/12 MT WOB.
20.04.2001.23:30	00:00	0.5	2024.0	ERCU	OK		TOOK VETCO DEPTH MEASUREMENT. FLOWCHECKED WELL FOR 15 MIN.
21.04.2001.00:00	04:30	4.5	272.0	ERCU	OK		POOH WITH CORE NO 5 FROM 2024 M TO 272 M.
21.04.2001.04:30	06:00	1.5		ERCU	OK		POOH WITH CORING BHA NO 5 FROM 272 M. RACKED BHA IN DERRICK.
21.04.2001.06:00	08:30	2.5		ERCU	OK		PERFORMED PREJOB MEETING. BROKE BIT AND L/D CORE BARRELS ON DECK.
21.04.2001.08:30	09:30	1.0		ERCU	OK		M/U CORE BARRELS FOR CORE RUN #6. M/U BIT.
21.04.2001.09:30	10:30	1.0	272.0	ERCU	OK		CONT M/U CORE BHA #6 TO 272 M.
21.04.2001.10:30	13:30	3.0	1965.0	ERCU	OK		RIH WITH CORING BHA ON 5 1/2" DP FROM 272 M TO 1965 M. FILLED PIPE AT 1000 M.
21.04.2001.13:30	14:30	1.0	2024.0	ERCU	OK		M/U DRILLING PUP, FILLED PIPE AND WASHED DOWN AND TAGGED BOTTOM AT 2024 M, 94 T UP WT/ 86 T ROT UP WT/ 82 T ROT DWN WT/ 4 KNM FREE ROT TRQ.
21.04.2001.14:30	16:30	2.0	2024.0	ERCU	OK		CIRC B/U, 1500 LPM/80 BAR.
21.04.2001.16:30	17:00	0.5	2024.0	ERCU	OK		SPACED OUT FOR CORING. DROPPED AND PUMPED DOWN BALL. TOOK VETCO MEASUREMENT.
21.04.2001.17:00	20:30	3.5	2052.0	ERCU	OK		CUT CORE NO 6 FROM 2024 M TO 2052 M, 950 LPM, 90/115 BAR, 110/130 RPM, 6/10 MT WOB, 8/18 KNM TORQUE. FLOWCHECKED WELL FOR 15 MIN.
21.04.2001.20:30	00:00	3.5	400.0	ERCU	OK		POOH WITH CORE NO 6 FROM 2051,5 M TO 400 M.
22.04.2001.00:00	00:30	0.5	272.0	ERCU	OK		POOH WITH CORE NO 6 FROM 400 M TO 272 M.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
22.04.2001.00:30	02:00	1.5		ERCU	OK		POOH WITH CORING BHA NO 6 FROM 272 M. RACKED BHA IN DERRICK.
22.04.2001.02:00	04:00	2.0		ERCU	OK		PERFORMED PREJOB MEETING. L/D COREBARREL ON DECK. RECOVERY 28 M - 100 %.
22.04.2001.04:00	06:00	2.0	140.0	ERCU	OK		M/U COREHEAD AND COREBARREL. RIH WITH CORING BHA NO 7 TO 140 M.
22.04.2001.06:00	07:00	1.0	272.0	ERCU	OK		CONT M/U CORE BHA NO 7 TO 272 M.
22.04.2001.07:00	09:00	2.0	1920.0	ERCU	OK		RIH WITH CORING BHA ON 5 1/2" DP FROM 272 M TO 1920 M. FILLED PIPE AT 1000 M.
22.04.2001.09:00	11:00	2.0	2052.0	ERCU	OK		WASHED DOWN FROM 1920 M TO 2005 M DUE TO TIGHT HOLE, 1500 LPM, 80 BAR, 110 RPM, 5 KNM. WORKED AND REAMED SEVERAL TIMES FROM 2005 M TO 2010 M.CONTINUED WASING DOWN TO 2052 M.
22.04.2001.11:00	12:00	1.0	2052.0	ERCU	OK		CIRCULATED BOTTOMS UP AND CONDITIONED MUD.
22.04.2001.12:00	12:30	0.5	2052.0	ERCU	OK		SPACED OUT FOR CORING. DROPPED AND PUMPED DOWN BALL.
22.04.2001.12:30	15:30	3.0	2074.0	ERCU	OK		CUT CORE NO 7 FROM 2052 M. JAMMED OFF AT 2074 M.
22.04.2001.15:30	16:30	1.0	2074.0	ERCU	OK		TOOK VETCO MEASUREMENT - 22 M CORED. FLOWCHECKED WELL. RACKED DRILLING STAND.
22.04.2001.16:30	18:00	1.5	1270.0	ERCU	OK		POOH WITH CORE NO 7 FROM 2074 M TO 1270 M.
22.04.2001.18:00	19:00	1.0	1270.0	ERCU	OK		FLOWCHECKED WELL. OBSERVED 500 LTR GAIN DUE TO U-TUBING FROM RE-SLUGGING OF STRING AT 1640 M. STABLE AFTER 25 MIN. CONTINUED FLOWCHECKING FOR 15 MIN - OK.
22.04.2001.19:00	21:00	2.0	272.0	ERCU	OK		POOH WITH CORE NO 7 FROM 1270 M TO 272 M.
22.04.2001.21:00	23:00	2.0		ERCU	OK		POOH WITH CORING BHA FROM 272 M. RACKED BHA IN DERRICK.
22.04.2001.23:00	00:00	1.0		ERCU	OK		HELD PREJOB MEETING. L/D COREBARREL ON DECK.
23.04.2001.00:00	00:30	0.5		ERCU	OK		CONT L/D COREBARREL ON DECK. RECOVERY 21,8 M - 99,1 %.
23.04.2001.00:30	03:00	2.5	272.0	ERCU	OK		M/U NEW 8 1/2" CORE HEAD AND COREBARREL AND RIH WITH CORING BHA NO 8 TO 272 M.
23.04.2001.03:00	06:00	3.0	1604.0	ERCU	OK		RIH WITH CORING BHA NO 8 ON 5 1/2" DP FROM 272 M TO 1604 M.
23.04.2001.06:00	06:30	0.5	2013.0	ERCU	OK		RIH WITH CORING BHA NO 8 ON 5 1/2" DP FROM 1604 M TO 2013 M.
23.04.2001.06:30	08:00	1.5	2071.0	ERCU	OK		WASHED DOWN FROM 2013 M AND TAGGED BOTTOM AT 2074 M. SPACED OUT FOR CORING. DROPPED AND PUMPED DOWN BALL.
23.04.2001.08:00	13:30	5.5	2101.0	ERCU	OK		SET VETCO MARK. CUT CORE FROM 2074 M TO 2101 M.
23.04.2001.13:30	14:30	1.0	2101.0	ERCU	OK		SET VETCO MARK, STRAPPED PIPE AND CONFIRMED 27 M CORE CUT. FLOWCHECKED WELL, OK. SLUGGED PIPE.
23.04.2001.14:30	18:00	3.5	274.0	ERCU	OK		POOH WITH CORE NO 8 FROM 2101 M TO 272 M. FLOWCHECKED WELL IN CSG SHOE.
23.04.2001.18:00	20:00	2.0		ERCU	OK		POOH WITH CORING BHA FROM 272 M. RACKED BHA IN DERRICK.
23.04.2001.20:00	23:00	3.0		ERCU	OK		HELD PREJOB MEETING. L/D CORE NO 8 ON DECK. L/D OUTER BARREL ON DECK.
23.04.2001.23:00	00:00	1.0	85.0	BBDU	OK		RIH WITH 3 STANDS 5 1/2" HWDP. M/U BOP TEST TOOL. MEANWHILE FUNCTION TESTED BOP SHEAR RAM ON BOTH PODS FROM DRILLING OFFICE.
24.04.2001.00:00	02:30	2.5	405.0	BBDU	OK		CONTINUED M/U BOP TEST TOOL, RIH AND LANDED IN WH.
24.04.2001.02:30	06:00	3.5		BBDU	OK		TESTED BOP ON BLUE POD TO 35/214 BAR FOR 5/10 MIN.
24.04.2001.06:00	07:00	1.0		BBDU	OK		CONT TESTING BOP TO 35/214 BAR FOR 5/10 MIN ON BLUE POD. FUNCTION TESTED ALL FUNCTIONS ON YELLOW POD.
24.04.2001.07:00	08:30	1.5		DERD	E FAIL		CHANGED GUIDE ROLLER ON LOWER PORT AFT TRAVELLING YOKE.
24.04.2001.08:30	10:30	2.0		BBOU	OK		POOH WITH BOP TEST TOOL AND 3 STANDS HWDP.
24.04.2001.10:30	11:30	1.0		BBOU	OK		RIGGED UP AND TESTED DDM IBOP'S. RIGGED DOWN.
24.04.2001.11:30	14:00	2.5	230.0	DTDU	OK		MADE UP 8 1/2" BHA.
24.04.2001.14:00	16:30	2.5	1925.0	DTDU	OK		RIH WITH 8 1/2" BHA ON 5 1/2" DP FROM 230 M TO 1925 M. FILLED PIPE AT 1000M.
24.04.2001.16:30	17:30	1.0	1950.0	DCAU	OK		BROKE CIRC AND INCREACED CIRC RATE IN STEPS TO 2400 LPM. TOOK CHECK SURVEY AT 1950 M.
24.04.2001.17:30	21:00	3.5	2101.0	DDOU	OK		WASHED AND REAMED THROUGH CORED SECTION FROM 1950 M TO TD AT 2101 M. PARAMETERS: 75 M/HR, 80 RPM, 2400 LPM, 200 BAR.
24.04.2001.21:00	00:00	3.0	2178.0	DDRU	OK	OK	DRILLED 8 1/2" HOLE FROM 2101 M TO 2178 M.
25.04.2001.00:00	05:30	5.5	2219.0	DDRU	OK		DRILLED 8 1/2" HOLE FROM 2178 M TO 2319 M.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
25.04.2001.05:30	06:00	0.5	2319.0	DCAU	OK		ROTATED AND RECIPROCATED STRING WHILE CIRCULATED HOLE CLEAN PRIOR TO POOH FOR WL LOGGING.
25.04.2001.06:00	08:30	2.5	2319.0	DCAU	OK		ROTATED AND RECIPROCATED STRING WHILE CIRCULATING HOLE CLEAN (BTM'S UP TWICE), FLOW 2400 LPM/SPP 246 BAR/230 RPM/9 KNM. BOOSTED RISER.
25.04.2001.08:30	10:00	1.5	2075.0	DTLU	OK		FLOWCHECKED WELL FOR 15 MIN AND POOH. TIGHT SPOT AT 2175 M. MAX OVERPULL 8 TONS.STICKY ON CONNECTIONS AT 2160 M AND 2105 M. MAX OVERPULL 14 TONS.
25.04.2001.10:00	10:30	0.5	2075.0	DDOD	STUCK		STUCK WHEN PULLING OUT OF SLIPS AT 2075M. M/U DDM TO FULL STAND. ESTABLISHED CIRCULATION, 1000 LPM WITH FULL RETURNS. BROUGHT FLOWRATE UP TO 2000 LPM. ATTEMPTED TO FIRE JAR. APPLIED 45 KNM TORQUE AND SAT DOWN 60 TON. WORKED TORQUE DOWN STRING FOR 5 MIN BEFORE STRING GOT LOOSE. STRING STUCK FOR TOTALLY 22 MIN.
25.04.2001.10:30	13:30	3.0	2075.0	DCRK	OK		CIRCULATED AND CONDITIONED MUD WITH 2400 LPM. REDUCED MW FROM 1.27 SG TO 1.26 SG. ADD FLUID LOSS REDUCER AND LUBRICANT TO MUD SYSTEM.
25.04.2001.13:30	15:00	1.5	1903.0	DCRK	OK		CONT POOH TO 1903 M. TIGHT SPOTS AT 2075 M 25 TONS OP/2046 M 15 TONS OP/1980 M 20 TONS OP.
25.04.2001.15:00	16:00	1.0	2319.0	DCRK	OK		RIH TO BOTTOM AT 2319 M. OBSERVED TIGHT SPOTS AT 2075 M AND 2105 M. WORKED SPOTS W/2400 LPM/190 BAR/50 RPM.
25.04.2001.16:00	00:00	8.0	1692.0	DCBK	OK		BACKREAMED FROM 2319 M TO 1692 M, 120 RPM, 2400/2200 LPM, 200 BAR. HAD 15 MT OVERPULL AFTER CONNECTION AT 2067 M. APPLIED 25 KNM TORQUE TO FREE PIPE. AT 2018 M OBSERVED INCREASING TORQUE AND PUMP PRESSURE. WORKED SPOTS OK.
26.04.2001.00:00	03:00	3.0	1290.0	DCBK	OK		CONT BACKREAMING FROM 1692 M TO 1290 M, 120 RPM, 2200 LPM, 180 BAR.
26.04.2001.03:00	04:30	1.5	1290.0	DCAU	OK		CIRC BOTTOMS UP AT 13 3/8" CSG SHOE. MODERATE AMMOUNT OF CUTTINGS OVER SHAKERS.
26.04.2001.04:30	06:00	1.5	1764.0	DCWK	OK		RIH FROM 1290 M. TOOK 12 MT WEIGHT AT 1400 M. WORKED THROUGH TIGHT SPOT - OK. CONTINUED RIH. TOOK 15 MT WEIGHT AT 1764 M.
26.04.2001.06:00	06:30	0.5	1776.0	DCWK	OK		CONNECTED DDM AND REAMED/WORKED TIGHT SPOT FROM 1764 M TO 1776 M.
26.04.2001.06:30	09:30	3.0	2319.0	DCWK	OK		CONTINUED RIH TO 2124 M. WASHED THROUGH TIGHT SPOT AT 2067 M, 2000 LPM, 127 BAR, 50 RPM. PIPE STICKING AT 2124 M. APPLIED 40 KNM TORQUE AND 40 MT DOWNWEIGHT TO FREE PIPE. CONTINUED RIH TO TD AT 2319 M.
26.04.2001.09:30	12:30	3.0	2319.0	DCWK	OK		TAGGED BOTTOM, NO FILL. CIRCULATED B/U 2000 LPM/ 158 BAR/ 50 RPM. INCREASED MW TO 1.30 SG.
26.04.2001.12:30	15:00	2.5	1300.0	DTLU	OK		POOH FROM 2319 M TO 1300 M. FLOWCHECKED WELL, OK. PUMPED SLUG.
26.04.2001.15:00	16:30	1.5	230.0	DTLU	OK		CONT POOH TO 230 M.
26.04.2001.16:30	18:00	1.5		DTLU	OK		RACKED BHA. L/D 6 3/4" SONIC MWD TOOL.
26.04.2001.18:00	19:00	1.0		DTLU	OK		TESTED 6 3/4" RLL TOOL. DUMPED MEMORY ON SAME.
26.04.2001.19:00	19:30	0.5		GBLD	OK		R/U SCHLUMBERGER WIRELINE.
26.04.2001.19:30	23:30	4.0	2319.0	GLFU	OK		PERFORMED PREJOB MEETING. M/U TOOLSTRING. RIH, TAGGED BLIND/SHEAR RAM AND CORRELATED DEPTH. OPENED BLIND/SHEAR RAM AND RIH WITH WIRELINE LOG NO 1: GR-DENSITY-NEUTRON POROSITY-RES TO TD AT 2319 M.
26.04.2001.23:30	00:00	0.5	2220.0	GLFU	OK		LOGGED OUT OF HOLE FROM 2319 M TO 2220 M.
27.04.2001.00:00	02:00	2.0		GLFU	OK		CONTINUED LOGGING FROM 2220 M TO 13 3/8" CSG SHOE AT 1305,5 M. POOH WITH WIRELINE.
27.04.2001.02:00	03:00	1.0		GLFU	OK		L/D WIRELINE TOOL STRING.
27.04.2001.03:00	04:00	1.0		GLFU	OK		M/U NEW WIRELINE TOOL STRING.
27.04.2001.04:00	06:00	2.0	1968.0	GLFU	OK		RIH WITH WIRELINE RUN NO 2: MDT - GR. TOOK PRESSURE POINTS FROM 1953,4 M TO 1966,8 M.
27.04.2001.06:00	00:00	18.0	2248.0	GLFU	OK		CONTINUED LOGGING RUN NO 2: MDT - GR. TOOK PRESSURE POINTS FROM 1966,8 M TO 2248,5 M. TOOK 6 EA FORMATION WATER SAMPLES AT 2052,2 M.
28.04.2001.00:00	04:00	4.0	2019.0	GLFU	OK		ATTEMPTED TO TAKE FORMATION WATER SAMPLE AT 2019,2 M - NO SUCCESS.
28.04.2001.04:00	06:00	2.0		GLFU	OK		POOH WITH WIRELINE RUN NO 2: MDT - GR FROM 2019,2 M. NO STICKING PROBLEMS. L/D TOOL STRING.
28.04.2001.06:00	07:00	1.0		GLFU	OK		M/U WIRELINE TOOL STRING, RUN NO 3: CMR - ESC - HNGS.
28.04.2001.07:00	18:00	11.0	2312.0	GLFU	OK		RIH WITH WL RUN NO 3: CMR - ECS - HNGS. LOGGED FROM 2312 M TO 1790 M. POOH WITH WIRELINE. REMOVED SOURCES AND L/D TOOL STRING.
28.04.2001.18:00	18:30	0.5		GLFU	OK		M/U TOOL STRING, WL RUN NO 4: FMI - DSI - GR.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
28.04.2001.18:30	00:00	5.5	1790.0	GLFU	OK		RIH WITH WL RUN NO 4: FMI - DSI - GR. LOGGED FROM 2117 M TO 1790 M.
29.04.2001.00:00	03:00	3.0		GLFU	OK		CONTINUED LOGGING SEQUENCE, RUN NO 4: FMI - DSI - GR. POOH.
29.04.2001.03:00	04:00	1.0		GLFU	OK		M/U WIRELINE TOOL STRING, RUN NO 5: MDT - GR.
29.04.2001.04:00	06:00	2.0	1972.0	GLFU	OK		RIH WITH WL RUN NO 5: MDT - GR. DEPTH CORRELATED PRIOR TO SAMPLING.
29.04.2001.06:00	17:30	11.5	2155.0	GLFU	OK		CONTINUED WIRELINE LOGGING RUN NO 5: MDT - GR. ATTEMPTED TO TAKE OIL SAMPLES AT 1961 M AND WATER SAMPLES AT 2155,1 M - NO SUCCESS. LOST SEAL DUE TO UNCONSOLIDATED FORMATION. ATTEMPTED TO TAKE PRESSURE POINTS AT 1814,5 M, 1810,6 M AND 1808,4 M - FORMATION TIGHT. POOH.
29.04.2001.17:30	18:30	1.0		GLFU	OK		L/D WIRELINE TOOL STRING.
29.04.2001.18:30	21:00	2.5		GLFU	OK		PREPARED AND M/U TOOL STRING, WIRELINE RUN NO 6: MDT - GR (DUAL PACKER). TESTED TOOLS ON SURFACE.
29.04.2001.21:00	00:00	3.0	1968.0	GLFU	OK		RIH WITH WIRELINE RUN NO 6: MDT - GR. DEPTH CORRELATED. SET DUAL PACKER AT 1967,8 M AND CLEANED OUT PRIOR TO TAKE FORMATION FLUID SAMPLES.
30.04.2001.00:00	06:00	6.0	2155.0	GLFU	OK		CLEANED OUT AND TOOK FORMATION FLUID SAMPLES AT 1967,8 M. PULLED TOOL FREE WITH 1,63 MT OVERPULL. CONTINUED RIH. CORRELATED AND SET DUAL PACKER AT 2155,5 M. PUMP TO CLEAN OUT PRIOR TO TAKE FORMATION FLUID SAMPLES.
30.04.2001.06:00	08:00	2.0	2155.0	GLFU	OK		CONT LOGGING RUN NO 6: MDT - GR. TOOK FORMATION FLUID SAMPLES AT 2155 M. PULLED TOOL FREE WITH 1,995 MT OVERPULL. POOH.
30.04.2001.08:00	09:00	1.0		GLFU	OK		L/D WIRELINE LOGGING TOOLS.
30.04.2001.09:00	11:00	2.0		GLFU	OK		PREPARED AND M/U TOOL STRING, WIRELINE RUN NO 7: VSP - GR.
30.04.2001.11:00	16:00	5.0	2319.0	GLFU	OK		RIH WITH WIRELINE RUN NO 7: VSP - GR TO TD. LOGGED/SHOT VSP FROM TD TO 600 M. POOH.
30.04.2001.16:00	17:00	1.0		GBNU	OK		R/D WIRELINE EQUIPMENT.
30.04.2001.17:00	18:00	1.0		CARU	OK		M/U CMT HEAD AND RACKED CMT STAND IN DERRICK.
30.04.2001.18:00	20:00	2.0		CARU	OK		HELD PREJOB MEETING WITH INVOLVED PERSONNEL PRIOR TO RUN 7" LINER. M/U SHOE JOINT, INTERMEDIATE JOINT AND FLOAT COLLAR JOINT. CHECKED SHOE AND FLOAT FOR FLOW THROUGH AND BACKFLOW. THREAD LOCKED THREE FIRST CONNECTIONS.
30.04.2001.20:00	00:00	4.0	430.0	CARU	OK		M/U SHOE, INTERMEDIATE AND FLOAT COLLAR JOINTS. CHECKED SHOE AND FLOAT FOR FLOW THROUGH AND BACK FLOW PRIOR TO RIH. THREAD LOCKED FIRST THREE CONNECTIONS. CONTINUED RIH WITH 7" LINER TO 430 M. FILLED EVERY 5 JOINTS WITH 1,30 SG MUD AS RIH.
01.05.2001.00:00	06:00	6.0	875.0	CARU	OK		RIH WITH 7" LINER FROM 430 M TO 875 M. FILLED EVERY 5 JOINTS WITH 1,30 SG MUG AS RIH.
01.05.2001.06:00	11:00	5.0	1125.0	CARU	OK		RIH WITH 7" LINER FROM 875 M TO 1125 M. FILLED EVERY 5 JOINTS WITH 1,30 SG MUD AS RIH. LAID DOWN 3 JOINTS DUE TO UNPROPER MAKE UP. CONNECTION DID NOT SHOULDER UP.
01.05.2001.11:00	13:30	2.5	1125.0	CARU	OK		M/U 7"X9 5/8" X-OVER AND 9 5/8" LINER HANGER TO STRING. INSTALLED CMT WIPER PLUGS, STINGER AND RUNNING TOOL.
01.05.2001.13:30	17:30	4.0	1850.0	CAOU	OK		RIH WITH 7" LINER ON 5 STDS 5 1/2" HVDP AND 5 1/2" DP FROM 1135 M TO 1285 M. LANDING STRING DRIFTED TO 2,75" PRIOR TO RIH. CONNECTED TDS AND ATTEMPTED TO PUMP THROUGH LANDING STRING - NO SUCCESS. APPLIED 80 BAR IN STRING. PRESSURE BLED OFF AFTER 10 MIN. CIRC FOR 15 MIN, 800 LPM, 47 BAR.
01.05.2001.17:30	00:00	6.5	2281.0	CARU	OK		CIRCULATED WHILE RIH WITH 7" LINER FROM 1850 M TO 2281 M, 480 LPM, 30-50 BAR.
02.05.2001.00:00	04:00	4.0	2313.0	CARU	OK		CONTINUED WASH DOWN 7" LINER WITH 480 LPM, 30-50 BAR FROM 2281 M. NOT ABLE TO PASS 2313 M.
02.05.2001.04:00	05:00	1.0	2313.0	CARU	OK		L/D 2 JOINTS 5 1/2" DP. M/U CMT STAND TO STRING.
02.05.2001.05:00	06:00	1.0	2313.0	CARU	OK		CIRC AND REDUSED MUD WEIGHT FROM 1,30 SG TO 1,26 SG.
02.05.2001.06:00	08:30	2.5	2313.0	CCCU	OK		CIRC AND REDUCED MUD WEIGHT FROM 1,30 SG TO 1,26 SG PRIOR TO CMT JOB.
02.05.2001.08:30	09:30	1.0	2312.0	CARU	OK		DROPPED AND CIRC BALL DOWN WITH 245 LPM,16 BAR. PRESS UP TO 165 BAR. AND SET LINER HANGER. TOP OF HANGER AT 1174 M. RELEASED RUNNING TOOL. PICKED UP STRING WEIGHT AND VERIFIED RELEASE. SET DOWN 18 MT WEIGHT. PRESS UP TO 220 BAR AND SHEARED BALL SEAT.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
02.05.2001.09:30	10:00	0.5	2312.0	CCCU	OK		ESTABLISHED CIRC WITH 1400 LPM, 82 BAR, 10 RPM, 4 KNM TORQUE.
02.05.2001.10:00	10:30	0.5	2312.0	CSSU	OK		PUMPED 10 M3 1,08 SG KCL BRINE FOLLOWED BY 15 M3 1,40 SG SPACER, 1200 LPM, 75 BAR. MEANWHILE TESTED CMT LINE TO 345 BAR.
02.05.2001.10:30	11:30	1.0	2312.0	CSSU	OK		DROPPED BOTTOM DART. MIXED AND PUMPED 27,2 M3 CMT SLURRY AT 800 LPM, 40-50 BAR. ROTATED LINER WITH 5 RPM WHILE MIXING. DROPPED TOP DART.
02.05.2001.11:30	12:00	0.5	2312.0	CSSU	OK		DISPLACED CMT SLURRY WITH 33,7 M3 1,26 SG MUD FROM RIG PUMPS, 1400 LPM, 100 BAR. ROTATED LINER WITH 25 RPM, 5,2 KNM WHILE DISPLACING. BUMPED PLUG AND INCREASED PRESS TO 170 BAR.
02.05.2001.12:00	12:30	0.5	2312.0	CSSU	OK		LINED UP TO CMT UNIT AND ATTEMPTED TO TEST 7" LINER TO 345 BAR. AT 337 BAR STRING WAS COMING UP. BLED OFF PRESS. ATTEMPTED TO RETEST LINER. OBSERVED SLIGHT LEAK AT 237 BAR. BLED OFF PRESS. CHECKED SHOE AND FLOAT FOR BACKFLOW. PULLED PACKER ACTUATOR ABOVE PBR. SET DOWN 33 MT TO SET TSP.
02.05.2001.12:30	13:00	0.5	1174.0	CSSU	OK		APPLIED 50 BAR PRESS ON STRING. OBSERVED PRESS DROPPING WHEN PULLING OUT OF RMS. CIRCULATED 1,5 TIMES BOTTOMS UP, 3600 LPM, 80 BAR. KCL BRINE AND SPACER IN RETURNS. NO VISUAL SIGN OF CMT IN RETURNS, BUT HP INCREASED FROM 8,4 TO 10,2.
02.05.2001.13:00	14:30	1.5	2312.0	CATD	OK		CLOSED ANNULAR PREVENTER. ATTEMPTED TO TEST 13 3/8" CSG, TSP AND 7" LINER. PRESS LEAKED OFF WITH 1-2 BAR/MIN.
02.05.2001.14:30	20:30	6.0		CTTU	OK		R/D CMT HOSES AND RACKED CMT STAND. POOH WITH LANDING STRING FROM 1174 M TO 810 M. PUMPED CLEAN OUT SPONGE THROUGH STRING. CONTINUED POOH. L/D LINER HANGER RUNNING TOOL. P/U CMT STAND. L/D CMT HEAD.
02.05.2001.20:30	22:00	1.5		BBWW	OK		WOW DUE TO ROLL AND PITCH MORE THAN 4 DEG. MEANWHILE TESTED KILL AND CHOKE LINES TO 35/225 BAR FOR 5/10 MIN.
02.05.2001.22:00	23:30	1.5		BBDU	OK		M/U BOP TEST TOOL.
02.05.2001.23:30	00:00	0.5	150.0	BBOU	OK		RIH WITH BOP TEST TOOL TO 150 M.
03.05.2001.00:00	01:30	1.5	405.0	BBOU	OK		CONT RIH WITH BOP TEST TOOL. WASHED BOP AND WELL HEAD AREA.
03.05.2001.01:30	05:00	3.5		BBOU	OK		TESTED BOP TO 35/225 BAR FOR 5/10 MIN ON YELLOW POD. FUNCTION TESTED ON BLUE POD FROM DRILLERS PANEL.
03.05.2001.05:00	06:00	1.0		BBOU	OK		POOH WITH BOP TEST TOOL.
03.05.2001.06:00	07:00	1.0		BBOU	OK		BROKE AND L/D BOP TEST TOOL.
03.05.2001.07:00	09:00	2.0		CTTU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT. P/U 6 JNTS 4 3/4" DC. M/U 6" BIT, 7" SCRAPER AND BIT SUB.
03.05.2001.09:00	14:00	5.0		CTTU	OK		P/U 107 JONITS 3 1/2" DP.
03.05.2001.14:00	16:00	2.0		CTTU	OK		INSTALLED 9 5/8" SCRAPE, BIT SUB, TDMA, 13 3/8" SCRAPE, BIT SUB, XO AND 1 STD 5" DP.
03.05.2001.16:00	17:30	1.5	1556.0	CTTU	OK		RIH WITH 5 1/2" DP TO 1556 M
03.05.2001.17:30	18:00	0.5	1556.0	CATU	OK		CLOSED MPR. TESTED WELL AND LINER LAP TO 225 BAR - OK.
03.05.2001.18:00	20:00	2.0		CTTU	OK		P/U AND M/U RTTS TOOL.
03.05.2001.20:00	21:30	1.5	2026.0	CTTU	OK		RIH WITH RTTS TO 444 M, BIT AT 2026 M.
03.05.2001.21:30	23:00	1.5		CATU	OK		PULLED UP WITH RTTS TO 436 M AND SET SAME. PRESSURE TESTED WELL AND LINER LAP BELOW RTTS TO 345 BAR - OK.
03.05.2001.23:00	00:00	1.0		CATU	OK		DISCONNECTED CMT HOSE. RELEASED RTTS. APPLIED 20 TON O-PULL AND SLACKED OFF WEIGHT TO NEUTRAL. PRESSURED UP TO 100 BAR AND APPLIED 20 TON O-PULL. SLACKED OFF WEIGHT. PRESSURED UP ANNULUS TO 150 BAR. SLACKED OFF WEIGHT AND RELEASED RTTS
04.05.2001.00:00	02:30	2.5		CTTU	OK		PULLED OUT AND L/D RTTS.
04.05.2001.02:30	05:00	2.5		CTTU	OK		RIH AND SCRAPED THE INTERVALLS 1900 - 1920 M AND 1970 - 1990 M. 10-30 RPM AND 2000 LPM.
04.05.2001.05:00	05:30	0.5	2265.0	CTTU	OK		RIH AND TAGGED TOP OF PBR AT 1174 M, BIT AT 2265 M.
04.05.2001.05:30	06:00	0.5	2265.0	CAOU	OK		POLISHED PBR AND DRESSED OF TOP OF PBR WITH 50 RPM AND 800 LPM
04.05.2001.06:00	07:00	1.0	2255.0	TCCU	OK		CIRCULATED B/U TO RISER WITH 2000 LPM, 280 BAR.
04.05.2001.07:00	08:00	1.0		TCCU	OK		DISPLACED RISER TO SEAWATER.
04.05.2001.08:00	11:00	3.0		TCCU	OK		DISPLACED OUT MUD WITH SEAWATER. CIRCULATED LONG WAY AND KEPT CONSTANT BHP.
04.05.2001.11:00	11:30	0.5		TCCU	OK		CLOSED WELL. BLED OFF PRESSURE AND FLOWCHECKED WELL - OK.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
04.05.2001.11:30	14:30	3.0		TCCU	OK		PUMPED A 10 M3 HIGH VISC PILL. CIRCULATED WITH SEAWATER UNTIL CLEAN WELL.
04.05.2001.14:30	17:30	3.0		CTTU	OK		POOH WITH 5 1/2" DP. STRAPPED PIPE ON WAY OUT.
04.05.2001.17:30	18:30	1.0		CTTU	OK		BROKE AND L/D 13 3/8" SCRAPER, 9 5/8" SCRAPER, TOP DRESSING MILL, BIT SUB AND X-OVERS.
04.05.2001.18:30	22:00	3.5		CTTU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT. POOH WITH 3 1/2" DP.
04.05.2001.22:00	23:30	1.5		CTTU	OK		R/B 2 STANDS 4 3/4" DC. BROKE AND L/D 6" BIT AND 7" SCRAPER.
04.05.2001.23:30	00:00	0.5		RMRU	OK		CHANGED WASHPIPE ON TOPDRIVE.
05.05.2001.00:00	02:00	2.0		RMRD	E FAIL		CHANGED WASHPIPE ON TOP DRIVE. HAD PROBLEM WITH INSTALLATION DUE TO SMALL CLEARANCES. ATTEMPTED TO PRESSURE TEST SAME - NO SUCCESS.
05.05.2001.02:00	03:30	1.5		RMRD	E FAIL		REMOVED WASHPIPE. INSTALLED NEW WASHPIPE AND PRESSURE TESTED SAME - NO SUCCESS. PRESSURE LEAKED OFF AT 270 BAR.
05.05.2001.03:30	04:00	0.5		RMRU	OK		M/U AND RETIGHTEN WASHPIPE. PRESSURE TESTED SAME TO 345 BAR - OK.
05.05.2001.04:00	06:00	2.0	91.0	TEDU	OK		HELD PREJOB SAFETY MEETING. P/U AND RAN IN WITH SCHLUMBERGER PERFORATION GUNS. RAN IN WITH FIRING HEAD AND SPACER TUBING.
05.05.2001.06:00	09:30	3.5	250.0	TEDU	OK		CONTINUED RUNNING IN WITH TEST STRING BHA. RAN 18 JNTS 4 3/4" DC. P/U SLIP JOINT ASSEMBLIES AND 1 JOINT 3 1/2" PH6 TUBING.
05.05.2001.09:30	12:00	2.5	250.0	TEOD	E FAIL		ATTEMPTED TO TEST INJECTION TEST STRING BHA AGAINST TST VALVE TO 345 BAR - NO SUCCESS. PRESSURE TESTED SURFACE LINES - OK. ATTEMPTED TO TEST AGAINST BHA AGAINST TST VALVE - NO SUCCESS.
05.05.2001.12:00	15:00	3.0		TEOD	E FAIL		COLLAPSED SLIP JOINTS AND R/B STAND. R/B 3 STANDS 4 3/4" DC. FOUND DC WITH DAMAGED BOX. L/O 3 JOINTS 4 3/4" DC.
05.05.2001.15:00	15:30	0.5		TEOD	E FAIL		R/U PUMP IN SUB AND PRESSURE TESTED TEST STRING BHA TO 345 BAR - OK.
05.05.2001.15:30	19:00	3.5		TEOD	E FAIL		P/U 3 NEW JOINTS 4 3/4" DC AND RAN 3 STANDS 4 3/4" DC. INSTALLED SLIP JOINTS. ATTEMPTED TO PRESSURE TEST - NO SUCCESS. R/B SLIPJOINTS AND 2 STANDS 4 3/4" DC. ATTEMPTED TO PRESSURE TEST - NO SUCCESS. R/B ONE MORE STAND AND ATTEMPTED TO PRESSURE TEST - NO SUCCESS. FOUND LEAK IN CONN. L/D 2 JOINTS 4 3/4" DC AND DAMAGED 4 3/4" DC.
05.05.2001.19:00	21:00	2.0	250.0	TEDU	OK		PRESSURE TESTED BHA WITH 2 STANDS 4 3/4" DC TO 345 BAR - OK. RIH W/ 3 STANDS 4 3/4" DC AND PRESSURE TESTED BHA TO 345 BAR - OK.
05.05.2001.21:00	21:30	0.5	285.0	TEDU	OK		RIH W/ 4 SLIP JOINTS AND 1 JOINT 3 1/2" PH6 TUBING. PRESSURE TESTED BHA TO 345 BAR - OK.
05.05.2001.21:30	00:00	2.5	440.0	TEDU	OK		RIH WITH 3 1/2" PH6 TUBING TO 440 M.
06.05.2001.00:00	05:00	5.0	970.0	TEDU	OK		CONTINUED TO RIH WITH 3 1/2" PH6 TUBING TO 970 M. M/U X-OVER TO 5 1/2" DP AND PRESSURE TESTED SAME TO 345 BAR - OK. L/O 2 JOINTS WHICH WERE DAMAGED IN BOX END.
06.05.2001.05:00	06:00	1.0	1000.0	TEDU	OK		CHANGED TO 5 1/2" HANDLING EQUIPMENT AND RIH WITH 5 1/2" DP TO 1000 M CHECKED EACH CONNECTION.
06.05.2001.06:00	08:00	2.0	1287.0	TEDU	OK		CONTINUED TO RIH WITH 5 1/2" DP. CHECKED EACH CONNECTION.
06.05.2001.08:00	10:00	2.0	1287.0	TEDU	OK		REARRANGED SET BACK. B/O KELLY COCK, SAVER SUB AND DRILLING PUP FROM DRILLING STAND. TIGHTEN UP TEST FLANGE IN DERRICK.
06.05.2001.10:00	12:00	2.0	1674.0	TEDU	OK		CONTINUED TO RIH WITH 5 1/2" DP. CHECKED EACH CONNECTION.
06.05.2001.12:00	17:00	5.0		TEDU	OK		P/U SSTT ASSEMBLY AND X-OVER. M/U SAME. VERIFIED SPACE OUT. CONNECTED CONTROL HOSES TO SSTT AND TESTED SAME. LAID SSTT IN SKATE. TESTED INJECTION TEST STRING BHA TO 345 BAR - OK. P/USSTT.
06.05.2001.17:00	20:00	3.0		TEDU	OK		TESTED SUB SEA CONTROL LINES. CHANGED MASTER BUSHING. CONNECTED X-OVER AND 5 1/2" DP STAND TO SSTT. BROKE FITTINGS ON CONTROLLINE. CHANGED TO BACK-UP REAL AND CONNECTED CONTROLLINES TO SSTT.
06.05.2001.20:00	21:00	1.0		TEDU	OK		RAN SSTT AND 4 STANDS 5 1/2" DP. USED TAPE AND ATTACHED UMBILICAL TO DP ON EVERY SECOND CONNECTION.
06.05.2001.21:00	22:00	1.0		TEDU	OK		M/U KELLY VALVE AND EXTENSION SUB. R/B STAND.
06.05.2001.22:00	23:30	1.5	2022.0	TEDU	OK		RIH WITH 5 1/2" DP.
06.05.2001.23:30	00:00	0.5	2022.0	TEDU	OK		P/U AND M/U LUBRICATOR ASSEMBLY TO STRING.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
07.05.2001.00:00	01:30	1.5		TEDU	OK		CONTINUED M/U LUBRICATOR ASSEMBLY TO STRING. USED RIG TONGS ON ALL X-OVERS. FLUSHED, CONNECTED AND TESTED CONTROL LINES.
07.05.2001.01:30	04:30	3.0		TEDU	OK		RIH WITH 5 1/2" DP. M/U KELLY STAND WITH EXTENSION SUB. PRESSURE TESTED STRING TO 345 BAR. BLED OFF TO 35 BAR AND INFLOWTESTED SSTT. PRESSURED UP TUBING TO 345 BAR. BLED OF TO 35 BAR. INFLOWTESTED LUBRICATOR. PRESSURE TESTED LUBRICATOR TO 345 BAR FROM ABOVE.
07.05.2001.04:30	05:00	0.5		TEDU	OK		CHECKED UP/DOWN WEIGHTS 77/75 TON. RAN IN AND LANDED FLUTED HANGER IN WELLHEAD. SET DOWN 4 TON AND P/U 4 M. ROTATED 4 TIMES AND SET RTTS PACKER. LOWERED STRING AND SET DOWN 11 TON ON PACKER AND 18 TON ON FLUTED HANGER IN WELLHEAD. CLOSED LOWER PIPE RAM.
07.05.2001.05:00	05:30	0.5	2069.0	TEDU	OK		PRESSURED UP TUBING TO 30 BAR. PRESSURED UP ANNULUS TO 100 BAR AND SHEARED TST VALVE. BLED OFF PRESSURE ON ANNULUS TO 30 BAR.
07.05.2001.05:30	06:00	0.5	2069.0	TPPU	OK		PRESSURED UP TUBING TO 272 BAR. BLED OFF TO 20 BAR. TCP GUNS WERE DETONATED AFTER 7 MIN. PERFORATED FROM 2018 M TO 2069 M. PRESSURE DROPPED TO 4 BAR.
07.05.2001.06:00	07:00	1.0	2069.0	TEDU	OK		CYCLING OMNI VALVE TO CIRCULATING POSITION.
07.05.2001.07:00	08:00	1.0		TCCU	OK		DISPLACED TEST STRING WITH GEL FLUID.
07.05.2001.08:00	09:00	1.0		TEDU	OK		CYCLED OMNI VALVE TO WELLTEST POSITION.
07.05.2001.09:00	09:30	0.5		TCCU	OK		HELD PREJOB MEETING PRIOR TO START OF MINIFRAC TEST AND INJECTION TEST. DISPLACED SEAWATER BELOW OMNI VALVE WITH GEL FLUID.
