STATOIL

FINAL WELL REPORT
PL 220
EXPLORATION WELL 6710/10-1

UPN
NOM OPR

Harstad, April 2001

HESS

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FINAL WELL REPORT
WELL 6710/10-1
PL220

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Table of contents

1 General well data 1
1 .1 Well data record 1
1 .2 Purpose of the well 1
1 .3 Result of the well 2
1 .4 Well history 2
1 .4 .1 Casing 2
1 .4 .2 Sidewall cores 2
1 .4 .3 Conventional cores 2
1 .4 .4 Mud logging 3
1 .4 .5 Logging 3
1 .4 .5 .1 Electrical Logging 3
1 .4 .5 .2 MWD Logging 3
1 .4 .6 Velocity Survey 3
1 .4 .7 Sampling programme 3
2 Exemptions and non-conformances 6
3 Health, environment, safety and quality (HES&Q) 7
3 .1 RUH 7
3 .1 .1 Comments to RUH 7
3 .1 .2 Experience listing 8
3 .1 .3 Time distribution 12
4 Geology and formation data report 13
4 .1 Geological setting 13
4 .2 Stratigraphy 13
4 .2 .1 Table of chronostratigraphy 13
4 .2 .2 Table of lithostratigraphy 14
4 .3 Lithological description 15
4 .3 .1 General information 15
4 .3 .2 Geological Summary 15
4 .4 Hydrocarbon indications 22
4 .5 Geophysical result 22
4 .6 Formation pressure 23
4 .6 .1 Reservoir pressure summary 23
4 .6 .2 Fracture Gradient 25
4 .6 .3 Formation Temperature 25
4 .7 Experiences / recommendations 25
5 Drilling Report 33
5 .1 Preparations - rig move and positioning 33
5 .2 36" Hole Section (366 m MD- 428 m MD) 33
5 .2 .1 Summary of operations 33
5 .2 .2 Experiences / Recommendations from operations 34
5 .3 17 1/2" Hole Section (9 7/8" pilot hole) (428 m MD - 840 m MD) 34
5 .3 .1 Summary of operations 34

5 .3 .2 Experiences / Recommendations from operations ... 35
5 .4 12 1/4" x 8 1/2" Hole section (840 m MD - 2267 m MD) ... 36
5 .4 .1 Summary of operations ... 36
5 .4 .2 Experiences / Recommendations from coring operations (1095 m MD to 1112 m MD and 1428 m MD to 1464 m MD) ... 37
5 .4 .3 Experiences / Recommendations from drilling operations (840 m MD to 2267 m MD) ... 37
5 .5 Permanent Plugging and Abandonment ... 38
5 .5 .1 Summary of operations ... 38
5 .5 .2 Experiences / Recommendations from operations ... 39
5 .6 Figures and tables ... 40
5 .6 .1 Time/depth curve ... 40
5 .6 .2 Timeplanner ... 42
5 .6 .3 Bit record ... 45
5 .6 .4 Bottom hole assemblies (BHA) ... 47
5 .6 .5 Drilling fluids program ... 51
5 .6 .6 Cement program ... 53
5 .6 .7 Wellhead system ... 55
5 .6 .8 Final Well Schematic ... 57

Appendix 1: Operational experience, operational listing
Appendix 2: Directional data, survey listing
Appendix 3: Contractors list
Appendix 4: Wellsite sample description
Appendix 5: Core description
Appendix 6: Sidewall core description
Appendix 7: List of additional available reports
Appendix 8: Tally error report

Enclosures: Composite log
Formation evaluation log (Geoservices)
Pressure evaluation log (Geoservices)

1 General well data

1.1 Well data record

Well name	:	6710/10-1	
Type of well	:	Wildcat	
Prospect	:	Hedda	
Country	:	Norway	
Area	:	Nordland VI	
License	:	PL 220	
Licensees	:	Statoil (Operator)	70%
		Amerada Hess Norge AS	15%
		Fortum Petroleum AS	15%
Drilling unit	:	West Navion	
Type	:	Drill ship	
Water depth	:	329 m MSL	
Air gap	:	36 m	
On license	:	03.10.00	
Rig release	:	27.10.00	
Formation at TD	:	Springar Formation	
Geographic co-ordinates:		67° 05' 51.73" N	
		10° 08' 46.78" E	
Datum/Spheroid	:	ED-1950/Int. 1924	
UTM	:	UTM Zone 32, CM 09° E	
		7 442 922 N	
		549 782 E	
Seismic location	:	Intersection between ST9604-3580 and ST9604-2765	

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

1.2 Purpose of the well

The main objective of well 6710/10-1 was to test the reservoir potential and the hydrocarbon type in the Tang Formation sandstones of the Hedda prospect.

1.3 Result of the well

The well was spudded in a water depth of 329 m MSL and drilled to a total depth of 2267 m MD. No shallow gas was observed by the ROV at the wellhead, nor was any shallow gas indicated on MWD logs.

Good, potential reservoir zones were recorded in the Tang Formation sandstones. Carbonate cemented sand layers with poor reservoir potential were penetrated in the lower part of the Springar Formation. The sand sequences in the Tang Formation proved to be waterbearing, this was verified by the lack of shows, interpretation of logs and MDT pressure measurements. The low permeability sandlayers in the lower part of the Springar Formation seem to contain a low saturation of hydrocarbons. Two cores were cut in the Tang Formation sandstones.

Except for top Brygge and top Tang Sandstone 2, the discrepancies between the observed and the prognosed formation tops are outside the bar of uncertainty. This is due to a combination of erroneous seismic picks and applied velocities.

1.4 Well history

Reference is made to the tally error (1112 m - 1456 m) report in Appendix 8.

1.4.1 Casing

Casing	Shoe Depth	Leak Off Tests
30"	428 m MD	
13 3/8"	834 m MD	1.65 g/cc

1.4.2 Sidewall cores

One run with 60 conventional sidewall cores was performed. 41 good cores were recovered, 2 were misfires, 16 were lost and 1 was empty.

1.4.3 Conventional cores

Core no.	Cored interval (m)	Recovered interval (m)	m	%	Depth shifted to log depth (m)	Comments
1	1095 - 1112	1095 - 1111.82	16,82	98,9	0	Tang Formation Sandstone 2
2	1456 - 1464	1456 - 1462	6	75	0	Jammed, Tang Formation Sandstone 3

1.4.4 Mud logging

A standard mud logging unit was used for the well (details in End of Well Report, Geoservices). Cuttings were sampled every 3 m from the 13 3/8" casing shoe down to TD.

1.4.5 Logging

1.4.5.1 Electrical Logging

Run no.	Tool combination	Interval m MD	Comments
1A	PEX-HALS-DSI-HNGS	2268.0 - 365.0	Logged DSI in casing to seabed
1A	ASI-GR	2250.0 - 768.0	A total of 190 levels were shot
1A	MDT-GR	2198.3 - 1128.0	15 good pretests, 1 tight. No samples
1A	CST-GR	2253.8 - 842.0	60 sidewall cores attempted, recovered 41

1.4.5.2 MWD Logging

Run no.	Depth interval m MD	Collar diam.	Tool type	Comments
1	430 - 450	8 1/4"	MPR	MPR LITE service, MWD failed
2	450 - 840	8 1/4"	MPR	MPR LITE service
3	430 - 840	9 1/2"	DC	Directional service only
4	840 - 1095	8 1/4"	MPR	MPR LITE service with pressure MAP sub failed in casing shoe
5	1095 - 1426	6 3/4"	MPR	MPR LITE service with pressure
6	1456 - 2267	6 3/4"	MPR	MPR LITE service with pressure

1.4.6 Velocity Survey

A zero-offset VSP was run with a 5 level ASI tool. A total of 190 levels were shot with 7.5 m spacing from 2250 m MD to 1000 m MD and 15m spacing from 1000 m MD to 768 m.

PL220
Location map. Well 6710/10-1

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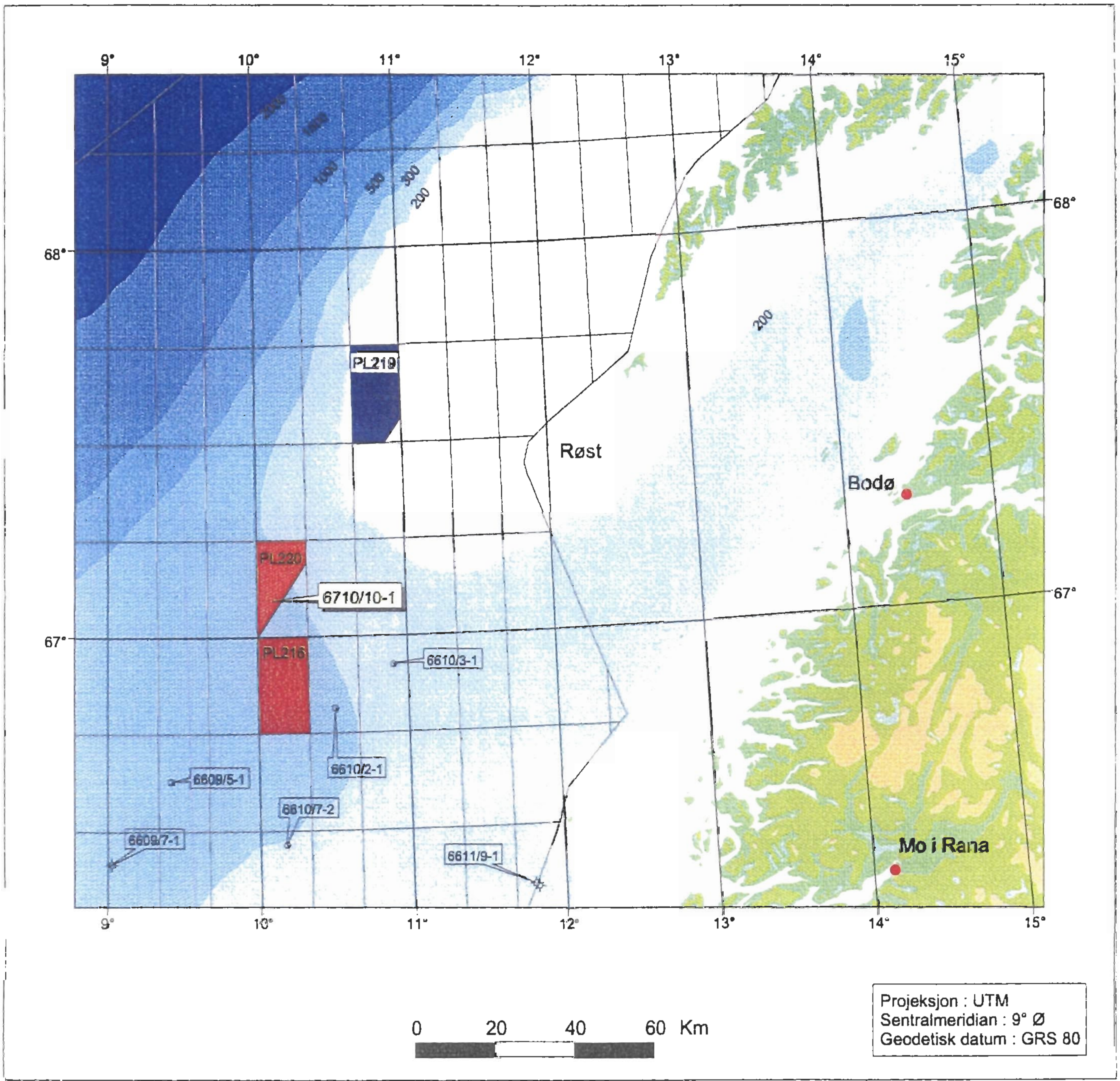


Fig. 1.1

UPN-PTT/ARC2000JUNI/04 | 17.07.2000 | BJD

PL 220	Formation Evaluation WELL 6710/10-1	STATOIL	
RKB - Sea: 36 m		Made by: AF	Date: 23.03.01
Water Depth: 329 m MSL			

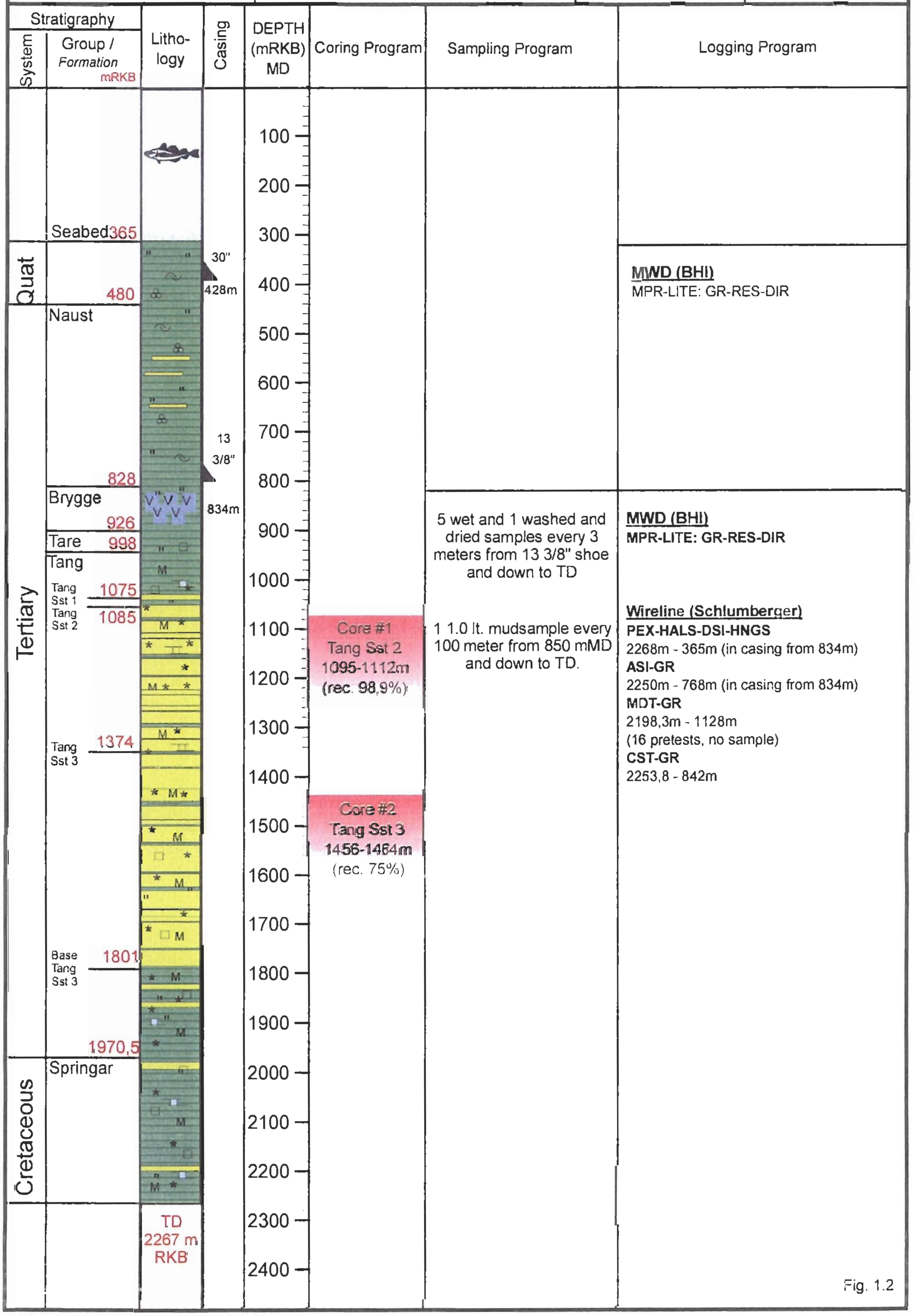


Fig. 1.2

2 Exemptions and non-conformances

Table 2.1

Non-conformance	Report no.	Title
KP10 - P110	1	Fravik til bruk av sirkulasjons-sub i BHA for 9 7/8" pilothull.
KP10 - K110	2	Bore dypere enn pilothulls TD ved åpning av pilothull, brønn 6710/10-1.

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

3.1 RUH

During the operation a total of 172 RUH (Rapport om Uønsket Hendelse) were obtained.

3.1.1 Comments to RUH

Table 3.1

Kind of incident	No.	Comments
Personal injury	0	LTA
	0	Serious with possibility of serious injury
	1	Medical treatment
	1	First aid
Environmental injury	2	Spill to external environment

3.1.2 *Experience listing*

System / event	D-time hrs	Experience	Immediate solution	Solution recommended	Ref.
36" section					
BHA assembly		Use of pre-made BHA assemblies .		The use of pre-made assemblies in all sections were a success and avoid time consuming operations on the drill floor. Further improvements can be achieved by also considering pre-made running tools / landing string and cements plugs onshore.	
BHA assembly		The BHA was not good enough for directional control and 9 1/2" DC proved inadequate to straighten out well		It is recommended to identify other BHA`s for better directional control	
Spudding		17 1/2" bit had nozzle plugged		The well should not be spudded without by inserting the BHA and bit without circulation. This increase the potential for plugging up the bit.	DBR report no.4
Heave compensation system	Very high potential	The heave compensation system not able to control rapid heave movements. As a result, the drill ship was not able to hold the 30" conductor in position during the cementing operations and the bulls eye was lowered into the seabed mud. Grouting job necessary.	Switching between active and passive compensation. Pulled the 30" conductor a couple of meters in order to move bulls eye out of seabed mud. Checked possible damage to bulls eye with ROV.	Review the heave compensation system in order to identify cause for problems.	DBR report no.3 and 4

System / event	D-time hrs	Experience	Immediate solution	Solution recommended	Ref.
17 1/2" section (9 7/8" pilot hole)					
MWD	8	Electrical failure in MWD tool caused extra round trip from 450 m while drilling pilot hole	Trip out of hole and install backup MWD tool. Tested backup tool at surface prior to running in hole.	MWD tool should be tested on surface prior to running in hole. This could save tripping time if tool fails when tested at surface.	DBR report no.4
Opening up pilot hole to 17 1/2"		Solution of using packed BHA when opening up 9 7/8" pilot hole was a success. Managed to follow pilot hole path at high ROP (59.4 m / hr.)		Evaluate to use packed BHA when opening pilot hole. Higher ROP than using hole opener.	DBR report no.6
Drilling of shoe track		Problems to drill out float with 12 1/4" x 8 1/2" speeddrill bit. Drilled with max. 2 tons WOB and 100 - 150 rpm. No progress.	When taking weight off bit and pulled a stand, the bit took weight a 3 - 6 meters before reaching the depth of the float. It seemed like the plug above float got caught by the 8 1/2" pilot. Tried to change WOB and RPM to penetrate float. Observed 14 cutters to be damaged on bit when pulling out.	For optimal drill out of the float another bit design should be used. However, in the selection of bit time lost on this operation must be evaluated against time saved in the drilling of new formation.	DBR report no. 10
Well head connector	19	During pressure test of well head connector and 20" x 13 3/8" casing, pressure leaked off at 245 bar. Small bubbles were identified on the outside the well head connector.	The leak was identified in the well head connector by running in hole and pressure test with RTTS packer. Disconnected BOP and installed new VX seal ring. After cycling the closing function several times, the well head connector was pressure tested to 270 bar. Lost 19 hours.	Inspection at the surface showed damage to the VX seal ring. The seal ring was installed at surface. It should be considered to install the VX seal ring on top of well head by the ROV.	DBR report no. 8 and 9
Landing 20" x 13 3/8" casing	Very high potential	Mismatch in space out in landing string resulted in an unintentional over pull of 200 tons.	Checked space out and found that a pup joint of 3.05 m was not accounted for.	Double check space out in pre-job meeting.	DBR report no. 7

System / event	D-time hrs	Experience	Immediate solution	Solution recommended	Ref.
12 1/4" x 8 1/2" section					
Drilling of 12 1/4" hole		Due to potential loss zone in Tang and Tare formations, it was in the planning phase decided to drill 12 1/4" hole instead of 8 1/2" hole in order to avoid potential hole problems. No loss was experienced. This resulted in higher ROP and wiper trips were avoided.		In the case of an uncontrolled well control situation, a 12 1/4" hole will reduce the influx height as opposed to and 8 1/2" hole, and is therefore less likely to compromise the well integrity. Further, the drilling of 12 1/4" hole is recommended both for hole stability and time saving purposes.	
Coring / Reaming	17	When reaming with 8 1/2" core assembly at 100 rpm, the 12 1/4" stab. got caught by a tight spot at 939 m. Impact forces created on the 12 1/4" stab. was large enough to unscrew outer core barrel. Discovered outer core barrel missing when POOH.	Tried to rotate string. Negative. Pulled string free with 85 tons over pull. Rigged up and performed fishing job using lip guide inside safety joint. Caught fish in the first attempt.	When reaming with this type of string configuration, reduce rpm to 20 in order to avoid backing off safety joint if rotation is stopped on a stabilisor above core BHA.	DBR report no. 12
Coring	Very high potential	Due to a mistake in the tally, 8 1/2" hole was drilled to 1428 m instead of 1456 m. When running in hole with core assembly, the string took weight at 1428 m. This was believed to be fill (1428 m - 1456m). Due to this assumption, the planned cored section was drilled.		In the presence of hydrocarbons in the reservoir, the consequence of this mistake is big. Therefore, the problem should have been further investigated before starting to drill. No other indications were found to support the fill assumption.	

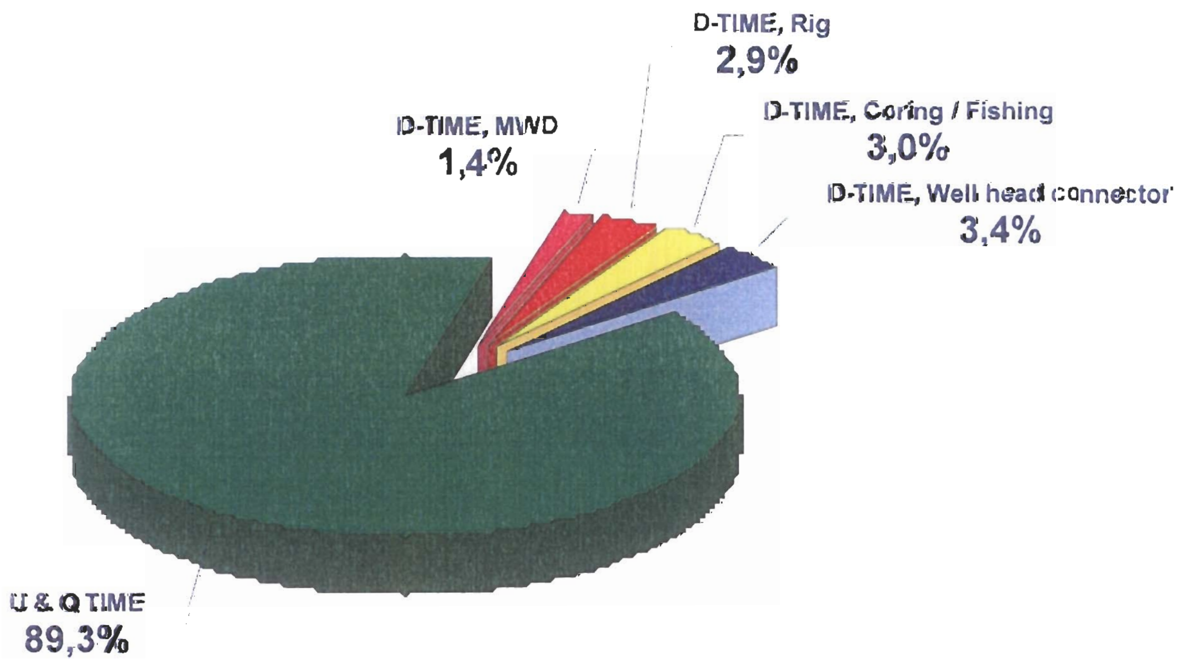
System / event	D-time hrs	Experience	Immediate solution	Solution recommended	Ref.
P & A					
Cutting of 20" x 30" casing		Unable to pull free casing after cutting 20" x 30" casing the first time.	Performed a new shallower cut in tension. Managed to pull free after positioning the ship while pulling 200 tons.	It should be evaluated to use fishing jar and accelerator in the cutting BHA. Further, a coating around the conductor housing could be used to prevent cement from bounding to the conductor wall. Hence, requirement of less overpull.	

3.1.3 Time distribution

Distribution of down time	Hrs	Cause of waiting time	hrs
Statoil operations	36.0		
Rig contractor	16.5		
MWD contractor	8.0		
TOTAL D-TIME	**60.5**	**TOTAL W-TIME**	**0.0**

Activity parameters	Days	Hrs	%
Planned time	31.0		
Actual time	23.6		
Days ahead of plan	7.4		
Total D+W-time		60.5	10.7
Total Q-time		15.5	5.5
Efficiency = $\frac{TotalTime-DownTime-WOW}{TotalTime-WOW}$			89.3

TIME DISTRIBUTION



4 Geology and formation data report

4.1 Geological setting

Block 6710/10 is situated in the Nordland VI area where the Vestfjorden and Ribban Basins intersect with the deeper Træna Basin. The principal structural element is the Bivrost Lineament, on which a left lateral wrench fault have developed the domal feature constituting the Hedda prospect. Initial doming is believed to have started in the Early Eocene, while the main phase was in the Late Eocene. Reactivation of doming through the Oligocene/Miocene is also possible.

Well 6710/10-1 penetrated rocks of Quaternary, Tertiary and Cretaceous age.
Final TD of the well was reached in rocks of Upper Cretaceous age (Springar Formation).

4.2 Stratigraphy

The stratigraphical divisions in this well are based on the biostratigraphy, lithology and log data, with correlations to the adjacent wells. A full well biostratigraphy study has been undertaken and a separate report issued.

4.2.1 Table of chronostratigraphy

Table 4.1

Stratigraphic Succession		m MD RKB	
		From	**To**
Tertiary	Early Eocene (top not seen)	842	926
	------ Possible stratigraphic break ------		
	Early Eocene	926	1060
	Late Paleocene	1060	1374
	----- Unconformity -----		
	Late Paleocene	1374	1582
	Early Paleocene	1582	1970
Cretaceous	Late Maastrichtian	1970	2254
	Early Maastrichtian?	2254	2267
	TD	2267	

4.2.2 Table of lithostratigraphy

Table 4.2

Table of lithostratigraphy						
Period	**Group / Formation**	**Prognosed**	**Observed**			**TWT**
		m TVD	**m MD**	**m TVD**	**m MSL**	**sec.**
QUATERNARY	Sea Floor	365.0	365.0	365.0	329.0	0.444
TERTIARY	NORDLAND GP	496.0	480.0	480.0	444.0	0.566
	Naust Fm	496.0	480.0	480.0	444.0	0.566
	HORDALAND GP	836.0	828.0	828.0	792.0	0.875
	Brygge Fm	836.0	828.0	828.0	792.0	0.875
	ROGALAND GP	899.0	926.0	926.0	890.0	0.965
	Tare Fm	899.0	926.0	926.0	890.0	0.965
	Tang Fm	940.0	998.0	998.0	962.0	1.036
	Tang Sst 1	1001.0	1 075.0	1 075.0	1 039.0	1.120
	Tang Sst 2	1063.0	1 085.0	1 085.0	1 049.0	1.130
	Tang Sst 3	1447.0	1 374.0	1 374.0	1 338.0	1.372
	Base Tang Sst 3	-	1 801.0	1 800.5	1 764.5	1.701
CRETACEOUS	SHETLAND GP	1889.0	1 970.5	1970.0	1934.0	1.828
	Springer Fm	1889.0	1970.5	1970.0	1934.0	1.828
	TD	2100.0	2 267.0	2 266.5	2 230.5	

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 core descriptions, see Appendices 4 - 6.

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

4 .3 .2 Geological Summary

QUATERNARY **365 - 480 m MD, (365 - 480 m TVD RKB)**
(329 - 444 m TVD MSL)

Series: Holocene to Pleistocene
Depositional environment: Marine, inner shelf.

The Quaternary was drilled with returns to the seafloor. Only the lowermost part was logged by MWD indicating a varied lithology ranging from claystone to sand and probably coarser material. The MWD log is rather poor in the interval from 428 to 483 metres, making it difficult to ascertain the lithology.

NORDLAND GROUP **480 - 828 m MD, (480 - 828 m TVD RKB)**
(444 - 792 m TVD MSL)

Series: Pliocene to Early Oligocene
Depositional environment: Marine, inner shelf.

The upper part of the Nordland Group is drilled with all returns to seafloor. Based on the Baker Hughes Inteq MWD log, the interpretation suggests mostly clays with sandstone layers appearing from 645 m to 685 m RKB. High ROP was experienced initially at 645 m from sand streak, as confirmed on the MWD gamma ray and resistivity logs.

HORDALAND GROUP **828 - 926 m MD, (828 - 926 m TVD RKB)**
(792 - 890 m TVD MSL)

Series: Eocene
Stage: Ypresian
Depositional environment: Marine, outer shelf - upper bathyal

The Hordaland Group consists of the Brygge Formation. The top of the Brygge Formation is defined by a decrease in gamma ray readings and a slight decrease in the resistivity readings from the overlying Nordland Group. The top of the Brygge Formation is picked just above the 13 3/8" casing shoe, making it impossible to use the wireline logs for the pick.

Brygge Formation **828 - 926 m MD, (828 - 926 m TVD RKB)**
(792 - 890 m TVD MSL)

Series: Eocene
Stage: Ypresian
Depositional environment: Marine, outer shelf - upper bathyal

The Brygge Formation consists of claystone with traces of sand and pebbles in the upper part and traces of sand and limestone in the lower part. Tuffaceous claystone is recorded in the middle.

The upper claystone section is medium dark grey to dark grey and brown grey, blocky to subblocky. It is silty to sandy, firm to moderately hard, slightly calcareous and contains black, splintry quartz (tuffaceous material). The claystone is occasionally sticky.

The pebbles are rounded to subrounded, mafic, quartzitic gneiss, in part pyritic.

The sand consists of clear to translucent, very fine to coarse grained, poorly sorted, angular to subrounded quartz grains.

The lower part of the Brygge Formation consists of claystone which is predominantly brown grey to red grey and dark greenish grey in parts. The claystone is blocky to subblocky, firm to moderately hard, silty, slightly calcareous and glauconitic to very glauconitic in parts.

The limestone is off-white, firm to moderately hard, blocky to subblocky and micritic.

The sand consists of clear to translucent, very fine to coarse quartz grains becoming very fine to fine, poorly sorted, angular to subrounded. Traces of pyrite are also present.

ROGALAND GROUP **926 - 1970,5 m MD, (926 - 1970 m TVD RKB)**
(890 - 1934 m TVD MSL)

Series: Early Eocene - Early Paleocene
Depositional environment: Upper bathyal

The Rogaland Group consists of the Tare and Tang Formations. The lithology is predominantly claystone with limestone stringers in the upper Tare Formation whilst sandstone with claystone layers and a few stringers of limestone prevail in the Tang Formation.

The top of the Rogaland Group (Top Tare Formation) is picked at a slight peak in resistivity readings trending towards higher values, this corresponds with a section of lower gamma ray values as well as a slightly lower sonic velocity trend. There is little change in the log characteristic from the overlying Hordaland Group.
The top of the Tang Formation is represented by a distinct increase in the gamma ray readings. There is also a slight drop in resistivity and a change in resistivity log characteristic from a spiky section to smoother readings.

Tare Formation **926 - 998 m MD, (926 - 998 m TVD RKB)**
(890 - 962 m TVD MSL)

Series: Early Eocene
Stage: Ypresian
Depositional environment: Upper bathyal

The Tare Formation consists predominantly of claystone with traces of limestone.
The claystone is medium green grey to green black, medium dark grey to brown grey, firm to moderately hard, blocky to subblocky, slightly silty and non to slightly calcareous. It is micromicaceous, glauconitic and occasionally it is micropyritic.

The limestone is off-white and occasionally yellowish white. It is firm to moderately hard, micritic and occasionally argillaceous.

Tang Formation **998 - 1970,5 m MD, (998 - 1970 m TVD RKB) (962 - 1934 m TVD MSL)**

Series: Early Eocene - Late Paleocene
Stage: Ypresian - Thanetian - Selandian - Danian
Depositional environment: Upper bathyal - upper slope to shelf break

The upper part of the Tang Formation consists of claystone with a few stringers of limestone. The claystone is green grey to green black to olive black, firm to moderately hard, blocky to subblocky, slightly silty, non to slightly calcareous, micromicaceous, occasionally micropyritic and occasionally glauconitic. The limestone stringers are described as off-white, blocky, firm to moderately hard, micritic and occasionally argillaceous. The lower part of the Tang Formation consists mainly of sandstones.

Tang Sst 1 **1075 - 1085 m MD, (1075 - 1085 m TVD RKB) (1039 - 1049 m TVD MSL)**

Series: Late Paleocene
Stage: Thanetian
Depositional environment: Upper slope to shelf break

The top of Tang Sandstone 1 is picked just below a gamma-ray peak corresponding with a resistivity peak. Tang Sandstone 1 is defined by a rather sandy and silty claystone with a few sandstone stringers. Tang Sandstone 1 is poorly developed in this well, with 20 - 30 percent sandstone recorded in this interval.

The claystone is dark grey to olive black, occasionally brownish grey, firm to moderately hard, partly silty to sandy and non calcareous. It is occasionally both micropyritic and glauconitic andit is micromicaceous throughout.

The sandstone consists of very fine to coarse grained, clear to translucent quartz grains. The grains are angular to subangular and occasionally subrounded. The sandstone is poorly sorted, mainly loose though occasionally silica cemented and with traces of micropyrite.

Tang Sst 2 **1085 - 1374 m MD, (1085 - 1374 m TVD RKB)**
(1049 - 1338 m TVD MSL)

Series: Late Paleocene
Stage: Thanetian
Depositional environment: Upper slope to shelf break

The top of Tang sandstone 2 is defined by interbedded sandstone and claystone interval and is seen most markedly as an increase in the resistivity log readings. These are associated with low gamma readings between spikes in the gamma log. The upper part of Tang sandstone 2 is characterised by interbedded sandstone and claystone. The lower part of Tang sandstone 2 consists predominantly of sandstone with interbedded layers of siltstone and claystone.

The sandstone is comprised of clear to translucent quartz, predominantly very fine to fine, but also medium grained in parts and occasionally coarse to very coarse. It is loose, poorly sorted, bimodal, subrounded to subangular, occasionally round and glauconitic.

The siltstone is medium dark grey to dark grey, occasionally greyish green. It is soft to firm, non calcareous, micaceous, glauconitic in part and grades to claystone.

The claystone is medium dark to dark grey and also dusky green. It is firm to moderately hard, blocky to subblocky, non calcareous, micaceous and glauconitic.

There are also traces of limestone which is off-white to grey, blocky, moderately hard to hard, occasionally firm to soft and micritic.

Tang Sst 3 **1374 - 1801 m MD, (1374 - 1800,5 m TVD RKB)**
(1338 - 1764,5 m TVD MSL)

Series: Late - Early Paleocene
Stage: Selandian - Danian
Depositional environment: Upper slope to shelf break - upper bathyal

Tang Sandstone 3 lies immediately beneath Tang Sandstone 2, with a thin claystone layer at the top. The top of Tang Sandstone 3 is picked at a gamma-ray peak associated with a slight general decrease in the resistivity level. Biostratigraphic data indicates an unconformity at this gamma-ray spike. Tang Sandstone 3 consists mainly of sandstone with layers of siltstone and claystone with occasional stringers of limestone, mainly in the lower part.

The sandstone consists of clear to translucent, predominantly very fine to fine, occasionally medium to coarse in the upper part and very fine to coarse and occasionally very coarse quartz grains in the lower part of this member. It is generally poorly sorted, angular to subrounded in the upper part and subangular to rounded in the lower part. The sandstone is generally loose but is occasionally seen as off-white, calcareously cemented, firm quartz cuttings. The sandstones are micromicaceous throughout and occasionally glauconitic in the upper sandstones whilst the lower sandstones become very glauconitic.

The claystones are medium dark grey to dark grey, greenish grey to dark greenish grey and in the lower part also dusky green and brownish grey. The claystones are firm to moderate hard, blocky, micromicaceous, glauconitic, non to slightly calcareous. From the upper part it changes from silty to partly very silty grading into siltstone in the lower part and even sandy parts have been observed.

The siltstone is medium dark grey and brownish grey, soft to firm, sandy, micromicaceous, and non to slightly calcareous. The amount of glauconite seems also here to increase with depth from only occasionally in the upper part to abundant in the lower part.

The limestone is predominantly off-white and occasionally yellow white, it is soft to firm, glauconitic and sandy.

Trace amounts of glauconite, mica and pyrite are seen in the lowermost parts.

Tang Formation (Lower part) — **1801 - 1970,5 m MD, (1800,5 - 1970 m TVD RKB) (1764,5 - 1934 m TVD MSL)**

Series: Early Paleocene
Stage: Danian
Depositional environment: Upper bathyal

The lower part of the Tang Formation is picked at an increase in both gamma-ray and resistivity corresponding to a marked increase in the argillaceous content of the layers. The formation consists of interbedded sandstone and claystone with stringers of siltstone and limestone in the upper part and claystone with layers of sandstone and siltstone and stringers of limestone in the lower part.

The claystone is greenish grey to dark greenish grey becoming medium dark grey to dark grey and brownish grey, in part it is very silty grading to siltstone, and also sandy in part. The claystone is firm to moderately hard, glauconitic and predominantly non calcareous becoming slightly to moderate calcareous towards the base of the formation.

The sandstone consists of clear to translucent quartz, very fine to coarse grained and occasionally very coarse grained. It is generally poorly sorted, subangular to subrounded and generally loose though traces of off-white calcite cemented friable sandstone with abundant glauconite occur.

The siltstone is medium dark grey and brownish grey, soft to firm, sandy, micromicaceous, and non to slightly calcareous. The amount of glauconite present continues in abundant amounts.

The limestone is predominantly off-white but occasionally yellow white and light olive green colours are seen. The limestone is soft to firm and sandy.

Trace amounts of glauconite, mica and pyrite are seen throughout.

SHETLAND GROUP **1970.5 - 2267 m MD, (1970 - 2266,5 m TVD RKB) (1934 - 2230,5 m TVD MSL)**

Series: Upper Cretaceous
Stage: Late - ?Early Maastrichtian
Depositional environment: Outer shelf to upper bathyal

The Shetland Group consists of the Springar Formation in this well. The top of the Shetland Group is seen as a small gamma-ray peak together with a slightly increasing resistivity trend, a slight decrease in the transit time readings and a slight shift to higher density values compared to the lower part of the Tang Formation. The lithology is predominantly claystone with argillaceous limestone stringers.

Springar Formation **1970,5 - 2267 m MD, (1970 - 2267 m TVD RKB) (1934 - 2230,5 m TVD MSL)**

Series: Upper Cretaceous
Stage: Late - ?Early Maastrichtian
Depositional environment: Outer shelf to upper bathyal

The Springar Formation consists predominantly of calcareous claystone interbedded with layers of argillaceous limestone and sandstone stringers.

The claystone is light olive grey to olive black occasionally greenish grey, very silty grading to siltstone, in parts sandy, firm to moderate hard, occasionally soft, and calcareous to very calcareous. The claystone is micromicaceous and glauconitic throughout the formation.

