

**Final Well Report
Well 7227/11-1S and 7227/11-1A
Uranus, PL 202**

EPDS-7227/11-1S-017

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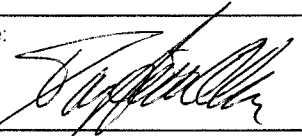
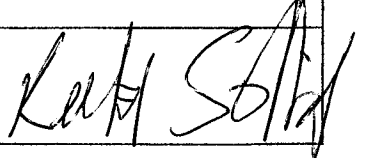
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1 Summary

The well 7227/11-1S was designed as a deviated well to avoid a salt-diapir, with one target defined at top Carnian sandstone of Triassic age. As Permian strata appeared where the Triassic sequence was prognosed, the side track 7227/11-1A was drilled in order to hit the target. No Triassic strata were found and both wells were permanently plugged and abandoned.

1.1 Well data record

Well name:	NO 7227/11-1S, NO 7227/11-1A		
Type of well:	Exploration, wildcat		
Prospect:	Uranus		
Area:	Barents Sea		
Country:	Norway		
Licence:	PL 202		
Licensees:	Statoil ASA (Operator)	70 %	
	Norsk Hydro Produksjon AS	30 %	
Drilling unit:	Eirik Raude		
Type:	Semi Submersible		
Water depth:	236.5 mMSL		
RKB-MSL:	25 m		
TD 7227/11-1S:	2294 mTVD / 2590 mMD		
TD 7227/11-1A:	3197.6 mTVD / 3446 mMD		
On contract:	11.01.2006		
Off contract:	24.03.2006		
Formation at TD:	Permian		
Surface co-ordinates:	Latitude	72° 14' 22.18"	
	Longitude	27° 22' 14.89"	
Datum/spheroid:	ED50, INT.1924		
UTM:	UTM zone 35, C.M 27° E		
	8 015 904 m N		
	512 625 m E		
Seismic reference:	Seismic survey PSTM ST0309 Time, lful 16		
	Inline 3419, Crossline 2990		
	Seismic survey PSDM ST0309 Depth		
	Inline 3419, Crossline 2990		

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

1.2 Well objectives

The objective for the wells 7227/11-1S and 7227/11-1A was to prove hydrocarbons in the Upper Triassic Carnian reservoir sandstone in the Ingøydjupet Group.

1.3 Result of the wells

The well 7227/11-1S was spudded in a water depth of 236.5 mMSL and drilled to a total depth of 2590 mMD/2294 mTVD. No shallow gas was expected, but since this was a new area a 9 7/8" pilot hole was drilled. No shallow gas was observed by the ROV.

The observed stratigraphy was somewhat different from the prognosis. The Cretaceous sequence was thinner than expected and the Jurassic sequence came in shallower because of this. Where Triassic strata were prognosed, Permian strata were encountered. Consequently the Triassic targets were not found. For details, see Figure 4-4.

The sidetrack 7227/11-1A was drilled in order to reach the Triassic targets. The Permian strata encountered in 7227/11-1S were believed to be large allochthonous blocks intruded into younger strata via halokinesis, and the Triassic targets were prognosed to be located underneath these Permian strata. The well 7227/11-1A was kicked off below the 13 3/8" casing shoe at 1160 mMD and drilled to a total depth of 3446 mMD/3197.6 mTVD RKB, giving the same result as 7227/11-1S with TD set in evaporites of Permian age (Figure 4-5).

No hydrocarbons were proven in the wells 7227/11-1S and 7227/11-1A.

1.4 Drilling summary

1.4.1 Casing

Table 1-1 Casing programme summary.

Casing	Shoe depth (mMD / mTVD RKB)	LOT / FIT (Equivalent mud weight)
Well 7227/11-1S		
30"	310 / 310	
20"	715 / 715	FIT 2.07 sg at 728 mMD RKB
13 3/8"	1094 / 1076	FIT 1.80 sg at 1103 mMD RKB
Well 7227/11-1A - sidetrack from 7227/11-1S at 1160 mMD.		
9 5/8"	2289 / 2232	FIT 1.80 sg at 2292 mMD RKB

1.4.2 Drilling fluids

Table 1-2 Drilling fluids summary.

Section	Section (mMD RKB)	Maximum mud weight (g/cm ³)	Mud type
Well 7227/11-1S			
36"	261.5 - 320	1.03	Seawater
9 7/8" pilot hole & 26"	320 - 725	1.03	Seawater / hi-vis pills
17 1/2"	725 - 1100	1.2 – 1.3	Sildril
	1100	1.45	Sildril. The mud weight was increased at TD to support collapsing walls.
12 1/4"	1100 - 1574	1.50	Sildril. The mud became very viscous when heated – Flair unit unable to function in lower section.
	1574 - 2590	1.50	KCl saturated for drilling Halite.
Well 7227/11-1A - sidetrack from 7227/11-1S at 1160 mMD.			
	1093 - 2290	1.5	KCL/Polymer.
	2290 - 3443	1.5	KCL/Polymer/NaCl saturated

1.5 Data acquisition summary

See Figure 1-2 and 1-3.

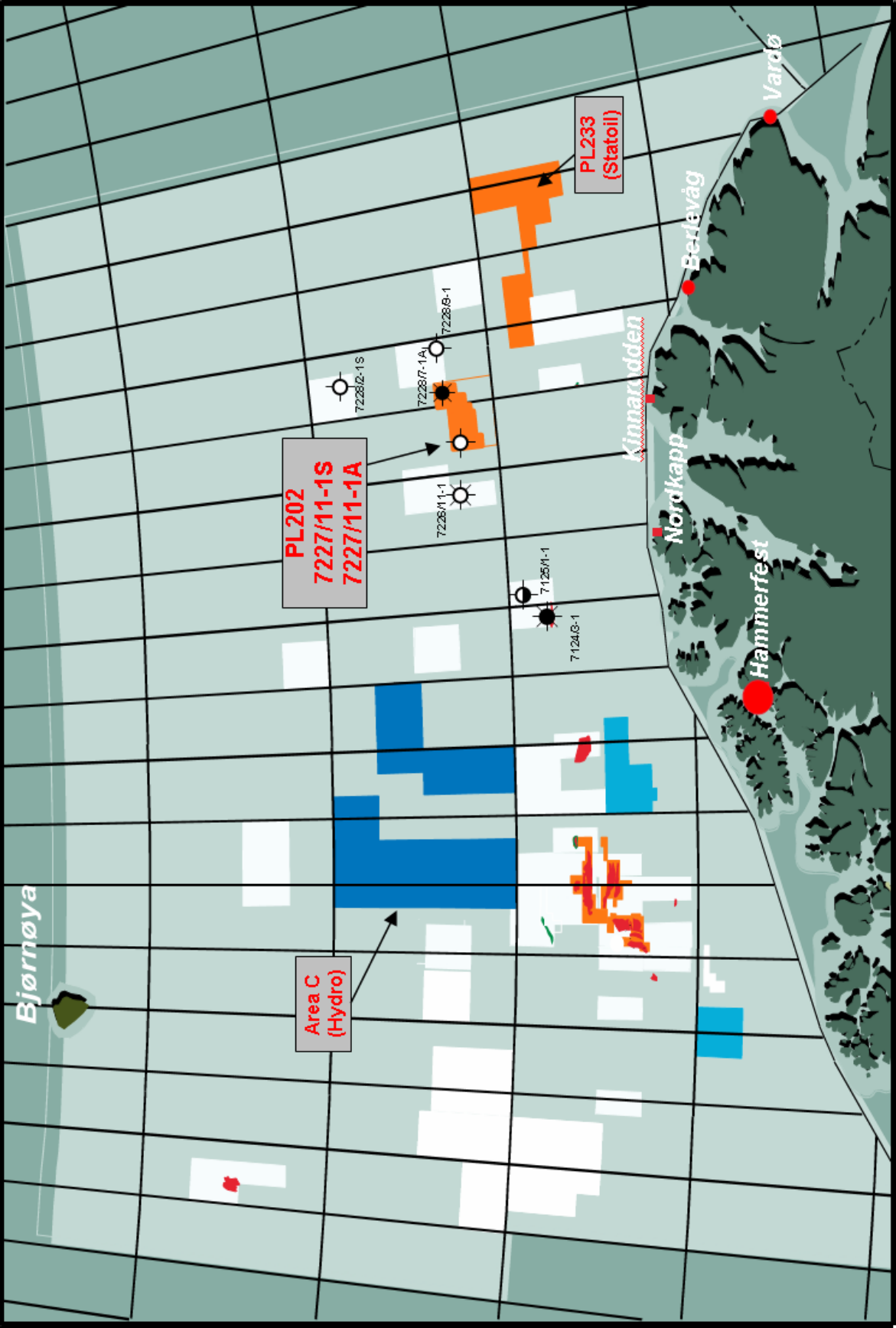


Figure 1-1 Location map. PL202: wells 7227/11-1S and 7227/11-1A.

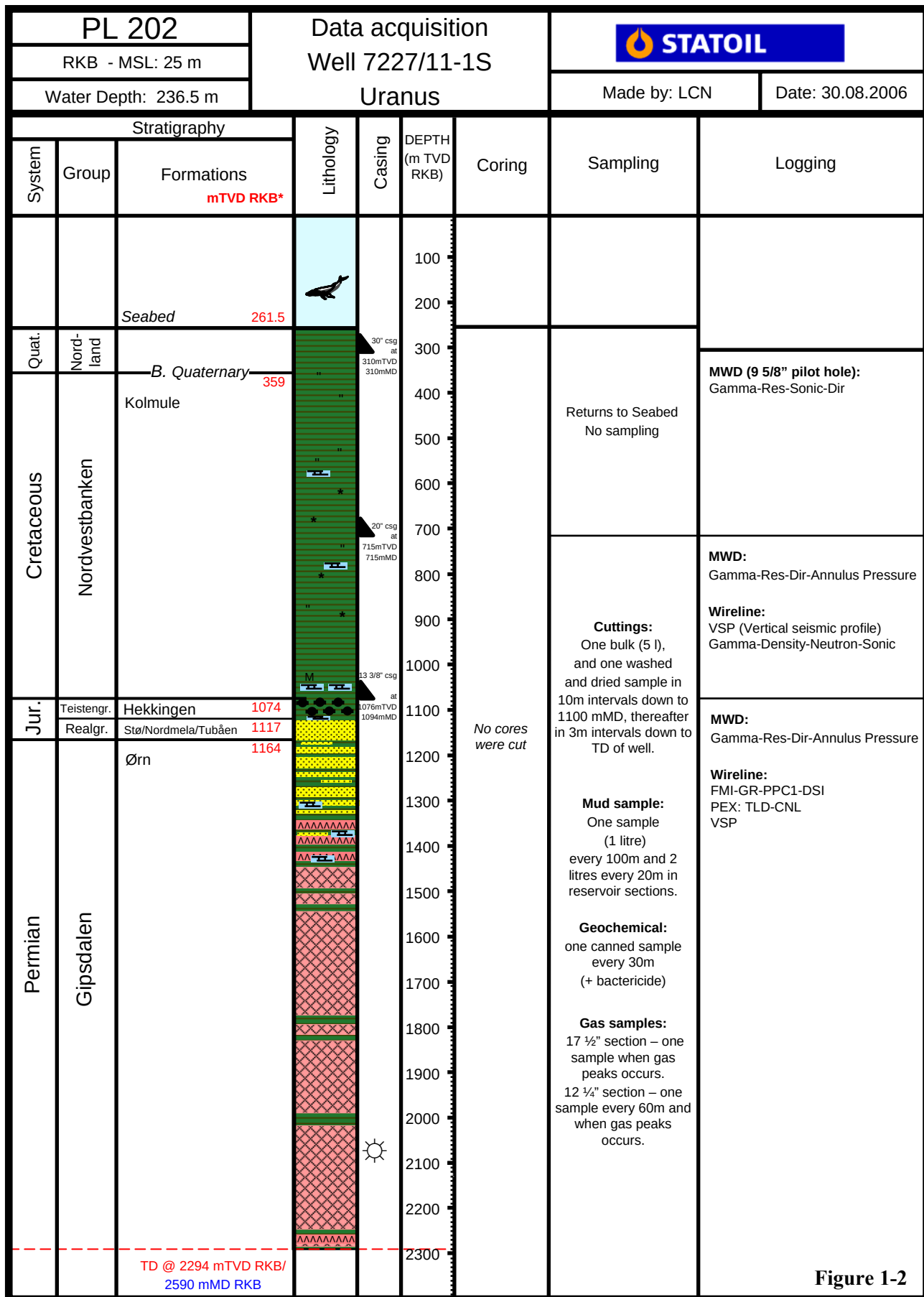


Figure 1-2

* All depths except seabed are rounded off to the nearest metre.

2 Exemptions and non-conformances

Exception from	Report no	Date	Title
NPD	None		
WR 0529	40504		Good gyro survey data

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

3.1 Incident Reports (RUH's)

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

3.1.1 RUH details

WELLBORE: NO 7227/11-1 S

Synergi no	Hazard	Description
365221	3	Synergi 365221 (Closed) - 17.01.2006 - Accident - Fell on drillfloor and injured arm. The roughneck was in operation to take off a lift sub from a 26" hole opener. A single joint elevator attached to tugger wire was used to lift the lift sub off. When the sub was pushed towards the sub rack forward of the setback, the IP slipped on the rails for the Hydra Racker. The IP fell down on the rails on top of his left arm. IP went to see the medic for medical treatment. IP was taken out of work the remaining of the day, if necessary IP will be sent onshore to Hospital tomorrow for X-rays of his arm. Weather conditions at the time of incident: Wind 50 knots - Direction 175°. Temp: - 1.8°. Rig heave: 1.8 m. Pitch: 1.8°. Roll: 2.0°.
365352	4	Synergi 365352 (Closed) - 18.01.2006 - Accident - Cleaning fluid injured eye. During night shift the ROV crew planned to do some housekeeping in the ROV control room. To clean the control room the crew wanted to use a "bug can" (similar to the cans used in Catering) to spray soap on the floor. This can was marked "kristalin". One of the ROV pilots wanted to release some pressure on the can, while doing so he accidentally pressed the trigger on the can and hit the other pilot in the eye (left) with the spray. The crew immediately found an eye wash bottle and started flushing the eye. Supervisor was out of the control room to get some rags when the incident happened. Back in the control room he discovered that the liquid did not smell like kristaline and suspected it was "Super rig cleaner" (Pr.nr 071113). He then contacted the Rig Control Room to get hold of the Medic, and followed the IP to the hospital.
368190	4	Synergi 368190 (Closed) - 29.01.2006 - Accident - Mudfluid into eye (eyeinjury) IP was taking a mud weight in the pit room using the pressure mud balance. At the time he was compressing the fluid into the mud balance using the correct syringe when some of the mud escaped upwards, went behind his safety glasses and hit his left eye. He immediately started to flush his eye and went straight to hospital for treatment. The medic was called and treatment in rig hospital was started. The duty doctor was called at 03.15 for assistance. The duty doctor decided to send a helicopter with a doctor onboard. When the doctor arrived the IP was examined and it was decided to send him onshore for further treatment.

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WELLBORE: NO 7227/11-1 A

Synergi no	Hazard	Description
376260	3	Synergi 376260 (Closed) - 04.03.2006 - Accident - Twisted ankle while stepping down from a ladder. He stepped up on a ladder to reach some winch controls. When he stepped down from the ladder again he twisted his ankle.
376254	5	Synergi 376254 (Closed) - 28.02.2006 - Accident - Dry drilling chemicals blew into eye. Roustabout opened door to container with plastic sacks of Sodium Bicarbonate. One sack was torn open a bit, and wind blew the dry drilling chemicals under his safety glasses and into eye.
378399	5	Synergi 378399 (Closed) - 11.03.2006 - Accident - Drilling mud into eye. While roughneck collected a mud sample, a pipe connection on sample pump parted. A splash of mud hit face and some came into eye. He washed eye and went to the medic. Medic gave first aid treatment.

3.2 Experience listing

Subject: 2.5 deg Anderdrift inclination tool

Section: NO 7227/11-1 S, 36"

Rep date: 13.01.2006

Keywords: BHA

Downtime: **Pot time improvements:**

Comp inv: Ocean Rig ASA

References:

Synergi no: **Cost:**

Description:

Some initial problems testing the Anderdrift tool as the tool did not respond as expected.

Immediate solution:

Rotated the string with 100 RPM above the seabed solved the problem.

Future recommended solution:

Rotate the string with 100 RPM above the seabed to solve the problem.

Subject: BOP ST locking system, difficulties to operate due to lubricity of Pelagic GZ BOP fluid.

Section: NO 7227/11-1 S, 26"

Rep date: 24.01.2006

Keywords: BOP/WB/BP

Downtime: 93.50 **Pot time improvements:**

Comp inv: Ocean Rig ASA

References: Statoil synergi: 366966

Synergi no: **Cost:**

Description:

Eirik Raude has recently experienced difficulty with the ST locking system on their Cameron 15M BOP in relation to maintaining a lock during standard surface testing. After the affected parts of the system were hosed down and cleaned, the system returned to normal operation, leading to the theory that excess lubricant may have gathered on metal surface over time, ultimately leading to over lubrication of the ST locks. Using pelagic GZ BOP Fluid at a lower concentration (10%), combined with a modified cleaning procedure and ongoing monitoring, will hopefully prevent reoccurrence of this anomaly.

Contributory factors to this anomaly:

-Contaminations of calcium Chlorides in BOP fluid (aug 05) can result in highly lubricious calcium soaps that adhere to metal surfaces (wax)

-Low temperature.

-ST Locks needs a certain degree of friction to operate.

Immediate solution:

Extensive testing and cleaning.

Future recommended solution:

Using pelagic GZ BOP Fluid at a lower concentration (10%), combined with a modified cleaning procedure and ongoing monitoring, will hopefully prevent reoccurring of this anomaly.

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Subject: Mud weight in 17 ½" section.

Section: NO 7227/11-1 S, 17 ½"

Rep date: 07.02.2006

Keywords: DRILLING FLUID

Downtime:

Pot time improvements:

Comp inv:

References:

Synergi no:

Cost:

Description:

The section was drilled with Sildril water based mud. Initially the mud weight was 1.20 sg which was increased to 1.30 sg before reaching 1000 mTVD. At TD the hole started to produce cavings (strain / tension related). Had to backream out of hole to 960 m due to excessive overpull. Evaluated hole condition, reamed back to TD and increased the mud weight from 1.30 sg to 1.45 sg. POOH from TD at 1100 m to 955 m, pumped out to 20" shoe at 715 m. Made wiper trip to TD, worked area from 1087 m to TD. POOH. Top Hekkingen Formation came in at 1074 mTVD (prognosed depth was 1215 mTVD)

Immediate solution:

Increased mud weight from 1.30 sg to 1.45 sg prior to entering the Hekkingen Formation.

Future recommended solution:

For hole stability purpose, experience is to use a mud weight of 1.40-1.50 sg in the Nordkapp Basin.

Subject: Cuttings handling using water based mud.

Section: NO 7227/11-1 S, 17 ½"

Rep date: 07.02.2006

Keywords: CUTTINGS TRANSPORT SYSTEM

Downtime:

Pot time improvements:

Comp inv: Oil Tools AS

References:

Synergi no:

Cost:

Description:

Sildril was used as the mud system in this section; this mud system gave us a better situation against clay forming to avoid problems with the transportation system. When using the spiral auger system for transporting we noted a tremendous increase in power on the auger, as a result we had to increase the hydraulic power to enable the transportation from shaker to the storage tanks onboard.
TSF 24.04.06

Immediate solution:

Increase of hydraulic power.

Future recommended solution:

When using WBM, all cuttings to be sent onshore. All use of augers should be avoided, use pneumatic transport system to transport from the shaker to the storage tank, and from storage tank to the supply vessel.

TSF 24.04.06

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Subject: Steel shavings found on ditch magnets when drilling 13 3/8" float / shoe track
Section: NO 7227/11-1 S, 17 1/2"
Rep date: 10.02.2006
Keywords: DRILLING
Downtime: **Pot time improvements:**
Comp inv:
References:
Synergi no: **Cost:**
Description:
10.5 hrs was spent on drilling 13 3/8" float / shoe track. Steel shavings (from 13 3/8" casing) were found on the ditch magnets. A PDC bit (12 1/4" HCR605Z Hughes Christensen) and Autotrack was used. Inclination of well: 31°. Drilling parameters: 3500 - 1500 lpm, 236 - 55 bar, 6 - 24 kNm, 86 - 93 RPM and 2 - 16 ton WOB. Mud = 1.50 sg

Immediate solution:

n/a

Future recommended solution:

n/a

Subject: Slow ROP when drilling 12 1/4" hole from 1150 m to 1318 m
Section: NO 7227/11-1 S, 12 1/4"
Rep date: 11.02.2006
Keywords: DRILLING
Downtime: **Pot time improvements:**
Comp inv: Baker Hughes Inteq
References:
Synergi no: **Cost:**
Description:
While drilling the 12 1/4" hole (1150 - 1318 m) severe "stick slip" and "lateral vib." were encountered. Various parameters were applied without giving the wanted response. POOH and inspected the bit while WOW and waiting on mud chemicals. The bit was re-run and a string stab was added above the BCPM in the BHA

Immediate solution:

POOH and reconfigured BHA.

Future recommended solution:

BHA #9 performed better than #8.

Subject: Too thick 1.50 sg Sildril mud from MI, difficult for Geoservices to take gas readings
Section: NO 7227/11-1 S, 12 1/4"
Rep date: 14.02.2006
Keywords: DRILLING FLUID
Downtime: **Pot time improvements:**
Comp inv: M-I Drilling Fluids
References:
Synergi no: 371275 **Cost:** 3000
Description:
Synergi 371275 (Closed) - 10.02.2006 - Other non-conformities - NEGATIVE to add bicarbonate and soda ash to treat out minor cement contamination in 1.50 sg SILDRIL mud from MI?
Bicarbonate and soda ash were added to the 1.50 sg Sildril mud from MI; this might have a negative effect on the mud system. The mud was too thick, made it difficult for Geoservices to perform gas readings.

Immediate solution:

Investigation initialized to find out what went wrong.

Were not able to continue drilling with this mud system, too high viscosity for the gas trap to function.

Made up new mud system and displaced hole.

Future recommended solution:

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Subject: Salt saturated drilling fluid in 12 ¼" section.

Section: NO 7227/11-1 S, 12 ¼"

Rep date: 15.02.2006

Keywords: DRILLING FLUID

Downtime:

Pot time improvements:

Comp inv: M-I Drilling Fluids

References: synergy: 371275

Synergi no:

Cost:

Description:

The 12 ¼" section was drilled from 1093 m to TD at 2590 m giving a section length of 1497 m. In this section a total of 950 m halite, 100 m anhydrite and minor limestone stringers were drilled.

After the mud had been converted to a saturated salt system (KCl based) the mud properties were maintained in a controlled manner to obtain the required properties for drilling the section:

- Hole cleaning was very good.
- Cuttings quality (and further handling & transport to shore) was good.
- No hole instability problems were experienced.
- No problems related to tripping (out or in) were experienced.
- No fill were found on bottom.
- Two logging runs to TD were made without any problems.
- The caliper log showed close to gauge hole, even in halite formation.

As drilling commenced in halite formation, the NaCl concentration in the mud increased from zero to 250 kg/m³, depleting the KCl concentration from 150 to 130 kg/m³. Total salt concentration at TD was 380 kg/m³.