07.05.2001.09:30	10:00	0.5	2069.0	TCCU	OK		PERFORMED MINIFRAC TEST BY PUMPING 50 M3 GEL FLUID INTO PERFORATIONS, 3300 LPM, 220 BAR.
07.05.2001.10:00	11:30	1.5		TCCU	OK		SHUT IN WELL AT SURFACE FOR PRESSURE FALL-OFF PERIOD. BLED BACK 600 LITER FROM STRING.
07.05.2001.11:30	12:00	0.5		TCCU	OK		PERFORMED SECOND MINIFRAC BY PUMPING 15 M3 GEL FLUID LEFT IN STRING. SHUT IN WELL AT SURFACE FOR FALL-OFF PERIOD. BLED BACK 300 LITER FROM TEST STRING.
07.05.2001.12:00	13:00	1.0		TCCU	OK		PERFORMED STEP RATE TEST. INCREASED PUMPRATE IN STEPS FROM 500 LPM TO 2900 LPM.
07.05.2001.13:00	13:30	0.5		TCCU	OK		STOPPED PUMPING AND PERFORMED FALL-OFF TEST.
07.05.2001.13:30	00:00	10.5	2069.0	TCCU	OK		PERFORMED INJECTION TEST WITH SEAWATER IN åRE FORMATION AT 2018 - 2069 M WITH 2500 LPM, 295 BAR.
08.05.2001.00:00	06:00	6.0	2069.0	TCCU	OK		CONTINUED INJECTION TEST WITH SEAWATER IN åRE FORMATION, 2500 LPM, 295 BAR. ACCUMULATED INJECTED VOLUME AT 06:00 HRS. 2580 M3.
08.05.2001.06:00	00:00	18.0	2069.0	TCCU	OK		CONTINUED INJECTION TEST WITH SEAWATER IN åRE FORMATION, 2450 LPM, 295 BAR. ACCUMULATED INJECTED VOLUME AT 24:00 HRS. 5230 M3.
09.05.2001.00:00	06:00	6.0		TCCU	OK		CONTINUED INJECTION TEST WITH SEAWATER IN åRE FORMATION, 2450 LPM, 295 BAR. ACCUMULATED INJECTED VOLUME AT 06:00 HRS, 6150 M3.
09.05.2001.06:00	00:00	18.0	2069.0	TCCU	OK		CONTINUED INJECTION TEST WITH SEAWATER IN åRE FORMATION, 2430 LPM, 295 BAR. ACCUMULATED INJECTED VOLUME AT 24:00 HRS, 8730 M3.
10.05.2001.00:00	06:00	6.0		TCCU	OK		CONTINUED INJECTION TEST WITH SEAWATER IN åRE FORMATION, 2430 LPM, 295 BAR. ACCUMULATED INJECTED VOLUME AT 06:00 HRS, 9670 M3.
10.05.2001.06:00	08:30	2.5	2069.0	TCCU	OK		CONT INJECTION TEST WITH SEAWATER IN ÅRE FORMATION W/2430 LPM/ 295 BAR. CUMULATIVE VOLUME Ø 0815 HRS 10032 M3. SHUT IN WELL. INITIAL SHUT-IN PRESSURE WAS 58 BAR.
10.05.2001.08:30	00:00	15.5	2069.0	TFSU	OK		RECORDED FALL-OFF PRESSURE WITH WELL SHUT IN. PRESSURE AT 2400 HRS 40.4 BAR.
11.05.2001.00:00	06:00	6.0	2069.0	TFSU	OK		CONT RECORDING FALL-OFF PRESSURE WITH WELL SHUT IN. PRESSURE AT 0600 HRS 37.1 BAR.
11.05.2001.06:00	10:00	4.0	2069.0	TFSU	OK		CONTINUED RECORDING FALL-OFF PRESSURE. PRESSURE AT 1000 HRS WAS 36 BAR. HELD PRE-JOB MEETING PRIOR TO KILLING WELL.
11.05.2001.10:00	11:00	1.0	2069.0	TFKU	OK		CYCLED OMNI VALVE TO CIRCULATION POSITION.
11.05.2001.11:00	12:30	1.5	2069.0	TFKU	OK		DISPLACED WELL TO 1.26 SG MUD W/1500 LPM/125 BAR.
11.05.2001.12:30	14:00	1.5	2069.0	TFKU	OK		DISPLACED RISER TO 1.26 SG MUD W/2400 LPM/208 BAR. MEANWHILE INCREASED MUDWEIGHT IN PITS TO 1.28 SG.
11.05.2001.14:00	15:00	1.0	2069.0	TFKU	OK		DISPLACED WELL TO 1.28 SG MUD W/1500 LPM/250 BAR.
11.05.2001.15:00	17:00	2.0	2069.0	TFKU	OK		CYCLED OMNI VALVE TO WELL TEST POSITION. HAD PROBLEMS WITH VERIFICATION OF OMNI IN RIGHT POSITION.
11.05.2001.17:00	18:00	1.0	2069.0	TFKU	OK		BULLHEADED 3 M3 MUD INTO PERFORATIONS W/200 LPM/69 BAR - BLED BACK 800 L. HAD 45 BAR ON ANNULUS WHILE BULLHEADING. FLOWCHECKED WELL ON TUBING SIDE.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
11.05.2001.18:00	18:30	0.5	2069.0	TFKU	OK		OPENED LPR. RELEASED RTTS PACKER BY PULLING UP 6 M. LOWERED DOWN AGAIN AND LANDED FLUTED HANGER IN WH.
11.05.2001.18:30	20:00	1.5	2069.0	TFKU	OK		CIRC B/U THROUGH CHOKE W/1100 LPM/200 BAR. DUE TO HIGH PRESSURE OPENED LPR, PICKED UP 9 M AND VERIFIED RTTS RELEASED, RELANDED FLUTED HANGER IN WH AND CLOSED LPR. CONT CIRC B/U W/HIGH PRESSURE.
11.05.2001.20:00	21:00	1.0	2069.0	TEDU	OK		OPENED LPR. FLOWCHECKED. SLUGGED PIPE AND REARRANGED SUBSEA CONTROL HOSES.
11.05.2001.21:00	22:00	1.0	2019.0	TEDU	OK		POOH AND L/O LUBRICATOR VALVE.
11.05.2001.22:00	00:00	2.0	1704.0	TEDU	OK		CONT POOH FROM 2019 TO 1704 M. PIPE WAS GETTING WETTER AFTER A WHILE - RESLUGGED PIPE.
12.05.2001.00:00	00:30	0.5	1667.0	TEDU	OK		CONT POOH FROM 1704 TO 1667 M. PIPE WAS STILL WET. PULLED SLOWLY TO AVOID SWABBING BELOW RTTS PACKER.
12.05.2001.00:30	01:30	1.0	1667.0	TEDU	OK		B/O AND L/D SSTT ASSY.
12.05.2001.01:30	04:30	3.0	1104.0	TEDU	OK		CONT POOH FROM 1667 TO 1104 M.
12.05.2001.04:30	05:00	0.5	1104.0	TEDU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT.
12.05.2001.05:00	06:00	1.0	880.0	TEDU	OK		CONT POOH W/3 1/2" PH6 TUBING FROM 1104 TO 880 M.
12.05.2001.06:00	07:00	1.0	275.0	TEDU	OK		CONT POOH W/3 1/2" PH6 TUBING FROM 880 M TO 275 M.
12.05.2001.07:00	08:00	1.0		TEDU	OK		CHANGED TO 4 3/4" DC HANDLING EQUIPMENT. CONT POOH FROM 275 M. B/O AND L/D SLIPJOINT ASSY.
12.05.2001.08:00	09:00	1.0		TEDU	OK		POOH AND RACKED BACK 5 STD 4 3/4" DC.
12.05.2001.09:00	09:30	0.5		TEDU	OK		CHANGED TO 3 1/2" DP ELEVATOR. PERFORMED PRE JOB MEETING PRIOR TO PULLING PERFORATING GUNS.
12.05.2001.09:30	11:00	1.5		TEDU	OK		B/O AND L/D INJECTION TEST STRING BHA.
12.05.2001.11:00	12:30	1.5		TEDU	OK		B/O AND L/D 4 1/2" PERFORATING GUNS. ALL SHOTS WERE FIRED.
12.05.2001.12:30	13:00	0.5		TEDU	OK		CLEANED RIG FLOOR AND CHANGED TO BX ELEVATOR.
12.05.2001.13:00	13:30	0.5		TEDU	OK		PICKED UP AND ADJUSTED FLUTED HANGER. L/D SAME.
12.05.2001.13:30	14:00	0.5		TEDU	OK		HELD PRE JOB MEETING PRIOR TO REMOVING BLIND CAP ON TEST LINE AND INSTALLING COFLEX HOSE ON SAME.
12.05.2001.14:00	17:00	3.0		TEDU	OK		REMOVED END CAP FROM TEST LINE. P/U COFLEX HOSE AND SECURED IN RAMRIG.
12.05.2001.17:00	18:00	1.0		PWPU	OK		R/U FOR RUNNING EZSV BRIDGE PLUG ON W/L.
12.05.2001.18:00	19:30	1.5	2006.0	PWPU	OK		RIH W/7" EZSV BRIDGE PLUG ON W/L TO 2006 M. MEANWHILE R/D CMT HOSE FROM CMT STANDPIPE.
12.05.2001.19:30	21:00	1.5		PWPU	OK		SET EZSV AT 2006 M (TOP OF EZSV AT 2005 M). POOH W/SETTING TOOL. R/D W/L EQUIPMENT.
12.05.2001.21:00	21:30	0.5		TEDU	OK		CONT INSTALLING COFLEX HOSE. MEANWHILE CLOSED BSR AND PRESSURE TESTED EZSV TO 225 BAR/10 MIN FROM ABOVE. OPENED BSR.
12.05.2001.21:30	22:30	1.0		TEDU	OK		P/U AND M/U 1 JOINT AND 2 PUPS OF 3 1/2" PH6 TUBING. HELD PRE-JOB MEETING PRIOR TO P/U SFT.
12.05.2001.22:30	00:00	1.5		TEDU	OK		P/U SFT TO RIGFLOOR.
13.05.2001.00:00	04:00	4.0		TEDU	OK		CONT P/U SFT TO RIGFLOOR. M/U SFT TO 1 STAND AND 2 PUPS OF 3 1/2" PH6 TUBING. MOVED SFT TO "PARKING PLACE" IN RISER BAY AND SECURED SAME.
13.05.2001.04:00	05:00	1.0	29.0	TEDU	OK		CHANGED TO 4 3/4" HANDLING EQUIPMENT. M/U 6" BIT, BITSUB AND 1 STD 4 3/4" DC.
13.05.2001.05:00	06:00	1.0	430.0	TEDU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT. CONT RIH W/CLEANOUT ASSY ON 3 1/2" DP TO 430 M.
13.05.2001.06:00	07:30	1.5	863.0	TEDU	OK		CONT RIH W/CLEANOUT ASSY ON 3 1/2" DP TO 863 M. CHANGED TO 5 1/2" HANDLING EQUIPMENT.
13.05.2001.07:30	10:00	2.5	1570.0	TEDU	OK		CONT RIH W/CLEANOUT ASSY ON 5 1/2" DP TO 1570 M.
13.05.2001.10:00	12:30	2.5	1570.0	TEDU	OK		P/U AND M/U RTTS ASSY.
13.05.2001.12:30	15:00	2.5	1999.0	TEDU	OK		CONT RIH W/CLEANOUT ASSY ON 5 1/2" DP TO 1999 M. RTTS PACKER AT 427 M.
13.05.2001.15:00	15:30	0.5	1999.0	TEDU	OK		BROKE CIRCULATION W/600 LPM, 72 TON UP WT, 69 TON DWN WT. SET RTTS PACKER. PRESSURE TESTED CSG/EZSV PACKER IN 7" LINER TO 345 BAR/ 10 MIN.
13.05.2001.15:30	16:30	1.0	1985.0	TEDU	OK		RELEASED RTTS PACKER. POOH TO 1985 M TO HAVE RTTS ELEMENT ABOVE 20" X 13 3/8" XO AT 418 M.
13.05.2001.16:30	18:00	1.5	1985.0	TCCU	OK		PUMPED 10 M3 HI-VIS PILL. DISPLACED WELL TO SEAWATER W/3000 LPM/ 275 BAR. FLOWCHECKED/INFLOW TESTED EZSV BRIDGE PLUG.
13.05.2001.18:00	21:00	3.0	863.0	TEDU	OK		POOH TO 863 M. RACKED RTTS PACKER IN SETBACK.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
13.05.2001.21:00	23:30	2.5		TEDU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT. CONT POOH W/3 1/2" DP. CHANGED TO 4 3/4" HANDLING EQUIPMENT. BROKE BIT AND RACKED 1 STD 4 3/4" DC. CHANGED TO 5" HANDLING EQUIPMENT.
13.05.2001.23:30	00:00	0.5		BBDU	OK		M/U BOP TEST TOOL WITH 1 STD 5" DP BELOW.
14.05.2001.00:00	01:00	1.0	434.0	BBDU	OK		RIH W/BOP TEST TOOL ON 5" V150 DP.
14.05.2001.01:00	04:00	3.0	434.0	BBDU	OK		PRESSURE TESTED BOP ON BLUE POD/DRILLERS PANEL TO 35/345 BAR / 5/10 MIN. FUNCTION TESTED ON YELLOW POD/DRILLERS PANEL. MEANWHILE PERFORMED PM ON TDS/TOP YOKE.
14.05.2001.04:00	05:30	1.5		BBDU	OK		POOH W/BOP TEST TOOL AND L/D SAME. MEANWHILE CLOSED BSR ON ACOUSTIC. HELD PRE-JOB MEETING PRIOR TO P/U TCP GUNS FROM DECK.
14.05.2001.05:30	06:00	0.5		TEDU	OK		CHANGED TO HANDLING EQUIPMENT FOR TCP GUNS. P/U AND M/U GUN #1 AND #2.
14.05.2001.06:00	11:00	5.0	287.0	TEDU	OK		CONT M/U AND RIH W/DST BHA TO 287 M.
14.05.2001.11:00	11:30	0.5	296.0	TEDU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT. CONT RIH W/1 JT 3 1/2" PH6 TUBING.
14.05.2001.11:30	12:00	0.5	296.0	TXPU	OK		PRESSURE TESTED BHA TO 345 BAR/10 MIN AGAINST TST VALVE.
14.05.2001.12:00	20:00	8.0	1577.0	TEDU	OK		CONT RIH W/DST BHA ON 3 1/2" PH6 TUBING TO 1577 M.
14.05.2001.20:00	20:30	0.5	1577.0	TXPU	OK		PRESSURE TESTED STRING TO 345 BAR/10 MIN AGAINST TST VALVE.
14.05.2001.20:30	23:30	3.0	1586.0	TEDU	OK		P/U AND M/U SSTT. TESTED LATCH. M/U SSTT UMBILICAL HOSES. STRAPPED SSTT ASSY AND VERIFIED CORRECT SPACEOUT. FUNCTION TESTED SSTT.
14.05.2001.23:30	00:00	0.5	1672.0	TEDU	OK		CONT RIH W/DST BHA ON 3 1/2" PH6 TUBING TO 1672 M.
15.05.2001.00:00	02:30	2.5	1929.0	TEDU	OK		CONT RIH W/DST BHA ON 3 1/2" PH6 TUBING TO 1929 M.
15.05.2001.02:30	03:00	0.5	1929.0	TEDU	OK		P/U LUBRICATOR VALVE.
15.05.2001.03:00	04:00	1.0	1929.0	TEOD	O FAIL		FOUND X/O'S ON LV MOUNTED UPSIDE-DOWN. CROSSED THREADS ON ONE X/O WHEN B/O. L/D LV ON DECK AND CHANGED X/O. P/U LV.
15.05.2001.04:00	05:00	1.0	1929.0	TEDU	OK		M/U LUBRICATOR VALVE. CONNECTED UMBILICAL HOSES.
15.05.2001.05:00	06:00	1.0	1979.0	TEDU	OK		CONT RIH W/DST BHA ON 3 1/2" PH6 TUBING TO 1979 M. TOOK UP/DOWNWEIGHTS 65/63 TONS.
15.05.2001.06:00	08:30	2.5	1979.0	TXPU	OK		PRESSURE TESTED DST STRING AGAINST TST VALVE TO 345 BAR/10 MIN. CLOSED SSTT. BLED DOWN TO 35 BAR ABOVE AND INFLOW TESTED SSTT FOR 10 MIN. EQUALIZED PRESSURE, OPENED SSTT, CLOSED LV, BLED OFF PRESSURE TO 35 BAR ABOVE AND INFLOW TESTED LV FOR 10 MIN. EQUALIZED PRESSURES, BLED DOWN, CLOSED LV AND PRESSURE TESTED SAME TO 345 BAR/10 MIN.
15.05.2001.08:30	09:00	0.5	1979.0	TEDU	OK		REMOVED ELEVATOR AND CHANGED TO 45' BAILS.
15.05.2001.09:00	09:30	0.5	1979.0	TEDU	OK		HELD PRE-JOB MEETING PRIOR TO P/U SFT.
15.05.2001.09:30	11:00	1.5	1979.0	TEDU	OK		P/U AND M/U SFT.
15.05.2001.11:00	15:30	4.5	1979.0	TEDU	OK		HOOKED UP COFLEX HOSE TO PRODUCTION SIDE, KILL HOSE AND HYDRAULIC CONTROL HOSES TO SFT.
15.05.2001.15:30	16:00	0.5	1985.0	TEDU	OK		OPENED COMPENSATOR AND LANDED FLUTED HANGER IN WEARBUSHING.
15.05.2001.16:00	17:00	1.0	1985.0	TXPU	OK		PRESSURE TESTED N2 INJECTION LINE TO 345 BAR/10 MIN. FLUSHED THROUGH SFT FROM CMT UNIT TO TEST CHOKE, PRESSURE TESTED ENTIRE STRING, KILL AND PRODUCTION HOSES AND CHOKE AGAINST TST VALVE TO 345 BAR/10 MIN. TESTED KILL VALVE TO 345 BAR/10 MIN.
15.05.2001.17:00	18:30	1.5	1985.0	TXPU	OK		OPENED KILL VALVE. PRESSURED UP TO 345 BAR, CLOSED PWV AND KILL VALVES, BLED OFF PRESSURE TO 35 BAR AND INFLOW TESTED FOR 10 MIN. BLED OFF PRESSURE. CLOSED UPPER MASTER VALVE.
15.05.2001.18:30	19:00	0.5	1981.0	TEDU	OK		PICKED UP STRING 4 M. TURNED STRING 4 TURNS CLOCKWISE USING CHAIN TONGS. RAN IN AND SET RTTS PACKER. LANDED FLUTED HANGER IN WEARBUSING AND SET DOWN 12 TONS.
15.05.2001.19:00	21:00	2.0	1981.0	TXPU	OK		PRESSURE TESTED SSV AND TEST CHOKE TO 345 BAR/10 MIN. CLOSED LPR AND SET RAMRING TO "LOCKED TO BOTTOM" MODE.
15.05.2001.21:00	22:00	1.0	1981.0	TXPU	OK		PRESSURE TESTED RTTS FROM ABOVE TO 100 BAR/10 MIN DOWN KILL-LINE/ CYCLED OMNI VALVE.
15.05.2001.22:00	22:30	0.5	1981.0	TEOD	OK		ATTEMPTED TO PRESSURE TEST PSD1-SYSTEM - PWV CLOSED TOO SLOW. TROUBLESHOT AND CHANGED OUT QUICK-BLEEDOFF VALVE.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
15.05.2001.22:30	23:30	1.0	1981.0	TXPU	OK		TESTED PSD SYSTEM FROM BUTTONS OUTSIDE DRILLERS CABIN AND OUTSIDE STATOIL OFFICE. CYCLED OMNI VALVE TO LAST CIRCULATING POSITION.
15.05.2001.23:30	00:00	0.5	1981.0	TEDU	OK		FLUSHED DIESEL FROM CMT UNIT THROUGH SFT TO TEST PLANT.
16.05.2001.00:00	01:30	1.5	1981.0	TEDU	OK		CLOSED TEST CHOKE AND CONT PUMPING 4.8 M3 DOWN TUBING W/CMT PUMP. OPENED FOR N2-INJECTION ON KILLSIDE AND INJECTED 950 L N2 DOWN TUBING, MONITORING RETURN VOLUME ON TRIPTANK. CLOSED ANNULUS AND CONT PRESSURING UP TO 80 BAR W/N2. CYCLED OMNI VALVE TO FIRST WELL TEST POSITION.
16.05.2001.01:30	02:00	0.5	1981.0	TPPU	OK		PRESSURED UP TUBING TO 313 BAR BY INJECTING N2, HELD FOR 2 MIN AND BLED DOWN PRESSURE RAPIDLY OVER TEST CHOKE AND TO BURNER BOOM TO ACTIVATE TCP FIRING HEAD.
16.05.2001.02:00	03:00	1.0	1981.0	TPPU	OK		MONITORED FOR INDICATIONS OF FIRING OF TCP GUNS - NO INDICATION.
16.05.2001.03:00	03:30	0.5	1981.0	TEDU	OK		CYCLED OMNI VALVE TO 3RD WELL TEST POSITION TO ENSURE CORRECT POSITION.
16.05.2001.03:30	04:00	0.5	1981.0	TEDU	OK		PREPARED FOR N2 INJECTION.
16.05.2001.04:00	04:30	0.5	1981.0	TPPU	OK		PRESSURED UP TUBING BY INJECTING N2. PRESSURE INCREASE DECLINED AFTER REACHING 180 BARS - UNABLE TO REACH 313 BARS WITHIN TIME FRAME FOR TCP FIRING HEAD. STOPPED AT 218 BAR. BLED OFF PRESSURE OVER TEST PLANT TO BURNER BOOM - TRIGGED PSD1 DUE TO HIGH PRESSURE IN BURNER LINE. RESET AND CONTINUED BLEEDING OFF PRESSURE.
16.05.2001.04:30	06:00	1.5	1981.0	TFSU	OK		DIVERTED FLOW TO CALIBRATION TANK - FLOW DECREASED TO NEGLIGIBLE. CLOSED IN WELL AND MONITORED FOR PRESSURE BUILDUP.
16.05.2001.06:00	11:00	5.0	1981.0	TFSU	OK		MONITORED FOR PRESSURE BUILDUP WITH WELL CLOSED IN AT TEST CHOKE.
16.05.2001.11:00	11:30	0.5	1981.0	TFSU	OK		HELD PRE-JOB MEETING PRIOR TO OPENING WELL AND INJECTING N2 AT SSTT.
16.05.2001.11:30	13:00	1.5	1981.0	TFFU	OK		OPENED WELL TO HALLIBURTON TANK. INJECTED N2 THROUGH SSTT UP TUBING. GOT 1.6 M3 DIESEL IN RETURNS.
16.05.2001.13:00	20:30	7.5	1981.0	TFFU	OK		CONTINUED FLOWING WELL TO TANK. AIDED FLOW WITH N2 INJECTION AT SSTT - STOPPED N2 INJECTION AS WELL FLOWED WITHOUT. FLOWED A TOTAL OF 24.4 M3 FLUID FROM WELL - MAINLY SEAWATER.
16.05.2001.20:30	22:00	1.5	1981.0	TFSU	OK		CLOSED IN WELL AT TEST CHOKE. MONITORED PRESSURE BUILDUP.
16.05.2001.22:00	00:00	2.0	1981.0	TFSU	OK		CONT MONITORING PRESSURE BUILDUP. PREPARED TO KILL WELL. STARTED TRANSFERRING KILL MUD FROM COLUMN TANKS.
17.05.2001.00:00	01:00	1.0	1981.0	TFSU	OK		CONT MONITORING PRESSURE BUILDUP - FINAL SHUT-IN PRESSURE 21 BAR. FINISHED TRANSFERRING KILL MUD FROM COLUMN TANKS.
17.05.2001.01:00	02:00	1.0	1981.0	TFKU	OK		CLOSED UPPER MASTER VALVE ON SFT. BLED OFF PRESSURE OVER TEST CHOKE. OPENED KILL VALVE AND FLUSHED W/SEAWATER OVER SFT TO TEST PLANT. CLOSED PWV. OPENED UPPER MASTER VALVE. HELD PRE-JOB MEETING PRIOR TO KILLING WELL.
17.05.2001.02:00	02:30	0.5	1981.0	TFKU	OK		CYCLED OMNI VALVE TO CIRCULATING POSITION BY PRESSURE CYCLING ANNULUS TO 100 BAR DOWN KILL LINE USING MUD PUMP.
17.05.2001.02:30	04:30	2.0	1981.0	TFKU	OK		LINED UP MUD PUMPS THROUGH KILL VALVE ON SFT DOWN TUBING, WITH RETURNS UP KILL LINE OVER POOR BOY. DISPLACED WELL TO 1.26 SG KILL MUD W/800 LPM/30-84 BAR. DUMPED RETURNS. DIVERTED LAST 15 M3 TO PIT. PUMPED A TOTAL OF 82 M3 MUD. MAXIMUM GAS READING DURING CIRCULATION WAS 1.8% - LEVELLED OUT AT 0.1% SHORTLY AFTER.
17.05.2001.04:30	06:00	1.5	1981.0	TFKU	OK		CYCLED OMNI VALVE TO WELL TEST POSITION. HAD TO BLEED OFF TRAPPED PRESSURE IN TUBING OVER CHOKE TO ACHIEVE CORRECT POSITION.
17.05.2001.06:00	07:00	1.0	1981.0	TFKU	OK		BULLHEADED 2 M3 1,26 SG MUD DOWN TUBING W/50-100 LPM/4-10 BAR USING CMT UNIT. CLOSED IN - PRESSURE DROPPED TO ZERO. OPENED BLEED-OFF VALVE AND FLOWCHECKED WELL TO CMT UNIT.
17.05.2001.07:00	08:00	1.0	1981.0	TFKU	OK		HELD PRE JOB MEETING. DISPLACED RISER TO 1,26 SG MUD THROUGH BOOSTER AND CHOKE LINES.
17.05.2001.08:00	08:30	0.5	1981.0	TFKU	OK		LINED UP MUD PUMP ON KILL LINE AND PRESSURED UP ANNULUS TO SHEAR RUPTURE DISC CIRCULATING VALVE - DISC SHEARED AT 150 BAR.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
17.05.2001.08:30	09:00	0.5	1985.0	TFKU	OK		SET DOWN WEIGHT ON FLUTED HANGER. OPENED LOWER PIPE RAM. RELEASED RTTS PACKER WITH 3 TON OVER PULL. RELANDED FLUTED HANGER. FLOWCHECKED WELL.
17.05.2001.09:00	11:30	2.5	1985.0	TFKU	OK		CLOSED LOWER PIPE RAM. CIRCULATED BOTTOMS UP THROUGH RIG CHOKE WITH 1050 LPM/150 BAR. HAD UP TO 1.27 SG MUD IN RETURNS. CONT CIRC UNTIL EVEN MUD WEIGHT 1.26 SG. HAD A MAXIMUM GAS READING ON B/U OF 0.69 % - SPLIT: C1=2909, C2=490, C3=183, IC4=0, NC4 35.
17.05.2001.11:30	12:30	1.0	1985.0	TFKU	OK		FLOWCHECKED WELL. TRIPTANK LEVEL DROPPED 1.3 M3 IN 15 MIN, THEN STABILIZED. FLOWCHECKED OK.
17.05.2001.12:30	15:00	2.5	1985.0	TEDU	OK		R/D COFLEX HOSE AND HOSE TO KILL LINE. B/O SFT AND PARKED IN RISER SETBACK.
17.05.2001.15:00	15:30	0.5	1985.0	TEDU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT.
17.05.2001.15:30	19:30	4.0	1586.0	TEDU	OK		POOH WITH LANDING STRING. L/D LUBRICATOR VALVE. CONT POOH TO SSTT.
17.05.2001.19:30	20:30	1.0	1577.0	TEDU	OK		B/O AND L/D SSTT.
17.05.2001.20:30	00:00	3.5	1026.0	TEDU	OK		CONT POOH AND L/D 3 1/2" PH6 TUBING TO 1026 M.
18.05.2001.00:00	03:30	3.5	287.0	TEDU	OK		CONT POOH AND L/D 3 1/2" PH6 TUBING FROM 1026 TO 287 M.
18.05.2001.03:30	06:00	2.5	150.0	TEDU	OK		B/O AND L/D 4 SLIP JTS. CHANGED TO 4 3/4" HANDLING EQUIPMENT. CONT POOH AND L/D 4 3/4" DC TO 150 M.
18.05.2001.06:00	07:30	1.5	75.0	TEDU	OK		CONTINUED L/D DST BHA FROM 150 M TO 75 M.
18.05.2001.07:30	08:00	0.5		TEDU	OK		HELD PRE JOB MEETING PRIOR TO L/O PERFORATING GUNS. CONTINUED L/D DST BHA.
18.05.2001.08:00	09:00	1.0		TEDU	OK		L/O PERFORATION GUNS. ALL SHOTS WERE FIRED.
18.05.2001.09:00	09:30	0.5		TEDU	OK		CLEANED AND TIDYED RIG FLOOR.
18.05.2001.09:30	10:30	1.0		TLLU	OK		HELD PRE-JOB MEETING PRIOR TO R/U FOR W/L. R/U W/L.
18.05.2001.10:30	12:00	1.5	2004.0	TLLU	OK		RIH W/GR/CCL ON W/L. HELD UP AT 2004 M (W/L DEPTH). CORRELATED AND LOGGED PERFORATED INTERVAL.
18.05.2001.12:00	12:30	0.5		TLLU	OK		POOH WITH W/L.
18.05.2001.12:30	13:00	0.5		TLLU	OK		R/D WIRELINE EQUIPMENT. MEANWHILE CLOSED BSR AND PERFORMED INJECTION TEST W/150 LPM USING CMT UNIT. FORMATION BROKE DOWN AT 70 BAR. PUMPED A TOTAL OF 546 L - BLED BACK 160 L AFTER TEST.
18.05.2001.13:00	14:00	1.0		PSSU	OK		M/U CIRCULATING SWEDGE ON TOP OF 5 1/2" DP AND RACKED BACK SAME. CHANGED TO 3 1/2" HANDLING EQUIPMENT.
18.05.2001.14:00	15:00	1.0		PSMU	OK		M/U EZSV RETAINER TO MECHANICAL SETTING TOOL. M/U SAME TO ONE STD 3 1/2" DP.
18.05.2001.15:00	21:30	6.5	1937.0	PSMU	OK		RIH W/EZSV RETAINER ON 30 STANDS 3 1/2" DP. CROSSED OVER TO 5 1/2" DP AND CONT RIH TO 1937 M.
18.05.2001.21:30	22:00	0.5	1932.0	PSMU	OK		SET EZSV RETAINER AT 1937 M BY ROTATING STRING 35 REVS CLOCKWISE. HAD 16 TONS OVERPULL TO RELEASE. SET DOWN 10 TONS ON PLUG - OK. PULLED ABOVE PLUG.
18.05.2001.22:00	23:30	1.5	1932.0	PSSU	OK		RACKED BACK 1 STD. P/U CMT STAND. HOOKED UP CMT HOSE. PRESSURE TESTED LINES TO 345 BAR/5 MIN.
18.05.2001.23:30	00:00	0.5	1937.0	PSSU	OK		PUMPED 14 M3 HI-VIS GEL PILL W/MUD PUMPS. STUNG INTO EZSV RETAINER AND SET DOWN 8 TON. LINED UP CMT PUMP DOWN STRING. CLOSED ANNULAR. APPLIED 20 BARS ON ANNULUS FOR MONITORING.
19.05.2001.00:00	01:00	1.0	1932.0	PSSU	OK		SQUEEZED 14 M3 HI-VIS GEL PILL AND 2 M3 MUD INTO PERFORATIONS W/500 LPM/120 BAR. OPENED ANNULAR AND STUNG OUT OF EZSV RETAINER.
19.05.2001.01:00	02:30	1.5	1932.0	PSSU	OK		CIRC B/U W/1500 LPM/140 BAR WHILE TREATING MUD WITH CITRIC ACID.
19.05.2001.02:30	03:30	1.0	1932.0	PSSU	OK		CLOSED ANNULAR. LINED UP RETURNS OVER RIG CHOKE TO CONTROL U-TUBING OF CMT SLURRY. PUMPED 6 M3 1.50 SG SPACER W/CMT UNIT. MIXED AND PUMPED 10 M3 1.90 SG CMT SLURRY FOLLOWED BY 1 M3 1.50 SG SPACER.
19.05.2001.03:30	04:00	0.5	1937.0	PSSU	OK		STUNG INTO EZSV RETAINER. APPLIED 20 BAR ON ANNULUS FOR MONITORING. SQUEEZED 3 M3 1.50 SG SPACER AND 7 M3 1.90 SG CMT SLURRY INTO PERFORATIONS USING CMT PUMPS.
19.05.2001.04:00	05:00	1.0	1653.0	PSSU	OK		OPENED ANNULAR AND STUNG OUT OF EZSV RETAINER. R/D CMT HOSE. POOH 10 STANDS - LETTING LAST 3 M3 CMT SLURRY U-TUBE OUT OF STRING ON TOP OF RETAINER.
19.05.2001.05:00	06:00	1.0	1653.0	PSSU	OK		DROPPED SPONGE WIPER BALL AND CIRC B/U W/2700 LPM/230 BAR/80 RPM.
19.05.2001.06:00	07:00	1.0	1450.0	PSSU	OK		POOH WITH CMT STINGER TO 1450 M.
19.05.2001.07:00	07:30	0.5	1221.0	PSSU	OK		SPOTTED 4 M3 1.26 SG HI-VIS PILL. POOH TO 1221 M.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
19.05.2001.07:30	08:00	0.5	1248.0	PSSU	OK		HELD PRE-JOB MEETING PRIOR TO CEMENTING. P/U CEMENT STAND AND RIH TO 1248 M. PRESSURE TESTED SURFACE LINES TO 200 BAR/5 MIN.
19.05.2001.08:00	08:30	0.5	1248.0	PSSU	OK		PUMPED 6 M3 SPACER W/CMT UNIT.
19.05.2001.08:30	09:00	0.5	1248.0	PSMU	OK		CLOSED ANNULAR AND PRESSURE TESTED CEMENT PLUG AND RETAINER AT 1934 M TO 220 BAR/10 MIN.
19.05.2001.09:00	09:30	0.5	1248.0	PSSU	OK		MIXED AND PUMPED 10 M3 1.95 SG CEMENT FOLLOWED BY 300 L SPACER. DISPLACED CEMENT WITH 4.7 M3 1.26 SG MUD USING CEMENT PUMPS.
19.05.2001.09:30	10:30	1.0	961.0	PSSU	OK		R/D CEMENT HOSE AND POOH FROM 1248 M TO 961 M - PULLING SPEED 2 MIN/STAND.
19.05.2001.10:30	12:00	1.5	961.0	PSSU	OK		DROPPED SPONGE WIPER BALL AND CIRCULATED B/U W/2400 LPM/150 BAR. FLOWCHECKED.
19.05.2001.12:00	14:30	2.5		PTTU	OK		POOH FROM 961 M WITH 5 1/2" X 3 1/2" CEMENT STINGER.
19.05.2001.14:30	15:00	0.5		PXXU	OK		CLEANED AND TIDIED DRILL FLOOR.
19.05.2001.15:00	18:00	3.0		TEDU	OK		HELD PRE-JOB MEETING - L/D SFT FROM RISER SETBACK TO DECK.
19.05.2001.18:00	20:00	2.0		TEDU	OK		HELD PRE-JOB MEETING - RIGGED DOWN COFLEX HOSE.
19.05.2001.20:00	00:00	4.0		TEDU	OK		CHANGED TO 3 1/2" HANDLING EQUIPMENT. L/D 3 1/2" PH6 TUBING TO DECK.
20.05.2001.00:00	02:00	2.0		TEDU	OK		CONT L/D 3 1/2" PH6 TUBING - L/D A TOTAL OF 72 JTS.
20.05.2001.02:00	02:30	0.5		TEDU	OK		CLEARED RIGFLOOR. CHANGED MASTERBUSHING.
20.05.2001.02:30	04:30	2.0		TEDU	OK		L/D RTTS STAND.
20.05.2001.04:30	06:00	1.5		TEDU	OK		CHANGED TO 4 3/4" HANDLING EQUIPMENT. L/D 6 JTS OF 4 3/4" DC.
20.05.2001.06:00	07:30	1.5		TEDU	OK		L/D 5 STANDS OF 4 3/4" DC.
20.05.2001.07:30	08:00	0.5		PTTU	OK		CLEANED AND TIDIED DRILL FLOOR. CHANGED TO 5 1/2" HANDLING EQUIPMENT.
20.05.2001.08:00	08:30	0.5	85.0	PTTU	OK		M/U 12 1/4" DRESS OFF BHA AND RIH TO 85 M.
20.05.2001.08:30	10:30	2.0	979.0	PTTU	OK		RIH WITH 12 1/4" DRESS OFF BHA ON 5 1/2" DP TO 979 M.
20.05.2001.10:30	11:30	1.0	1087.0	PSTU	OK		WASHED DOWN FROM 979 M TO TOC AT 1083 M W/2400 LPM/66 BAR/40 RPM/ 3 KNM. DRESSED OFF CMT PLUG FROM 1083 M TO 1087 M. LOAD TESTED CEMENT PLUG TO 10 TON.
20.05.2001.11:30	12:30	1.0	1080.0	PCCU	OK		CIRCULATED B/U W/2400 LPM/66 BAR/15 RPM/2 KNM.
20.05.2001.12:30	13:00	0.5	1080.0	PTTU	OK		FLOWCHECKED. SLUGGED PIPE.
20.05.2001.13:00	16:00	3.0		PTTU	OK		POOH FROM 1087 M. REAMED AND WASHED PACKER SETTING AREA ON WAY OUT. PRESSURE TESTED CMT PLUG TO 110 BAR/10 MIN WHILE POOH AFTER BHA PASSED BOP.
20.05.2001.16:00	16:30	0.5		PTTU	OK		B/O 12 1/4" BIT AND BIT SUB. RACKED BACK DC STAND.
20.05.2001.16:30	17:00	0.5		PTTU	OK		M/U EZSV AND RUNNING TOOL TO 5 1/2" DP STAND.
20.05.2001.17:00	19:00	2.0	680.0	PTTU	OK		RIH W/EZSV TO 680 M. HELD PRE-JOB MEETING PRIOR TO CEMENTING WHILE RIH.
20.05.2001.19:00	19:30	0.5	680.0	PSMU	OK		SET EZSV AT 680 M AND LOAD TESTED TO 10 TONS.
20.05.2001.19:30	20:30	1.0	675.0	PSSU	OK		RACKED BACK 1 STAND. P/U CMT STAND AND M/U HOSE. PRESSURE TESTED SURFACE LINES TO 200 BAR/5 MIN.
20.05.2001.20:30	21:30	1.0	675.0	PSSU	OK		LINED UP CMT UNIT. PUMPED 6 M3 SEAWATER SPACER. MIXED AND PUMPED 19 M3 1.90 SG CMT SLURRY FOLLOWED BY 400 L SEAWATER SPACER. DISPLACED CMT WITH 3.2 M3 MUD.
20.05.2001.21:30	22:00	0.5	420.0	PSSU	OK		POOH TO 420 M.
20.05.2001.22:00	23:00	1.0	420.0	PSSU	OK		DROPPED SPONGE WIPER BALL. CIRC B/U W/2300 LPM/20 BAR.
20.05.2001.23:00	00:00	1.0		PTTU	OK		POOH FROM 420 M.
21.05.2001.00:00	00:30	0.5		PTTU	OK		B/O AND L/D EZSV RUNNING TOOL.
21.05.2001.00:30	01:00	0.5		BHRU	OK		P/U AND M/U WEARBUSHING RUNNING AND RETRIEVING TOOL.
21.05.2001.01:00	02:00	1.0	405.0	BHRU	OK		RIH W/WRRT AND LANDED IN WEARBUSHING.
21.05.2001.02:00	03:30	1.5		BHRU	OK		RELEASED WEARBUSHING W/10 TONS OVERPULL. POOH W/WRRT/WB. DISPLACED RISER AND KILL/CHOKE/BOOSTER-LINES TO SEAWATER WHILE POOH.
21.05.2001.03:30	04:00	0.5		BHRU	OK		B/O AND L/D WB AND WRRT.
21.05.2001.04:00	04:30	0.5		BBRU	OK		CLEARED RIGFLOOR.
21.05.2001.04:30	06:00	1.5		BBRU	OK		PREPARED TO PULL BOP. INSTALLED RISER HANDLER ON IR. CHANGED BAILS. INSTALLED LIFTING SUB IN TDS. INSTALLED RISER SPIDER.
21.05.2001.06:00	07:00	1.0		BBRU	OK		PICKED UP DIVERTER RUNNING TOOL AND INSTALLED SAME.