The limestone is light brownish grey to brownish grey, occasionally off-white to yellowish grey, soft to firm, blocky and occasionally silty to sandy in parts. The limestone is very argillaceous grading to marl in parts especially in the uppermost section.

The sandstone is seen as clear to translucent quartz, very fine to coarse grained, poorly sorted, subrounded to rounded, occasionally with calcite cement and glauconite.

Trace amounts of glauconite, pyrite and mica are seen throughout the formation.

TD **2267,0 m MD, (2267,0 m TVD RKB) (2230,5 m TVD MSL)**

4 .4 Hydrocarbon indications

The wireline logs in the 12 1/4" and the 8 1/2" holes give no hydrocarbon indications. Only C1 gas was observed, with a maximum of 1.0% towards the top of the Cretaceous. In the Cretaceous section, heavier gas components were recorded, using Geoservices Reseval® chromatograph, but no hydrocarbon shows were encounterd. The maximum gas level in the Cretaceous was 2.4% C1 - C5, originating from a stringer of tight, calcareous cemented sandstone.

In core 1 (cut 1095 m MD - 1112 m MD) and core 2 (cut 1456 m MD- 1464 m MD) no hydrocarbon shows were observed. Low background gas and no significant gas peaks were recorded from both the cored intervals.

Wireline logs (resistivity, neutron/density and MDT) confirmed water filled reservoirs only at this location.

For a comprehensive list of gas peaks and other details, please refer to Geoservices Final Well Report.

Table 4.3 Gas peaks

Depth m MD	Gas %	BG %	C_1 ppm	C_2 ppm	C_3 ppm	iC_4 ppm	nC_4 ppm	C_5 ppm	Type
861.0	0.57	0.4	5521	0	0	0	0	0	FG
1062.0	0.73	0.4	6640	0	0	0	0	0	FG
1385.0	0.79	0.5	7600	0	0	0	0	0	FG
1550.0	1.00	0.4	9577	0	0	0	0	0	FG
1660.0	0.47	0.3	4402	0	0	0	0	0	FG
2182.0	1.53	0.5	12634	464	156	34	37	30	FG
2197.0	2.20	0.6	19232	659	207	43	43	29	TG
2255.0	2.40	0.8	21408	784	222	38	48	33	TG

4 .5 Geophysical result

Please refer to table 4.2, figure 4.1 and figure 4.2.

There are significant differences in the actual versus the prognosed stratigraphy throughout the well. This is caused by a combination of erroneous seismic picks and seismic velocities applied. It can be seen in table 4.2 that only Top Brygge and Top Tang Sandstone 2 (near Top Thanetian) have been picked correctly. The discrepancies between the prognosed and observed formation tops for the other stratigraphic tops are outside the bar of uncertainty. The differences in actual vs. prognosed depths for these stratigraphic tops are attributed to erroneous velocities applied for the depth conversion.

4.6 Formation pressure

Figures 4.3a, 4.3b and 4.4 show the pore pressure gradient, leak-off test value, overburden gradient and relevant drilling and log data from well 6710/10-1. The evaluation is mainly based on the sonic log and gas readings, but other drilling parameters have also been evaluated.
In the reservoir section, pressure data from the MDT log is used.

The sonic data and the gas readings do not give very clear and reliable values for the pore pressure in this well. Drilling with PDC-bits also makes the use of the D-exponent questionable.
A normal pore pressure gradient based on a fluid density of 1.03 g/cc is estimated down to approximately 840 m MD. Sonic data may indicate a small pressure increase in lower part of the Naust Formation. Based on this, a small pressure gradient increase between 840 m MD and Top Tang Sandstone at 1075 m MD is estimated, with a peak of 1.08 g/cc at approximately 950 m MD. However, lithology changes make estimation based on sonic data questionable, so it is also possible that the pore pressure gradient is normal throughout this section.
Through the Tang Formation Sandstones a normal pore pressure gradient is measured by MDT. Further down through the lower Tertiary and Cretaceous sections, the sonic data does not show any increase in pressure gradient above normal. But based on gas readings a small pressure increase is interpreted in the Springar Formation from approximately 2050 m MD. In a carbonate cemented, low permeability sandstone in the lower part of the Springar Formation, a pore pressure gradient of 1.07 g/cc was measured by MDT.

4.6.1 Reservoir pressure summary

One MDT run was performed and 16 pressure measurements were attempted, of which 15 were successful and 1 was aborted due to tight reservoir. No samples were attempted.

In the sandstones of the Tang Formation, a normal pore pressure was measured by the MDT and a water gradient of 1.011 g/cc was established.
Two pressure points in a thin, carbonate cemented sandstone in Springar Formation shows a pore pressure gradient of 1.07 g/cc. No reliable fluid density could be derived between the two points in this sand.

Table 4.4 and Figure 4.5 shows the measured formation pressures in the well.

Table 4.4 MDT Formation Pressures

FORMATION PRESSURE -MDT WELL: 6710/10-1					RUN: 1A				DATE: 21.10-22.10.2000			
TEST #	ZONE NAME	DEPTH mMD RKB	DEPTH m TVD MSL	INIT. RES. PRESS (BAR)	RES. PRESS (BAR) HP- gauge	PORE PRESSG RAD. (g/cm3) ref .RT	HYD. PRESS BEFORE (BAR)	HYD PRESS AFTER (BAR)	PRESS GAUGE Schlum. file no.	MOB. mD/CP	TEMP °C	COMMENTS
1	Tang Sst#2	1128.0	1091.7	110.887	110.887	1.0023	144.830	144.810	Q	1	-	Good permeability.
2	Tang Sst#2	1139.5	1103.2	112.053	112.053	1.0027	146.250	146.260	Q	202	20.5	Good permeability
3	Tang Sst#2	1149.5	1113.2	113.065	113.065	1.0029	147.610	147.500	Q	82.6	22.9	Good permeability
4	Tang Sst#2	1186.0	1149.7	116.691	116.691	1.0032	152.240	152.220	Q	30.9	25.6	Good permeability
5	Tang Sst#2	1240.0	1203.7	122.066	122.066	1.0037	159.115	159.115	Q	119.7	28.3	Good permeability
6	Tang Sst#2	1322.0	1285.68	130.223	130.223	1.0044	169.560	169.490	Q	248.7	31.0	Good permeability
7	Tang Sst#3	1485.0	1448.65	146.426	146.426	1.0054	190.301	190.174	Q	59.2	33.8	Good permeability
8	Tang Sst#3	1526.0	1489.64	150.500	150.500	1.0056	195.370	195.350	Q	287.9	36.7	Good permeability
9	Tang Sst#3	1563.0	1526.63	154.158	154.158	1.0056	200.050	200.040	Q	151.1	37.6	Good permeability
10	Tang Sst#3	1691.8	1655.41	166.896	166.896	1.0058	216.470	216.420	Q	2082.5	40.4	Good permeability
11	Tang Sst#3	1774.0	1737.6	175.034	175.034	1.0060	227.010	226.910	Q	57.6	42.4	Good permeability
12	Tang Sst#3	1992.4	1955.90	196.594	196.594	1.0061	254.580	254.480	Q	89.7	46.3	Good permeability
13	Tang Sst#3	1997.8	1961.3	197.127	197.127	1.0061	255.170	255.110	Q	48.7	48.0	Good permeability
14	Springar Fm.	2197.8	2161.23	230.552	230.552	1.0696	280.370	280.260	Q	10.9	54.1	Poor permeability
15	Springar Fm.	2198.8	2162.23				280.460	280.380			56.9	Aborted due to too much drawdown - tight
16	Springar Fm.	2198.3	2161.73	230.502	230.502	1.0691	280.400	280.340	Q	6.9	59.4	Poor permeability

4.6.2 Fracture Gradient

The only LOT in well 6710/10-1 is below the 13 3/8" casing at 834 m MD RKB.
A LOT value of 1.65 g/cc EMW was recorded.

4.6.3 Formation Temperature

A temperature of 74 °C at 2267 m MD as been extrapolated from the measured log temperatures. Extrapolation is done using the Horner method. This gives an average temperature gradient of 3.63 °C /100 metres from seabed down to TD of the well.

Figure 4.6 and Table 4.5 shows measured and extrapolated temperatures from wireline logs.

Table 4.5 Wireline Log Temperatures

Source	Run	Ref. depth m MD RT	Time since circulation (hours)	Circulation time (hours)	Measured Log Temp. °C	Extrapolated Temp. °C (Horner method)
PEX/HALS/DSI	1A	2232,0	12,8	2,5	61,61,62	74.0 °C @ 2265 m
VSP/GR	1A	2163,0	22,7	2,5	64.4,65,65	
MDT/GR	1A	2187,8	38,2	2,5	66,67,67	

4.7 Experiences / recommendations

Due to the pipe tally error between 1112 m MD and 1456 m MD MWD data was lost between 1422 m MD and 1441 m MD. Samples between 1426 m MD and 1456 m MD were also lost. See Appendix 8 for further details of the pipe tally error.

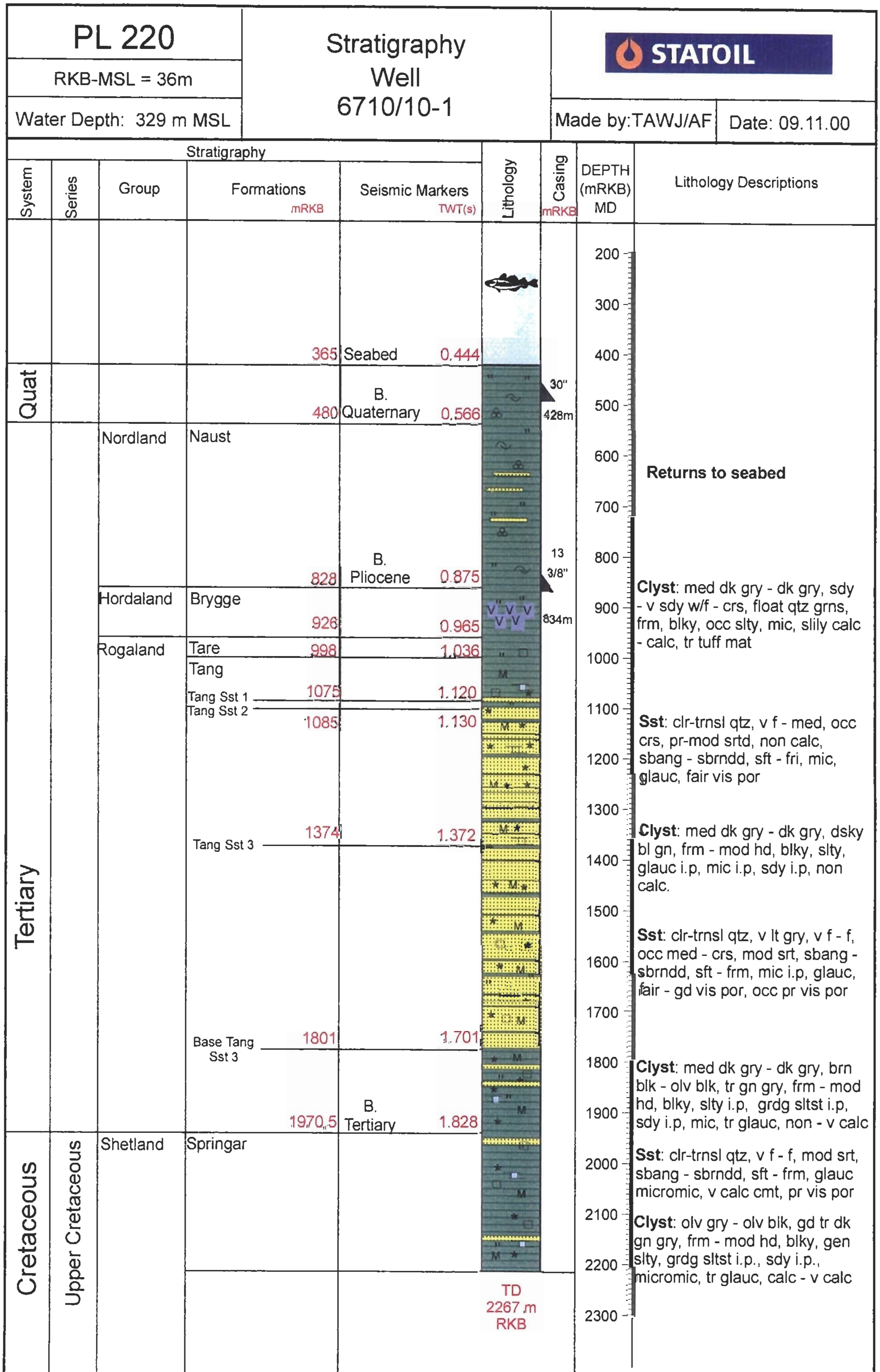
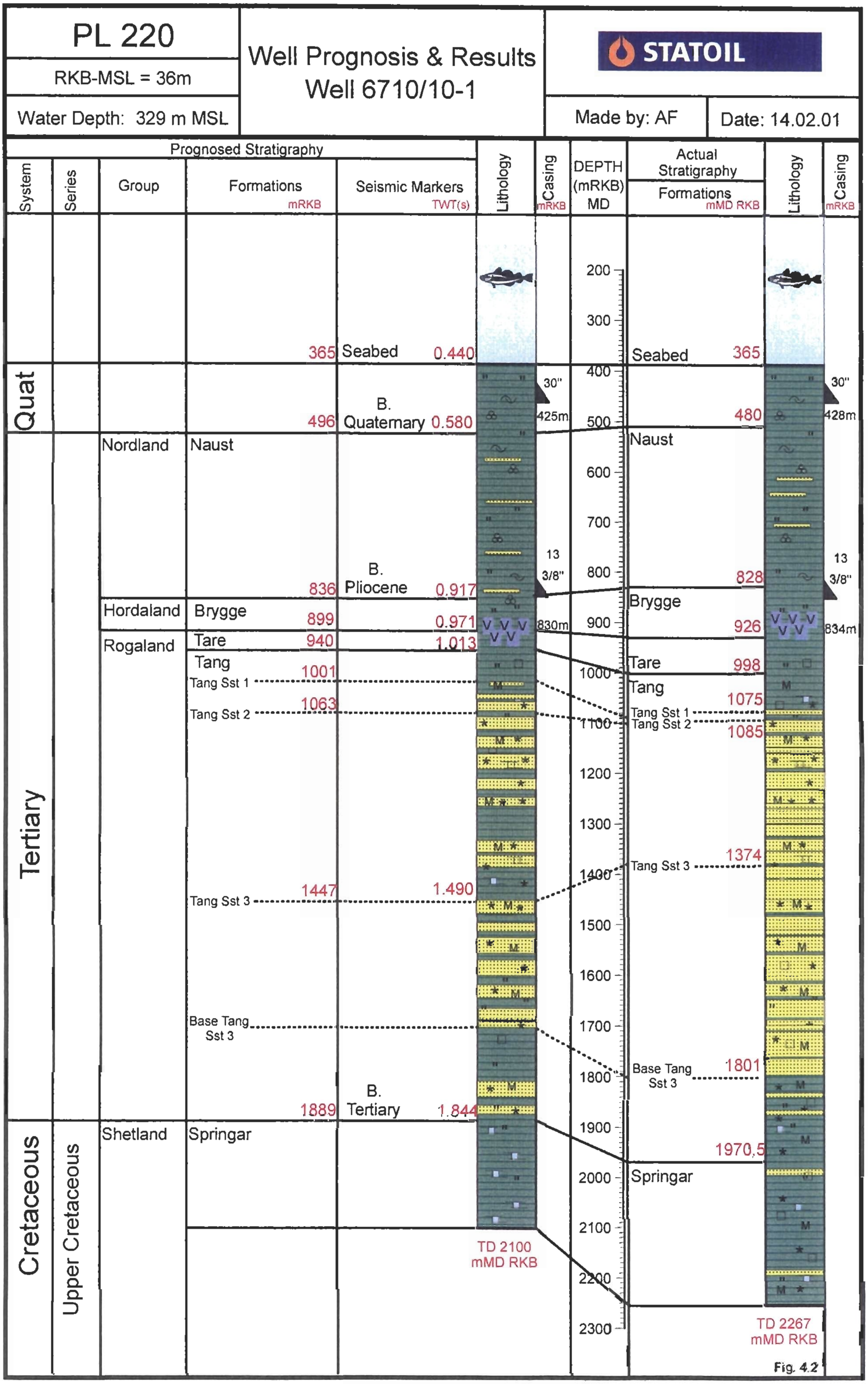
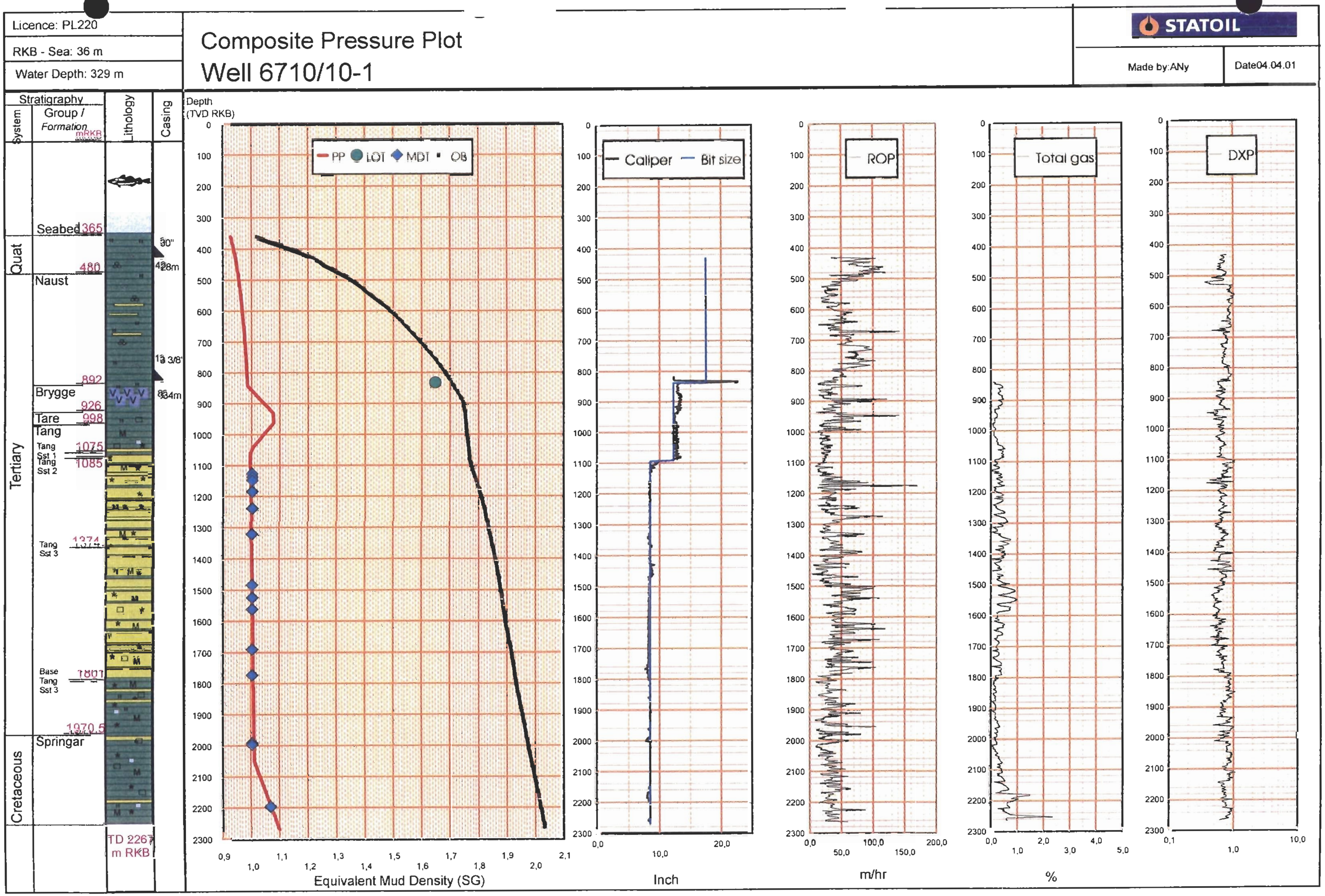

PL 220
RKB-MSL = 36m
Water Depth: 329 m MSL
Stratigraphy
Well
6710/10-1
STATOIL
Made by:TAWJ/AF
Date: 09.11.00
Stratigraphy
System
Series
Group
Formations mRKB
Seismic Markers TWT(s)
Lithology
Casing mRKB
DEPTH (mRKB) MD
Lithology Descriptions
365 Seabed 0.444
B. 480 Quaternary 0.566
828 B. Pliocene 0.875
926 0.965
Tare 998 1.036
Tang
Tang Sst 1 1075 1.120
Tang Sst 2 1085 1.130
Tang Sst 3 1374 1.372
Base Tang Sst 3 1801 1.701
1970,5 B. Tertiary 1.828
Quat
Tertiary
Cretaceous
Upper Cretaceous
Nordland
Naust
Hordaland
Brygge
Rogaland
Shetland
Springar
30" 428m
13 3/8" 834m
TD 2267 m RKB
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
Returns to seabed
Clyst: med dk gry - dk gry, sdy - v sdy w/f - crs, float qtz grns, frm, blky, occ slty, mic, slily calc - calc, tr tuff mat
Sst: clr-trnsl qtz, v f - med, occ crs, pr-mod srtd, non calc, sbang - sbrndd, sft - fri, mic, glauc, fair vis por
Clyst: med dk gry - dk gry, dsky bl gn, frm - mod hd, blky, slty, glauc i.p, mic i.p, sdy i.p, non calc.
Sst: clr-trnsl qtz, v lt gry, v f - f, occ med - crs, mod srt, sbang - sbrndd, sft - frm, mic i.p, glauc, fair - gd vis por, occ pr vis por
Clyst: med dk gry - dk gry, brn blk - olv blk, tr gn gry, frm - mod hd, blky, slty i.p, grdg sltst i.p, sdy i.p, mic, tr glauc, non - v calc
Sst: clr-trnsl qtz, v f - f, mod srt, sbang - sbrndd, sft - frm, glauc micromic, v calc cmt, pr vis por
Clyst: olv gry - olv blk, gd tr dk gn gry, frm - mod hd, blky, gen slty, grdg sltst i.p., sdy i.p., micromic, tr glauc, calc - v calc

Fig. 4.1


PL 220
RKB-MSL = 36m
Water Depth: 329 m MSL
Well Prognosis & Results
Well 6710/10-1
STATOIL
Made by: AF
Date: 14.02.01
Prognosed Stratigraphy
System
Series
Group
Formations
mRKB
Seismic Markers
TWT(s)
Lithology
Casing
mRKB
DEPTH
(mRKB)
MD
Actual Stratigraphy
Formations
mMD RKB
Lithology
Casing
mRKB
Quat
Tertiary
Cretaceous
Upper Cretaceous
Nordland
Hordaland
Rogaland
Shetland
365 Seabed 0.440
496 B. Quaternary 0.580
Naust
836 B. Pliocene 0.917
Brygge 899 0.971
Tare 940 1.013
Tang 1001
Tang Sst 1
Tang Sst 2 1063
Tang Sst 3 1447 1.490
Base Tang Sst 3
1889 B. Tertiary 1.844
Springar
TD 2100
mMD RKB
30"
425m
13 3/8"
830m
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
Seabed 365
480
Naust
828
Brygge
926
Tare 998
Tang
1075
Tang Sst 1
Tang Sst 2
1085
Tang Sst 3 1374
Base Tang Sst 3 1801
1970,5
Springar
TD 2267
mMD RKB
30"
428m
13 3/8"
834m
Fig. 4.2



Licence: PL220
RKB - Sea: 36 m
Water Depth: 329 m
Composite Pressure Plot
Well 6710/10-1
STATOIL
Made by:ANy
Date04.04.01
Stratigraphy
System
Group / Formation
mRKB
Lithology
Casing
Depth (TVD RKB)
Seabed 365
Quat
480
Naust
892
Brygge
926
Tare
998
Tang
1075
Tang Sst 1
Tang Sst 2
1085
Tertiary
Tang Sst 3
1374
Base Tang Sst 3
1801
1970,5
Springar
Cretaceous
TD 2267 m RKB
30"
428m
13 3/8"
834m
PP
LOT
MDT
OB
Equivalent Mud Density (SG)
Caliper
Bit size
Inch
ROP
m/hr
Total gas
%
DXP

Figure 4.3a

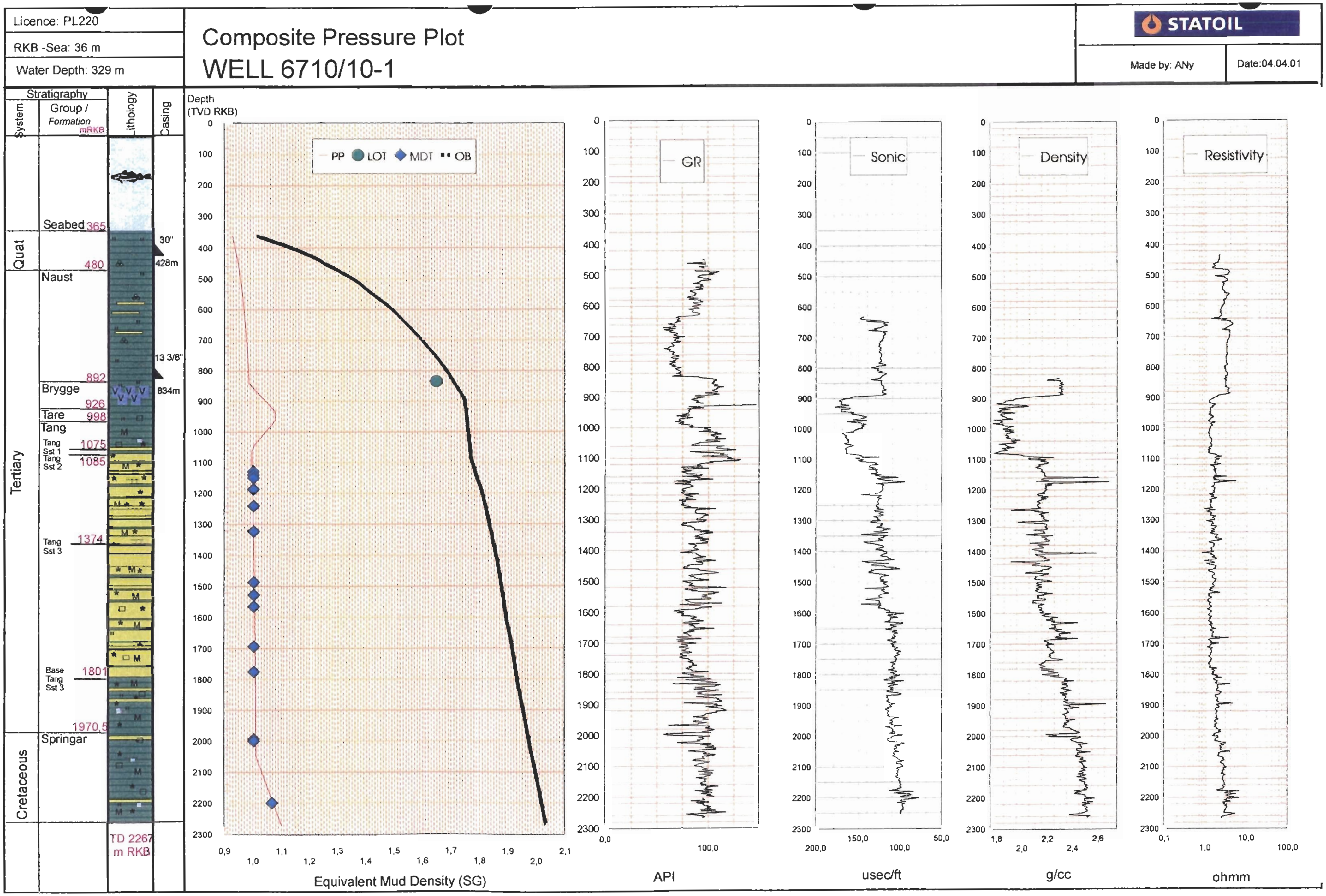

Licence: PL220
RKB -Sea: 36 m
Water Depth: 329 m
Composite Pressure Plot
WELL 6710/10-1
STATOIL
Made by: ANy
Date:04.04.01
Stratigraphy
System
Group / Formation mRKB
Lithology
Casing
Depth (TVD RKB)
Seabed 365
Quat
480
Naust
892
Brygge
926
Tare 998
Tang
Tang Sst 1 1075
Tang Sst 2 1085
Tertiary
Tang Sst 3 1374
Base Tang Sst 3 1801
1970,5
Springar
Cretaceous
TD 2267 m RKB
30" 428m
13 3/8" 834m
PP
LOT
MDT
OB
Equivalent Mud Density (SG)
GR
API
Sonic
usec/ft
Density
g/cc
Resistivity
ohmm

Figure 4.3b

Well 6710/10-1 - Hedda

MDT Formation Pressure

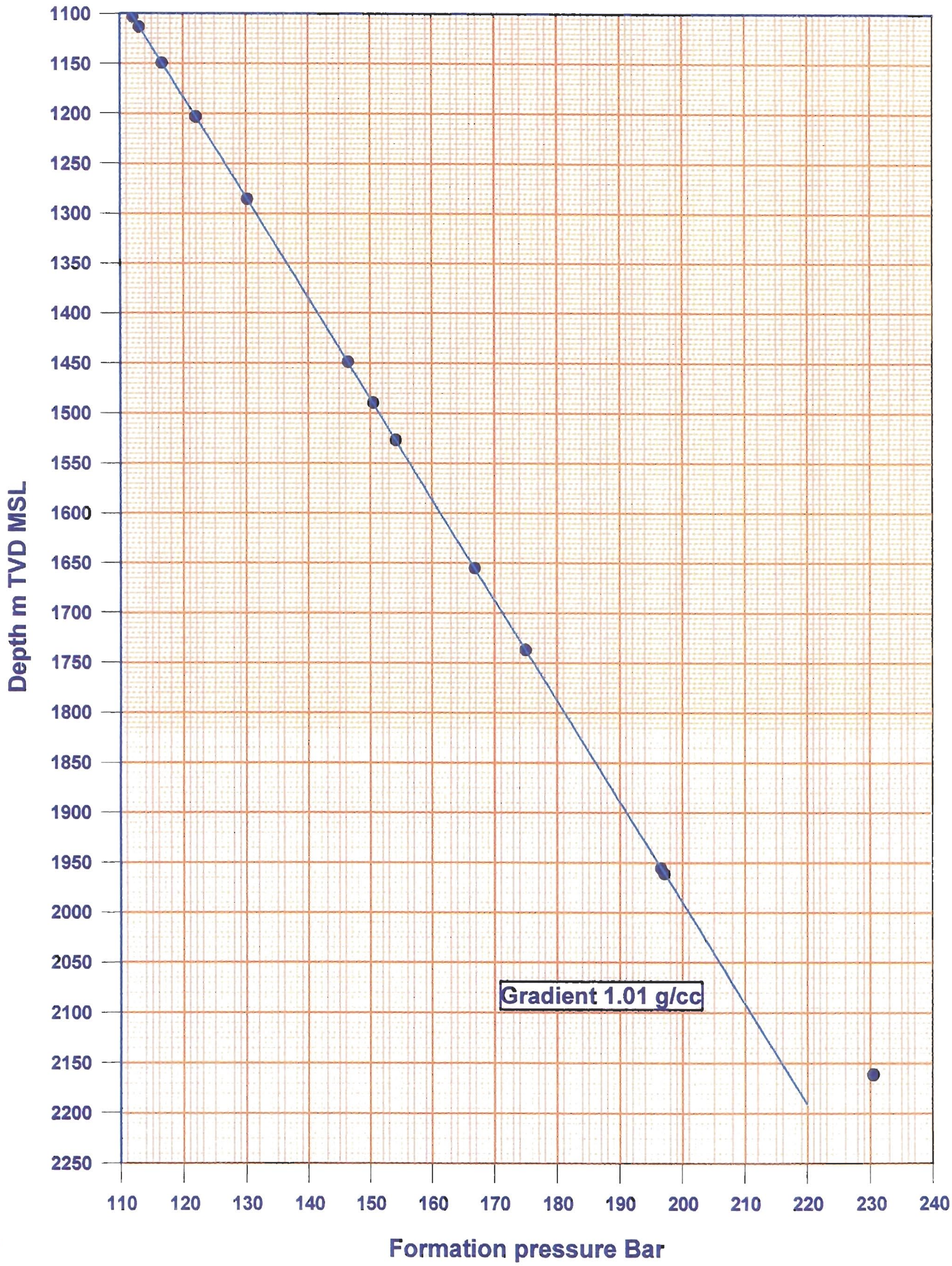


Fig. 4.4

PL 220	Pressure Plot Well 6710/10-1	STATOIL
RKB - Sea: 36 m		Made by: ANy
Water Depth: 329 m		Date:05.04.01

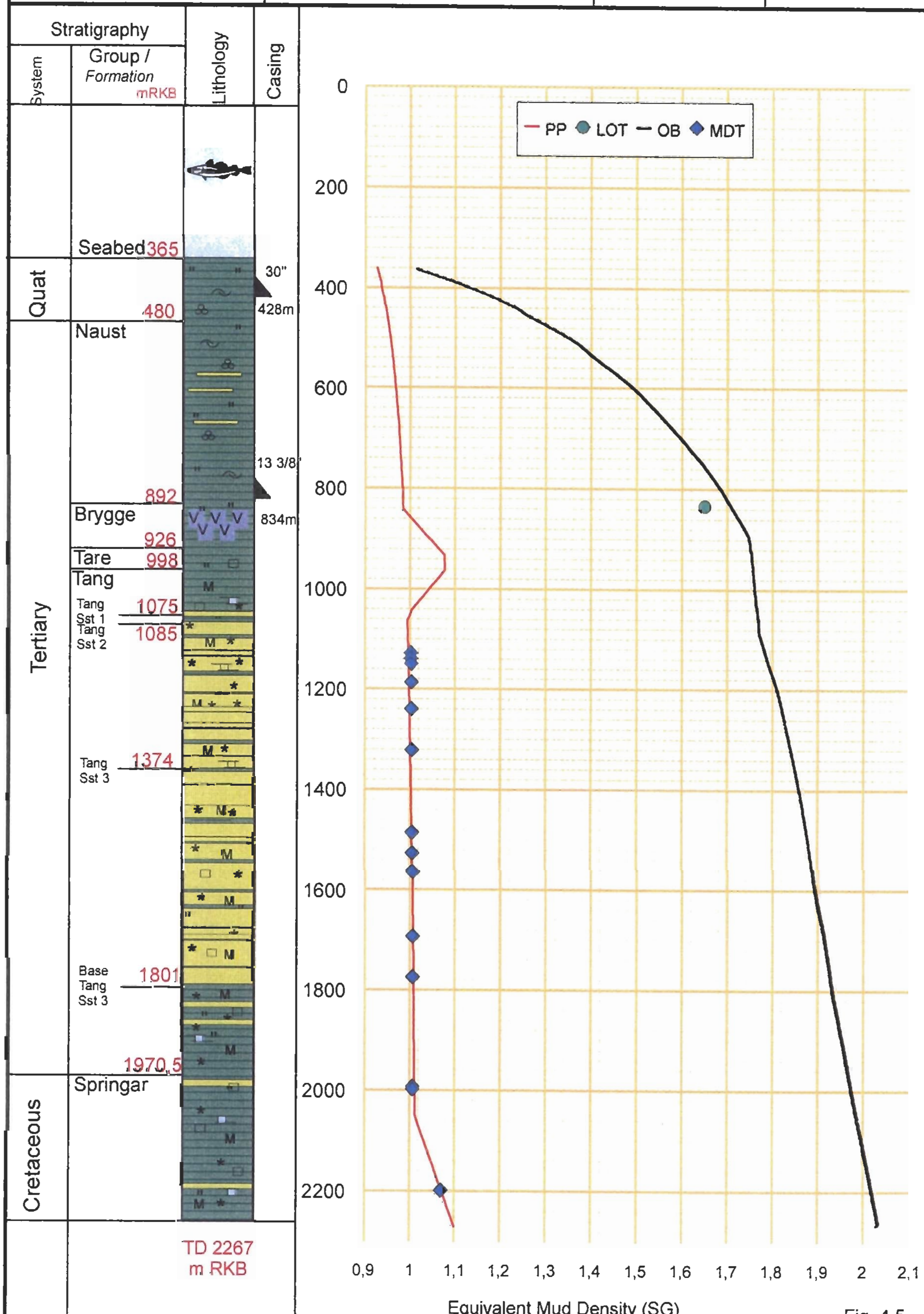


Fig. 4.5

PL 220	Temperature Plot Well 6710/10-1	STATOIL
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Water Depth: 329 m		Date:05.04.01

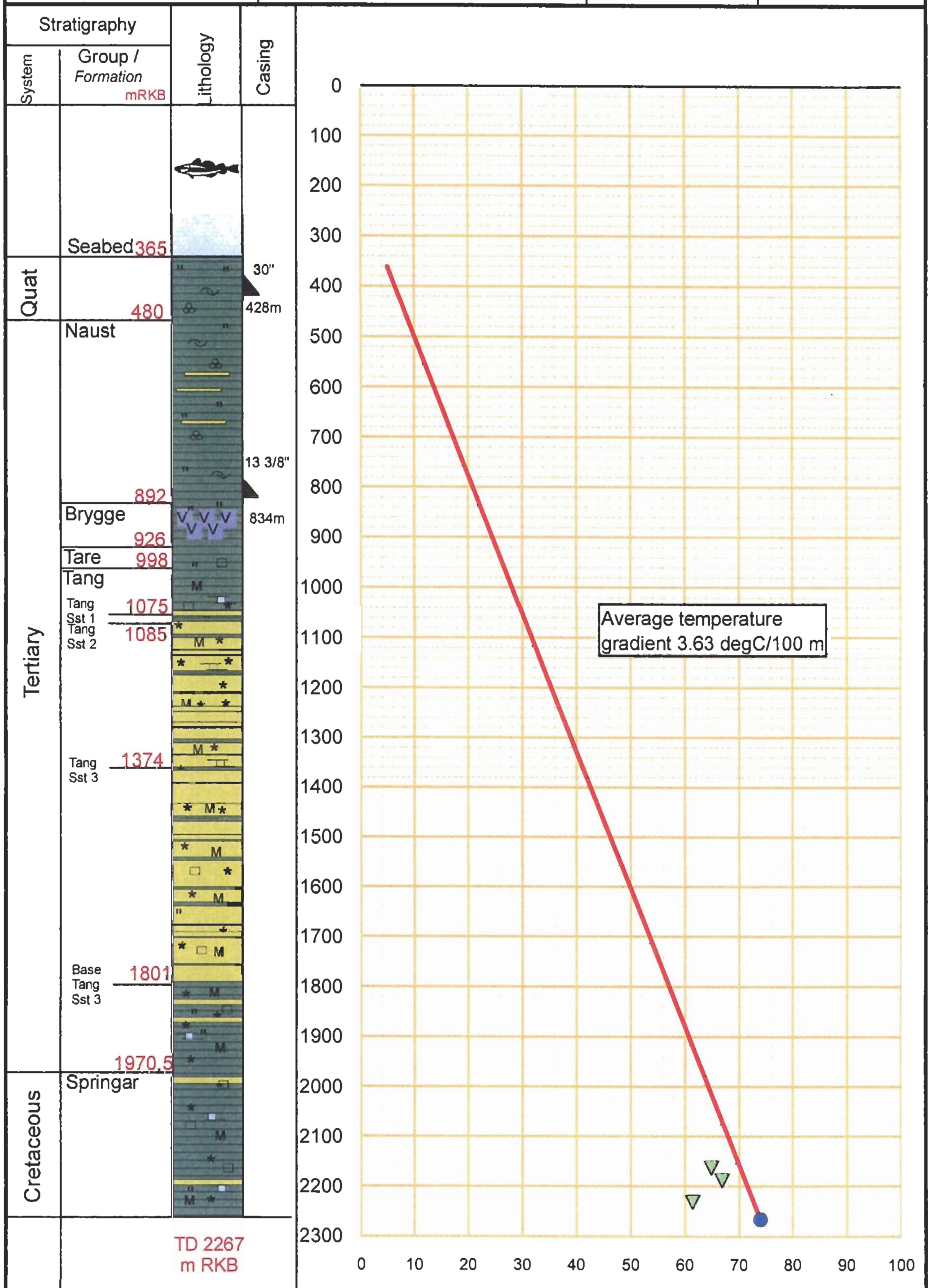


Fig. 4.6

5 Drilling Report

5.1 Preparations - rig move and positioning

The West Navion went on contract for licence PL220 03.10.2000 at 17:00 hrs (N 66° 08' E 02° 57') and arrived at the Hedda location (N 67°05'51,8" E 010°08'46,6") 04.10.2000 at 18:07 hrs.