Immediate solution:

n/a

Future recommended solution:

This mud system is recommended for drilling similar formations in the future.

Subject: Drilled with Autotrak in salt (halite) formation.

Section: NO 7227/11-1 S, 12 ¼"

Rep date: 22.02.2006

Keywords: DIRECTIONAL

Downtime: 0.50

Pot time improvements:

Comp inv: Baker Hughes Inteq

References: 372082

Synergi no:

Cost:

Description:

Due to a high degree of uncertainty in the formation prognosis, the 12 ¼" section was drilled with a 3D Autotrak system. The directional performance was good, inclination and azimuth were kept and maintained according to plan (and revised well path). After the Autotrak steering head failed at 2343 m, the drilling of salt formation (halite) continued as the inclination were kept within acceptable range (from 2343 m to 2590 m). Total revolutions on BHA were 750 k.

Immediate solution:

After the tool failed, drilling continued without any operational problems.

Future recommended solution:

To be able to maintain the well path while drilling this type of wildcat, it is important to use a type of BHA that allows for changing the inclination / azimuth according to changes in the lithology. It is recommended to use this type of BHA on similar wells in the future.

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Subject:	Drop gyro	
Section:	NO 7227/11-1 A, 12 1/4"	
Rep date:	01.03.2006	
Keywords:	DIRECTIONAL	
Downtime:		Pot time improvements:
Comp inv:	Scientific Drilling	
References:	Unntaksnr 40504 (fra WR0529)	
Synergi no:		Cost:
Description:		

A gyro run was required in this deviated exploration well drilled with the semi sub Eirik Raude. The plan was to drop the gyro in DP and survey 12 1/4" open hole to sea bed. If these surveys were of good quality, this should be the final gyro. If the surveys were not good, a gyro should be run on WL in cased hole.

A drop gyro will probably not give good results in the vertical hole sections of a deviated well.

Two 12 1/4" sections were drilled. In the first section the gyro survey data were not available at all. In the second section the surveys were not of sufficient quality, and they were only acceptable in open hole.

Lots of effort was put into quality control offshore and onshore also including Statoil's advisor, as the conclusion was needed urgently as whether to keep Schlumberger logging crew and SDC personnel offshore for many days.

Immediate solution:

Exception from WR0529 was obtained to continue drilling the well and tie in to the shallowest good gyro survey.

Future recommended solution:

The idea of planning for a drop gyro is good as this may exclude the wire line gyro, also on a semi sub, although one has to be prepared to run the gyro on wire line. The wire line run is not to be cancelled before the drop gyro results are quality controlled.

Subject:	No cuttings return when drilling NaCl-salt fm (halite).	
Section:	NO 7227/11-1 A, 12 1/4"	
Rep date:	27.02.2006	
Keywords:	DRILLING	
Downtime:		Pot time improvements:
Comp inv:	M-I Drilling Fluids	
References:		
Synergi no:		Cost:
Description:		

When drilling into salt fm. (halite) with the KCl/Polymer mud no returns were observed over the shakers. A 'lesson learnt' from the main well bore showed that the 'cuttings' were dissolved into the mud system, and adding KCl into the active system until the mud was saturated would cause cuttings returns at the shakers.

In this well bore it was decided to drill ahead and incorporate drill solids (halite) in the active system until a calculated saturation point was obtained in the system with dual salts. Start up concentration of KCl of the interval was 160 kg/m³. Maintaining KCl content by direct addition of KCl-salt and premix. A calculated NaCl concentration at 21:30hrs was 16 % by wt, whereas the concentration of NaCl was 17 % by wt at 02:00. The fluid became saturated at midnight as salt returned at the shakers. This corresponds to mutual solubility data at 28°C.

Immediate solution:

n/a

Future recommended solution:

It is possible to run this type of KCl mud, saturating with NaCl as you drill (picking up NaCl from the formation). The system worked fine and the recommendation in similar section is to drill ahead.

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Well 7227/11-1S and 7227/11-1A

Doc. no.
EPDS-7227/11-1S-017
Date
2006-10-10



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Subject: Drill pipe wiper dart got stuck in x-over. CST
Section: NO 7227/11-1A, PERM P&A
Rep date: 19.03.2006
Keywords: CEMENT PLUG
Downtime: **Pot time improvements:**
Comp inv: Halliburton
References:
Synergi no: 377808 **Cost:** 93000
Description:
Synergi 377808 (Closed) - 18.03.2006 - Other non-conformities - 5 1/2" DP was plugged up when circulating clean after setting P&A cement plug #2.
Sequence of event:
-Ran in hole 3 1/2" mule shoe, 11 stands of 3 1/2" DP, x-over drifted to 2 1/4" on 5 1/2" HT 55 DP to 2357 mMD.
-Inserted cement support tool (CST) in DP and placed one 5 1/2" x 3 1/2" CST dart behind (according to Halliburton procedure).
-Installed CST in open hole by pumping down drill pipe with the mud pumps via the top drive (through the whole string). Pumped 1500 lpm with CST inside 5 1/2" DP and 500 lpm with CST inside 3 1/2" DP. Did not observe any pressure reduction in stand pipe pressure when pumping out the CST and wiper dart.
-Sat cement plug #1 from 2350 m to 2140 m by pumping spacer, cement, spacer and displacement volume from the cement unit.
-Laid out cement stand, pulled out to 1940 m, installed two sponge balls in string and circulated well clean at 3400 lpm, 180 bar, 120 rpm.
-Pulled out of hole.
-Made up and RIH with 8 1/2" BHA. Washed down from 1928 m to 2156 m with 500 lpm, 45 bar. Tested cement plug #1: 10 ton / 180 bars.
-POOH.
-Made up 13 3/8" EZSV with running tool, x-over from 4 1/2" IF to 5 1/2" HT55 and RIH on 5 1/2" DP to 1010 m.
-Installed cement stand to string and set EZSV at 1010 m. Sheared out of plug with 17 ton.
-Tested EZSV to 10 tons and 180 bars.
-Connected cement hose to cement stand and set cement plug #2 by from 1005 m to 935 m by pumping spacer, cement slurry, spacer and displacement volume from the cement unit.
-Laid out cement stand and pulled string out of hole to 805 m.
-Installed two sponge balls in string and started to circulate. Pressure suddenly increased after 8.5 m³ pumped activating the pop-off valve. Pulled out of hole.

At surface: found upper part of the CST dart stuck in the 4 1/2" IF x 5 1/2" HT55 x-over with one sponge ball above and one below. Found lower part of the CST dart in the EZSV running tool. Type of CST used: CST 2", minimum drift 2.0". Outer diameter of CST dart: 46 mm.

Total downtime for the incident: 0.5 hrs.

Immediate solution:

The next planned CST was not run.

For the cement plug #3 a 100 meter hi-vis pill was used as foundation.

Future recommended solution:

The main office will look further into this.

Subject: 13 3/8" casing cutting.
Section: NO 7227/11-1A, PERM P&A
Rep date: 19.03.2006
Keywords: PLUG BACK/KICK-OFF
Downtime: **Pot time improvements:**
Comp inv: Weatherford Norge AS
References:
Synergi no: **Cost:**
Description:
The 13 3/8" casing was cut at 603 mMD in only 4 minutes. The cutting tool in use was: Weatherford 12" M24. Parameters: 650 lpm, 130 bar, 120 rpm, 9-17 kNm.

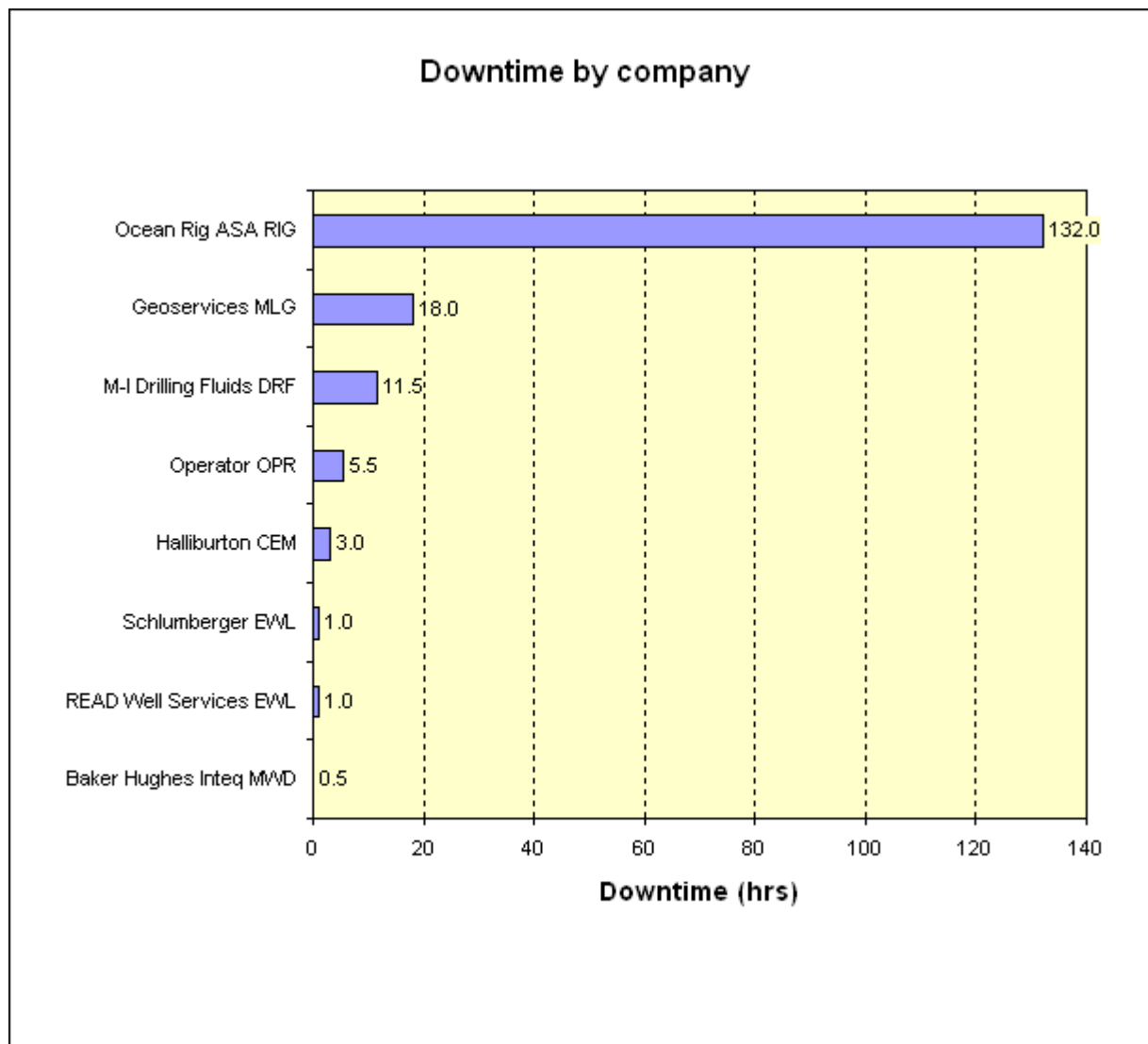
Immediate solution:

n/a

Future recommended solution:

This tool is recommended for future use.

3.3 Incidents by service and company



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SERVICE COMPANY: Cementing CEM Halliburton
WELLBORE: NO 7227/11-1S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
22.01.2006 16:00:00	CEM-E01 Equipment functions	366286	Incorrect threads on cement head.	465000	4464000	2.5	100	2.5
			Total	558000				3.0

WELL BORE: NO 7227/11-1A

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
18.03.2006 05:00:00	CEM-E01 Equipment functions	377808	5 1/2" DP became plugged up when circulating clean after setting P&A cement plug #2.	93000	4464000	0.5	100	0.5

SERVICE COMPANY: Drilling Fluids DRF M-I Drilling Fluids
WELLBORE: NO 7227/11-1S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
11.02.2006 06:00:00	DRF-03 Fluid property out of specification	371275	NEGATIVE to add bicarbonate and soda ash to treat out minor cement contamination in 1.50 sg SILDRIL mud from MI	3000	6261	11.5	100	11.5
			Total	3000				11.5

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SERVICE COMPANY: Electric Wireline Logging EWL READ Well Services
WELLBORE: NO 7227/11-1A

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
13.03.2006 03:30:00	EWL-E04 Cables/Heads & Assoc.	376565	Not communication between VSP tool and surface computer.	372000	4464000	2.0	50	1.0
			Total	372000				1.0

SERVICE COMPANY: Measurement While Drilling MWD Baker Hughes Inteq
WELLBORE: NO 7227/11-1S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
18.02.2006 06:00:00	DDR-E11 3D Steering / DLS / performance	372082	Lost communication with Autotrack.	93000	4464000	0.5	100	0.5
			Total	93000				0.5

SERVICE COMPANY: Mud Logging MLG Geoservices
WELLBORE: NO 7227/11-1S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
23.02.2006 12:30:00	MLG-E02 Data collection / presentation	373246	Geoservices computer failure.	3348000	4464000	18.0	100	18.0
			Total	3348000				18.0

SERVICE COMPANY: Operator OPR Operator
WELLBORE: NO 7227/11-1S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
15.01.2006 12:00:00	DDR-08 Other	364762	Grouted 30" conductor	930000	4464000	5.0	100	5.0
			Total	1023000				5.5

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WELLBORE: NO 7227/11-1A

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
09.03.2006 06:00:00	DRF-20 Other failures	376244	Lost contact with MWD GR source #1.	93000	4464000	0.5	100	0.5

SERVICE COMPANY: Rig Operations RIG Ocean Rig ASA
WELLBORE: NO 7227/11-1S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
15.01.2006 03:30:00	RIG-E345 Elevator	364645	Repaired varco elevator	186000	4464000	1.0	100	1.0
22.01.2006 00:00:00	RIG-E341 Vert pipe handling system	366237	Broken hydraulic hose on Hydraracker.	279000	4464000	1.5	100	1.5
24.01.2006 02:30:00	RIG-E03 BOP stack/valves	366966	Not able to achieve surface pressure test on BOP.	17391000	4464000	93.5	100	93.5
25.01.2006 03:30:00	RIG-E07 Top drive	367365	Not able to achieve pressure test on IBOP.	1116000	4464000	6.0	100	6.0
31.01.2006 02:00:00	RIG-E02 BOP control system	368486	Fault on SEM (Submersed Electronic Module) on BOP yellow POD.	372000	4464000	2.0	100	2.0
31.01.2006 12:00:00	RIG-E20 Riser system	368636	Leak on kill line seals.	2139000	4464000	11.5	100	11.5
03.02.2006 11:00:00	RIG-E341 Vert pipe handling system	369274	Hydraulic hose on Hydraracker bursted.	279000	4464000	1.5	100	1.5
06.02.2006 20:30:00	RIG-E302 Crown block	369941	Loose bolts on fast line sheave cover.	186000	4464000	1.0	100	1.0
14.02.2006 02:00:00	RIG-E07 Top drive	371457	Troubleshoot and rectified leakage around washpipe	1395000	4464000	7.5	100	7.5
15.02.2006 00:00:00	RIG-08 Un-scheduled maintenance	371460	Drill line slipped on drawwork drum.	93000	4464000	0.5	100	0.5
			Total	24552000				132.0

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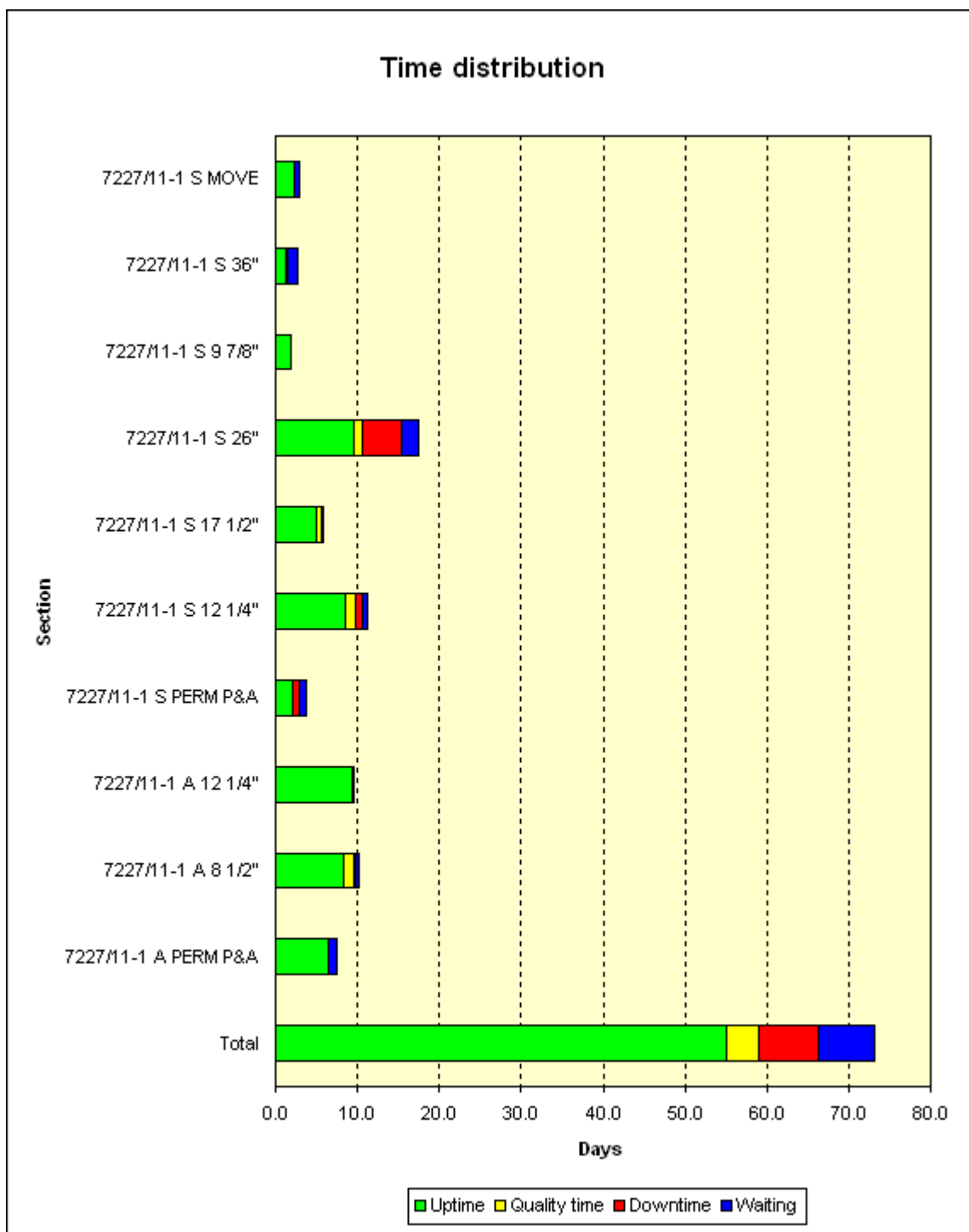
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WELLBORE: NO 7227/11-1A

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
04.03.2006 00:00:00	RIG-03 Procedure not followed	375438	Damaged threads on 5 ½" DP.	93000	4464000	0.5	100	0.5
04.03.2006 09:30:00	RIG-E341 Vert pipe handling system	375443	Stand of 5 ½" DP fell out of fingerboard.	558000	4464000	3.0	100	3.0
12.03.2006 11:00:00	RIG-E328 HP equipment	376558	Leakage on wash pipe.	186000	4464000	1.0	100	1.0
15.03.2006 06:00:00	RIG-E341 Vert pipe handling system	377805	Hydraulic pump for Hydraracker unintentionally shut down.	93000	4464000	0.5	100	0.5
21.03.2006 08:00:00	RIG-E362 Overhead cranes	378602	Re-calibrated gantry crane.	93000	4464000	0.5	100	0.5
22.03.2006 00:00:00	RIG-E341 Vert pipe handling system	378643	Problems with Hydraracker upper head single joint elevator arm.	93000	4464000	0.5	100	0.5

3.4 Time distribution

Section	Start time	Length m	Budget		TL		Actual		Ops (f)
			hrs	days	hrs	days	hrs	days	
NO 7227/11-1 S MOVE	10.01.2006 02:00		58.0	2.4	50.0	2.1	72.5	3.0	100.0
NO 7227/11-1 S 36"	13.01.2006 02:30	50.9	78.0	3.3	70.0	2.9	64.0	2.7	86.7
NO 7227/11-1 S 9 7/8"	15.01.2006 18:30	371.0	69.0	2.9	59.0	2.5	45.5	1.9	100.0
NO 7227/11-1 S 26"	17.01.2006 16:00	405.0	174.0	7.3	151.0	6.3	419.5	17.5	68.1
NO 7227/11-1 S 17 1/2"	04.02.2006 03:30	375.0	180.0	7.5	207.5	8.6	138.0	5.8	99.3
NO 7227/11-1 S 12 1/4"	09.02.2006 21:30	1487.0	148.0	6.2	223.5	9.3	269.0	11.2	92.3
NO 7227/11-1 S PERM P&A	21.02.2006 02:30	0.0	70.0	2.9	43.5	1.8	90.5	3.8	74.3
NO 7227/11-1 A 12 1/4"	24.02.2006 21:00	1130.0	334.0	13.9	258.0	10.8	229.5	9.6	98.5
NO 7227/11-1 A 8 1/2"	06.03.2006 10:30	1156.0	463.0	19.3	444.0	18.5	246.5	10.3	98.3
NO 7227/11-1 A PERM P&A	16.03.2006 17:00	0.0	341.0	14.2	293.0	12.2	178.5	7.4	99.1
Sum			1915.0	79.9	1799.5	75.0	1753.5	73.2	