Operations

Wellbore: 6608/10-007

Time from	Time to	Time used	Depth mMD	Act code	---- Status ---- During opr	End of opr	Description of activities
21.05.2001.07:00	08:30	1.5		BBRU	OK		B/O DIVERTER AND LAID OUT SAME.
21.05.2001.08:30	10:00	1.5		BBRU	OK		INSTALLED ELEVATOR AND RISER RUNNING TOOL. HELD PRE JOB MEETING. P/U AND INSTALLED PULLING JOINT. COLLAPSED AND LOCKED SLIP JOINT.
21.05.2001.10:00	11:00	1.0	390.0	BBRU	OK		DISCONNECTED AND PULLED BOP ABOVE GUIDE BASE. MOVED RIG 20 METER OFF LOCATION. REMOVED POD LINE SADDLES.
21.05.2001.11:00	12:00	1.0	390.0	BBRU	OK		LOCKED LOAD RING TO DIVERTER HOUSING AND RELEASED FROM SLIP JOINT. SET BACK LANDING JOINT.
21.05.2001.12:00	13:30	1.5	390.0	BBRU	OK		B/O AND SET BACK SLIP JOINT.
21.05.2001.13:30	17:00	3.5	45.0	BBRU	OK		PULLED RISER AND BOP TO BELOW SPLASH ZONE.
21.05.2001.17:00	18:30	1.5		BBRU	OK		PULLED BOP THROUGH SPLASH ZONE AND INTO UNDER HULL GUIDING SYSTEM. RACKED BACK LAST RISER JT. RELEASED GUIDELINES. R/D TRANSPONDER. PULLED BACK K/C-LINES.
21.05.2001.18:30	20:00	1.5		BBRU	OK		MOVED FORKLIFT IN POSITION AND LANDED OFF BOP ON SAME. B/O RISER PUP AND L/D SAME.
21.05.2001.20:00	22:30	2.5		BBRU	OK		R/D RISER/BOP HANDLING EQUIPMENT. SKIDDED BOP TO PARKING POSITION.
21.05.2001.22:30	00:00	1.5		PACU	OK		P/U AND M/U MOST TOOL W/MUD MOTOR AND CASING CUTTER. ADJUSTED CLAMP ON TOOL AND SECURED W/DOG COLLAR.
22.05.2001.00:00	01:00	1.0	39.0	PACU	OK		RIH W/MOST TOOL ON 3 STD 8" DC.
22.05.2001.01:00	03:00	2.0	390.0	PACU	OK		INSTALLED GUIDEFRAME ON STRING. CONT RIH WITH MOST TOOL ON 5 1/2" DP.
22.05.2001.03:00	06:00	3.0	413.0	PACU	OK		RAN DOWN GUIDEFRAME. STABBED IN CASING CUTTER AND LANDED MOST TOOL ON WH. CUT 20" AND 30" W/3000 LPM/135 BAR.
22.05.2001.06:00	08:00	2.0	413.0	PACU	OK		CONT CUTTING 20" AND 30" W/3000 - 3200 LPM/115 - 135 BAR. PRESSURE INCREASED TO 200 BAR INDICATING THAT WELLHEAD WAS FREE.
22.05.2001.08:00	09:00	1.0	413.0	PACU	OK		ATTEMPTED TO ENGAGE MOST TOOL ON 18 3/4" WH - NEGATIVE.
22.05.2001.09:00	11:00	2.0		PACU	OK		POOH WITH MOST TOOL W/MUD MOTOR AND CASING CUTTER. FOUND LOCKING ARMS ON MOST PACKED WITH SWARF. B/O AND L/D SAME.
22.05.2001.11:00	11:30	0.5		PACU	OK		M/U 18 3/4" WELLHEAD RUNNING TOOL (CART).
22.05.2001.11:30	12:30	1.0	405.0	PACU	OK		RIH WITH CART ON 5 1/2" DP.
22.05.2001.12:30	14:00	1.5	405.0	PACU	OK		POSITIONED RIG. STABBED CART INTO 18 3/4" WELLHEAD AND ENGAGED SAME.
22.05.2001.14:00	14:30	0.5		PACU	OK		PULLED FREE WELLHEAD HOUSING AND PGB WITH 4 TON OP. PULLED HOUSING/PGB TO SURFACE. TOTAL UP WEIGHT WHILE PULLING 49 TON. STARTED ANCHOR HANDLING WHEN PGB CLEAR OF SEA BED. MEANWHILE COMPLETED SEABED SURVEY.
22.05.2001.14:30	23:00	8.5		MARU	OK		ANCHORHANDLING. TOR VIKING: ANCHOR #1 ON DECK 1940, ANCHOR #2 ON DECK 1600. NORMAND BORG: ANCHOR #3 ON DECK 1539, ANCHOR #4 ON DECK 2020. OLYMPIC POSEIDON: ANCHOR #5 ON DECK 1925, ANCHOR #6 ON DECK 1545. VIKING QUEEN: ANCHOR #7 ON DECK 1615, ANCHOR #8 ON DECK 2112. RIG READY FOR TOW 2254.