West Navion completed a 1999 nm voyage from Greenland with an average speed of 9.4 knots. The positioning of the transponders started 18:30 and was completed satisfactorily. Further, there should be time saving potential by simplifying the operation for picking up and installing the mud hoses in moon pool.

"Havila Charisma" was dedicated as standby boat and "Troms Steggen" as supply boat. Both boats were waiting on West Navion at location.

The operation of making up the 36" BHA was delayed due to installation and welding of the through moonpool guide.

5.2 36" Hole Section (366 m MD- 428 m MD)

5.2.1 Summary of operations

The section was finished in 3.2 days. This was 2.9 days below budget and the saving was mainly achieved by optimising for dual operations and the use of pre-made BHA assemblies.

Technical objectives were to drill 36" hole from seabed at 365 m MD to 425 m MD. Further, install and support the conductor with cement, < 2.5 m stick up and < 0.75° inclination (max 1.5°) to provide support for 18 3/4" housing. These objectives were met, but only partly with respect to inclination of conductor.

Drilled 36" hole from main rig while running 30" conductor in aux. rig. The top formation was harder than expected and some boulders were experienced 8 - 15 m below seabed. The section was drilled succesfully from 366 m MD to 428 m MD with max. 5 tons WOB and rpm up to 130. Sea water and hi vis pills were pumped at high rate to clean the hole. Two stands 9 1/2" drill collars were included in the BHA to reduce the possibility for kick off on boulders together with a very restricted use of weight on bit.
Cemented 30" conductor with shoe at 427 m MD. A thorough grouting job around the conductor housing was performed after a penetration test of 3 metres with 3 1/2" DP. Final bulls eye reading 1.5 degrees.

5.2.2 Experiences / Recommendations from operations

- A wiper trip was performed and hole reamed to section TD due to surveys showing an angle of 2,5 degrees.
- The readings on the level indicators before the cement set up around the conductor were just above 1°. No problems occured during cementing. However, it was found that while holding the conductor in tension, it was lowered into the seabed mud. The compensator was not able to control the rapid heave movements nor hold the required depth. This may be the reason why the bulls eye readings were out after the bulls eye arms were lowered in to the seabed mud. After the cement job the two bulls eyes showed 1.5° and 2° respectively. Positioning of the ship as corrective action had hardly any effect. Bulls eye readings after cement set up were 1.25° and 1.75°. Suspected damage to level indicators. The inclination was checked again after cementing the 20" x 13 3/8" casing. The ROV placed bulls eye on top of wellhead. Angle measured to 1.5 degrees.

5.3 17 1/2" Hole Section (9 7/8" pilot hole) (428 m MD - 840 m MD)

5.3.1 Summary of operations

The section was finished in 5.9 days. The budget time was 7.4 days and the time saving was achieved mainly due to the optimization of dual operations, faster ROP when opening the pilot hole to 17 1/2" hole and the use of pre-made BHA assemblies.

Technical objectives were to drill a 9 7/8" pilot hole down to 835 m MD, to appraise the presence of shallow gas and open up pilot hole to 17 1/2" hole. Further, install and support the 20" x 13 3/8" casing with cement and run BOP / riser. The objectives were met.

The pilot hole was drilled with sea water and 15 m^3 hi vis pills per stand. An extra trip was needed due to failure in MWD tool. Drilling break at 645 m MD and 673 m MD. No flow was experienced while flow checking. The pilot hole was drilled to 840 m MD, and observed no indications of shallow gas.

Opened up pilot hole to 17 1/2" hole down to 840 m MD from the auxillary rig while running BOP and riser in main rig. The average ROP used was 59.4 m/hr. A 10 m^3 hi vis pill was pumped every 15 m to clean the hole. Tight spot at 650 m MD (15 tons overpull) and 457 m MD (10 tons overpull) when pulling out of hole with 17 1/2" BHA. Displaced well to 1.30 g/cc mud. Ran 20" x 13 3/8" casing in auxillary rig. The 20" x 13 3/8" casing was cemented without problem with the casing shoe located at 834 m MD. The plug was bumped with 135 bar. Full return during the mixing and displacement of cement. No back flow after pressure bleed off.

Landed BOP. Negative pressure test of 13 3/8" casing and well head connector due to damage in VX seal ring. Changed seal ring, pressure tested BOP to 270 bar and function tested BOP ok Drilled shoe track and 3 m new formation while displacing from seawater to 1.25 g/cc glydrill mud. Performed L.O.T. to 1.65 g/cc (prognosed to 1.57 g/cc)

5.3.2 Experiences / Recommendations from operations

- Pre-made assemblies was also a success in the 17 1/2" section. The optimalisation of dual operations in the planning phase was a success and was performed as follows : The 9 7/8" BHA pre-made assembly was made up and run in the main rig. After completing the drilling of the pilot hole, the 17 1/2" assembly was then made up and run in the auxillary rig while the main rig was occupied with preperations and running of the BOP / Riser.

- The 30" shoe was drilled out with the 9 7/8" drilling assembly. The MWD tool was not tested prior to run in hole. While testing the MWD tool at 450 m MD, an electrical failure was detected and a round trip was necessary to install back-up MWD. Downtime 8 hours.

- Prior to making up 17 1/2" BHA, 13 3/8" casing joints were made up in doubles. Due to some casing handling problems, 14 out of 17 doubles were made up. It is effecient to run casing in double and reduce the number of connections to be made up during critical operations.

- The 13 3/8" casing was run in doubles to 277 m MD. Encountered problems with the Vertical Pipe Handling (VPH) system. Had to troubleshoot for electrical problems in VPH control cabin. Downtime 4.5 hours. Cause : Electrical failure.

- When landing 20" x 13 3/8" casing, there was a mismatch in spaceout which resulted in an unintentional overpull of 200 tons. A pup joint of 3.05 m was not accounted for. It is recommended to run pre-job meeting with all shifts prior to the running of casing.

- During pressure test of well head connector and 20" x 13 3/8" casing pressure leaked off at 245 bar due to damage to the VX seal ring. The leak was identified in the wellhead connector by running in hole and pressure test with RTTS packer. Changed VX seal ring and landed BOP. Some problems were encountered when closing the wellhead connector. Unable to obtain the correct closing flow. After cycling the closing function several times, the wellhead connector closed ok. Pressure tested wellhead connector and 20" x 13 3/8" casing with seawater to 270 bar / 10 min and performed 30 ton overpull test ok. Lost 19 hours.

- The drilling of the shoe track and three metres new formation took 6.5 hours, which is longer than expected. Some problems were encountered when drilling out the float with 12 1/4" x 8 1/2" Speed Drill. It seemed like the plug above float got caught by the 8 1/2" pilot and there was no relative rotational movements between bit and plug. By changing the WOB and the other drilling parameters the float was penetrated after a couple of hours delay. In the selection of bit design, consideration should be given to both time spend on drilling out the shoe track and the drilling performance in the formation below the shoe.

- In the process of displacing from seawater to mud, 45 m^3 of water based mud was unintentionally dumped to sea through dumping valves in both mud pits and shaker pits. Inspight of high focus on volume control in both the planning and operational phase, more involvment and dedication from all involved contractors is required.

5 .4 12 1/4" x 8 1/2" Hole section (840 m MD - 2267 m MD)

5 .4 .1 Summary of operations

The section was finished in 10.2 days. The budget time was 12.2 days. Little effect of dual operations after installing BOP and riser. The decision in the planning stage of drilling a 12 1/4" hole from 13 3/8" casing shoe down to first coring point minimized the risk for potential hole problems in the potential loss zones in Tare / Tang Formations and secured higher ROP.

Technical objectives were to drill 12 1/4" hole down to first coring point in Tang Sandstone 2. Cut first core and drill 8 1/2" hole to second coring point in Tang Sandstone 3. Cut second core and drill to TD. Log open hole with wireline. The objectives were met.

The 12 1/4" hole was successfully drilled from 840 m MD to 1095 m MD with an average ROP of 27.7 m/hr. The ROP was limited by geological requirements of 30 m/hour. A pump rate of 3000 l/min, 130 bar, 60 - 150 r.p.m. and maximum 3 tons WOB. When pulling out of hole, tight spots were detected at 1000 m MD, 939 m MD, 900 m MD and 785 m MD. Maximum 15 ton overpull. Washed through tight spots. Attempted to run in hole with 8 1/2" core assembly. Tight hole at 963 m MD and got stuck with 12 1/4" stab. Lost outer core barrel in hole. Ran in hole with fishing BHA and engaged core barrel in first attempt. Cleaned out hole with 12 1/4" BHA. Ran in hole with 8 1/2" core assembly and cut core from 1095 m MD to 1112 m MD. Recovered 16.8 m core, 98.3 % recovery. Washed and reamed core interval with 8 1/2" BHA.

Drilled 8 1/2" hole to 1428 m MD. The 8 1/2" hole was drilled with an average ROP of 30.1 m/hr and was limited by the need to obtain geological samples and interpretation. A pump rate of 2000 l/min, 145 bar, 80 - 160 r.p.m. and maximum 5 tons WOB. Due to a mistake in tally a depth of 1456 m MD was reported. Circulated bottoms up for samples. When running in hole with 8 1/2" core assembly the hole was tagged at 1428 m MD rather than the expected 1456 m MD. Wrongly assumed fill and drilled 28 m of formation to be cut as core. Cut core from 1456 m MD and core jammed off at 1464 m MD. Recovered 6 m core, 75 % recovery.

Drilled 8 1/2" hole to TD at 2267 m MD. The 8 1/2" hole was drilled with an average ROP of 32.9 m/hr. A pump rate of 2000 l/min, 180 bar, 150 - 170 r.p.m. and maximum 10 tons WOB. Increased mud weight to 1.27 g/cc at 1687 - 1809 m MD before drilling into the expected pressure build up interval.

Logged open hole with wireline :

- Ran logging string # 1 : PEX / HALS / DSI / HNGS without any problems.
- Ran logging string # 2 : ZVSP. Experienced noise problems, which caused extra shots.
- Ran logging string # 3 : MDT / GR. Took pressure points ok to 2199 m MD.
- Ran logging string # 4 : CST / GR to 2254 m MD and took samples at selected depths.

5.4.2 Experiences / Recommendations from coring operations (1095 m MD to 1112 m MD and 1428 m MD to 1464 m MD)

- When running in hole with 8 1/2" core assembly (60 ft core barrel), it was discovered that mud was out of specification due to unintentionally adding 23 m^3 of fresh and seawater in the active system. Poor routines and volume control was found to be the cause. It took 9 hours from detection until reported to operator. Downtime 3 hours.

- While running in hole with 8 1/2" core assembly at 916 m MD, the Hydraulic Power Unit (HPU) shut down due to broken inlet from hydraulic pump on lokomec block. 7.5 m^3 of hydraulic oil lost to slop tank. Circulated well at 900 lpm whilst repairing leaking HPU. Downtime 3 hours.

- When running in hole with first 8 1/2" core assembly, string got stuck at 963 m MD while reaming at 100 rpm. 12 1/4" stab. got caught by tight spot at 939 m. Unable to rotate string. Established circulation and pulled string free with 85 ton overpull. Washed and reamed. Discovered outer core barrel missing when pulled out of hole. The connection between safety joint and 12 1/4" core barrel screwed itself out due to the force impact when the stab. got caught in tight spot. When reaming with this string configuration, 100 rpm is to high. 20 rpm is recommended. Caught fish in first attempt by using lip guide inside safety joint. Cleaned out hole with 12 1/4" BHA. Lost 17 hours.

- When running in hole with second 8 1/2" core assembly (90 ft core barrel), the string took weight at 1428 m MD. It was wrongly assumed fill from 1428 m MD to 1456 m MD. Therefore, in reality, the formation was drilled and the core was then cut from 1456 m MD unintentionally. As a result the core jammed off at 1464 m MD.

5.4.3 Experiences / Recommendations from drilling operations (840 m MD to 2267 m MD)

- When running in hole with 8 1/2" BHA to wash and ream core interval from 1095 m MD to 1112 m MD, the hole was by mistake reamed from 1065 m MD. The depth at 1065 m MD was by mistake corrected to 1095 m MD. Reaming was performed from 1095 m MD to 1142 m

MD (actually 1112 m MD). Inspite of a known TD at 1112 m MD, the mistake was not identified. Drilled 8 1/2" hole to second core point at 1456 m MD (actually 1428 m MD). The mistake was identified 6 days later by correlating wireline log data against the MWD data.

- When running in hole with 8 1/2" BHA assembly to 1464 m MD, operation was stopped in order to repair tool joint finder on iron roughneck. Downtime 0.5 hours.

- Increased ECD readings at 1809 m MD - 2267 m MD. Circulated and reamed well prior to connections. Boosted riser. ECD 1.45 - 1.52 g/cc.

- When pulling out of hole with 8 1/2" BHA, 15 ton overpull was encountered at 1791 m MD. Hole generally in good condition. The mud weight of 1.25 g/cc and the use of Glydrill mud can be used as reference for future wells in the area.

5 .5 Permanent Plugging and Abandonment

5 .5 .1 Summary of operations

To permanently plug and abandon well 6710/10-1 a duration of 5,4 days was planned. The operations were completed successfully in 4,4 days.

It was planned to permanently plug and abandon the well by first setting a 5 stage cement plug through the 8 1/2" hole section, extending approximately 130 m into the 13 3/8" casing. Subsequently, a mechanical bridge plug was to be set inside the 13 3/8" casing and pressure tested as the second barrier to the open hole interval. Prior to retrieving the wellhead, a surface cement plug would be set in accordance with the governing regulations.

Plugging of the 8 1/2" x 12 1/4" open hole section was performed successfully in accordance to plan with the exception of the final cement plug (#1E). When approximately 13 m^3 of the 15,5 m^3 cement slurry had been pumped, the slurry density was observed to fall from 1,90 g/cc to 1,70 g/cc. This was caused by partial blockage of the cement supply line from the surge tank. Manual mixing of the slurry was instantly performed to enable control of the cement slurry density pumped downhole. When the blockage cleared, a peak of 2,10 g/cc slurry density was momentarily observed. Further problems, attributed to operator error, were encountered during transfer of mix water to the mix tub. This resulted in early termination of the cement job with 1 m^3 less slurry pumped than planned.
Cement plug #1E was successfully load and pressure tested in accordance with the requirements.

A mechanical bridge plug was run on drillpipe and subsequently pressure tested to the required pressure. A 200 m surface cement plug (#2) was placed on top of the bridge plug, extending up to 31 m below the seabed.

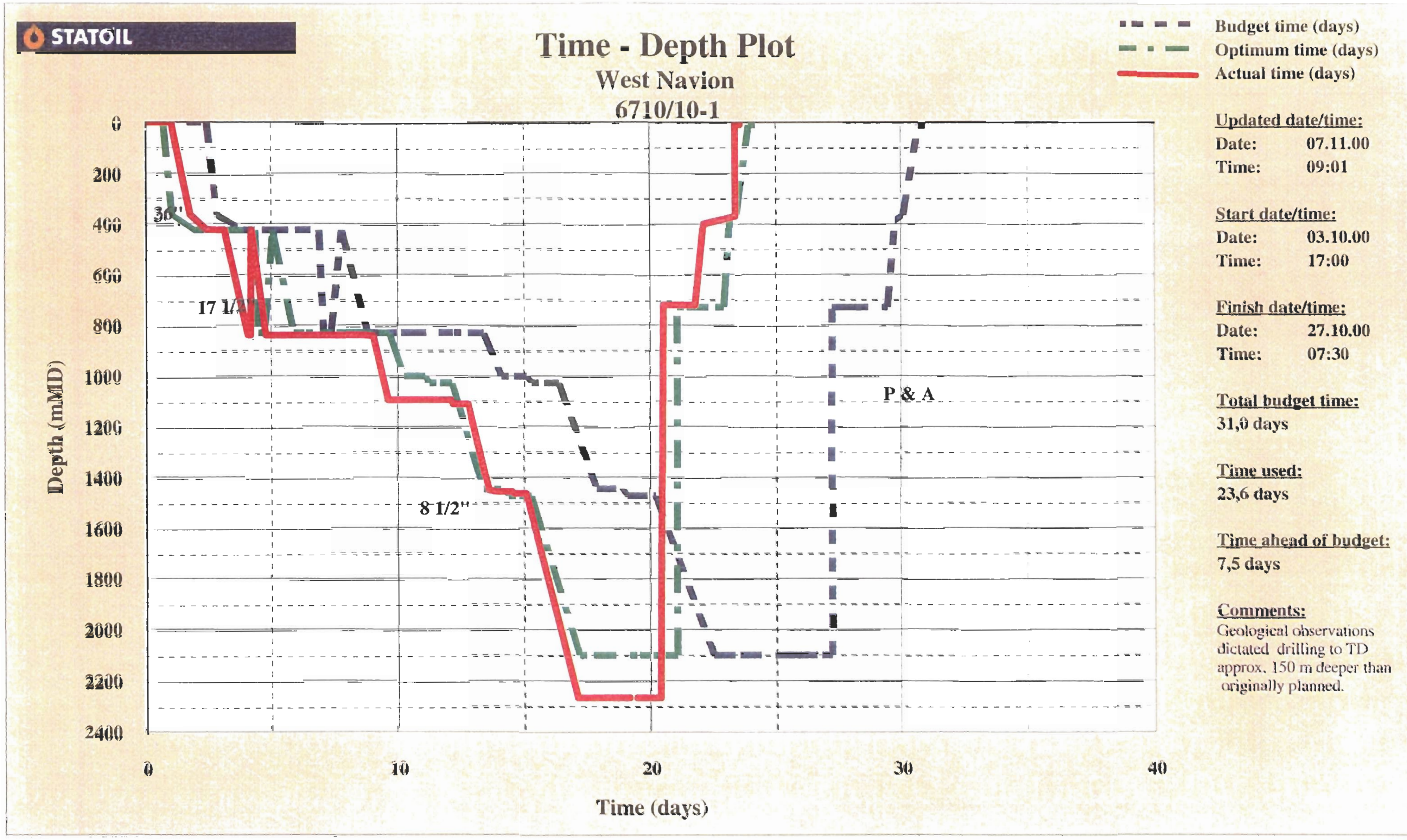
The wellhead and conductor could not be pulled after cutting for 5 hours. Motor stalling indicated that wellhead dropped on the knives and that the cut was complete. Suspected cement to hold the wellhead and conductor. Decision was made to make a shallower cut in tension. Cut for another 5 hours with 200 tons overpull before the wellhead was free. The wellhead was pulled to surface.

5.5.2 Experiences / Recommendations from operations

- When performing operations in moderate water depths it should be considered to retrieve the wear bushing while waiting on barrier cement to set. This is recommended only in cases where no further protection of the wellhead is required.
- To save time, is recommended to plan the actual lengths of cement plugs in accordance with the drillpipe tally. This will avoid unnecessary time for "spacing out".
- When setting mechanical bridge plugs at shallow depths, it should be evaluated to run and set the plugs on drillpipe.
- When cutting wellhead and conductor it was suspected that cement was preventing the wellhead being pulled free. Stalling motor indicated a complete cut through the wellhead steel. By cutting in 200 ton tension while moving the drillship back and forth, the wellhead came free. For future wells, especially when a grouting job is performed, it is recommended to consider using a rubber layer around conductor in order to reduce the pulling resistance in cement when removing the wellhead.

5.6 Figures and tables

5.6.1 Time/depth curve


STATOIL
Time - Depth Plot
West Navion
6710/10-1
Budget time (days)
Optimum time (days)
Actual time (days)
Depth (mMD)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
Time (days)
0
10
20
30
40
30"
17 1/2"
8 1/2"
P & A
Updated date/time:
Date: 07.11.00
Time: 09:01
Start date/time:
Date: 03.10.00
Time: 17:00
Finish date/time:
Date: 27.10.00
Time: 07:30
Total budget time:
31,0 days
Time used:
23,6 days
Time ahead of budget:
7,5 days
Comments:
Geological observations dictated drilling to TD approx. 150 m deeper than originally planned.

5.6.2 Timeplanner

Thu	09.11.00	09:34	Updated
Tue	03.10.00	17:00	Start date
Fri	27.10.00	07:30	Finish date

TIMEPLANNER

West Navion

6710/10-1

STATOIL

Time ahead of budget: 7,5 days

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)	N/T/a/t	Rig (M/A)	Activity description	Company
														36" hole section (365 - 425 mMD)	
Tue	03.10.00	17:00	0,0	0,0	0,0	0,0	0	0,0	0,0	0,0	0	F		Start operation	
Tue	03.10.00	17:00	58,5	2,4	17,0	0,7	0	17,0	25,0	1,0	0	F		Transit from 200 nm Norwegian Border (Budget: Stavanger).	
Wed	04.10.00	18:00	10,0	2,9	8,0	1,0	365	18,0	18,0	1,8	365	F		R/D k&c line, place transponders w/ guide wire while MU BHA	
Thu	05.10.00	12:00	25,5	3,9	21,0	1,9	425	21,0	15,5	2,4	425	F	m	Drill 36" hole to 430 m	
Fri	06.10.00	03:30	1,0	4,0	1,0	2,0	425	1,0	1,0	2,5	425	F	m	Circulate hole clean and displace to 1.30 SG mud	
Fri	06.10.00	04:30	2,5	4,1	2,0	2,0	425	3,0	0,0	2,5	425	F	m	POOH	
Fri	06.10.00	04:30	14,5	4,7	12,0	2,5	425	12,0	3,5	2,6	425	F	a	RIH w/cmt. stinger / 30" WH and 30" conductor	
Fri	06.10.00	07:00	14,5	5,3	12,0	3,0	425	13,0	8,5	2,9	425	F	a	Pump and displace cement. WOC / keep in tension	
Fri	06.10.00	15:30	4,0	5,4	3,0	3,2	425	3,0	4,0	3,1	425	F	a	Release RT and landing string. POOH	
Fri	06.10.00	19:30	14,5	6,0	12,0	3,7	425	13,0	1,5	3,2	425	F	m	RIH with 9 7/8" BHA and Drill out/clean up 30" shoe.	
Section time (days)			6,0		3,7			4,1	3,2					Section time ahead of/behind (-) budg:2,9 days, Tot. time ahead of/behind (-) budg:2,9 days	
														17 1/2" hole section (425 - 830 mMD)	
Fri	06.10.00	21:00	21,0	6,9	17,0	4,4	425	25,0	22,5	4,1	840	F	m	Drill 9 7/8" pilothole to TD (840 m/ 600 m/day). MU 13 3/8" in double in Aux rig	
Sat	07.10.00	19:30	4,0	7,1	3,0	4,5	830	3,0	2,5	4,2	840	F	m	Circulate hole and displace to 1.30 s.g. mud	
Sat	07.10.00	22:00	7,5	7,4	6,0	4,8	830	6,0	0,5	4,2	425	F	m	POOH.	
Sat	07.10.00	22:30	10,0	7,8	8,0	5,1	425	8,0	0,5	4,3	425	F	m	RIH with 17 1/2" BHA in AUX, while prepare to run BOP in MAIN	
Sat	07.10.00	23:00	24,5	8,8	20,0	5,9	830	11,0	13,5	4,8	840	F	a	Open up pilothole to 17 1/2" hole to TD (Aux). Run BOP (Main).	
Sun	08.10.00	12:30	4,0	9,0	3,5	6,1	830	2,0	2,0	4,9	840	F	a	Circulate hole and displace to 1.30 s.g. mud (Aux). Run BOP (Main)	
Sun	08.10.00	14:30	10,0	9,4	8,0	6,4	830	6,0	5,0	5,1	840	F	a	POOH.(Aux). Run BOP (Main)	
Sun	08.10.00	19:30	18,0	10,2	15,0	7,0	830	26,5	26,5	6,2	840	F	a	Run 20" x 13 3/8" casing from 428.3 to 834 m. (Aux) Run BOP (Main)	
Mon	09.10.00	22:00	5,0	10,4	4,0	7,2	830	4,0	2,0	6,3	840	F	a	Pump and displace cement (Aux). Run BOP (Main)	
Tue	10.10.00	00:00	12,0	10,9	10,0	7,6	830	10,0	3,5	6,4	840	F	a	Release RT, wash WH area. POOH (Aux). Run BOP (Main).	
Tue	10.10.00	03:30	18,5	11,6	15,0	8,2	830	10,0	19,0	7,2	840	F	m	Run BOP and riser.	
Tue	10.10.00	22:30	14,5	12,3	12,0	8,7	830	10,0	10,0	7,6	840	F	m	Rig down BOP handling equip. Prepare for handling 5 1/2" DP.	
Wed	11.10.00	08:30	0,0	12,3	0,0	8,7	830	8,0	8,0	8,0	840	F	m	RIH with 13 3/8" RTTS and identify leak in 13 3/8" casing.	
Wed	11.10.00	16:30	0,0	12,3	0,0	8,7	830	11,0	11,0	8,4	840	F	m	Disconnect BOP. Change VX ring. Land BOP and pressure test WH conn and 13 3/8" csg.	
Thu	12.10.00	03:30	18,5	13,0	15,0	9,4	830	10,0	6,0	8,7	840	F	m	PU & RIH w/ 12 1/4" BHA .	
Thu	12.10.00	09:30	7,0	13,3	6,0	9,6	830	6,0	8,5	9,0	843	F	m	Drill shoetrack and 3 m of new formation while displacing to new 1.25 SG KCl/Glydrill mud	
Thu	12.10.00	18:00	2,5	13,4	2,0	9,7	830	1,0	0,5	9,1	843	F	m	Perform LOT	
Section time (days)			7,4		6,0			6,6	5,9					Section time ahead of/behind (-) budg:1,5 days, Tot. time ahead of/behind (-) budg:4,4 days	
														12 1/4" x 8 1/2" hole section (830 - 2100 mMD)	
Thu	12.10.00	18:30	17,0	14,1	14,0	10,3	1001	14,0	14,0	9,6	1095	F	m	Drill 12 1/4" to top reservoar (approx 1060 m). Evaluate MWD / cuttings .	
Fri	13.10.00	08:30	12,0	14,6	10,0	10,7	1001	6,0	6,5	9,9	1095	F	m	Circulate and POOH for coring.	
Fri	13.10.00	15:00	12,0	15,1	10,0	11,1	1001	19,0	19,5	10,7	1095	F	m	MU and RIH w/ 90 ft core BHA, unable to pass 963 m. POOH. LOST core barrel.	
Sat	14.10.00	10:30	0,0	15,1	0,0	11,1	1001	16,0	17,0	11,4	1095	F	m	MU and RIH with fish BHA. Fish corebarrel.	
Sun	15.10.00	03:30	0,0	15,1	0,0	11,1	1001	10,0	11,0	11,9	1095	F	m	MU and RIH with 12 1/4" BHA. Clean out 12 1/4" hole.	
Sun	15.10.00	14:30	0,0	15,1	0,0	11,1	1001	6,0	5,5	12,1	1095	F	m	MU and RIH w/ 90 ft core BHA	
Sun	15.10.00	20:00	5,0	15,3	4,0	11,3	1028	4,0	1,5	12,2	1112	F	m	Cut core #1. Tang Sst. 1/2	
Sun	15.10.00	21:30	12,0	15,8	10,0	11,7	1028	6,0	8,0	12,5	1112	F	m	POOH w/ core BHA and LD core barrel	
Mon	16.10.00	05:30	12,0	16,3	10,0	12,1	1028	6,0	5,0	12,7	1112	F	m	MU and RIH with w/ 8 1/2" BHA	
Mon	16.10.00	10:30	2,0	16,4	1,5	12,2	1028	1,5	2,0	12,8	1112	F	m	Log cored interval	
Mon	16.10.00	12:30	36,0	17,9	30,0	13,4	1447	30,0	19,5	13,6	1450	F	m	Drill to top reservoar #3. Evaluate MWD / cuttings . (357 m/350 m/day)	
Tue	17.10.00	08:00	12,0	18,4	10,0	13,8	1447	10,0	6,5	13,9	1456	F	m	Circulate and POOH for coring.	
Tue	17.10.00	14:30	12,5	18,9	10,0	14,3	1447	10,0	15,5	14,5	1456	F	m	MU and RIH w/ 90 ft core BHA	
Wed	18.10.00	06:00	5,0	19,1	4,0	14,4	1474	4,0	2,0	14,6	1464	F	m	Cut core #2 (27 m is optimistic) Tang Sst. 3	
Wed	18.10.00	08:00	12,0	19,6	10,0	14,8	1474	10,0	5,5	14,9	1464	F	m	POOH w/ core BHA and LD core barrel	
Wed	18.10.00	13:30	12,5	20,2	10,0	15,3	1474	6,0	5,5	15,1	1464	F	m	RIH w/ 8 1/2" BHA	
Wed	18.10.00	19:00	2,0	20,3	1,5	15,3	1474	2,0	0,5	15,1	1464	F	m	Log cored interval	
Wed	18.10.00	19:30	55,0	22,5	46,0	17,2	2100	45,0	49,5	17,2	2267	F	m	Drill to 2267 m. (793 m/384 m/day)	
Fri	20.10.00	21:00	25,0	23,6	21,0	18,1	2100	12,0	7,0	17,5	2267	F	m	Circulate /wiper trip. POOH .	
Sat	21.10.00	04:00	44,0	25,4	36,0	19,6	2100	42,0	42,5	19,2	2267	F	m	RU and run wire line logs in 8 1/2" hole	
Sun	22.10.00	22:30	5,0	25,6	4,0	19,8	2100	0,0	0,0	19,2	2267	F	m	RIH and retrieve wearbushing	
Section time (days)			12,2		10,1			11,1	10,2					Section time ahead of/behind (-) budg:2,9 days, Tot. time ahead of/behind (-) budg:7,3 days	
														Spare section (N/A)	
Sun	22.10.00	22:30	0,0	25,6		19,8	2100			19,2					
Sun	22.10.00	22:30	0,0	25,6		19,8	2100			19,2					
Sun	22.10.00	22:30	0,0	25,6		19,8	2100			19,2					
Section time (days)			0,0												
														Section available for DST timeplanner	

Down time/Waiting time

West Navion

6710/10-1

Down time (hrs)	Accum. down time (hrs)	Waiting time (hrs)	Accum. waiting time (hrs)	Comments (reason for down/waiting time)
				36" hole section (365 - 425 mMD)
	0,0		0,0	Contingency.Downtime: 20,8 %, WOW: Aug: 0,2% Sep: 1,1% Oct: 6,6%, Nov: 1,3 %
	0,0		0,0	
	0,0		0,0	
1,0	1,0		0,0	Repaired leaking washpipe
	1,0		0,0	
	1,0		0,0	
	1,0		0,0	
	1,0		0,0	
	1,0		0,0	
	1,0		0,0	
1,0	hours	0,0	hours	Down time: 1,3% , Total Down time: 1,3% , Waiting time: 0,0% , Total Waiting time: 0,0%
				17 1/2" hole section (425 - 830 mMD)
8,0	9,0		0,0	MWD failure. Trip to change out MWD tool.
	9,0		0,0	
	9,0		0,0	
	9,0		0,0	
	9,0		0,0	
1,0	10,0		0,0	Repaired oil leakage in hydraulic power unit.
0,5	10,5		0,0	Serviced PS-30 slips.
4,5	15,0		0,0	Located & repaired fault in VPH control cabin
	15,0		0,0	
	15,0		0,0	
	15,0		0,0	
	15,0		0,0	
8,0	23,0		0,0	Located leaking VX seal ring.
11,0	34,0		0,0	Changed out VX seal ring.
	34,0		0,0	
	34,0		0,0	
	34,0		0,0	
33,0	hours	0,0	hours	Down time: 23,3% , Total Down time: 15,6% , Waiting time: 0,0% , Total Waiting time: 0,0%
				12 1/4" x 8 1/2" hole section (830 - 2100 mMD)
	34,0		0,0	
	34,0		0,0	
6,0	40,0		0,0	Repaired oil leakage in hydraulic power unit.
17,0	57,0		0,0	Fished out core barrel.
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
	57,0		0,0	
0,5	57,5		0,0	Repaired tool joint finder on iron roughneck.
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
23,5	hours	0,0	hours	Down time: 9,6% , Total Down time: 12,5% , Waiting time: 0,0% , Total Waiting time: 0,0%
				Spare section (N/A)
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
0,0	hours	0,0	hours	
				Section available for DST timeplanner

Thu	09.11.00	09:34	Updated
Tue	03.10.00	17:00	Start date
Fri	27.10.00	07:30	Finish date

TIMEPLANNER

West Navion

6710/10-1

STATOIL

Time ahead of budget: 7,5 days

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)	[illegible]	[illegible]	Activity description	Company
Sun	22.10.00	22:30	0,0	25,6		19,8	2100			19,2					
Sun	22.10.00	22:30	0,0	25,6		19,8	2100			19,2					
Sun	22.10.00	22:30	0,0	25,6		19,8	2100			19,2					
Section time (days)			0,0												
														P&A	
Sun	22.10.00	22:30	11,0	26,1	9,0	20,1	2100	5,0	7,0	19,5	2267	F	[illegible]	RIH w/ 450 m 3 1/2" DP to TD	
Mon	23.10.00	05:30	18,0	26,8	15,0	20,8	2100	15,0	17,5	20,3	2267	F	[illegible]	Circulate and place a 5 stage m plug across reservoir and 13 3/8" shoe.	
Mon	23.10.00	23:00	2,5	26,9	2,0	20,9	2100	2,0	1,5	20,3	2267	F	[illegible]	PO above plug and circulate.	
Tue	24.10.00	00:30	7,5	27,2	6,0	21,1	2100	4,0	3,5	20,5	2267	F	[illegible]	POOH	
Tue	24.10.00	04:00	0,0	27,2	0,0	21,1	730	4,0	3,0	20,6	722	F	[illegible]	RIH and retrieve wearbushing	
Tue	24.10.00	07:00	11,0	27,7	9,0	21,5	730	5,0	5,0	20,8	722	F	[illegible]	M/U 12 1/4" bit and RIH to tag cement plug. Pressure test to 70 bar above LOT	
Tue	24.10.00	12:00	6,0	28,0	5,0	21,7	730	5,0	2,0	20,9	722	F	[illegible]	POOH.	
Tue	24.10.00	14:00	8,5	28,3	7,0	22,0	730	6,0	5,0	21,1	722	F	[illegible]	RIH and set a bridge plug . POOH	
Tue	24.10.00	19:00	2,5	28,4	2,0	22,1	730	1,0	0,0	21,1	722	F	[illegible]	Pressure test plug.	
Tue	24.10.00	19:00	25,0	29,5	21,0	22,9	730	17,0	18,0	21,8	722	F	[illegible]	Prepare to pull BOP, disconnect same	
Wed	25.10.00	13:00	7,5	29,8	6,0	23,2	385	8,0	8,0	22,2	400	F	[illegible]	RIH and set surface plug. POOH	
Wed	25.10.00	21:00	7,5	30,1	6,0	23,4	365	12,0	30,0	23,4	370	F	[illegible]	RIH and cut wellhead. POOH. Retrive transponders w/ROV	
Fri	27.10.00	03:00	15,0	30,7	12,0	23,9	10	7,0	0,0	23,4	10	F	[illegible]	Continue pull BOP	
Fri	27.10.00	03:00	8,0	31,0	8,0	24,3	10	0,0	4,5	23,6	10	F		Rigmove	
Fri	27.10.00	07:30	5,4		4,5			3,8	4,4					Section time ahead of/behind (-) budg:1,0 days, Tot. time ahead of/behind (-) budg:7,4 days	
End of operation															

Down time/Waiting time

West Navion

6710/10-1

Down time (hrs)	Accum. down time (hrs)	Waiting time (hrs)	Accum. waiting time (hrs)	Comments (reason for down/waiting time)
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
0,0	hours	0,0	hours	
				P&A
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
	57,5		0,0	
3,0	60,5		0,0	Diverse hydraulic and general system faults while simultaneously pulling BOP
	60,5		0,0	
	60,5		0,0	
30,0	hours	0,0	hours	Down time: 28,6% , Total Down time: 10,7% , Waiting time: 0,0% , Total Waiting time: 0,0%

5.6.3 Bit record

B I T   R E C O R D

Well: 6710/10-001

Run no.	Bit Size	Bit no.	BHA no.	Bit type	IADC code	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	HO2STAGE	135	IPE	21479	6 x 13	x	x	x	,778
	17 1/2"	1	1	MXT1	115	HUGHES	H94DL	3 x 20	1 x 18	x	x	1,169
2	9 7/8"	2	2	FGSS+2C	117	SMITH	MXL9709/C	2 x 18	1 x 16	1 x 14	x	,844
3	17 1/2"	3	3	MGSSH+ODC	115	SMITH	LW2339	2 x 18	1 x 16	1 x 15	x	,866
4	12 1/4"	4	4	DR566	S323	DPI	1963500	5 x 10	5 x 10	x	x	,767
5	8 1/2"	5	5	FC264RILI	M133	SECURITY DBS	7981237	x	x	x	x	
6	12 1/4"	4RR	7	DR566	S323	DPI	1963500	5 x 10	5 x 10	x	x	,767
7	8 1/2"	6	8	FC264RILI	M133	SECURITY DBS	7000701	x	x	x	x	
8	8 1/2"	7	9	ABD445	M232	HUGHES CHRISTEN	1213375	3 x 14	x	x	x	,451
9	8 1/2"	6RR	10	FC264RILI	M133	SECURITY DBS	7000701	x	x	x	x	
10	8 1/2"	7RR	11	ABD445	M232	HUGHES CHRISTEN	1213375	3 x 14	x	x	x	,451
11	12 1/4"	8	13	SVH	215	SMITH	LR1599	x	x	x	x	