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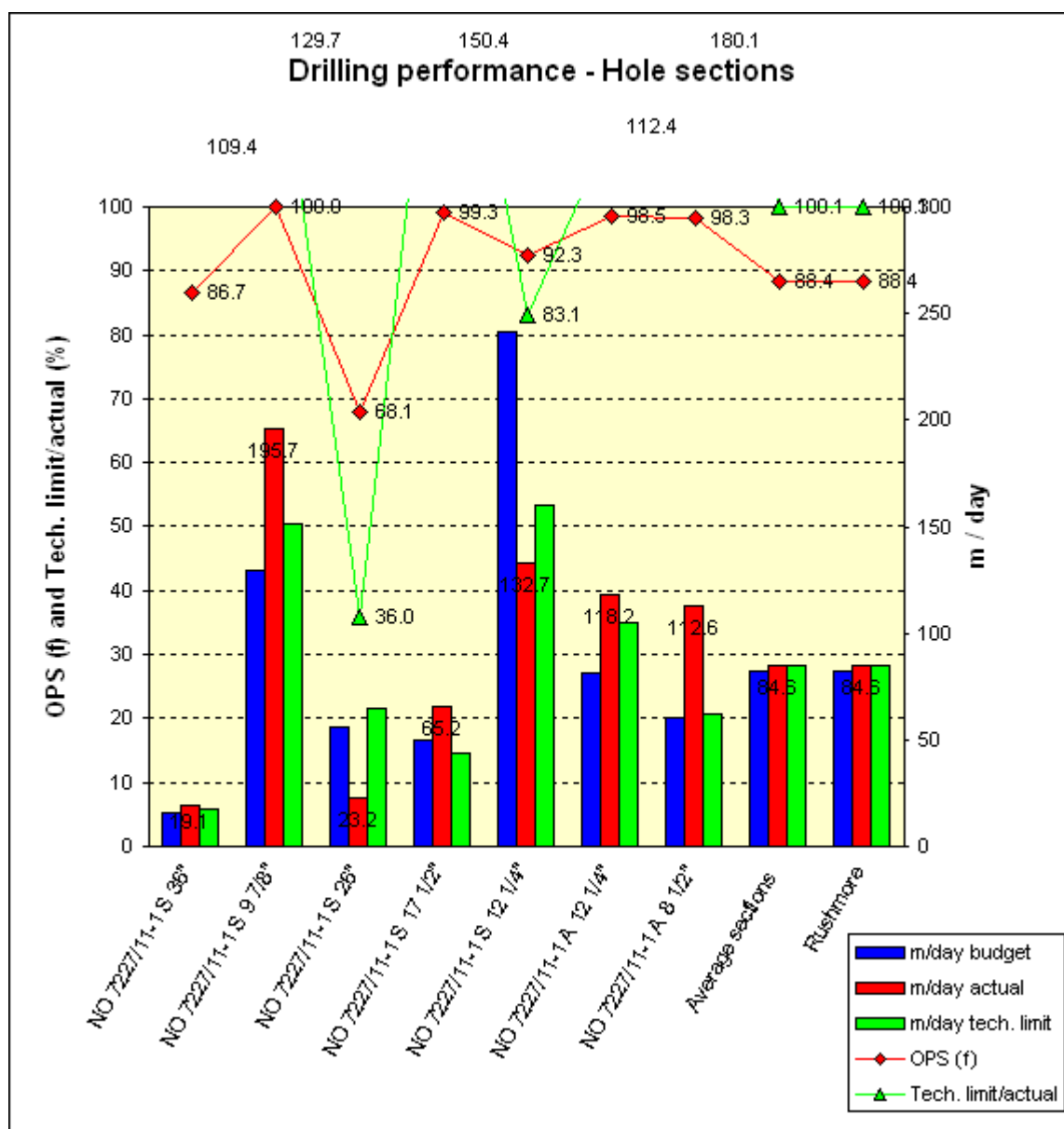


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The graph above is based on the following details:

Section	Downtime	Uptime	Quality time	Waiting time	Total time
7227/11-1 S MOVE	0.0	2.3	0.0	0.7	3.0
7227/11-1 S 36"	0.3	1.2	0.0	1.2	2.7
7227/11-1 S 9 7/8"	0.0	1.9	0.0	0.0	1.9
7227/11-1 S 26"	4.9	9.6	0.9	2.0	17.5
7227/11-1 S 17 1/2"	0.0	5.0	0.7	0.0	5.8
7227/11-1 S 12 1/4"	0.8	8.5	1.2	0.7	11.2
7227/11-1 S PERM P&A	0.8	2.2	0.0	0.9	3.8
7227/11-1 A 12 1/4"	0.1	9.4	0.0	0.0	9.6
7227/11-1 A 8 1/2"	0.2	8.4	1.2	0.5	10.3
7227/11-1 A PERM P&A	0.1	6.5	0.0	0.9	7.4
Total	7.2	55.0	4.0	6.9	73.1



3.5 Cost

Project kind	WBS	Currency	Budget	Actual cost
Drilling	T.O202A.AP.20320	NOK	277 021 130	331 715 974
Drilling	T.O202A.AP.20321	NOK		24 939 522
Mobilize/Demobilize	T.O202A.AP.20330	NOK	73 390 000	5 466 020
Planning	T.O202A.AP.20310	NOK	19 396 659	28 349 068
Total			369 807 789	390 470 584

4 Geology and formation data report

4.1 Geological setting

The wells 7227/11-1S and 7227/11-1A are situated in the Nordkapp basin offshore Finnmark (see Figure 1-1 and 4-1). This basin is the most pronounced structural element east of Loppfågda, with a basinal-axis oriented northeast-southwest. The development of the basin is inferred to have occurred as several rift-phases in Late Devonian to Middle Carboniferous. With deposition of evaporites in the Late Carboniferous and Early Permian, the basin developed further due to salt movements in Triassic time. Salt diapirs have been reactivated in Tertiary time.

The wells 7227/11-1S and 7227/11-1A penetrate sediments ranging in age from recent to Permian (Figure 4-2 and 4-3).

4.2 Shallow gas results

A 9 7/8" pilot hole was drilled from the 30" conductor shoe at 320 m to 691 m. No shallow gas was observed.

4.3 Stratigraphy

The stratigraphical division is based on biostratigraphy and correlations with reference wells. Depths of the formations are listed in Table 4-3 and 4-4. The stratigraphical division is based on interpretation of the biostratigraphic report, log curves and on correlation with offset wells. The stratigraphy of the well is shown in Figure 4-2 and 4-3. Prognosed versus observed stratigraphy is shown in Figure 4-4 and 4-5.

4.3.1 Table of chronostratigraphy

Table 4-1 Chronostratigraphy Well 7227/11-1S

Stratigraphic succession			mMD RKB	
Studied interval 728 – 2590 mMD RKB			From	To
Cretaceous	Early Cretaceous	Late Albian	728	1010
		Middle Albian	1020	1070
		Early Albian	1080	1090
----- Break: Base Cretaceous Unconformity -----				
Jurassic	Late Jurassic	Kimmeridgian	1120	1120
	Late – Middle Jurassic	Oxfordian	1130	1136
		----- Stratigraphical break (Late Jurassic) -----		
	Middle – Early Jurassic	Early Aalenian	1142	1142
		Late Toarcian	1160	1160
		----- Stratigraphical break -----		
		Pliensbachian	1181	1181
----- Stratigraphical break -----				
Permian	Early Permian	?Asselian	1205	2590

Table 4-2 Chronostratigraphy Well 7227/11-1A

Stratigraphic succession			mMD RKB	
Studied interval 1141 – 3439 mMD RKB			From	To
Jurassic	Middle – Early Jurassic	Early Aalenian	1141	1156
		Well 7227/11-1A starts at 1160 mMD		
		Late Toarcian	1160	1165
		----- Stratigraphical break -----		
		Pliensbachian	1171	1185
		?Hettang-?Sinemur	1199	1199
----- Stratigraphical break -----				
Permian	Early Permian		1205	3446

4.3.2 Table of lithostratigraphy

Table 4-3 Lithostratigraphy Well 7227/11-1S

Period	Group top	Formation top and/or seismic marker	Observed		
			mMD RKB	mTVD RKB	mTVD MSL
Quaternary	NORDLAND GP	Seabed/T. Quaternary	261.5	261.5	236.5
Cretaceous	NORDVESTBANKEN GP	Kolmule Fm	358.5	358.5	333.5
Jurassic	TEISTENGRUNNEN GP	Hekkingen Fm	1091.0	1074.0	1049.0
	REALGRUNNEN GP	Stø Fm	1141.9	1116.8	1091.8
		Nordmela Fm	1165.5	1136.0	1111.0
		Tubåen Fm	1189.6	1155.0	1130.0
Permian	GIPSDALEN GP	Ørn Fm	1201.0	1163.9	1138.9
TD			2590.0	2294.0	2269.0

Table 4-4 Lithostratigraphy Well 7227/11-1A

Period	Group top	Formation top and/or seismic marker	Observed		
			mMD RKB	mTVD RKB	mTVD MSL
Quaternary	NORDLAND GP	Seabed/T. Quaternary	261.5	261.5	236.5
Cretaceous	NORDVESTBANKEN GP	Kolmule Fm	358.5	358.5	333.5
Jurassic	TEISTENGRUNNEN GP	Hekkingen Fm	1091.0	1074.0	1049.0
	REALGRUNNEN GP	Stø Fm	1141.9	1116.8	1091.8
		Well 7227/11-1A starts at 1160 mMD			
		Nordmela Fm	1165.0	1135.5	1110.5
		Tubåen Fm	1190.0	1156.4	1131.4
Permian	GIPSDALEN GP	Ørn Fm	1201.5	1166.2	1141.2
TD			3446.0	3197.6	3172.6

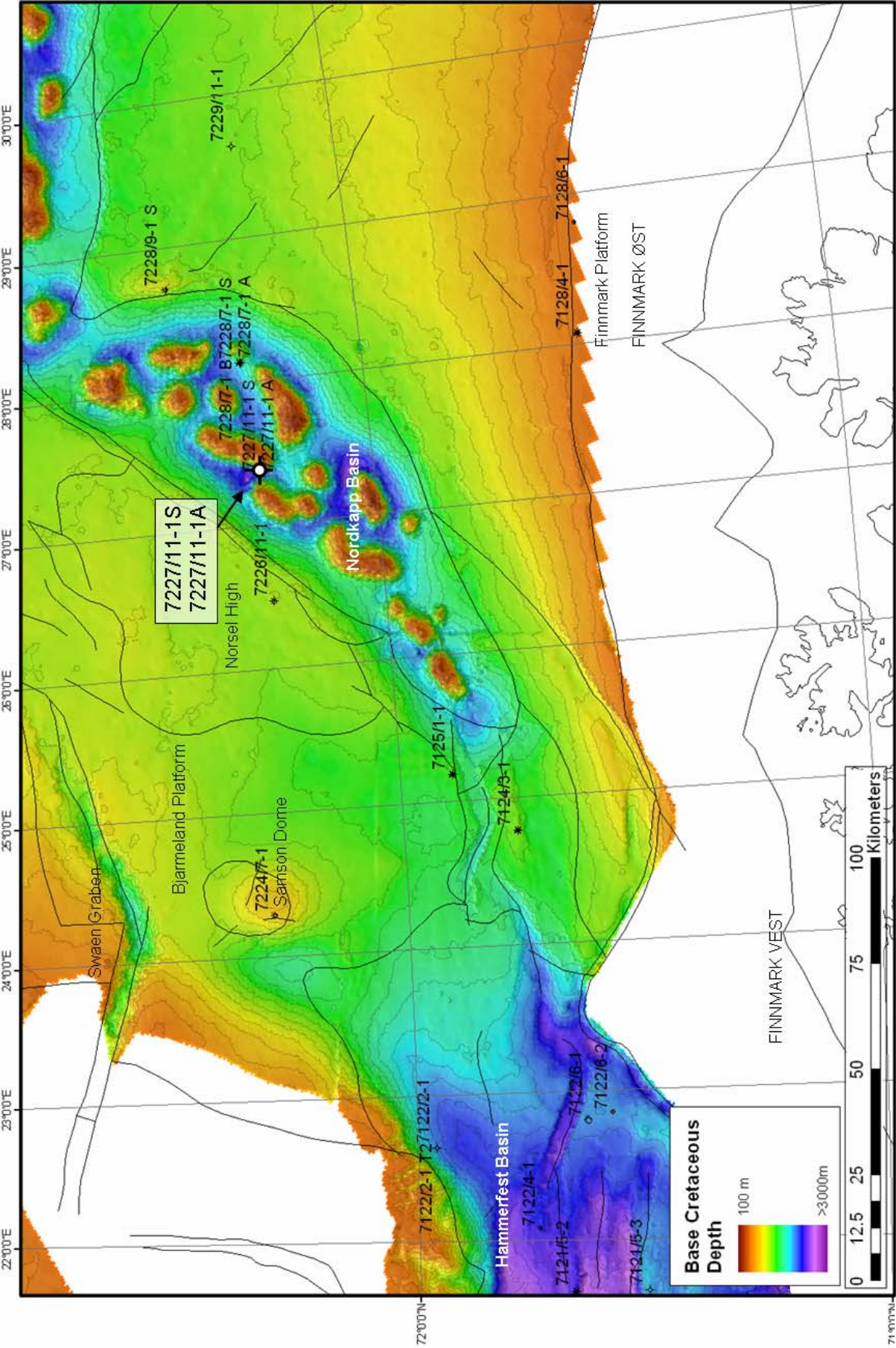


Figure 4-1 Regional structural setting.

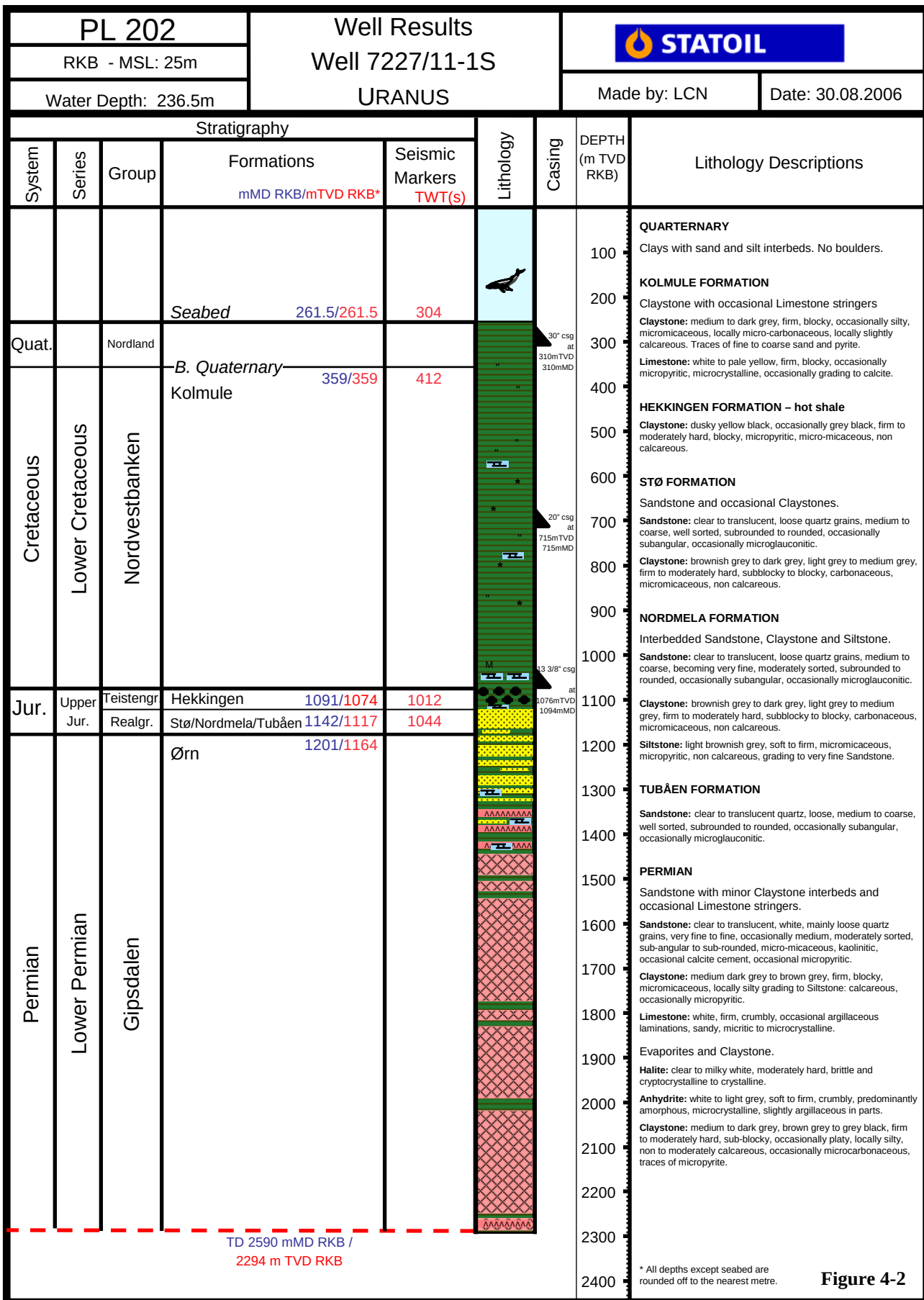
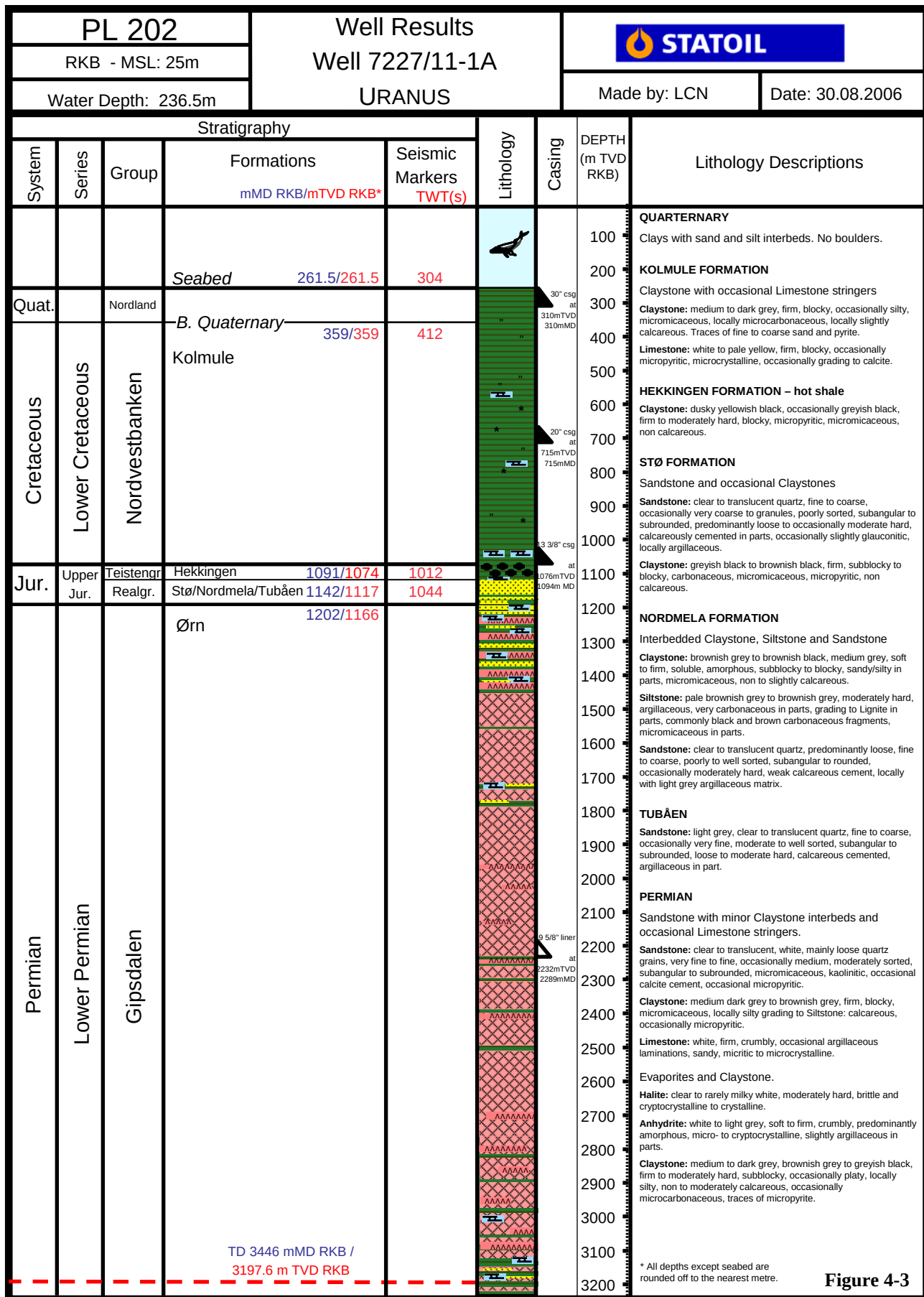


Figure 4-2



PL 202					Well Prognosis vs. Results Well 7227/11-1A URANUS			STATOIL				
RKB - MSL: 25m								Made by: LCN	Date: 30.08.2006			
Water Depth: 236.5m												
Stratigraphy					Lithology	Casing	DEPTH (m TVD RKB)	Stratigraphy		Lithology	Casing	
System	Series	Group	Formations mMD RKB/mTVD RKB	Seismic Markers TWT(ms)				Formations mMD RKB/mTVD RKB*	Seismic Markers TWT(ms)			
Quat			Seabed	261.5/261.5	304		100	Seabed	261.5/261.5	304		100
			B. Quaternary	359/359	412		300	B. Quaternary	359/359	412		300
Cretaceous	Lower Cretaceous	Nordvestbanken	Kolmule				400	Kolmule				400
							500					500
Jur.	Jur.	Teistengr.	Hekkingen	1091/1074			1100	Hekkingen	1091/1074			1100
		Real-grunnen	Stø/Nordmela Tubåen	1142/1117			1200	Stø/Nordmela/Tubåen	1142/1117			1200
Permian	Lower Permian			1255/1221			1300	Ørn	1202/1166			1300
							1400					1400
Triassic	Upper Triassic	Ingøydjupet	Intra Carnian 2	1840/1789			1800					1800
							1900					1900
Triassic	Middle Triassic		Alt. Top Carnian res.	2547/2405			2400					2400
			Top Carnian res.	2718/2533			2500					2500
			Kobbe	3602/3321			3300					3300
							3400					3400
TD 3880mMD RKB / 3590m TVD RKB							3500	TD 3446mMD RKB / 3198m TVD RKB				3500
							3600					3600

* All depths except seabed are rounded off to the nearest metre.

Figure 4-5

4.4 Lithostratigraphic descriptions

4.4.1 Geological Summary 7227/11-1S

NORDLAND GROUP

**261.5 – 358.5 mMD, 261.5 – 358.5 mTVD
(236.5 – 333.5 mTVD MSL)**

System: Quaternary

Series: Pleistocene – Holocene

Quaternary sediments were drilled with returns to the sea floor and lithology is inferred from drilling parameters and information from the offset wells and the site survey. The sediments are dominated by soft glaciomarine clays with sand and silt interbeds. No boulders were encountered in these sediments.

NORDVESTBANKEN GROUP

**358.5 – 1091.0 mMD, 358.5 – 1074.0 mTVD
(333.5 – 1049.0 mTVD MSL)**

The Nordvestbanken Group comprises the Kolmule Formation.

Kolmule Formation

**358.5 – 1091.0 mMD, 358.5 – 1074.0 mTVD
(333.5 – 1049.0 mTVD MSL)**

System: Cretaceous

Series: Early Cretaceous

Stage: Albian

Depositional environment: Open marine

Kolmule formation sediments were drilled with returns to the sea floor down to 725 mMD. The lithology description is therefore based on MWD logs, gamma ray and resistivity, and cuttings from the bottom part of the formation.

The sediments down to 725 mMD consist of claystone with thin streaks and stringers of dolomite and limestone. A limestone/dolomite bed which is approx. 1.5 m thick is present at 578 m.

This interval has lower gamma ray, higher resistivity and a reduced ROP compared to the claystone above and below.

The hole section commenced at 725 mMD in the Late Albian, shown by wellsite palynology. Middle and Early Albian ages were determined by palynology, although depths are unsure due to low resolution sampling. The middle Albian was penetrated between 820 mMD and 840 mMD, the Early Albian between 1030 mMD and 1040 mMD. MWD gamma and resistivity logs showed little character over this section and cuttings were homogenous claystone with traces of dolomite or dolomitic limestone.

The claystones are medium to dark grey, firm, blocky, occasionally silty, micromicaceous, locally microcarbonaceous, with traces of fine to coarse sand. Traces of pyrite were also occasionally

detected. The claystones were generally non calcareous although isolated fragments were slightly calcareous.

Traces of dolomitic limestone were seen throughout this formation, but no significant layers could be detected from ROP or MWD logs. The dolomite is dark brown to grey brown, hard, brittle, occasionally sucrosic and microcrystalline to cryptocrystalline. The dolomitic limestone is light grey, being argillaceous, blocky to brittle and locally grading to crystalline calcite.