5.8 Figures and tables

5.8.1 Well schematic

Well: 6608/10-7
Field: Exploration
Rig: Borgland Dolphin

WELL SCHEMATIC

HOLE		CASING				LOT FIT	TOC		CSG. SHOE				
SIZE	TVD MD	SIZE	TYPE / RAD. MARKERS	CENTRALIZERS	TEST PRESS [BAR]		TVD	MD	TVD	MD	WL LOGS	LWD LOGS	SURV CSG/ OH
SB	408												
36"	481 481	**30"**	309.7 lb/ft, X-52, ST2 2 x 1.5" WT 3 x 1" WT		-	-	Seabed		468	468			Anderdrift (Totco)
17 1/2"	1315 1315	**20" x 13 3/8"**	0.812" WT, X-52 72 lb/ft, P-110, New Vam	2 centrilizers on shoe and interm. 0 centrilizer on Float 1 centrilizer on next two jnts.		XLOT 1,49 / 1,56	Seabed		1173 1305,6	1173 1305,6		GR RES PWD	MWD
8 1/2"	2318,4 2319	**7"**	29 lb/ft, L-80, BDS 29 lb/ft, L-80, Antares MS28	1 centrilizer pr. jnt. except from pups and hanger		-	1173		RA-marker 2312	1823,8 2312	ACTS - HRLA GR PEX MDT HNGS ECS CMR DSI FMI MDT VSP	GR RES PWD SONIC	MWD

RKB

Comments :

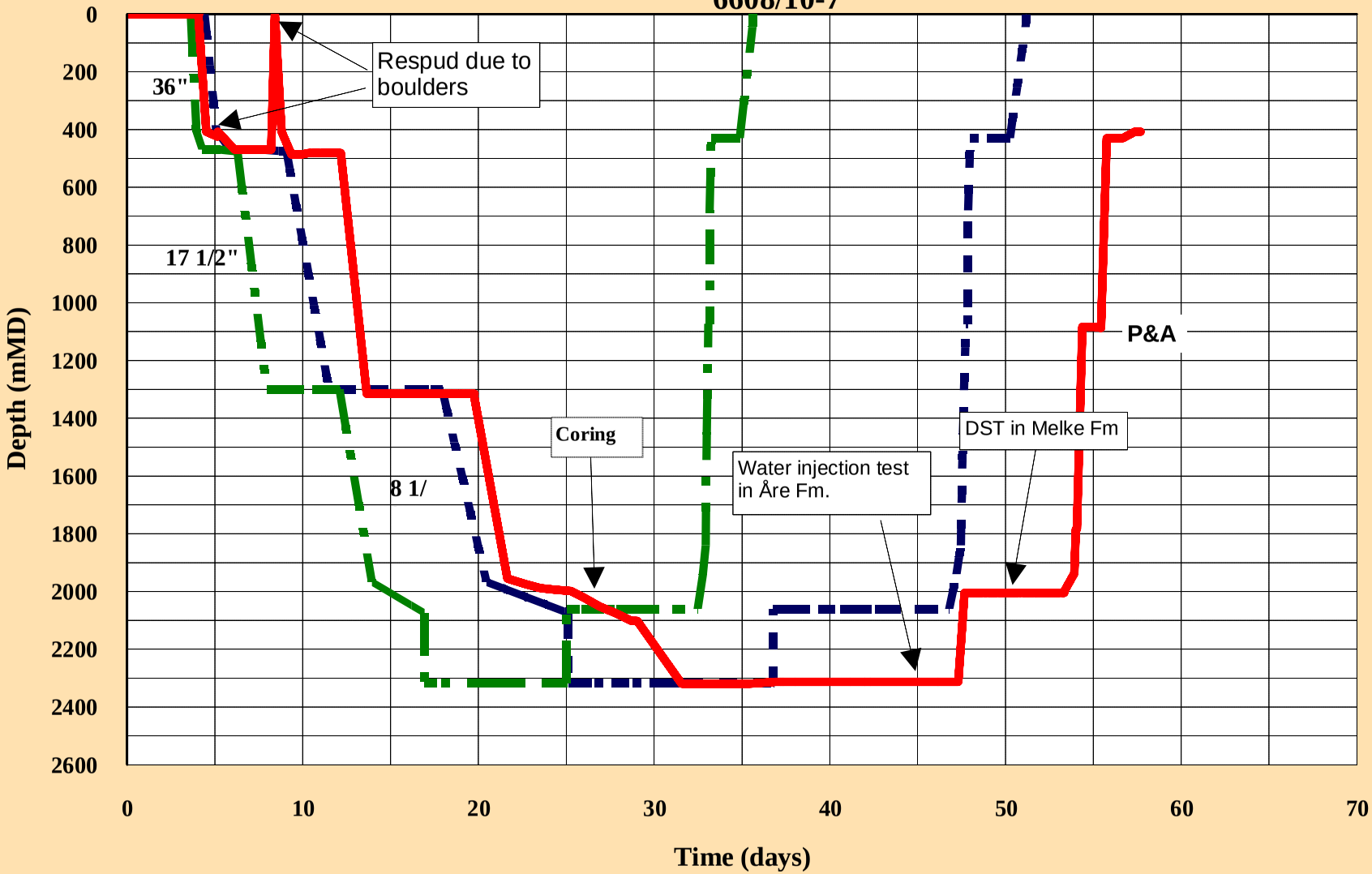
5.8.2 Time vs depth curve

STATOIL

Time - Depth Plot

Svale

6608/10-7



Budget time (days)
Optimum time (days)
Actual time (days)

Updated date/time:
Date: 09.08.2001
Time: 11:27

Start date/time:
Date: 26.03.2001
Time: 06:00

Est. finish date/time:
Date: 22.05.2001
Time: 23:00

Total budget time:
51.2 days

Time used:
57.7 days

Time behind budget:
6.5 days

Comments:

5.8.3 Timeplanner

Thu	09.08.2001	11:27	Updated										
Mon	26.03.2001	06:00	Start date										
Tue	22.05.2001	23:00	Est. finish date										

TIMEPLANNER

Svale

6608/10-7

STATOIL

DAY	START DATE	START TIME	Budg. time (hrs)	Acc. budg. time (days)	Opt. time (hrs)	Acc. opt. time (days)	Budg./ Opt. depth (mMD)	Plan time (hrs)	Actual time (hrs)	Acc. actual time (days)	Actual Depth (mMD)		Activity description
													Rig Move / Anchor Handling
Mon	26.03.2001	06:00	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	F	Start operation
Mon	26.03.2001	06:00	72.0	3.0	66.0	2.8	0	63.0	62.0	2.6	0	F	Transit to Svale
Wed	28.03.2001	20:00	30.0	4.3	20.0	3.6	0	30.0	33.5	4.0	0	F	WOW. Run Anchors
Fri	30.03.2001	05:30	4.0	4.4	1.0	3.6	0	2.0	2.0	4.1	0	F	Tension test anchors / place marker buoys
Section time (days)			4.4		3.6			4.0	4.1				Section time ahead of/behind (-) budg:0.4 days, Tot. time ahead of/behind (-) budg:0.4 days
													36" hole section (0 - 470 mMD)
Fri	30.03.2001	07:30	16.0	5.1	8.0	4.0	408	12.0	11.0	4.5	408	F	M/U and run 36" BHA to seabed
Fri	30.03.2001	18:30	18.0	5.8	8.0	4.3	470	41.0	15.0	5.1	425	F	Drill from 408-425 m.
Sat	31.03.2001	09:30	0.0	5.8	0.0	4.3	470	0.0	0.5	5.2	408	F	Move rig.
Sat	31.03.2001	10:00	0.0	5.8	0.0	4.3	470	0.0	23.0	6.1	469.5	F	Respud well. Drill from 407- 469,5mMD
Sun	01.04.2001	09:00	8.0	6.2	4.0	4.5	470	5.0	5.0	6.3	470	F	Circ. hole clean w/hi-visc. mud. Displ.hole w/1.30 SG hi-visc. bent. mud. Drill to 470 m.
Sun	01.04.2001	14:00	2.0	6.3	1.0	4.5	470	1.0	3.5	6.5	470	F	POOH w/BHA
Sun	01.04.2001	17:30	18.0	7.0	10.0	4.9	470	40.0	41.5	8.2	470	F	WOW. Run 30" conductor. Positioned rig. Attempted to adjust angle on PGB.
Tue	03.04.2001	11:00	0.0	7.0	0.0	4.9	470	5.0	5.0	8.4	0	F	POOH w/ conductor/running string. Landed and secured cond./PGB on skid in moonpool.
Tue	03.04.2001	16:00	0.0	7.0	0.0	4.9	470	9.0	9.0	8.8	408	F	M/U and RIH w/ 17 1/2" BHA.
Wed	04.04.2001	01:00	0.0	7.0	0.0	4.9	470	12.0	13.5	9.4	487	F	Drill 17 1/2" pilot hole to 487 m.
Wed	04.04.2001	14:30	0.0	7.0	0.0	4.9	470	6.0	4.0	9.5	487	F	Displace hole to 1,30 s.g bent. mud. POOH w/ BHA.
Wed	04.04.2001	18:30	0.0	7.0	0.0	4.9	470	8.0	9.5	9.9	487	F	M/U and RIH w/ 36" hole opener assembly.
Thu	05.04.2001	04:00	0.0	7.0	0.0	4.9	470	12.0	10.5	10.4	481	F	Open hole to 36" from 408 m to 468 m.
Thu	05.04.2001	14:30	0.0	7.0	0.0	4.9	470	5.0	4.0	10.5	481	F	Displace hole to 1,30 s.g. mud. POOH w/ 36" hole opener assembly.
Thu	05.04.2001	18:30	0.0	7.0	0.0	4.9	470	7.0	11.0	11.0	481	F	Run 30" conductor.
Fri	06.04.2001	05:30	8.0	7.3	5.0	5.1	470	6.0	1.5	11.0	481	F	Cement 30" conductor
Fri	06.04.2001	07:00	8.0	7.7	4.0	5.3	470	6.0	17.5	11.8	481	F	Wait on cement, hold tension on conductor, release RT, Wash PGB, PO w/landing string
Section time (days)			3.3		1.7			7.3	7.7				Section time ahead of/behind (-) budg:-4.5 days, Tot. time ahead of/behind (-) budg:-4.1 days

Thu	09.08.2001	11:27	Updated	**TIMEPLANNER**	STATOIL
Mon	26.03.2001	06:00	Start date	**Svale**	
Tue	22.05.2001	23:00	Est. finish date	**6608/10-7**	

DAY	START DATE	START TIME	Budg. time (hrs)	Acc. budg. time (days)	Opt. time (hrs)	Acc. opt. time (days)	Budg./ Opt. depth (mMD)	Plan time (hrs)	Actual time (hrs)	Acc. actual time (days)	Actual Depth (mMD)		Activity description
													17 1/2" hole section (470 - 1300 mMD)
Sat	07.04.2001	00:30	34.0	9.1	24.0	6.3	476	30.0	9.5	12.2	481	F	L/D 36" BHA. M/U 17 1/2" BHA and RIH to 450 m, wash down last singles
Sat	07.04.2001	10:00	58.0	11.5	40.0	8.0	1300	34.0	35.5	13.6	1315	F	Drill and clean out 30" shoe, drill 17 1/2" hole from 476 - 1300 mMD (+/-20 m/hr)
Sun	08.04.2001	21:30	5.0	11.7	3.5	8.1	1300	4.0	2.5	13.8	1315	F	Circ. hole clean and displace to 1.30 SG mud
Mon	09.04.2001	00:00	12.0	12.2	6.0	8.4	1300	8.0	5.5	14.0	1315	F	Wipertrip to 30" shoe
Mon	09.04.2001	05:30	8.0	12.5	4.0	8.5	1300	6.0	7.5	14.3	1315	F	Displace to 1.30 SG mud and POOH (wash PGB + unload MWD)
Mon	09.04.2001	13:00	30.0	13.8	18.0	9.3	1300	21.0	21.5	15.2	1315	F	R/U and run 18 3/4" x 13 3/8" csg. land and pulltest
Tue	10.04.2001	10:30	8.0	14.1	4.0	9.4	1300	6.0	4.5	15.4	1315	F	Pressure test cmt. lines Circ. and pump cmt. displ. cement w/rig pumps
Tue	10.04.2001	15:00	6.0	14.4	3.0	9.6	1300	4.0	3.0	15.5	1315	F	Check float, release R/T, wash SSWH, POOH, LD R/T
Tue	10.04.2001	18:00	48.0	16.4	36.0	11.1	1300	42.0	44.5	17.4	1315	F	RU spider, inst LMRP, fuction test, run BOP and riser (test every 5th jt.)
Thu	12.04.2001	14:30	6.0	16.6	4.0	11.2	1300	5.0	2.5	17.5	1315	F	Pulltest & Press.test WH conn.,casing and surface equipment, function test BOP
Thu	12.04.2001	17:00	2.0	16.7	1.0	11.3	1300	0.0	0.0	17.5	1315	F	(Install bore protector - preinstalled!)
Thu	12.04.2001	17:00	0.0	16.7	0.0	11.3	1300	9.0	11.0	17.9	1315	F	L/D cmt stand, CART-stand. M/U EDPHOT-stand. L/D 17 1/2" BHA.
Fri	13.04.2001	04:00	14.0	17.3	8.0	11.6	1300	10.0	14.5	18.5	1315	F	RIH w/12 1/4" clean out rotary assy. to 1280 m, wash down last std.
Fri	13.04.2001	18:30	0.0	17.3	0.0	11.6	1300	3.0	5.5	18.8	1315	F	Drill out plugs and shoe track stepwise + 3 m new formation w/SW and hivisc pills
Sat	14.04.2001	00:00	0.0	17.3	0.0	11.6	1300	3.5	3.0	18.9	1315	F	Spot 10 m3 bentonite pill at TD, pull into shoe and perform extended LOT
Sat	14.04.2001	03:00	0.0	17.3	0.0	11.6	1300	3.5	3.5	19.0	1315	F	Displace SW to AquaDrill mud
Sat	14.04.2001	06:30	0.0	17.3	0.0	11.6	1300	6.0	6.0	19.3	1315	F	POOH and set back 12 1/4" BHA
Sat	14.04.2001	12:30	16.0	18.0	12.0	12.1	1300	14.0	11.0	19.7	1315	F	MU and RIH 8 1/2" BHA .
Sat	14.04.2001	23:30	0.0	18.0	0.0	12.1	1305	0.0	0.0	19.7	1315	F	Optinoal: (Perform XLOT)
Section time (days)			10.3		6.8			8.7	8.0				Section time ahead of/behind (-) budg:-2.4 days, Tot. time ahead of/behind (-) budg:-6.5 days

Thu	09.08.2001	11:27	Updated		
Mon	26.03.2001	06:00	Start date		
Tue	22.05.2001	23:00	Est. finish date		

TIMEPLANNER

Svale

6608/10-7

STATOIL

DAY	START DATE	START TIME	Budg. time (hrs)	Acc. budg. time (days)	Opt. time (hrs)	Acc. opt. time (days)	Budg./ Opt. depth (mMD)	Plan time (hrs)	Actual time (hrs)	Acc. actual time (days)	Actual Depth (mMD)		Activity description
													8 1/2" hole section (1300 - 2318 mMD)
Sat	14.04.2001	23:30	60.0	20.5	44.0	13.9	1967	52.0	46.0	21.6	1955	F	Drill 8 1/2" hole to core point in Melke Fm.@ +/- 1967 m, circ and POOH (+/- 15 m/hr)
Mon	16.04.2001	21:30	28.0	21.6	18.0	14.7	1994	24.0	25.5	22.7	1975	F	MU and RIH coring assy #1, cut core and POOH
Tue	17.04.2001	23:00	28.0	22.8	18.0	15.4	2021	24.0	20.0	23.5	1988	F	MU and RIH coring assy #2, cut core and POOH
Wed	18.04.2001	19:00	28.0	24.0	18.0	16.2	2048	24.0	20.0	24.4	1993.5	F	MU and RIH coring assy #3, cut core and POOH
Thu	19.04.2001	15:00	28.0	25.1	18.0	16.9	2075	22.0	21.5	25.3	1998	F	MU and RIH coring assy #4, cut core and POOH
Fri	20.04.2001	12:30	0.0	25.1	0.0	16.9	2318	20.0	20.0	26.1	2024	F	MU and RIH coring assy #5, cut core and POOH
Sat	21.04.2001	08:30	0.0	25.1	0.0	16.9	2318	20.0	19.5	26.9	2052	F	MU and RIH coring assy #6, cut core and POOH
Sun	22.04.2001	04:00	0.0	25.1	0.0	16.9	2318	20.0	20.5	27.8	2074	F	MU and RIH coring assy #7, cut core and POOH
Mon	23.04.2001	00:30	0.0	25.1	0.0	16.9	2318	20.0	22.5	28.7	2102	F	MU and RIH coring assy #8, cut core and POOH
Mon	23.04.2001	23:00	8.0	25.5	5.0	17.1	2318	6.0	8.0	29.0	2102	F	Pressure test BOP's
Tue	24.04.2001	07:00	28.0	26.6	18.0	17.9	2318	36.0	60.5	31.6	2319	F	Drill 8 1/2" hole to TD @ +/- 2318 m, circ and POOH (+/- 15 m/hr)
Thu	26.04.2001	19:30	52.0	28.8	40.0	19.6	2318	93.5	93.5	35.5	2319	F	RU Schlumberger and perform el.logging, RD Schlumberger
Mon	30.04.2001	17:00	24.0	29.8	18.0	20.3	2318	28.0	35.0	36.9	2313	F	RU and run 7" x 9 5/8" Liner.
Wed	02.05.2001	04:00	3.0	29.9	2.0	20.4	2318	5.0	6.5	37.2	2313	F	Circulate prior to cementing.
Wed	02.05.2001	10:30	6.0	30.2	4.0	20.6	2318	4.0	2.0	37.3	2313	F	Cement liner, pressure test to 345 bar/5 min, set packer .
Wed	02.05.2001	12:30	5.0	30.4	4.0	20.7	2318	3.0	2.0	37.4	2313	F	Circulate out excess cement. test packer/casings to 100 bar. LD cement head and POOH.
Wed	02.05.2001	14:30	10.0	30.8	7.0	21.0	2318	13.0	16.0	38.0	2313	F	LD LHRT, cement equipment and 8 1/2" BHA. Test BOP
Thu	03.05.2001	06:30	12.0	31.3	8.0	21.4	2318	24.0	13.5	38.6	2313	F	MU and RIH clean out assy. test well to 225 bar
Thu	03.05.2001	20:00	0.0	31.3	0.0	21.4	2318	24.0	27.5	39.7	2313	F	RIH 13 5/8" RTTS and p-test 13 3/8" x 7" to 345bar , clean well and disp. to SW, POOH
Fri	04.05.2001	23:30	12.0	31.8	8.0	21.7	2318	36.5	34.5	41.2	2313	F	MU and Run Åre DST-string w/TCP guns to below SSTT
Sun	06.05.2001	10:00	120.0	36.8	80.0	25.0	2318	18.0	20.0	42.0	2313	F	Run SSTT, Landing String and pump-in sub. Set RTTS and land string. Perforate Åre.
Mon	07.05.2001	06:00	0.0	36.8	0.0	25.0	2318	6.0	7.5	42.3	2313	F	Displace string, Perform Minifrac
Mon	07.05.2001	13:30	0.0	36.8	0.0	25.0	2318	67.0	67.0	45.1	2313	F	Perform injection test
Thu	10.05.2001	08:30	0.0	36.8	0.0	25.0	2318	24.0	25.5	46.2	2313	F	Fall off period
Fri	11.05.2001	10:00	0.0	36.8	0.0	25.0	2318	26.0	27.5	47.3	2313	F	Kill Well, and pull DST.
Sat	12.05.2001	13:30	0.0	36.8	0.0	25.0	2060	6.0	8.5	47.7	2005	F	RU and run EZSV on wireline. Pressure test EZSV. Meanwhile install Coflexip hose.

TIMEPLANNER

STATOIL

Svale

6608/10-7

Thu	09.08.2001	11:27	Updated
Mon	26.03.2001	06:00	Start date
Tue	22.05.2001	23:00	Est. finish date

DAY	START DATE	START TIME	Budg. time (hrs)	Acc. budg. time (days)	Opt. time (hrs)	Acc. opt. time (days)	Budg./ Opt. depth (mMD)	Plan time (hrs)	Actual time (hrs)	Acc. actual time (days)	Actual Depth (mMD)		Activity description
Sat	12.05.2001	22:00	8.0	37.1	6.0	25.3	2060	6.0	6.0	47.9	2005	F	P/U SFT and move to "parking position".
Sun	13.05.2001	04:00	20.0	38.0	15.0	25.9	2060	18.0	19.5	48.7	2005	F	RIH w/cleanout string. Displace to seawater. Inflow test EZSV. Test to 345 bar. POOH.
Sun	13.05.2001	23:30	10.0	38.4	7.0	26.2	2060	8.0	6.0	49.0	2005	F	Test BOP's
Mon	14.05.2001	05:30	34.0	39.8	25.0	27.2	2060	24.0	14.0	49.6	2005	F	MU and Run Melke DST-string w/TCP guns to below SSTT
Mon	14.05.2001	19:30	20.0	40.6	15.0	27.9	2060	16.0	28.5	50.8	2005	F	Run SSTT and Landing String. Set RTTS and land string
Wed	16.05.2001	00:00	7.0	40.9	5.0	28.1	2060	3.0	4.5	50.9	2005	F	Displace string to nitrogen, and perforate Melke @ 1950-1980mMD.
Wed	16.05.2001	04:30	40.0	42.6	30.0	29.3	2060	16.5	17.5	51.7	2005	F	Flow well for approx. 50 Sm^3. Take PVT samples.
Wed	16.05.2001	22:00	54.0	44.8	41.0	31.0	2060	24.0	0.0	51.7	2005	F	Shut in well for build up test.
Wed	16.05.2001	22:00	8.0	45.2	6.0	31.3	2060	0.0	0.0	51.7	2005	F	Mini frac (Cancelled)
Wed	16.05.2001	22:00	39.0	46.8	29.0	32.5	2060	36.0	35.5	53.1	2005	F	Kill Well. Pull DST string.
Fri	18.05.2001	09:30	0.0	46.8	0.0	32.5	2060	6.0	3.5	53.3	2005	F	Run GR/CCL and Gauge ring to confimr perforation and tag setting depth on the bridge plug.
Fri	18.05.2001	13:00	0.0	46.8	0.0	32.5	2060	0.0	0.0	53.3	2005		Prepare for P&A.
Section time (days)			28.8		20.4			33.5	33.6				Section time ahead of/behind (-) budg:-4.8 days, Tot. time ahead of/behind (-) budg:-6.5 days
													P & A Operations
Fri	18.05.2001	13:00	10.0	47.2	7.0	32.8	1940	8.0	15.0	53.9	1937	F	MU cmt.stinger w/7"EZSV and RIH, set at1940m and squeeze 7 m3 cement into perforations
Sat	19.05.2001	04:00	6.0	47.5	4.0	32.9	1840	4.0	2.0	54.0	1784	F	Unsting retainer, pump 100 m eq. volum (2m3) on top of retainer, POOH 150 m and circ.
Sat	19.05.2001	06:00	3.0	47.6	1.5	33.0	1450	2.0	1.5	54.1	1784	F	POOH to 1450 m - spot hi-vis bentonite pill to 1250m
Sat	19.05.2001	07:30	4.0	47.8	2.0	33.1	1073	3.0	7.5	54.4	1083	F	Set balanced cmt. plug f/1250 to 1073 m, PO to 1000 m & circ. out excess cmt. POOH
Sat	19.05.2001	15:00	0.0	47.8	0.0	33.1	1073	11.0	17.0	55.1	1083	F	L/D 3 1/2" PH6 tubing, SFT, RTTS stand and 4 3/4" DC.
Sun	20.05.2001	08:00	3.0	47.9	2.0	33.2	1073	7.0	8.5	55.4	1087	F	RIH w/12 1/4" bit, load test w/10 tons and p.test to 70 bor over LOT at 13 3/8", POOH
Sun	20.05.2001	16:30	0.0	47.9	0.0	33.2	680	7.0	8.0	55.8	430	F	RIH w/13 3/8"EZSV, set at 680m and loadtest, pump 19 m3 1.90 sg cmt.slurry to 430m, POOH
Mon	21.05.2001	00:30	3.0	48.0	2.0	33.3	430	2.0	3.5	55.9	430	F	RIH, pull slimhole bore proctector, POOH
Mon	21.05.2001	04:00	44.0	49.8	32.0	34.6	430	18.0	18.5	56.7	430	F	Nipple down diverter and disconnect BOP , pull riser, split BOP and skid back
Mon	21.05.2001	22:30	10.0	50.3	7.0	34.9	430	12.0	16.0	57.4	408	F	MU and RIH 20 x 30" cutting assy. to 4xx m, cut and retrieve HP/LP housing.
Tue	22.05.2001	14:30	22.0	51.2	18.0	35.6	31	20.0	8.5	57.7	408	F	Pull anchors; meanwhile inspect seabottom and record
Tue	22.05.2001	23:00	0.0	51.2	0.0	35.6	0	0.0		57.7			end of Svale operations, move rig to Norne south templates well 6608/10-B-4H
Section time (days)			4.4		3.1			3.9	4.4				Section time ahead of/behind (-) budg:-0.0 days, Tot. time ahead of/behind (-) budg:-6.5 days

5.8.4 Bit record

Bit record

Wellbore: 6608/10-007

Run No	Bit Size	Bit No	BHA No	Bit Type	IADC code	Bit manufacturer	Serial No	Nozzles (n/32") no x n	no x n	no x n	no x n	Flow Area in2
1	26"/36"	HO	1	NA		IPE	21478	6 x 12	x	x	x	,663
	17 1/2"	1RR	1	10GMGRDPD	435	Smith Bits	LR3833	1 x 14	3 x 20	x	x	1,071
2	26"/36"	HO	1	NA		IPE	21478	6 x 12	x	x	x	,663
	17 1/2"	2RR	1	10GMGRDPD	435	Smith Bits	LR3833	1 x 14	3 x 20	x	x	1,071
3	17 1/2"	3RR	2	MXT1	115	Hughes Christensen	K22DV	2 x 20	1 x 18	1 x 14	x	1,012
4	17 1/2"	4RR2	3	MXT1	115	Hughes Christensen	K22DV	2 x 20	1 x 18	1 x 14	x	1,012
	26"/36"	HO	3	NA		IPE	21470	5 x 9	x	x	x	,311
5	17 1/2"	5	4	MGGH+ODC	443	Smith Bits	LW8779	3 x 20	1 x 15	x	x	1,093
6	12 1/4"	6	5	XS4	216 S	Security DBS	739886	3 x 20	x	x	x	,920
7	8 1/2"	7	6	2745DR	M434	Security DBS	5009961	4 x 15	x	x	x	,690
8	8 1/2"	8	7	FC284RILI	M231	DIAMANT BOART S	7990558	8 x 17	x	x	x	1,773
9	8 1/2"	8RR1	8	FC284RILI	M231	DIAMANT BOART S	7990558	8 x 17	x	x	x	1,773
10	8 1/2"	9	9	FC274LI	M432	DIAMANT BOART S	7000940	7 x 17	x	x	x	1,552
11	8 1/2"	8RR2	10	FC284RILI	M231	DIAMANT BOART S	7990558	8 x 17	x	x	x	1,773
12	8 1/2"	10	11	CT1031SPC	M623	DIAMANT BOART S	SSY 19620	x	x	x	x	,700
13	8 1/2"	10RR	12	CT1031SPC	M623	DIAMANT BOART S	SSY 19620	x	x	x	x	,700
14	8 1/2"	10RR2	13	CT1031SPC	M623	DIAMANT BOART S	SSY 19620	x	x	x	x	,700
15	8 1/2"	11	14	CT1031SPC	M623	DIAMANT BOART S	7980540	x	x	x	x	,700
16	8 1/2"	7RR	16	FM2745DR	M333	Security	5009961	4 x 14	x	x	x	,601
17	6"	12	17	XS4	216 S	Security DBS	B742440	3 x 20	x	x	x	,920
18	6"	12RR	18	XS4	216 S	Security DBS	B742440	3 x 20	x	x	x	,920
19	12 1/4"	6RR	21	XS4	216 S	Security DBS	739886	3 x 20	x	x	x	,920

Run No	Bit Size	Pump Rate l/min	Pump Press bar	Depth in mMD	Depth out mMD	Drilled length m	Hours Drilled	ROP	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	17 1/2"	5000	130	408	424	16	8,1	2,0		2	40	80	3000	8000		
	26"/36"	5000	130	408	424	16	8,1	2,0		2	40	80	3000	8000		
2	17 1/2"	5000	135	407	470	63	15,9	4,0	2	5	50	100	5000	10000		
	26"/36"	5000	135	407	467,5	60,5	15,9	3,8	2	5	50	100	5000	10000		
3	17 1/2"	4500	160	408	487	79	7,3	10,8		2	80	130	3000	8000		
4	17 1/2"	5000	135	408	436	28	1,2	23,3	1	4	40	60	3000	9000		
	26"/36"	5000	135	408	423	15	1,7	8,8	1	4	40	60	3000	9000		
5	17 1/2"	4500	175	468	1315	847	21,6	39,2	4	18	80	120	7000	16000		
6	12 1/4"	4500	190	1279	1318	39	3,3	11,8	1	7	55	80	4000	5000		
7	8 1/2"	2400	185	1318	1955	637	17,4	36,6	2	13	110	225	6000	12000		

Run No	Bit Size	Pump Rate l/min	Pump Press bar	Depth in mMD	Depth out mMD	Drilled length m	Hours Drilled	ROP	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
8	8 1/2"	980	80	1955	1975	20	2,8	7,1	1	7	80	120	5000	10000		
9	8 1/2"	1000	75	1975	1988	13	2,4	5,4	6	10	110	110	6000	10000		
10	8 1/2"	1000	85	1988	1993,5	5,5	1,6	3,4	3	20	80	130	7000	12000		
11	8 1/2"	1000	76	1993,5	1998,3	4,8	3,7	1,3	7	10	99	112	6000	10000		
12	8 1/2"	950	100	1998,3	2024	25,7	4,9	5,2	7	12	81	115	7000	12000		
13	8 1/2"	950	110	2024	2052	28	2,7	10,4	6	10	110	130	8000	18000		
14	8 1/2"	950	115	2052	2074	22	2,6	8,5	7	9	100	125	6000	13000		
15	8 1/2"	950	140	2074	2101	27	5,3	5,1	4	10	104	112	6000	13000		
16	8 1/2"	2400	235	2101	2319	218	5,9	36,9	7	12	150	190	10000	14000		
17	6"															
18	6"			2005	2005	0										
19	12 1/4"			1083	1087	4										

Run No	Bit Size	IADC dull grading I	O	DC	L	B	G	OC	RP	Remarks
1	17 1/2"									
	26"/36"									
2	17 1/2"	2	2	NO		E			TD	
	26"/36"	6	6	WT	A	F		NO	TD	NO EXCESSIVE WEAR ON BODY
3	17 1/2"	1	1	WT	A	E	I	NO	TD	
4	17 1/2"									36 HOLE OPENER RUN
	26"/36"									
5	17 1/2"	5	4	BT	A	E	I	WT	TD	TBR: 260472
6	12 1/4"	2	2	WT	A	E	I	BT	BHA	DRLD SHOETRK+3M NEW FM.TBR1405 0. 7 BT ON INNERROW CONE 1.
7	8 1/2"	0	1	NO	A	X	I	NO	CP	
8	8 1/2"	1	1	WT	A	X	I	NO	TQ	JAMMED OFF AFTER CUTTING 20 M OF CORE.
9	8 1/2"	1	1	WT	A	X	I	NO	TQ	GRADING AFTER 2 RUNS.
10	8 1/2"									
11	8 1/2"	1	1	WT	A	X	I	NO	PR	CORE JAMMED.
12	8 1/2"	2	3	WT	N	X	I	CT	TD	
13	8 1/2"	2	3	WT	N	X	I	CT	TD	
14	8 1/2"	2	5	WT	N	X	I	CT	PR	
15	8 1/2"	2	2	WT	A	X	I	CT	TD	
16	8 1/2"	1	1	WT	A	X	1	NO	TD	ONE CHIPPED CUTTER.
17	6"	0	0	NO		E	I			CLEAN OUT OF 7 LINER BIT WAS NOT WORN
18	6"									CLEANOUT RUN. ONLY CIRC - NO ROTATION.
19	12 1/4"									

5.8.5 Bottom hole assemblies (BHA)

BHA report

Wellbore: 6608/10-007

BHA seq: 1 **BHA category:** **BHA description:**
BHA no: 1

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	17.500		0.40	0.40
FLOAT SUB	9.500		0.64	1.04
HOLE OPENER	36.000		3.90	4.94
BIT SUB	9.500		0.85	5.79
ANDERDRIFT	9.500		3.12	8.91
DRILL COLLAR	9.500		56.72	65.63
X-OVER	8.000		0.84	66.47
DRILL COLLAR	8.000		56.78	123.25
X-OVER	8.000		0.64	123.89
HW DRILL PIPE	5.500		109.61	233.50
DRILL PIPE	5.500			233.50

BHA seq: 2 **BHA category:** **BHA description:**
BHA no: 2

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	17.500		0.43	0.43
STAB. NB W/FLOAT	17.500	2.750	2.32	2.75
ANDERDRIFT	9.500	3.000	3.35	6.10
STABILIZER	17.250	3.000	2.50	8.60
DRILL COLLAR	9.500	3.000	9.45	18.05
STABILIZER	17.250	3.000	2.43	20.48
DRILL COLLAR	9.500	3.000	47.27	67.75
X-OVER	8.000	3.060	0.84	68.59
DRILL COLLAR	8.000	3.000	56.78	125.37
X-OVER	8.000	3.000	0.64	126.01
HW DRILL PIPE	5.500		109.61	235.62
DRILL PIPE	5.500			235.62

BHA seq: 3 **BHA category:** **BHA description:**
BHA no: 3

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	17.500		0.43	0.43
STAB STRING	17.250	3.000	2.50	2.93
DRILL COLLAR	9.500	3.000	9.45	12.38
HOLE OPENER	36.000	3.000	2.48	14.86
BIT SUB W/FLOAT	9.500	3.000	0.89	15.75
ANDERDRIFT	9.500	3.000	3.34	19.09
DRILL COLLAR	9.500	3.000	9.45	28.54
X-OVER	9.500	3.000	0.84	29.38
DRILL COLLAR	8.000	3.000	56.78	86.16
X-OVER	8.000	3.000	0.64	86.80
HW DRILL PIPE	5.500		109.61	196.41
DRILL PIPE	5.500			196.41