Run no.	Flow-rate l/min	Pump pres bar	Depth In mMD	Depth Out mMD	Made m.	HR. Drlg.	ROP m/hr	WOB Min ton	WOB Max ton	RPM Min	RPM Max	I	O	DC	L	B	G	OC	RP	Remarks
1	5000	121	366,0	428,0	62,0		,0													
	5000	121	366,0	430,0	64,0		,0					2	2	BT	A	E	4/16	PN	TD	RAN ON HOLE OPENER ASSY.
2	3200	110	430,0	840,0	410,0	8,2	50,0	1	4	60	110									
3	4000	150	430,0	840,0	410,0	6,9	59,4	2	7	60	125	1	1	WT	A	E	1/16	NO	TD	OPEN 9 7/8" PILOT HOLE.
4	3000	130	840,0	1095,0	255,0	9,2	27,7		3	60	150	1	1	WT	A	X	I	BT	CP	12 1/4" X 8 1/2" BIT SIZE.
																				7 BROKEN TEETH ON EACH "BIT".
5			1095,0	1095,0	,0		,0													CORE RUN #1 (FISH).
6					,0		,0					1	1	WT	A	X	I	BT	CP	CLEAN OUT RUN IN 12 1/4" HOLE
																				7 BT ON EACH "BIT"
7	1000	45	1095,0	1112,0	17,0	1,0	17,0	3	9	90	110	1	1	LT	S	X	I	PN	TD	CORE RUN #2
																				3 PLUGGED NOZZLES
8	2000	145	1112,0	1456,0	344,0	11,4	30,1	1	5	80	160	1	1	WT	S	X	I	BT	CP	2 X BROKEN TEETH ON SHOULDER.
9	1000	45	1456,0	1464,0	8,0	1,8	4,6	3	8	90	110									CORE RUN #3
10	2000	180	1464,0	2267,0	803,0	24,4	32,9	1	10	150	170	3	1	WT	S	X	1/8	PN	TD	PARTLY PLUGGED WATERWAYS
11			722,0	722,0	,0		,0					1	1	WT	A	E	I	NO	TD	TAGGED CMT PLUG

5.6.4 Bottom hole assemblies (BHA)

Well: 6710/10-001

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/06	1	BIT, TRI CONE	17,500		,40	,40
		FLOAT SUB	9,500	3,000	,60	1,00
		HOLE OPENER	36,000	3,000	3,86	4,86
		BIT SUB	9,500	3,000	,91	5,77
		ANDERDRIFT	9,500	2,813	3,32	9,09
		DRILL COLLAR	9,500	3,000	56,26	65,35
		X-OVER	9,500	3,000	,93	66,28
		DRILL COLLAR	8,000	2,813	56,19	122,47
		X-OVER	8,000	2,813	,93	123,40
		HW DRILL PIPE	5,500		56,68	180,08
00/10/07	2	BIT, TRI CONE	9,875		,26	,26
		BIT SUB	8,000	2,750	,73	,99
		SUB PIN X PIN	8,250	2,813	,80	1,79
		MWD MPR	8,250	2,813	4,89	6,68
		MWD TOOL	8,250	2,813	11,40	18,08
		SAVER SUB	8,250	2,813	,88	18,96
		DRILL COLLAR	8,000	2,813	121,76	140,72
		JAR	8,000	2,750	9,64	150,36
		DRILL COLLAR	8,000	2,813	18,50	168,86
		XO SUB	8,000	2,813	,93	169,79
		HW DRILL PIPE	5,500	3,500	85,03	254,82
00/10/08	3	BIT, TRI CONE	17,500		,43	,43
		STABILIZER, NB	17,500	3,000	2,13	2,56
		DRILL COLLAR	9,500	3,000	3,79	6,35
		STAB STRING	17,500	3,000	2,25	8,60
		SUB PIN X PIN	9,500	3,000	,54	9,14
		MWD TOOL	9,500	3,000	9,90	19,04
		SAVER SUB	9,500	3,000	,52	19,56
		STAB STRING	17,500	3,000	1,75	21,31
		X-OVER	9,500	3,000	,89	22,20
		DRILL COLLAR	8,000	2,813	64,84	87,04
		JAR	8,000	2,750	9,67	96,71
		DRILL COLLAR	8,000	2,813	18,74	115,45
		X-OVER	8,000	2,813	,93	116,38
		HW DRILL PIPE	5,500	3,500	56,63	173,01
00/10/13	4	BIT, PDC	12,250		,67	,67
		BIT SUB	8,250	3,000	,39	1,06
		STABILIZER, NB	12,250	3,000	,83	1,89
		MWD, MPR	8,250	3,000	3,75	5,64
		STABILIZER	12,250	2,813	1,38	7,02
		MWD, MAP	8,250	3,000	1,17	8,19
		MWD TOOL	8,250	3,000	1,76	9,95
		DRILL COLLAR	8,250	2,813	8,99	18,94
		SAVER SUB	8,250	3,000	,71	19,65
		STABILIZER	12,250	2,813	2,12	21,77
		FLOAT SUB	8,000	2,813	1,05	22,82
		DRILL COLLAR	8,000	2,813	65,50	88,32
		JAR	8,000	2,750	9,67	97,99
		DRILL COLLAR	8,000	2,813	18,74	116,73
		X-OVER	8,000	2,813	,93	117,66
		HW DRILL PIPE	5,500	3,500	56,72	174,38

Well: 6710/10-001

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/14	5	BIT, CORE	8,500	7,250	,36	,36
		BIT SUB	8,375	6,750	1,22	1,58
		CORE BARREL	8,375	6,750	3,35	4,93
		STAB STRING	8,375	6,750	1,22	6,15
		CORE BARREL	8,375	6,750	3,35	9,50
		STAB STRING	8,375	6,750	1,22	10,72
		CORE BARREL	8,375	6,750	7,92	18,64
		STAB STRING	8,375	6,750	1,22	19,86
		TOP SUB	8,375	3,156	,86	20,72
		SAFETY JOINT	6,750	3,156	,58	21,30
		FLOAT SUB	6,750	2,750	1,10	22,40
		X-OVER	8,000	2,875	,95	23,35
		STAB STRING	12,250	2,875	2,08	25,43
		DRILL COLLAR	8,000	2,813	28,09	53,52
		JAR	8,000	2,750	9,67	63,19
		DRILL COLLAR	8,000	2,813	18,74	81,93
		X-OVER	8,000	2,750	,93	82,86
		HW DRILL PIPE	5,500	3,500	56,72	139,58
Remarks: CORE RUN #1						
00/10/15	6	CUT LIP GUIDE	6,750		1,14	1,14
		FISHING JAR	6,500	2,250	3,97	5,11
		DRILL COLLAR	6,500	2,813	56,72	61,83
		ACCELERATOR	6,500	2,250	2,39	64,22
		X-OVER	7,250	2,875	,94	65,16
		DRILL PIPE	5,500		,00	65,16
Remarks: FISHING FOR LOST CORE BARREL						
	7	BIT, PDC	12,250		,67	,67
		STAB. NB W/FLOAT	12,250	2,750	2,20	2,87
		DRILL COLLAR	8,000	2,815	18,72	21,59
		STAB STRING	12,250	2,750	2,11	23,70
		DRILL COLLAR	8,000	2,813	9,37	33,07
		JAR	8,000	2,750	9,67	42,74
		DRILL COLLAR	8,000	2,813	18,74	61,48
		X-OVER	8,000	2,813	,93	62,41
		HW DRILL PIPE	5,500	3,500	56,72	119,13
Remarks: CLEAN OUT BHA						
00/10/16	8	BIT, CORE	8,500	7,250	,36	,36
		BIT SUB	8,375	6,750	1,22	1,58
		CORE BARREL	8,375	6,750	3,35	4,93
		STAB STRING	8,375	6,750	1,22	6,15
		CORE BARREL	8,375	6,750	3,35	9,50
		STAB STRING	8,375	6,750	1,22	10,72
		CORE BARREL	8,375	6,750	7,92	18,64
		STAB STRING	8,375	6,750	1,22	19,86
		TOP SUB	8,375	3,156	,86	20,72
		SAFETY JOINT	6,750	3,156	,58	21,30
		FLOAT SUB	6,750	2,750	1,10	22,40
		X-OVER	8,000	2,875	,93	23,33
		STAB STRING	12,250	2,875	2,18	25,51
		DRILL COLLAR	8,000	2,813	28,09	53,60
		JAR	8,000	2,750	9,67	63,27
		DRILL COLLAR	8,000	2,813	18,74	82,01
		X-OVER	8,000	2,750	,93	82,94
		HW DRILL PIPE	5,500	3,500	56,72	139,66

Well: 6710/10-001

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/17	9	BIT, PDC	8,500		,28	,28
		STAB. NB W/FLOAT	8,500	3,000	1,18	1,46
		MWD, MPR	6,750	3,000	3,64	5,10
		STABILIZER	8,250	3,000	1,12	6,22
		MWD TOOL	6,750	3,000	11,25	17,47
		STAB STRING	8,500	2,750	1,80	19,27
		DRILL COLLAR	6,500	2,813	66,26	85,53
		JAR	6,500	2,750	9,43	94,96
		DRILL COLLAR	6,500	2,813	19,04	114,00
		X-OVER	6,500	2,813	,93	114,93
		HW DRILL PIPE	5,500	3,500	85,03	199,96
00/10/18	10	BIT, CORE	8,500	4,000	,36	,36
		STAB STRING	8,470	4,250	1,22	1,58
		CORE BARREL	6,750	4,250	3,35	4,93
		STAB STRING	8,470	4,250	1,22	6,15
		CORE BARREL	6,750	4,250	3,35	9,50
		STAB STRING	8,470	4,250	1,22	10,72
		CORE BARREL	6,750	4,250	7,92	18,64
		STAB STRING	8,470	4,250	1,22	19,86
		CORE BARREL	6,750	4,250	7,92	27,78
		STAB STRING	8,470	4,250	1,22	29,00
		TOP SUB	6,750	3,156	,86	29,86
		SAFETY JOINT	6,750	3,156	,58	30,44
		FLOAT SUB	6,500	2,750	1,10	31,54
		DRILL COLLAR	6,500	2,813	56,79	88,33
		JAR	6,500	2,750	9,43	97,76
		DRILL COLLAR	6,500	2,813	19,04	116,80
		X-OVER	6,500	3,000	,93	117,73
		HW DRILL PIPE	5,500	3,500	85,03	202,76

Remarks: CORE RUN #3

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/19	11	BIT, PDC	8,500		,28	,28
		STAB. NB W/FLOAT	8,500	3,000	1,18	1,46
		MWD, MPR	6,750	3,000	3,64	5,10
		STABILIZER	8,250	3,000	1,12	6,22
		MWD TOOL	6,750	3,000	11,25	17,47
		STAB STRING	8,500	2,750	1,80	19,27
		DRILL COLLAR	6,500	2,813	66,26	85,53
		JAR	6,500	2,750	9,43	94,96
		DRILL COLLAR	6,500	2,813	19,04	114,00
		X-OVER	6,500	2,813	,93	114,93
		HW DRILL PIPE	5,500	3,500	85,03	199,96
00/10/23	12	MULE SHOE	3,500		9,00	9,00
		DRILL PIPE	3,500		436,78	445,78
		XO SUB	7,250	2,250	,91	446,69

Remarks: CEMENT STINGER

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/25	13	BIT, TRI CONE	12,250		,32	,32
		BIT SUB	8,000	4,750	,92	1,24
		SCRAPER	13,375	2,250	,98	2,22
		DRILL COLLAR	8,000	2,813	28,11	30,33
		XO SUB	8,000	2,813	,93	31,26

Remarks: 13 3/8" SCRAPER BHA

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
	14	BRIDGE PLUG	13,375		,92	,92
		SETTING TOOL	13,375		1,50	2,42
		XO SUB	6,500	2,813	,95	3,37
		HW DRILL PIPE	5,500		141,75	145,12
00/10/26	15	MOST TOOL	12,250		10,77	10,77
		DRILL COLLAR	8,000	2,813	111,45	122,22
		XO SUB	8,000	2,813	,92	123,14
		HW DRILL PIPE	5,500	3,500	85,05	208,19

Remarks: MOST TOOL WITH MOTOR AND 13 3/8" CUTTER

5.6.3 Bit record

5.6.4 Bottom hole assemblies (BHA)

Well: 6710/10-001

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/14	5	BIT, CORE	8,500	7,250	,36	,36
		BIT SUB	8,375	6,750	1,22	1,58
		CORE BARREL	8,375	6,750	3,35	4,93
		STAB STRING	8,375	6,750	1,22	6,15
		CORE BARREL	8,375	6,750	3,35	9,50
		STAB STRING	8,375	6,750	1,22	10,72
		CORE BARREL	8,375	6,750	7,92	18,64
		STAB STRING	8,375	6,750	1,22	19,86
		TOP SUB	8,375	3,156	,86	20,72
		SAFETY JOINT	6,750	3,156	,58	21,30
		FLOAT SUB	6,750	2,750	1,10	22,40
		X-OVER	8,000	2,875	,95	23,35
		STAB STRING	12,250	2,875	2,08	25,43
		DRILL COLLAR	8,000	2,813	28,09	53,52
		JAR	8,000	2,750	9,67	63,19
		DRILL COLLAR	8,000	2,813	18,74	81,93
		X-OVER	8,000	2,750	,93	82,86
		HW DRILL PIPE	5,500	3,500	56,72	139,58

Remarks: CORE RUN #1

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/15	6	CUT LIP GUIDE	6,750		1,14	1,14
		FISHING JAR	6,500	2,250	3,97	5,11
		DRILL COLLAR	6,500	2,813	56,72	61,83
		ACCELERATOR	6,500	2,250	2,39	64,22
		X-OVER	7,250	2,875	,94	65,16
		DRILL PIPE	5,500		,00	65,16

Remarks: FISHING FOR LOST CORE BARREL

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
	7	BIT, PDC	12,250		,67	,67
		STAB. NB W/FLOAT	12,250	2,750	2,20	2,87
		DRILL COLLAR	8,000	2,815	18,72	21,59
		STAB STRING	12,250	2,750	2,11	23,70
		DRILL COLLAR	8,000	2,813	9,37	33,07
		JAR	8,000	2,750	9,67	42,74
		DRILL COLLAR	8,000	2,813	18,74	61,48
		X-OVER	8,000	2,813	,93	62,41
		HW DRILL PIPE	5,500	3,500	56,72	119,13

Remarks: CLEAN OUT BHA

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
00/10/16	8	BIT, CORE	8,500	7,250	,36	,36
		BIT SUB	8,375	6,750	1,22	1,58
		CORE BARREL	8,375	6,750	3,35	4,93
		STAB STRING	8,375	6,750	1,22	6,15
		CORE BARREL	8,375	6,750	3,35	9,50
		STAB STRING	8,375	6,750	1,22	10,72
		CORE BARREL	8,375	6,750	7,92	18,64
		STAB STRING	8,375	6,750	1,22	19,86
		TOP SUB	8,375	3,156	,86	20,72
		SAFETY JOINT	6,750	3,156	,58	21,30
		FLOAT SUB	6,750	2,750	1,10	22,40
		X-OVER	8,000	2,875	,93	23,33
		STAB STRING	12,250	2,875	2,18	25,51
		DRILL COLLAR	8,000	2,813	28,09	53,60
		JAR	8,000	2,750	9,67	63,27
		DRILL COLLAR	8,000	2,813	18,74	82,01
		X-OVER	8,000	2,750	,93	82,94
		HW DRILL PIPE	5,500	3,500	56,72	139,66

5.6.5 Drilling fluids program

Well: 6710/10-1
Field: Nordland VI
Rig: West Navion

DRILLING FLUIDS PROGRAM

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 (lbs/100sq.ft	Fann 3 rpm		PV [cP]	API FL [ml]	HTHP FL [ml]	MBT [KG/m³]	pH	FV [sec]		KCl (kg/m3)	Glycol [%]	Total Volume / Old Volume / New Volume / Usage [m³]
36"	425	30"	425	Seawater/ Bentonite	1.03-1.30				38	17		6,5				9,6	109				329 0 329 106

Comments: A total of 329 m3 (hivis pills and displacement fluid) - 223 m3 was transferred to next section. The section was drilled with seawater and 5-10 m3 hivis pills every 15 m. At TD the hole was swept clean with a 30 m3 hivis pill and then the well was displaced to 1,3 sg Bentonite/CMC mud before pulling out to run casing. Mixing: Due to lack of shearing device, a higher concentration of bentonite was mixed to achieve required specifications.

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 (lbs/100sq.ft	Fann 3 rpm		PV [cP]	API FL [ml]	HTHP FL [ml]	MBT [KG/m³]	pH	FV [sec]		KCl (kg/m3)	Glycol [%]	Total Volume / Old Volume / New Volume / Usage [m³]
17 1/2"	840 840	13 3/8"	834 834	SW/Bent sweeps	1,03												104				523 223 300 523
				SW/Bent Displacm.fl.	1,3				37	16		8				9,5	69				
				Kill fluid	1,7		8	14	41	16		27					79				

Comments: A total of 223 m3 spud mud was transferred from the 36" section. Further 300 m3 were built. Spud mud was diluted with 30 % seawater before pumping.A total of 68 m3 Glydrill mud was weighted up to 1,7 sg and used for kill mud due to problems with the surge tank while mixing/prehydrating bentonite mud. The section was drilled with seawater and hivis sweeps of 5-10 m3 every 15 m.

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 (lbs/100sq.ft	Fann 3 rpm		PV [cP]	API FL [ml]	HTHP FL [ml]	MBT [KG/m³]	pH	FV [sec]		KCl (kg/m3)	Glycol [%]	Total Volume / Old Volume / New Volume / Usage [m³]
12 1/4"	1095 1095	0	0 0	Glydril	1.25	26	6	7	30	11		12	3,5	na	10	8,5			147	5	514 249 265 60

Comments: A total of 249 m3 Glydril mud was received from field. This volume included 235 m3 Glydril Deepwater mud from Fylla - Greenland. KCl premix, Kill mud, Deepwater mud and drillwater was blended and weighted to 1,25 sg. This was done to save time and to reduce sulphate content in deepwater mud. Additional viscosifier was added to increase low end rheology once drilling commenced. The mud system was pre-treated with 1 kg/m3 Citric Acid and Sodium Bicarbonate prior to drilling cement. Addition of KCl dry salt and viscosifier was mixed as required and additional chemicals added after an incident were 24 m3 of seawater entered the active system due to a open seawater valve on mud pumps. Since shearing the polymers is difficult at surface, the required rheology is first achived after a few circulations. It is therefore reccomended to add Duotec NS as quickly as possible after displacement. Furthermore, maintain a steady volume of polymers by adding directly to active. Due to fine mesh screens - polymers are lost at the shakers.

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 (lbs/100sq.ft	Fann 3 rpm		PV [cP]	API FL [ml]	HTHP FL [ml]	MBT [KG/m³]	pH	FV [sec]		KCl (kg/m3)	Glycol [%]	Total Volume / Old Volume / New Volume / Usage [m³]
8 1/2"	2267 2267	0	0 0	Glydril	1.25-1.27	14 - 40	6	8 - 10	30	11		12	3,5	na	10	8,5			147	5	623 454 169 148

Comments: Maintenance of the active system continued as described for the 12 1/4" section. And the Glydril Mud system proved to be very effective in providing good hole cleaning and inhibition. Close inspection of increase in MBT levels is required along with control of KCl levels.

5.6.6 Cement program

CEMENT PROGRAM

Well: 6710/10-1
Field: Nordland VI
Rig: West Navion

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"	428 428	30"	427 427	Seabed Seabed	Lead: 17,1 m3 Tail: 15,0 m3 Excess: 150%	Econolite Liquid CaCl2 NF-6 Seawater	Slurry ref.: STL10 3,20 - 0,10 95,07	Slurry ref.: STT10 - 4,35 0,10 39,56	Lead: 1,56 Tail: 1,95	Lead: 129,42 Tail: 75,06	6 - 8	Lead: > 6 Tail: 3 - 4	Lead: 1 - 2 Tail: 1 - 2	N/A	Lead: +/- 200 Tail: +/- 600	Seawater	Seawater 1000 - 2000 lpm
17 1/2"	840 840	13 3/8"	834 834	Seabed Seabed	Lead: 51,5 m3 Tail: 35,0 m3 Excess: 150%	Econolite NF-6 Seawater	Slurry ref.: STL10 3,20 0,10 95,07	Slurry ref.: STTNT - 0,10 43,52	Lead: 1,56 Tail: 1,92	Lead: 129,42 Tail: 76,88	22 15 - 20	Lead: > 5 Tail: 02:40	Lead: 1 - 2 Tail: 1 - 2	N/A	Lead: +/- 300 Tail:	1 open hole volume Seawater	Seawater 2500 lpm
P&A	2267 2267	Plug #1	2267 2267	722 722	Plug #1A-#1D: 60,8 m3 Plug #1E 14,5 m3 Excess: 3%	CFR-3L HR-4L Halad-99LE+ NF-6 DW SW	Slurry ref.: #1A - #1D MPFLC 0,70 0,30 8,00 0,10 36,83	Slurry ref.: #1E STTNT - - - 0,10 - 73,69	#1A - #1D: 1,90 #1E: 1,95	#1A - #1D: 76,98 #1E: 73,69	#1A - #1D: 80 / 63 #1E: 28 / 23	#1A - #1D: 04:40 #1E: 03:10	#1A - #1D: 0 #1E: 1 - 2	#1A - #1D: 250 #1E: n/a	#1A - #1D: 2200 #1E: 2700	8 + 1 m3 Fresh water	WBM 2500 lpm
P&A	2267 2267	Plug #2	600 600	400 400	15,5 0%	NF-6 SW	Slurry ref.: STTNT 0,10 46,74		1,90	77,90	14 10	+/- 4	1 - 2	n/a	+/- 400	7 + 1 m3 Fresh water	WBM 2500 lpm

Comments:

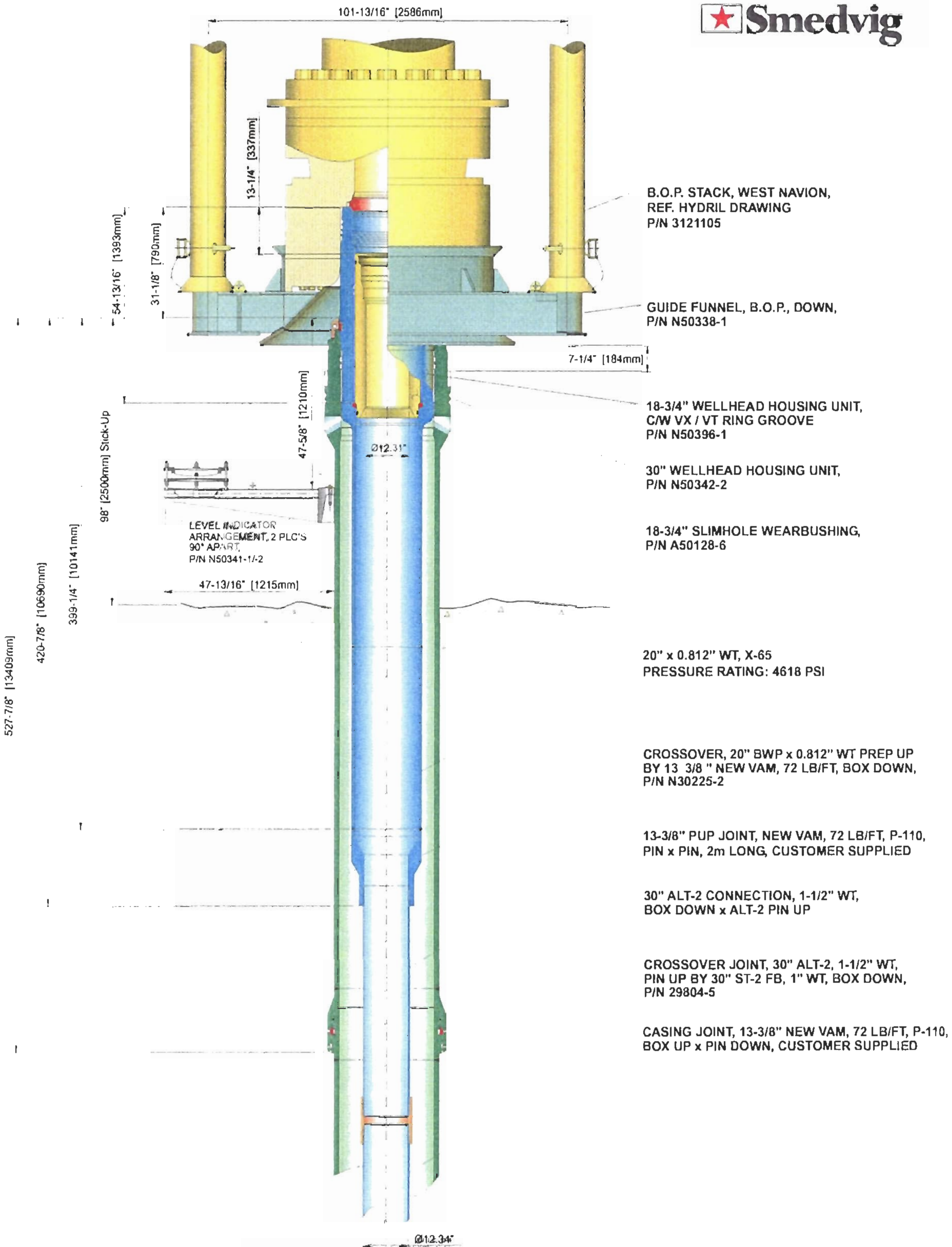
5.6.7 Wellhead system

West Navion

Well 6710/10-1
'Hedda'

STATOIL

Smedvig



MS-700 Wellhead System
18-3/4" x 15,000 PSI

ABB Offshore Systems AS
Division Subsea

ABB

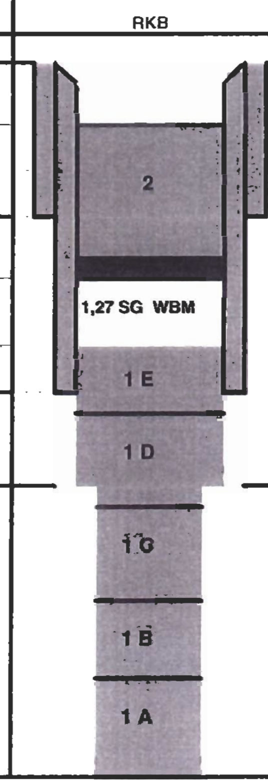
Drawing Number: N600895-1

5.6.8 Final Well Schematic

Well: 6710/10-1
Field: Nordland VI
Rig: West Navion

FINAL WELL SCHEMATIC

HOLE		CASING				LOT FIT	TOC		DEPTHS		WL LOGS	LWD LOGS	SURV CSG/ OH
SIZE	TVD MD	SIZE	TYPE / RAD. MARKERS	CENTRALIZERS	TEST PRESS [BAR]	s.g.	TVD	MD	TVD	MD			
SB	365												
36"	427 427	30"	X-52, 309 lb/ft, ST-2 Housing ext. joint:1,5" w.t., ALT-2 box XO int. med. joint: 1,5" w.t. ALT-2 pin, ST-2 box				Surface	Surface	400 427	400 427			
17 1/2"	840 840	13 3/8"	P110, 72 lb/ft, New Vam Housing ext. joint: 20", X-65, 166,2 lb/ft R/A marker @ 650 m	2 cent. pr. jnt for the lowermost 3 jnts.	270 1.03 s.g.	LOT: 1,65	Surface	Surface	615 722 834	615 722 834			OH MWD
12 1/4"	1095 1095												OH MWD
8 1/2"	2267 2267												OH MWD



Comments : 5 stage cement plug set in 8 1/2" x 12 1/4" open hole extending inside the 13 3/8" casing to 722 m.
Cement plug #1E load tested to 10 tons and pressure tested to 115 bar w/ 1, 27 SG WBM.
Mechanical bridge plug at 615 m pressure tested to 129 Bar w/ 1,27 SG WBM

APPENDIX 1

Operational Experience, Operational Listing

L I S T O F O P E R A T I O N S D A T A (0000 - 2400)

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/03	1700	2400	7,00		MNMU	OK	OK	IN TRANSIT WITH 9,5 - 11 KN.
00/10/04	0000	0600	6,00		MNMU	OK	OK	IN TRANSIT WITH 10,5 - 11 KN. SPEED : 11 KN DISTANCE SAILED : 1878 NM DISTANCE TO GO : 121 NM ETA : 04.10.00 18:00 HRS. LT (AVERAGE SPEED 10 KN)
	0600	1830	12,50		MNMU	OK	OK	IN TRANSIT WITH 9,5 - 11 KN. ON LOCATION 6710/10-1 AT 18:07 HRS. AVERAGE SPEED FOR TRANSIT: 9,4 KN.
	1830	2300	4,50		MNPU	OK	OK	JUMPED ROV AND SET OUT BASKET WITH TRANSPONDERS. STARTED TO PLACE OUT TRANSPONDERS WITH ROV. M: NO ACTIVITIES. A: REARRANGED KILL, CHOKE, BOOSTER AND CONDUITE LINES IN THE MOON POOL.
	2300	2400	1,00		2NON	FAIL	O FAIL	M/A: SKIDDED X-MAS TREE CARRIER WITH THROUGH MOON POOL GUIDE TO MAIN RIG. CONTINUED TO SET OUT TRANSPONDERS WITH ROV.
00/10/05	0000	0500	5,00		2NON	FAIL	O FAIL	M: CONTINUED TO INSTALL THROUGH MOON POOL GUIDE. A: NO ACTIVITIES.
	0500	0600	1,00		DTDU	OK	OK	M: PICKED UP 36" HOLE OPENER. A: NO ACTIVITIES.
	0600	0930	3,50	208,0	DTDU	OK	OK	M: MU 36" HOLE OPENER BHA AND RAN IN WITH SAME TO 208 M. A: RU 30" CONDUCTOR RUNNING EQUIPMENT.
	0930	1200	2,50	366,0	DTDU	OK	OK	M: TESTED ANDERDRIFT TOOL, 0,5 DEG AT 208 M, AND CONT. TO RIH. TAGGED SEA BOTTOM AT 366 M. A: CONT. TO RU 30 CONDUCTOR RUNNING EQUIPMENT. PU 30" SHOE AND CHECKED FLOAT, OK.
	1200	1500	3,00	381,0	DDRU	OK	OK	M: DRILLED 36" HOLE FOM 366 M TO 381 M WITH 5000 LPM/130 BAR/80 RPM/ 4-6 TON WOB. A: RAN 30" CONDUCTOR.
	1500	1600	1,00	381,0	DERD	FAIL	E FAIL	M: LEAK IN WASH PIPE. REPAIRED SAME. A: RAN 30" CONDUCTOR.
	1600	2400	8,00	425,0	DDRU	OK	OK	M: DRILLED 36" HOLE FOM 381 M TO 425 M WITH 5000 LPM/130 BAR/80 RPM/ 4-6 TON WOB. PERFORMED SVYS AT 381, 392 AND 420 M : 0.5, 1.25 AND 2 DEG. A: RAN 30" CONDUCTOR. PU CONDUCTOR HOUSING AND RAN INNER STRING. RAN IN WITH 30 CONDUCTOR TO 343 M.
00/10/06	0000	0130	1,50	428,0	DDRU	OK	OK	M: PERFORMED SVY AT 425 M, 2,5 DEG. CONTINUED DRILLING 36 " HOLE FROM 425 M TO 428 M. CONFIRMED DEPTH WITH ROV. A: NO ACTIVITIES.
	0130	0200	,50	428,0	DDOU	OK	OK	M: PUMPED 20 M3 HI-VIS AND POOH WITH 36" BHA TO 380 M. MAX 4 TON OVER PULL. A: NO ACTIVITIES.
	0200	0230	,50	428,0	DDOU	OK	OK	M: WASHED AND REAMED FROM 380 M TO 428 M WITH 5000 LPM/ 60 RPM. NO FILL OBSERVED ON TD. A: NO ACTIVITIES.
	0230	0330	1,00	380,0	DDOU	OK	OK	M: PUMPED 30 M3 HI-VIS AND PERFORMED SVY AT 428 M, 2.5 DEG. REPEATED SVY WITH SAME RESULT. POOH TO 380 M AND PERFORMED NEW SVY, 2 DEG. A: NO ACTIVITIES.
	0330	0430	1,00	360,0	DDOU	OK	OK	M: RIH TO 428 M AND DISPLACED HOLE TO 1,30 SG MUD. POOH TO SEA BED WITH 36" HOLE OPENER ASSY. A: NO ACTIVITIES.
	0430	0500	,50	360,0	DDOU	OK	OK	A: MOVED VESSEL AND POSITIONED AUX RIG OVER WELL CENTRE. M: NO ACTIVITIES.
	0500	0600	1,00	425,0	CARU	OK	OK	A: RIH WITH 30" CONDUCTOR TO 425 M. BULLS EYE INDICATORS SHOWING 1

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/06	0500	0600	1,00	425,0	CARU	OK	OK	DEG DEVIATION. M: POOH WITH 36" HOLE OPENER ASSY TO 350 M.
	0600	0700	1,00	425,0	CAOU	OK	OK	A: INSTALLED CEMENT HOSE. PUMPED 30 M3 SEA WATER AND TESTED CEMENT HOSE TO 200 BAR, OK. M: POOH WITH 36" BHA.
	0700	0800	1,00	425,0	CSSU	OK	OK	A: MIXED AND PUMPED 17,1 M3 1,56 SG LEAD AND 15 M3 1,95 SG TAIL SLURRY. DISPLACED SAME WITH 7,8 M3 SEA WATER. M: POOH WITH 36" BHA.
	0800	1530	7,50	425,0	CSCW	OK	OK	A: WOC WHILST HOLDING 30" CONDUCTOR IN TENSION. ADJUSTED STICK UP HIGHT AND MOVED SHIP 10 M IN 80 DEG DIRECTION TO ADJUST ANGLE ON WELLHEAD HOUSING TO 1.25 AND 1.75 DEGREES. M: POOH WITH 36" BHA AND LD BIT, HOLE OPENER AND ANDERDRIFT TOOL. M/U 9 7/8" BHA AND RIH WITH SAME.
	1530	1600	,50	363,0	CAOU	OK	OK	A: RELEASED CART TOOL FROM 30" HOUSING. ANGLE ON WELLHEAD HOUSING REMAINED ON 1.25 AND 1.75 DEGREES. RACKED BACK CEMENT STAND. M: CONT TO RIH WITH 9 7/8" BHA.
	1600	1630	,50	368,0	CAOU	OK	OK	A: RAN IN AND TAGGED CEMENT OUTSIDE 30" HOUSING AT 368 M, 3 M IN FROM FROM SEA BED. M: NO ACTIVITIES.
	1630	1800	1,50	368,0	CSOU	OK	OK	A: PREPARED FOR GROUTING JOB AROUND 30" CONDUCTOR. M: NO ACTIVITIES.
	1800	1900	1,00	368,0	CSOU	OK	OK	A: MIXED AND PUMPED 4 M3 1,95 SG TAIL SLURRY. DISPLACED SAME WITH 1 M3 SEA WATER. ALLOWED CEMENT TO U-TUBE OUT PIPE AROUND CONDUCTOR. M: NO ACTIVITIES.
	1900	1930	,50	360,0	CSOU	OK	OK	A: PULLED OUT CEMENT STINGER TO ABOVE SEA BED AND REPOSITIONED VESSEL WITH MAIN RIG OVER WELL CENTRE. M: NO ACTIVITIES.
	1930	2100	1,50	424,0	DDOU	OK	OK	M: ENTERED 30" HOUSING WITH 9 7/8" BHA. RAN IN AND TAGGED CEMENT AT 424 M. DRILLED FIRM CEMENT FROM 424 M TO 427 M, 2500 LPM/2-3 TON WOB/60 RPM. A: POOH WITH CART TOOL AND CEMENT STINGER.
	2100	2130	,50	450,0	DDRU	OK	OK	M: BROKE THROUGH 30" SHOE AT 427 M. CLEANED OUT RAT HOLE AND DRILLED 9 7/8" HOLE FROM 430 M TO 450 M. A: POOH WITH CART TOOL AND CEMENT STINGER.
	2130	2400	2,50		DEMD	FAIL	E FAIL	M: FAILURE IN MWD. PUMPED 10 M3 HI-VIS AND FILLED OPEN HOLE WITH SAME. POOH WITH 9 7/8" BHA TO CHANGE MWD. A: RACKED BACK CART TOOL AND POOH WITH CEMENT STINGER. RIGGED UP 13 3/8" CASING TONG.
00/10/07	0000	0130	1,50		DEMD	FAIL	OK	M: CHECKED MWD AND MPR TOOLS. FOUND ELECTRICAL FAILURE ON BOTH TOOLS AND LD SAME. PU NEW SET OF MWD TOOLS. A: NO ACTIVITIES.
	0130	0530	4,00	450,0	DEMD	FAIL	OK	M: CHECKED NEW MWD TOOLS, OK. MU 9 7/8" BHA AND RIH TO 450 M. A: MU 17 1/2" BHA.
	0530	0600	,50	470,0	DDRU	OK	OK	M: DRILLED 9 7/8" HOLE FROM 450 M TO 470 M, 3200 LPM/112 BAR/3 TON WOB/3-5 KNM. A: MU 17 1/2" BHA.
	0600	1300	7,00	645,0	DDRU	OK	OK	M: DRILLED 9 7/8" HOLE FROM 470 M TO 645 M, 3200 LPM/110 BAR/1-4 TON WOB/110-120 RPM/3-5 KNM. A: MU AND RACKED BACK 17 1/2" BHA. PU 13 3/8" CASING AND RACKED BACK SAME IN DOUBLES.
	1300	1330	,50	645,0	DDOU	OK	OK	M: DRILLING BREAKE AT 645 M. FLOWCHECKED FOR 30 MIN, OK. A: PU 13 3/8" CASING AND RACKED BACK SAME IN DOUBLES.
	1330	1430	1,00	673,0	DDRU	OK	OK	M: DRILLED 9 7/8" HOLE FROM 645 M TO 673 M, 3200 LPM/110 BAR/1-4 TON WOB/120 RPM/3-5 KNM. A: PU 13 3/8" CASING AND RACKED BACK SAME IN DOUBLES.
	1430	1500	,50	673,0	DDOU	OK	OK	M: DRILLING BREAKE AT 673 M. FLOW CHECKED FOR 30 MIN, OK. A: PU 13 3/8" CASING AND RACKED BACK SAME IN DOUBLES.