At the base of the Kolmule Formation a thicker limestone stringer was present, which was white to pale yellow, firm, blocky, occasionally micropyrritic, microcrystalline, occasionally grading to calcite.

TEISTENGRUNNEN GROUP **1091.0 – 1141.9 mMD, 1074.0 – 1116.8 mTVD**
(1049.0 – 1091.8 mTVD MSL)

The Teistengrunnen Group consists of the Hekkingen Formation.

Hekkingen Formation **1091.0 – 1141.9 mMD, 1074.0 – 1116.8 mTVD**
(1049.0 – 1091.8 mTVD MSL)

System: Jurassic

Series: Late Jurassic

Stage: Kimmeridgian to Oxfordian

Depositional environment: Restricted, anoxic bottom conditions

The Hekkingen Formation, defined by a sharp increase in the GR readings response, is a hot shale just penetrated to set the 13 3/8" casing. The MWD gamma log showed a sharp increase on entering this formation. The sonic showed a decrease in the log response when entering this formation.

The claystone is dusky yellow black, occasionally grey black, firm to moderately hard, blocky, micropyrite, micromicaceous and non calcareous.

REALGRUNNEN GROUP **1141.9 – 1201.0 mMD, 1116.8 – 1163.9 mTVD**
(1091.8 – 1138.9 mTVD MSL)

The Realgrunnen Group comprises the Stø Formation.

Stø Formation **1141.9 – 1165.5 mMD, 1116.8 – 1136.0 mTVD**
(1091.8 – 1111.0 mTVD MSL)

System: Jurassic

Series: Middle - Early Jurassic

Stage: Early Aalenian to late Toarcian

Depositional environment: Shoreface/coastal

The Stø Formation, picked at a sharp decrease on the GR, consists of sandstones, occasional claystones and small amounts of limestone.

The sandstones consists of clear to translucent and loose quartz, which is medium to coarse, well sorted, subrounded to rounded, occasionally subangular, occasionally microglauconitic. The sparse claystones are brownish grey to dark grey, light to medium grey, firm to moderately hard, subblocky to blocky, are carbonaceous, occasionally micromicaceous and non calcareous.

The limestone is white to pale yellowish white, soft to firm, blocky and microcrystalline. Occasionally the limestone is microglauconitic and argillaceous.

Nordmela Formation

**1165.5 – 1189.6 mMD, 1136.0 – 1155.0 mTVD
(1111.0 – 1130.0 mTVD MSL)**

System: Jurassic

Series: Early Jurassic

Stage: Pliensbachian

Depositional environment: Marginal marine

The top of the Nordmela Formation is picked on a decrease of the GR and resistivity log responses. The Nordmela Formation is represented with interbedded claystone, sandstone and siltstone.

The claystone is observed as brownish grey to dark grey, light grey to medium grey, firm to moderately hard, subblocky to blocky, micromicaceous, carbonaceous, and non calcareous.

The sandstone consists of clear to translucent, loose quartz grains. The grain size varies from medium to coarse, and the sand is moderately sorted. The grains are subrounded to rounded, and occasionally subangular. Microglauconite appears occasionally.

The siltstone is light brownish grey, soft to firm and blocky. It is grading to sandstone and contains micropyrrite. The siltstone is also non calcareous.

Tubåen Formation

**1189.6 – 1201.0 mMD, 1155.0 – 1163.9 mTVD
(1130.0 – 1138.9 mTVD MSL)**

System: Jurassic

Series: Early Jurassic

Stage: Pliensbachian

Depositional environment: Marginal marine

PERMIAN

**1201.0 – 2590.0 mMD, 1163.9 – 2294.0 mTVD
(1138.9 – 2269.0 mTVD MSL)**

System: Permian

Series: Early Permian

Depositional environment: Coastal plain or intermittently sabkha-like environments within an arid or semi-arid climatic regime

The Lower Permian sediments were identified by biostratigraphy, and were later picked on a sharp increase of the GR response. From 1201 mMD to 1425 mMD the sediments consisted of dominant sandstone with minor claystone interbeds and occasional limestone stringers. These stringers may have

been calcite cemented sandstone layers but could only be identified as limestone in samples and by log response.

The sandstones are clear to translucent quartz, mainly loose, also white, very fine to fine, occasionally medium, moderately sorted, subangular to subrounded, micromicaceous, kaolinitic, occasionally with calcite cement, occasional micropyrrite. The claystone tends to be medium dark grey to brown grey, firm, blocky, micromicaceous, locally silty grading to siltstone which is calcareous and occasionally micropyrritic. The limestone stringers are white, firm, crumbly, occasional argillaceous laminations, fine sand, micritic to microcrystalline.

Below 1425 mMD evaporites and claystone dominate the sequence until TD at 2590 mMD. Halite layers were only determined by log response until 1630 mMD since the mud was not salt saturated and all the halite drilled dissolved into the mud. Anhydrite was also common in the sequence along with occasional limestone and rare sandstone stringers.

The claystones are predominately medium to dark grey or brown grey to grey black, firm to moderate hard, sub-blocky, occasionally platy, locally silty, non to moderate calcareous, occasionally micro carbonaceous and with traces of micropyrrite.

The anhydrite is described as white to light grey, soft to firm, crumbly, and predominately amorphous to microcrystalline. In parts slightly argillaceous.

The halite is described as clear to milky white, moderate hard, brittle and cryptocrystalline to crystalline.

TD

**2590.0 mMD, 2294.0 mTVD
(2269.0 mTVD MSL)**

4.4.2 Geological Summary 7227/11-1A

Well 7227/11-1A starts at 1160 mMD.

REALGRUNNEN GROUP 1141.9 – 1201.5 mMD, 1116.8 – 1166.2 mTVD
(1091.8 – 1141.2 mTVD MSL)

The Realgrunnen Group comprises the Stø and the Nordmela Formations.

Stø Formation 1141.9 – 1165.0 mMD, 1116.8 – 1135.5 mTVD
(1091.8 – 1110.5 mTVD MSL)

System: Jurassic

Series: Middle - Early Jurassic

Stage: Aalenian - Late Toarcian

Depositional environment: Shoreface/coastal

The Stø Formation is dominated by sandstone with only minor claystones interbeds. Top of the formation is picked at a sharp decrease of the GR readings.

In the samples the sandstones predominantly appear as loose quartz grains, clear to translucent, fine to very coarse, poorly sorted and subangular to subrounded. Towards the base of Stø, the grains are occasionally very coarse to granule sized and the sandstone is locally argillaceous.

The claystones are greyish black to brownish black, firm, subblocky to blocky and non calcareous. Accessories such as micromica and micropyrrite are present, and the claystone contains carbonaceous material. The claystones are very soluble, probably due to the high formation water salinity, and are generally underestimated in the samples.

Nordmela Formation 1165.0 – 1190.0 mMD, 1135.5 – 1156.4 mTVD
(1110.5 – 1131.4 mTVD MSL)

System: Jurassic

Series: Early Jurassic

Stage: Pliensbachian

Depositional environment: Marginal marine

The top of the Nordmela Formation shows a decrease in the GR log readings. The formation is represented with interbedded claystone, siltstone and sandstone.

The sandstone appears as clear to translucent quartz grains that are predominantly loose. The grains are fine to coarse, subangular to rounded and poorly sorted. In the lower part of the formation the grain size is predominantly fine to medium and the sand is well sorted. Sandstone fragments logged are light grey, friable to hard, commonly calcareous cemented with traces of silica cement. They are made up of very fine to fine, clear to translucent quartz grains.

The claystone is observed as brownish grey to brownish black, soft, amorphous and soluble. In part the claystone is sandy and silty. Further down in the formation, the claystone becomes medium grey, firm, subblocky to blocky and micromicaceous.

The siltstone is pale brownish grey to brownish grey, moderate hard, argillaceous, micromicaceous and non calcareous. It is very rich in brown and black carbonaceous fragments and locally grading into lignite.

Tubåen Formation **1190.0 – 1201.5 mMD, 1156.4 – 1166.2 mTVD**
(1131.4 – 1141.2 mTVD MSL)

System: Jurassic

Series: Early Jurassic

Stage: Hettang – Sinemur?

Depositional environment: Marginal marine

The Tubåen Formation consists of massive sandstone.

The sandstone contains clear to translucent quartz grains, very fine to fine, well sorted and subangular to subrounded. The matrix is friable to moderately hard, light grey, partly argillaceous and is calcareously cemented. In the base of Tubåen, the sorting degrades to moderate and the grain size is very fine to coarse, predominantly fine to coarse.

PERMIAN **1201.5 – 3446.0 mMD, 1166.2 – 3197.6 mTVD**
(1141.2 – 3172.6 mTVD MSL)

System: Permian

Series: Early Permian

Depositional environment: Coastal plain or intermittently sabkha-like environments within an arid or semi-arid climatic regime

The Early Permian sediments were identified by biostratigraphy, and were picked on the log where the GR increases sharply at the base of the Tubåen Formation sandstone. From 1201 mMD to 1425 mMD the sediments consisted of predominantly sandstone with minor claystone interbeds and occasional limestone stringers. These stringers may have been calcite cemented sandstone layers but could only be identified as limestone in samples and by log response.

The sandstones consists of clear to translucent quartz grains, mainly loose, also white, very fine to fine, occasionally medium, moderately sorted, subangular to subround, micromicaceous, kaolinitic, occasionally with calcite cement, occasional micropyrrite. Claystone tends to be medium dark grey to brown grey, firm, blocky, micromicaceous, locally silty, grading to siltstone which is calcareous and occasionally micropyrritic. Limestone stringers are white, firm, crumbly, occasional argillaceous laminations, fine sand, micritic to microcrystalline.

Below 1425 mMD anhydrite and halite dominated evaporates and claystone dominate the sequence until TD at 3446 mMD. Halite layers were first identified in the original well bore 7227/11-1A, solely on log response due to lack of cuttings return. This phenomenon persisted then until 1630 mMD since the mud was not salt saturated and all the halite drilled dissolved into the mud. Anhydrite zones were also common in the sequence along with occasional limestone/marl and rare sandstone stringers. On

this sidetracked well the drilling mud was well saturated with NaCl from the previous well bore and normal amounts of drill cuttings were experienced over the halite sequences.

The claystones are predominately medium to dark grey or brown grey to grey black, firm to moderate hard, sub-blocky, occasionally platy, locally silty, non to moderate calcareous, occasionally micro carbonaceous and with traces of micropyrrite.

The anhydrite is described as white to light grey, soft to firm, crumbly, and predominately amorphous to cryptocrystalline. In parts it was slightly argillaceous, seen as very fine lamina. Towards the base of the section anhydrite became calcareous to the point of grading to anhydritic limestone.

The halite is described as clear to rarely milky white, consistently moderate hard, brittle and cryptocrystalline to coarse crystalline. A high-response GR zone were encountered within the halite, suggesting allegedly a high ³⁹⁻⁴¹K+ isotope content in this zone between 3079 and 3095 mMD.

TD

3446.0 mMD, 3197.6 mTVD
(3172.6 mTVD MSL)

4.5 Hydrocarbon indications

No hydrocarbon indications were observed in the wells 7227/11-1S and 7227/11-1A. Except for one gas peak of 43.55 % total gas at 2299 mMD in 7227/11-1S, the gas readings were very low throughout both wells (Table 4-5 and 4-6).

Table 4-5 Gas peaks well 7227/11-1S

Depth mMD	Depth mTVD	Gas content %	C1	C2	C3	iC4	nC4	iC5	nC5	Description	Background gas %
1100	1083	0.80	2916	297	30	-	-	-	-	Trip gas	0.2
1666	1519.6	1.03	6632	798	295	36	62	19	20	Formation gas	0.06
1710	1552.7	1.01	5772	637	273	37	68	23	15	Formation gas	0.4
1718	1558.8	0.90	5818	628	247	37	64	22	17	Formation gas	0.4
1851	1660.8	1.02	8103	221	52	35	18	40	20	Formation gas	0.1
1882	1684.8	17.36	92005	2769	674	92	164	47	57	Formation gas	0.3
2040	1819.8	2.28	17737	1105	219	58	67	43	26	Formation gas	0.7
2119	1888.1	3.12	24682	703	204	31	55	14	16	Formation gas	0.7
2175	1936.8	2.10	15146	1359	341	118	96	55	25	Formation gas	0.4
2259	2009.3	6.89	41180	2560	1064	197	289	101	85	Formation gas	0.3
2299	2044.0	43.55	151655	15260	11430	2797	4349	1769	1463	Formation gas	1.5
2322	2064.1	9.13	45040	4093	2909	709	1093	438	357	Connection gas	1.2
2348	2086.4	2.70	14356	1223	897	228	354	154	140	Connection gas	1.1
2380	2114.3	1.22	5338	513	531	160	257	125	118	Connection gas	0.6
2408	2138.6	1.93	11455	797	516	140	219	103	95	Connection gas	0.5
2437	2163.7	1.31	8182	603	404	118	181	90	86	Connection gas	0.4
2465	2187.8	0.68	3470	273	245	81	132	67	63	Connection gas	0.3
2493	2211.0	0.87	5129	379	272	87	136	71	78	Connection gas	0.3
2521	2235.8	0.67	3834	269	199	66	104	56	63	Connection gas	0.3
2550	2260.1	1.23	8455	474	254	74	116	57	51	Connection gas	0.4
2553	2262.6	1.78	12111	632	238	64	95	49	44	Formation gas	0.4
2565	2272.7	2.20	16692	985	281	61	96	46	44	Pumps off gas	0.8
2579	2284.4	1.27	9000	566	244	64	100	55	55	Connection gas	0.4
2589	2292.6	8.07	58761	2013	411	76	124	52	52	Formation gas	0.8
2590	2294.0	2.80	21819	927	291	66	99	53	42	Short trip gas	0.6

Table 4-6 Gas peaks well 7227/11-1A

Depth mMD	Depth mTVD	Gas content %	C1	C2	C3	iC4	nC4	iC5	nC5	Description	Background gas %
1518	1468.5	2.75	18157	1475	670	136	203	94	79	Formation gas	0.3
1543	1493.3	0.38	2111	225	126	39	55	28	28	Connection gas	0.3
1571	1521.0	0.33	1681	198	116	37	53	33	27	Connection gas	0.2
1590	1539.9	4.09	31213	1032	303	62	101	41	39	Formation gas	0.3
1607	1556.7	1.66	13327	399	79	26	33	21	16	Formation gas	0.6
2275	2218.0	1.59	13892	386	131	22	36	12	13	Formation gas	0,06
2308	2250.0	7.37	50788	1391	337	40	84	27	43	Formation gas	0.03
2342	2284.4	0.64	5010	194	61	-	23	-	11	Pumps off gas	0.22
2371	2313.0	0.44	3355	103	31	11	18	-	14	Pumps off gas	0.15
2573	2502.3	0.15	1002	27	13	-	36	-	11	Pumps off gas	0.06
2600	2524.6	0.13	884	27	11	31	36	-	12	Pumps off gas	0.06

4.6 Geophysical results

The Jurassic sequence came in 140 meters shallower than predicted, due to a thinner Cretaceous sequence than prognosed. The depth conversion of the Cretaceous sequence, which formed the basis for the well prognosis, was complicated by dipping strata and both vertical and lateral (anisotropic) seismic velocity variations. Triassic strata were prognosed to follow the Jurassic sequence, possibly interfingering with salt tongues or debris flows related to halokinesis. However, no Triassic strata were encountered, and an Early Permian sequence consisting of carbonates, shales and large volumes of evaporites was penetrated below the Jurassic sequence.

4.7 Data acquisition

4.7.1 Cuttings and mud samples

A standard mud logging unit and a Flair unit were used for the well (details in Final Well Report and Flair report, Geoservices).

Well 7227/11-1S:

- Cuttings were sampled every 10 m from 730 to 1100 mMD, thereafter every 3 m from 1100 to 2590 mMD. In intervals drilled with high ROP, cuttings were collected every 6 m.
- Mud samples were taken every 100 m from 730 to 2590 mMD (TD).
- Geochemical samples were taken every 30 m from 730 mMD to 2590 mMD (TD).
- Gas samples were collected from gas peaks.

Well 7227/11-1A:

- Cuttings were sampled every 3 m from 2347 to 3446 mMD. Through halite sequences the sampling interval was increased to 6 m due to high ROP.
- Mud samples were taken every 100 m from 2363 to 3446 mMD (TD).
- Geochemical samples were taken every 30 m from 1163 mMD to 3446 mMD (TD).
- Gas samples were collected from gas peaks.

4.7.2 Conventional coring

No cores were cut in the wells 7227/11-1S and 7227/11-1A due to no presence of reservoirs.

4.7.3 MWD/LWD

The MWD-logging was performed by Baker Hughes Inteq.

Table 4-7 MWD logging, well 7227/11-1S

Run No.	Depth interval mMD RKB	Collar diameter	Tool type	Comments
1	312 - 691	8 1/4"	DCP/MPR/APX	9 7/8" pilot hole GR/Res/Dir + acoustic
2	321 - 725	9 1/2"	DCP/MPR	GR/Res/Dir
3	725 - 1100	9 1/2"	Autotrack G3 Ontrack	Drilled 17 1/2" hole. GR/Res/Dir + ECD
4	1100 - 2590	9 1/2"	Autotrack G3 Ontrack	Lost communication with Autotrack at approx. 2340m. POOH at TD. GR/Res/Dir + ECD

Table 4-8 MWD logging, well 7227/11-1A

Run No.	Depth interval mMD RKB	Collar diameter	Tool type	Comments
5	1093 – 2290	9 1/2"	Autotrack G3 Ontrack	Kick off assembly. GR/Res/Dir + ECD
6	2290-3446	6 3/4"	Autotrack G3 Ontrack	GR/Res/Dir + ECD

4.7.4 Wireline logging

Schlumberger was the main contractor for the wireline logging operation in the well. Read Well Service was selected for the VSP logging. Density/neutron and sonic measurements were stored on the rig during the well operation.

Table 4-9 Wireline logging

Tool Combination	Run	Interval mMD RKB	Remarks
Well 7227/11-1S			
VSP	1A	585 - 285	In 9 7/8" pilot hole without riser
VSP	2B	955 - 755	Inside 13 3/8" casing. Not able to reach TD
PEX/FMI-dip	1A	2595 - 1093	
MSIP	1A	2593 - 683	Data collected in open 12 1/4" open hole and in 13 3/8" casing
Well 7227/11-1A			
PEX/FMI-dip/DSI	1A	2283 - 1108	
PEX/FMI-dip/DSI	2B	3243 - 2289	Tool stopped in shale approximately 200 m above TD

VSP	3C	3243 - 1105	Did not pass restriction in shale. Logged in two runs. First run in casing
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4.7.5 Data quality

In general the data quality was good.

Good quality sonic compression wave data were collected in the 9 7/8" pilot hole in connection with the MWD logging. Sonic data is missing in the interval 683 to 730.7 mMD.

Due to unstable hole in the 17 1/2" section the planned open hole wireline had to be cancelled. Density data are missing in this interval. The sonic data were collected through the 13 3/8" liner during open hole logging of the 12 1/4" section. A walk-away VSP of good quality was run just after the 13 3/8" liner was set.

In 7227/11-1A the logs were not overlapping between 12 1/4" and 8 1/2" sections, but continuous logs were obtained by applying salt values in the missing interval.

In connection with the TD logging in well 7227/11-1A, no wireline logs were able to pass 3243 mMD. This depth represents a change in lithology from halite to shale, which was observed on cuttings and MWD.

4.8 Formation pressure

No indication of abnormal pressure was observed during drilling.

In the shale section down to top of the Hekkingen Formation a pressure gradient of 1.03 sg is estimated. The estimated pressure in the reservoir sections below is based on the pressure represented by a column of salty water from the reservoir to the seabed. Figure 4.8.1 is showing this possible communication to the seabed. The density of the salty water of 1.15 sg is based on the MDT measurements in well 7228/7-1A.

Formation pressure in Permian sections:

Salt:

The salt does not have any pores. In theory the pressures are equal in all direction and the same as the overburden pressure.

Shale:

There are no indications of high pressure in the shales.

Formation pressure is presented in Figure 4-6 and 4-7. In this figure a dotted line is drawn in the salt sections. This line is expected to represent the formation pressure in the shale.

Overburden pressure

Below 13 3/8" casing a density log from wireline is available and is used to calculate the overburden gradient. Above the casing shoe a sonic log is available up to 309 mMD, and a synthetic density log is

calculated using the Gardner equation. At seabed a density of 1.83 sg is used and a linear relation is assumed down to top of the first actual value.

In well 7227/11-1A the wireline logs did not pass a restriction at 3245 mMD which represents a change in lithology from halite to shale. From TD and up to this depth a density of 2.50 sg is used to calculate the overburden gradient. This gradient is believed to represent the actual lithology.

4.8.1 *Reservoir pressure summary*

No pressure points were taken in the well. Based on seismic data it is assumed that the Jurassic sandstone is in pressure communication with the seabed.

4.9 *Reservoir fluid sampling*

No fluid samples were collected in the well.

4.10 *Leak off test*

No leak off or extended leak off tests were performed in the well.

Below the 20" casing, at approximately 700 mMD, an extended leak off test was attempted. The test was unsuccessful due to higher fracture pressure than expected. The pressure applied reached the maximum casing pressure, which has an equivalent mud weight of 2.23 sg.

Below the 13 3/8" liner shoe a FIT to 1.8 sg was performed. No LOT/XLOT was performed because high pore pressures were prognosed below the shoe, and a test would reduce the formation strength.

In the well 7227/11-1A a 9 5/8" liner shoe was set at 2289 mMD in massive salt. A FIT to 1.8 sg was performed.

The observations indicate that the fracture pressure is high. This may be caused by the salt tectonic causing high horizontal stresses in the formation.

The caliper from the FMI log shows a large ovality in some intervals. This is related to difference in maximum and minimum horizontal stress. The difference in stress is related to salt tectonic, where the minimum stress direction against the centre of the salt dome.

4.11 *Formation temperature*

Temperature is measured while performing wireline and MWD logging. The temperature profile is different compared to other wells in the area.

A temperature gradient of 5.0 °C/100 meter is assumed above the salt, and a gradient of 1.2 °C/100 meter is assumed in the salt section. The high temperature gradient in the shale is supported by temperature measurement from MWD log.

The shape of the temperature gradient is caused by a much larger thermal conductivity for halite than for shale or sand.

Due to the few measurements the calculated temperature profile is very uncertain.

Table 4-10 Measured and evaluated temperatures

Tool Combination	Depth of measurement mTVD RT	Max recorded temperature °C	Time since last circulation hrs	Evaluated temperature – inhouse formula °C	Remarks
Well 7227/11-1S					
VSP	1050	32	-	-	Inside casing
PEX/FMI-dip	2297	50	14	70.0	
MSIP	2297	52	34.7	61.3	
Well 7227/11-1A					
PEX/FMI-dip	2230	50	9.9	74.6	
PEX/FMI-dip	2968	68	32.2	78.1	
VSP	2968	68	31.9	78.2	Poor quality

The temperature measurement from VSP logging in 7227/11-1A is from inside the tool since the thermometers on the cable head was not functioning. From experience the inside temperature is around 20°C lower than the mud temperature.