BHA seq: 4 **BHA category:** **BHA description:**
BHA no: 4

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	17.500		0.44	0.44
SPERRYDR 5/6L 0,78GR	9.625		8.81	9.25
STAB STRING	17.250	3.000	2.50	11.75
MWD, RLL TOOL	9.500		7.66	19.41
MWD, MPT TOOL	9.380		7.10	26.51
STAB STRING	17.250	3.000	2.43	28.94
X-OVER	9.500	3.000	0.84	29.78

BHA report

Wellbore: 6608/10-007

BHA seq: 4 **BHA category:** **BHA description:**
BHA no: 4

String component	OD in	ID in	Length m	Acc length m
DRILL COLLAR	8.000	2.750	56.78	86.56
JAR	7.750	3.000	9.78	96.34
DRILL COLLAR	8.000	2.750	28.28	124.62
X-OVER	8.000	3.000	0.64	125.26
HW DRILL PIPE	5.500		109.61	234.87
DRILL PIPE	5.500	4.778		234.87

BHA seq: 5 **BHA category:** **BHA description:**
BHA no: 5

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	12.250		0.30	0.30
X-OVER	9.500	3.000	0.84	1.14
BIT SUB	9.563	3.063	0.97	2.11
MWD, RLL TOOL	9.500		7.66	9.77
MWD, MPT TOOL	9.380		7.10	16.87
STAB STRING	12.250	3.000	2.21	19.08
X-OVER	9.500	3.063	0.84	19.92
DRILL COLLAR	8.000	2.750	56.78	76.70
JAR	7.750	3.000	9.78	86.48
DRILL COLLAR	8.000	2.750	28.28	114.76
X-OVER	8.000	3.000	0.64	115.40
HW DRILL PIPE	5.500		109.61	225.01
DRILL PIPE	5.500	4.778		225.01

BHA seq: 6 **BHA category:** **BHA description:**
BHA no: 6

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	8.500		0.26	0.26
MWD, RLL TOOL	6.750		8.52	8.78
MWD, MPT TOOL	6.750		6.97	15.75
SONIC TOOL	6.750		6.69	22.44
STAB STRING	8.500	2.750	2.16	24.60
DRILL COLLAR	6.500	2.750	9.47	34.07
STAB STRING	8.500	2.750	1.67	35.74
DRILL COLLAR	6.500	2.750	47.34	83.08
JAR	6.375	2.813	9.24	92.32
DRILL COLLAR	6.500	2.750	28.42	120.74
X-OVER	7.250	3.000	0.40	121.14
HW DRILL PIPE	5.500	3.000	109.61	230.75
DRILL PIPE	5.500	4.778		230.75

BHA seq: 7 **BHA category:** **BHA description:**
BHA no: 7

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.36	0.36
CORE BARREL	9.469		30.08	30.44
DRILL COLLAR	6.500	2.750	9.47	39.91
FLOAT SUB	6.750	2.813	0.75	40.66
STAB STRING	8.500	2.750	1.67	42.33
DRILL COLLAR	6.500	2.750	75.74	118.07
JAR	6.375	2.813	9.24	127.31
DRILL COLLAR	6.500	2.750	28.42	155.73
X-OVER	7.250	3.000	0.40	156.13
HW DRILL PIPE	5.500	3.000	109.61	265.74

BHA report

Wellbore: 6608/10-007

BHA seq: 7 **BHA category:** **BHA description:**
BHA no: 7

String component	OD in	ID in	Length m	Acc length m
DRILL PIPE	5.500	4.778		265.74

BHA seq: 8 **BHA category:** **BHA description:** CORE ASSY #2
BHA no: 8

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.36	0.36
CORE BARREL	9.469		30.08	30.44
MWD, RLL TOOL	7.375	3.000	8.37	38.81
DRILL COLLAR	6.500	2.750	9.47	48.28
FLOAT SUB	6.750	2.813	0.75	49.03
DRILL COLLAR	6.500	2.750	75.74	124.77
JAR	6.375	2.813	9.24	134.01
DRILL COLLAR	6.500	2.750	28.42	162.43
X-OVER	7.250	3.000	0.40	162.83
HW DRILL PIPE	5.500	3.000	109.61	272.44
DRILL PIPE	5.500	4.778		272.44

BHA seq: 9 **BHA category:** **BHA description:** CORE ASSY #3
BHA no: 9

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.36	0.36
CORE BARREL	9.469		30.08	30.44
MWD, RLL TOOL	7.375	3.000	8.37	38.81
DRILL COLLAR	6.500	2.750	9.47	48.28
FLOAT SUB	6.750	2.813	0.75	49.03
DRILL COLLAR	6.500	2.750	75.74	124.77
JAR	6.375	2.813	9.24	134.01
DRILL COLLAR	6.500	2.750	28.42	162.43
X-OVER	7.250	3.000	0.40	162.83
HW DRILL PIPE	5.500	3.000	109.61	272.44
DRILL PIPE	5.500	4.778		272.44

BHA seq: 10 **BHA category:** **BHA description:** CORE ASSY #4
BHA no: 10

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.36	0.36
CORE BARREL	8.469		30.08	30.44
MWD, RLL TOOL	7.375	3.000	8.37	38.81
DRILL COLLAR	6.500	2.750	9.47	48.28
FLOAT SUB	6.750	2.813	0.75	49.03
DRILL COLLAR	6.500	2.750	75.74	124.77
JAR	6.375	2.813	9.24	134.01
DRILL COLLAR	6.500	2.750	28.42	162.43
X-OVER	7.250	3.000	0.40	162.83
HW DRILL PIPE	5.500	3.000	109.61	272.44
DRILL PIPE	5.500	4.778		272.44

BHA seq: 11 **BHA category:** **BHA description:** CORE ASSY #5.
BHA no: 11

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.37	0.37
CORE BARREL	8.417		30.08	30.45
MWD, RLL TOOL	7.375	3.000	8.37	38.82
DRILL COLLAR	6.500	2.750	9.47	48.29

BHA report

Wellbore: 6608/10-007

BHA seq: 11 **BHA category:** **BHA description:** CORE ASSY #5.

BHA no: 11

String component	OD in	ID in	Length m	Acc length m
FLOAT SUB	6.750	2.813	0.75	49.04
DRILL COLLAR	6.500	2.750	75.74	124.78
JAR	6.375	2.813	9.24	134.02
DRILL COLLAR	6.500	2.750	28.42	162.44
X-OVER	7.250	3.000	0.40	162.84
HW DRILL PIPE	5.500	3.000	109.61	272.45
DRILL PIPE	5.500	4.778		272.45

BHA seq: 12 **BHA category:** **BHA description:** CORE ASSY #6.

BHA no: 12

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.37	0.37
CORE BARREL	8.417		30.08	30.45
MWD, RLL TOOL	7.375	3.000	8.37	38.82
DRILL COLLAR	6.500	2.750	9.47	48.29
FLOAT SUB	6.750	2.813	0.75	49.04
DRILL COLLAR	6.500	2.750	75.74	124.78
JAR	6.375	2.813	9.24	134.02
DRILL COLLAR	6.500	2.750	28.42	162.44
X-OVER	7.250	3.000	0.40	162.84
HW DRILL PIPE	5.500	3.000	109.61	272.45
DRILL PIPE	5.500	4.778		272.45

BHA seq: 13 **BHA category:** **BHA description:** CORE ASSY #7.

BHA no: 13

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.37	0.37
CORE BARREL	8.417		30.08	30.45
MWD, RLL TOOL	7.375	3.000	8.37	38.82
DRILL COLLAR	6.500	2.750	9.47	48.29
FLOAT SUB	6.750	2.813	0.75	49.04
DRILL COLLAR	6.500	2.750	75.74	124.78
JAR	6.375	2.813	9.24	134.02
DRILL COLLAR	6.500	2.750	28.42	162.44
X-OVER	7.250	3.000	0.40	162.84
HW DRILL PIPE	5.500	3.000	109.61	272.45
DRILL PIPE	5.500	4.778		272.45

BHA seq: 14 **BHA category:** **BHA description:** CORE ASSY #8.

BHA no: 14

String component	OD in	ID in	Length m	Acc length m
BIT, CORE	8.500		0.37	0.37
CORE BARREL	8.417		30.08	30.45
MWD, RLL TOOL	7.375	3.000	8.37	38.82
DRILL COLLAR	6.500	2.750	9.47	48.29
FLOAT SUB	6.750	2.813	0.75	49.04
DRILL COLLAR	6.500	2.750	75.74	124.78
JAR	6.375	2.813	9.24	134.02
DRILL COLLAR	6.500	2.750	28.42	162.44
X-OVER	7.250	3.000	0.40	162.84
HW DRILL PIPE	5.500	3.000	109.61	272.45
DRILL PIPE	5.500	4.778		272.45

BHA report

Wellbore: 6608/10-007

BHA seq: 15 **BHA category:** **BHA description:** OTHER: BOP TEST TOOL.

BHA no: 15

String component	OD in	ID in	Length m	Acc length m
HW DRILL PIPE	7.250	3.000	82.10	82.10
XO SUB	7.250	3.000	0.14	82.24
OTHER		3.500	1.10	83.34

BHA seq: 16 **BHA category:** **BHA description:** FLOAT IN TOP OF MPT TOOL.

BHA no: 16

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	8.500		0.26	0.26
BIT SUB	6.750		0.67	0.93
MWD, RLL TOOL	6.625		7.88	8.81
MWD, MPT TOOL	6.625		6.14	14.95
FLOAT SUB	6.438		0.84	15.79
SONIC TOOL	6.625		6.70	22.49
STAB STRING	8.500	2.750	2.16	24.65
DRILL COLLAR	6.500	2.750	9.47	34.12
STAB STRING	8.500	2.750	1.67	35.79
DRILL COLLAR	6.500	2.750	47.34	83.13
JAR	6.375	2.813	9.24	92.37
DRILL COLLAR	6.500	2.750	28.42	120.79
X-OVER	7.250	3.000	0.40	121.19
HW DRILL PIPE	5.500	3.000	109.61	230.80
DRILL PIPE	5.500	4.778		230.80

BHA seq: 17 **BHA category:** **BHA description:** CLEAN OUT BHA

BHA no: 17

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	6.000		0.18	0.18
SCRAPER	6.250	1.250	0.82	1.00
BIT SUB	4.750	2.500	0.75	1.75
DRILL COLLAR	4.750	2.310	57.13	58.88
DRILL PIPE	3.500	2.500	1026.09	1084.97
X-OVER	6.375	2.625	0.28	1085.25
X-OVER	6.625	2.250	0.25	1085.50
SCRAPER	9.000	2.000	0.82	1086.32
BIT SUB	6.625	3.000	0.99	1087.31
MILL, POLISH/DRESS			4.38	1091.69
MILL, POLISH/DRESS			0.52	1092.21
SCRAPER	12.250		1.78	1093.99
BIT SUB	8.000	3.000	0.99	1094.98
X-OVER	8.000	3.000	0.64	1095.62
DRILL PIPE	5.500	3.500		1095.62

BHA seq: 18 **BHA category:** **BHA description:** CLEANOUT ASSY W/RTTS

BHA no: 18

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	6.000		0.18	0.18
BIT SUB	4.750	2.875	0.79	0.97
DRILL COLLAR	4.750	2.250	28.64	29.61
DRILL PIPE	3.500	2.563	833.56	863.17
X-OVER	7.125	2.500	0.61	863.78
DRILL PIPE	5.500	4.778	706.99	1570.77
X-OVER	7.250	2.688	0.38	1571.15
RTTS			4.34	1575.49
X-OVER	7.250	3.000	0.40	1575.89

BHA report

Wellbore: 6608/10-007

BHA seq: 18 **BHA category:** **BHA description:** CLEANOUT ASSY W/RTTS

BHA no: 18

String component	OD in	ID in	Length m	Acc length m
DRILL PIPE	5.500	4.778		1575.89

BHA seq: 19 **BHA category:** **BHA description:** BOP TESTING ASSY

BHA no: 19

String component	OD in	ID in	Length m	Acc length m
DRILL PIPE	5.000	4.276	29.29	29.29
X-OVER	6.375		0.26	29.55
PLUG			1.12	30.67
DRILL PIPE	5.000	3.750		30.67

BHA seq: 20 **BHA category:** **BHA description:** CEMENT STINGER WITH EZSV RETAINER

BHA no: 20

String component	OD in	ID in	Length m	Acc length m
EZSV	7.000		2.14	2.14
DRILL PIPE	3.500	2.563	865.09	867.23
X-OVER	6.375	2.375	0.28	867.51
X-OVER	7.250	3.000	0.27	867.78
DRILL PIPE	5.500	4.778		867.78

BHA seq: 21 **BHA category:** **BHA description:** DRESS OFF BHA.

BHA no: 21

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	12.250		0.30	0.30
BIT SUB	8.000	3.000	0.99	1.29
DRILL COLLAR	8.000	3.000	28.41	29.70
X-OVER	8.000	3.000	0.64	30.34
HW DRILL PIPE	5.500	3.500	54.71	85.05
DRILL PIPE	5.500	4.778		85.05

BHA seq: 22 **BHA category:** **BHA description:** CMT STINGER WITH EZSV AND RUNNING TOOL

BHA no: 22

String component	OD in	ID in	Length m	Acc length m
EZSV			2.37	2.37
X-OVER	7.250	3.000	0.27	2.64
DRILL PIPE	5.500	4.778		2.64

BHA seq: 23 **BHA category:** **BHA description:** WH/COND HOUSING CUTTING ASSY.

BHA no: 23

String component	OD in	ID in	Length m	Acc length m
CASING CUTTER			12.01	12.01
DRILL COLLAR	8.000	3.000	85.06	97.07
X-OVER	7.250		0.64	97.71
DRILL PIPE	5.500	4.778		97.71

5.8.6 Drilling fluids summary

Well: 6608/10-7
Field: Exploration
Rig: Borgland Dolphin

DRILLING FLUIDS SUMMARY

REVISION 1 - 16.01.02

HOLE SIZE	HOLE TVD MD	CASING SIZE	CASING TVD MD	MUD TYPE	MW [SG]	LGS [KG/m³]	10 sec. [Pa]	10 min. [Pa]	Fann 100 rpm	Fann 3 rpm	O / W ratio	PV [mPa]	API FL [ml]	HTHP FL [ml]	MBT [KG/m³]	pH	Kcl [KG/m³]	Glyc. [%]	Ca++ (mg/l)	ES (volt)	Total Volume Old Volume New Volume Usage [m³]
36"	481 481	**30"**	468 468	seawater w/ hi-vis sweeps	1.03 (DISPL.VOL) 1.30											8 - 10 8 - 10			80 - 120 80 - 120		
				Comments: *This section was drilled with Seawater and hi-vis sweeps. 10 m3 hi-vis pills were pumped every 10-15 m or as required to ensure good hole cleaning. At TD, the hole was flushed with a 30 m3 hi-vis pill prior to displacing the hole to 1.30 S.G. spud mud.*																
				KILL MUD: *70 m3 spud mud at 1.30 S.G. was kept in a reserve pit at all times throughout the drilling of this interval.*																
17 1/2"	1315 1315	**13 3/8"**	1305,6 1305,6	seawater w/ hi-vis sweeps Aquadrill	1.03 (DISPL.VOL) 1.30											8 - 10 8 - 10	50 - 80	0 - 3	80 - 120		
				Comments: *This section was drilled with Seawater and hi-vis sweeps. 10 m3 hi-vis pills were pumped every 10-15 m or as required to ensure good hole cleaning. At TD, the hole was flushed with a 30 m3 hi-vis pill prior to displacing the hole to 1.30 S.G. AquaDrill (used mud from Helgel.base mixed with spud mud)*																
				KILL MUD: *130 m3 of diluted, inhibitive AquaDrill mud at 1.30 S.G. was kept in a reserve pit at all times throughout the drilling of this interval.*																
8 1/2"	2318,4 2319	**7"** (If inj.)	2312 (If inj.)	AquaDrill WBM	1.25 1.30	<160 <160	2 - 5 2 - 5	4 - 8 4 - 8		5 - 8 5 - 8		ALAP ALAP	<3.5 <3.0	<10 <8	<80 <80	8 - 10 8 - 9	120 - 150 80 - 120	4 - 5 2 - 4			
				Comments: *This section was drilled with the inhibitive Aquadrill PAC/Glycol/KCL water base mud system. Due to strickt requirements to maintain a low sulphate level in the mud system, Ilmenite was replaced with CaCO3 as weighting agent.*																
				NOTE: **It was very important to minimize the risk for any sea water leakage into the active mud system.**																

5.8.7 Cementing summary

CEMENT SUMMARY

Well: 6608/10-7
Field: Exploration
Rig: Borgland Dolphin

HOLE		CASING SHOE		TOC	VOLUME/ EXCESS	CEMENT SLURRY DESIGN										SPACER	DISPLACEMENT
SIZE	TVD MD	SIZE	TVD MD	TVD MD		Components	Lead [ltr/100kg]	Tail [ltr/100kg]	Density [SG]	Yield [ltr/100kg]	Stat. / Circ. Temp [°C]	Thickening time [hrs to 30 Bc]	API Free Water [%]	API Fluid loss [cc/30min]	24 hrs C. S. [psi]		Fluids and Rates
36"	481	**30"**	468	Seabed	16.8 m3 lead 21.8 m3 tail 150 % OH excess	STL 10 Econolite CaCl2 NF- 6 Seawater	STT 10 3.2 4.35 0.10 95.07 39.56	1.56 lead 1.95 tail	129.42 lead 75.06 tail	7 / 9	> 6 lead 3 - 4 tail	1-2 lead <1 tail	na	+/- 100 lead +/- 500 tail	30 m3 Seawater	SW 1400 lpm
17 1/2"	1315	**13 3/8"**	1305,6	Seabed	81.4 m3 lead 21.4 m3 tail 100 % OH excess	STL40 Econolite HR-4L NF-6 Seawater Drill Water	MPT14B - 0.50 0.10 - 45.04 3.20 2.00 0.10 93.64 -	1.56 lead 1.90 tail	130.1 lead 76.70 tail	43 / 33	5 - 6 lead 3 - 4 tail	1-2 lead 1-2 tail	na	+/- 200 lead +/- 1200 tail	15 m3 fresh water	SW / WBM 3000 lpm
8 1/2"	2318,4	**7"**	2312	1173	27.2 m3 38 % OH excess	GTT80 CFR-3L Gascon HR-5L Halad-99LE+ Halad-600LE+ NF-6 Fresh Water 0.80 4.00 1.60 11.00 1.50 0.10 37.59		1.80	88.00	84 / 56	5 - 6	0	< 50	+/- 2000	15 m3 of 1.40 sg Spacer 500E+	Active mud 1400 lpm

5.8.8 P&A well schematic

Well Schematic - Permanent P&A

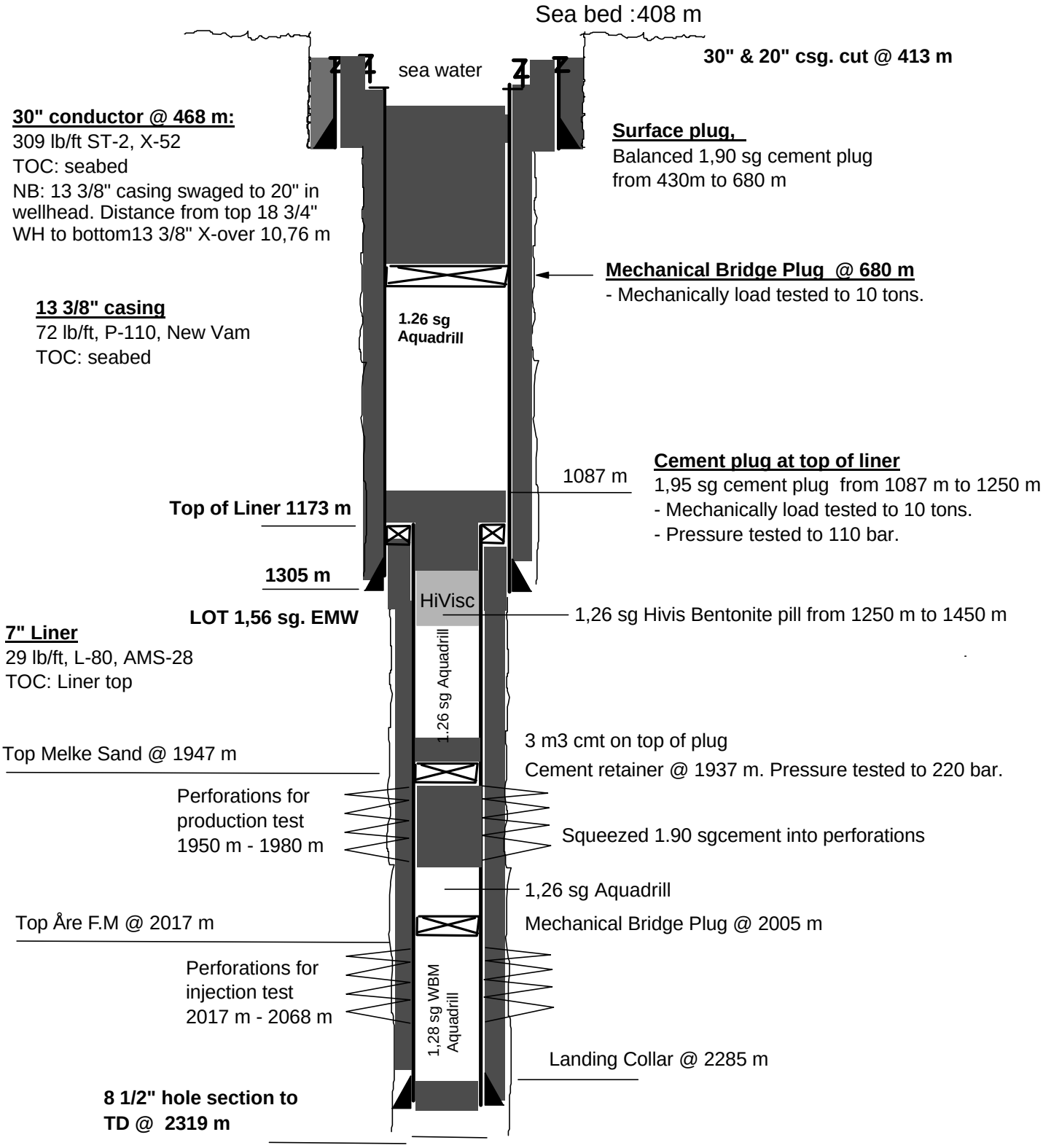
Well no: 6608/10-7 Vertical Well

PL 128

Not to scale
All depth are MD

Borgland Dolphin

RKB to MSL : 31 m
Water Depth : 377 m
RKB-Wellhead 405,2 m



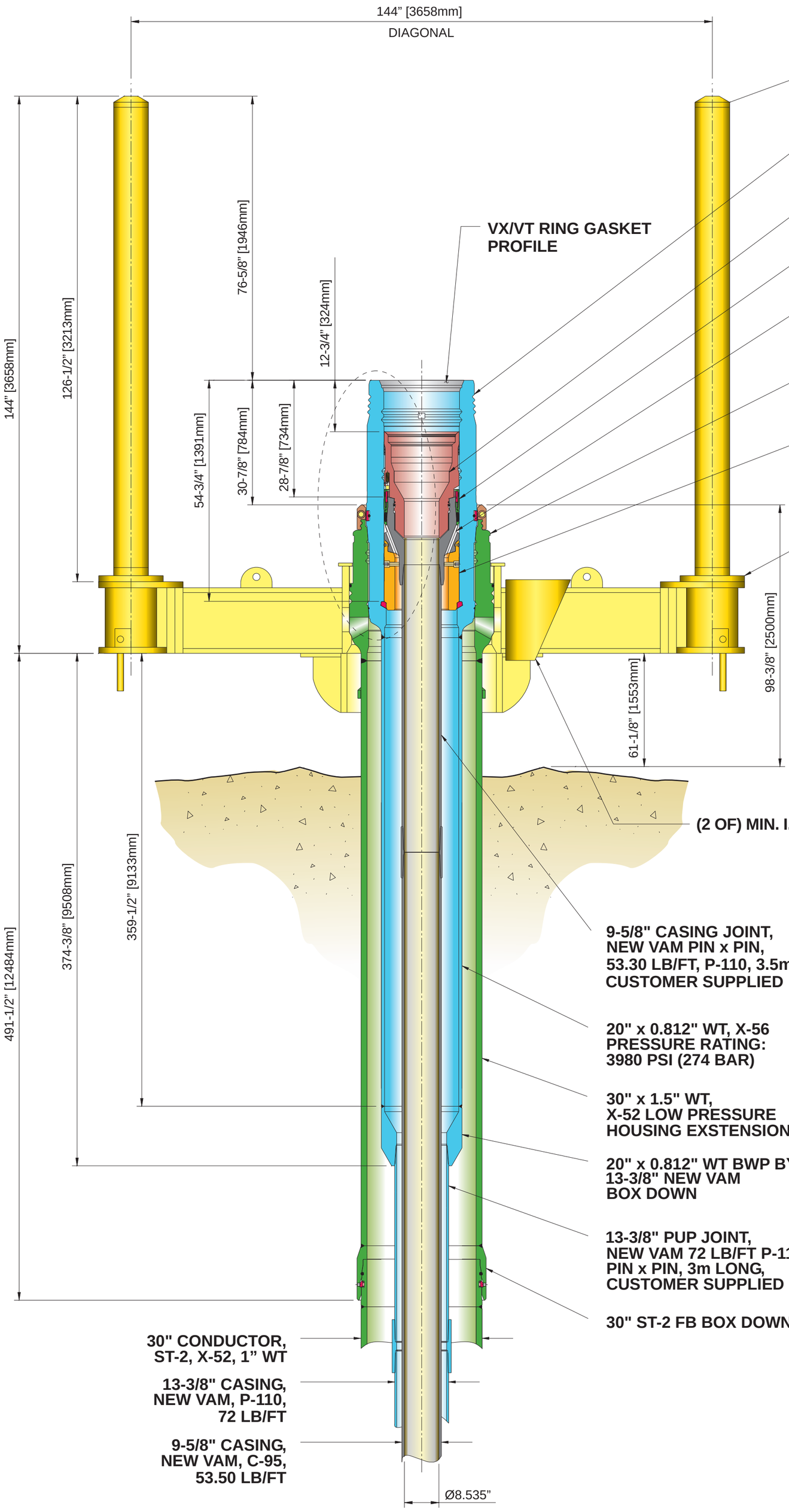
5.8.9 Wellhead system

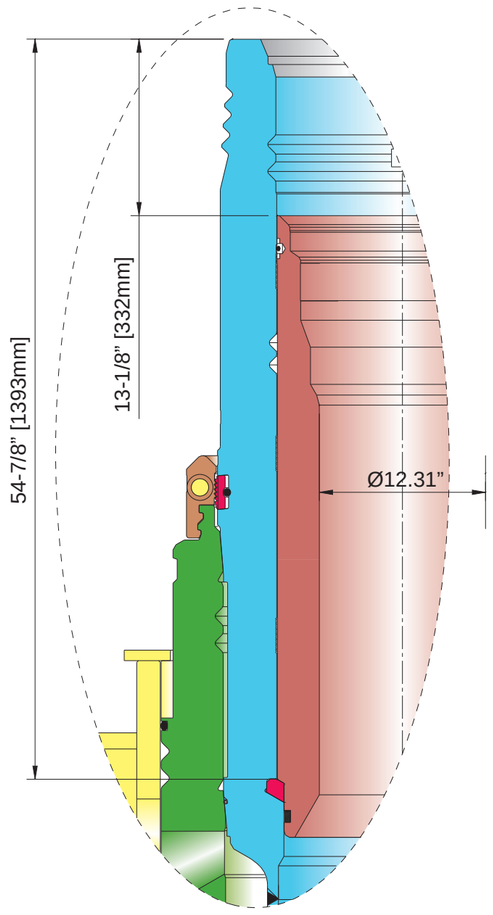
Borgland Dolphin

Well 6608/10-7

‘Svale’

STATOIL





DETAIL 'A'

SLIMHOLE SEAT PROTECTOR INSTALLED, P/N A50128-6

MS-700 Wellhead System

18-3/4” x 15,000 PSI

Concept AS

Drawing Number: N600973-1

ABB Oil, Gas and Petrochemicals

ABB

Appendices

Appendix 1 : Wellsite sample description

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O.Beyer / J. Gilpin	Date: 14. -15.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
1318	100	Sd:	clr - trnsl, smky, pa yel, opq i.p., f - v crs, pr srtd, ang, r sbrnd, pr sph, Qtz, + rk frags, dk gry blk, mott, v hd, shiny, vit, fused looking, meta, mic, calcite & shell/foss frags, tr Pyr, r tr Glauc, frac pbls	No Shows very cmt contam. 15%
1320	75	Sd:	a.a.	a.a.
	25	Clst:	med gry, sli gn gry, v sft, amor, sli slty, sdy, sli calc, hygroturgid	
1330	30	Sd:	lse Qtz, clr, trnsp, mlky wh, trnsl, f - v crs, pred crs - v crs, pr srtd, ang - sbang, occ sbrnd, mod - pr sph, rk frags & occ pbl a.a., dk gry, med gry, blk, mtld, v hd, met, shiney, vit, mic, tr shl / foss frags, tr Pyr	a.a.
	70	Clst:	med gry, sli gnsh gry, sft - v sft, amor, slty / sdy, sli calc, hygroturgid	
1340	30	Sd:	lse Qtz & rk frags a.a. but v f - crs, occ v crs, gen v f - med, pr srtd, sbang - sbrnd, occ ang, mod sph, else a.a.	a.a.
	70	Clst:	a.a.	
1350	15	Sd:	a.a.	a.a.
	85	Clst:	a.a.	
1360	25	Sd:	a.a.	a.a.
	75	Clst:	a.a.	
1370	30	Sd:	a.a. v f - crs, v crs, clr, occ mlky wh, r or rd, r dk gry, opq, ang - sbrnd + mets rk frags, pbl frags	a.a.
	70	Clst:	a.a., sli calc i.p.	
1380	35	Sd:	a.a.	a.a.
	65	Clst:	a.a.	
1390	15	Sd:	a.a.	a.a.
	85	Clst:	a.a., tr Glauc	
1400	50	Sd:	a.a., pred lse Qtz & Glauc, v f - crs, gen f - med, gen sbang, ang - sbrnd, mod - pr srtd, some meta rk frags & pbl frags a.a.,	a.a.
	50	Clst:	a.a. + pa yel - brnsh gry, v sft, v calc	
	Tr	Pyr		
1410	50	Sd:	a.a.	a.a.
	50	Clst:	a.a.	
1420	30	Sd:	Qtz & Glauc a.a.	a.a.
	70	Clst:	a.a.	
1430	20	Sd:	Qtz & Glauc a.a.	a.a.
	80	Clst:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 2 of 11
Country: Norway	Area: Nordland II		Field: Svale
Well no: 6608/10-7			
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil		
Hole size: 8 ½"	Geologist: O.Beyer / J. Gilpin		Date: 15.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1440	80	Clst: med gn gry, sli brnsh gry, sft - v sft, pred amor, slily slty / sdy, i.p. sli calc unif hygroturgid txt	No Shows
	20	Sd: lse Qtz , clr, trnsp, mlky wh, trnsl & Glauc, blk- dk gn, all f - v crs, pred crs - v crs, pr srtd, ang - sbrnd, mod - pr sph, also tr rk frags & pbl, a.a., dk gry - med gry, blk	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1450	60	Clst: pred a.a., bec also mod olv - brn gry, sft - frm, slily sbfiss, micromic	a.a.
	40	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1460	70	Clst: pred olv gry - dk brn gry, a.a.	a.a.
	30	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1470		a.a.	a.a.
1480		a.a.	a.a.
1490	90	Clst: pred olv gry - dk brn gry, also med - dk gn gry, again sft - frm, i.p. sol	a.a.
	10	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1500	95	Clst: pred olv gry-dk brn gry, med-dk gn gry, sft-frm, i.p. sol, Glauc spks	a.a.
	5	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1510	100	Clst: pred a.a.	a.a.
	Gd tr	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1520	95	Clst: pred a.a.	a.a.
	5	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1530	100	Clst: pred a.a.	a.a.
	Gd tr	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1540	95	Clst: bec pred med - dk gn gry, min med olv gry, sft - frm, abd Glauc spks, non calc	a.a.
	5	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	
1550	100	Clst: pred a.a.	a.a.
	Gd tr	Sd: lse Qtz & Glauc, a.a.	
	Tr	Shl / foss frags, tr Pyr/foss pyr	