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/07	1500	1930	4,50	840,0	DDRU	OK	OK	M: DRILLED 9 7/8" HOLE FROM 673 M TO 840 M, 3200 LPM/110 BAR/1-4 TON WOB/120 RPM/3-5 KNM. A: PU 13 3/8" CASING AND RACKED BACK SAME IN DOUBLES. TOT 14 DOUBLES RACKED BACK AT 16:00 HRS. PU 17 1/2" BHA AND RIH WITH.
	1930	2030	1,00	840,0	DCAU	OK	OK	M: CIRCULATED BTTMS UP AND FLOW CHECKED WELL FOR 30 MIN, OK. A: NO ACTIVITIES.
	2030	2230	2,00	360,0	DDOU	OK	OK	M: DISPLACED WELL TO 1,30 SG MUD AND POOH WITH 9 7/8" BHA TO 360 M. A: NO ACTIVITIES.
	2230	2300	,50	424,0	DDOU	OK	OK	A: MOVED VESSEL AND POSITIONED AUX RIG OVER WELL CENTRE. ENTERED 30" CONDUCTOR WITH 17 1/2" BHA AND RIH TO 424 M. M: POOH WITH 9 7/8" BHA.
	2300	2400	1,00	428,0	DDRU	OK	OK	A: DRILLED CEMENT FROM 424 M TO 428 M, 2500-3000 LPM/70-90 BAR/40-60 RPM/2-4 TON WOB/2-4 KNM. M: POOH WITH 9 7/8" BHA.
00/10/08	0000	0600	6,00	667,0	DDRU	OK	OK	A: OPENED 9 7/8" PILOT HOLE TO 17 1/2" FROM 428 M TO 667 M, 4000 LPM/ 90 BAR/120-135 RPM/4-8 TON WOB/4-8 KNM. M: DUMPED DATA FROM MWD AND RACKED BACK BHA. PREPARED FOR RUNNING RISER AND BOP.
	0600	1230	6,50	840,0	DDRU	OK	OK	A: OPENED 9 7/8" PILOT HOLE TO 17 1/2" FROM 667 M TO 840 M, 3000-4000 LPM/110-150 BAR/120-125 RPM/4-7 TON WOB/2-10 KNM. M: RIGGED UP FOR RUNNING RISER AND BOP. PU ONE 75' BARE RISER JOINT AND TWO 15' RISER PUP JOINTS.
	1230	1330	1,00	840,0	DCAU	OK	OK	A: PUMPED 10 M3 HI-VIS AND DISPLACED SAME OUT OF HOLE. M: SKIDDED BOP INTO MOON POOL.
	1330	1430	1,00	840,0	DDOU	OK	OK	A: POOH TO 692 M AND RAN BACK IN TO 840 M. NO OBSTRUCTIONS OBSERVED. M: MU RISER TO BOP.
	1430	1530	1,00	840,0	DCAU	OK	OK	A: PUMPED 30 M3 HI-VIS SWEEP AND DISPLACED WELL TO 1,30 SG MUD. M: PU BOP. LANDED BOP AGAIN DUE TO HPU PROBLEMS.
	1530	1630	1,00	840,0	DDOD	FAIL	E FAIL	A: REPAIRED OIL LEAKAGE IN HPU. M: NO ACTIVITIES.
	1630	2130	5,00		DTCU	OK	OK	A: POOH WITH 17 1/2" BHA AND RACKED BACK BHA. TIGHT SPOTS AT 650 M (15 TON OP) AND 457 M (5-10 TON OP). M: PU BOP AND SKIDDED BOP SKID AFT. INSTALLED GUIDE FUNNEL ON BOP. PU AND TURNED 2 X RISER PUP JOINTS 180 DEG DUE TO FAIL POSITION.
	2130	2230	1,00		CAOU	OK	OK	A: PU 5 1/2" DP SINGLE AND INSTALLED X-OVER AND PLUG LAUNCHER. LD SAME ON DECK. M: RAN BOP INTO THROUGH MOON POOL GUIDE.
	2230	2330	1,00		CAOU	OK	OK	A: INSTALLED PS 30 SLIPS AND CHANGED LIFT HEAD ON VPH. HELD PRE-JOB SAFETY MEETING PRIOR TO RUN 13 3/8" CASING. M: FILLED KILL AND CHOKE LINES AND COMMENCED PRESSURE TESTING SAME TO 1033 BAR.
	2330	2400	,50		CAOD	FAIL	E FAIL	A: PROBLEMS WITH PS 30 SLIPS. SERVICED SAME. M: PRESSURE TESTED KILL CHOKE LINES.
00/10/09	0000	0200	2,00	35,0	CARU	OK	OK	A: MU AND THREAD LOCKED SHOE, INTERMEDIATE AND FLOAT JOINTS. CHECKED SHOE AND FLOAT FOR FREE FLOW-THROUGH. INSTALLED 1 CENTRALIZER ON EACH JOINT. M: PRESSURE TESTED KILL AND CHOKE LINES, 35/1033 BAR. PRESSURE TESTED CONDUITE AND BOOSTER LINE, 35/345 BAR.
	0200	0300	1,00	108,0	CARU	OK	OK	A: MU AND RIH WITH 13 3/8" CASING IN SINGLES TO 108 M. M: RAN RISER AND BOP.
	0300	0430	1,50	277,0	CARU	OK	OK	A: MU AND RIH WITH 13 3/8" CASING IN DOUBLES TO 277 M. M: RAN RISER AND BOP.
	0430	0600	1,50	277,0	CAOD	FAIL	E FAIL	A: PROBLEMS WITH VPH SYSTEM. RE SAT PLS. UNABLE TO INITIALIZE LLA. TROUBLE SHOT ON ELECTRICAL SYSTEM IN VPH CONTROL CABIN. M: RAN RISER AND BOP (183 M AT 06:00 HRS).
	0600	0900	3,00	277,0	CAOD	FAIL	E FAIL	A: TROUBLE SHOT ON ELECTRICAL SYSTEM IN VPH CONTROL CABIN.

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/09	0600	0900	3,00	277,0	CAOD	FAIL	E FAIL	M: RAN RISER AND BOP.
	0900	1230	3,50	455,0	CARU	OK	OK	A: RIH WITH 13 3/8" CASING TO 355 M. OPENED ACTIVE COMPENSATOR AND STABBED INTO 30" HOUSING. CONT TO RIH TO 455 M. M: FILLED UP LINES AND PRESSURE TESTED KILL AND CHOKE LINES TO 35/1033 BAR, 5/10 MIN. PRESSURE TESTED BOOSTER AND CONDUITE LINES TO 35/345 BAR, 5/10 MIN.
	1230	1330	1,00	455,0	CAOU	OK	OK	A: MU 18 3/4" WELL HEAD HOUSING. M: MU TERMINATION SPOOL.
	1330	1500	1,50	465,0	CAOU	OK	OK	A: RD PS 30 SLIPS AND INSTALLED MASTER BUSHING. RIH WITH 18 3/4" WELL HEAD HOUSING. RELEASED LIFT TOOL AND LD SAME. M: CONT TO MU TERMINATION SPOOL.
	1500	1600	1,00	465,0	CAOU	OK	OK	A: PU SGL DRILL PIPE WITH PLUG LAUNCHER AND INSTALLED CEMENT PLUGS. RAN SAME INTO WELL HEAD HOUSING. M: MU INTERMEDIATE FLEX JOINT.
	1600	1830	2,50	465,0	CAOU	OK	OK	A: PU 18 3/4" CART TOOL AND MU SAME TO DRILLPIPE WITH CEMENT PLUGS. CONNECTED CART TOOL TO WELL HEAD HOUSING. LD TOP SGL ON CART TOOL AND MU PUP JOINT. M: MU KEEL JOINT AND PU SLIP JOINT.
	1830	2130	3,00	834,0	CARU	OK	OK	A: RIH WITH 13 3/8" CASING ON 5 1/2" DP FROM 465 M TO 830 M. INSTALLED CEMENT STAND AND WASHED DOWN LAST 10 M. LANDED OUT IN WELL HEAD. MISMATCH ON SPACEOUT RESULTED IN UNINTENTIONAL OVERPULL OF 200 TON. M: MU SLIP JOINT AND INSTALLED TERMINATION RING.
	2130	2200	,50	834,0	CCCU	OK	OK	A: INCREASED PUMP RATE IN STEPS TO 2300 LPM AND CIRCULATED ON OPEN HOLE VOLUME. HELD PRE JOB SAFETY MEETING PRIOR TO CEMENT JOB WHILE CIRCULATING. M: CONT TO INSTAL TERMINATION RING.
	2200	2330	1,50	834,0	CSSU	OK	OK	A: MIXED AND PUMPED 51,5 M3 1,56 SG LEAD AND 35 M3 1,92 SG TAIL SLURRY. M: MU UPPER FLEX JOINT.
	2330	2400	,50	834,0	CSSU	OK	OK	A: DISPLACED CEMENT WITH 37 M3 SW AT 2500 LPM. BUMPED PLUG WITH 135 BAR. FULL RETURNS DURING MIXING AND DISPLACING CEMENT. BLED OFF PRESSURE AND CHECKED FOR BACK-FLOW, OK. M: SKIDDED BACK LATERAL SUPPORT.
00/10/10	0000	0100	1,00	365,0	CAOU	OK	OK	A: RELEASED RUNNING TOOL AND PULLED OUT SAME. RIGGED DOWN CEMENT HOSE AND RACKED BACK CEMENT STAND. M: CONT TO SKID BACK LATERAL SUPPORT.
	0100	0330	2,50		CAOU	OK	OK	A: WASHED WELL HEAD AND POOH WITH 18 3/4" CART TOOL. ROV PLACED BULLS EYE ON TOP OF WELL HEAD WHILE POOH. ANGLE MEASURED TO 1,5 DEG. M: PROBLEMS WITH PU SPACER JOINT. LINED UP AND PRESSURE TESTED KILL AND CHOKE LINES TO 35/1033 BAR 5/10 MIN.
	0330	0430	1,00		BBRU	OK	OK	M: MU SPACER JOINT. A: SERVICED 18 3/4" CART TOOL AND RACKED BACK SAME. CLEARED RIG FLOOR AND PREPARED FOR PU 12 1/4" BHA.
	0430	0530	1,00		BBRU	OK	OK	M: INSTALLED MUX CABLE CLAMPS AND SADDLE ON SLIP JOINT. A: PREPARED FOR PU 12 1/4" BHA.
	0530	0600	,50		BBRU	OK	OK	M: PU LANDING JOINT. A: PREPARED FOR PU 12 1/4" BHA.
	0600	0800	2,00		BBRU	OK	OK	M: INSTALLED MUX SADDLES AND STROKED OUT TENSIONERS. INSTALLED LATERAL SUPPORT. A: MU 12 1/4" BHA.
	0800	1230	4,50		BBRU	OK	OK	M: INSTALLED TENSION SUPPORT RING AND LOWERED RISER INTO RING. A: CONT MU 12 1/4" BHA AND RACKED BACK SAME.
	1230	1330	1,00		BBRU	OK	OK	M: STROKED OUT AND ADJUSTED RISER TENSIONERS. A: PU AND LD 17 1/2" BHA.
	1330	1530	2,00		BBRU	OK	OK	M: INSTALLED MUX CABLES, HOSES AND SADDLES. A: CONT LD 17 1/2" BHA.

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/10	1530	1630	1,00		BBRU	OK	OK	M: ADJUSTED RISER TENSIONERS AND CHECKED HEADING ON BOP. A: CONT LD 17 1/2" BHA.
	1630	1800	1,50		BBRU	OK	OK	M: POSITIONED VESSEL OVER WELL HEAD AND LANDED BOP AT 17:20 HRS. CLOSED CONNECTOR AND PERFORMED 30 TON OVER PULL TEST, OK. A: CONT LD 17 1/2" BHA.
	1800	2100	3,00		BBRU	OK	OK	M: STROKED OUT SLIP JOINT AND LD LANDING JOINT. RD RISER RUNNING TOOL. A: NO ACTIVITIES.
	2100	2230	1,50		BBRU	OK	OK	M: INSTALLED DIVERTER. ATTEMPTED TO PRESSURE TEST WELL HEAD CONNECTOR AND 13 3/8" CSG WHILE INSTALLING DIVERTER, NEG. PRESSURE LEAKED OFF AT 245 BAR. TESTED SURF LINES, OK. MADE NEW ATTEMPT, UNABLE TO HOLD 50 BAR. A: NO ACTIVITIES.
	2230	2400	1,50		BBOU	OK	OK	M: RD RISER RUNNING EQUIPMENT. A: NO ACTIVITIES.
00/10/11	0000	0030	,50		BBOU	OK	OK	M: CONT RD RISER RUNNING EQUIPMENT. A: NO ACTIVITIES.
	0030	0330	3,00		BBOU	OK	OK	M: SKIDDED BACK AND PARKED RISER SPIDER. PROBLEMS WITH SAME DUE TO RIG HEAVE AND ROLL. A: NO ACTIVITIES.
	0330	0500	1,50		BBOU	OK	OK	M: INSTALLED MASTER BUSHINGS. PROBLEMS WITH SAME DUE TO RIG HEAVE AND ROLL. WHILE INSTALLING MASTER BUSHINGS, PRESSURED UP WELL TO ESTABLISH LEAK OFF PRESSURE. UNABLE TO OBTAIN CONCLUSIVE VALUE. STOPPED TEST AT 100 BAR. PRESSURE LEAKED OFF TO ZERO IN 20 MIN. A: NO ACTIVITIES.
	0500	0600	1,00		BBOU	OK	OK	M: RD BAILS AND CYLINDER ON DDM. INSTALLED TOOL JOINT BREAKER. A: NO ACTIVITIES.
	0600	0830	2,50		DDOU	OK	OK	M: INSTALLED TOOL JOINT BREAKER, BAILS AND ELEVATOR. HOOKED UP IRON ROUGHNECK AND CHANGED INSERTS IN ELEVATOR. A: PU 9 7/8" BHA AND LD SAME.
	0830	1100	2,50	395,0	DDOD	FAIL	OK	M: MU RTTS PACKER AND RIH WITH SAME TO 395 M. SPOTTED 2 M3 MUD IN BOP. A: NO ACTIVITIES.
	1100	1130	,50	395,0	DDOD	FAIL	O FAIL	M: SAT RTTS PACKER AT 395 M. CLOSED UPPER ANNULAR AND ATTEMPTED TO PRESSURE UP TO 10 BAR ABOVE RTTS, NEG. A: NO ACTIVITIES.
	1130	1200	,50	398,0	DDOD	FAIL	O FAIL	M: RELEASED RTTS PACKER AND RIH TO 398 M. SAT PACKER AND CLOSED UPPER ANNULAR. ATTEMPTED TO PRESSURE UP TO 10 BAR ABOVE RTTS, NEG. A: NO ACTIVITIES.
	1200	1300	1,00	398,0	DDOD	FAIL	O FAIL	M: CLOSED LOWER ANNULAR AND MADE NEW ATTEMPT TO PRESSURE UP TO 10 BAR ABOVE RTTS, NEG. OPENED LOWER ANNULAR AND ATTEMPTED TO PRESSURE UP TO 10 BAR BELOW RTTS, NEG. A: NO ACTIVITIES.
	1300	1330	,50	398,0	DDOD	FAIL	OK	M: CHECKED FOR CORRECT LINING, OK. PRESSURED UP ABOVE RTTS IN STEPS TO 150 BAR. LEAK IN CONNECTOR OBSERVED BY ROV. BLED OFF PRESSURE. A: NO ACTIVITIES.
	1330	1400	,50	398,0	DDOD	FAIL	OK	M: CYCLED CLOSING FUNCTION ON WELL HEAD CONNECTOR AND LINED UP FOR PRESSURE TESTING 13 3/8" CASING BELOW RTTS PACKER. A: NO ACTIVITIES.
	1400	1430	,50	398,0	DDOD	FAIL	OK	M: PRESSURE TESTED 13 3/8" CASING BELOW RTTS PACKER TO 270 BAR/10 MIN, OK. A: CONT LD 9 7/8" BHA.
	1430	1500	,50	398,0	DDOD	FAIL	OK	M: FLUSHED MUD PILL OUT OF BOP AND CLOSED MPR. PRESSURED UP ABOVE RTTS. CONNECTOR STILL LEAKING, UNABLE TO HOLD 45 BAR. BLED OFF PRESSURE AND OPENED MPR. RELEASED RTTS PACKER. A: NO ACTIVITIES.
	1500	1630	1,50		DDOD	FAIL	OK	M: POOH WITH RTTS PACKER AND LD SAME.

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/11	1500	1630	1,50		DDOD	FAIL	OK	A: NO ACTIVITIES.
	1630	1800	1,50		DDOD	FAIL	OK	M: PREPARED FOR DISCONNECTING BOP. A: NO ACTIVITIES.
	1800	1830	,50		DDOD	FAIL	OK	M: DISCONNECTED BOP AND MOVED SHIP 10 M AFT. A: NO ACTIVITIES.
	1830	1900	,50		DDOD	FAIL	OK	M: RETRIEVED SEAL RING WITH ROV. FOUND SEVERE DAMAGES ON SEAL RING. A: NO ACTIVITIES.
	1900	2400	5,00		DDOD	FAIL	OK	M: CLEANED AND INSPECTED WELL HEAD WITH ROV. INSTALLED NEW VX RESILLIENT SEAL RING. A: NO ACTIVITIES.
00/10/12	0000	0200	2,00		DDOD	FAIL	OK	M: POSITIONED SHIP AND LANDED BOP AT 01:45 HRS (BOP HEADING 200 DEG). A: NO ACTIVITIES.
	0200	0300	1,00		DDOD	FAIL	OK	M: CLOSED WELL HEAD CONNECTOR. UNABLE TO OBTAIN CORRECT CLOSING FLOW. CHECKED POSITION OF CONNECTOR LOCK DOWN BOLT AND CYCLED CLOSING FUNCTION SEVERAL TIMES. CLOSED OK. A: NO ACTIVITIES.
	0300	0330	,50		DDOD	FAIL	OK	M: PERFORMED 30 TON OVER PULL TEST AND PRESSURE TESTED WELL HEAD CONNECTOR AND 13 3/8" CASING TO 270 BAR/10 MIN, OK. A: NO ACTIVITIES.
	0330	0500	1,50		DDOU	OK	OK	M: RD DIVERTER RUNNING TOOL AND PREPARED FOR PU 12 1/4" BHA. A: NO ACTIVITIES.
	0500	0600	1,00		DTDU	OK	OK	M: MU 12 1/4" BHA. A: NO ACTIVITIES.
	0600	0900	3,00	790,0	DTDU	OK	OK	M: MU AND RIH WITH 12 1/4" BHA TO 790 M. FUNCTION TESTED BOP (FUNCTION TESTED SHEAR RAM WHILE MU BHA). A: NO ACTIVITIES.
	0900	0930	,50	794,0	DTDU	OK	OK	M: FILLED PIPE AND WASHED DOWN. TAGGED CEMENT AT 794 M. A: NO ACTIVITIES.
	0930	1230	3,00	805,0	CDDU	OK	OK	M: DRILLED OUT CEMENT AND FLOAT FROM 794 M TO 805 M, 3000 LPM/110-115 BAR/20-150 RPM/1-12 TON WOB. A: NO ACTIVITIES.
	1230	1400	1,50	826,0	CDDU	OK	OK	M: DRILLED CEMENT FROM 805 M TO 826 M, 3400 LPM/145 BAR/125 RPM/2-6 TON WOB. A: NO ACTIVITIES.
	1400	1500	1,00	833,0	CDDU	OK	OK	M: DISPLACED WELL TO 1,25 SG MUD WHILE DRILLING CEMENT FROM 826 M TO 833 M. DUMPED UNINTENTIONALLY 45 M3 OF MUD TO SEA WHILE DISPLACING. A: NO ACTIVITIES.
	1500	1600	1,00	826,0	DDOU	OK	OK	M: PERFORMED KICK AND CHOKE DRILL. A: MU 8 1/2" CORE ASSY.
	1600	1700	1,00	843,0	DDRU	OK	OK	M: DRILLED THROUGH 13 3/8" SHOE AT 833 M AND CLEANED OUT RAT HOLE DOWN TO 840 M. DRILLED 3 M NEW FORMATION. A: MU 8 1/2" CORE ASSY.
	1700	1800	1,00	829,0	DDOU	OK	OK	M: CIRCULATED WELL CLEAN AND PULLED INTO 13 3/8" CASING. LINED UP AND PREPARED FOR LOT. A: MU 8 1/2" CORE ASSY.
	1800	1830	,50	829,0	EXLU	OK	OK	M: PERFORMED LOT AT 13 3/8" SHOE EQUAL TO 1,65 SG. A: NO ACTIVITIES.
	1830	2400	5,50	948,0	DDRU	OK	OK	M: DRILLED 12 1/4" HOLE FROM 843 M TO 948 M, 3000 LPM/125 BAR/150 RPM/1-5 TON WOB/3-6 KNM. CONDUCTED KICK DRILL WITH NIGHT SHIFT PRIOR TO START DRILLING. A: RACKED BACK CORE ASSY AND COMMENCED MU 8 1/2" BHA.
00/10/13	0000	0600	6,00	1055,0	DDRU	OK	OK	M: DRILLED 12 1/4" HOLE FROM 948 M TO 1055 M, 3000 LPM/125-128 BAR/150 RPM/0-3 TON WOB/2-4 KNM. A: MU 8 1/2" BHA AND RACKED BACK SAME.
	0600	0830	2,50	1095,0	DDRU	OK	OK	M: DRILLED 12 1/4" HOLE FROM 1055 M TO 1095 M, 3000 LPM/134 BAR/150

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/13	0600	0830	2,50	1095,0	DDRU	OK	OK	RPM/0-1 TON WOB/2-5 KNM. A: NO ACTIVITIES.
	0830	1000	1,50	1095,0	DCAU	OK	OK	M: CIRCULATED BTTMS UP FOR SAMPLES. A: NO ACTIVITIES.
	1000	1200	2,00	785,0	DTRU	OK	OK	M: POOH FROM 1095 M TO 785 M. TIGHT HOLE WITH MAX 15 TON OVER PULL AT 1000 M, 939 M, 900 M AND 785 M. WASHED THROUGH TIGHT SPOT AT 785 M. TOOK 10-15 TON WEIGHT WHEN 12 1/4" STAB ENTERED SHOE AND FLOAT. A: NO ACTIVITIES.
	1200	1500	3,00		DTRU	OK	OK	M: POOH WITH 12 1/4" BHA. A: NO ACTIVITIES.
	1500	1530	,50		DDOU	OK	OK	M: HELD PRE JOB MEETING AND MU 8 1/2" CORING ASSY. A: DUMPED MWD DATA.
	1530	2030	5,00	916,0	DTDU	OK	OK	M: RIH WITH 8 1/2" CORING BHA TO 916 M. TOOK 10 TON WEIGHT AT 916 M. AT 19:30 HRS DISCOVERED A TOTAL GAIN OF 23 M3 SW/FW ACCUMULATED INTO ACTIVE SYSTEM DURING THE DAY. MUD OUT OF SPEC FOR DRILLING CONDITION. CHECKED FW/SW LINES FOR LEAKS INTO ACTIVE SYSTEM. A: LD 12 1/4" BHA.
	2030	2100	,50	913,0	DDOU	OK	OK	M: PU AND LD TOP SGL. PU STAND AND CONNECTED DDM. STARTED TO WASH DOWN. CONT TO CHECK FW/SW LINES FOR LEAKS INTO ACTIVE SYSTEM. A: NO ACTIVITIES.
	2100	2130	,50	913,0	DERD	FAIL	E FAIL	M: SHUT DOWN OF HPU. INLET FROM HYDRAULIC PUMP #3 ON LOKOMEC BLOCK BROKEN OFF. 7,5 M3 OF HYDRAULIC OIL LOST TO SLOP TANK. CIRCULATED WELL WITH 900 LPM WHILE REPAIRING LEAK IN HPU. A: NO ACTIVITIES.
	2130	2300	1,50	913,0	DERD	FAIL	OK	M: REPAIRING LEAK IN HPU. CONT CIRCULATING WELL AND CHECKING FW/SW LINES FOR LEAK INTO ACTIVE SYSTEM WHILE REPAIRING HPU. ACTIVE SYSTEM STABLE SINCE 23:00 HRS. A: NO ACTIVITIES.
	2300	2400	1,00	913,0	DERD	FAIL	OK	M: TESTED HPU PUMPS AND RE-FILLED HYDRAULIC OIL INTO SYSTEM. CONT CIRCULATING WELL AND CHECKING FW/SW LINES WHILE REPAIRING HPU. A: NO ACTIVITIES.
00/10/14	0000	0100	1,00	830,0	DDOD	FAIL	OK	M: POOH FROM 913 M TO 830 M ,INSIDE 13 3/8" CASING, IN ORDER TO KEEP PUMPS OFF TO VERIFY STABLE VOLUMES IN ACTIVE SYSTEM. A: NO ACTIVITIES.
	0100	0300	2,00	830,0	DDOD	FAIL	OK	M: CIRCULATED AND CONDITIONED MUD TO OBTAIN PROPER SPEC FOR DRILLING OPERATION. A: NO ACTIVITIES.
	0300	0400	1,00	963,0	DDOU	OK	OK	M: RIH WITH 8 1/2" CORING ASSY TO 963 M (12 1/4" STAB AT 939 M). PASSED 916 M WITHOUT ANY OBSTRUCTIONS. A: NO ACTIVITIES.
	0400	0430	,50	963,0	DDOU	OK	OK	M: TOOK SUDDEN WEIGHT AT 963 M, MAX 35 TON. UNABLE TO ROTATE, MAX 38 KNM. ESTABLISHED CIRCULATION, 1950 LPM/30 BAR. PULLED STRING FREE WITH 85 TON OVER PULL. A: NO ACTIVITIES.
	0430	0500	,50	913,0	DDOU	OK	OK	M: PUMPED OUT TO 913 M WITH NO OVER PULL. A: NO ACTIVITIES.
	0500	0600	1,00	963,0	DDOU	OK	OK	M: WASHED AND REAMED DOWN FROM 913 M. MADE SEVERAL ATTEMPTS TO PASS 963 M, NEG (12 1/4" STAB AT 939 M). PREPARED FOR POOH. A: NO ACTIVITIES.
	0600	0930	3,50		DTAK	OK	OK	M: POOH WITH 8 1/2" CORING ASSY. DISCOVERED OUTER BARREL MISSING ON BHA. 19,7 M FISH LEFT IN HOLE. ALSO FOUND ONE LOOSE CONNECTION. A: NO ACTIVITIES.
	0930	1030	1,00		DTAK	OK	OK	M: LD INNER TUBE, SAFETY JOINT AND X-OVERS. A: NO ACTIVITIES.
	1030	1330	3,00		FIOD	FAIL	OK	M: MODIFIED SAFETY JOINT FOR FISHING OPERATION AND PREPARED FOR FISHING LOST CORE BARREL. CHECKED DDM FOR LOOSE PARTS AND

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/14	1030	1330	3,00		FIOD	FAIL	OK	LUBRICATED SAME. A: NO ACTIVITIES.
	1330	1500	1,50		FTFD	FAIL	OK	M: MU FISHING BHA. A: NO ACTIVITIES.
	1500	1930	4,50	930,0	FTTD	FAIL	OK	M: RIH WITH FISHING BHA TO 930 M. CHECKED MU TORQUE ON EVERY CONNECTION. CONDUCTED PRE JOB MEETING WITH DAY/NIGHT SHIFTS. A: NO ACTIVITIES.
	1930	2000	,50	930,0	FIOD	FAIL	OK	M: CONNECTED DDM AND ESTABLISHED FISHING PARAMETERS, 500 LPM/6-9 BAR/ 20 RPM/1,5 KNM. A: NO ACTIVITIES.
	2000	2200	2,00	1075,0	FTTD	FAIL	OK	M: WASHED DOWN FROM 930 M AND TAGGED TOP OF FISH AT 1075 M. A: PU 8" DC STAND FOR 12 1/4" BHA.
	2200	2230	,50	1075,0	FIJD	FAIL	OK	M: ENGAGED FISH WITH 1-2 TON WOB. PRESSURE/TORQUE INCREASED TO 22 BAR/3,5 KNM. PU AND OBSERVED 2-3 TON OVER PULL. VERIFIED CATCH AND PREPARED FOR POOH. A: NO ACTIVITIES.
	2230	2400	1,50	900,0	FTTD	FAIL	OK	M: FLOW CHECKED, OK, AND POOH WITH FISH TO 900 M. A: NO ACTIVITIES.
00/10/15	0000	0330	3,50		FTTD	FAIL	OK	M: POOH WITH LOST CORE BARREL AND LD SAME. A: PU 12 1/4" CLEAN OUT BHA.
	0330	0600	2,50	415,0	DCWK	OK	OK	M: MU AND RIH WITH 12 1/4" CLEAN OUT BHA TO 415 M. A: NO ACTIVITIES.
	0600	0830	2,50	1023,0	DCWK	OK	OK	M: RIH WITH 12 1/4" CLEAN OUT BHA FROM 415 M TO 1013 M. MINOR TIGHT SPOTS AT 963 M, 973 M, 1004 M AND 1023 M (2-5 TON WEIGHT, MAX 8 TON AT 1023 M). A: PU AND LD OUTER BARREL (FISH).
	0830	0900	,50	1095,0	DCWK	OK	OK	M: WASHED AND REAMED DOWN FROM 1023 M TO 1095 M, 3000 LPM/110 BAR/ 60-100 RPM/3-8 KNM. A: MU NEW 8 1/2" CORE ASSY.
	0900	1030	1,50	1095,0	DCWK	OK	OK	M: CIRCULATED WELL CLEAN, 3000 LPM/110 BAR/20 RPM. LOTS OF CUTTINGS ON SHAKERS AT BTTMS UP. OBSERVED MINOR AMOUNTS OF CAVINGS. FLOW CHECKED FOR 15 MIN, OK. A: NO ACTIVITIES.
	1030	1130	1,00	927,0	DCWK	OK	OK	M: POOH WET FROM 1095 M TO 956 M. WASHED AND REAMED AREA FROM 956 M TO 927 M, 2000 LPM/52 BAR/50 RPM. A: NO ACTIVITIES.
	1130	1430	3,00		DCWK	OK	OK	M: POOH WITH 12 1/4" CLEAN OUT BHA AND RACKED BACK SAME. A: NO ACTIVITIES.
	1430	1530	1,00		EECU	OK	OK	M: MU 8 1/2" CORE ASSY. A: NO ACTIVITIES.
	1530	1730	2,00	833,0	ETCU	OK	OK	M: RIH WITH 8 1/2" CORE ASSY TO 833 M. FILLED PIPE AND BROKE CIRCULATION. A: PU 12 1/4" BHA. BROKE OFF BIT AND 12 1/4" STAB.
	1730	1830	1,00	1095,0	ETCU	OK	OK	M: CONT TO RIH WITH 8 1/2" CORE ASSY FROM 833 M. WASHED DOWN LAST STAND AND TAGGED BOTTOM AT 1095 M. A: NO ACTIVITIES.
	1830	2000	1,50	1095,0	ECFU	OK	OK	M: CIRCULATED BTTMS UP, 2500 LPM/45 BAR. A: NO ACTIVITIES.
	2000	2130	1,50	1112,0	ERCU	OK	OK	M: DROPPED BALL AND CIRCULATED SAME DOWN. CUT CORE FROM 1095 M TO 1112 M. A: NO ACTIVITIES.
	2130	2300	1,50	1112,0	ECFU	OK	OK	M: CIRCULATED BTTMS UP, 1000 LPM/43 BAR. A: PU 6 1/2" DC STAND W/FISHING JAR AND LD SAME.
	2300	2400	1,00	918,0	ETCU	OK	OK	M: FLOW CHECKED, OK. POOH WITH 8 1/2" CORE ASSY TO 918 M. A: NO ACTIVITIES.
00/10/16	0000	0400	4,00		ETCU	OK	OK	M: POOH WITH 8 1/2" CORING ASSY FROM 918 M. PULLED OUT SLOWLY FROM

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/16	0000	0400	4,00		ETCU	OK	OK	350 M. A: NO ACTIVITIES.
	0400	0500	1,00		EECU	OK	OK	M: BROKE OFF BIT AND LD INNER BARREL. RECOVERED 16,8 M CORE, 98,3% RECOVERY. A: NO ACTIVITIES.
	0500	0530	,50		EECU	OK	OK	M: INSTALLED SAFETY JOINT, X-OVER AND PUP JOINT ON CORE BARREL. RACKED BACK SAME. A: NO ACTIVITIES.
	0530	0600	,50		DTPU	OK	OK	M: COMMENCED PU 8 1/2" BHA. A: NO ACTIVITIES.
	0600	0930	3,50	830,0	DTPU	OK	OK	M: MU AND RIH WITH 8 1/2" BHA TO 830 M. A: NO ACTIVITIES.
	0930	1030	1,00	1086,0	DTPU	OK	OK	M: FILLED PIPE AND CONT TO RIH TO 1086 M. A: NO ACTIVITIES.
	1030	1230	2,00	1112,0	DTDU	OK	OK	M: WASHED AND REAMED DOWN FROM 1086 M TO 1112 M, 2000 LPM/133 BAR/ 80 RPM/0 WOB. A: NO ACTIVITIES.
	1230	2400	11,50	1302,0	DDRU	OK	OK	M: DRILLED 8 1/2" HOLE FROM 1112 M TO 1302 M, 2000 LPM/136-139 BAR/ 100-150 RPM/1-8 TON WOB/3-15 KNM. A: MU CORING ASSY AND RACKED BACK SAME.
00/10/17	0000	0600	6,00	1428,0	DDRU	OK	OK	M: DRILLED 8 1/2" HOLE FROM 1302 M TO 1428 M, 2000 LPM/136-145 BAR/ 100-160 RPM/1-5 TON WOB/4-12 KNM/1,29-1,36 ECD. A: NO ACTIVITIES.
	0600	0800	2,00	1456,0	DDRU	OK	OK	M: DRILLED 8 1/2" HOLE 1428 - 1456 M, 2000 LPM/143 BAR/150 RPM/1-4 TON WOB/4-12 KNM. A: NO ACTIVITIES.
	0800	1000	2,00	1456,0	ECSU	OK	OK	M: CIRCULATED BTTMS UP FOR SAMPLES. A: NO ACTIVITIES.
	1000	1430	4,50		DTRU	OK	OK	M: POOH WITH 8 1/2" BHA AND RACKED BACK SAME. A: NO ACTIVITIES.
	1430	1800	3,50		EECU	OK	OK	M: MU 90 FT CORING ASSY. A: NO ACTIVITIES.
	1800	2400	6,00	1295,0	ETCU	OK	OK	M: RIH WITH CORING ASSY TO 1283 M. TOOK SUDDEN 8 T WEIGHT AT 1283 M. WASHED AND REAMED 1283 - 1295 M, 500-2000 LPM/40 RPM/2-6 KNM. A: NO ACTIVITIES.
00/10/18	0000	0230	2,50	1431,0	ETCU	OK	OK	M: RIH WITH CORING ASSY 1295 - 1431 M. TOOK 8-10 T SUDDEN WEIGHT AT 1431 M. MADE SEVERAL ATTEMPTS TO PASS, NEG. CHECKED AND VERIFIED PIPE TALLY, OK. A: NO ACTIVITIES.
	0230	0600	3,50	1456,0	ETCU	OK	OK	M: WASHED AND REAMED FILL 1431 - 1456 M, 2000 LPM/50-105 BAR/40-80 RPM/2-12 TON WOB/3-7 KNM. DROPPED BALL AND COMMENCED CUTTING CORE AT 1456 M. A: NO ACTIVITIES.
	0600	0800	2,00	1464,0	ERCU	OK	OK	M: CUT CORE 1456 - 1464 M, 1000 LPM/44-53 BAR/90-110 RPM/3-12 KNM. A: NO ACTIVITIES.
	0800	1330	5,50	1464,0	ETCU	OK	OK	M: CORE JAMMED OFF AT 1464 M. FLOW CHECKED, OK AND POOH WITH 8 1/2" CORING ASSY. RECOVERED 6 M CORE, 75% RECOVERY. A: RACKED 8 1/2" BHA.
	1330	1430	1,00	90,0	DTPU	OK	OK	M: MU AND RIH WITH 8 1/2" BHA. A: NO ACTIVITIES
	1430	1500	,50	90,0	DERD	FAIL	E FAIL	M: REPAIRED TOOL JOINT FINDER ON IRON ROUGHNECK. A: NO ACTIVITIES.
	1500	1630	1,50	800,0	DTDU	OK	OK	M: RIH WITH 8 1/2" BHA TO 800 M. A: PU CORING ASSY AND BROKE OUT INNER BARREL.
	1630	1700	,50	800,0	DDOU	OK	OK	M: FILLED PIPE AND TESTED MWD. A: NO ACTIVITIES.

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/18	1700	1930	2,50	1464,0	DTDU	OK	OK	M: RIH WITH 8 1/2" BHA FROM 800 M TO 1447 M. WASHED AND REAMED AREA FROM 1447 M TO 1464 M. A: NO ACTIVITIES.
	1930	2400	4,50	1548,0	DDRU	OK	OK	M: DRILLED 8 1/2" HOLE 1464 - 1548 M, 2000 LPM/145-150 BAR/150 RPM/ 1-5 TON WOB/4-8 KNM/1,35-1,39 ECD. A: NO ACTIVITIES.
00/10/19	0000	0600	6,00	1687,0	DDRU	OK	OK	M: DRILLED 8 1/2" HOLE 1548 - 1687 M, 2000 LPM/150-155 BAR/150 RPM/ 1-5 TON WOB/4-6 KNM/1,37-1,39 ECD. A: NO ACTIVITIES.
	0600	1200	6,00	1809,0	DDRU	OK	OK	M: CONT DRILL 8 1/2" HOLE 1687 - 1809 M, 2000 LPM, 150-160 BAR, 150 RPM, 2-19 KNM, 1-10 TON WOB. INCREASED MW TO 1,27 SG. A: NO ACTIVITIES.
	1200	1230	,50	1809,0	DDOU	OK	OK	M: FLOW CHECKED WELL FOR 30 MIN DUE TO 400 LTR GAIN IN TRIPTANK. WELL STATIC. A: NO ACTIVITIES.
	1230	2400	11,50	1965,0	DDRU	OK	OK	M: CONT DRILL 8 1/2" HOLE 1809 - 1965 M, 2000 LPM, 160-175 BAR, 150-170 RPM, 5-10 KNM, 3-10 TON WOB. CIRC AND REAMED WELL PRIOR TO CONNECTIONS, BOOSTED RISER DUE TO INCREASING ECD. A: NO ACTIVITIES.
00/10/20	0000	0600	6,00	2047,0	DDRU	OK	OK	M: CONT DRILL 8 1/2" HOLE 1965 - 2047 M, 2000 LPM, 160-175 BAR, 165 RPM, 6-15 KNM, 2-10 TON WOB, 1,45-1,49 SG ECD. CIRC AND REAMED WELL PRIOR TO CONNECTIONS, BOOSTED RISER. A: NO ACTIVITIES.
	0600	1830	12,50	2267,0	DDRU	OK	OK	M: CONT DRILL 8 1/2" HOLE 2047 - 2267 M, 2000 LPM, 175-200 BAR, 165 RPM, 4-18 KNM, 2-10 TON WOB, 1,45-1,52 SG ECD. CIRC AND REAMED WELL PRIOR TO CONNECTIONS, BOOSTED RISER. A: NO ACTIVITIES.
	1830	2100	2,50	2267,0	DCAU	OK	OK	M: CIRCULATED TO CLEAN HOLE, 2000 LPM, 170-180 BAR, DOWN STRING, 1700 LPM DOWN BOOSTER LINE. RESIPROCATED STRING WITH 160 RPM. REDUCED ECD FROM 1,47 SG TO 1,41 SG DURING CIRC. A: NO ACTIVITIES.
	2100	2130	,50	2267,0	DDOU	OK	OK	M: FLOW CHECKED WELL FOR 20 MIN. MEANWHILE LD DRILLING PUP. A: NO ACTIVITIES.
	2130	2400	2,50	1500,0	DTLU	OK	OK	M: POOH WITH 8 1/2" BHA FROM 2267 M TO 1500 M. PUMPED SLUG AT 2048 M. HAD 15 TON OVERPULL AT 1791 M, HOLE GENERALLY IN GOOD CONDITION. A: BROKE AND LD CORE BARREL BHA.
00/10/21	0000	0400	4,00		DTLU	OK	OK	M: CONT POOH WITH 8 1/2" BHA FROM 1500 M. RACKED BHA AND CHECKED BIT. A: NO ACTIVITIES.
	0400	0600	2,00		ELOU	OK	OK	M: HELD PREJOB MEETING AND RU FOR LOGGING OPERATIONS. MU LOGGING STRING #1 PEX/HALS/DSI/HNGS. A: MOVED MWD TOOL TO AUX RIG AND DOWNLOADED SAME.
	0600	0700	1,00		ELOU	OK	OK	M: CONT MU LOGGING STRING #1 PEX/HALS/DSI/HNGS. INSTALLED RA SOURCES. A: BROKE BIT.
	0700	1500	8,00		ELWU	OK	OK	M: RIH AND LOGGED OPEN HOLE WITH PEX/HALS/DSI/HNGS. TAGGED BOTTOM AT 2268 M DURING LOGGING. POOH AND RD TOOLSTRING. A: NO ACTIVITIES.
	1500	1730	2,50		ELOU	OK	OK	M: MU LOGGING STRING #2 ASI/GR (2VSP). A: NO ACTIVITIES.
	1730	2400	6,50		ELWU	OK	OK	M: RIH TO 2250 M AND LOGGED OPEN HOLE WITH ASI/GR (2VSP). A: LD 8 1/2" BHA.
00/10/22	0000	0430	4,50		ELWU	OK	OK	M: CONT LOG OPEN HOLE WITH ASI/GR (2VSP). SLOW PROGRESS DUE TO NOISE CAUSING EXTRA SHOTS. POOH AND RD TOOLSTRING. A: SERVICED TOPDRIVE. MU AND RACKED BHA WITH 12 1/4" BIT AND 13 3/8" CSG SCRAPER.