4.12 Experiences/Recommendations

The logistic is challenging when operating in the Barents Sea. For this well PEX-DSI and HRLA (density/neutron/sonic/resistivity) tools were put on the rig on fixed rental. This solution is good when several sections shall be logged. In the present contract the minimum rental period is 3 months.

Due to unstable 17 ½” hole section, wireline logging could not be performed. This section was logged through the liner with a sonic log in connection with logging of the 12 ¼” section. The sonic tool used was the MSIP tool.

Data was of good quality where cement was present. The logging speed for the MSIP tool was 600 ft/hrs which is low compared to the DSI tool which has a logging speed of 1800 ft/hrs.

When entering the open hole below the 9 ⅝” casing shoe, the VSP tool stopped in connection with the TD logging. When the tool reached surface it was discovered that the calliper arm probably was open when running in with the tool. The VSP tool is light and was equipped with an additional part to supply more weight. The part is relative short and massive, and it was believed that it could stop in washout zones. When the log was rerun the design of the additional weight was changed using two Schlumberger logging tools as weight material.

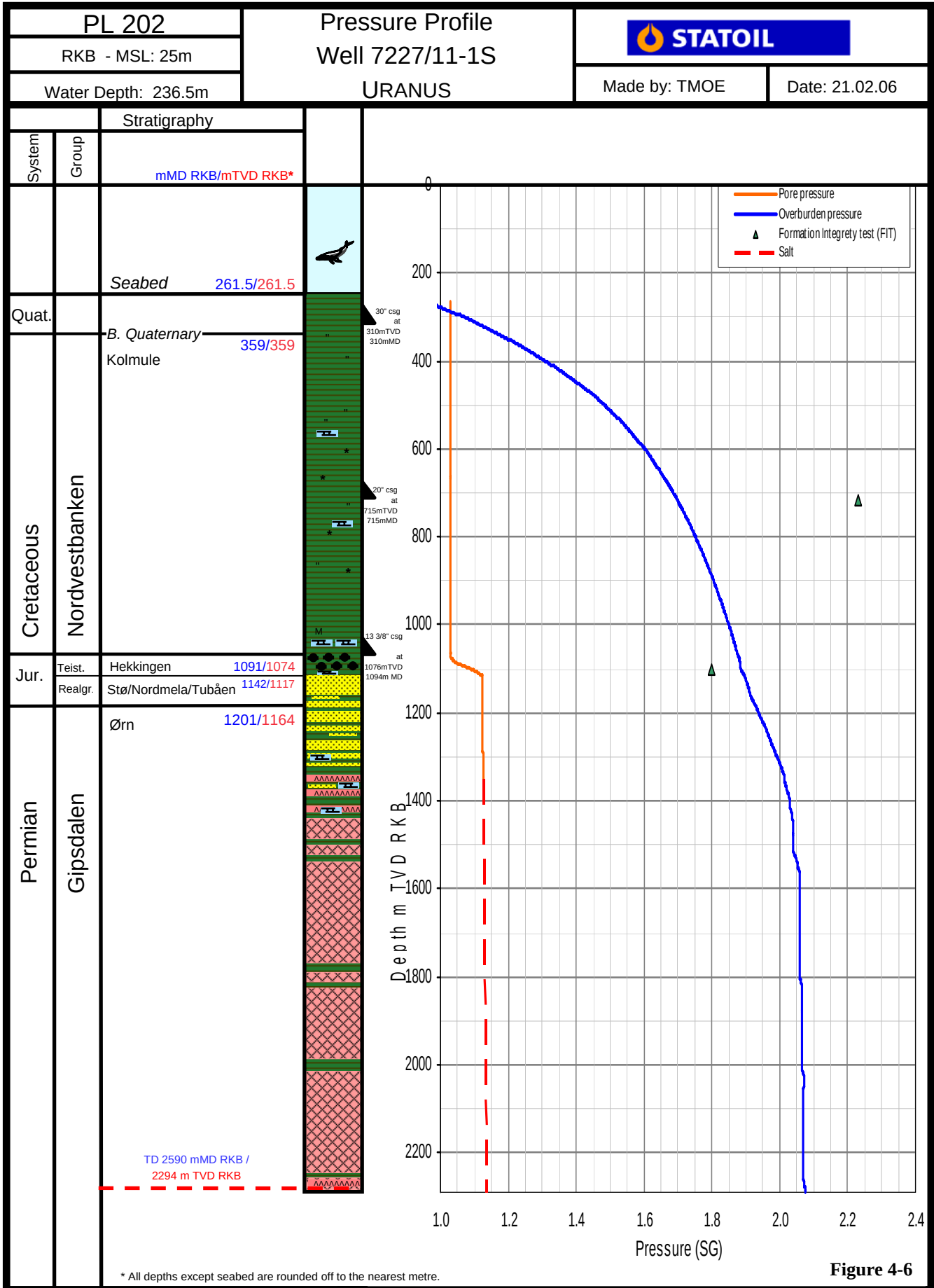


Figure 4-6

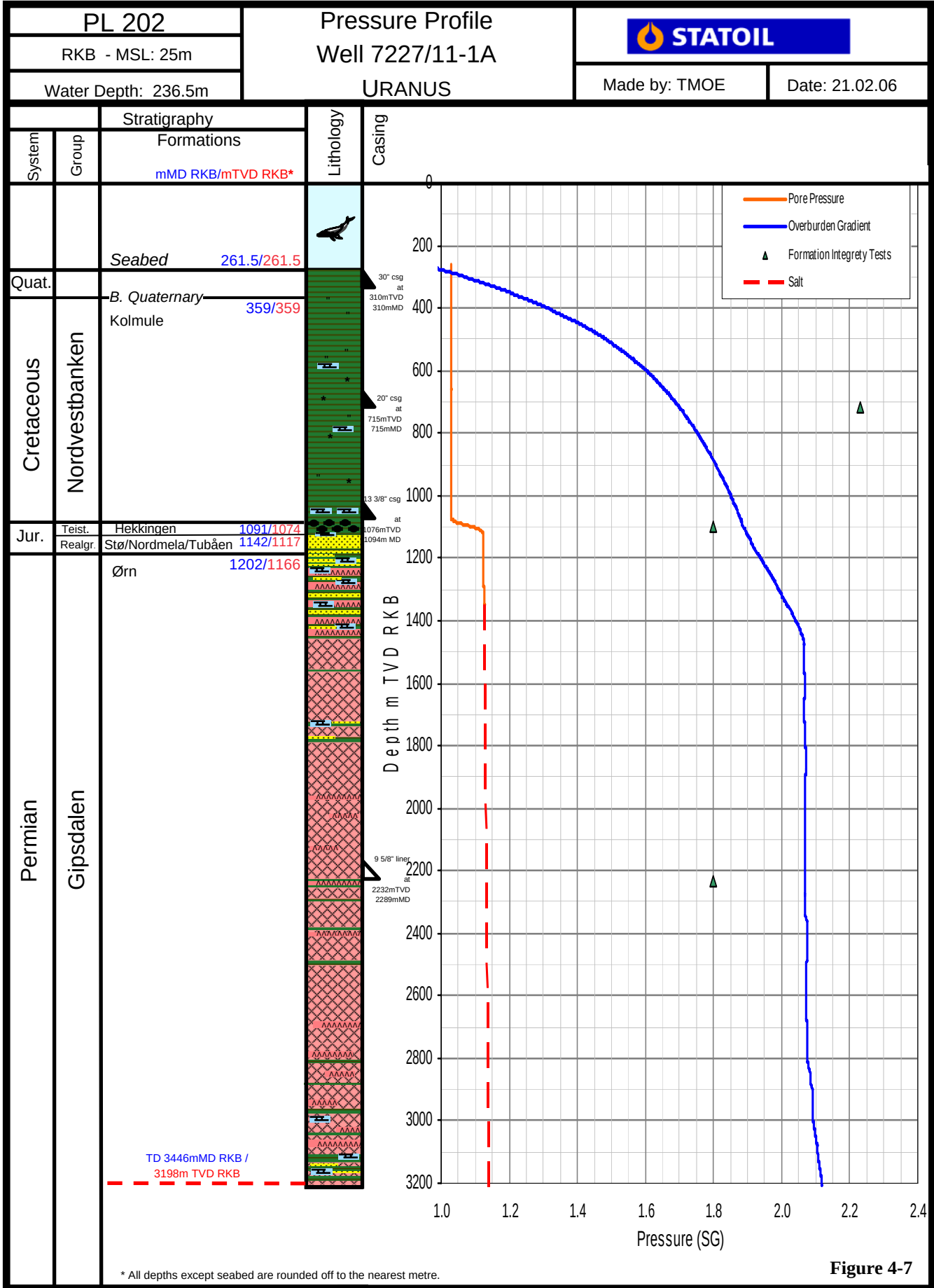
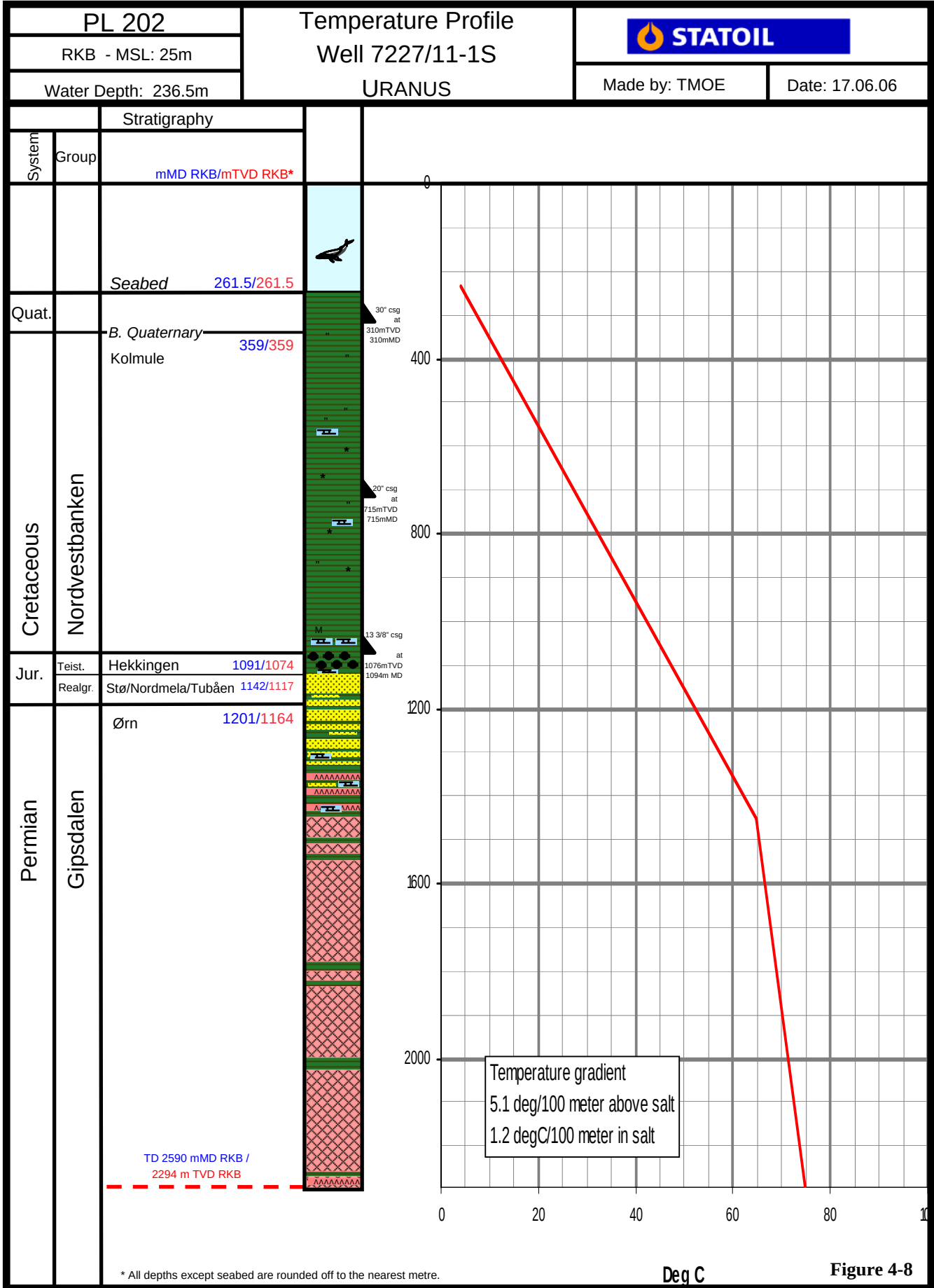
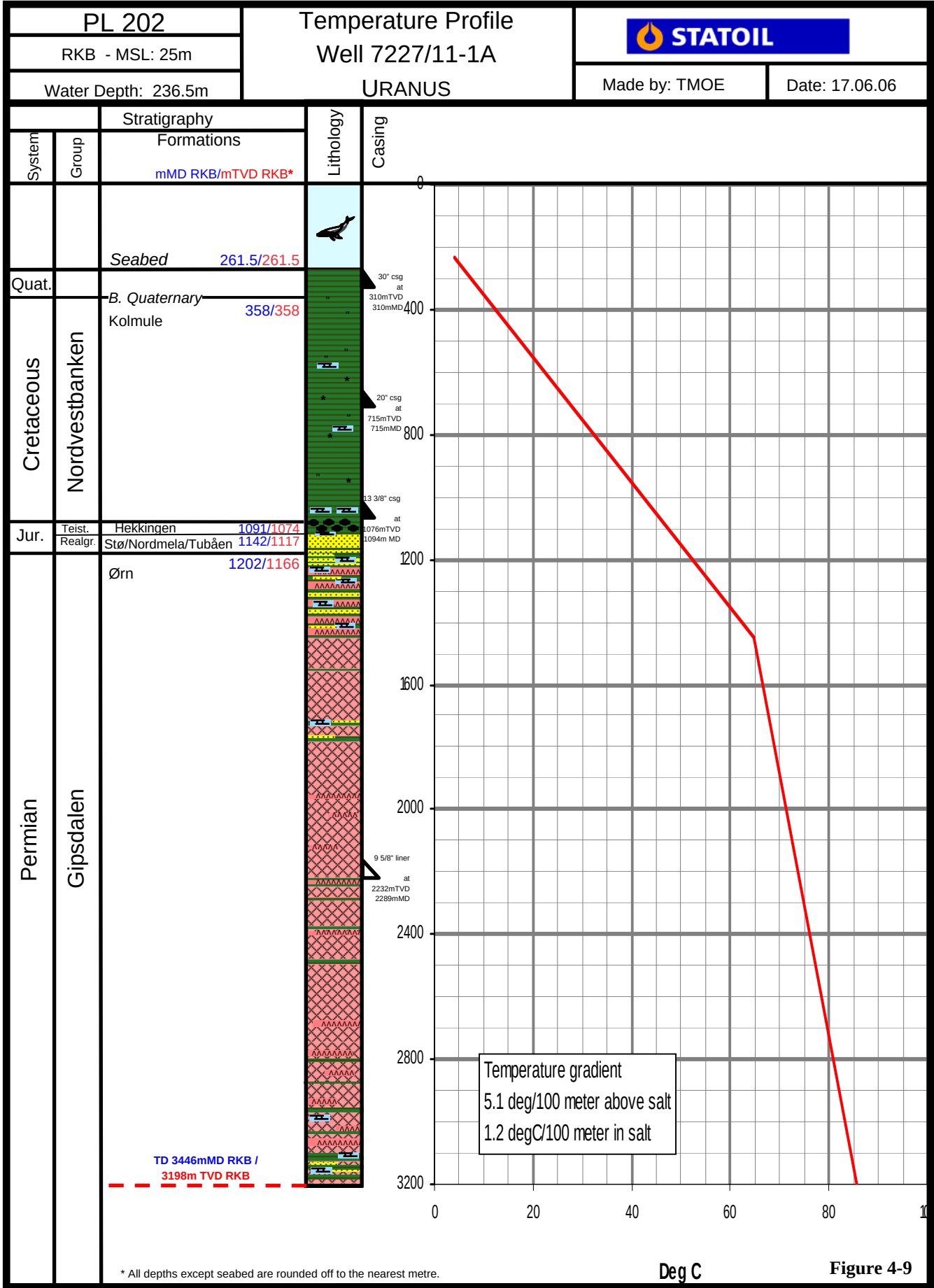