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O.Beyer / J. Gilpin	Date: 15.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
1560	95	Clst: pred med - dk gn gry, med - dk olv gry, sft - frm, abd Glauc spks, non calc	No Shows
	5	Sst: lse Qtz , clr, trnsp, mlky wh, trnsl & Glauc, blk- dk gn, all f - v crs, pred crs - v crs, pr srtd, ang - sbrnd	
	Tr	Pyr/foss pyr	
1570		a.a.	a.a.
1580		a.a.	a.a.
1590	80	Clst: pred a.a.	a.a.
	10	Sst: lse Qtz & Glauc, a.a.	
	10	Sltst: pa gn arg mtrx, frm, blky, non calc, pred grad Clst	
	Tr	Pyr/foss pyr	
1600	80	Clst: pred a.a.	a.a.
	20	Sltst: pred a.a.	
	Gd tr	Sst: lse Qtz & Glauc, a.a.	
	Tr	Pyr/foss pyr	
1610	90	Clst: bec i.p. slily calc, else pred a.a.	a.a.
	10	Sltst: pred a.a.	
	Gd tr	Sst: lse Qtz & Glauc, a.a.	
	Tr	Pyr/foss pyr	
1620		a.a.	a.a.
1630	100	Clst: pred non - slily calc, bec pred cln pa gn gry, frm, unif	a.a.
	Gd tr	Sltst: pred a.a.	
	Gd tr	Sst: lse Qtz & Glauc, a.a.	
	Tr	Pyr/foss pyr	
1640		a.a.	a.a.
1650		a.a. bec slily tf, loc bl gry, wxy app	
1660	100	Clst/Tf Clst: pred pa - med gn gry, bl gry, med brn, frm, wxy app	a.a.
1670	100	Clst/Tf Clst: pred a.a.	a.a.
1680	50	Tf Clst: pred a.a., tr Tf	a.a.
	50	Clst: med dk gry- dk brn gry, frm, blky, non - slily slty, non - slily calc	
	Tr	Sd (Qtz), Dol/Ls, Pyr	
1690	100	Clst/Tf Clst: pred a.a., tr Tf	a.a.
	Tr	Sd (Qtz), Dol/Ls, Pyr	
1700	100	Clst/Tf Clst: pred a.a., tr Tf	a.a.
	Tr	Sd (Qtz), Dol/Ls, Pyr	
1710		a.a.	a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O.Beyer / J. Gilpin	Date: 15.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
1720	100	Clst: pred med dk gry, minor pa - med gn gry, frm, blky - ang, loc wxy app, slily calc	No Shows
	Tr	Sd (Qtz), Sltst, Dol/Ls, Pyr	
1730	100	Clst: loc slty, else pred a.a.	a.a.
1740	100	Clst: bec pred pa gn, non slty, only tr med dk gry, wxy app, non - slily calc	a.a.
1750		a.a.	a.a.
1760	100	Clst: pa gnsh gry, lt gry, med dk gry, brnsh gry, occ gn, sft - frm, occ mod hd, ang, blky, amor, loc wxy app, Glauc, r tr micromic, tr micropyr, non calc	a.a
	Tr	Ls: wh - pa gry, sft - mod hd, blky, ang, occ chlky, microxln i.p., tr micropyr	
1770		a.a	
1780	90	Clst: a.a but bcmg more med gry, sl brnsh gry, gen ang - occ blky, v occ sl slty, micromic & micropyr i.p.	some pa yel fluor in Clst. 10% total fluor. brown oil stn? pa yel, wh fluor, slw blmg - v slw wh cut fluor. (some mineral fluor). Tr brn stn v f Sst/Sltst - slty Clst, strmg cut
	10	Ls: gen wh, pa gry/wh, gen sft, blky, chlky	
	R tr	Sd/Sst: v f, wl srtd, fri, brn oil stn? rk frags (contam from higher up?), tr crs, ang Qtz	
	Tr	Pyr & Glauc	
1790	90	Clst: a.a, v sli slty i.p., but occ slily brn oil stn?	10% total fluor. Bri pa yel flour, slw blm - sl strmg wh cut flour
	10	Ls: a.a, + grad to sft Mrl i.p., min flour, no vis oil stn	
	Tr	Sst: a.a	
	Gd tr	Pyr & Glauc	
1800	95	Clst: pred med gry - med dk gry, occ gn gry a.a, gen frm - v frm, occ sft - mod hd, ang - blky, occ sb tab, loc sli slty, sl micromic i.p., micropyr i.p., tr Glauc, non calc	5% total fluor a.a r tr brn oil stn, occ slw strmg - blmg cut fluor. Predom assoc w/ oil stn Clst slty Clst.
	5	Ls: wh, pa gry, chlky	
1804	90	Clst: a.a, slty i.p., brn oil stn Clst i.p.	20-25% total fluor (some mineral), wh - bri pa yel, slw blmg-strmg wh cut fluor. Slw strmg cut in brn sst.
	5	Sd/Sst: clr, mlky, crs - v crs, ang frags, + pa - mod brn, v f silty/arg sst	
	5	Ls: a.a	
	Gd tr	Pyr: micro & cubic	
	Gd tr	Glauc	
1810	90	Clst: gnsh gry, pa gn, brnsh gry, gen frm - v frm, occ sft - mod hd, ang - blky, occ sbtab, loc sli slty, sli micromic i.p., micropyr i.p., tr Glauc, non calc	No Shows
	10	Ls: wh, pa gry, sft - occ mod hd, chlky/mrly, tr brn ang chert.	
	R tr	Cht: dk brn, sl trnsl, ang, v hd	
	Gd tr	Pyr: nodules, occ cubes	
	Gd tr	Glauc	

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O.Beyer / J. Gilpin	Date: 15.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
1820	50	Clst:	varicol, gry, pa gn gry, gn, bl/gry etc, v small pieces, loc v slty grad to slst a.a, micromic, micropyr, non calc. r tr faint brn stain?	No Shows circ off btm
	40	Sst:	clr, mlky, opq, f- v crs, pr srtd, ang - sbrnd	1 hr to clean hole
	10	Ls:	wh, pa gry, sft - occ mod hd, chlky/mrly, tr brn ang chert	riser booster on.
	Gd tr	Pyr & Glauc:		representative??!
1830	80	Clst:	med gry - med dk gry, occ lt gry, sl brnsh gry, + tr gn & gnsh gry a.a, sft - occ frm, sb blky, - amor, slty grad to sltst, micromic, non calc	dull yel gn & bri wh/pa yel wh fluor
	20	Sst:	lse Qtz, clr, mlky, gen v f - f, med - v crs, mod - pr strd, sbang - sbrnd, mod sph	a.a (20-30%?). Slw blmg - occ v slw strmg wh cut fluor
	Gd tr	Ls:	a.a.	
	Gd tr	Pyr:	a.a	
	Tr	Glauc		
1840	80	Clst:	a.a, v slty	a.a 20%? gen duller?
	20	Sst:	a.a, sli better srtg?	
1850	90	Clst:	gen med gry - sl brnsh med gry, occ gn & gnsh gry, sft, v slty & sdy, grad to sltst i.p., v micromic, micropyr, non calc	a.a
	10	Sst:	a.a	
	Gd tr	Pyr:	a.a	
	Tr	Glauc:		
1853	90	Clst:	med gry - med dk gry, sl blsh & gnsh gry, r gn, v sft, amor, silty, micromic, v calc grad to Mrl, also pa yel brn, crm, v sft - frm i.p., dol	a.a. mineral & sli (10%) show
	10	Sst:	v f - v crs, lse Qtz a.a	
	Tr	Ls:	wh, a.a	
	Gd tr	Pyr		
	Tr	Glauc		
1856	100	Clst:	a.a, 10 - 15% dol Clst a.a yel brn, crm	some tr fluor a.a
	Gd tr	Sst:	a.a	no vis oil stn. occ
	Gd tr	Pyr:	nod & foss	v slw blmg wh cut
	Tr	Glauc		
1859 - 1865m		Missing		
1868	80	Clst:	med gry, occ med dk gry, lt brnsh gry, tr gn & gnsh gry, v sft, amor, loc slty, calc	No shows
	15	Dol:	lt yel brn, med - dk gry brn, brnsh gry, hd, ang, sli arg i.p., microxln, occ sft, grad to dol Clst, occ thin carb/blk lamin	
	5	Sst:	a.a	
1871	75	Clst:	med gry, occ dk med gry, brnsh gry i.p., occ gn & gnsh gry, else a.a	No shows
	20	Dol:	pa yel brn, crm, brnsh gry, hd, ang, microxln, occ sft grad to dol Clst	
	5	Sst:	lse Qtz, gen clr, occ mlky, v f - f, occ v crs, mod - pr srtd, sbang - sbrnd	
	Gd tr	Pyr	nod & cubic i.p.	
	Tr	Glauc		
1874		Missing		

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O.Beyer / J. Gilpin	Date: 15-16.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
1877	65	Clst: med gry, occ dk med gry, brnsh gry i.p., occ gn & gnsh gry, v sft, amor, loc slty, calc, micromic	No shows
	30	Dol: pa yel brn, crm, brnsh gry, hd ang, microxln, occ sft grad to dol Clst	
	5	Sst: lse Qtz, gen clr, occ mlky, v f - f, occ v crs, mod - pr srtd, sbang - sbrnd	
	Tr	Ls: wh, sft - occ mod hd, chlky/mrly	
	Gd tr	Pyr:	
1880	80	Clst: a.a	a.a.
	20	Dol: a.a	
	Tr	Sst: a.a	
	Gd tr	Pyr: a.a	
1883		Missing	
1886	80	Clst: a.a, + pa yel brn i.p., calc	a.a
	15	Dol: a.a	
	Tr	Sst: a.a	
	Gd tr	Pyr:	
1889	90	Clst: a.a + v calc pa yel brn, crm, grad Mrl?	a.a
	10	Dol: a.a	
	Gd tr	Sst: a.a	
	Tr	Pyr	
1892	75	Clst: a.a, sli less slty?, still calc + pa yel brn/crm mrly Clst grad Ls	a.a
	20	Dol: a.a	
	5	Sst: a.a	
1895	90	Clst: a.a + 10 - 15% mrly Clst a.a	a.a
	10	Dol: a.a	
	Gd tr	Sst: a.a	
	Tr	Pyr: a.a	
1898		a.a	a.a.
1901	100	Clst: pred med gry - sl brnsh med gry, occ pa yel brn - crm (mrly), v sft amor, silty, micromic, calc. Also occ med dk gry, dk gry, frm - mod hd, ang, non calc + gn & gnsh gry from higher up	a.a
	Tr	Ls: lt gry, mod hd	
	Tr	Sst: gen clr, v f, slt	
	Tr	Dol: a.a	
1904	70	Clst: pred med gry - sl brnsh med gry, occ pa yel brn - crm (mrly), v sft amor, silty, micromic, calc. Also occ med dk gry, dk gry, frm - mod hd, ang, non calc + gn & gnsh gry from higher up	bri wh - v pa yel fluor (some mineral) No vis oil stn, v slw
	30	Mrl/Ls: pa yel brn / crm, sft - occ mod frm, occ crmb, thin blk/carb lamin	blmg - v slw strmg
	Gd tr	Pyr	wh cut fluor

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O. Beyer / J. Gilpin	Date: 16.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
1907	75	Clst:	pred med gry - sl brnsh med gry, occ pa yel brn - crm (mrly), v sft amor, silty, micromic, calc. Also occ med dk gry, dk gry, frm - mod hd, ang, non calc + gn & gnsh gry from higher up	bri wh - v pa yel fluor (some mineral) No vis oil stn, v slw
	25	Mrl/Ls:	pa yel brn / crm, sft - occ mod frm, occ crmb, thin blk/carb lamin	blmg - v slw strmg wh cut fluor
1910	65	Clst:	a.a	
	30	Mrl/Ls:	a.a	a.a
	5	Sst:	lse Qtz, clr, trnsp, occ mlky, v f - f occ med, mod srtd, sbang - sbrnd	
	Gd tr	Pyr		
1913	75	Clst:	a.a	Poss sli vis oil stn
	25	Mrl/Ls:	a.a, tr Glauc i.p.	
1916		Missing		
1919	75	Clst:	a.a, med gry - occ med dk gry, occ lt gry, occ spkld w Glauc, sli slty	a.a.
	25	Mrl/Ls:	a.a.	
	Tr	Dol:	a.a	
1922	100	Clst:	a.a	a.a.
	Gd tr	Mrl/Ls:	a.a, tr brn chert	
	Gd tr	Sst:	a.a	
	Tr	Pyr		
1925	90	Clst:	a.a, abd Glauc & Pyr	a.a.
	10	Mrl:	a.a, occ grad Ls	
	Gd tr	Sst:	lse Qtz, a.a	
1928	90	Clst:	med gry, occ lt gry, sli brnsh gry, + crm - grad to Mrl, sli inc in siltiness, tr Glauc	a.a.
	10	Mrl/Ls:	a.a	
	Tr	Sst:		
	Tr	Pyr		
1934	100	Clst:	med gry, sli brnsh gry, v sft, amor, loc slty, micromic & micropyr, tr Glauc	None, v rare fluor
	Tr	Mrl/Ls:	a.a	
	Tr	Sst:	lse Qtz, v f - f, mod - wl srtd, sbang - sbrnd, mod - gd sph	
	Tr	Pyr:		
1937	100	Clst:	a.a	a.a
	Tr	Pyr:	a.a	
1940		a.a		a.a.
1943		a.a		a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: O. Beyer/J. Gilpin	Date: 24.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Remarks: Shows, cavings, mud additives, etc.
1946	100	Clst:	med gry, sli brnsh gry, v sft, amor, loc slty, micromic & micropyr, tr Glauc, grad occ to dk gry, v f mic sltst/poss v f arg sst, sli less calc i.p.		5-10% pa yel wh fluor. Slw blmg-strmg wh cut fluor
	Tr	Pyr			
1949	85	Clst:	a.a, w/ mic Sltst		a.a.
	Gd tr	Sltst:	dk gry, fri, v mic		
	10	Sst:	Predom lse Qtz, clr, mlky, blk & opq i.p., f - crs. gen med, pr srtd, mod sph		
	5	Pyr:	nod		
1952	85	Clst:	a.a, slty, grad to Sltst i.p., non calc - calc		Gen dull yel
	15	Sltst:	gen as Clst but v silty, + dk gry mic a.a		yel/gn fluor, occ brighter. Slw blmg - occ v slw strmg wh cut fluor
	Tr	Mrl:	a.a		
	Tr	Sst:	a.a		
	Gd tr	Pyr:	a.a		TG 0.44% c1-c4
1955	80	Clst:	a.a.		Gen dull yel - yel/ gn fluor, occ pa yel wh. Slw strmg blmg wh cut fluor
	20	Sltst:	a.a, micromic, micropyr, tr Glauc		
	Gd tr	Pyr:	a.a		
-					
1955-2101		Cored interval described in the conventional core description file.			
2102	90	Sltst:	gry - brnsh gry, brnsh blk, mod hd - frm		No Shows
	5	Sst:	Qtz, a.a.		
	5	Ls:	lt gry - wh, frm		
2105	50	Sltst:	a.a.		a.a.
	45	Sst:	clr Qtz, v f, sbrnd, lse		
	5	Coal:	blk, shny, blky,		
2108		a.a.			a.a.
2111	90	Sltst:	a.a.		a.a.
	10	Sst:	a.a.		
	tr	Clst	gnsh gry		
2114	80	Sltst:	a.a.		a.a.
	20	Sst:	a.a. but Kaol cmt		
2117		a.a.			a.a.
2120	60	Sltst:	a.a.		a.a.
	20	Clst:	a.a., kaol		
	20	Sst:	Qtz, f - med, prly srtd		
	tr	Coal:			
2126	60	Sltst:	a.a.		a.a.
	30	Coal:	a.a.		
	10	Clst	a.a.		

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: J. Gjerde/J.O. Fløtre	Date: 24.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
2129	40	Sltst:	gry - brnsh gry - brnsh blk, mod hd - sft	No Shows
	40	Clst	gn, wh gry, kaol	
	10	Sst:	clr Qtz, f, sbrnd, prly srtd	
	10	Coal:	blk, shny, blky, brit	
2132		a.a.		a.a. 6m samples due to fast drilling
2138		a.a.		a.a.
2144		a.a.		a.a.
2150		a.a.		a.a.
2156		a.a.		a.a.
2162	95	Sst:	clr Qtz, f, mod srtd, sbrnd	a.a.
	5	Sltst:	a.a.	Kaol washed out from samples
2170	70	Sltst:	a.a.	a.a.
	20	Sst:	a.a.	
	10	Clst	a.a.	
2177	90	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	Tr	Coal:	a.a.	
2180	80	Sltst:	a.a.	a.a.
	20	Sst:	a.a.	
	Tr	Coal:	a.a.	
2189		a.a.		No shows
2192		a.a.		a.a.
2195		a.a.		a.a. 6m samples due to fast drilling
2201		a.a.		a.a.
2204		a.a.		a.a.
2210		a.a.		a.a.
2216		a.a.		a.a.
2219	80	Sltst:	a.a.	a.a.
	20	Sst:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: J. Gjerde/J.O. Fløtre	Date: 25.04.2001

Depth (m RKB)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
2222	80	Coal: blk, shny, blky, brit	No Shows
	20	Sltst: gry - brnsh gry-brnsh blk, mod hd - sft	
2228	90	Sltst: gry - brnsh gry - brnsh blk, mod hd - sft	a.a.
	10	Coal: blk, shny, blky, brit	
2231	90	Sltst: gry - brnsh gry - brnsh blk, mod hd - sft	a.a.
	10	Sst: clr Qtz, f, mod srtd, sbrnd	
2237		a.a.	a.a.
2243		a.a.	a.a.
2246	80	Sltst: a.a.	a.a.
	20	Sst: a.a.	
2252	40	Clst: mod gry - mod brnsh gry, sft - frm, fiss, lam i.p., calc, micromic, occ slty	a.a.
	30	Coal: blk, frm - hd, shny, brit, occ grad carb Clst	
	30	Sd/Sst: clr Qtz, f - med, lse, mod srtd, sbrnd - sbang	
2255		a.a.	a.a.
2258		a.a.	a.a.
2261	50	Clst: a.a. but occ mod brn, carb, mic	a.a.
	30	Coal: a.a.	
	20	Sst: a.a. but occ crs, ang	
2264		a.a.	a.a.
2267	50	Clst: mod gry, gn gry, brn gry, else a.a.	a.a.
	30	Coal: a.a.	
	20	Sst: a.a.	
2273	60	Clst: mod gry, frm, fiss, lam, mic, occ nod Pyr	a.a.
	30	Sst: a.a.	
	10	Coal: a.a.	
2276	50	Clst: mod gry, gn gry, brn gry, else a.a.	a.a.
	30	Coal: a.a.	
	10	Sltst: mod brn, frm - hd, fiss, lam, v carb	
	10	Sst: a.a.	
2279		a.a.	a.a.
2282		a.a.	a.a.
2285		a.a.	a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland II	Field: Svale
Well no: 6608/10-7		
RKB: 31 meters	Company: Statoil ASA, Norsk Hydro, Norsk Agip, Enterprise Oil	
Hole size: 8 ½"	Geologist: J. Gjerde/J.O. Fløtre	Date: 25.04.2001

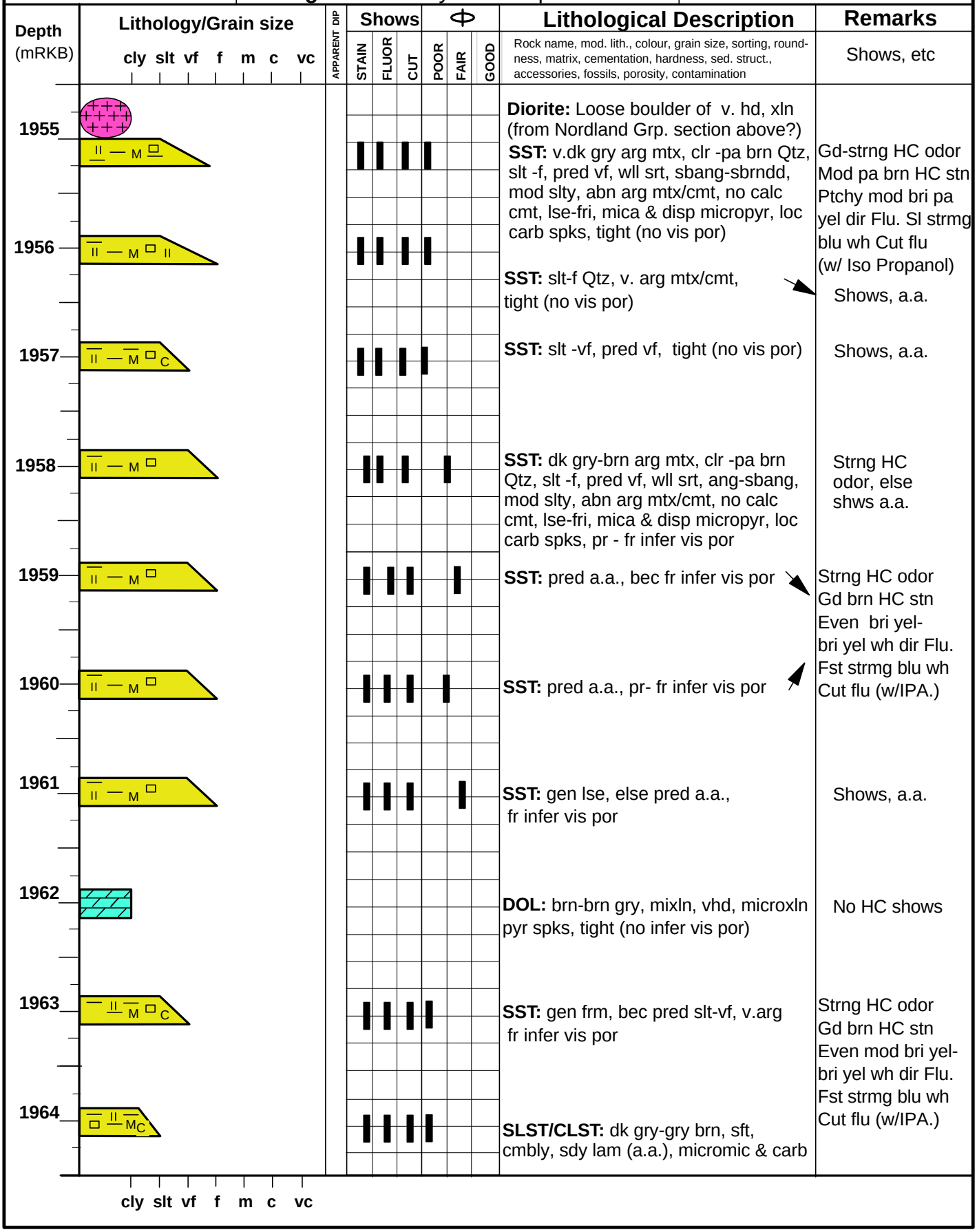
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.
2288	50	Sst:	clr - lt brn Qtz, f - med, occ crs, prly srtd, sbang, pred lse, occ cly mtrx, tr Mica	No Shows
	30	Clst:	mod gry, gnsh gry, brn gry, frm - hd, fiss, lam, grad Slt, brn gry, org rich (Coal)	
	20	Coal::	blk, hd, shny, brit	
2291		a.a.		a.a.
2294	80	Sst:	clr - lt brn Qtz, pred f occ grad med crs, mod - w srtd, sbrnd, pred lse, occ kaol mtrx, tr oxide, tr Mica	a.a.
	20	Clst:	a.a., tr Coal	
2297	50	Sst:	a.a., sp nod Pyr, sp chal Pyr	a.a.
	30	Clst:	a.a.	
	20	Coal:	a.a.	
2300		a.a.	sp nod Pyr	a.a.
2303		a.a.		a.a.
2306		a.a.		a.a.
2309		a.a.		a.a.
2312		a.a.		a.a.
2315	lost			
2318	40	Clst:	mod gry, gn gry, brn, frm - mod hd, fiss, lam, carb, calc, tr micropyr, tr Mica	a.a.
	20	Coal:	a.a.	
	20	Sltst:	mod brn, frm, fiss, lam, carb	
	20	Sst:	a.a.	