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/22	0430	0600	1,50		ELOU	OK	OK	M: MU LOGGING STRING #3 MDT/GR. COMMENCED RIH. A: NO ACTIVITIES.
	0600	1300	7,00		ELWU	OK	OK	M: CONT RIH WITH LOGGING STRING #3 MDT/GR. TOOK PRESSURE POINTS DOWN TO 2199 M. POOH AND LD TOOLSTRING. A: NO ACTIVITIES.
	1300	1600	3,00		ELOU	OK	OK	M: MU LOGGING STRING #4 CST/GR. A: NO ACTIVITIES.
	1600	2130	5,50		ELWU	OK	OK	M: RIH WITH LOGGING STRING #4 CST/GR TO 2254 M. TOOK SAMPLES AT SELECTED DEPTHS. POOH. A: PU STAND WITH PUMP-IN SUB. BROKE OFF SUB AND REARRANGED CMT ASSEMBLY. MU CMT HOSE AND PRESSURE TESTED SAME TO 200 BAR, 5 MIN.
	2130	2230	1,00		ELOU	OK	OK	M: LD TOOLSTRING AND RD WIRELINE EQUIPMENT. A: NO ACTIVITIES.
	2230	2330	1,00		PTWU	OK	OK	M: PREPARED RUNNING CMT STINGER. MOVED IRON ROUGHNECK AND CHANGED ELEVATOR. A: NO ACTIVITIES.
	2330	2400	,50	125,0	PTWU	OK	OK	M: PU MULE SHOE AND RIH WITH SAME ON 3 1/2" DP TO 125 M. A: NO ACTIVITIES.
00/10/23	0000	0130	1,50	446,0	PTWU	OK	OK	M: CONT RIH WITH CMT STINGER FROM 125 M TO 446 M. CHANGED TO 5 1/2" EQUIPMENT. A: NO ACTIVITIES.
	0130	0530	4,00	2266,0	PTWU	OK	OK	M: CONT RIH WITH CMT STINGER FROM 446 M TO 2266 M. A: NO ACTIVITIES.
	0530	0600	,50	2266,0	PCCU	OK	OK	M: MU PUMP-IN STAND, CIRCULATED WITH 2500 LPM, 130 BAR, 50 RPM TO CONDITION MUD PRIOR TO CEMENT JOB. MEANWHILE HELD PREJOB MEETING. A: NO ACTIVITIES.
	0600	0700	1,00	2266,0	PCCU	OK	OK	M: CONT CIRC TO CONDITION MUD, 2500 LPM, 130 BAR, 50 RPM. A: NO ACTIVITIES.
	0700	0800	1,00	2266,0	PSSU	OK	OK	M: CONNECTED CMT HOSE. PUMPED 8 M3 FW AS SPACER. MIXED AND PUMPED 12,7 M3 1,90 SG CMT SLURRY. DISPLACED SAME TO DRILL FLOOR WITH 700 LTR FW. RD CMT HOSE. A: NO ACTIVITIES.
	0800	0830	,50	2266,0	PSSU	OK	OK	M: DISPLACED CMT SLURRY WITH 18,3 M3 1,27 SG MUD TO PLACE BALANCED PLUG #1A AT 1931-2266 M. 50 RPM ON STRING. A: NO ACTIVITIES.
	0830	1100	2,50	1931,0	PCCU	OK	OK	M: POOH SLOWLY FROM 2266 M TO ESTIMATED TOC AT 1931 M. PULLED 7 OF 11 STANDS DRY. CIRCULATED BOTTOMS UP WITH 2500 LPM, 112 BAR, 50 RPM. A: NO ACTIVITIES.
	1100	1200	1,00	1921,0	PSSU	OK	OK	M: POOH TO 1921 M. MU PUMP-IN SUB AND CONNECTED CMT HOSE. PUMPED 8 M3 FW AS SPACER. MIXED AND PUMPED 12,7 M3 1,90 SG CMT SLURRY. DISPLACED SAME TO DRILL FLOOR WITH 700 LTR FW. RD CMT HOSE. A: NO ACTIVITIES.
	1200	1230	,50	1921,0	PSSU	OK	OK	M: DISPLACED CMT SLURRY WITH 14,1 M3 1,27 SG MUD TO PLACE BALANCED PLUG #1B AT 1585-1921 M. 50 RPM ON STRING. A: NO ACTIVITIES.
	1230	1430	2,00	1585,0	PCCU	OK	OK	M: POOH SLOWLY FROM 1921 M TO ESTIMATED TOC AT 1585 M. PULLED 9 OF 11 STANDS DRY. CIRCULATED BOTTOMS UP WITH 2500 LPM, 102 BAR, 50 RPM. A: NO ACTIVITIES.
	1430	1530	1,00	1575,0	PSSU	OK	OK	M: POOH TO 1575 M. MU PUMP-IN SUB AND CONNECTED CMT HOSE. PUMPED 8 M3 FW AS SPACER. MIXED AND PUMPED 12,7 M3 1,90 SG CMT SLURRY. DISPLACED SAME TO DRILL FLOOR WITH 700 LTR FW. RD CMT HOSE. A: NO ACTIVITIES.
	1530	1600	,50	1575,0	PSSU	OK	OK	M: DISPLACED CMT SLURRY WITH 10,4 M3 1,27 SG MUD TO PLACE BALANCED PLUG #1C AT 1575-1239 M. 50 RPM ON STRING. A: NO ACTIVITIES.
	1600	1800	2,00	1239,0	PCCU	OK	OK	M: POOH SLOWLY FROM 1575 M TO ESTIMATED TOC AT 1239 M. PULLED 9 OF 11 STANDS DRY. CIRCULATED BOTTOMS UP WITH 2500 LPM, 105 LPM, 50 RPM.

Well: 6710/10-001

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/23	1600	1800	2,00	1239,0	PCCU	OK	OK	A: NO ACTIVITIES.
	1800	1900	1,00	1229,0	PSSU	OK	OK	M: POOH TO 1229 M. MU PUMP-IN SUB AND CONNECTED CMT HOSE. PUMPED 8 M3 FW AS SPACER. MIXED AND PUMPED 22,7 M3 1,90 SG CMT SLURRY. DISPLACED SAME TO DRILL FLOOR WITH 700 LTR FW. RD CMT HOSE. A: NO ACTIVITIES.
	1900	1930	,50	1229,0	PSSU	OK	OK	M: DISPLACED CMT SLURRY WITH 6,2 M3 1,27 SG MUD TO PLACE BALANCED PLUG #1D AT 893-1229 M. 50 RPM ON STRING. A: NO ACTIVITIES.
	1930	2130	2,00	893,0	PCCU	OK	OK	M: POOH SLOWLY FROM 1229 M TO ESTIMATED TOC AT 893 M. PULLED ALL STANDS DRY. CIRCULATED BOTTOMS UP WITH 2500 LPM, 95 BAR, 50 RPM. A: CHECKED AND SERVICED WEAR BUSHING RUNNING TOOL.
	2130	2230	1,00	883,0	PSSU	OK	OK	M: POOH TO 883 M. MU PUMP-IN SUB AND CONNECTED CMT HOSE. PUMPED 8 M3 FW AS SPACER. MIXED AND PUMPED 14,5 M3 1,95 SG CMT SLURRY. DISPLACED SAME TO DRILL FLOOR WITH 700 LTR FW. RD CMT HOSE. A: NO ACTIVITIES.
	2230	2300	,50	883,0	PSSU	OK	OK	M: DISPLACED CMT SLURRY WITH 4,1 M3 1,27 SG MUD TO PLACE BALANCED PLUG #1E AT 706-883 M. 50 RPM ON STRING. CEMENT IN PLACE AT 22:45. A: NO ACTIVITIES.
	2300	2400	1,00	677,0	PTWU	OK	OK	M: POOH SLOWLY FROM 883 M TO 677 M. PULLED 3 OF 7 STANDS DRY. A: NO ACTIVITIES.
00/10/24	0000	0030	,50	677,0	PCCU	OK	OK	M: CIRCULATED BOTTOMS UP WITH 2500 LPM, 95 BAR, 50 RPM. A: NO ACTIVITIES.
	0030	0130	1,00	446,0	PTWU	OK	OK	M: POOH WITH CMT STINGER FROM 677 M TO 446 M. CHANGED TO 3 1/2" EQUIPMENT. A: NO ACTIVITIES.
	0130	0400	2,50		PTWU	OK	OK	M: CONT POOH WITH CEMENT STINGER FROM 677 M. WASHED THROUGH BOP/ WELLHEAD WITH 3600 LPM, 145 BAR SEVERAL TIMES. LD MULE SHOE. A: NO ACTIVITIES.
	0400	0430	,50		PTWU	OK	OK	M: CHANGED TO 5 1/2" EQUIPMENT. CLEARED RIGFLOOR. A: NO ACTIVITIES.
	0430	0600	1,50	365,0	BHRU	OK	OK	M: WHILE WAITING ON CMT, PU WEAR BUSHING RT FROM SETBACK AND RIH WITH SAME TO WELLHEAD. RELEASED WEAR BUSHING WITH 10 TON OVERPULL. A: NO ACTIVITIES.
	0600	0700	1,00		BHRU	OK	OK	M: POOH AND LD WEAR BUSHING. A: NO ACTIVITIES.
	0700	1030	3,50	677,0	PTWU	OK	OK	M: PU 13 3/8" SCRAPER BHA AND RIH WITH SAME TO 610 M. WORKED SCRAPERS IN PLANNED SETTING AREA FOR BRIDGE PLUG, 610-620 M. CONT RIH TO 677 M. A: NO ACTIVITIES.
	1030	1200	1,50	722,0	PTWU	OK	OK	M: BROKE CIRC AND WASHED DOWN FROM 677 M TO 722 M. TAGGED TOP OF CEMENT WITH 10 TON AT 722 M. A: NO ACTIVITIES.
	1200	1400	2,00		PSSU	OK	OK	M: POOH WITH 13 3/8" CSG SCRAPER BHA. MEANWHILE CLOSED BLINDSHEAR RAM AND PRESSURE TESTED CMT PLUG TO 115 BAR, 10 MIN. PUMPED/BLED BACK 260 LTR. A: NO ACTIVITIES.
	1400	1700	3,00	615,0	PSMU	OK	OK	M: MU 13 3/8" EZSV PLUG ON DP. RIH AND SET SAME AT 615 M. A: NO ACTIVITIES.
	1700	1900	2,00		PSMU	OK	OK	M: POOH WITH SETTING TOOL FOR EZSV PLUG. MEANWHILE CLOSED BSR AND PRESSURE TESTED PLUG TO 129 BAR, 10 MIN. PUMPED/BLED BACK 190 LTR. A: NO ACTIVITIES.
	1900	2330	4,50		BBOU	OK	OK	M: PREPARED TO PULL RISER/BOP. CHANGED ELEVATOR AND BAILS. REMOVED IRON ROUGHNECK AND MASTER BUSHING. FLUSHED KILL & CHOKE LINES DISPLACED RISER TO SEAWATER. A: MOVED 3 1/2" DP TO AUX RIG FOR CMT JOB.
	2330	2400	,50		BBOU	OK	OK	M: INSTALLED SKID BEAMS AND SKIDDED RISER SPIDER/GIMBLE TO WELL CENTRE.

Well: 6710/10-001

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/24	2330	2400	,50		BBOU	OK	OK	A: CONT MOVE 3 1/2" DP TO AUX RIG FOR CMT JOB.
00/10/25	0000	0200	2,00		BBOU	OK	OK	M: SECURED SPIDER/GIMBLE. LIFTED SAME AND REMOVED SKID. A: NO ACTIVITIES.
	0200	0230	,50		BBOU	OK	OK	M: PU DIVERTER RUNNING TOOL. A: NO ACTIVITIES.
	0230	0330	1,00		RMRD	FAIL	E FAIL	M: REPAIRED HYDRAULIC LEAK ON ROTATING HEAD CONNECTION FOR ELEVATOR. A: PREPARED TO RUN CMT STINGER.
	0330	0430	1,00		BBOU	OK	OK	M: INSTALLED DIVERTER RT AND PULLED DIVERTER. A: MU MULE SHOE AND START RIH WITH SAME ON 3 1/2" DP.
	0430	0600	1,50		BBOU	OK	OK	M: RELEASED DIVERTER RT AND LD SAME. A: CONT RIH WITH CMT STINGER. ROV FOLLOWED STRING DOWN.
	0600	0700	1,00		BBOU	OK	OK	M: CONT LD DIVERTER RT. A: STANDBY WITH CMT STINGER AT 330 M.
	0700	0900	2,00		BBOU	OK	OK	M: WORKED TO FREE LOCKING BOLTS ON DIVERTER. BROKE OFF AND SET BACK DIVERTER. A: NO ACTIVITIES.
	0900	0930	,50		RMRD	FAIL	E FAIL	M: LD RISER ADAPTER FOR MAINTAINANCE. A: NO ACTIVITIES.
	0930	1130	2,00		BBOU	OK	OK	M: RU RISER RUNNING TOOL. RU TO PULL BOP AND RISER. A: STANDBY WITH CMT STINGER AT 330 M.
	1130	1200	,50		RMRD	FAIL	E FAIL	M: CHANGED OUT HYDRAULIC HOSE ON ELEVATOR. A: STANDBY WITH CMT STINGER AT 330 M.
	1200	1300	1,00		BBOU	OK	OK	M: PU 75' FLOATER JNT. COLLAPSED SLIP JNT AND CLOSED SAME. PU TO 110 TON OVERPULL AND DISCONNECTED BOP AT 13:01. A: NO ACTIVITIES.
	1300	1600	3,00		BBRU	OK	OK	M: RD EQUIPMENT IN MOONPOOL AREA. A: RIH WITH CMT STINGER TO 600 M. MU CMT HOSE AND CIRCULATED BOTTOMS UP WITH 4400 LPM, 100 BAR.
	1600	1630	,50		BBRU	OK	OK	M: BROKE OFF LANDING JNT. A: TESTED CMT LINE TO 200 BAR. PUMPED 8 M3 FW AS SPACER.
	1630	2100	4,50		BBRU	OK	OK	M: LD SPACER JNT AND UPPER FLEX JNT. RD TERMINATION SPOOL AND HOSES IN MOONPOOL. A: MIXED AND PUMPED 15,5 M3 1,90 SG CMT SLURRY. DISPLACED SAME WITH 1800 LTR SW. POOH SLOWLY TO 400 M. PULLED 4 STANDS DRY. DISPLACED TOP OF WELL TO SW WITH 2500 LPM, 50 BAR. POOH WITH CMT STINGER.
	2100	2130	,50		BBRU	OK	OK	M: PULLED AND RACKED BACK SLIP JNT. A: LD MULE SHOE. ROV STARTED TO RETRIEVE TRANSPONDERS.
	2130	2230	1,00		BBRU	OK	OK	M: PULLED AND LD KEEL JOINT. A: NO ACTIVITIES. ROV ON DECK AT 22:20 TO CHANGE HYDRAULIC PUMP ON SAME.
	2230	2400	1,50		BBRU	OK	OK	M: PULLED AND LD INTERMEDIATE FLEX JNT AND TERMINATION SPOOL. A: BROKE AND LD WEAR BUSHING RT. CONT REPAIR ROV.
00/10/26	0000	0300	3,00		BBRU	OK	OK	M: PULLED RISER/BOP. A: BROKE AND LD 12 1/4" BIT AND 13 3/8" CSG SCRAPER. RACKED BACK DC. CONT REPAIR ROV.
	0300	0500	2,00		BBRU	OK	OK	M: CONT PULL RISER/BOP. BOP SECURED IN THROUGH MOONPOOL GUIDE. A: PU CSG CUTTER/MOST TOOL. MU BHA AND COMMENCED RIH WITH SAME. JUMPED ROV AT 03:45, OBSERVED BOP/PIPE.
	0500	0600	1,00		BBRU	OK	OK	M: SKIDDED BOP CARRIER AFT AND RD LATERAL SUPPORT. A: CONT RIH WITH CSG CUTTER/MOST TOOL TO 210 M. PULLED ROV AT 05:20 DUE TO HYDRAULIC LEAK.
	0600	0700	1,00		BBRU	OK	OK	M: PULLED BOP INTO OVER HULL GUIDE AND REARR. MUX CABLES. A: POSISIONED SHIP AND STABBED WELLHEAD CUTTING ASSY.
	0700	0800	1,00	370,0	PACU	OK	OK	A: CUT 20 AND 30" CSG. WITH STRING IN COMPRESSION(10 TONN). PARAMETRES : 2800 LPM/86 BAR. M: REMOVED GUIDE FUNNEL ON BOP AND SECURED SAME TO X-MAS TREE

Well: 6710/10-001

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
00/10/26	0700	0800	1,00	370,0	PACU	OK	OK	CARRIER.
	0800	0900	1,00	370,0	PACU	OK	OK	A: ATTEMPTED TO PULL FREE WELLHEAD WITH 200 TON - NO GO. CONTINUED TO CUT 20 AND 30" CSG. M: SKIDDED X-MAS TREE CARRIER TO PARKED POSITION AND SKIDDED BOP SKID FORWARD.
	0900	1000	1,00	370,0	PACU	OK	OK	A: MOTOR IN CUTTING ASSY. STALLED OUT. ATTEMPTED TO PULL FREE WELLHEAD WITH 220 TON - NO GO. CONTINUED TO CUT 20 AND 30" CSG WITH 2800 LPM / 86 BAR. MOTOR STALLED OUT. UNABLE TO RESTART CUTTING. M: LANDED BOP ON BOP SKID.
	1000	1100	1,00	370,0	PAOD	FAIL	E FAIL	A: ATTEMPTED TO CHANGE FROM PASSIVE TO ACTIVE MODE ON DRILLSTRING COMPENSATOR DUE TO LOW PRESS. ON N2 STANDBY BOTTLES. TROUBLE SHOT SAME. RESTARTED CONTROL SYSTEM FOR HOISTING. M: DISCONNECTED RISER FROM BOP.
	1100	1200	1,00	370,0	PACU	OK	OK	A: ATTEMPTED TO RESTART CUTTING OF 20 AND 30" CSG. MOTOR STALLED OUT. M: SKIDDED BOP TO GARAGE AND LAID DOWN 2 EA. 15' RISER PUP JNTS.
	1200	1400	2,00	370,0	PACU	OK	OK	A: CUT 20 AND 30" CSG. WITH 40 TON OVER PULL AND 2800 LPM / 86 BAR. M: LAID DOWN 75' RISER JNT. AND RIGGED DOWN RISER RUNNING EQUIPMENT.
	1400	1700	3,00	370,0	PACU	OK	OK	A: CONTINUED TO CUT 20 AND 30" CSG. MADE SEVERAL ATTEMPTS TO PULL FREE WELLHEAD WITH 210 TONN OVER PULL - NO GO. M: CONTINUED TO RIG DOWN RISER RUNNING EQUIPMENT.
	1700	1730	,50	370,0	PACU	OK	OK	A: PULLED FREE WELLHEAD AND SECURED CUTTING TOOL TO WELLHEAD WITH ROV. M: INSTALLED MASTER BUSHING.
	1730	2030	3,00		PACU	OK	OK	A: POOH WITH CUTTING ASSY. AND WELLHEAD. REMOVED BULLS EYE FROM 30" HOUSING AND T-BARS ON CUTTING TOOL. SECURED CUTTING TOOL TO WELLHEAD. HELD PRE JOB MEETING PRIOR TO PULL WELLHEAD THROUGH ROTARY. NO CEMENT ON HOUSING. M: LAID DOWN 750 TONS BAILS AND PREPARED TO RUN TUBULARS.
	2030	2130	1,00		PACU	OK	OK	A: PULLED CUTTING ASSY. AND WELLHEAD THROUGH ROTARY AND SECURED SAME. RELEASED CUTTING ASSY. AND LAID DOWN SAME. M: MADE UP WIRE SLING TO TOP DRIVE AND CONNECTED TO TERMINATION RINGS.
	2130	2230	1,00		PACU	OK	OK	A: INSTALLED WIRE SLING I ABB CLAMP AND LAID DOWN WELLHEAD. M: PULLED TERMINATION RINGS UP BELOW DRILL FLOOR AND SECURED SAME IN ROTARY.
	2230	2400	1,50		MNPU	OK	OK	RETRIEVED 2 OUT OF 6 TRANSPONDERS. M/A: NO ACTIVITIES.
00/10/27	0000	0300	3,00		MNPU	OK	OK	RETRIEVED 4 REMAINING TRANSPONDERS AND PERFORMED A FINAL SITE SURVEY. M/A: NO ACTIVITIES.
	0300	0600	3,00		MNMU	OK	OK	IN TRANSIT TO 6608/11-2 AT 7 KN.TOTAL DISTANCE/SAILED : 72 / 16 NM, AGREEMENT BETWEEN HEDDA/FALK PROJECT THAT 1/3 OF SAILING TIME WILL BE CHARGED HEDDA WELL. SAILING WITH REDUCED SPEED WITH KILL- AND CHOKE LINE HANGING IN MOONPOOL WILL REDUCE OVERALL OPERATION TIME FOR BOTH WELLS. M/A: NO ACTIVITIES.
	0600	0730	1,50		MNMU	OK	OK	IN TRANSIT TO 6608/11-2 AT 7 KN.TOTAL DISTANCE/SAILED : 72 / 24 NM, AGREEMENT BETWEEN HEDDA/FALK PROJECT THAT 1/3 OF SAILING TIME WILL BE CHARGED HEDDA WELL. SAILING WITH REDUCED SPEED WITH KILL- AND CHOKE LINE HANGING IN MOONPOOL WILL REDUCE OVERALL OPERATION TIME FOR BOTH WELLS. END OF OPERATION 6710/10-1 27.10.00 AT 07:30 HRS.

APPENDIX 2

Directional data, survey listing

Statoil,Exploration well 6710/10-1 Exploration,6710/10 EXPLORATION,Norway	Wellbore: 6710/10-1 Wellpath: 6710/10-1 Definitive TD@2267 Date Printed: 8-Nov-2000	BAKER HUGHES INTEQ

Units are in Metres unless otherwise specified
Coordinates are from Installation. MDs are from Rig. TVDs are from Rig.
Vertical Section is from 0,00N 0,00E on azimuth 358,65
Bottom hole location is 38,57 m from wellhead on azimuth 358,65deg
Wellpath calculation is by Minimum Curvature
Prepared by Baker Hughes INTEQ

Wellbore

Name	Created	Last Revised
6710/10-1	8-Nov-2000	8-Nov-2000

Well

Name	Government ID	Last Revised
6710/10-1		8-Nov-2000

Installation

Name	Easting	Northing	Coord System Name	North Alignment
6710/10-1 Exploration	549780,0000	7442923,0000	ED50-UTM-32N on EUROPEAN DATUM 1950 datum	Grid

Field

Name	Easting	Northing	Coord System Name	North Alignment
EXPLORATION	0,0000	0,0000	ED50-UTM-31N on EUROPEAN DATUM 1950 datum	Grid

Created By

Comments

All data is in Metres unless otherwise stated
Coordinates are from Installation MD's are from Rig and TVD's are from Rig
Vertical Section is from 0,00N 0,00E on azimuth 358,65 degrees
Bottom hole distance is 38,57 Metres on azimuth 358,65 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Baker Hughes INTEQ

Statoil,Exploration well
6710/10-1 Exploration,6710/10
EXPLORATION,Norway

Wellbore: 6710/10-1
Wellpath: 6710/10-1 Definitive
TD@2267
Date Printed: 8-Nov-2000

BAKER HUGHES
INTEQ

Wellpath Report

MD[m]	Inc[deg]	Dir[deg]	TVD[m]	North[m]	East[m]	Dogleg [deg/30m]	Vertical Section[m]
365,00	0,00	0,00	365,00	0,00N	0,00E	0,00	0,00
451,00	3,10	41,80	450,96	1,73N	1,55E	1,08	1,70
479,00	2,70	37,70	478,92	2,82N	2,46E	0,48	2,76
509,00	2,70	50,30	508,89	3,83N	3,43E	0,59	3,75
538,00	2,30	37,90	537,86	4,73N	4,32E	0,69	4,62
566,00	2,00	45,50	565,84	5,51N	5,01E	0,44	5,39
596,00	2,10	39,10	595,82	6,30N	5,73E	0,25	6,17
624,00	1,60	32,10	623,81	7,04N	6,26E	0,59	6,89
653,00	1,30	36,40	652,80	7,64N	6,67E	0,33	7,48
682,00	1,60	40,90	681,79	8,21N	7,13E	0,33	8,04
711,00	1,00	16,50	710,78	8,76N	7,47E	0,83	8,58
740,00	1,10	42,70	739,78	9,21N	7,73E	0,50	9,02
769,00	1,30	15,20	768,77	9,73N	8,01E	0,62	9,54
798,00	0,90	39,40	797,77	10,23N	8,24E	0,63	10,03
827,00	1,30	13,30	826,76	10,72N	8,46E	0,65	10,52
856,00	1,20	13,60	855,75	11,34N	8,60E	0,10	11,13
885,00	1,20	16,00	884,75	11,92N	8,76E	0,05	11,71
913,00	1,10	20,60	912,74	12,46N	8,93E	0,15	12,24
942,00	1,20	20,40	941,74	13,00N	9,14E	0,10	12,78
971,00	1,20	21,30	970,73	13,57N	9,35E	0,02	13,35
1000,00	1,10	6,60	999,72	14,13N	9,50E	0,32	13,90
1029,00	1,00	6,10	1028,72	14,66N	9,55E	0,10	14,43
1057,00	1,00	3,60	1056,71	15,14N	9,60E	0,05	14,91
1112,00	0,90	4,60	1111,71	16,05N	9,66E	0,06	15,82
1142,00	0,90	349,50	1141,70	16,52N	9,64E	0,24	16,29
1171,00	0,90	344,20	1170,70	16,96N	9,53E	0,09	16,73
1201,00	0,80	347,10	1200,70	17,39N	9,42E	0,11	17,17
1229,00	0,90	348,20	1228,69	17,80N	9,33E	0,11	17,57
1258,00	1,00	340,90	1257,69	18,26N	9,21E	0,16	18,04
1287,00	1,10	331,90	1286,68	18,75N	8,99E	0,20	18,53
1316,00	1,10	330,60	1315,68	19,23N	8,72E	0,03	19,02
1345,00	1,10	330,20	1344,67	19,72N	8,45E	0,01	19,51
1373,00	1,20	329,00	1372,67	20,20N	8,16E	0,11	20,01
1402,00	1,20	332,60	1401,66	20,73N	7,87E	0,08	20,54
1431,00	1,00	319,80	1430,66	21,20N	7,56E	0,33	21,01
1460,00	1,00	311,90	1459,65	21,56N	7,21E	0,14	21,38
1489,00	1,10	311,30	1488,65	21,91N	6,82E	0,10	21,74
1518,00	1,00	312,60	1517,64	22,27N	6,42E	0,11	22,11
1547,00	1,00	308,90	1546,64	22,60N	6,04E	0,07	22,45
1576,00	1,10	310,20	1575,63	22,93N	5,63E	0,11	22,80
1634,00	1,10	316,10	1633,62	23,70N	4,82E	0,06	23,58
1663,00	1,00	315,30	1662,62	24,07N	4,45E	0,10	23,96
1692,00	1,00	314,50	1691,61	24,43N	4,09E	0,01	24,33
1720,00	1,10	326,10	1719,61	24,83N	3,76E	0,25	24,73
1748,00	1,20	332,10	1747,60	25,31N	3,48E	0,17	25,22
1777,00	1,30	340,40	1776,60	25,89N	3,22E	0,21	25,80
1806,00	1,70	341,10	1805,59	26,60N	2,97E	0,41	26,53
1835,00	1,60	341,80	1834,57	27,40N	2,71E	0,11	27,32
1865,00	1,70	341,30	1864,56	28,22N	2,43E	0,10	28,15
1894,00	1,80	338,00	1893,55	29,05N	2,13E	0,15	28,99
1923,00	1,80	336,60	1922,53	29,89N	1,77E	0,05	29,84
1952,00	1,60	336,80	1951,52	30,68N	1,43E	0,21	30,63
1978,00	1,60	335,60	1977,51	31,34N	1,14E	0,04	31,30
2008,00	1,60	338,20	2007,50	32,11N	0,81E	0,07	32,08
2037,00	1,60	339,30	2036,49	32,87N	0,52E	0,03	32,84
2067,00	1,50	349,30	2066,48	33,64N	0,30E	0,29	33,63
2096,00	1,60	350,90	2095,47	34,41N	0,16E	0,11	34,40

All data is in Metres unless otherwise stated
Coordinates are from Installation MD's are from Rig and TVD's are from Rig
Vertical Section is from 0,00N 0,00E on azimuth 358,65 degrees
Bottom hole distance is 38,57 Metres on azimuth 358,65 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Baker Hughes INTEQ

Statoil,Exploration well
6710/10-1 Exploration,6710/10
EXPLORATION,Norway

Wellbore: 6710/10-1
Wellpath: 6710/10-1 Definitive
TD@2267
Date Printed: 8-Nov-2000

BAKER HUGHES
INTEQ

Wellpath Report

MD[m]	Inc[deg]	Dir[deg]	TVD[m]	North[m]	East[m]	Dogleg [deg/30m]	Vertical Section[m]
2125,00	1,60	348,70	2124,45	35,21N	0,02E	0,06	35,20
2153,00	1,50	344,30	2152,45	35,95N	0,16W	0,17	35,94
2183,00	1,50	341,20	2182,43	36,70N	0,39W	0,08	36,70
2212,00	1,40	342,00	2211,43	37,39N	0,62W	0,11	37,40
2240,00	1,20	345,90	2239,42	38,00N	0,80W	0,23	38,01
2257,00	1,20	350,30	2256,41	38,35N	0,87W	0,16	38,36
2267,00	1,20	350,30	2266,41	38,56N	0,91W	0,00	38,57

All data is in Metres unless otherwise stated
Coordinates are from Installation MD's are from Rig and TVD's are from Rig
Vertical Section is from 0,00N 0,00E on azimuth 358,65 degrees
Bottom hole distance is 38,57 Metres on azimuth 358,65 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Baker Hughes INTEQ

Statoil,Exploration well
6710/10-1 Exploration,6710/10
EXPLORATION,Norway

Wellbore: 6710/10-1
Wellpath: 6710/10-1 Definitive
TD@2267
Date Printed: 8-Nov-2000

BAKER HUGHES
INTEQ

Comments

MD[m]	TVD[m]	North[m]	East[m]	Comment
365,00	365,00	0,00N	0,00E	Seabed
451,00	450,96	1,73N	1,55E	7-Oct-2000 17 1/2" BHI Mwd
856,00	855,75	11,34N	8,60E	12-Oct-2000 12 1/4" BHI Mwd
1112,00	1111,71	16,05N	9,66E	16-Oct-2000 8 1/2" BHI Mwd
2267,00	2266,41	38,56N	0,91W	Extrapolated to TD

Hole Sections

Diameter [in]	Start MD[m]	Start TVD[m]	Start North[m]	Start East[m]	End MD[m]	End TVD[m]	End North[m]	Start East[m]	Wellbore
36,000	365,00	365,00	0,00N	0,00E	430,00	429,98	0,99N	0,89E	6710/10-1
17 1/2	430,00	429,98	0,99N	0,89E	840,00	839,76	11,00N	8,52E	6710/10-1
12 1/4	840,00	839,76	11,00N	8,52E	1095,00	1094,71	15,78N	9,64E	6710/10-1
8 1/2	1095,00	1094,71	15,78N	9,64E	2267,00	2266,41	38,56N	0,91W	6710/10-1

Casings

Name	Top MD[m]	Top TVD[m]	Top North[m]	Top East[m]	Shoe MD[m]	Shoe TVD[m]	Shoe North[m]	Shoe East[m]	Wellbore
30,000in Conductor	365,00	365,00	0,00N	0,00E	428,00	427,98	0,93N	0,83E	6710/10-1
13 3/8in Casing	365,00	365,00	0,00N	0,00E	834,00	833,76	10,87N	8,49E	6710/10-1

All data is in Metres unless otherwise stated
Coordinates are from Installation MD's are from Rig and TVD's are from Rig
Vertical Section is from 0,00N 0,00E on azimuth 358,65 degrees
Bottom hole distance is 38,57 Metres on azimuth 358,65 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Baker Hughes INTEQ

APPENDIX 3

Contractors list

Contractors list

Service	Company
Casing	Weatherford
Cementing	Halliburton
Coring	Security DBS
Directional drilling	Baker Hughes INTEQ
Diving	Oceaneering
Drilling contractor	Smedvig Offshore
Electric logging	Schlumberger Offshore Services NV
Helicopter	Helikopter Service A/S
Mud	Anchor/M-I Drilling Fluids
Mud logging	Geoservices
MWD	Baker Hughes INTEQ
Rig positioning	Racal Norge A/S
Site survey	Gardline Surveys
Wellhead system	ABB Vetco Gray

APPENDIX 4

Wellsite sample description

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 01 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 12 1/4 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 12.10.2000

Depth (m RT)	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.
843	100	Clst:	med dk gry - dk gry, blky - sbblky, frm - mod hd, slty - sdy, calc, tr of mafic min, occ stky	tr of cmt in samples No shows
	Tr	Sd:	clr - trnsl qtz, v f - crs, pr srt, ang - sbrnd	
846	a.a.			a.a.
849	100	Clst:	a.a.	a.a.
	Tr	Sd:	a.a.	
	Tr	Pebbles:	rnd - sbrnd, mafic quartzitic gneiss, i/p pyritic	
852	missing			
855	a.a.			cmt disappears No shows
858	a.a.			a.a.
861	a.a.			a.a.
864	100	Clst:	frm, else a.a.	a.a.
	Tr	Sd, Pebbles a.a.		
867	a.a.			a.a.
870	a.a.			a.a.
873	100	Clst:	blk splntry qtz (tuffitic mat), else a.a.	a.a.
	Tr	Sd and Pebbles, a.a.		
876	100	Clst:	occ glauc, else a.a.	a.a.
	Tr	Sd and Pebbles, a.a.		
879	a.a.			a.a.
882	100	Clst:	sl calc - calc, else a.a.	a.a.
	Tr	Sd and Pebbles, a.a.		
885	a.a.			a.a.
888	a.a.			a.a.
891	a.a.			a.a.
894	100	Clst:	no glauc, else a.a.	a.a.
	Tr	Sd, a.a.		
897	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 02 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 12 1/4 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 12.10.2000

Depth (m RT)	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.
900	missing			
903	100	Clst:	med dk gry - dk gry, brn gry , dk gn gry, blky - sbblky, frm , slty - i/p sdy, sl calc - calc, blk splntry qtz (tuffitic mat) in med dk gry - dk gry clst, occ stky dk gn gry clst v glauc	No shows
	Tr	Sd:	clr - trnsl qtz, v f - crs, pr srt, ang - sbrnd	
906	missing			
909	100	Clst:	brn gry - gry rd, dk gn gry, blky - sbblky, frm - mod hd, slty, sl calc, glauc - v glauc	a.a.
	Tr	Sd:	a.a.	
	Tr	Ls:	off wh, frm - mod hd, blky - sbblky, micr	
	Tr	Pyr		
912	a.a.			a.a.
915	a.a.			a.a.
918	100	Clst:	a.a.	a.a.
	Tr	Sd:	v f - f, else a.a.	
	Tr	Ls:	a.a.	
	Tr	Pyr		
921	a.a.			a.a.
924	100	Clst:	a.a.	a.a.
	Gd Tr	Ls:	a.a.	
	Tr	Sd:	a.a.	
	Tr	Pyr		
927	a.a.			a.a.
930	a.a.			a.a.
933	100	Clst:	dk gn gry - gn blk, med dk gry, else a.a.	a.a.
	Tr	Ls:	a.a.	
	Tr	Pyr		
936	100	Clst:	micropyr, else a.a.	a.a.
	Tr	Ls:	a.a.	
	Pyr			
939 - 951		missing		

STATOIL

WELLSITE SAMPLE DESCRIPTION				Page 03 of 27
Country: Norway		Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1				
R.T.: 36 meters		Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 12 1/4 "		Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 13.10.2000

Depth (m RT)	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.
954	100	Clst:	dk gn gry - gn blk, med dk gry, frm - mod hd, blky - sbblky, sl slty, non - sl calc, occ micropyr, micromic, glauc	No shows
	Tr	Ls:	off-wh, blky , frm - mod hd, micr, occ arg	
	Tr	Pyr		
957	100	Clst:	a.a.	a.a.
	Tr	Lst:	off-wh - yel wh, else a.a.	
	Tr	Pyr		
960 - 966		missing		
969	as for 957 sample			a.a.
972	a.a.			a.a.
975	a.a.			a.a.
978	95	Clst:	a.a.	a.a.
	5	Ls:	off-wh, else a.a.	
	Tr	Pyr		
981	a.a.			a.a.
984	100	Clst:	also brn gry, else a.a.	a.a.
	Gd Tr	Ls:	a.a.	
	Tr	Pyr		
987	a.a.			a.a.
990	a.a.			a.a.
993	missing			
996	a.a.			a.a.
999	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
	Tr	Pyr		
1002	100	Clst:	gn gry - gn blk, brn gry, else a.a.	a.a.
	Tr	Ls:	a.a.	
	Tr	Pyr		
1005	a.a.			a.a.
1008	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 04 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 12 1/4 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 13.10.2000