Figure 4-7



Deg C

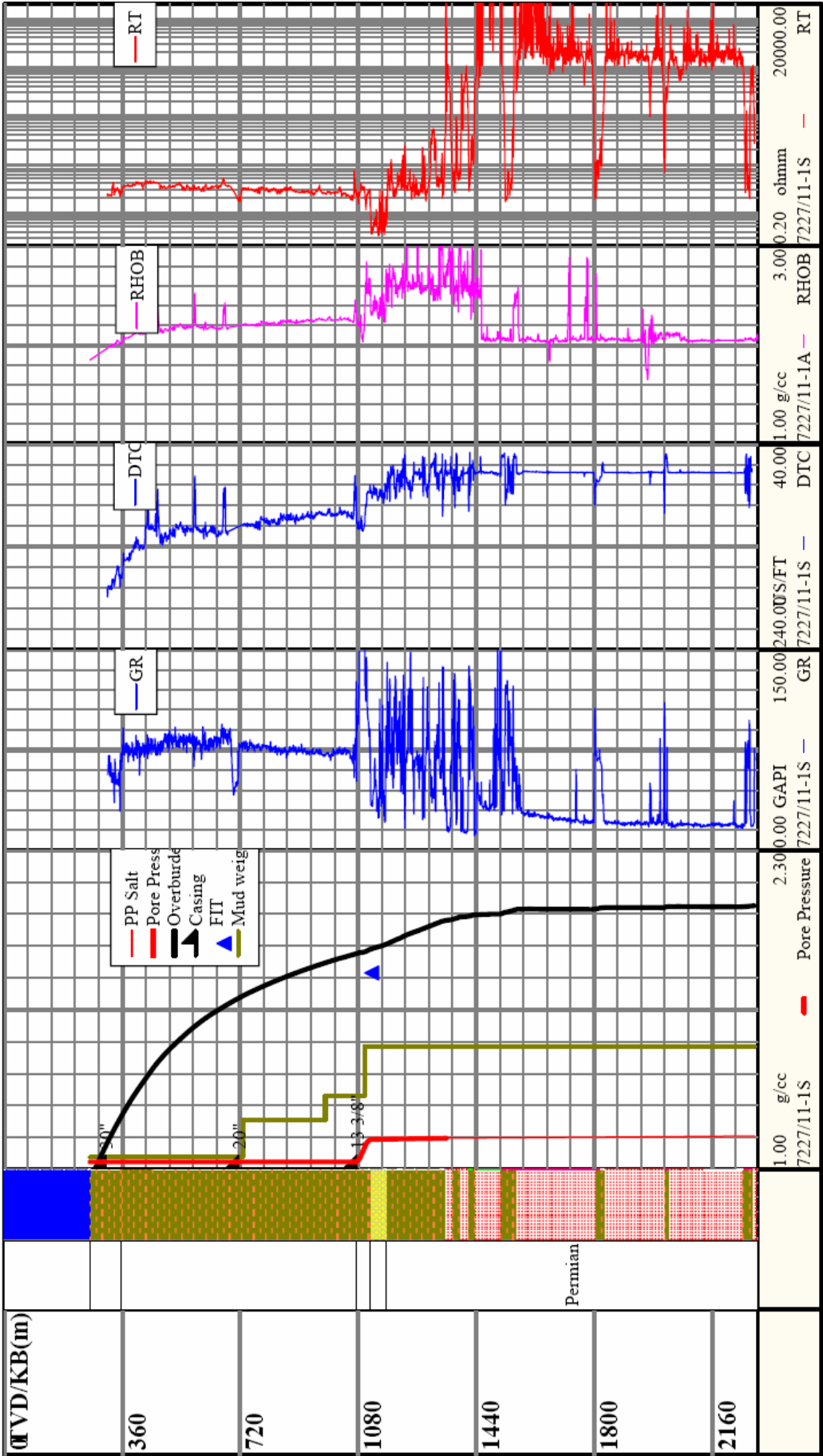
Figure 4-8

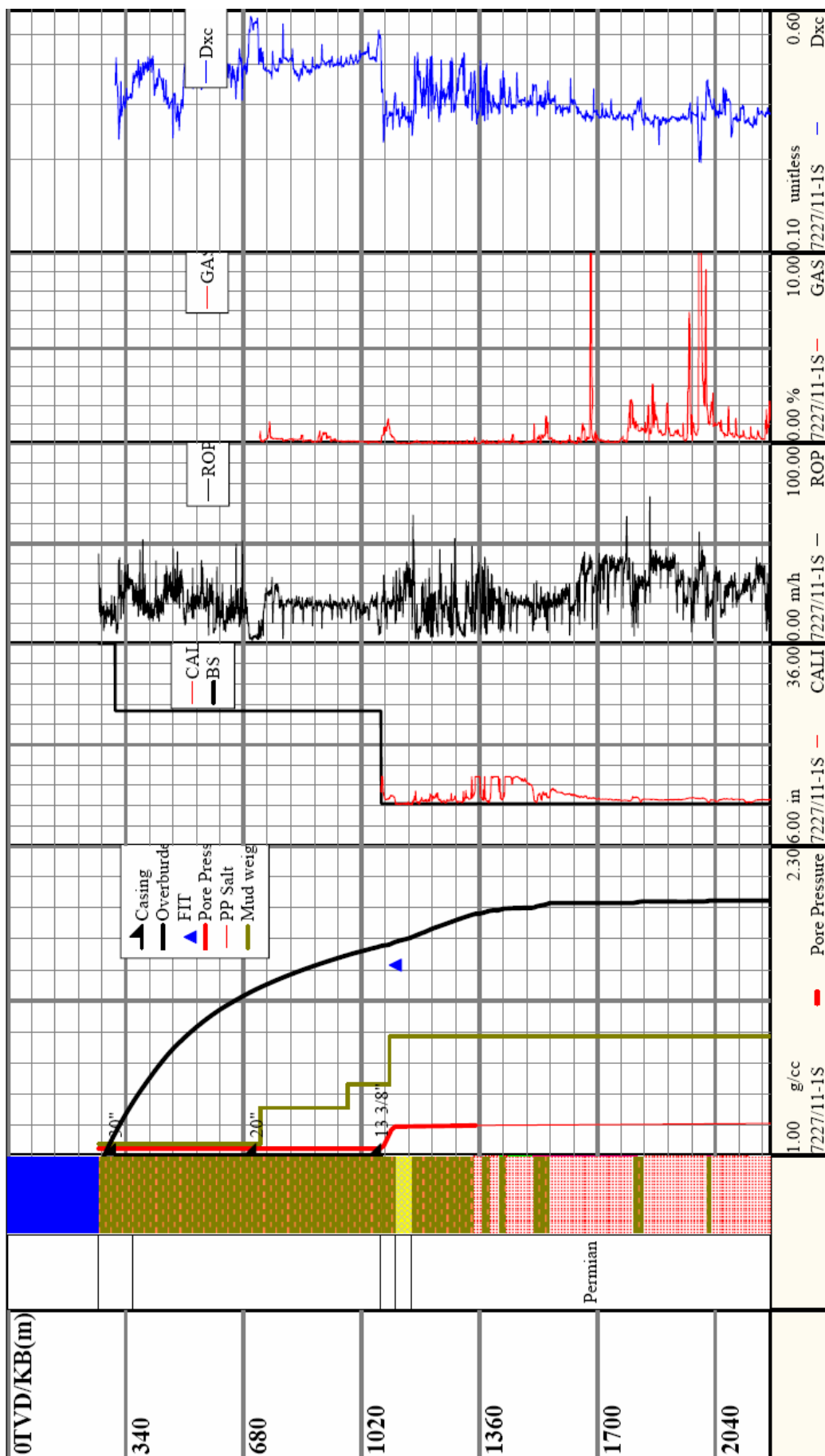


4.13 Composite plots

Uranus Completion 1 7227/11-1S

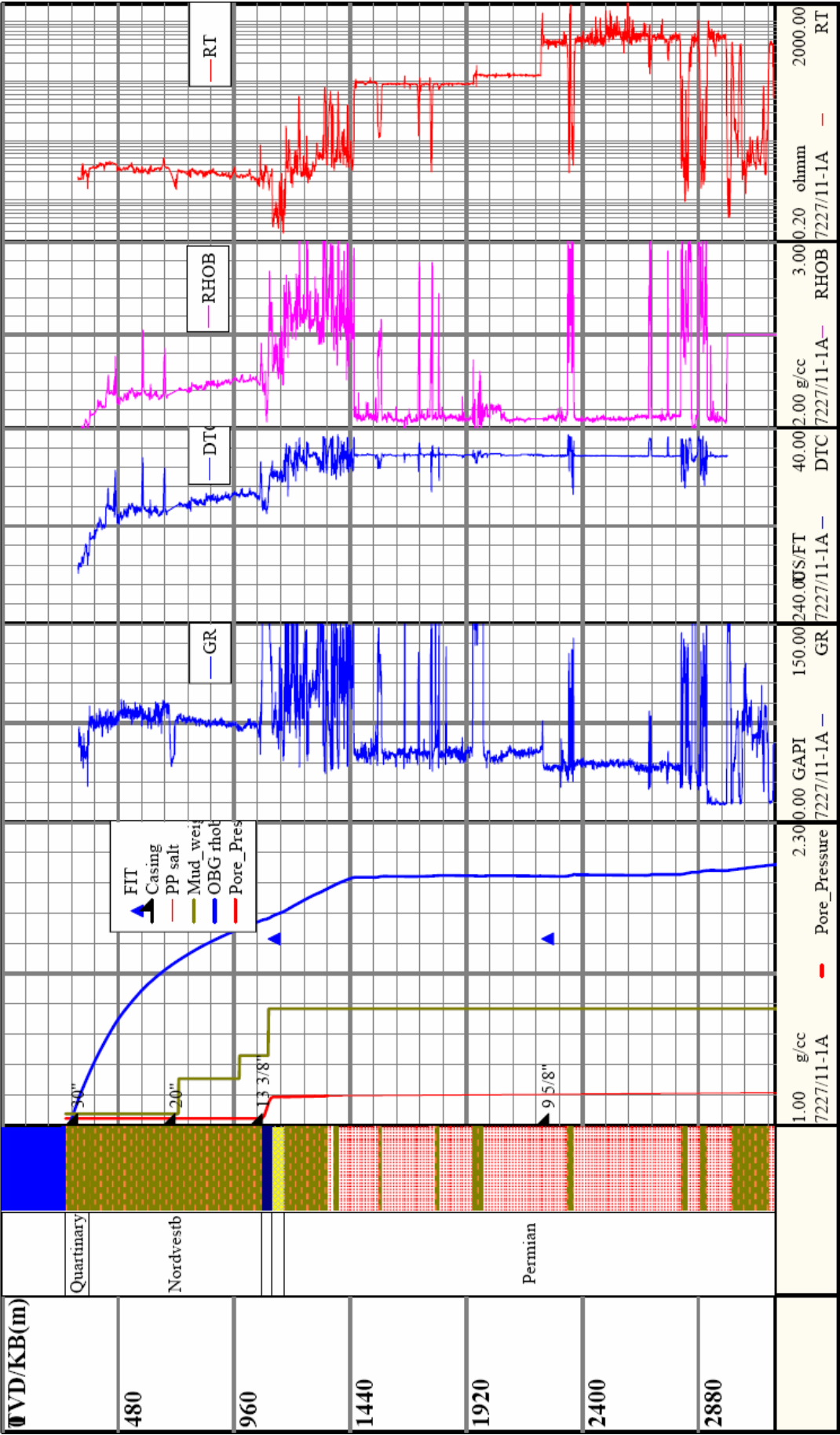
Project Name: Uranus Project





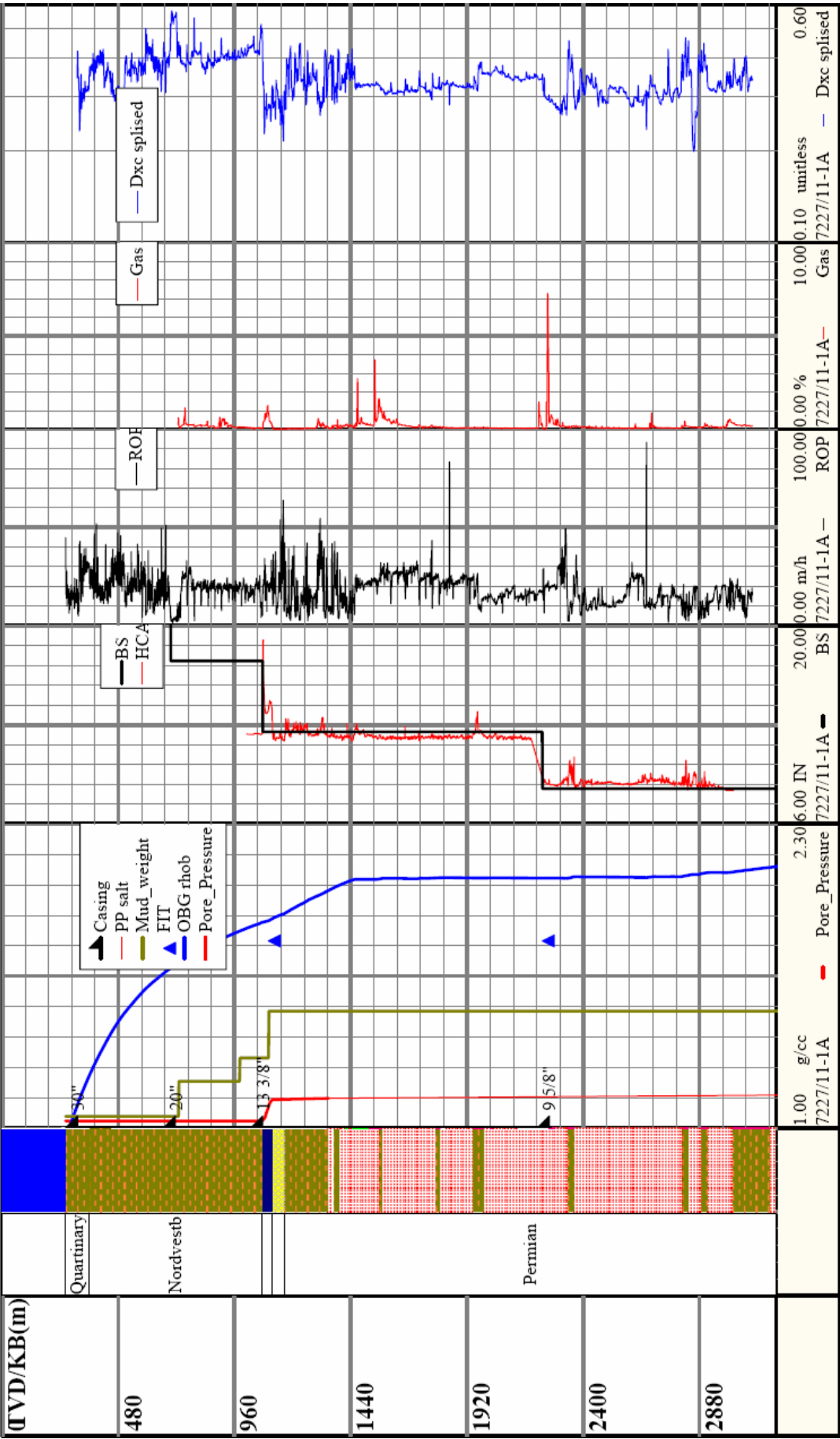
Uranus Completion 1 7227/11-1A

Project Name: Uranus Project



Uranus Completion 2 7227/11-1A

Project Name: Uranus Project



5 Drilling operations report

5.1 Rig move and positioning

START: 10.01.2006 02:00 0 mMD

END : 13.01.2006 02:30 0 mMD

OBJECTIVE

Move rig from Goliat location to Uranus Location.

SUMMARY

The rig was handed over from ENI to Statoil at 02:00 hrs on the 10 January 2006 in sheltered waters east of Rolfsøysund. Bad weather caused the rig to move from the Goliat location to sheltered waters in order to handle logistics. Unloaded bulk and spud equipment before commencing rig move. The distance of 91.4 nm to Uranus location was made in 21 hrs giving an average transit speed of 4.4 knots. Prior to running anchors and de-ballasting the rig, rig maintenance and soil sampling of the sea bed was performed while WOW. Final spud-in position for Uranus was:

Geographical coordinates

North: 72° 14' 22.18" N

East: 27° 22' 14.89" E

Datum: ED50

Spheriode: INT 1924

UTM coordinates

North: 8 015 904 m UTM zone: 35

East: 512 625 m C.M. 27°E

5.2 Drilling 36" top hole section, 7227/11-1S

START: 13.01.2006 02:30 261.5 mMD

END : 15.01.2006 18:30 312.4 mMD

OBJECTIVE

Drill 36" top hole from seabed to 310 m. Run and cement 30" conductor with 3.0 m stick up. Release conductor running tool directly after cementing.

SUMMARY

Placed 4 marker buoys 5-6 m from spud position. RIH and tagged seabed at 261.5mMD RKB without pumping and with no rotation. Drilled 36" hole with almost no WOB, 1000 lpm and 40 RPM. Slowly increased flow rate up to 2000 lpm and 50 RPM. Continued drilling from 270 m to 296 m using 126 RPM, 4700 lpm, 0-1 WOB, torque 4 - 8 kNm. Worked pipe several times to reduce angle in the well due to sea currents.

Survey at 274 m: 1.75°, 278 m: 1.5°, 282 m: 0.75°, 310m: 0.5°. TD of 36" hole at 310 m.

Circulated hole clean and displaced hole 1.3 times to 1.35 sg mud. POOH. Ran and cemented 30" conductor.

BIT RUNS

The section was drilled in one run. No indications of boulders and the formation was easily drilled.

Drilled out the 30" conductor using a 26" HO clean out assay with a 9 7/8" bit. TD 9 7/8" bit at 320 m. Circulated well clean and pulled up to inside top of the 30" conductor. Observed 30" conductor for movement. Found that the conductor was still moving slightly (this might however have been caused by the BHA banging onto the casing wall). Decision was made to pull up to surface, PU cement stinger, run in and check TOC on the outside of the 30" conductor.

Tagged TOC 6 m below seabed. Large crater the first few meters of the formation. Attempted to tag TOC on the other side of the conductor, but was unable to keep the light cement stinger straight due to strong currents at seabed.

DRILLING FLUID

Used sea water and bentonite hi-vis sweeps. Pumped 5-10 m³ hi-vis pills 15 m after connection.

Displaced the hole to 1.35 sg bentonite/CMC mud prior to POOH.

Pumped hi-vis pills as follows: 1.6 m³ at 275 m, 9.3 m³ at 282 m, 7.4 m³ at 298 m, 14.9 m³ at 311 m, 2.4 m³ at 312 m.

CASING

Decided to delay running the 30" conductor through the splash zone due to rough weather (10-14 m waves and wind up to 50 knots). Ran 4 joints of 30" conductor. The inner string was spaced out 13 m above the float valve.

WOW for approximately 19 hours. Continued MU the conductor string and the 5 1/2" DP inner string. Mounted the bulls eye brackets in the moon pool from the 100 T flat car using the drill floor tuggers and one of the tuggers in the moon pool. The ball valve was also mounted in the moon pool. Ran the conductor through the splash zone, pumped out remaining air from the conductor and ran it down to 10-15 m above seabed. Used ROV to close the ball valve on the conductor running tool.

Stabbed in hole assisted by the ROV. The hole was in good condition and no problems were experienced running in to TD. Tagged bottom with 3 m stick up. However, lost 0.5 m stick up when setting down 5 tons. Pulled conductor 0.5 m up to maintain stick up. Circulated 30 m³ of sea water at 2000 lpm prior to cementing. This caused the conductor to be washed down 1.0 m as the conductor was not kept in tension (as it was meant to be). Picked up conductor 1.0 m to maintain 3 m stick up. It seems like the formation was much softer than expected.

Kept the conductor in tension during cement job.

MWD/BHA

Odfjell two stage 26"/36" hole opener assembly with 17 1/2" pilot bit was used. The 36" cutters was 2.83 m behind the 17 1/2" bit. Total depth of 17 1/2" hole was 312 m. A 2.5° Anderdrift tool was included in the assembly for inclination measurement. Some initial problems testing the tool were experienced as the tool did not respond according to procedure. Rotating the string with 100 RPM above the seabed solved the problem.

CEMENTING

Pumped light tuned cement at 800 - 960 lpm for 7 minutes before aborting the operation due to blockage in the surge tank knife valve. The reason for this is that the cementer mixed cement (after having weighted up the cement) at a too high rate for the bulk delivery to follow. This led to a large amount of air and little cement in the surge tank which was blown down in the mixing bowl. The cement was left static for 9 minutes while cleaning the knife valve. The rest of the cement job went well except when only 2 tons of cement was left in the cement silo. A significant amount of air is required to transfer this little volume of cement to the cement unit. Had a few problems with the air operated valve on silo C as a result of this. Unable to blow the last 1.2 tons of cement to the cement unit. Pumped a total of 27.2 m³ of 1.52 sg tuned light cement slurry and displaced with 6.6 m³ of seawater to leave 5 m of cement inside the shoe.

Held the conductor in tension while waiting for the cement to set up. While WOW the rig was unable to keep the conductor from moving due to heave. The conductor moved approx 20-30 cm up and down from time to time. Waited for the cement to set up and disconnected conductor running tool. Checked bulls eye and pulled RT to surface.

Decided to grout the conductor. Ran cement stringer (5 ½" DP and one stand of 3 ½" DP) to 6 m below seabed into the annulus. Pumped 4.5 m³ of cement slurry at TOC when start pulling pipe up to 1 m below seabed while continue pumping cement. Pumped a total of 7.5 m³ of cement and displaced with 2500 litres below rotary. Topped up annulus with cement while POOH.

LOGGING

N/A.

5.3 Drilling 9 ⅞" pilot hole, 7227/11-1S

START: 15.01.2006 18:30 320 mMD
END : 17.01.2006 16:00 691 mMD

OBJECTIVE

Drill out 30" conductor with dedicated clean-out BHA. Drill 9 ⅞" pilot hole from 30" conductor shoe to TD 691m. Perform shallow gas evaluation and geological sampling with MWD/LWD.

SUMMARY

Drilled out the 30" conductor shoe and cleaned out the rat hole with dedicated clean-out BHA. POOH. Grouted the 30" conductor annulus as described in 36" section summary. RIH and drilled 9 ⅞" pilot hole TD at 691 m. No indication of gas. Circulated hole clean, flow checked, displaced to 1.35 sg mud and POOH. Typical drilling parameters were: flow: 3100 lpm, pressure: 143 bar, WOB: 1-7 ton, RPM: 153-185 1/s, torque: 4-5 kNm.

BIT RUNS

Drilled 9 ⅞" pilot hole from 320 m to TD at 691 m. The hole was easily drilled except for a few interbedded dolomite/ limestone stringers that required more weight. Observed well continuously by using the ROV. Reamed each stand once due to tendency of building inclination. Maximum

inclination observed was 2.8°, direction 105°. It was not considered as a problem as the azimuth had the same direction as the planned kick off in the 17 1/2" section. The reason for the well building angle is believed to be formation related (inclination of the layers), not the BHA.

The bit came out rated 2-2-NO-A-E-I-NO-TD. The 371 m drilled was made with an average ROP of 14 m/hr.

DRILLING FLUID

Sea water and hi-vis bentonite sweeps were used. Pumped 7 m³ hi-vis pill every 15 m drilled. At TD the hole was circulated clean and swept with a 20 m³ hi-vis pill before displacing 1.3 times to 1.35 sg mud. POOH.

MWD/BHA

A 9 7/8" pilot hole assembly was utilized. For BHA details see appendix.

CEMENTING

N/A.

LOGGING

N/A.

5.4 Drilling 26" section, 7227/11-1S

START: 17.01.2006 16:00 320 mMD

END : 04.02.2006 03:30 725 mMD

OBJECTIVE

Open up 9 7/8" pilot hole to 26" from the 30" conductor rat hole to TD. Install 20" casing and 18 3/4" well head. Run and install BOP and Riser.

SUMMARY

RIH clean-out BHA with 8" bullnose instead of 9 7/8" pilot bit and opened up hole to 26" from 321 m to 409 m. Were not able to pass this depth, displaced hole to 1.35 sg mud and pulled BHA to surface. Typical drilling parameters were: flow: 3500-4700 lpm, pressure: 120 bar, RPM: 60-90 1/s, WOB: 1-8 tons, torque: 5-12 kNm.

Replaced bullnose with 9 7/8" bit and included the MWD to the new BHA. RIH and continued to open pilot hole from 409 m to 721 m (26" HO at 712 m). Experienced decreasing progress during this interval, at 721 m the penetration rate was down to 1.0 m/hr. Experienced erratic torque and pressure increase while off bottom at same depth. Displaced hole to 1.35 sg mud and pulled BHA to surface. Found 3 of 4 nozzles in the 9 7/8" bit plugged off and bearings on the 26" hole opener were severely worn out. Drilling parameters for this interval were: flow: 4000 lpm, pressure: 130 bar, RPM: 60-100 1/s, WOB: 1-20 tons, torque: 5-20 kNm.

Made up BHA with new 17 1/2" bit and new 26" hole opener, the MWD was left out. RIH and drilled 17 1/2" hole to 725 m, 26" hole to 722. Drilling parameters for this interval were: flow: 4700 lpm, pressure: 165 bar, RPM: 85 1/s, WOB: 5-10 tons, torque: 5-30 kNm. Circulated hole clean and

displaced to 1.35 sg mud. Pulled out of hole without any over pull. Topped up well with mud before pulling out at sea bed.

Made up cement assembly and installed wiper plug in 20" casing. Rigged up and ran 20" casing. Ran in and landed casing and 18 3/4" well head on 5 1/2" HT55 DP landing string. Cemented casing but did not bump the plug and retrieved 18 3/4" WH running tool.

BIT RUNS

RUN #1:

Opened up pilot hole to 26" from 321 m to 405 m with a BHA consisting of 8" bullnose / 12 1/4" PDC hole opener / 17 1/2" hole opener / 26" hole opener. The first 100 m was easily drilled. Extensive reaming and pumping of hi-vis pills was experienced before connection at 405 m, the BHA hung up on the formation and lifted the slips out of rotary. Made up top drive to string and circulated hole. Worked pipe and cleaned out 2 m fill before making connection. Was unable to drill past 409 m, displaced hole to 1.35 sg mud and POOH. The penetration rate for this interval was 24.8 m/hr.

RUN #2:

Replaced the 8" bullnose with a 9 7/8" bit. Included the bit to be able to clean out possible fill on bottom so that the 9 7/8" hole could be opened up to the planned depth of 691 m. MWD tools were also included in this run for survey measurements due to the risk of side tracking the well. Ran in hole and opened up pilot hole from 409 m. At this depth, the formation was hard to drill and 1.5 hour was spent to get past 409 m. Had several incidents where the BHA hung up on the formation and jacked the string out of rotary during rig heave. The flow rate was restricted to 3400 lpm due to flow limitation on the MWD tool. Later the flow rate was increased in steps to 4000 lpm in attempt to improve hole cleaning. At 415 m the BHA was stuck for a moment and 15 tons over pull was required to free the assembly. Were also forced to ream stand / work string several times and pump sweeps before connections. Continued opening hole down to 691 m with restricted progress, had to place hi-vis pill around the BHA at connections due to 3-8 m fill on bottom. Suspected sidetracking the hole, based on survey data, and decided to drill 26" hole from 691 m to 729 m to give space for sealing off from the pilot hole with cement. At 721 m (26" at 712 m) erratic torque and pressure increase off bottom was experienced. Attempted to back ream without any success. Circulated hole clean, displaced to 1.35 sg mud and POOH. Found 3 out of 4 nozzles on the 9 7/8" bit plugged, this may have caused the poor hole cleaning and fill on bottom. Bearings on the 26" hole opener were worn out (not re-runable). The penetration rate for this interval was 7.5 m/hr.

RUN#3:

Made up BHA consisting of a new 17 1/2" bit, new 26" hole opener and a 25 3/4" string stab. No MWD was included in the assembly. RIH and drilled to section TD at 725 m (26" hole to 722 m). Again the hole was circulated clean and displaced to 1.35 mud. Bit and hole opener came out as new.

DRILLING FLUID

Seawater and hi-vis bentonite sweeps was used in this section. Displaced hole to 1.35 sg mud four times due to changing out BHA and once for a "Time out for Safety" meeting. Even though, the discharge of mud chemicals was kept within the discharge permit. No mud related problems were experienced and the 20" casing was run and cemented without any problems.

CASING

The 20" casing was run and cemented with shoe at 715 m. Casing took weight at 710 m running in on landing string, washed down and landed casing / well head in the 30" housing.

Installing the cement wiper plug on rig floor was done using pipe dope (Bestolifs) as lubricant. Later residual dope was observed in the well head seal area. Flushed and cleaned the seal area with ROV brush.

MWD/BHA

BHA# 1 consisted of 8" bullnose / 12 ¼" PDC hole opener / 17 ½" hole opener and a 26" hole opener. The 26" cutters were 9.63 m behind the bullnose. A drift sub was included in the BHA to catch the 3 ⅜" drift. No MWD was included. Opened the interval from 321 m to 409 m, but were not able to pass this depth. POOH.

BHA# 2: consisted of the same components as in BHA #1, but the 8" bullnose was replaced with a 9 ⅞" Bit. MWD (GR, Res, Dir, Pres) tool was included to verify the well path in case of sidetracking. Opened the pilot hole to 26" from 409 m to 721 m where the assembly was pulled due to erratic torque and increased pressure values off bottom, together with almost no drilling progress. Found 3 of 4 nozzles on the bit plugged and the 26" hole opener bearings were worn out.

BHA#3: Made up new BHA consisting of a new 17 ½" bit and a new 26" hole opener, no MWD was included. Drilled the last interval from 721 m to 725 m (26" hole to 722 m) without any problems. No wear was observed on this assembly.

CEMENTING

The 20" casing was cemented as planned and the performance of the job was very good both operationally and mechanically. Observations from the ROV indicated full returns during the entire job. The only minor problem encountered was a plugged off densitometer which led to running the cement unit in manual mode. This caused no operational problem and the pump rate and density was maintained according to programme. The lead slurry, 77 m³ 1.56 sg, was mixed and pumped at 1500 lpm / 20 bar. The tail slurry, 20 m³ 1.95 sg, was mixed and pumped at 1000 lpm / 32 bar. Towards the end of the job, the surge tank was emptied and all the cement slurry was chased to the rig floor with sea water, no cement was left in the unit.