Appendix 2 : Core descriptions

STATOIL

CONVENTIONAL CORE DESCRIPTION

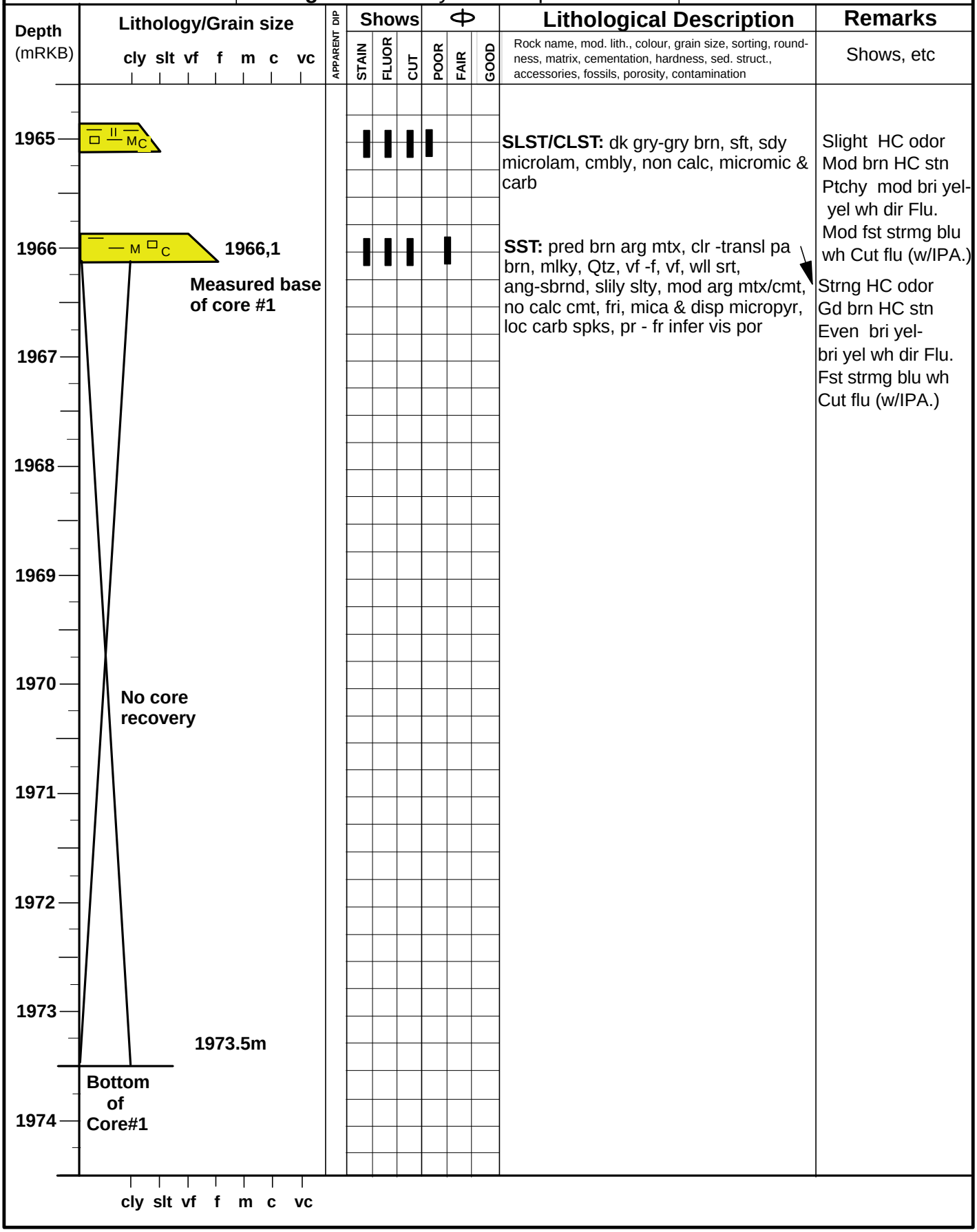
Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke Formation	
Core no: 1	**Interval:** 1955 - 1973.5 mMD	**Cored:** 18.5 m **Rec:** 11.1 m 60.0 %
Core size: 4"	**Geologists:** O. Beyer / J. Gilpin	**Date:** 17.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

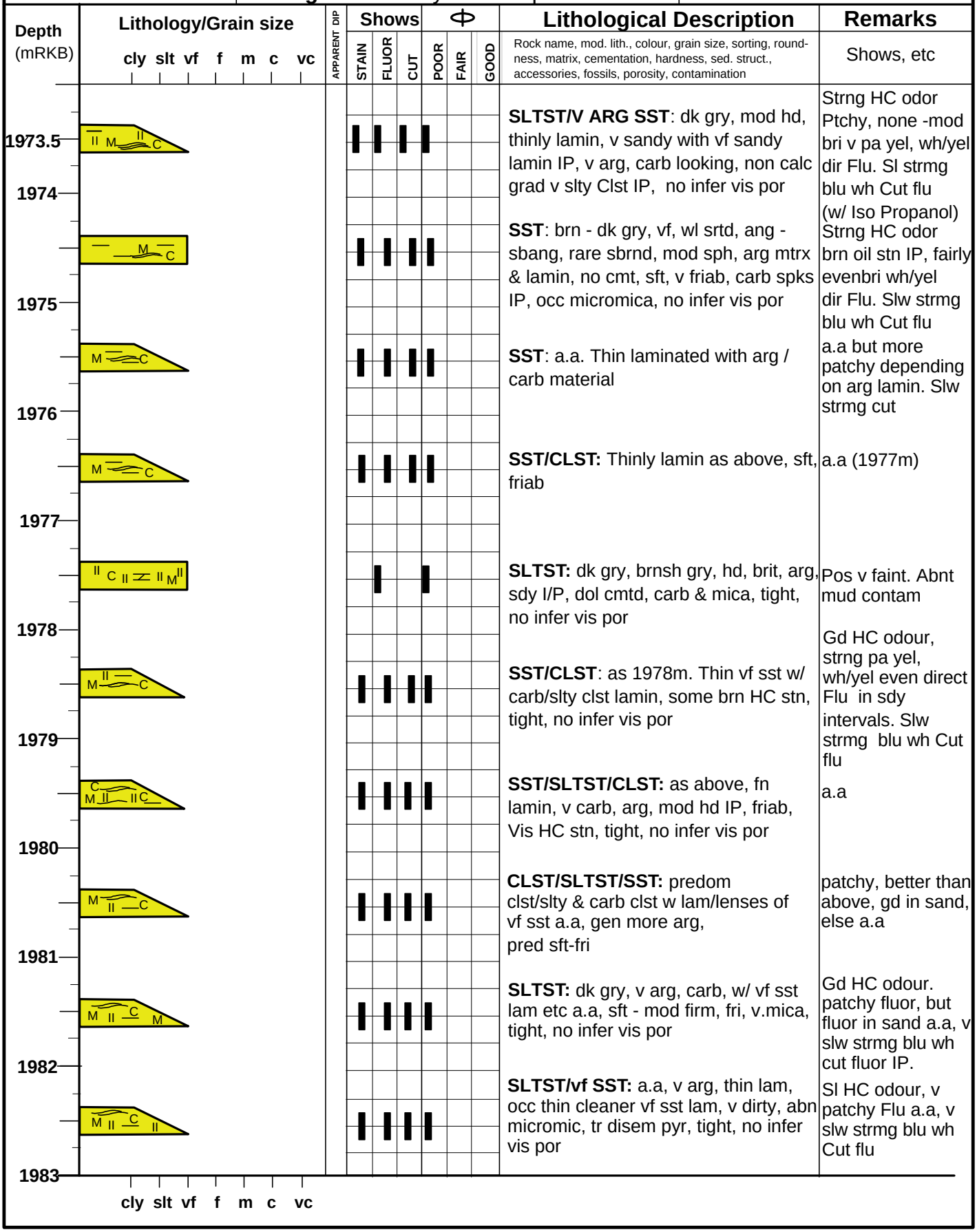
Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke Formation	
Core no: 1	**Interval:** 1955 - 1973.5 mMD	**Cored:** 18.5 m **Rec:** 11.1 m 60.0 %
Core size: 4"	**Geologists:** O. Beyer / J. Gilpin	**Date:** 17.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke Formation	
Core no: 2	**Interval:** 1973.5 - 1987.0 mMD	**Cored:** 13.5 m **Rec:** 13.50m 100.0 %
Core size: 4"	**Geologists:** O. Beyer / J. Gilpin	**Date:** 18.04.2001



Lithological Description

Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination

SLTST/V ARG SST: dk gry, mod hd, thinly lamin, v sandy with vf sandy lamin IP, v arg, carb looking, non calc grad v slty Clst IP, no infer vis por

SST: brn - dk gry, vf, wl srtd, ang - sbang, rare sbrnd, mod sph, arg mtrx & lamin, no cmt, sft, v friab, carb spks IP, occ micromica, no infer vis por

SST: a.a. Thin laminated with arg / carb material

SST/CLST: Thinly lamin as above, sft, friab

SLTST: dk gry, brnsh gry, hd, brit, arg, sdy l/P, dol cmtd, carb & mica, tight, no infer vis por

SST/CLST: as 1978m. Thin vf sst w/ carb/slty clst lamin, some brn HC stn, tight, no infer vis por

SST/SLTST/CLST: as above, fn lamin, v carb, arg, mod hd IP, friab, Vis HC stn, tight, no infer vis por

CLST/SLTST/SST: predom clst/slty & carb clst w lam/lenses of vf sst a.a, gen more arg, pred sft-fri

SLTST: dk gry, v arg, carb, w/ vf sst lam etc a.a, sft - mod firm, fri, v.mica, tight, no infer vis por

SLTST/vf SST: a.a, v arg, thin lam, occ thin cleaner vf sst lam, v dirty, abn micromic, tr disem pyr, tight, no infer vis por

Remarks

Shows, etc

Strng HC odor Ptchy, none -mod bri v pa yel, wh/yel dir Flu. Sl strmg blu wh Cut flu (w/ Iso Propanol)

Strng HC odor brn oil stn IP, fairly evenbri wh/yel dir Flu. Slw strmg blu wh Cut flu

a.a but more patchy depending on arg lamin. Slw strmg cut

a.a (1977m)

Pos v faint. Abnt mud contam

Gd HC odour, strng pa yel, wh/yel even direct Flu in sdy intervals. Slw strmg blu wh Cut flu

a.a

patchy, better than above, gd in sand, else a.a

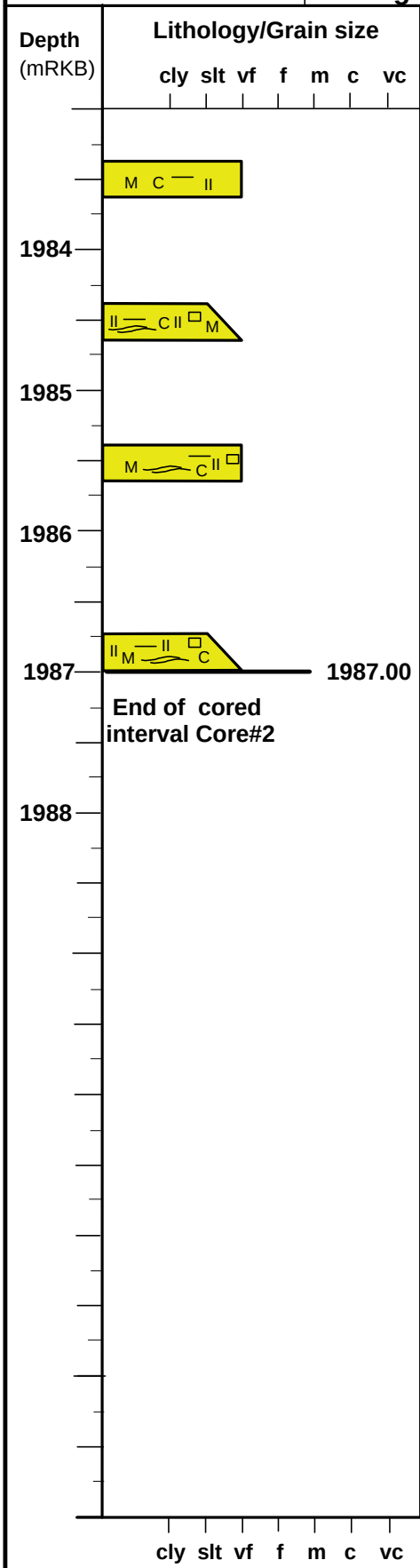
Gd HC odour. patchy fluor, but fluor in sand a.a, v slw strmg blu wh cut fluor IP.

Sl HC odour, v patchy Flu a.a, v slw strmg blu wh Cut flu

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke Formation	
Core no: 2	**Interval:** 1973.5 - 1987.0 mMD	**Cored:** 13.5m **Rec:** 13.5m 100.0%
Core size: 4"	**Geologists:** O. Beyer / J. Gilpin	**Date:** 18.04.2001

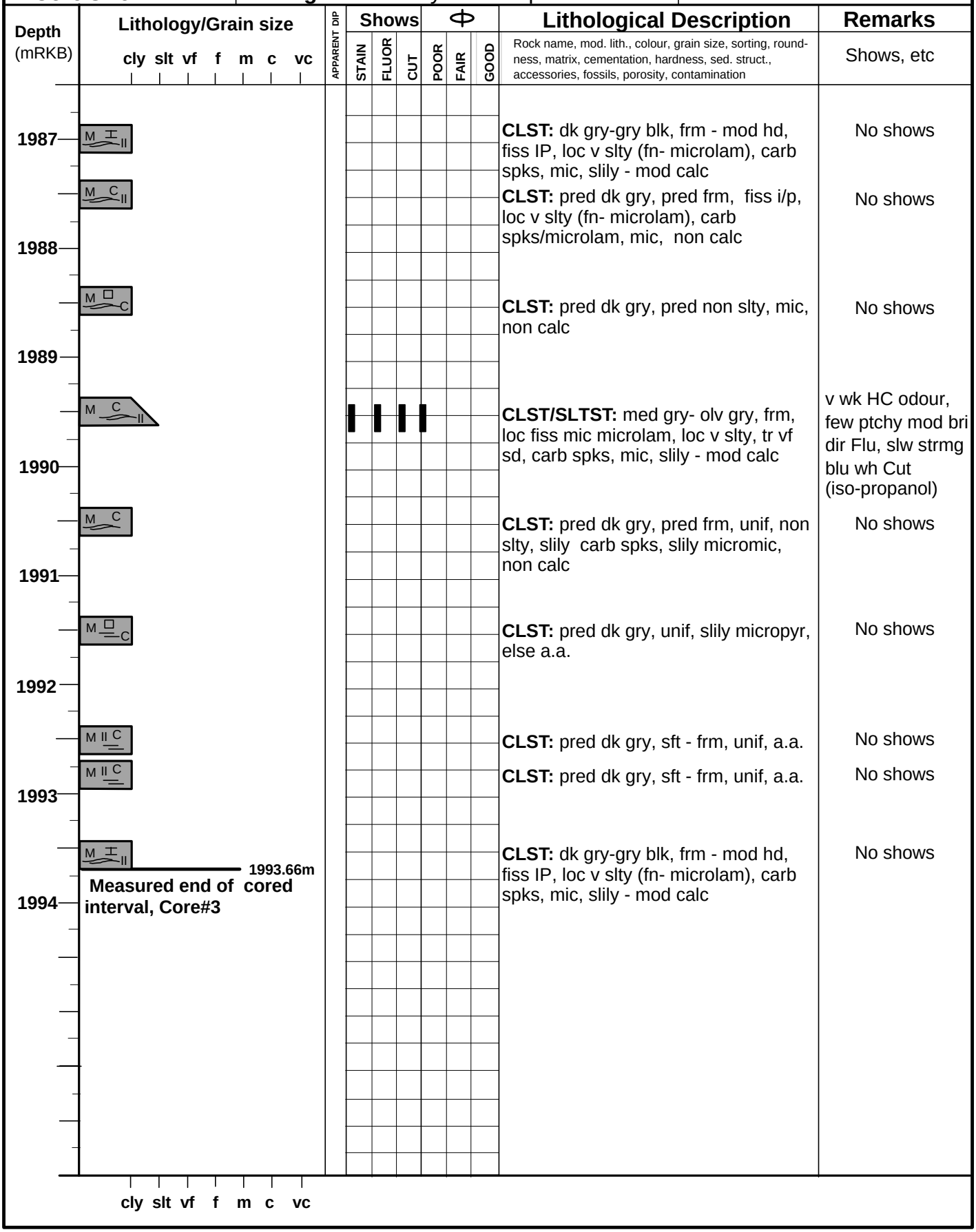


Shows						Lithological Description	Remarks
STAIN	FLUOR	CUT	POOR	FAIR	GOOD	Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination	Shows, etc
						SST: brn, vf, wl srtd, ang-sbang, occ sbrnd, mod sph, lse, friab, some dk gry arg/sli carb mtx, no cmt, tr mica, vis HCl stn IP, pos fair vis por I/P	Strng HC odour reasonably even wh yel, dir Flu, slw - poss mod strmg blu wh Cut flu
						SST/SLTST: vf sst as above but v argil w/ sltst/arg& carb microlamin, mod frm, friab, mica, tr disemm pyr, tr carb spks, v sli dol, no vis por	HC odour. Flu gen a.a., but ptchy dep. on arg cont., slw strmg blu wh Cut flu
						SST: brn, dk gry, vf wl srtd, ang - sb ang, mod sph, silty/arg/carb, lamin & mtrx IP, friab, mica, no vis por, poss v local fair por	Gen a.a, slw strmg & blmg blu wh Cut flu
						CLST: dk gry, mod hd - sft, fiss IP, slty, loc v sdy grad to vf sst (thin micro lamin), carb, mic, non calc	Sl HC odour. No Flu - pr/ptchy I/P assoc with sd, r slw strmg Cut flu

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke Formation	
Core no: 3	**Interval:** 1987.0 - 1993.5 mMD	**Cored:** 6.50 m **Rec: 6.66** m 102.5%
Core size: 4"	**Geologists:** O. Beyer / J. Gilpin	**Date:** 19.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke Formation	
Core no: 4	**Interval:** 1993.5 - 1998.3 mMD	**Cored:** 4.82 m **Rec: 5.16** m 107.1%
Core size: 4"	**Geologists:** J.Gjerde / J. Gilpin	**Date:** 20.04.2001

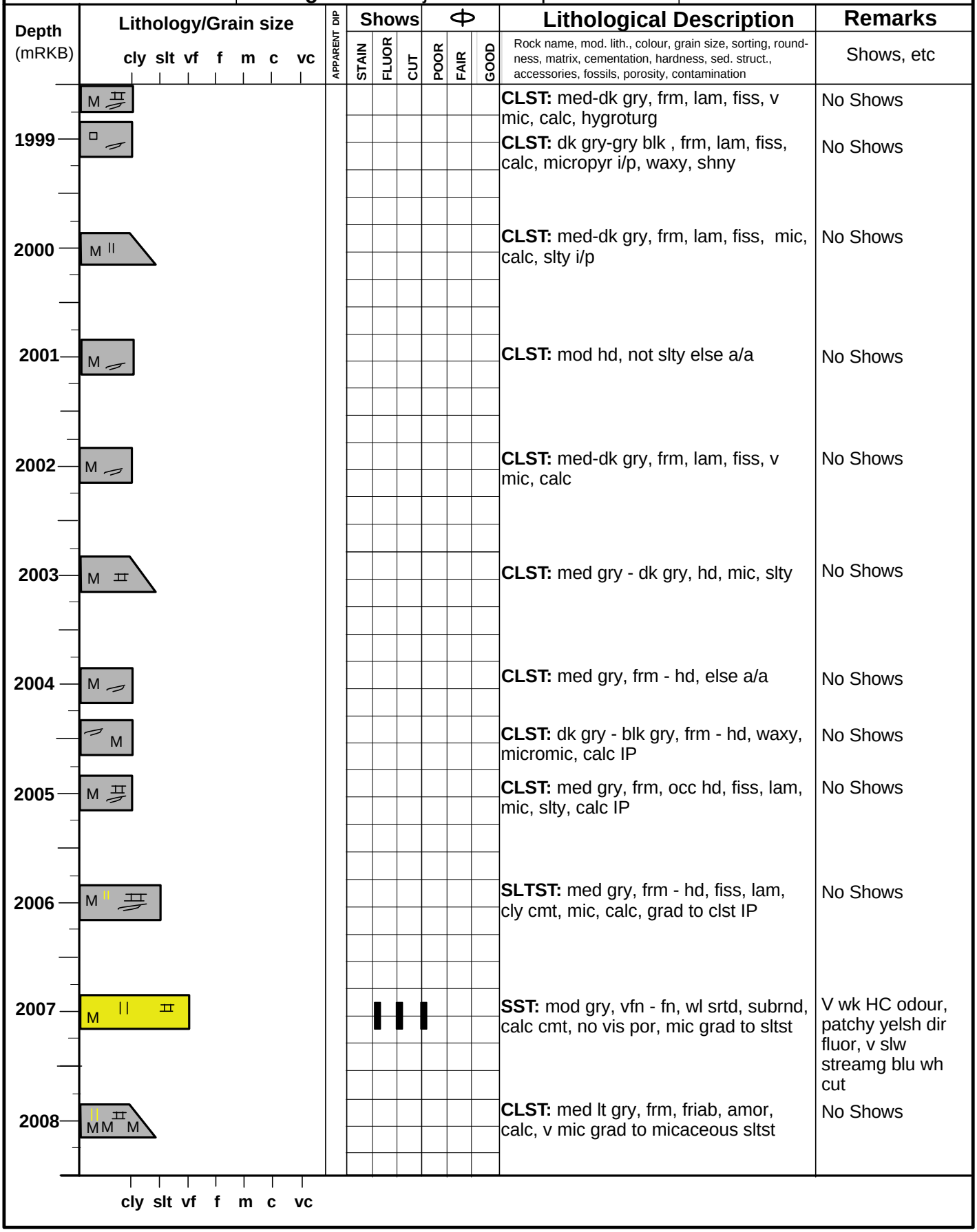
Depth (mRKB)	Lithology/Grain size (cly slt vf f m c vc)	APPARENT DIP	Shows: STAIN	FLUOR	CUT	Porosity: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
1993.5	M II								**CLST:** dk gry- gry blk, frm - mod hd, fiss, mic, carb spks, loc slty, sli - mod calc	**No shows**
1994	M C II								**CLST:** med - dk gry, occ gry blk, frm - mod hd, fiss, mic, occ v mic, carb spks, slty IP, non calc, lamin	**No shows**
1995	M II								**CLST:** predom a/a, tr calc, not silty	**No shows**
1996	M II								**CLST:** predom a/a, calcareous, hygroturgid	**No shows**
1997									**CLST:** med - dk gry, hd - v hd, non mic, calc IP, lamin, sil cmt	**No shows**
1998	M C								**CLST:** gry - gry blk, frm - hd, mic - v mic, fiss, lamin, calc, carb IP	**No shows**
1998.66	**Measured end of cored interval, Core#4**									
1999										
1995										
1996										

cly slt vf f m c vc

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke/Garn/Åre Formation	
Core no: 5	**Interval:** 1998,3 -2024.0 mMD	**Cored:** 25,7 m **Rec:** 25,85 m 100,6%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 20.04.2001

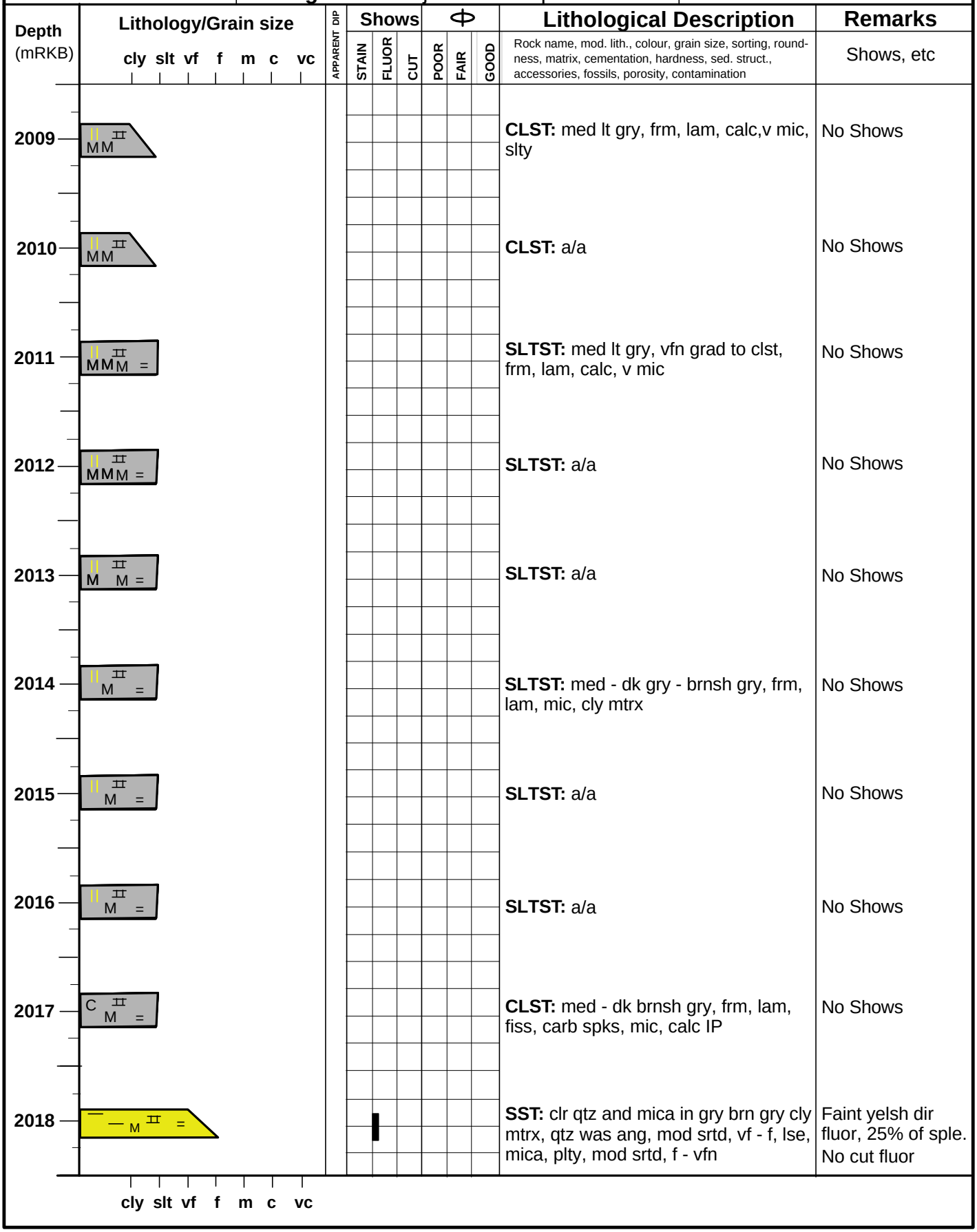


Lithological Description Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination	Remarks Shows, etc
CLST: med-dk gry, frm, lam, fiss, v mic, calc, hygroturg	No Shows
CLST: dk gry-gry blk , frm, lam, fiss, calc, micropyr i/p, waxy, shny	No Shows
CLST: med-dk gry, frm, lam, fiss, mic, calc, slty i/p	No Shows
CLST: mod hd, not slty else a/a	No Shows
CLST: med-dk gry, frm, lam, fiss, v mic, calc	No Shows
CLST: med gry - dk gry, hd, mic, slty	No Shows
CLST: med gry, frm - hd, else a/a	No Shows
CLST: dk gry - blk gry, frm - hd, waxy, micromic, calc IP	No Shows
CLST: med gry, frm, occ hd, fiss, lam, mic, slty, calc IP	No Shows
SLTST: med gry, frm - hd, fiss, lam, cly cmt, mic, calc, grad to clst IP	No Shows
SST: mod gry, vfn - fn, wl srtd, subrnd, calc cmt, no vis por, mic grad to sltst	V wk HC odour, patchy yelsh dir fluor, v slw streamg blu wh cut
CLST: med lt gry, frm, friab, amor, calc, v mic grad to micaceous sltst	No Shows

STATOIL

CONVENTIONAL CORE DESCRIPTION

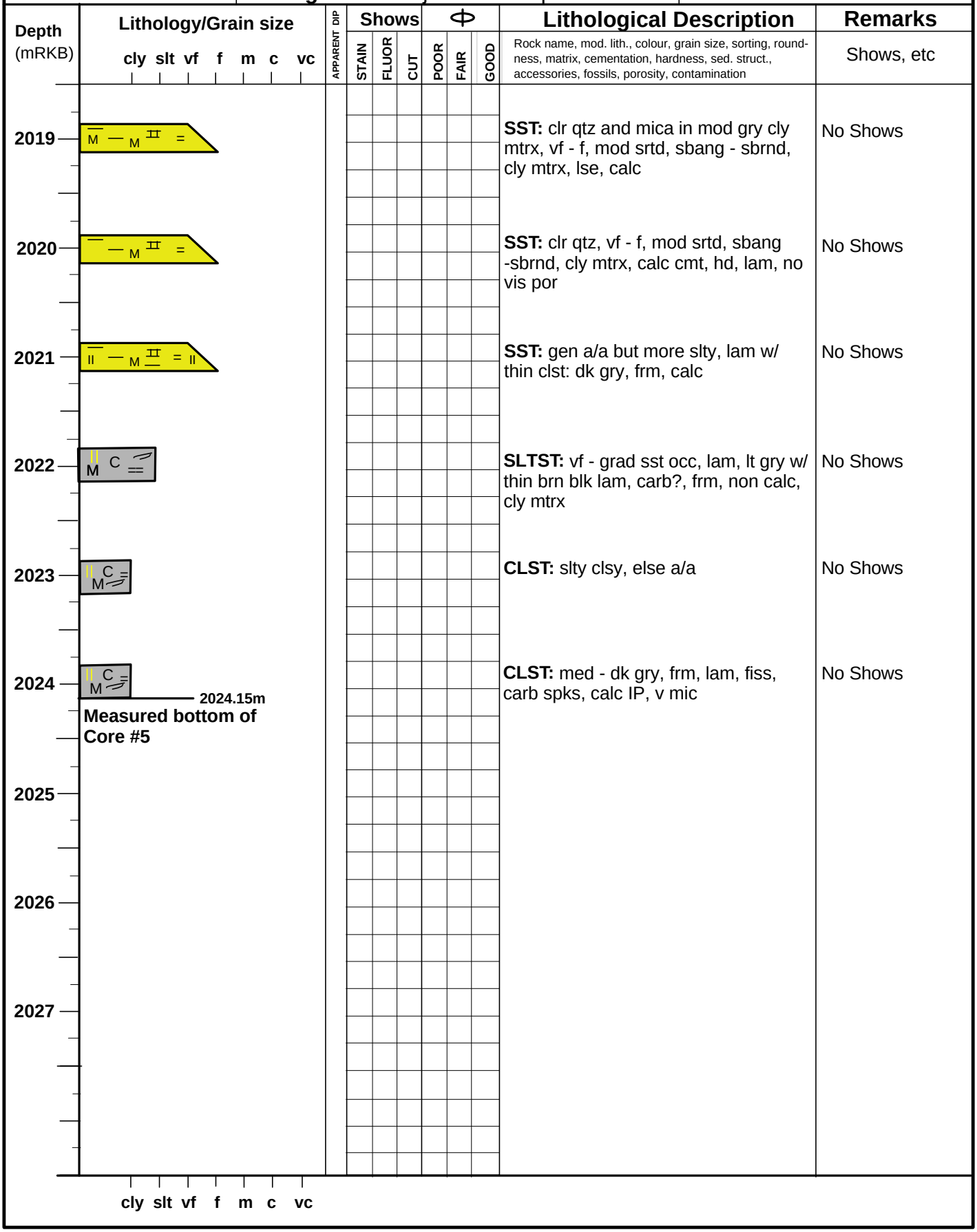
Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke/Garn/Åre Formation	
Core no: 5	**Interval:** 1998.3 - 2024.0 mMD	**Cored:** 25,7 m **Rec:** 25,85 m 100,6%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 20.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Melke/Garn/Åre Formation	
Core no: 5	**Interval:** 1998,3 - 2024,0 mMD	**Cored:** 25,7 m **Rec:** 25,85 m 100,6%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 20.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 6	**Interval:** 2024,0 -2052.0 mMD	**Cored:** 28,0 m **Rec:** 28,2 m 100,7%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 22.04.2001