Depth (m RT)	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.
1011	100	Clst:	gn gry - gn blk, brn gry, frm - mod hd, blky - sbblky, sl slty, non - sl calc, occ micropyr, micromic, glauc	No shows
	Tr	Ls:	off-wh, blky , frm - mod hd, micr, occ arg	
	Tr	Pyr		
1014	a.a.			a.a.
1017	a.a.			a.a.
1020	a.a.			a.a.
1023	100	Clst:	a.a.	a.a.
	Tr	Pyr		
1026	a.a.			a.a.
1029	a.a.			a.a.
1032	a.a.			a.a.
1035	missing			
1038	100	Clst:	occ glauc, else a.a.	a.a.
1041	a.a.			a.a.
1044	a.a.			a.a.
1047	100	Clst:	brn gry - olv blk, else a.a.	a.a.
1050	a.a.			a.a.
1053	100	Clst:	a.a.	a.a.
	Tr	Ls:	off-wh, blky, frm - mod hd, micr, occ arg	
1056	a.a.			a.a.
1059	95	Clst:	a.a.	a.a.
	5	Ls:	a.a.	
1062	a.a.			a.a.
1065	a.a.			a.a.
1068	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
1071	missing			

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 05 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 12 1/4 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 13- 16.10.2000

Depth (m RT)	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.
1074	100	Clst:	brn gry - olv blk, frm - mod hd, blky - sbblky, sl slty, non - sl calc, occ micropyr, micromic, occ glauc	No shows
	Tr	Ls:	off-wh, blky , frm - mod hd, micr, occ arg	
1077	100	Clst:	dk gry - olv blk, occ brn gry, frm - mod hd, blky - sbblky, sl slty i.p., sdy i.p, non calc, occ micropyr, occ glauc, micromic	a.a
	Gd Tr	Ls:	a.a	
1083	80	Clst	a.a	a.a
	20	Sst:	clr - trnsl qtz, vf - crs, pr srt, sbang - ang, occ sbrndd, lse, occ silika cmt, tr micropyr,	
	Tr	Ls: a.a		
1086	70	Clst:	dk gry - olv blk, else a.a	a.a
	30	Sst:	a.a	
	Tr	Ls	a.a	
1089	60	Clst	a.a	a.a
	40	Sst:	a.a	
1092	60	Clst	a.a	a.a
	40	Sst:	a.a	
	Tr	Ls:	a.a	
1095	60	Clst	a.a	a.a
	40	Sst:	a.a	
	Tr	Ls:	a.a	
1095-1111,82 Cored Section				
1113	95	Clst:	lt brnsh gry, slily calc, pa gn, else a.a	a.a
	5	Sst:	a.a	
	Tr	Glauc		
1116	missing			
1119	90	Clst:	a.a	a.a
	10	Sst:	a.a	
	Tr	Pyr, glauc		
1122	70	Clst:	med gry - med dk gry, dsky bl gn, frm - mod hd, slty, glauc i.p, mic i.p, sdy i.p., non calc, blky	a.a
	30	Sst:	clr - trnsl qtz, vf - f, mod wl srt, occ crs grns, sbang - sbrndd	
	Gd Tr	Ls:	brnsh gry - lt brn gry, frm - mod hd, micr, blky	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 06 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 16.10.2000

Depth (m RT)	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.
1125	60	Clst:	med gry - med dk gry, dsky bl gn, frm - mod hd, slty, glauc i.p, mic i.p, sdy i.p., non calc, blky	No shows
	40	Sst:	clr - trnsl qtz, vf - f, occ v crs grns, mod wl srt, occ crs grns, sbang - sbrndd	
	Tr	Ls:	brnsh gry - lt brn gry, frm - mod hd, micr, blky	
	Gd Tr	Pyr		
1128	50	Clst/ sltst:	med dk gry - dk gry, sft - frm, occ mod hd, v slty, mic, non calc, occ glauc	a.a
	50	Sst:	clr - trnsl qtz, vf - med, occ crs - v crs grns, pr srt, sbrndd - sbang	
	Tr	Ls:	a.a	
	Tr	Pyr		
1131	60	Sst:	clr - trnsl qtz, vf - med, occ crs - v crs grns, pr srt, sbrndd - sbang	a.a.
	40	Clst/ sltst:	med dk gry - dk gry, sft - frm, occ mod hd, v slty, mic, non calc, occ glauc	
	Tr	Ls:	a.a	
	Tr	Pyr		
1134	60	Sst:	a.a	a.a
	40	Clst/Slst:	a.a , occ dsky bl gn clst, sft - frm, mod hd, blky	
	Tr	Ls:	grysh rd, hd, blky, micr	
1137	60	Sst:	a.a	a.a
	40	Clst/Slst:	a.a	
	Tr	Ls/Dol:	grysh rd, hd, blky, micr, dol	
1140	70	Sst:	a.a	a.a
	30	Clst/Slst:	a.a , occ dsky bl gn clst, sft - frm, mod hd, blky	
	Tr	Ls/Dol:	grysh rd, hd, blky, micr, dol	
1143	50	Sst:	clr - trnsl qtz, pred v f - f, also med, occ crs grains, lse, pr srtd sbrnd - sbang,	a.a.
	50	Sltst:	med dk gry - dk gry, sbblky blky, sft - frm, occ hd, non calc, mic, grdg Clst	
	Sl Tr	Ls:	lt brn gry, blky, hd, micr	
1146	missing			
1149	missing			
1152	50	Sst:	a.a.	a.a.
	40	Sltst:	a.a.	
	10	Clst:	lt brn, grysh gn, blky - sbblky, frm, hd , slily calc, lam	
1155	50	Sltst:	a.a.	a.a.
	40	Sst:	a.a.	
	10	Clst:	dk gry - med dk gry, occ dsky bl gn, blky - sbblky, frm - hd, non calc	
1158	60	Sst:	a.a.	a.a.
	30	Sltst:	a.a.	
	10	Clst:	gry gn, blky - sbblky, frm - hd, non calc	
	Tr	Ls:	lt brn, gry, hd, blky, micr	

WELLSITE SAMPLE DESCRIPTION			Page 07 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke	Date:	16.10.2000

Depth (m RT)	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.
1161	60	Sst:	clr - trnsl qtz, pred v f - f, also med, occ crs - v crs grains, lse, pr srtd, sbrnd - sbang, bimodal, occ rndd, glauc,	No shows
	30	Sltst:	med dk gry - dk gry, occ gry gn, sbblky blky, sft - frm, occ hd, non calc, mic, grdg Clst, glauc i/p	
	10	Clst:	gry gn, blky - sbblky, frm - hd, non calc, glauc	
	Tr	Ls:	off-wh, gry, mod hd - hd, micr	
1164	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
	Sl Tr	Ls:	a.a.	
1167	80	Sst:	clr - trnsl qtz, pred v f - f, also med, occ crs - v crs, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	a.a.
	15	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
	5	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
	Tr	Ls:	off-wh, gry, blky, mod hd - hd, micr	
1170	80	Sst:	a.a.	a.a.
	15	Clst:	also brn gry, else a.a.	
	5	Sltst:	a.a.	
	Sl Tr	Ls:	a.a.	
1173	80	Sst:	a.a.	a.a.
	10	Clst:	med dk gry - dk gry, occ gry gn, else a.a.	
	10	Sltst:	a.a.	
	Sl Tr	Ls:	a.a.	
1176	missing			
1179	a.a.			a.a.
1182	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	also brn gry, else a.a.	
	Sl Tr	Ls:	a.a.	
1185	missing			
1188	a.a.			a.a.
1191	a.a.			a.a.
1194	a.a.			a.a.
1197	90	Sst:	a.a.	a.a.
	5	Clst	a.a.	
	5	Sltst:	a.a.	

	Sl Tr	Ls:	a.a.

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 16.10.2000

Depth (m RT)	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.
1200	80	Sst	clr - trnsl qtz, pred v f - f, also med, occ crs - v crs, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	No shows
	10	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
	10	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
	Sl Tr	Ls:	off-wh, gry, blky, mod hd - hd, micr	
1203	95	Sst:	clr - trnsl qtz, pred v f - f, also med, occ crs - v crs, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	a.a.
	5	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
1206	80	Sst:	a.a.	a.a.
	15	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
	5	Sltst:	a.a.	
1209	95	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	Tr	Clst:	a.a.	
	Tr	Ls:	off-wh, gry, blky, mod hd - hd, micr	
1212	100	Sst:	a.a.	a.a.
	Tr	Sltst:	a.a.	
	Tr	Clst:	a.a.	
	Sl Tr	Ls:	a.a.	
1215	missing			
1218	90	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	5	Clst:	a.a.	
	Tr	Ls:	a.a.	
1221	90	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	5	Clst:	a.a.	
	Tr	Ls:	a.a.	
	Tr	Pyr		
1224	80	Sst:	a.a.	a.a.
	15	Clst:	a.a.	
	5	Sltst:	a.a.	
	Tr	Ls, Pyr		
1227	75	Sst:	a.a.	a.a.
	15	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls, Pyr		

1230	a.a.			

WELLSITE SAMPLE DESCRIPTION				Page 9 of 27
Country: Norway		Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1				
R.T.: 36 meters		Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "		Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 17.10.2000

Depth (m RT)	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.
1233	75	Sst:	clr - trnsl qtz, pred v f - f, also med, occ crs - v crs, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	No shows
	15	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
	10	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
	Tr	Ls, Pyr		
1236	missing			
1239	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1242	a.a.			a.a.
1245	90	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	5	Clst:	a.a.	
1248	missing			
1251	90	Sst:	v f - f, occ med, else a.a.	a.a.
	5	Sltst:	a.a.	
	5	Clst:	a.a.	
1254	a.a.			a.a.
1257	95	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	Tr	Clst	a.a.	
1260	missing			
1263	90	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	5	Clst:	a.a.	
1266	a.a.			a.a.
1269	a.a.			a.a.
1272	missing			
1275	missing			
1278	a.a.			a.a.

1281 missing

WELLSITE SAMPLE DESCRIPTION			Page 10 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 17.10.2000

Depth (m RT)	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.
1284	90	Sst:	clr - trnsl qtz, pred v f - f, also med, occ crs - v crs, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	No shows
	5	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
	5	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
1287	a.a.			a.a.
1290	90	Sst:	clr - trnsl qtz, pred v f - f, also med, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	a.a.
	10	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
1293	90	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	Tr	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
1296	missing			
1299	missing			
1302	80	Sst:	occ crs - v crs, else a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1305	70	Sst:	a.a.	a.a.
	15	Sltst:	a.a.	
	15	Clst:	a.a.	
1308	a.a.			a.a.
1311	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	off-wh, blky, sft - frm	
1314	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1317	a.a.			a.a.
1320	missing			
1323	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	

	Tr	Ls:	a.a.	

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland VI	Field: Hedda Structure
Well no: 6710/10-1		
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS	
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke	Date: 17.10.2000

Depth (m RT)	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.
1326	80	Sst:	clr - trnsl qtz, pred v f - f, also med, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	No shows
	10	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
	10	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc, mic	
	Tr	Ls:	off-wh, blky, sft - frm	
1329	a.a.			a.a.
1332	missing			
1335	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1338	a.a.			a.a.
1341	a.a.			a.a.
I				
1350	a.a.			a.a.
1353	missing			
1356	90	Sst:	a.a.	a.a.
	5	Sltst:	a.a.	
	5	Clst:	a.a.	
1359	a.a.			a.a.
I				
1362				
1365	80	Sst:	pred v f - f, occ med, else a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1368	missing			
1371	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	a.a.	
1374	missing			
1377	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 12 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 17.10.2000

Depth (m RT)	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.
1380	70	Sst:	clr - trnsl qtz, pred v f - f, also med, lse, pr srtd, bimodal, sbrnd - sbang, occ rnd, glauc	No shows
	20	Sltst:	med dk gry - dk gry, occ gry gn, sbblky - blky, sft - frm, non calc, mic, grdg Clst, glauc i/p	
	10	Clst:	med dk gry - dk gry, also dsky gn, frm - mod hd, blky - sbblky, non calc, glauc i/p, mic	
1383	75	Sst:	a.a	a.a
	20	Sltst:	a.a	
	5	Clst:	a.a	
1386	80	Sst:	v f-med, else a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	a.a	
1389	85	Sst:	a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	a.a	
1392	85	Sst:	a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	a.a	
1395	missing			
1398	90	Sst:	a.a	a.a
	10	Clst:	a.a	
1401	90	Sst:	a.a	a.a
	5	Sltst:	a.a	
	5	Clst:	a.a	
1404	90	Sst:	a.a	a.a
	5	Sltst:	a.a	
	5	Clst:	a.a	
1407	85	Sst:	clr qtz, pred v f-med, occ crs, pr srt, lse, sbrndd-rndd, mic, glauc	no shows
	10	Sltst:	med dk - dk gry, blky, sft, non-calc, mic, glauc	
	5	Clyst:	dsky gn, frm-mod hd, blky, non-calc	
	Tr	Ls:	off-wh, mod hd, micr	
1410	90	Sst:	a.a	a.a
	5	Sltst:	a.a	
	5	Clst:	a.a	
1413	85	Sst:	a.a	a.a
	10	Sltst:	a.a	
	5	Clst:	a.a	

STATOIL

WELLSITE SAMPLE DESCRIPTION				Page 13 of 27
Country: Norway	Area: Nordland VI			Field: Hedda Structure
Well no: 6710/10-1				
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS			
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke			Date: 17.10.2000

Depth (m RT)	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.
1416	80	Sst:	clr qtz, pred v f-med, occ crs, pr srt, lse, sbrndd-rndd, mic, glauc	No shows
	10	Sltst:	med dk - dk gry, blky, sft, non-calc, mic, glauc	
	10	Clst:	dsky gn, frm-mod hd, blky, non-calc	
	Tr	Ls:	lt brnsh gry, mod hd, micr	
1419	80	Sst:	a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	med dk gry - dk gry, dk gn gry, else a.a	
	Tr	Ls:	a.a	
1422	80	Sst:	a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	occ lt brn, else a.a	
	Tr	Ls:	off-wh - wh, blky, frm, micr	
	Gd Tr	Pyr		
1425	50	Sst:	a.a	a.a
	30	Sltst:	a.a	
	20	Clst:	a.a	
1426	70	Sst:	a.a (Bottoms up)	a.a
	30	Clst:	a.a	
	Tr	Lst:	a.a	
	Tr	Pyr		

Samples between 1426m and 1456m are missing due to pipe tally error

1456,0 - 1464,0m RKB Core#2. See description on separate sheets.

Depth (m RT)	Lithology (%)		Lithological Description	Remarks
1467	50	Sst:	clr - trnsl qtz, pred v f - f, occ med - crs, lse, ang - sbrndd, pr srt mic, occ glauc,	a.a.
	40	Clst:	dk gry - dk gn gry, dsky gn, slty, frm, blky, non - sl calc, occ glauc	
	10	Sltst:	med dk gry - brn gry, blky, sft, non - sl calc, mic, occ glauc	
1470	a.a.			a.a.
1473	70	Sst:	a.a.	a.a.
	20	Clst:	a.a.	
	10	Sltst:	a.a.	
1476	50	Sst:	a.a.	a.a.
	40	Clst:	a.a.	
	10	Sltst:	a.a.	
	Tr	Ls:	off-wh - yel brn, sft - frm, micr	
1479	60	Sst:	a.a.	a.a.
	30	Clst:	a.a.	
	10	Sltst:	a.a.	
	Tr	Ls:	a.a.	

WELLSITE SAMPLE DESCRIPTION			Page 14 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 18.10.2000

Depth (m RT)	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.
1482	60	Sst:	clr - trnsl qtz, pred v f - f, occ med - crs, lse, ang - sbrndd, pr srt mic, occ glauc,	No shows
	30	Clst:	dk gry - dk gn gry, dsky gn, slty, frm, blky, non - sl calc, occ glauc	
	10	Sltst:	med dk gry - brn gry, blky, sft, non - sl calc, mic, occ glauc	
	Tr	Ls:	off-wh - yel brn, sft - frm, micr	
1485	80	Sst:	a.a.	a.a.
	15	Clst:	a.a.	
	5	Sltst:	a.a.	
	Tr	Ls:	a.a.	
1488	70	Sst:	a.a.	a.a.
	20	Clst:	a.a.	
	10	Sltst:	a.a.	
	Tr	Ls:	a.a.	
1491	90	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	Tr	Ls:	a.a.	
1494	80	Sst:	a.a.	a.a.
	15	Clst:	a.a.	
	5	Sltst:	a.a.	
	Tr	Ls:	a.a.	
1497	a.a.			a.a.
1500	a.a.			a.a.
1503	90	Sst:	a.a.	a.a.
	10	Clst:	a.a.	
1506	missing			
1509	a.a.			a.a.
1512	missing			
1515	a.a.			a.a.
1518	70	Sst:	a.a.	a.a.
	20	Clst:	a.a.	
	10	Sltst:	a.a.	
1521	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 15 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 19.10.2000

Depth (m RT)	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.
1524	missing			
1527	80	Sst:	clr - trnsl qtz, pred v f - f, occ med - crs, lse, ang - sbrndd, pr srt mic, occ glauc,	No shows
	10	Clst:	dk gry - dk gn gry, dsky gn, slty, frm, blky, non - sl calc, occ glauc	
	10	Sltst:	med dk gry - brn gry, blky, sft, non - sl calc, mic, occ glauc	
1530 - 1536		missing		
1539	a.a.			a.a.
1542	a.a.			a.a.
1545	missing			
1548	80	Sst:	a.a.	a.a.
	20	Sltst:	a.a.	
1551	70	Sst:	a.a.	a.a.
	20	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	off-wh, sft - frm, micr	
1554	a.a.			a.a.
1557	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	a.a.	
1560	70	Sst:	a.a.	a.a.
	20	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	a.a.	
1563	a.a.			a.a.
1566	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls:	a.a.	
1569 - 1572		missing		
1575	a.a.			a.a.
1578	a.a.			a.a.

WELLSITE SAMPLE DESCRIPTION			Page 16 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 19.10.2000

Depth (m RT)	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.
1581	80	Sst:	clr - trnsl qtz, pred v f - f, occ med - crs, lse, ang - sbrndd, pr srt mic, occ glauc,	No shows
	10	Clst:	dk gry - dk gn gry, dsky gn, slty, frm, blky, non - sl calc, occ glauc	
	10	Sltst:	med dk gry - brn gry, blky, sft, non - sl calc, mic, occ glauc	
	Tr	Ls:	off-wh - yel brn, sft - frm, micr	
1584	a.a.			a.a.
1587	70	Sst:	a.a.	a.a.
	20	Sltst:	a.a.	
	10	Clst:	a.a.	
1590	80	Sst:	a.a.	a.a.
	20	Sltst:	a.a.	
1593	80	Sst:	a.a.	a.a.
	15	Sltst:	a.a.	
	5	Clst:	a.a.	
1596	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1599	a.a.			a.a.
1602	missing			
1605	a.a.			a.a.
1608	a.a.			a.a.
1611	a.a.			a.a.
1614	80	Sst:	a.a.	a.a.
	15	Sltst:	a.a.	
	5	Clst:	a.a.	
1617	a.a.			a.a.
1620	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	a.a.	
1623	a.a.			a.a.
1626	missing			
1629	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION		Page 17 of 27
Country: Norway	Area: Nordland VI	Field: Hedda Structure
Well no: 6710/10-1		
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS	
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke	Date: 19.10.2000

Depth (m RT)	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.
1632	80	Sst:	clr - trnsl qtz, pred v f - f, occ med - crs, lse, sbang - sbrndd, pr srt mic, occ glauc,	No shows
	10	Clst:	dk gry - dk gn gry, dsky gn, slty, frm, blky, non - sl calc, glauc	
	10	Sltst:	med dk gry - brn gry, blky, sft, non - sl calc, mic, occ glauc	
1635	80	Sst:	a.a.	a.a.
	10	Sltst:	a.a.	
	10	Clst:	v glauc i/p, else a.a.	
1638	a.a.			a.a.
1641	80	Sst:	glauc - v glauc i/p, else a.a.	a.a.
	10	Clst:	a.a.	
	10	Sltst:	glauc, else a.a.	
1644	70	Sst:	a.a.	a.a.
	20	Clst:	a.a.	
	10	Sltst:	a.a.	
1647	70	Sst:	a.a.	a.a.
	20	Clst:	also brn blk, else a.a.	
	10	Sltst:	a.a.	
1650	a.a.			a.a.
1653	missing			
1656	a.a.			a.a.
1659	80	Sst:	a.a.	a.a.
	10	Clst:	dk gry - dk gn gry, dsky gn, else a.a.	
	10	Sltst:	glauc - v glauc i/p, else a.a.	
1662	a.a.			a.a.
1665	missing			
1668	a.a.			a.a.
1671	a.a.			a.a
1674	missing			

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 18 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 19.10.2000

Depth (m RT)	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.
1677	80	Sst:	clr-trnsl qtz, vf-f, occ med, lse, sbang-sbrndd, occ rndd, pr srt, mic i.p., glauc non calc	No shows
	15	Sltst:	med dk gry-dk gry, occ sdy, mic, v glauc, frm, blky, slily calc	
	5	Clst:	dk gry-brnsh gry, blky, sft-frm, mic, slily calc	
1680	80	Sst:	pred vf, else a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	med dk grry-dk gry, hd, blky, non calc, occ glauc	
1683	85	Sst:	occ calc cmt, occ hd, v glauc, else a.a	a.a
	5	Sltst:	brnsh gry, non-slily calc, else a.a	
	10	Clst:	lt brn i.p., else a.a	
	Tr	Ls:	off wh-wh, sft-frm, blky, micr	
1686	85	Sst:	a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	a.a.	
	Tr	Ls:	a.a	
1689	80	Sst:	vf-med, occ crs, else a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	a.a	
	Tr	Ls:	a.a	
1692	85	Sst:	occ hd, occ calc cmt, else a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	pl grn, frm, glauc, non calc, blky, occ lt brn	
1695	75	Sst:	clr-trnsl qtz, vf-med, sbrndd - rndd, pr srt, lse, non calc, glauc	a.a
	10	Sltst:	med dk gry, mic, glauc, frm, blky, slily calc	
	15	Clst:	grysh brn, hd, mic, blky, non calc, slty i.p	
	Tr	Ls:	a.a	
1698	85	Sst:	pred vf, occ calc cmt, else a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	lt brn i..p., else a.a	
	Sl Tr	Ls:	a.a	
	Tr	Pyr		
1701	85	Sst:	pred f, pr-mod srt, else a.a	a.a
	10	Sltst:	a.a	
	5	Clst:	a.a	
	Tr	Ls:	a.a	
1704	80	Sst:	pr srt, else a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	lt brn i.p., occ glauc, else a.a	
	Tr	Ls:	a.a	

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway		Area: Nordland VI		Field: Hedda Structure	
Well no: 6710/10-1					
R.T.: 36 meters		Company: Statoil, Amerada Hess AS, Fortum Petroleum AS			
Hole size: 8 1/2 "		Geologist: Tor-Arild W. Johnsen/Lars Rasmussen/Anna Fawke		Date: 19.10.2000	

Depth (m RT)	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.
1707	80	Sst:	pred v f, occ med, occ calc cmt, else a.a	No shows
	5	Sltst:	a.a	
	10	Clst:	lt brn, occ med dk gry, frm, hd, blky, non calc	
	Tr	Ls:	a.a	
1710	80	Sst:	a.a	a.a
	10	Sltst:	non calc, else a.a	
	10	Clst:	occ dsky grn, glau, lt brn i.p., else a.a	
1713	85	Sst:	a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	lt brn occ med gry-med dk gry, frm-hd, blky, non calc	
	Tr	Ls:	a.a	
1716	85	Sst:	pred vf, pr-mod srt, else a.a	a.a
	5	Sltst:	a.a	
	10	Clst:	occ med dk-dk gry, else a.a	
	Tr	Ls:	a.a	
1719	70	Sst:	vf-med, occ crs, pr srt, else a.a	a.a
	10	Sltst:	med gry-dk gry., frm-hd, mic, glauc, blky, non calc	
	20	Clst:	med dk gry-dk gry, hd, blky, non calc	
	Tr	Ls:	a.a	
1722	80	Sst:	pred vf-f, occ med, pr-mod srt, else a.a	a.a
	10	Sltst:	a.a	
	10	Clst:	lt grn, frm-hd, blky, glauc, non calc	
1725	a.a.			a.a.
1728	80	Sst:	pred clr qtz, tr transluc, tr trnsl gn, f - crs, occ v crs, pr srt, sbang - rndd, tr Sst w/wh calc cmt w/abd Glauc	a.a.
	15	Clst:	gn gry - dk gn gry, also med dk gry and brn gry, frm - mod hd, blky, non calc, glauc	
	5	Sltst:	med dk gry, brn gry, frm - mod hd, mic, abd glauc, sdy, non calc	
	Tr	Ls:	off wh, lt yel brn, frm - mod hd, cryptoxln, occ off wh and sft	
	Abd tr	Glauc:	dk gn - gn blk, nod	
	Tr	Mica, Pyr		
1731 I 1740	a.a.			a.a.
1743	80	Sst:	incr tr off wh , calc cmt Sst w/abd Glauc, vf - crs, frm - fri, else a.a.	a.a.
	15	Clst:	a.a.	
	5	Sltst:	a.a.	
	Gd tr	Ls:	pred off wh, frm - sft, prob calc cmt from Sst	
	Abd tr	Glauc:	a.a.	
	Tr	Mic, Pyr		

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 20 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr		Date: 19.10.2000

Depth (m RT)	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.
1746	80	Sst:	pred clr qtz, tr transluc, tr trnsl gn, vf - crs, occ v crs, pr srt, sbang - rndd, gd tr Sst w/wh calc cmt w/abd Glauc, vf - crs, frm - fri	No shows
	15	Clst:	gn gry - dk gn gry, also med dk gry and brn gry, frm - mod hd, blky, non calc, glauc	
	5	Sltst:	med dk gry, brn gry, frm - mod hd, mic, abd glauc, sdy, non calc	
	Gd Tr	Ls:	pred off wh, frm - sft, glauc, sdy, prob calc cmt from Sst	
	Abd tr	Glauc:	dk gn - gn blk, nod	
	Tr	Mica, Pyr		
1749	Lost			
1752	a.a.			a.a.
1755	a.a.			a.a.
1758	75	Sst:	a.a.	a.a.
I	20	Clst:	a.a.	
1770	5	Sltst:	a.a.	
	Gd tr	Ls:	a.a.	
	Abd tr	Glauc:	a.a.	
	Tr	Mica, Pyr		
1773	70	Sst:	a.a.	a.a.
I	25	Clst:	a.a.	
1785	5	Sltst:	a.a.	
	Tr	Mica, Pyr		
1788	60	Sst:	a.a.	a.a.
	25	Clst:	a.a.	
	10	Sltst:	a.a.	
	5	Ls:	a.a.	
	Abd Tr	Glauc		
	Tr	Mica, Pyr		
1791	50	Sst:	a.a.	a.a.
	30	Clst:	a.a.	
	15	Sltst:	a.a.	
	5	Ls:	a.a.	
	Tr	Mica, Pyr		
1794	70	Sst:	a.a.	a.a.
I	25	Clst:	a.a.	
1797	5	Ls:	a.a.	
1800	60	Sst:	a.a.	a.a.
I	25	Clst:	a.a.	
1806	10	Sltst:	a.a.	
	5	Ls:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 21 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr		Date: 19.10.2000

Depth (m RT)	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.
1809	50	Sst:	pred clr qtz, tr transluc, tr trnsl gn, vf - crs, occ v crs, pr srt, sbang - rndd, gd tr Sst w/wh calc cmt w/abd Glauc, vf - crs, frm - fri	No shows
I				
1812	40	Clst:	gn gry - dk gn gry, also med dk gry, occ brn gry, frm - mod hd, blky, non calc, glauc	
	5	Sltst:	med dk gry, brn gry, frm - mod hd, mic, abd glauc, sdy, non calc	
	5	Ls:	pred off-wh, frm - sft, glauc, sdy, prob calc cmt from Sst	
	Abd tr	Glauc:	dk gn - gn blk, nod	
	Tr	Mica, Pyr		
1815	50	Clst:	a.a.	a.a.
I	30	Sst:	a.a.	
1821	15	Sltst:	a.a.	
	5	Ls:	a.a.	
	Abd tr	Glauc:	dk gn - gn blk, nod	
	Tr	Mica, Pyr		
1824	50	Sst:	a.a.	a.a.
	40	Clst:	a.a.	
	5	Sltst	a.a.	
	5	Ls:	a.a.	
	Tr	Glauc, Mica		
1827	50	Clst:	a.a.	a.a.
I	30	Sst:	a.a.	
1842	15	Sltst	a.a.	
	5	Ls:	a.a.	
	Tr	Glauc, Mica, Pyr		
1845	50	Sst:	a.a.	a.a.
	40	Clst:	a.a.	
	5	Sltst	a.a.	
	5	Ls:	a.a.	
	Tr	Glauc, Mica		
1848	missing			
1851	50	Clst:	a.a.	a.a.
I	40	Sst:	a.a.	
1872	5	Sltst	a.a.	
	5	Ls:	a.a.	
	Tr	Glauc, Mica, Pyr		
1872	60	Clst:	med dk gry - dk gry, occ gn gry, else a.a.	a.a.
I	30	Sst:	a.a.	
1878	5	Sltst	a.a.	
	5	Ls:	a.a.	
	Tr	Glauc, Mica, Pyr		

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland VI	Field: Hedda Structure
Well no: 6710/10-1		
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS	
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr	Date: 19.10.2000

Depth (m RT)	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.
1881	70	Clst:	med dk gry - dk gry, occ gn gry, frm - mod hd, blky, non calc, glauc, i.p. slty and sdy	No shows
I				
1884	20	Sst:	pred clr qtz, tr transluc, tr trnsl gn, v f - crs, occ v crs, pr srt, sbang - rndd,	
	10	Sltst:	med dk gry, brn gry, frm - mod hd, mic, abd glauc, sdy, non calc	
	Tr	Ls, Mica, Pyr		
1884	80	Clst:	med dk gry - dk gry, occ gn gry, frm - mod hd, blky, non calc, glauc	a.a.
I				
1893	10	Sst:	pred clr qtz, tr transluc, tr trnsl gn, v f - crs, occ v crs, pr srt, sbang - rndd,	
	10	Sltst:	med dk gry, brn gry, frm - mod hd, mic, abd glauc, sdy, non calc	
	Tr	Ls, Mica, Pyr		
1896	80	Clst:	med dk gry - dk gry, brn gry, tr gn gry, frm - mod hd, blky, i.p. v slty - grad Sltst, sli sdy i.p., glauc, micromic, sli calc	a.a.
I				
1905	10	Sst:	clr qtz, tr trnsl, tr trnsl gn, v f - crs, occ v crs, pr srt, sbang - sbrndd, tr off wh, calc cmt Sst, v glauc	
	10	Sltst:	med dk gry - brn gry, frm - mod hd, sdy, glauc - v glauc, v micromic, non - sli calc	
	Tr	Ls, Glauc, Mica, Pyr		
1908	85	Clst:	i.p. mod calc, else a.a.	a.a.
	5	Sst:	a.a.	
	5	Sltst:	a.a.	
	5	Ls:	lt olv gry, lt yel brn, frm - mod hd, cryptoxln, occ frm - sft and arg - mrly	
	Tr	Mica, Glauc, Pyr		
1911	90	Clst:	gen v slty and sdy, also v mic i.p., gen sli glauc - glauc, micropyr i.p., sli calc, else a.a.	a.a.
I				
1917	5	Sst:	a.a.	
	5	Sltst:	a.a.	
	Gd tr	Ls:	a.a.	
	Tr	Mica, Pyr, Glauc		
1920	90	Clst:	mod calc, else a.a.	a.a.
I	5	Sst:	a.a.	
1923	5	Sltst:	a.a.	
	Gd tr	Ls:	a.a.	
	Tr	Mica, Pyr, Glauc		
1926	90	Clst:	sli calc, else a.a.	a.a.
I	5	Sst:	a.a.	
1929	5	Sltst:	a.a.	
	Gd tr	Ls:	a.a.	
	Tr	Mica, Pyr, Glauc		
1932	95	Clst:	med dk gry - dk gry, brn blk - olv blk, tr gn gry, frm - mod hd, blky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, occ v mic, tr glauc, non - occ sli calc	a.a.
	5	Sst:	a.a.	
	Tr	Ls, Mica, Pyr, Glauc		

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: Nordland VI	Field: Hedda Structure
Well no: 6710/10-1		
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS	
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr	Date: 20.10.2000

Depth (m RT)	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.
1935	95	Clst:	med dk gry - dk gry, brn blk - olv blk, tr gn gry, frm - mod hd, blky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, occ v mic, tr glauc, non - occ sli calc	No shows
I				
1941	5	Sst:	clr qtz, tr trnsl, tr trnsl gn, v f - crs, occ v crs, pr srt, sbang - rndd, tr off wh, calc cmt Sst, v glauc	
	Tr	Ls:	lt olv gry, lt brn gry, sft - frm, arg - mrly	
	Tr	Mica, Pyr, Glauc		
1944	100	Clst:	pred brn blk - olv blk, non calc, else a.a.	a.a.
I	Gd tr	Sst:	a.a.	
1953	Tr	Ls, Mica, Pyr, Glauc		
1956	95	Clst:	a.a.	a.a.
	5	Sst:	a.a.	
	Gd tr	Ls:	a.a.	
	Tr	Mica, Pyr, Glauc		
1959	90	Clst:	a.a.	a.a.
I	10	Sst:	a.a.	
1962	Gd tr	Ls:	a.a.	
	Tr	Mica, Pyr, Glauc		
1965	95	Clst:	a.a.	a.a.
I	5	Sst:	a.a.	
1968	Tr	Ls, Mica, Pyr, Glauc		
1971	90	Clst:	incr brn blk, gd tr dk gn gry, sli - mod calc, else a.a.	a.a.
I	10	Sst:	clr - occ trnsl qtz, lse, med - v crs, sbrndd - rndd, gd tr off wh, calc cmt Sst w/abd glauc	
1974				
	Tr	a.a.		
1977	85	Clst:	mod calc, else a.a.	a.a.
	15	Sst:	a.a.	
	Tr	a.a.		
1980	95	Clst:	pred brn blk - olv blk, gd tr dk gn gry, incr. calc to mod - v calc	a.a.
I	5	Sst:	a.a.	
1983	Tr	a.a.		
1986	95	Clst:	calc - v calc, else a.a.	a.a.
I	5	Sst:	a.a.	
1989	Tr	a.a.		
1992	70	Clst:	a.a.	a.a.
	30	Sst:	clr qtz, tr trnsl, lse, vf - v crs, pr srt, sbang - rndd, glauc	
	Abd tr	Glauc		
	Tr	Ls, Mica, Pyr		

WELLSITE SAMPLE DESCRIPTION			Page 24 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr		Date: 20.10.2000

Depth (m RT)	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.
1995 I 1998	80	Sst:	clr qtz, tr trnsl, v f - v crs,, pr srt, sbang - rndd, lse, glauc	No shows
	20	Clst:	olv gry - olv blk, brn gry - brn blk, gd tr dk gn gry, frm - mod hd, blky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, occ v mic, tr glauc, calc - v calc	
	Tr	Ls:	lt olv gry, lt brn gry, sft - frm, arg - mrly	
	Abd tr	Glauc		
	Tr	Mica, Pyr		
2001	60	Clst:	a.a.	a.a.
	40	Sst:	a.a.	
	Gd tr	Ls:	a.a.	
	Gd tr	Glauc, Pyr		
	Tr	Mica		
2004	70	Clst:	a.a.	a.a.
	25	Sst:	a.a.	
	5	Ls:	off wh, frm - sft, glauc, sdy, prob calc cmt	
	Tr	Mica, Pyr, Glauc		
2007	80	Clst:	a.a.	a.a.
	15	Sst:	pred crs - v crs, mod srt, sbrndd - rndd, else a.a.	
	5	Ls:	also lt olv gry and lt yel gry, v arg - mrly, else a.a.	
	Tr	a.a.		
2010	a.a.			a.a.
2013	85	Clst:	a.a.	a.a.
	10	Sst:	a.a.	
	5	Ls:	a.a.	
	Tr	a.a.		
2016	a.a.			a.a.
2019	85	Clst:	v calc, else a.a.	a.a.
	10	Ls:	v arg - mrly a.a.	
	5	Sst:	a.a.	
	Tr	a.a.		
2022	60	Clst:	a.a.	a.a.
	40	Ls:	v arg - grad Mrl, pred brn gry - lt brn gry, occ off wh - yel gry, frm - sft, blky, sli slty	
	Gd tr	Sst:	a.a.	
	Tr	Mica, Pyr, Glauc		
2025	50	Clst:	a.a.	a.a.
	50	Ls:	a.a.	
	Gd tr	Sst:	a.a.	
	Tr	a.a.		