Displaced the slurry with rig pumps and sheared out the wiper plug with 154 bars. No bump was observed although half the shoe was over displaced. FCP at 500 lpm was 15 bars. Equalized pressure and bled back 2 litres. Discharged remaining cement from the unit to sea, evaluated volume to be less than 30 litre cement. Flushed and washed the unit according to standard procedure without any volume restrictions.

The bulk cement system worked well, the cement delivery rate was kept with constant flow also during change of silos. The success here may be related to the personnel involved. The planning of the cement job was good. Permits for opening master dump valve in the pit room had been obtained prior to start of operation, dedicated personnel was pointed out to visually inspect the vent line from the dust collector in case of this plugging off.

LOGGING

Ran VSP walk-away log prior to running the riser and BOP due to failure pressure testing the BOP. Running VSP without riser is not a standard operation, but the entire logging operation was successfully performed.

5.5 Drilling 17 ½" section, 7227/11-1S

START: 04.02.2006 03:30 725 mMD

END : 09.02.2006 21:30 1100 mMD

OBJECTIVE

Drill deviated 17 ½" hole from the 20" casing shoe and +/- 10m into the Hekkingen Fm. Set and cement 13 ⅜" casing. Perform XLOT.

SUMMARY

Made up and ran in hole 17 ½" Autotrak G 3.0 assembly to 680 m. Washed down and tagged float at 700 m. Displaced well, surface lines, choke and kill manifold from sea water to 1.20 sg Sildrill mud. Drilled float collar, shoe track and cleaned rat hole. No cement observed in shoe track or rat hole. Drilled 3 m new formation from 725 m to 728 m conditioned the mud and prepared for a XLOT. Initiated a formation test but suspended same when reaching a surface pressure of 73 bar corresponding to a FIT of 2.07 sg EMW (20" casing pressure tested to 75 bar).

Continued drilling deviated hole from 728m to 1090m, reamed and circulated as required. Drilling parameters: 4100 - 4450 lpm, 260 - 330 bar, 160 rpm, 5 - 12 kNm, 7 - 18 tons. Circulated bottoms up for samples and continued drilling to section TD at 1100 mMD / 1082 mTVD and 30° inc.

Attempted to POOH but experienced drag of 20 tons at 1090 m. Back reamed OOH from 1090 m to 960 m. Had excessive returns of cuttings from hole and ran string back to bottom. Increased mud weight from 1.30 sg to 1.45 sg. Flow checked well - static. POOH from 1100m to 955m where increasing over pull (15 tons) was recorded. Pumped OOH and into the 20" casing shoe at 715 m. Ran string back to bottom and worked tight spot at 1087m before circulated / washed down to TD at 1100m. POOH, down loaded MWD data and broke bit. Prepared rig floor for running 13 ⅜" casing.

Ran and landed 13 ⅜" casing with the shoe 1094 m on 5 ½" DP in well head at 257.5 m. Cemented casing with 25 m³ 1.90 sg slurry and full returns. Bumped the plug when displacing according to plans (97 % pump efficiency). TOC at +/- 780 m confirmed on VSP.

Pressure tested BOP to 35 / 345 bar for 5 / 10 minutes, sat wear bushing and LD running tool before running VSP on wire line.

M/U and RIH with 12 ¼" BHA. Drilled shoe track and hard cement while increasing the mud weight from 1.45 sg to 1.50 sg before taking FIT to 1.80 sg.

BIT RUNS

17 ½" section:

Bit used: Reed- Hycalog T13CDH, SN: J50122

Nozzles: 3 x 18, 1 x 16, TFA: 0.942 in²

Drilled shoe track from 700 – 725 m. No cement in shoe track or rathole.

Continued drilling after taking a FIT from 725 m – 1100 m in 22.6 drilling hours and a ROP of 16.6 m/hrs.

WOB: 7 - 22 tons, RPM: 70 - 160, torque: 5 -14 KNm

Rated: 2 - 2 - WT-A - E-I-No-TD

DRILLING FLUID

Sildrill (WBM) was used in this section.

Displaced sea water to 1.20 sg Sildrill mud before drilling out shoe track and performing FIT.

Added polymers for viscosity and weighed up mud to 1.30 sg before reaching 1000 mTVD according to plans.

At section TD the mud weight was increased to 1.45 sg due to increase in cuttings / cavings in returns and for stabilising the hole. Treated low-end rheology with 'thinner' weighed mud.

No mud related problems was experienced and the 13 3/8" casing was run and cemented without any problems.

CASING

Ran 13 3/8" 72#, P-110 casing to 1094 mMD / 1076 mTVD.

P/u shoe joint, intermediate and float joint (back-up joint) as the primary float joint threads was damaged during pick up from the cradle. Bakerlocked joints - installed 1 ea bow centralizer on first 5 joints.

Ran casing and filled up string every 5 joints. Landed casing hanger in well head at 257.5 m and shoe at 1094 m. Time used for running: 16.5 hrs.

MWD/BHA

Tricone bit

MWD Ontrak with GR/&RES

MWD BCPM (pulser)

For BHA details see appendix

CEMENTING

The 13 3/8" casing was cemented as planned and the performance of the job was good. Full returns and no losses during the entire job.

Made up cement head to landing string. Took weights up/down. Circulated at 500 lpm and washed down casing from 1084 m to 1093 m. Circulated bottoms up with 2000 lpm / 24 bar, increasing to 3000 lpm.

Pumped 20 m³ 1.65 sg spacer followed by 2.0 m³ 1.45 sg mud before dropping ball. Mixed and pumped 25 m³ 1.90 sg at 710 lpm, 15 - 20 bar, released dart and launched top plug with 4.0 m³ 1.45 sg mud from the cement unit. Sheared top plug after 3.4 m³ pumped and a pressure of 160 bar.

Displaced cement with 62.5 m³, 1.45 sg mud at 3000 lpm. Reduced flow rate to 1200 lpm / 26 bar after 60.0 m³ (2630 strokes). Bumped plug with 96 bar, 70 bars above final circulating pressure (pump

efficiency @ 97%). Held pressure for 10 minutes before bleeding off and checked for back flow - ok. 500 litres was bled off in total.

Set seal assembly according to procedures.

LOGGING

Ran VSP on wire line through the interval 500 m - 1055 mMD inside 13 3/8" casing. Check shots at 500 and 820 mMD. TOC confirmed at +/-780 mMD.

5.6 Drilling 12 1/4" section, 7227/11-1S

START: 09.02.2006 21:30 1100 mMD

END : 21.02.2006 02:30 2590 mMD

OBJECTIVE

Drill 12 1/4" hole from 13 3/8" casing shoe to TD at 1900 mMD/2170 mTVD. Section TD is in the Snadd Formation, above the Alt. Carnian reservoir. A 9 5/8" liner will be set and cemented. Perform XLOT.

SUMMARY

Made up and ran in hole with 12 1/4" Autotrak G 3.0 assembly to 1053 m. Washed down and tagged float at 1067 m. Drilled float collar, shoe track, cleaned rat hole and drilled 3 m new formation to 1103 m. Increased the mud weight from 1.45 sg to 1.50 sg while drilling the shoe track. 10.5 hrs were spent on drilling float/shoe track and 17 kg steel shavings (from 13 3/8" casing) were found on the ditch magnets. Drilling parameters : 1500 - 3500 lpm, 55 - 236 bar, 6 - 24 kNm, 86 - 93 rpm and 2 - 18 tons. Had difficulties getting back to bottom after circulation due to cement debris at 1103 m. Bicarbonate and soda ash were added to the mud to treat out minor cement contamination (Negative, never use bicarbonate in SilDril mud). Cleaned rat hole for cement debris at 3500 lpm, 233 bar and 70 rpm. Performed FIT to 1.80 sg.

Continued drilling deviated hole from 1103 m to 1141m (12.7 m/hr). Drilling parameters: 3500 lpm, 233 bar, 80 - 140 rpm, 5 - 20 kNm, 2 - 8 tons. Circulated bottoms up, pulled bit into shoe and circulated. WOW for 10 hrs to allow boat to receive cuttings. Continued drilling deviated hole from 1141 m to 1446 m (9.2 m/hr). Drilling parameters: 3500 lpm, 230 - 261 bar, 140 - 150 rpm, 5 - 30 kNm, 2 - 15 tons. Severe problems for Geoservices to obtain gas readings due to too thick 1.50 sg SilDril mud. Circulated while treating active mud by adding freshwater and illmenite (8.5 hrs). Thinning the mud system cured Geoservices gas reading problems for some time.

Continued drilling deviated hole from 1446 m to 1574 m (10.7 m/hr). Drilling parameters: 3500 lpm, 247 - 255 bar, 140 - 160 rpm, 10 - 30 kNm, 4 - 13 ton. Still problems for Geoservices to obtain gas readings due to too thick SilDril mud. Circulated at 1486 m while treated active mud by adding freshwater and illmenite (3 hrs). Found that the chloride content had increased from 66000 mg/ltr to 110000 mg/ltr, must have drilled into "salt formation". Circulated bottom up, small amount of cuttings return. Pumped out of hole to 1172 m, 3000 lpm and 195 bar, over pull 15 ton. Back reamed out to shoe, circulated, flow checked and POOH.

RIH with new bit to 1574 m, displaced hole to new 1.50 sg KCl-saturated mud. Continued drilling deviated hole from 1574 m to 2243 m (17 m/hr). Drilling parameters: 3500 lpm, 265 - 295 bar, 145 - 170 rpm, 13 - 35 kNm, 2 - 12 tons. Performed wiper trip to shoe. The hole was in good condition, no over pull observed. Ran back in hole. Took weight at 1510 m (25 tons), washed area and passed through without any restrictions. Except from this spot the hole was in good condition. No fill was observed on bottom. Continued drilling and orienting 12 1/4" hole from 2243 m to 2590 m (15.8 m/hr). Wiper trip to 2033 m, no over pull and no fill on bottom. Dropped scientific gyro and POOH.

BIT RUNS

12 1/4" section :

Bit used: Hughes Christensen HCR605Z. SN: 7004569

Nozzles: 7 x 12. TFA : 0.773 in²

Drilled shoe track from 1067 - 1100 m. New formation from 1100 - 1574 m

Rated: 2 - 1 - WT - A - X - I - CT - BHA

Bit used: Hughes Christensen HCR605Z. SN: 7004570

Nozzles: 7 x 12. TFA : 0.773 in²

Drilled new formation (halite/anhydrite) from 1574 - 2590 m

Rated: 1 - 1 - NO - A - X - I - NO - TD

DRILLING FLUID

Increased the SilDril mud weight from 1.45 sg to 1.50 sg while drilling the shoe track. Had difficulties getting back to bottom after circulation due to cement debris at 1103 m. Bicarbonate and soda ash were added to the mud to treat out minor cement contamination (This was no success, never use bicarbonate in SilDril mud). Severe problems for Geoservice to obtain gas readings due to too thick 1.50 sg SilDril mud. Circulated while treating active mud by adding freshwater and illmenite (8.5 hrs). Thinning the mud system cured Geoservices gas reading problems for some time.

Still problems for Geoservice to obtain gas readings due to too thick SilDril mud. Circulated at 1486 m while treating active mud by adding freshwater and illmenite (3 hrs). Found that the chloride content had increased from 66000 mg/ltr to 110000 mg/ltr, must have drilled into "salt formation".

At 1574 m, displaced hole to new 1.50 sg KCL-salt saturated mud.

Continued adding silicate free KCl-saturated premix to active and reduced the overall viscosity profile to programmed values. Added low-vis PAC for fluid loss (reduced API from 7 to 4 ml) and XC polymer for low end rheology. While drilling massive halite (NaCl) formation the NaCl-content in the mud increased, depleting the KCl-concentration. Only KCl was added to the system, but NaCl from the formation drilled contributed to reaching a salinity balance of 360 kg/m³ (230 kg/m³ NaCl + 130 kg/m³ KCl). The hole cleaning was excellent and the general hole conditions were good. From this point the mud became salt saturated and the cuttings came over the shakers well defined.

MWD/BHA

Continued drilling and orienting 12 1/4" hole with Autotrak from 1820 m according to revised well path, dropping inclination from 40° to 30°. At 1950 m the inclination was 30°, the azimuth was maintained at 105°, which was kept for the duration of the interval. At 2343 m the Autotrak failed, but as no drop in inclination was observed the drilling continued.

LOGGING

Schlumberger WL run no. 1: FMI, GR, PPC and MSIP.

Schlumberger WL run no. 2: TLD, CNL, and GR.

5.7 Perm P&A, 7227/11-1S

START: 21.02.2006 02:30 2590 mMD

END : 24.02.2006 21:00 1160 mMD

OBJECTIVE

Plugged back the original well due to geological sidetrack from 2590 mMD in 12 ¼" section to 13 ⅜" shoe at 1094 mMD.

SUMMARY

Made up and ran in hole with 3 ½" cement stinger on 5 ½" DP to 1308 mMD. Circulated clean and installed CST (umbrella) in string, pumped the tool down and placed same at 1309m. Pumped 10 m³ 1.75 sg spacer, mixed and pumped 21.0 m³ 2.05 sg cement slurry, pumped 0.46 m³ 1.75 sg spacer before displacing the cement with 9.0 m³ 1.50 sg mud. POOH slowly to 897 m and pulling dry to 1065 m (estimated TOC). Installed sponges and circulated string clean before POOH with stinger and racked back same.

Pressure and function tested BOP to 35/275 bar for 5/10 minutes and other relevant surface equipment before making up a new 12 ¼" Autotrack BHA with a re-run bit. RIH same on 5 ½" DP to 900 m and washed down to 1093 m where top of cement was tagged.

Drilled cement from 1093 m to 1110 m and continued drilling to 1153 m while attempting to kick off the well without success due to high rig heave. Suspended the operation and POOH into the 13 ⅜" casing to 1060 m and WOW. RIH to 1120 m when the weather permitted, but the operation was suspended due to failure in the mud logging systems. Pulled back into the 13 ⅜" casing at 1060 m, while trouble shooting software systems. In total 18 hrs down time was recorded due to this incident.

RIH to 1140 m and washed down to 1154 m. Kicked off well 7227/11-1S from 1154 m to 1160 m to well 7227/11-1A (50% cutting in returns).

5.8 Drilling 12 ¼" section, 7227/11-1A

START: 24.02.2006 21:00 1160 mMD

END : 06.03.2006 10:30 2290 mMD

OBJECTIVE

Drill 12 ¼" section well bore 7227/11-1 A, from below 13 ⅜" shoe at 1094 m to 2233 mTVD in well bore 7227/11-1 S. Run and cement 9 ⅝" liner. Perform FIT.

SUMMARY

Attempted to kick off well below 13 3/8" shoe without success due to high heave several times before the well finally was kicked off at 1160 mMD.

Drilled and oriented 12 1/4" hole from 1160 m to section TD at 2290 mMD / 2233 mTVD where the hole was circulated clean. Drilling parameters: 3500 lpm, 270 bar, 145-180 rpm, 8-15 tons, 15-25 kNm, max ECD 1.59 sg. Performed wiper trip to shoe at 1094 m. The hole was in good condition. No over pull observed except at 1179 m where 15 tons over pull was observed. Reamed tight spot from 1179 m to 1146 m. Circulated bottoms up before RIH to section TD. No fill was observed on bottom.

Circulated hole clean, dropped SDC Gyro inside drill string and POOH to surface while taking gyro readings at every connection with rig compensator activated. Recovered Gyro and prepared for WL logging.

Rigged up WL equipment and ran in hole with FMI-DIP, DSI, PEX. Logged hole according to revised program.

Rigged up and ran 9 5/8" liner from surface to 2283 m (on 5 1/2" DP from 1066 m). Installed cement stand and RIH and tagged bottom at 2290 m.

Picked casing 1 m off bottom, broke circulation and circulated 1 1/2 times hole volume. Dropped ball and sat liner hanger as per procedures. Cemented liner according to plans without rotation (not possible). Displaced cement and bumped the plug with 70 bars above circulating pressure.

Set TSP packer according to procedures and pressure tested same to 275 bars from above. Pulled running tool to 50 m above TOL and circulated hole clean. POOH and laid out tools and cleared rig floor.

Pressure tested BOP and picked up 8 1/2" BHA (PDC bit and On Trak assembly).

RIH and tagged cement at 2245 m. Drilled float, shoe track and shoe from 2245 m to 2290. Drilled 3 m new formation. Pulled into casing and performed FIT to 1.80 sg.

BIT RUNS

Only one bit was used in this hole section (re-run from main bore):

HCR605Z Hughes Christensen (PDC), IADC code M323, SN: 7004570, 7 x 12/32", TFA: 0.774
IADC grading: 2 - 4 - CT - G - X - 1/16 - WT-TD.

DRILLING FLUID

KCl / Polymer #1:

Treated mud system using Soda Ash to reduce calcium content from anhydrite and keep PH values above 8. Added Doutec NS for low end rheology and bled KCl premix into the active system in order to maintain stable salt concentration and mud weight.

Continued adding premix in order to maintain mud weight at 1.50 sg. Fluid loss material was added to maintain properties. Pumped 3 m³ slug of 1.80 sg at TD before wiper trip and another slug before POOH with gyro.

CASING

The 9 5/8" liner was run and cemented with shoe at 2289 mMD / 2232 mTVD and approximately 55 m liner lap. The casing was run on 5 1/2" DP landing string from 1249 m. Took weights up/down at 2283 m (up: 172 tons, down: 127 tons).

Installed cement stand and broke circulation with 500 lpm. Ran in hole and tagged bottom at 2290 m.

Picked casing 1 m off bottom, broke circulation and circulated 1 1/2 times hole volume. Dropped ball and set liner hanger as per procedures. Cemented liner according to plans without rotation (not possible). Displaced cement and bumped the plug with 70 bars above circulating pressure.

Disconnected cement hoses, applied 50 bar pressure on string and pulled running tool out of 9 5/8" liner.

Set TSP packer according to procedures and pressure tested same to 275 bar from above. Pulled running tool to 50 m above TOL and circulated hole clean. POOH and laid out tools and cleared rig floor.

MWD/BHA

An On Trak (AutoTrak) BHA and PDC bit was used. For BHA details see appendix.

The assembly worked according to plans with regards to drill ability and directional drilling. See details in BHA summary.

CEMENTING

Cemented liner according to plans without rotations (not possible). Displaced cement and bumped the plug with 70 bar above circulating pressure.

Cementing programme:

Pumped 20 m³ 1.70 sg tuned spacer E+ at 2500 lpm, 75 - 55 bar.

Mixed and pumped 33 m³ 1.90 sg cement, 780 lpm, 22-25 bar.

Displaced cement with 56.501 m³ WBM, 2500 lpm, 31 - 95 bar. Reduced flow rate to 1000 lpm, 58 bar after 54 m³ pumped. Bumped plug with 70 bar above final circulating pressure. Held pressure for 5 minutes. Bled off pressure and checked for back flow - ok.

LOGGING

Ran open hole logs on wire line - one run - 13 hrs in total

Logging suite: FMI-DIP, DSI and PEX.

5.9 Drilling 8 ½" section, 7227/11-1A

START: 06.03.2006 10:30 2290 mMD

END : 16.03.2006 17:00 3446 mMD

OBJECTIVE

Drill 8 ½" hole to well TD. Build inclination from 8° to 52° while keeping azimuth at 105°. Cut cores in reservoirs. Perform open hole logging.

SUMMARY

Drilled and oriented 8 ½" hole from 2293 mMD to section TD at 3446 mMD / 3198 mTVD.

Drilling parameters: 1500-2500 lpm, 114-263 bar, 64-160 rpm, 12-22 kNm, max ECD 1.64 sg.

Autotrak was used as directional tool. It was difficult to start building angle from 8° in the Permian halite. Different parameters were tried. Reference is made to experience report. A low flow rate of 1500-2000 lpm, RPM of 120 and ROP of 10 m/hr. Higher ROP at any other parameters led to building inclination and high DLSs.

Prepared for WL logging.

BIT RUNS

Lyng LD565AHG, M223, drilled the section without excess wear. ROP restricted for steering purposes.

DRILLING FLUID

KCl / Polymer #1:

Treated mud system using soda ash and citric acid to treat out cement contamination. Added Duotec to maintain rheology and polypac ELV for fluid loss properties. Added KCl premix and KCl powder to increase concentration of KCl. Added polypac ELV to improve fluid loss.

MWD/BHA

A BHA incorporating BHI's AutoTrak and PDC bit was used. For BHA details see appendix.

LOGGING

Ran VSP log inside 9 5/8" liner (shoe at 2289 mMD), tool hung up at 2293 mMD.

Troubleshooted communication error betwixt VSP tool and surface computer for 2 hrs.

Ran FMI-DIP/DSI/PEX-ACTS-ECRD log. Not able to pass 3255 mMD while logging down hole.

RIH with 8 ½" BHA and tagged obstruction at 3250 mMD. Not able to pass 3250 mMD. POOH.

Ran VSP log to 3225 mMD. (TD well at 3446 mMD)

5.10 Perm P&A, 7227/11-1A

START: 16.03.2006 17:00 3446 mMD

END : 24.03.2006 03:30

OBJECTIVE

Permanently plug and abandon well 7227/11-1A and well 7227/11-1S according to programme.

SUMMARY

RIH with 3 ½" DP and mule shoe on 5 ½" DP to 2357 m. Set CST (cement support tool) at 2355 m. Set cement plug #1 in transition zone (9 ⅝" casing shoe at 2289 m) from 2350 m to 2140 m. Ran in with 8 ½" BHA, washed down and tagged TOC at 2156 m (16 m deep). Weight tested plug #1 to 10 tons, pressure tested plug #1 to 180 bar.

Installed 13 ⅜" EZSV at 1010 m. Weight and pressure tested EZSV to 10 ton/180 bar.

Set cement plug #2 on top of EZSV, from 1005 m to 935 m. Pulled above cement plug, dropped two sponge balls and attempted to circulate, pressure increased setting off the pop-off valve. POOH and found wiper dart (from CST) stuck in x-over from 5 ½" HT55 to 4 ½" IF with sponge ball above and below.

Retrieved wear bushing and seal assembly, no gas observed. Ran in hole with 13 ⅜" cutting assembly and cut casing at 603 m. Well stable. RIH 13 ⅜" spear assembly and retrieved 13 ⅜" casing.

Ran in hole 3 ½" DP stinger and mule shoe and set a 100 m high vis pill from 760 m to 660 m. Set cement plug #3 from 650 m to 500 m, across the 13 ⅜" casing cut at 603 m.

Made up 12 ¼" bit on 5 ½" DP, ran in hole and tested cement plug #3 with 10 ton / 75 bar.

Sat surface cement plug, plug #4, from 500 to 290 m.

Pulled riser and BOP to surface.

Ran in hole 20" x 30" cutting assembly and MOST tool. Cut casing/conductor at 266.5 m (5 m below sea bed) and retrieved BHA and casing cut to surface.

Performed final sea bed survey with ROV, pulled anchors and commenced rig move to Kristiansund.