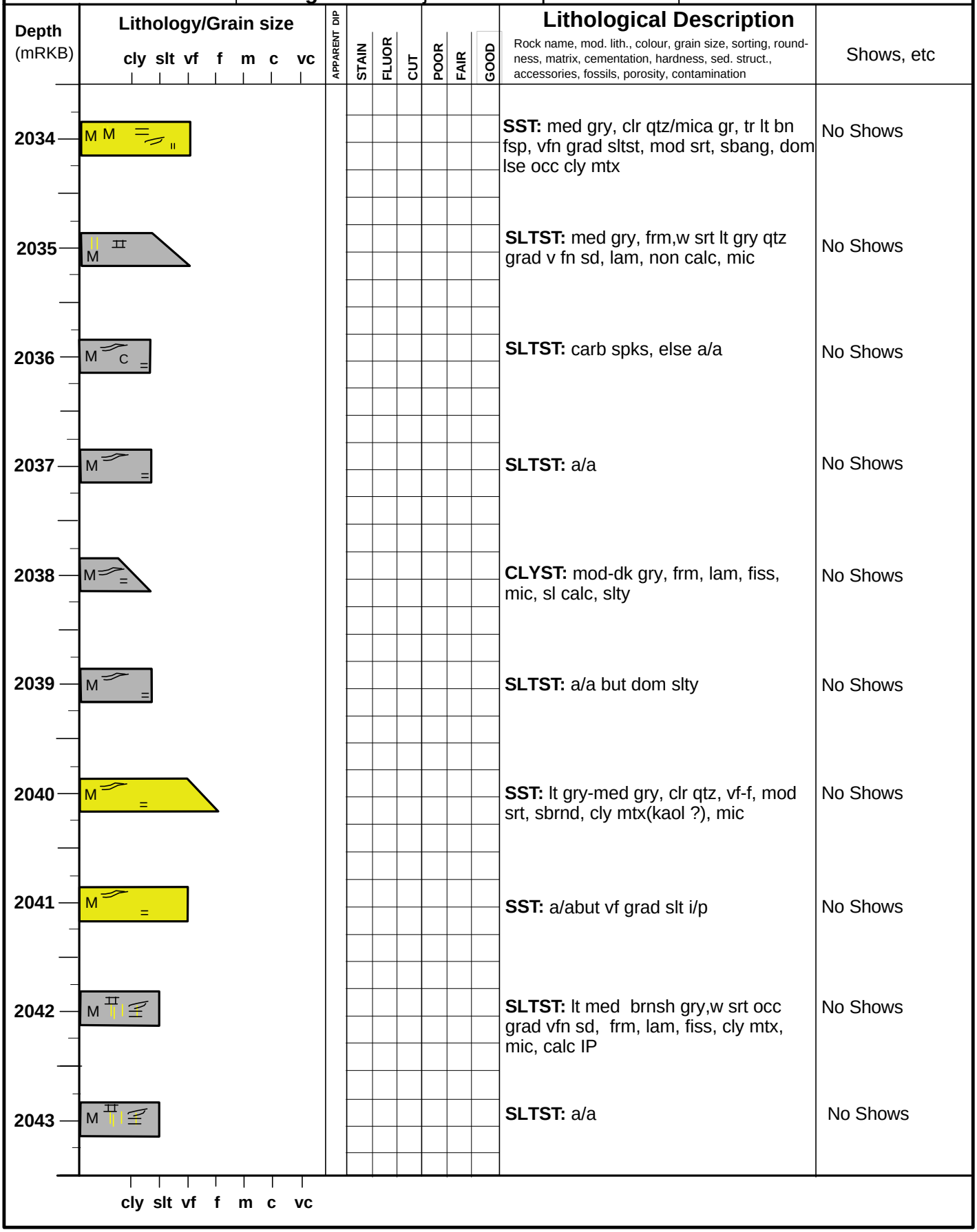
Depth (mRKB)	Lithology/Grain size (cly slt vf f m c vc)	Apparent Dip	Shows: Stain	Shows: Fluor	Shows: Cut	Porosity: Poor	Porosity: Fair	Porosity: Good	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
2024	M								**CLST:** med-lt gry, dk bnsh gry, frm, lam, fiss, carb spks, v mic, non calc, slty	No Shows
2025	M								**CLST:** a/a but frm-hd	No Shows
2026	M								**CLST:** Pred dk gry, else a/a	No Shows
2027	M								**CLST:** a/a	No Shows
2028	M								**CLST:** a/a	No Shows
2029	M								**CLST:** a/a but slty	No Shows
2030	M								**SLTST:** med-dk gry, lam, frm -mod hd, fiss, lam, cly cmt, v mic, non calc, carb spks, grad to clst IP	No Shows
2031	M M								**SST:** med gry, clr qtz/mica gr, tr lt bn fsp (?), vfn grad sltst, mod srt, sbang, dom lse occ cly mtx	No Shows
2032	M M								**SST:** a/a but v lamin	No Shows
2033	M M								**SST:** a/a but fn occ med	No Shows

cly slt vf f m c vc

STATOIL

CONVENTIONAL CORE DESCRIPTION

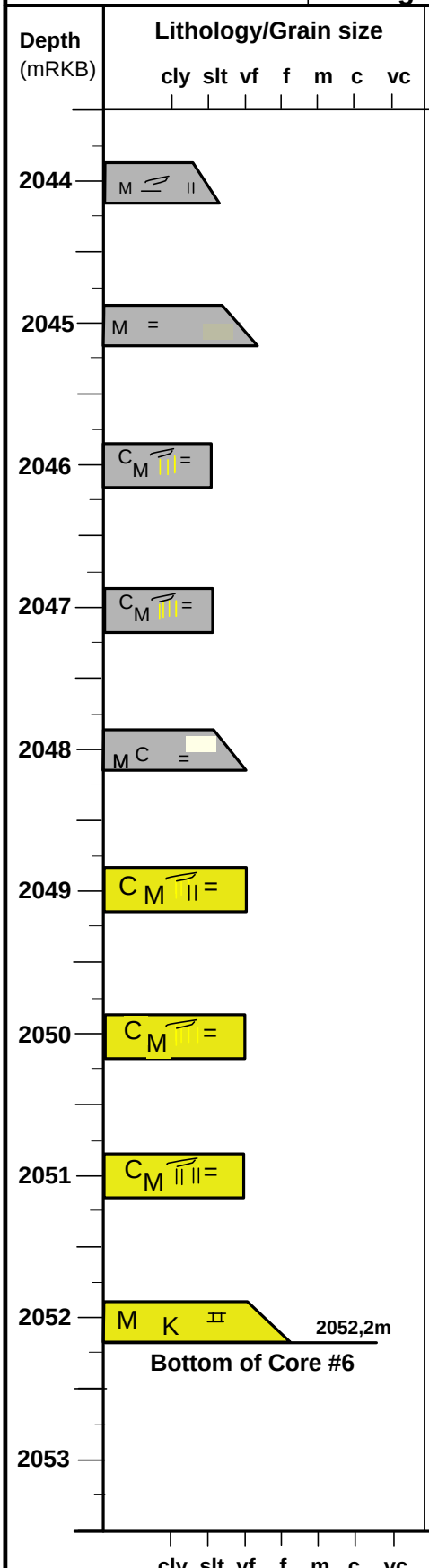
Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 6	**Interval:** 2024,0 -2052.0 mMD	**Cored:** 28,0 m **Rec:** 28,2 m 100,7%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 22.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 6	**Interval:** 2024,0 -2052.0 mMD	**Cored:** 28,0 m **Rec:** 28,2 m 100,7%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 22.04.2001

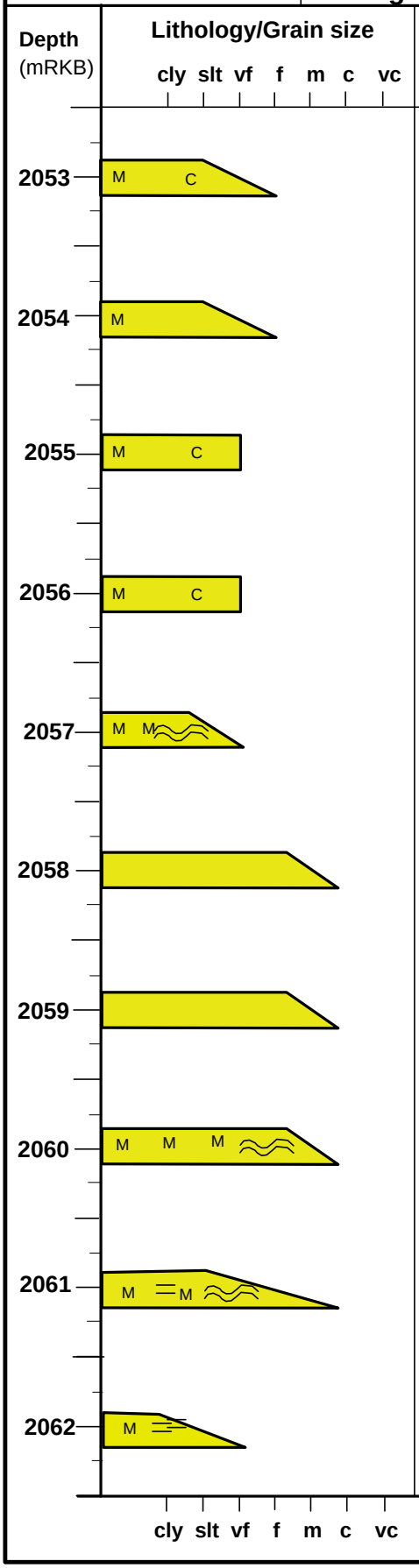


Lithological Description Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination	Remarks Shows, etc
CLST: med-dk gry, frm-mod hd, lam, fiss, mic, carb spks, calc i/p	No Shows
SLTST: med gry, hd, lam, occ coarse grad to vfn sd, cly mtx, mic, dom non calc, calc i/p	No Shows
SLTST: gen a/a but less sndy, lam w/ thin mica: dk gry, frm	No Shows
SLTST: a/a, tr carb	No Shows
SLTST: a/a grad vfn sd	No Shows
SST: a/a but as vfn sst, carb spks	No Shows
SST: a/a	No Shows
SST: a/a	No Shows
SST: lt gry clr qtz&mica, vfn-fn, mod srt, subrnd-rnd, mica plty, lse-frm, v calc grad cal cmt, cly (kaol) mtx	No Shows

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 7	**Interval:** 2052.0 -2074 mMD	**Cored:** 22,0 m **Rec:** 22,0 m 100%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 22.04.2001

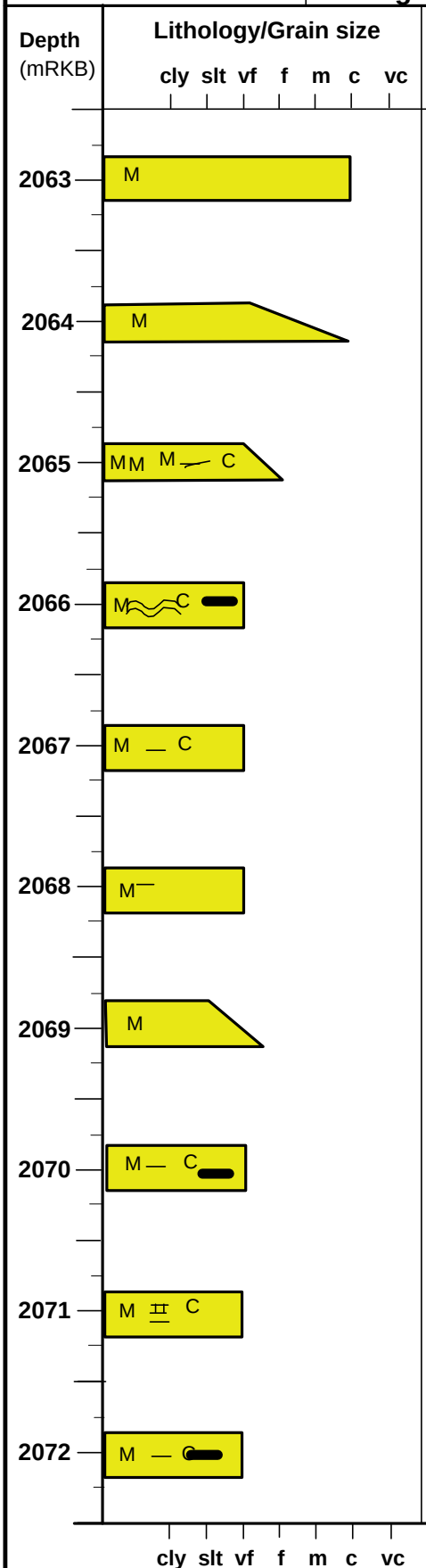


Lithological Description Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination	Remarks Shows, etc
SST: med lt - mod gry, Qtzclr occ frosted vf-f tr med, modl srt, ang-sbrnd, mod slty, frm-fri, poss sli kao mtx, loc carb spks,tr mica poss res bn oil stain poor vis por	No flu, no cut, sli wh residue ?
SST: a/a no cmt, sft-fri, occ gry arg mat, ang-sbang, r tr carb, tr clr mica poor vis por	No Shows
SST: lt med gry-med gry, vfn, w srt, lse, fri, no cmt, tr mica, carb spks, non calc	No Shows
SST: lmed-dk gry, vf, w srt, ang-sbrnd, w/nod dk gry cly mtx, fri, tr mica, carb spks, tr res oil stain?, non calc, no vis por	No Shows
SST: lmed-dk gry, vf-slty, mod srt,lam, fiss, arg, carb lam, cly mtx, coal, plant rests, non calc, grad sltst	No Shows
SST: clr lt gry-bn qtz, gen crs-med, mod-w srt, ang-sbang,lse, r tr cly, mod-good inf por	No Shows
SST: a/a but ylsh gry-pale gry, v clean, strong pungent odour res decayed org mat	No Shows
SST: m gry - m dk gry, vfn-crs prly srt, ang-sbang, frm, blk-dk gry cly mtx, arg lamin, sl fiss, carb flecks&spks, v mic, qtz col a/a+tr pnk	No Shows
SST/SLTST: pa gry-dk gry, lamin. SST : clean vfn-crs a/a bu tr cal cmt& cly (kao)mtx SLTST : v dk gry grad blk, fiss, v mic, v carb, non calc	No Shows
SST: vfn, thin lamin w/carb sltst & carb clyst, fiss, v mic	No Shows

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 7	**Interval:** 2052.0 -2074 mMD	**Cored:** 22,0 m **Rec:** 22,0 m 100%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 22.04.2001

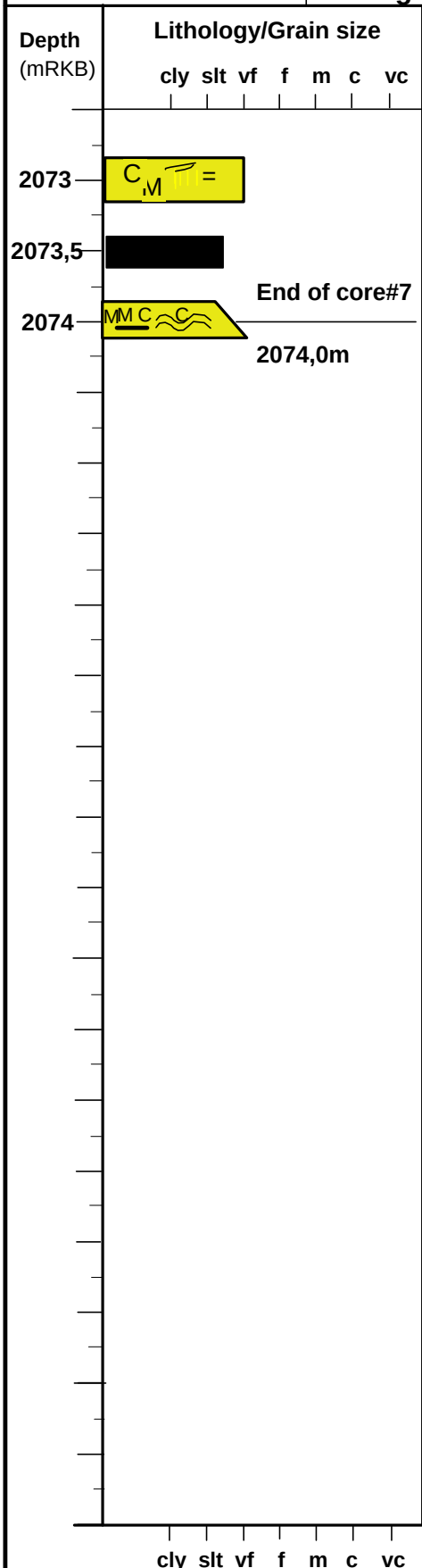


Depth (mRKB)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
2063	**SST:** clr-frsted occ smky, r pnk, r yelsh qts, crs, w srt, ang-sbang occ sbrnd, lse, v clean, tr mica	No Shows
2064	**SST:** lse qtz a/a but vf-crs gen med pr srt, tr cly i/p	No Shows
2065	**SST:** med gry-med bnsh gry, vf-f, mod srt, fiss, lamin, extremely micaceous, cly mtx, poss kaol i/p, carb spks, v fri	No Shows
2066	**SST:** med-pa gry, vf, w srt,fri, sl cly mtx, tr mic, tr carb spks, thin lam w/carb sltst and arg microlam	No Shows
2067	**SST:** lt gry-med gry, wfn, w srt, ang-sbrnd, sft-fri, sl cly mtx, tr mic, tr carb spks, tr res dull bn oil st ?	No Shows
2068	**SST:** a/a, r carb	No Shows
2069	**SLTST:** m-dk gry, frm, fiss, lam, v ang, vfn sd ip as lamin&lenses, grad sst i/p, sl mic, r tr carb, non calc	No Shows
2070	**SST:** m-m dk gry w/dk gry lamin, fiss, lam, vfn, sbang-sbrnd, w srt, sl cly mtx, arg&carb lam,mica, non calc, poss resid dk bn oil stain i/p	No Shows
2071	**SST:** m lt gry, vfn, sl cly mtx, tr w calc cmt, mod frm, mod fri, tr mic	No Shows
2072	**SST:** gen a/a, but lt gry-m dk gry, non calc, sl more carb spks	No Shows

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 7	**Interval:** 2052.0 -2074 mMD	**Cored:** 22,0 m **Rec:** 22,0, 100%
Core size: 4"	**Geologists:** J. Gjerde / J. Gilpin	**Date:** 22.04.2001



Lithological Description

Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination

SST: as 2072, sl more ang, v mic

COAL: blk, shny, frm-hd,fiss, lam i/p w/dk bn slty mat

SLST: dk gry-blk brn, v fiss, v carb, v v mic, grad vfn sd, abnd carb mtx, non calc

Remarks

Shows, etc

No Shows

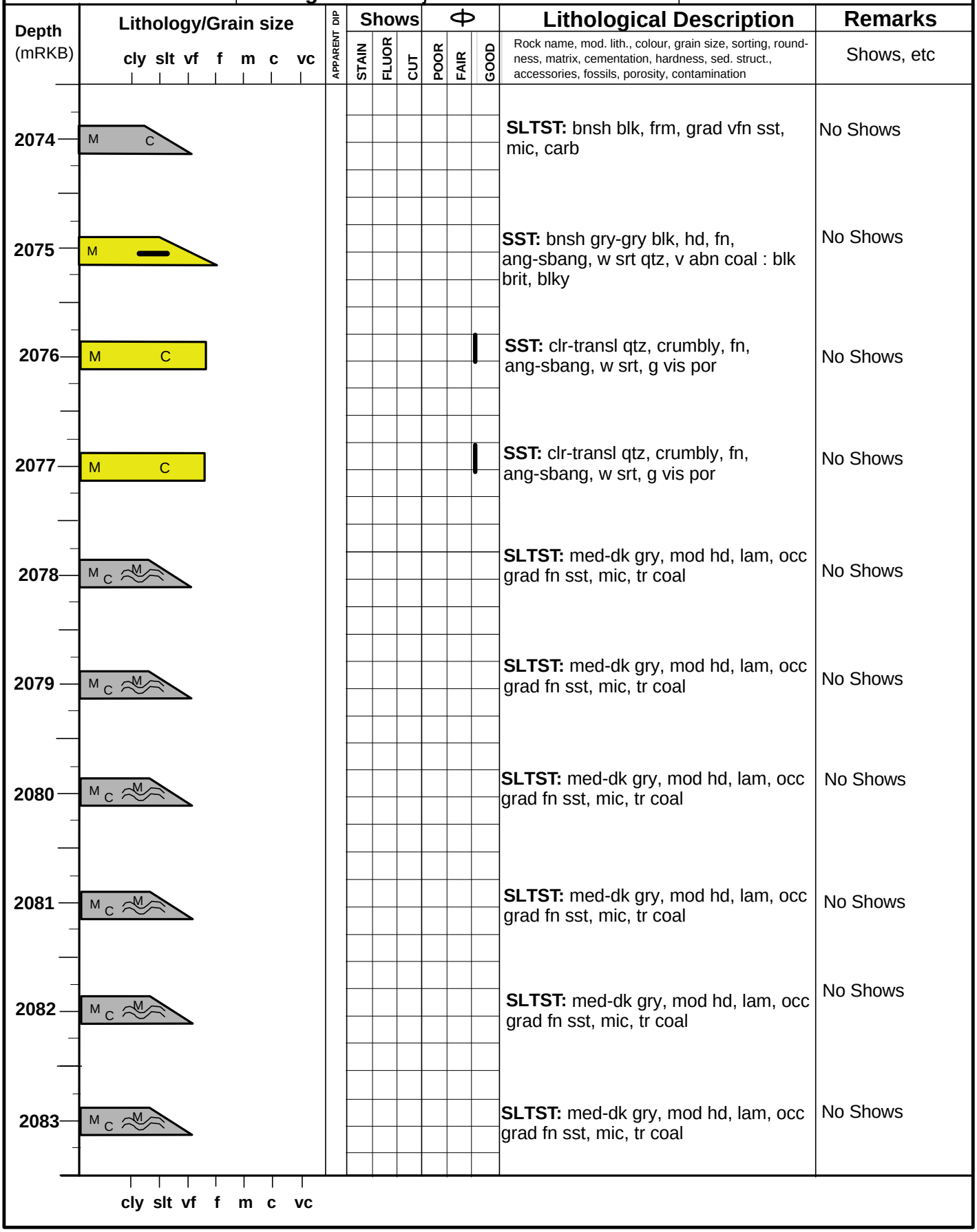
No Shows

No Shows

STATOIL

CONVENTIONAL CORE DESCRIPTION

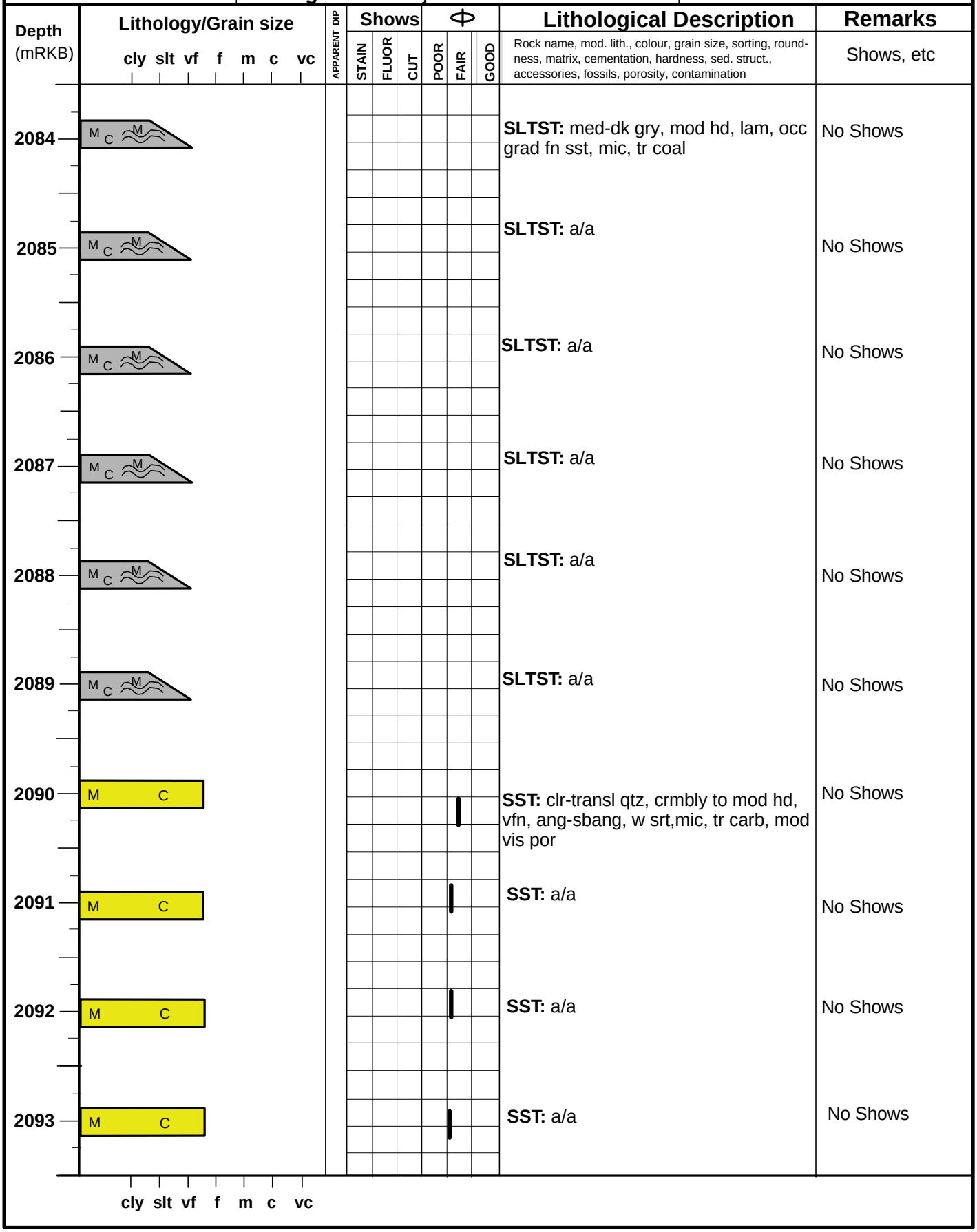
Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 8	**Interval:** 2074.0 -2101.0 mMD	**Cored:** 27,0 m **Rec:** 27,0 m 100%
Core size: 4"	**Geologists:** J. Gjerde / J.O.Fløtre	**Date:** 23.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

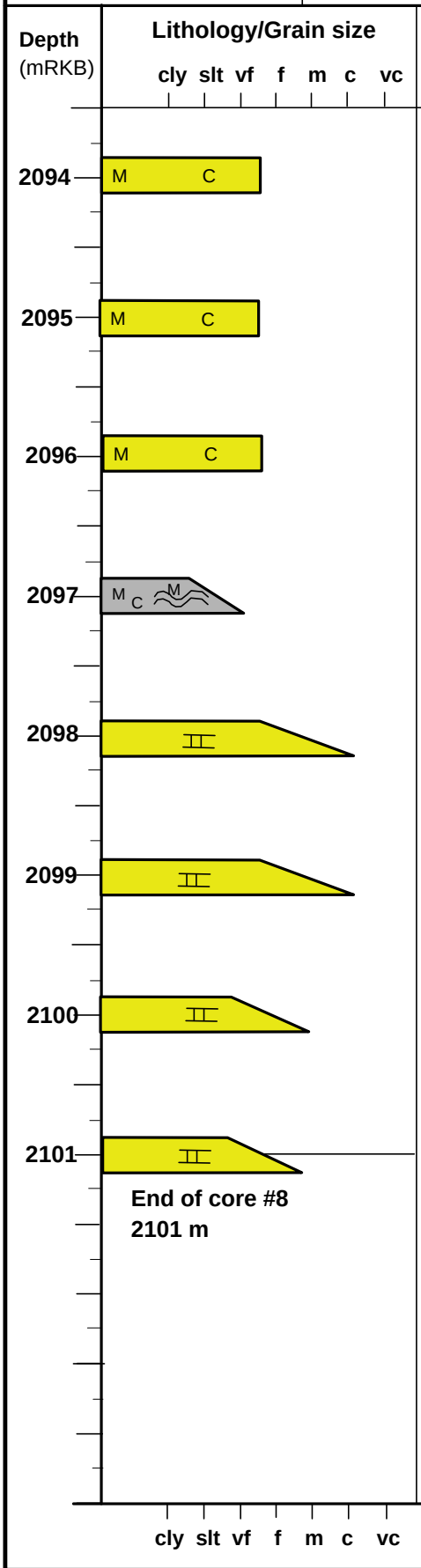
Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 8	**Interval:** 2074.0 -2101.0 mMD	**Cored:** 27,0 m **Rec:** 27,0 m 100%
Core size: 4"	**Geologists:** J. Gjerde / J. O.Fløtre	**Date:** 23.04.2001



STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland II - PL 128	**Field:** Svale
Well no: 6608/10-7	**Formation:** Åre Formation	
Core no: 8	**Interval:** 2074.0 -2101.0 mMD	**Cored:** 27,0 m **Rec:** 27,0, 100%
Core size: 4"	**Geologists:** J. Gjerde / J.O.Fløtre	**Date:** 23.04.2001



Lithological Description

Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination

SST: clr-transl qtz, crmbly to mod hd, vfn, ang-sbang, w srt,mic, tr carb, mod vis por

SST: a/a

SST: a/a

SLTST: lt gry-med dk gry, hd, lam, occ grad fn qtz sst, tr mica

SST: clr-transl qtz, v hd, fn occ med-crs, sbrnd-rnd, w srt, w cmt

SST: clr-transl qtz, v hd, fn occ med-crs, sbrnd-rnd, w srt, w cmt

SST: clr-transl qtz, hd, fn occ med, sbrnd-rnd, mod srt, cmt

SST: clr-transl qtz, hd, fn occ med, sbrnd-rnd, mod srt, cmt

Remarks

Shows, etc

No Shows

No Shows

No Shows

No Shows

No Shows

No Shows

No Shows

No Shows

Appendix 3 : Info til OD, Grunn gass

GRUNN GASS; INFO TIL OD SKJEMA

1. Avstand fra boredekk til havnivå: 31m

2. Vanndyp: 377m

3a. Settedyp for lederør: 468m MD RKB

3b. Evt. formasjonstyrketest (g/cc): ikke utført

4a. Settedyp for foringsrør hvorpå BOP settes: 1305 mRKB

4b. Formasjonstyrketest (g/cc): 1.56 g/cc

6. Dybdeintervall (mRKB og mTVD) og alder for sandlag grunnere enn 1000 m under havbunnen.

   Kvartære sandlag 595 - 602 m, 675 - 684 m og 691 - 709,5 mRKB, alle vannvåte. Tertiære antatt sandige lag 821 - 825 m, 830 - 835 m, 848 - 852 m og 930 - 937 mRKB, alle vannvåte.

   Hullet er vertikalt og således er det ikke avvik mellom mRKB og mTVD. Seksjonen ned til 1305 mRKB er boret med retur til havbunnen. De angitte sandige intervaller er derfor basert på loggtolkning

7. Grunn gass er ikke påvist i brønnen.

8. Sammensetning og opprinnelse til gassen: ingen registrering

9. Beskriv alle målinger i gassførende lag: ingen registrering

10. Angi dyp (mRKB og TVG) til inkonformiteter i borehullsposisjonen.
    Forventet topp kvartær på 628 mRKB. Toppen ble påvist på 709,5m

11. Angi utbredelsen av sandlagene (kommunikasjon, kontinuitet, trunkering, etc.): ikke kartlagt

12. Angi utbredelsen av evt. gass- skygging ("gas blanking"): ikke kartlagt

13. Angi evt seismiske indikasjoner på at gassen stammer fra dypere nivå.
    Beskrivelse dersom gassen stammer fra dypere nivå: ingen gassregistrering

14. Hvordan samsvarer tolkingen av borestedsundersøkelsen med borehullsdata mht. :

   - grunn gass: Ingen gass observert og helt i henhold til grunn gass prognoser.
   - sandlag: Konf. pkt. 6 vedrørende usikkerhet omkring mulige sandlag.
   - inkonformiteter: Refererer til punkt 10.
   - korrelasjon til nærliggende borehull: God korrelasjon til nærmeste referansebrønn 6608/10-6.