WELLSITE SAMPLE DESCRIPTION			Page 25 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr		Date: 20.10.2000

Depth (m RT)	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.
2028	60	Ls:	v arg - grad Mrl, pred brn gry - lt brn gry, occ off wh - yel gry, frm - sft, blky, sli slty	No shows
	40	Clst:	olv gry - olv blk, gd tr dk gn gry, frm - mod hd, blky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, occ v mic, tr Glauc, calc - v calc	
	Gd Tr	Sst:	clr - trnsl Qtz, v f - v crs, pr srt, sbrnd - rndd, lse, Glauc	
	Tr	Mica, Pyr, Glauc		
2031	60	Clst:	a.a.	a.a.
I	40	Ls:	a.a.	
2037	Gd Tr	Sst:	a.a.	
	Tr	Mica, Pyr, Glauc		
2040	70	Clst:	a.a.	a.a.
I	30	Ls:	a.a.	
2043	Tr	Sst, Mica, Pyr, Glauc		
2046	90	Clst:	a.a.	a.a.
	10	Ls:	a.a.	
	Tr	Sst, Mica, Pyr, Glauc		
2049	95	Clst:	a.a.	a.a.
I	5	Ls:	a.a.	
2052	Tr	Sst, Mica, Pyr, Glauc		
2055	95	Clst:	a.a.	a.a.
I	5	Ls:	a.a.	
2058	Gd Tr	Pyr		
	Tr	Sst, Mica, Glauc		
2061	100	Clst:	a.a.	a.a.
	Gd Tr	Pyr		
	Tr	Ls, Sst, Mica, Glauc		
2064	100	Clst:	a.a.	a.a.
	Tr	Ls, Sst, Pyr, Mica, Glauc		
2067	95	Clst:	a.a.	a.a.
I	5	Ls:	a.a.	
2070	Tr	Sst, Pyr, Mica, Glauc		
2073	100	Clst:	a.a.	a.a.
I	Tr	Ls, Sst, Pyr, Mica, Glauc		
2076				
2079	95	Clst:	only tr dk gn gry, else a.a.	a.a.
I	5	Ls:	a.a.	
2085	Tr	Sst, Pyr, Mica, Glauc		

WELLSITE SAMPLE DESCRIPTION			Page 26 of 27
Country: Norway	Area: Nordland VI		Field: Hedda Structure
Well no: 6710/10-1			
R.T.: 36 meters	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / Per Furmyr		Date: 20.10.2000

Depth (m RT)	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.
2088	95	Clst:	olv gry - olv blk, tr dk gn gry, frm - mod hd, blky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, tr Glauc, calc - v calc	No shows
I				
2109	5	Ls:	arg - v arg, off-wh - yel gry, lt brn gry, frm - sft,blky, sli slty	
	Tr	Sst, Mica, Pyr, Glauc		
2012	100	Clst:	olv gry - olv blk, tr dk gn gry, frm - mod hd, blky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, tr Glauc, calc - v calc	a.a.
I				
2145	Tr	Ls, Sst, Mica, Pyr, Glauc		
2045	100	Clst:	olv gry - lt olv gry, tr gn gry - dk gn gry, sft - frm , occ mod hd, blky, sl stky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, tr Glauc, calc - v calc	a.a.
I				
2187	Tr	Ls, Sst, Mica, Pyr, Glauc		
2190	95	Clst:	a.a.	a.a.
I	5	Ls:	a.a.	
2193	Tr	Sst, Mica, Pyr, Glauc		
2196	95	Clst:	a.a.	a.a.
I	5	Sst:	clr - trnsl Qtz, v f - crs, pr srt, sbrnd - rndd, lse, some calc cmt, Glauc	
2199	Tr	Ls, Mica, Pyr, Glauc		
2202	90	Clst:	a.a.	a.a.
	5	Ls:	a.a.	
	5	Sst:	a.a.	
	Tr	Mica, Pyr, Glauc		
2205	95	Clst:	a.a.	a.a.
	5	Sst:	a.a.	
	Tr	Ls, Mica, Pyr, Glauc		
2208	90	Clst:	a.a.	a.a.
	5	Ls:	a.a.	
	5	Sst:	a.a.	
	Tr	Mica, Pyr, Glauc		
2211	95	Clst:	a.a.	a.a.
	5	Sst:	a.a.	
	Tr	Ls, Mica, Pyr, Glauc		
2214	100	Clst:	a.a.	a.a.
I	Tr	Ls, Sst, Mica, Pyr, Glauc		
2250				
2253	100	Clst:	a.a.	a.a.
I	Gd tr	Ls:	a.a.	
2259	Tr	Sst, Mica, Pyr, Glauc		

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway		Area: Nordland VI	Field: Hedda Structure	
Well no: 6710/10-1				
R.T.: 36 meters		Company: Statoil, Amerada Hess AS, Fortum Petroleum AS		
Hole size: 8 1/2 "		Geologist: Lars Rasmussen / Per Furmyr	Date: 20.10.2000	

Depth (m RT)	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.
2262	100	Clst:	olv gry - lt olv gry, tr gn gry - dk gn gry, sft - frm , occ mod hd, blky, sl stky, gen slty, i.p. v slty - grad Sltst, i.p. sdy, micromic, tr Glauc, calc - v calc	No shows.
	Gd tr	Ls:	arg - v arg, off-wh - yel gry, lt brn gry, frm - sft,blky, sli slty	
	Tr	Sst:	clr - trnsl Qtz, v f - crs, pr srt, sbrnd - rndd, lse, some calc cmt and glauc	
	Tr	Glauc		
2265	100	Clst:	a.a.	a.a.
	Tr	Ls, Sst, Mica, Glauc		
2267	100	C lst:	a.a.	a.a.
	Tr	Ls, Sst, Mica, Glauc		

TD OF WELL 6710/10-1 AT 2267mMD, 2266.5mTVD

APPENDIX 5

Core descriptions

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland VI	**Field:** Hedda Structure
Well no: 6710/10-1	**Formation:** Tang Formation (Sst 2)	
Core no: 1	**Interval:** 1095 - 1112 m	**Cored:** 17 m **Rec:**16.82m (98,9%)
Core size: 4"	**Geologists:** Johnsen/Rasmussen/Fawke	**Date:** 16.10.00

Depth (mRKB)	Lithology/Grain size (cly slt vf f m c vc)	Apparent dip	Shows (Stain, Fluor, Cut)	Φ (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)
1095					**CLST:** dk gry, frm-mod hd, mic, slty, non calc	
	m			Poor	**SST:** clr-trnsl qtz, vf-med, mod-pr srt, ang-sbang, silic cmt, mod-v hd, mic, pr vis por	No shows
1096					**CLST:** lam, else a.a.	a.a.
1097					**CLST:** dk gry, slily calc, v mic, slty, occ sdy, vf-med, sbang-sbrndd in clst Mtrx, glauc	a.a.
1098					**CLST:** dk gry, lam, frm-mod hd, mic, slty, non-slily calc	a.a.
1099					**CLST:** a.a.	a.a.
1100	m				**SLTST:** med-dk gry, wl srt, frm-mod hd, non calc, micac, glauc, occ sdy vf-f, sbang-sbrndd	a.a.
1101					**CLST:** med dk gry-dk gry, frm-mod hd, micac,slty, occ glauc, non calc	a.a.
1102					**CLST:** dk gry-grysh blk, frm-mod hd, slty, micac, glauc, non calc, f-crs qtz grns in clst Mtrx, clr, sbang-ang	a.a.
1103					**CLST:** dk gry-grysh blk, frm-mod hd, micac, slily-non calc, lam	a.a.
1104	m				**SLTST:** med gry-med dk gry, wl srt, non calc, frm, glauc, mic	a.a.

cly slt vf f m c vc

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland VI		**Field:** Hedda Structure
Well no: 6710/10-1	**Formation:** Tang Fm (Sst 2)		
Core no: 1	**Interval:** 1095 - 1112 m	**Cored:** 17 m **Rec:** 16.82 m (98.9 %)	
Core size: 4"	**Geologists:** Johnsen/Rasmussen/Fawke		**Date:** 16.10.00

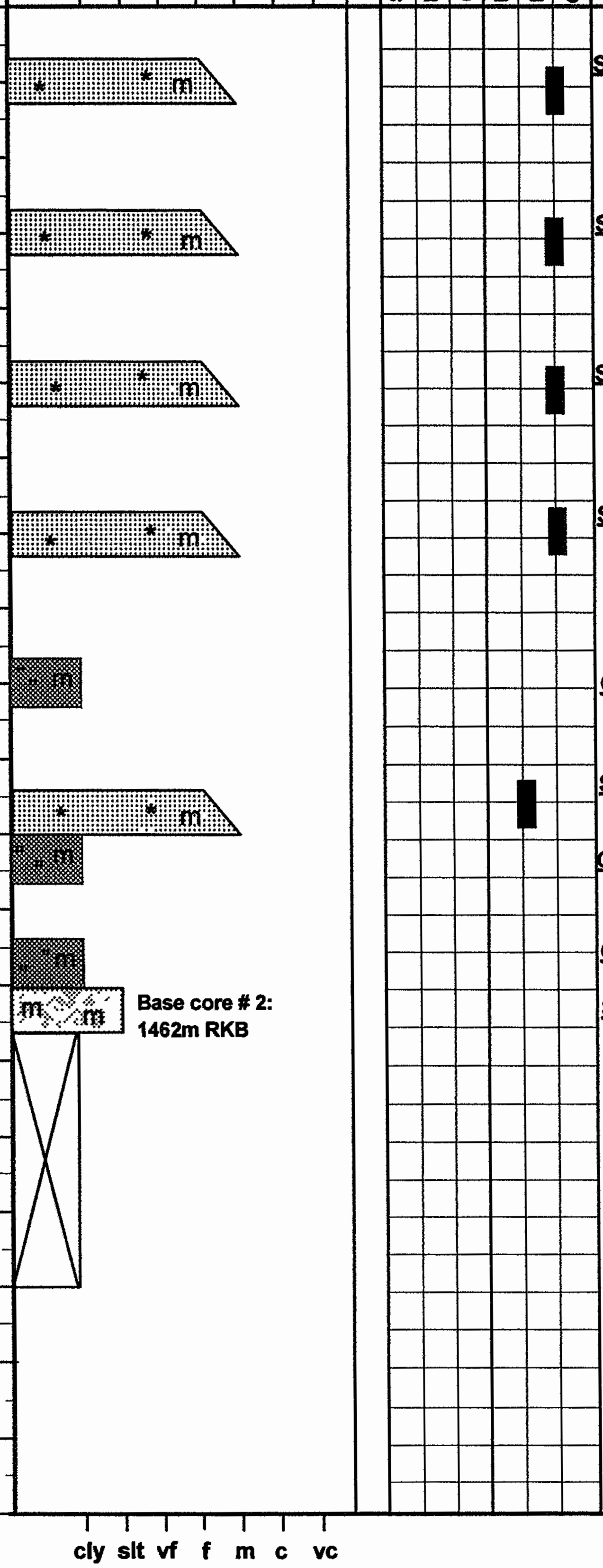
Depth (mRKB)	Lithology/Grain size (cly slt vf f m c vc)	Apparent dip	Shows (Stain / Fluor / Cut)	Φ (Poor / Fair / Good)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
1105					**CLST:** dk gry-grysh blk, frm-mod hd, micac, non calc, lam	No shows
1106				Poor	**CLST:** a.a. w/ sst lam, clr-trnsl qtz, vf-f, pr-mod srt, sbang-sbrndd, mod-v hd, mic, non calc cmt, glauc	a.a.
1107	m			Poor	**SST:** trnsl qtz, vf-f, mod srt, sbang-sbrndd, mod hd, micac, glauc,non calc, occ crs qtz grns, sbrndd-sbang, pr-mod vis por	a.a.
1108	m			Poor	**SST:** trnsl qtz, vf, mod srt, sbrndd, mod hd, micac, non calc, pr-mod vis por	a.a.
1109	m			Poor	**SST:** clr-trnsl qtz, f-med, mod srt, sbang-sbrndd, non calc, sft, micac, glauc, pr-mod vis por	a.a.
1110	m			Poor	**SST:** clr-trnsl qtz, f-crs, pr srt, ang-sbrndd, non calc, sft, micac, glauc, pr-mod vis por	a.a.
1111	m			Fair	**SST:** clr-trnsl qtz, f-med, mod srt, sbang-sbrndd, non calc, sft, micac, glauc, mod vis por	a.a.
1112	m; Base core # 1: 1111.82mRKB			Poor	**SST:** clr-trnsl qtz, vf-f, mod srt, sbang-sbrndd, frm, micac, glauc, non calc, pr vis por, clst lam, dk gry-grysh blk, sft-frm, micac, non calc, occ clr, crs qtz grns, sbang	a.a.
1113						
1114						

cly slt vf f m c vc

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** Nordland VI	**Field:** Hedda Structure
Well no: 6710/10-1	**Formation:** Tang Formation (Sst 3)	
Core no: 2	**Interval:** 1456 - 1464 m	**Cored:** 8 m **Rec:**6 m (75%)
Core size: 4"	**Geologists:** Johnsen/Rasmussen/Fawke	**Date:** 18.10.00

Depth (mRKB) | Lithology/Grain size: cly slt vf f m c vc | APPARENT DP | Shows: STAIN, FLUOR, CUT | Φ: POOR, FAIR, GOOD



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)
1456	**SST:** clr-trnsl, v lt gry qtz, f-med, mod srt, sbang-sbrndd, glauc, mic i.p., fri-lse, non calc, fr-gd vis por, v wk sil cmt i.p.	No shows
1457	**SST:** v wk calc cmt i.p., mod-wl srt, else a.a	a.a.
1458	**SST:** a.a	a.a.
1459	**SST:** pred f, wl srt, else a.a	a.a.
1460	**CLST:** grysh blk - blk, frm-hd, non calc, mic, slty	a.a.
1461	**SST:** clr-trnsl qtz,vf- f, mod-wl srt, sbrndd-rndd, glauc, mic i.p., frm, non-slily calc, pr-fr vis por **CLST:** med dk gry-dk gry, frm-hd, mic i.p., calc i.p., slty	a.a.
1462	**CLST:** brnsh gry-med dk gry, frm-sft, slty i.p., non calc **SLTST:** med dk gry-dk gry, frm-mod hd, occ hd, sdy i.p., non-slily calc, arg i.p., mic	a.a.
1463		
1464		

APPENDIX 6

Sidewall core descriptions

STATOIL

SIDEWALL CORE DESCRIPTION				Page 1 of 3
Country: Norway	Area: Nordland VI		Field: Hedda structure	
Well no: 6710/10-1	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS			
Hole size: 12 1/4 " 8 1/2	Geologist: Lars Rasmussen / P. Furmyr		R.T.: 36 meters	
Run no.: 1A	Reference log: Run 1A- PEX/HALS/DSI/HNGS		Date: 22.10.2000	

Shot no.	Depth (m RT)	Rec. (mm)	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.
60	842.0	40	Clst:	med dk gry - dk gry, sdy - v sdy w/ f - crs float Qtz Gr, frm, blky, mic, slily calc - calc	No shows
59	868.5	40	Clst:	a.a.	a.a.
58	890.0	45	Clst:	dk gry, slily sdy, slily calc, else a.a.	a.a.
57	926.0	50	Clst:	dk gry - gry blk, frm - mod hd, blky, slily mic, occ sdy, mas, non calc, tr micropyr	a.a.
56	966.0	40	Clst:	olv blk - brn blk, else a.a.	a.a.
55	994.0	40	Clst:	gry blk, frm, blky, slty, v slily sdy, slily micromic, non - slily calc	a.a.
54	1000.0	30	Clst:	brn blk, frm - mod hd, mas, non calc	a.a.
53	1009.0	40	Sltst:	brn gry - brn blk, blky, sdy, mic, carb, spks w/ off-wh arg min (kao?), slily calc,	a.a.
52	1035.0	40	Sltst:	gry blk, sdy - v sdy, frm - sft, blky, v mic, glauc, carb, non calc	a.a.
51	1064.0	35	Clst:	olv blk - brn blk, frm, blky, v slily micromic, mas, non calc	a.a.
50	1082.0	35	Clst:	med dk gry, frm, blky, micromic, non calc	a.a.
49	1090.0	55	Clst:	dk gry, else a.a.	a.a.
48	1121.5	25	Sst:	clr - trnsl Qtz, occ v lt gry, v f - med, occ crs - v crs float Qtz Gr, pr - mod srtd, ang - sbrndd, slily calc cmt, sft - frm, micromic, glauc, mafic min, pr - fair vis por	a.a.
47	1132.0	25	Sst:	clr - trnsl Qtz, also med lt gry - med gry, v f - f, slty, mod srtd, sbang - sbrnd, frm, v micromic, glauc, slily calc cmt, pr vis por	a.a.
46	1180.0	25	Sst:	clr - trnsl Qtz, also v lt gry, v f - f, occ med, mod srtd, sbang - sbrnd, frm, micromic, occ glauc, non - slily calc cmt, pr vis por	a.a.
45	1217.5	45	Clst:	med dk gry - dk gry, dk gn gry, frm, slty, micromic, occ glauc, calc	a.a.
44	1286.2	55	Clst:	med dk gry - dk gry, gn gry, brn gry, frm, micromic, slty, occ glauc in spots, calc	a.a.
43	1336.5	40	Lam Clst/Sst:		
			Clst:	a.a.	
			Sst:	clr - trnsl Qtz, also med lt gry - med gry, v f - f, mod srtd, sbang - sbrndd, frm, micromic, occ glauc, sl calc cmt, pr vis por	a.a.

STATOIL

SIDEWALL CORE DESCRIPTION				Page 2 of 3
Country: Norway	Area: Nordland VI			Field: Hedda structure
Well no: 6710/10-1	Company: Statoil, Amerada Hess AS, Fortum Petroleum AS			
Hole size: 8 1/2 "	Geologist: Lars Rasmussen / P. Furmyr			R.T.: 36 meters
Run no.: 1A	Reference log: Run 1A- PEX/HALS/DSI/HNGS			Date: 22.10.2000

Shot no.	Depth (m RT)	Rec. (mm)	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.
42	1373.0	35	Lam Clst/Sst:		
			Clst:	med gry - dk gn gry, frm, micromic, occ glauc, sl calc - calc	No shows
			Sst:	clr - trnsl Qtz, v lt gry, v f - f, occ med - crs, mod srtd, sbang - sbrndd, frm, micromic, occ glauc, sl calc cmt, pr vis por	
41	Empty				
40	1408.0	45	Sst:	a.a.	a.a.
39	1428.0	48	Clst:	dk gn gry - gn blk, dk gry, frm, slily slty, calc	a.a.
38	1469.0	53	Clst:	dk gry - gry blk, frm, slty - sdy i/p, micromic, slily calc - calc	a.a.
37	1494.0	45	Clst:	sl slty, non calc, else a.a.	a.a.
36	1498.0	40	Sst:	clr - trnsl Qtz, v lt gry, v f - f, occ med, mod srtd, sbang - sbrnd, frm, micromic, glauc, calc cmt, pr vis por	a.a.
35	1540.0	30	Sst:	slty - v f, mod wl srtd, sbrnd - rnd, calc - v calc cmtd, else a.a.	a.a.
34	1570.0	55	Clst:	med dk gry - dk gry, frm - mod hd, slty, micromic, calc - v calc	a.a.
33	1594.0	Misfire			
32	1627.2	38	Clst:	a.a.	a.a.
31	1688.0	30	Sst:	clr - trnsl Qtz, dsky gn (due to glauc), v f - med, pr - mod srtd, sbang - sbrndd, slily calc cmtd, frm, micromic, glauc - v glauc, pr vis por	a.a.
30	1749.7	35	Sst:	a.a.	a.a.
29	1778.0	33	Sst:	a.a.	a.a.
28	1816.2	26	Clst:	med dk gry - dk gry, frm - mod hd, slty - sdy i/p, micromic, glauc, calc - v calc	a.a.
27	1852.0	27	Clst:	sl slty, else a.a.	a.a.
26	1880.0	30	Clst:	a.a.	
25	1901.0	31	Clst:	glauc, calc, else a.a.	a.a.
24	1916.0	30	Clst:	occ glauc, non - sl calc, else a.a.	a.a.
23	1976.0	29	Clst:	calc - v calc, else a.a.	a.a.

STATOIL

SIDEWALL CORE DESCRIPTION					Page 3 of 3
Country: Norway		Area: Nordland VI			Field: Hedda structure
Well no: 6710/10-1		Company: Statoil, Amerada Hess AS, Fortum Petroleum AS			
Hole size: 8 1/2 "		Geologist: Lars Rasmussen / P. Furmyr			R.T.: 36 meters
Run no.: 1A		Reference log: Run 1A- PEX/HALS/DSI/HNGS			Date: 22.10.2000

Shot no.	Depth (m RT)	Rec. (mm)	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.
22	1994.0	40	Sst:	clr - trnsl Qtz, sl dsky gn (due to glauc), v f - med, occ crs - v crs, pr srtd, sbang - sbrnd, sl calc cmtd, frm, micromic, glauc, pr vis por	No shows
21	1998.0	40	Sst:	kao cmt?, micropyr, else a.a.	a.a.
20	2013.0	Lost			
19	2019.5	Lost			
18	2023.0	Lost			
17	2026.0	Lost			
16	2031.0	Lost			
15	2064.0	Lost			
14	2106	Lost			
13	2141.0	Lost			
12	2160.0	Lost			
11	2178.0	Lost			
10	2187.0	Lost			
9	2189.0	28	Clst:	brn gry - brn blk, med dk gry, frm, slty i/p, micromic, calc - v calc	a.a.
8	2199.0	Lost			
7	2199.8	Lost			
6	2201.0	Lost			
5	2211.5	Lost			
4	2229.0	25	Clst	slty - sdy i/p, sl glauc, else a.a.	a.a.
3	2244.0	Misfire			
2	2251,5	Lost			
1	2253,8	34	Sst:	clr - trnsl wh Qtz, v f - f, mod srtd, sbang - sbrnd, sft - frm, micromic, glauc, calc - v calc cmtd, pr vis por	a.a.

APPENDIX 7

List of additional available reports

List of additional available reports from well 6710/10-1

Andergauge	- Anderdrift Performance Report
Baker Hughes	- End of Well Report, MWD - Definitive Survey Report
Gardline	- Site Survey NOCS 6710/10-1 Pre-drilling Hazard Survey, August 1997
Geoservices	- Final Well Report, Mudlogging, Well 6710/10-1
Halliburton	- Cementing Services Recap
MI Norge	- Drilling Fluids Summary, well 6710/10-1 - Hedda
Racal Survey Norway	- Navigation & positioning of drill ship "West Navion" at 6710/10-1
Read Well Services	- Zero Offset VSP, Well 6710/10-1
Reslab	- Conventional Core Analysis, Well 6710/10-1 - Core Photographs, Well 6710/10-1, Core 1-2 (scale 1:4) - Thin Sections, Well 6710/10-1
RPS Consultants Ltd.	- Biostratigraphy of the interval 842 - 2267m (TD), Norwegian Sea Well 6710/10-1
Schlumberger	- Digital Well Data Reporting to NPD
Security DBS	- End of Well Report, Coring
Statoil	- Geological Prognosis / Pressure Prognosis / Drilling Programme, PL 220 - Detailed Operational Recommendations, 6710/10-1 - Samtykkesøknad West Navion, undersøkelsesbrønn 6710/10-1 PL220 - Descriptions of cores from well 6710/10-1, Tang Fm. Nordland III/IV area

APPENDIX 8

Tally error

WEST NAVION, WELL 6710/10-1

Tally error, 1112m - 1456m

NB!! Correct depths in brackets. All depths ref. RKB.

1. Had cored (1095m) - (1112m). These depths for core #1 are correct.

2. RIH with bit #7. Left out one stand while RIH, but stand was still included in tally.

3. Ran in to 1095m (1065m) and reamed to 1112m (1082m) in order to log MWD across cored interval.

4. Started (assumed) drilling ahead from 1112m (1082m). Judging from torque, rpm, spp etc. it may now be seen, that bottom was not reached before 1142m (1112m). So assumed drilling between 1112m and 1142m was in fact reaming.

5. Drilled ahead from 1142m (1112m) to core point at 1456m (1428m). POOH.

6. RIH with core barrel. This time the "missing" stand was actually included, so TD was now hit at the correct depth of (1428m). However, this "shallow" TD was now interpreted as being 30m of fill or a bridge having formed in the well.

7. Consequently, the core head was then used to "ream" this "fill" from (1428m) to (1456m).

8. Core #2 was then cut from (1456m) to (1464m), so core #2 has correct depths.

<u>Implications for recorded data:</u>

Drilling data: Interval 1112m (1082m) to 1142m (1112m) was reaming and not drilling, so these data have been removed from the database.
All depths below 1142m and down to 1456m were adjusted by 30m upwards.
Data for the 28 metres from (1428m) to (1456m) drilled with the core head, have been satisfactory recovered from time-database and ream-database and have been entered into drilling-database.

MWD: All depths from 1095m and down to 1456m adjusted one stand (approx. 30m) up.
Data for the interval drilled with the core head, partly lost. Some recovered from ream data causing data to be missing between approx. (1422m) and (1441m).

Samples:	Depths for wet, dry and mud samples have been adjusted upwards by 30m in the interval: 1142m - 1456m. Descriptions have been corrected accordingly. <u>Depths for wellsite Biostrat. samples will have to be corrected by contractor.</u> Samples between (1428m) and (1456m) have been lost, as this interval was thought to be reamed, not drilled, with the core head.
Cores:	Core #1 and core #2 have correct depths.
Wireline:	All logs have correct depths.
Formation: Tops	Top Tang Sst#3 to be corrected from 1402m to (1372m). Other preliminary formation tops correct. (However, all formation tops to be adjusted to wireline log depths).

Amerada Hess Norge AS, Fortum Petroleum AS

PARTNERS

STATOIL

WELL 6710/10-1

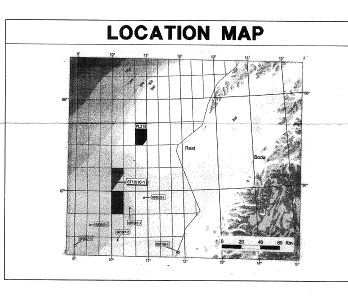
Hedda

PROSPECT STRUCTURE

COMPOSITE LOG
1 : 500

AREA:	Nordland VI
LICENCE:	PL220
COORDINATES:	67° 05' 51.73" N 10° 08' 46.78" E
KB:	36m
WATER DEPTH:	329m
TOTAL DEPTH:	2267mMD RKB/2266.4mTVD RKB
FM. AT T.D.:	Springar Formation
SPUD DATE:	5th October 2000
RIG RELEASE:	27th October 2000
WELL STATUS:	Perm. P&A, dry well
RIG:	West Navion
CONTRACTOR:	Smedvig ASA
GEOLOGIST:	L.Rasmussen, P.Furmyr, O.Beyer, T.A.Johnsen, A.Fawke
PREPARED BY:	T.A.Johnsen, A.Fawke

LOCATION MAP



CASING DATA / **LEAK OFF TESTS**

30" 428.0 mMDRKB
13 3/8" 834.0 mMDRKB 1.65 g/cc

VELOCITY SURVEY

Zero offset VSP
2250 - 1000 m: 7.5 m spacing
1000 - 768 m: 15 m spacing
A total of 190 levels were recorded

LOGS RUN — **CONTRACTOR: SCHLUMBERGER/BHI (MWD)**

MWD MPR	PEX-HALS-DSI-HNGS	ASI-GR	MDT-GR	CST-GR
Run1: 428-450m(pilot) Run2: 450-840m(pilot) Run3: 840-1095m Run4: 1095-1426m Run5: 1456-2267m	Run 1A: 2268-365m	Run 1A: 2250-768m	Run 1A: 2198.3-1128m	Run 1A: 2253.8-842m

COMMENTS:

9 7/8" pilot hole was drilled from 30" casing depth to 840 m, opened up to 17 1/2". No shallow gas was dectected in either the pilot or the final well.

12 1/4" hole was drilled from 840 m to 1095 m.
8 1/2" hole was drilled from 1095 m to TD.

Due to a tally error between 1112 m - 1456 m, MWD data were lost between 1422 m and 1441 m. Cuttings samples were lost between 1426m and 1456 m.

Two cores were cut.

LITHOLOGICAL SYMBOLS

CONGLOMERATE, SHALE, MARL, COAL LIGNITE, FORAMS, MICA, SAND SANDSTONE, LIMESTONE, TUFF, WOOD FRAGS, BURROWS, KAOLINITE, SILT SILTSTONE, CHALK, SALT GEN'L, FOSSILS GEN'L, PYRITE, CHERT, CLAY CLAYSTONE, DOLOMITE, ANHYDRITE, SHELL FRAGS, GLAUCONITE, SIDERITE

CUTTINGS/FLUORESCENCE — OIL SHOW — OIL/GAS SHOW — GAS SHOW

AZIMUTH & INCLINATION — SIDEWALL CORES: 1.5 SIDEWALL CORE; 2.8 NO RECOVERY; R 1.2 ROTARY SIDEWALL CORE — CORES: CORE NO — DST — RFT/FMT: SAMPLE — CASING SHOE / LINER — CHRONO STRAT UNCERTAINTY

MDT Run 1A Formation Pressures

FORMATION PRESSURE -MDT — WELL: 6710/10-1 — RUN: 1A — DATE: 21.10-22.10.2000

TEST #	ZONE NAME	DEPTH mMD RKB	DEPTH m TVD MSL	INIT. RES. PRESS (BAR)	RES. PRESS (BAR) HP-gauge	PORE PRESSG RAD. (g/cm3) ref.RT	HYD. PRESS BEFORE (BAR)	HYD PRESS AFTER (BAR)	PRESS GAUGE Schlum. file no.	MOB. mD/CP	TEMP °C	COMMENTS
1	Tang Sst#2	1128.0	1091.7	110.887	110.887	1.0023	144.830	144.810	Q	1	-	Good permeability.
2	Tang Sst#2	1139.5	1103.2	112.053	112.053	1.0027	146.250	146.260	Q	202	20.5	Good permeability
3	Tang Sst#2	1149.5	1113.2	113.065	113.065	1.0029	147.610	147.500	Q	82.6	22.9	Good permeability
4	Tang Sst#2	1186.0	1149.7	116.691	116.691	1.0032	152.240	152.220	Q	30.9	25.6	Good permeability
5	Tang Sst#2	1240.0	1203.7	122.066	122.066	1.0037	159.115	159.115	Q	119.7	28.3	Good permeability
6	Tang Sst#2	1322.0	1285.68	130.223	130.223	1.0044	169.560	169.490	Q	248.7	31.0	Good permeability
7	Tang Sst#3	1485.0	1448.65	146.426	146.426	1.0054	190.301	190.174	Q	59.2	33.8	Good permeability
8	Tang Sst#3	1526.0	1489.64	150.500	150.500	1.0056	195.370	195.350	Q	287.9	36.7	Good permeability
9	Tang Sst#3	1563.0	1526.63	154.158	154.158	1.0056	200.050	200.040	Q	151.1	37.6	Good permeability
10	Tang Sst#3	1691.8	1655.41	166.896	166.896	1.0058	216.470	216.420	Q	2082.5	40.4	Good permeability
11	Tang Sst#3	1774.0	1737.6	175.034	175.034	1.0060	227.010	226.910	Q	57.6	42.4	Good permeability
12	Tang Sst#3	1992.4	1955.90	196.594	196.594	1.0061	254.580	254.480	Q	89.7	46.3	Good permeability
13	Tang Sst#3	1997.8	1961.3	197.127	197.127	1.0061	255.170	255.110	Q	48.7	48.0	Good permeability
14	Springar Fm.	2197.8	2161.23	230.552	230.552	1.0696	280.370	280.260	Q	10.9	54.1	Poor permeability
15	Springar Fm.	2198.8	2162.23				280.460	280.380			56.9	Aborted due to too much drawdown - tight
16	Springar Fm.	2198.3	2161.73	230.502	230.502	1.0691	280.400	280.340	Q	6.9	59.4	Poor permeability

Conventional cores

Core no.	Cored interval (m)	Recovered interval (m)	m	%	Barrel length (m)	Jammed	Comments
1	1095 - 1112	1095 - 1111.82	16,82	98,9	20.94	Yes	Tang Formation Sst#2
2	1456 - 1464	1456 - 1462	6	75	30.08	Yes	Tang Formation Sst#3

Temperatures

Source	Run	Ref. depth m MD RT	Time since circulation (hours)	Circulation time (hours)	Measured Log Temp. °C	Extrapolated Temp. °C (Horner method)
PEX/HALS/DSI	1A	2232,0	12,8	2,5	61,61,62	74.0 °C @ 2265 m
VSP/GR	1A	2163,0	22,7	2,5	64.4,65,65	
MDT/GR	1A	2187,8	38,2	2,5	66,67,67	

FORMATION EVALUATION LOG

Well name : 6710/10-1
Client name : STATOIL

CLST: med dk gry-dk gry,blky-sbblky,frm-mod hd,slty-sndy,calc,tr mafic min,occ stky
Tr SD: clr-trnsl qtz,vf-crs,pr srt,ang-sbrnd

CLST: a/a,+blk splntry qtz,tr sd,pebbles,occ glauc

CLST: med dk gry-dk gry,brn gry,dk gn gry,blky-sbblky,frm,slty,i/p sdy,sl calc-calc,blk splntry qtz(tuffitic mat)in med dk gry-dk gry clst,occ stky dk gn gry clst,v glauc
Tr SD: clr-trnsl qtz,vf-crs,pr srt,ang-sbrnd

Tr LST: off wh,frm-mod hd,blky-sbblky,micritic

CLST: dk gn gry-gn blk,med dk gry, else a/a,micropyr

LST: off wh,blky,frm-mod hd,micritic,occ arg

CLST: gn gry-gn blk,brn gry,else a/a

CLST: gn gry-gn blk,brn gry,frm-mod hd,blky-sbblky,sl slty,non-sl calc,occ micropyr,micromic,glauc

LST: off wh,blky,frm-mod hd,micritic,occ arg

SST: clr-trnsl qtz,vf-crs,pr srt,sbang-ang,occ sbrnd,lse,occ sil cmt,tr micropyr
Core Head#1 and barrel twisted off while RIH. Fished at first attempt

Refer to Statoil Report for detailed core description

LS: brnsh gry-lt brnsh gry,frm-mod hd,micr,blky

CLST/SLST: med dk gry-dk gry,sft-frm, occ mod hd,v slty,mic,non calc, occ glauc

SST: clr-trnsl qtz,vf-med, occ crs-v crs grns,pred sort,sbrndd-sbang

SLST: med dk gry-dk gry,sft-frm,occ hd,sbblky-blky,non calc,mic,grad clst

CLST: med dk gry-dk gry,occ dsky gn,frm-mod hd,blky-sbblky,non calc,glauc,mic

SST: clr-trnsl qtz,pred vf-f,occ med,occ crs-v crs,lse,pr srt,bimod,sbrnd-sbang,occ rnd,glauc

CLST: med dk gry-dk gry,occ dsky gn,frm-mod hd,blky-sbblky,non calc,glauc,mic

SST: clr-trnsl qtz,vf-f,occ med,lse,pr srt,bimod,sbrndd-sbang,occ rnd,glauc

CLST: med dk gry-dk gry,occ dsky gn,frm-mod hd,blky-sbblky,non calc,glauc,mic

SLST: med dk-dk gry,occ grysh,gn,sbblky-blky,sft-frm,non calc,mic,grd clst,i/p glauc

LST: off wh,mod hd,mic

SST: clr qtz,pred vf-med,occ crs,pr srt,lse,sbrndd-rndd,mic,glauc

DUE TO A PIPE TALLY ERROR FROM 1112M TO 1456M (ONE STAND LEFT OUT),COREHEAD#2RR DRILLED FROM 1426M TO 1456M. ALL INVOLVED ASSUMED THIS WAS REAMING,SO NO SAMPLES WERE TAKEN.ALL DEPTHS AND DATA HAVE BEEN CORRECTED FOR THIS MISTAKE

Refer to Statoil report for detailed core description

CLST: dk gry-dk gn gry,dsky gn,slty,frm,blky,non-sl calc,occ glauc

SST: clr-trnsl qtz,pred vf-f,occ med-crs,lse,ang-sbrndd,pr srt,mic,occ glauc

SLTST: med dk gry-brn gry,blky,sft,non-sl calc,mic,occ glauc

SST: clr-trnsl qtz,pred vf-f,occ med-crs,lse,ang-sbrndd,pr srt,mic,occ glauc

SST: clr-trnsl qtz,vf-f,occ med,lse,sbang-sbrndd,occ mdd,pr srt,mic i/p,glauc,non calc

SLTST: med dk gry,brn gry,frm-mod hd,mic,abd glauc,sdy,non calc

SST: pred clr qtz,tr trnsl,tr trnsl gn,f-crs,occ v crs,pr srt,sbang-rndd,tr sst w/wh calc cmt,abd glauc

CLST: gn gry-dk gn gry,med dk gry,brn gry,frm-mod hd,blky,non calc,glauc

SST: pred clr qtz,tr trnsl,tr trnsl gn,vf-crs,occ v crs,pr srt,sbang-rndd,gd tr sst w/wh calc cmt w/abd glauc,vf-crs,frm-fria

CLST: gn gry-dk gn gry,also med dk gry,occ brn gry,frm-mod hd,blky,non calc,glauc

CLST: med dk gry-dk gry,brn gry,tr gn gry,frm-mod hd,blky,i/p v slty-grad sltst,sl sdy i/p,glauc,micromic,sl calc

CLST: med dk gry-dk gry,brn blk,olv blk,tr gn gry,frm-mod hd,blky,slty,i/p v slty grad sltst,i/p sdy,micromic,occ v mic,tr glauc,non-occ sl calc

SST: clr qtz,tr trnsl,vf-crs,pr srt,sbang-rndd,lse,glauc

LST: v arg-grad Mrl,pred brn gry-lt brn gry,occ off wh-yel gry,frm-sft,blky,sl slty

CLST: olv gry-olv blk,gd tr dk gn gry,frm-mod hd,blky,slty,i/p v slty grad sltst,i/p sdy,micromic,occ v mic,tr glauc,calc-v calc

CLST: olv gry-olv blk,tr dk gn gry,frm-mod hd,slty,i/p v slty,grad sltst,sdy,micromic,tr glauc,calc-v calc

CLST: olv gry-lt olv gry,tr gn gry-dk gn gry,sft-frm,occ mod hd,blky,sl stky,slty,i/p v slty,grad sltst,i/p sdy,micromic,tr glauc,calc-v calc

LS: off wh-yelsh gry,lt brnsh,gry,sft-frm,blky,slily slty

CLST: olv gry-lt olv gry,tr gnsh gry-dk gnsh gry,sft-frm,occ mod hd,blky,slily stky,gen slty,i/p v slty,grad Sltst,i/p sdy,micro-mic,tr Glauc,calc-v calc

CLST: olv gry-lt olv gry,tr gnsh gry-dk gnsh gry,sft-frm,occ mod hd,blky,slily stky,gen slty,i/p v slty,grad Sltst,i/p sdy,micro-mic,tr Glauc,calc-v calc

Well 6710/10-1 reached TD 2267m 18:30 hrs on 20th October 2000

PRESSURE EVALUATION LOG

A/S

Geoservices

FROM :(mt) 300 | TO :(mt) 2270 | SCALE : 1/ 5000

PEL1_N1Q.PR1

Well Name	: 6710/10-1	Location	: 10 08 46.78E 67 05 51.73N	Rig Name	: WEST NAVION
Company Name	: STATOIL	Country	: NORWAY	Rig Type	: Drill-Ship
Depth Reference	: Rotary Table	Final TD (m)	: 2267	UTM coordinate N (m)	: 7442922
Permit	: PL 220	Final TVD (m)	: 2266.4	UTM coordinate E (m)	: 549782
RT - MSL (m)	: 36	Spud Date	: 05-10-2000	Field	: Hedda
MSL - Seabed (m)	: 329	TD Reached	: 20-10-2000	Area	: Nordland VI

Generated by ALX Package

Claystone, Shale, Shale sndy, Claystone sil, Siltstone, Sand, Sandstone f, Sandstone m, Quartzite, Limestone, Limestone dol, Dolomite, Dolomite calc, Chalk, Marl, Limestone arg, Chalk, Sandstone anhy, Evaporite, Halite, Anhydrite, Gypsum, Conglomerate, Breccia, Bitumen, Coal, Basalt, Calcite, Dolomite, Fossils, Algae, Forams, Corals, Sponges, Wood silicified, Plant fragments, unbroken Shell, broken Shells, Fissures, Karst, normal microfau, reverse microfa, disturbed fmt, serial hd grnd, sub hard grnd, X bedding: plan, Deviation surve, Mud loss, Mud gain, Shoe, Core, Sidewall Core