5.10.1 *Permanent P&A well schematics*

[illegible]

Well: 7227/11-1 A

Field: PL202, Uranus

Eirik Raude

WELL SCHEMATIC - PERMANENT P&A

All depths refer to RKB

RKB-MSL Eirik Raude: 25 m

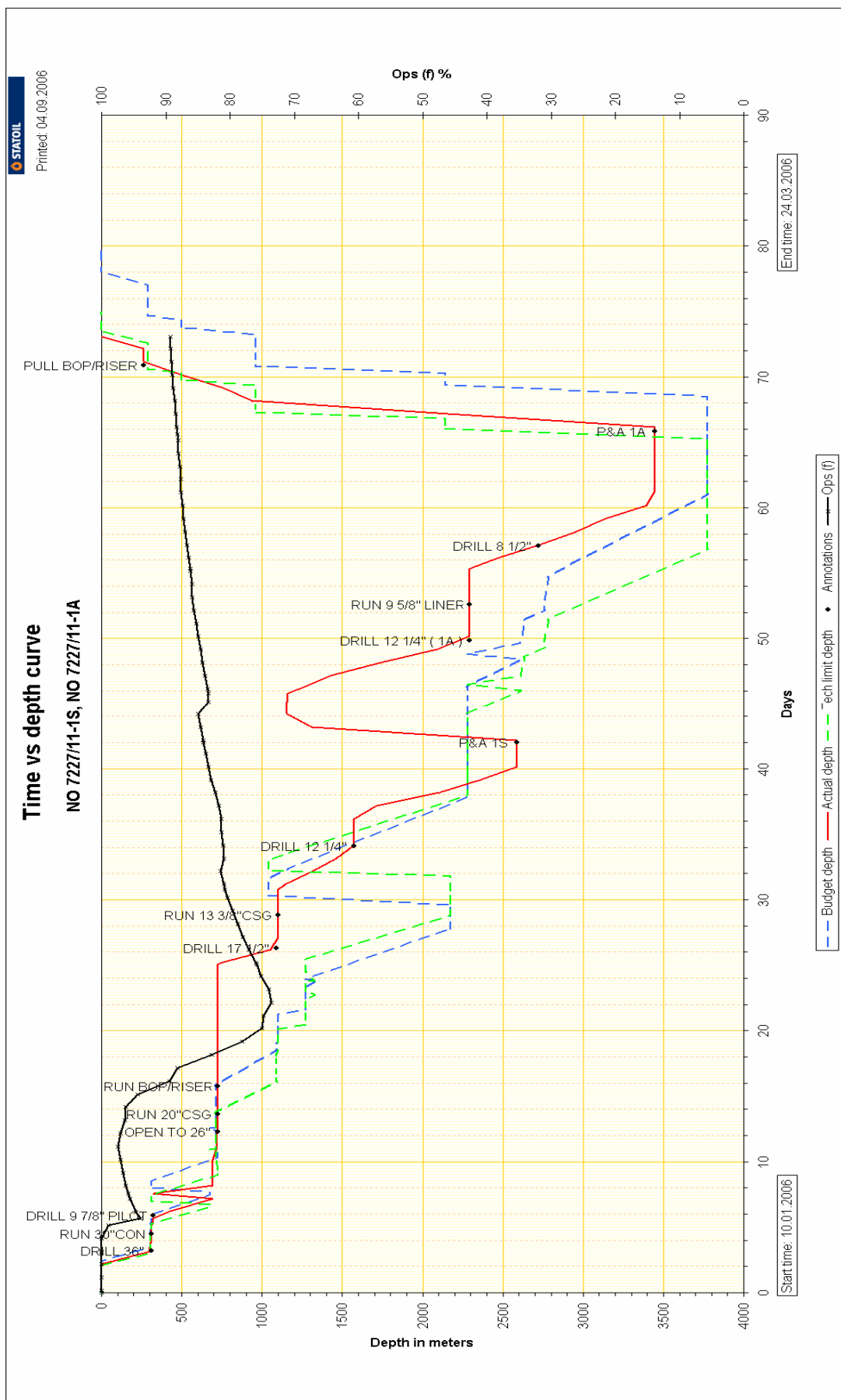
March 2006

13.03.06

HOLE		CASING		LOT / FIT	TOC		CSG. SHOE		RKB	CUTTING AND PLUGGING	PRESSURE TESTING
SIZE	TYD MD	SIZE	TYPE / RAD. MARKERS		TYD	MD	TYD	MD			
SB		2615									
36"	30"	310 310	Interval: 253 - 310 m. Type: 303.7 lb/ft, X-52, SL-60 Drift: 26,815"	N/A				310 310		255.5 230 500 603 650 100 m high vis pil 150 sg WBM	20" / 30" casing cut Top of Surface cement plug Base for Surface cement plug 10 3/8" casing cut Base for cement plug, top high vis pil
26"	20"	715 715	Interval: 253 - 715 m. Type: 133 lb/ft, N-80, Antares Drift: 18,542"	FIT 2.07 sg				715 715			75 bar (with 150 sg WBM)
17 1/2"	13 3/8"	1076 1034	Interval: 253 - 1034 m. Type: 72 lb/ft, P-110, Yam Top Drift: 12,258"	FIT 1.80 sg	755	755		Top liner: 1030 1040 1076 1034		935 1010 Top of cement above 10 3/8" EZSV 10 3/8" EZSV setting depth	180 bar (with 150 sg WBM)
12 1/4"	9 5/8"	2231 2250	Interval: 1040 - 2283 m. Type: 53.5 lb/ft, P-110, Yam Top Drift: 8,508"	FIT 1.80 sg	1160	1200				1160 Well bore 7227/11-1 S departs 150 sg WBM	
8 1/2"		3198 3446						2232 2283		2140 2350 2355 Bottom of cement plug in open hole CST	180 bar (with 150 sg WBM)
								NA NA			3446 inc. 7.0'

5.11 Figures and tables

5.11.1 *Time/depth curve*



5.11.2 *Timeplanner*

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PROJECT NAME: Uranus well 7227/11-1 S and -1 A
PROJECT NUMBER: T.O202A.AP.MAIN

Start time	End time	Budget time hrs	Acc budget days	Tech limit hrs	Acc tech days	Plan time hrs	Act time hrs	Acc actual days	Down time	Description	Companies
10.01.2006 02:00	13.01.2006 02:30	58,0	2,4	50,0	2,1	50,0	72,5	3,0	0,0	MOVE [NO 7227/11-1 S]	
10.01.2006 02:00	11.01.2006 08:30	26,0	1,1	22,5	0,9	22,5	30,5	1,3	0,0	1 Move rig from ENI Goliat to Uranus location(120 Nm)	OR
11.01.2006 08:30	12.01.2006 19:00	26,0	2,2	22,5	1,9	22,5	34,5	2,7	0,0	2 WOW (17,5 hrs). Soil samp.on sea floor.Run anchors	OR
12.01.2006 19:00	13.01.2006 00:00	0,0	2,2	0,0	1,9	0,0	5,0	2,9	0,0	3 MU CMT stand and 36" BHA. Pick up DP/DC.	OR
13.01.2006 00:00	13.01.2006 02:30	6,0	2,4	5,0	2,1	5,0	2,5	3,0	0,0	4 Run 36" BHA to sea bed (261,5 m), prepare for spudding.	OR,Geo,BHI,Ocean
13.01.2006 02:30	15.01.2006 18:30	78,0	3,2	70,0	2,9	72,5	64,0	2,7	6,0	36" [NO 7227/11-1 S]	
13.01.2006 02:30	13.01.2006 08:30	27,0	3,5	23,0	3,0	23,0	6,0	3,3	0,0	5 Drill 36" hole to 310 m. Circulate hole clean.	OR,BHI,Geo,MI,Ocean
13.01.2006 08:30	13.01.2006 12:00	6,0	3,8	5,0	3,2	5,0	3,5	3,4	0,0	6 Displace hole 1,3 times to 1.35 sg mud. POOH.	OR,BHI,Geo,MI,Ocean
13.01.2006 11:59	13.01.2006 12:00	0,0	3,8	0,0	3,2	0,0	0,0	3,4	0,0	7 Optional: Planned rig maintenance	OR
13.01.2006 12:00	14.01.2006 15:30	16,0	4,5	13,5	3,8	13,5	27,5	4,6	0,0	8 Rig up and run 30" conductor to 310 m.	OR,Geo,Ocean,Weath,DQ
14.01.2006 15:30	15.01.2006 03:30	6,0	4,7	5,0	4,0	5,0	12,0	5,1	0,0	9 Pump/displace Tuned light 1,52sg cem. WOC (10 hrs)	OR,Geo,Hall,Ocean
15.01.2006 03:30	15.01.2006 05:00	9,0	5,1	7,5	4,3	9,0	1,5	5,1	0,0	10 Retrieve running tool and landing string.	Ocean,OR,DQ
15.01.2006 05:00	15.01.2006 09:00	6,0	5,3	5,0	4,5	5,0	4,0	5,3	1,0	11 MU and RIH with 26" cleanout BHA (TOC at 306 m)	OR,BHI,Geo,Ocean
15.01.2006 09:00	15.01.2006 13:30	8,0	5,7	7,0	4,8	7,0	4,5	5,5	0,0	12 Drill cement, shoe and 3 m new form. to 320 m. POOH.	Ocean,MI,OR,BHI,Geo
15.01.2006 13:30	15.01.2006 18:30		5,7	4,0	5,0	5,0	5,0	5,7	5,0	13 Grouted conductor, from 6 m below seabed	Geo,MI,Ocean,OR,BHI
15.01.2006 18:30	16.01.2006 00:00	7,0	6,0	6,0	5,2	6,0	5,5	5,9	0,0	14 MU 9 7/8" pilot hole BHA and RIH.	BHI,OR,Geo,BHI
15.01.2006 18:30	17.01.2006 16:00	69,0	2,9	59,0	2,5	52,5	45,5	1,9	0,0	9 7/8" [NO 7227/11-1 S]	
16.01.2006 00:00	17.01.2006 03:30	37,0	7,5	31,5	6,6	25,0	27,5	7,1	0,0	15 Drill 9 7/8" pilot hole to 691 m.	BHI,MI,Ocean,OR,Geo,BHI
17.01.2006 03:30	17.01.2006 05:00	4,0	7,7	3,5	6,7	3,5	1,5	7,1	0,0	16 Circ. hole clean. Flowcheck. Displace to 1.35 sg mud.	BHI,MI,Ocean,OR,Geo
17.01.2006 05:00	17.01.2006 10:00	9,0	8,0	7,5	7,0	7,5	5,0	7,3	0,0	17 POOH and LD BHA.	BHI,Ocean,OR,Geo,BHI
17.01.2006 09:59	17.01.2006 10:00	5,0	8,3	4,5	7,2	4,5	0,0	7,3	0,0	18 MU cement std and 18 3/4" WHH.	OR,Hall

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17.01.2006 10:00	17.01.2006 16:00	7,0	8,5	6,0	7,5	6,0	6,0	7,6	0,0	19 MU and RIH with 26" HO BHA.	OR,DQ,Hall,Ocean,Weath
17.01.2006 16:00	22.01.2006 09:30	44,0	10,4	37,5	9,0	37,5	113,5	12,3	1,5	20 Open hole to 26" to section TD 725 m	OR,BHI,BHI,Geo,MI,Ocean
17.01.2006 16:00	04.02.2006 03:30	174,0	7,2	151,0	6,3	218,5	419,5	17,5	118,5	26" [NO 7227/11-1 S]	
22.01.2006 09:30	22.01.2006 10:30	3,0	10,5	2,5	9,1	2,5	1,0	12,4	0,0	21 Circulate hole clean, displace to 1.35 sg mud.	OR,Ocean,BHI,BHI,Geo,MI
22.01.2006 10:30	22.01.2006 16:30	7,0	10,8	6,0	9,4	6,0	6,0	12,6	0,0	22 POOH and wash conductor housing.	Ocean,MI,OR,BHI,BHI,Geo,Hall
22.01.2006 16:30	23.01.2006 18:30	20,0	11,6	17,0	10,1	17,0	26,0	13,7	2,5	23 R/U and run 20" casing and 18 3/4" WH on 5 1/2" DP.	OR,DQ,Geo,Ocean,Weath,Hall
23.01.2006 18:30	23.01.2006 22:30	8,0	12,0	7,0	10,4	7,0	4,0	13,9	0,0	24 Circulate well. Pump and displace cement.	OR,DQ,Geo,Hall,MI,Ocean,Weath
23.01.2006 22:30	24.01.2006 00:30	4,0	12,1	3,5	10,5	3,5	2,0	13,9	0,0	25 Release RT and wash WH area. POOH.	OR,DQ,Ocean
24.01.2006 00:30	24.01.2006 05:00	5,0	12,3	4,5	10,7	4,5	4,5	14,1	0,0	26 L/D RT, cement stand and 26" HO BHA.	OR,DQ,Hall,BHI,BHI
24.01.2006 05:00	24.01.2006 20:00	0,0	12,3	0,0	10,7	24,0	15,0	14,8	6,0	27 Optional: Planned rig maintenance	OR
24.01.2006 20:00	25.01.2006 06:00	7,0	12,6	6,0	11,0	6,0	10,0	15,2	2,0	29 RU and run VSP walk away inside 20" casing.	OR,Read,Schlum
25.01.2006 06:00	25.01.2006 22:00		12,6	1,0	11,0	1,0	16,0	15,8	16,0	28 RU and run BOP/riser. Pressure test BOP, WH conn. and casing.	OR,Ocean,Hall
25.01.2006 22:00	26.01.2006 02:30	9,0	13,0	7,5	11,3	10,0	4,5	16,0	0,0	31 M/U 17 1/2" BHA	OR,BHI,BHI,Geo,MI
26.01.2006 02:30	26.01.2006 13:00		13,0	1,0	11,4	1,0	10,5	16,5	10,0	28a Continue to run BOP/riser. Pressure test BOP, WH conn. and casing	OR,Ocean,Hall
26.01.2006 13:00	26.01.2006 21:00	6,0	13,3	5,0	11,6	5,0	8,0	16,8	0,0	30 M/U cement stand, 13 3/8" hanger and hang off tool	OR,DQ,Hall
26.01.2006 21:00	03.02.2006 10:00	55,0	15,5	47,0	13,5	81,0	181,0	24,3	79,0	28b Continue to run BOP/riser. Pressure test BOP, WH conn. and casing	OR,Hall,Ocean
03.02.2006 10:00	04.02.2006 02:00	1,0	15,6	1,0	13,6	8,0	16,0	25,0	1,5	32 RIH.Drill out shoe track and drill 3 m new formation. Circulate hole clean	OR,BHI,BHI,Geo,MI,OTAS
04.02.2006 02:00	04.02.2006 03:30	5,0	15,8	4,5	13,7	4,5	1,5	25,1	0,0	33 Displace to 1.20 g/cm³ mud. FIT to 2.07 sg	OR,BHI,BHI,Geo,Hall,MI,OTAS
04.02.2006 03:30	09.02.2006 21:30	180,0	7,5	207,5	8,6	155,5	138,0	5,8	1,0	17 1/2" [NO 7227/11-1 S]	
04.02.2006 03:30	05.02.2006 10:00	66,0	18,5	57,0	16,1	41,0	30,5	26,3	0,0	34 Drill 17 1/2" hole to 1090 m. (20 m/hr)	OR,BHI,BHI,Geo,MI,OTAS
05.02.2006 10:00	05.02.2006 11:00	13,0	19,1	3,0	16,2	3,0	1,0	26,4	0,0	35A Circulate hole clean	BHI,BHI,Geo,MI,OR,OTAS

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05.02.2006 11:00	05.02.2006 12:00	0,0	19,1	1,0	16,3	1,0	1,0	26,4	0,0	34A Drill 17 1/2" hole to 1100	BHI,BHI,Geo,MI,OR,OTAS
05.02.2006 12:00	05.02.2006 15:00	0,0	19,1	3,0	16,4	3,0	3,0	26,5	0,0	35B Circulate to clean hole	BHI,BHI,Geo,MI,OR,OTAS
05.02.2006 15:00	05.02.2006 15:30	0,0	19,1	5,0	16,6	0,5	0,5	26,6	0,0	35C Back ream to 1080 m.	BHI,BHI,Geo,MI,OR,OTAS
05.02.2006 15:30	05.02.2006 18:00	0,0	19,1	2,5	16,7	2,5	2,5	26,7	0,0	35D Circulate to clean hole	BHI,BHI,Geo,MI,OR,OTAS
05.02.2006 18:00	05.02.2006 20:00	0,0	19,1	2,0	16,8	2,0	2,0	26,8	0,0	35E Back ream to 960 m.	BHI,BHI,Geo,MI,OR,OTAS
05.02.2006 20:00	05.02.2006 21:30	0,0	19,1	1,5	16,9	1,5	1,5	26,8	0,0	35F Ream back to TD at 1100	BHI,BHI,Geo,MI,OR,OTAS
05.02.2006 21:30	06.02.2006 05:00	0,0	19,1	5,0	17,1	7,5	7,5	27,1	0,0	35G Increase mud weight to 1,45.	BHI,BHI,Geo,MI,OR,OTAS
06.02.2006 05:00	06.02.2006 09:30	0,0	19,1	10,0	17,5	6,0	4,5	27,3	0,0	35H POOH to 20" shoe.	BHI,BHI,Geo,MI,OR,OTAS
06.02.2006 09:30	06.02.2006 11:00	0,0	19,1	2,0	17,6	2,0	1,5	27,4	0,0	35I Circulate hole clean	BHI,BHI,Geo,MI,OR,OTAS
06.02.2006 11:00	06.02.2006 12:30	0,0	19,1	2,0	17,7	2,0	1,5	27,4	0,0	35K RIH to TD	BHI,BHI,Geo,MI,OR,OTAS
06.02.2006 12:30	06.02.2006 18:00	0,0	19,1	2,0	17,7	2,0	5,5	27,7	0,0	35L Circulate hole clean.	BHI,BHI,Geo,MI,OR,OTAS
06.02.2006 18:00	06.02.2006 20:30	0,0	19,1	6,0	18,0	2,5	2,5	27,8	0,0	35J POOH into 20" shoe.	BHI,BHI,Geo,MI,OR,OTAS
06.02.2006 20:30	06.02.2006 21:30	0,0	19,1	1,0	18,0	1,0	1,0	27,8	0,0	35M Circulate hole clean	OTAS,Geo,BHI,MI,OR,BHI
06.02.2006 21:30	06.02.2006 22:30	0,0	19,1	1,5	18,1	1,5	1,0	27,9	1,0	35N Repaired rig	OTAS,Geo,BHI,MI,OR,BHI
06.02.2006 22:30	07.02.2006 00:00	0,0	19,1	4,0	18,3	4,0	1,5	27,9	0,0	35O POOH	OTAS,Geo,BHI,MI,OR,BHI
07.02.2006 00:00	07.02.2006 04:30	7,0	19,4	6,0	18,5	6,0	4,5	28,1	0,0	37 Retrieve bore protector and wash BOP/ WH area.	OR,DQ,Geo,MI
07.02.2006 04:30	07.02.2006 23:00	24,0	20,4	21,0	19,4	21,0	18,5	28,9	0,0	38 RU and run 13 3/8" casing on 5 1/2" DP.	DQ,Weath,MI,OR,Geo
07.02.2006 23:00	08.02.2006 04:00	9,0	20,8	7,5	19,7	7,5	5,0	29,1	0,0	39 Circulate, pump and displace cement. Set 13 3/8" sealassy.	OR,DQ,Geo,Hall,MI
08.02.2006 03:59	08.02.2006 04:00	12,0	21,3	10,5	20,1	0,0	0,0	29,1	0,0	36 CANCELED ref item 41A. Perform two logging run. (Dens/Neu/Sonic/VSP)	OR,Schlum,Read

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08.02.2006 04:00	08.02.2006 06:30	9,0	21,6	7,5	20,5	7,5	2,5	29,2	0,0	40 Release RT. POOH. LD RT and cement head.	OR,DQ,Geo,Hall,MI
08.02.2006 06:30	08.02.2006 13:00	11,0	22,1	9,5	20,9	0,0	6,5	29,5	0,0	41 Set 13 3/8" WB (and test BOP if applicable).	OR,DQ,Geo
08.02.2006 13:00	08.02.2006 20:00	0,0	22,1	12,0	21,4	12,0	7,0	29,8	0,0	41A RU and run VSP (from task 36).	OR,Read,Schlum
08.02.2006 20:00	09.02.2006 00:30	4,0	22,3	3,5	21,5	3,5	4,5	29,9	0,0	42 LD 17 1/2" BHA and pressure test casing against BSR.	OR,BHI,BHI
09.02.2006 00:30	09.02.2006 07:30	13,0	22,8	11,0	22,0	6,5	7,0	30,2	0,0	43 MU and RIH with 12 1/4" BHA	OR,BHI,BHI,Geo,MI
09.02.2006 07:30	09.02.2006 19:00	7,0	23,1	6,0	22,2	4,0	11,5	30,7	0,0	44 Drill out shoe track and 3 m new formation.	OR,BHI,BHI,Geo,MI,OTAS
09.02.2006 19:00	09.02.2006 21:30	5,0	23,3	4,5	22,4	4,5	2,5	30,8	0,0	45 Circulate hole clean, pull in to casing and perform (X)LOT.	OR,BHI,BHI,Geo,MI,Hall
09.02.2006 21:30	13.02.2006 06:00	11,0	23,8	9,5	22,8	90,0	80,5	34,2	11,5	47 Drill 12 1/4" hole to 1574 m. WOW	OR,BHI,BHI,Geo,MI,OTAS
09.02.2006 21:30	21.02.2006 02:30	148,0	6,2	223,5	9,3	273,0	269,0	11,2	20,0	12 1/4" [NO 7227/11-1 S]	
13.02.2006 05:59	13.02.2006 06:00	5,0	24,0	4,5	23,0	0,0	0,0	34,2	0,0	46 Increase MW to 1.39 sg.	OR,BHI,BHI,Geo,MI,OTAS
13.02.2006 06:00	13.02.2006 15:00	0,0	24,0	12,0	23,5	12,0	9,0	34,5	0,0	47A POOH for Bit / BHA change	OR,Geo,BHI,MI,BHI
13.02.2006 15:00	13.02.2006 18:30	0,0	24,0	8,0	23,8	8,0	3,5	34,7	0,0	47 B R/u and perform logging run on WL	MI,OR,Geo,BHI,BHI
13.02.2006 18:29	13.02.2006 18:30	0,0	24,0	0,0	23,8	0,0	0,0	34,7	0,0	48 Optional: POOH and cut core in Real grunnen Group.	OR,BHI,BHI,BHI,Geo,MI,OTAS
13.02.2006 18:30	15.02.2006 19:30	0,0	24,0	16,0	24,5	48,0	49,0	36,7	8,0	47 C RIH and condition mud	OTAS,MI,OR,Geo,BHI,BHI
15.02.2006 19:30	16.02.2006 06:00	0,0	24,0	24,0	25,5	24,0	10,5	37,2	0,0	47 D Drill 12 1/4" hole to core point	BHI,BHI,Geo,MI,OR,OTAS
16.02.2006 06:00	17.02.2006 11:00	93,0	27,8	80,0	28,8	24,0	29,0	38,4	0,0	49 Continue drill 12 1/4" hole to 2234 m. MW at 1.50 sg at 1650 +/-m.	OR,BHI,BHI,Geo,MI,OTAS
17.02.2006 11:00	18.02.2006 00:00	0,0	27,8	12,0	29,3	8,0	13,0	38,9	0,0	49 A Perform wipertrip to 13 3/8" shoe. RIH to TD.	MI,OR,Geo,BHI,BHI
18.02.2006 00:00	18.02.2006 23:30	0,0	27,8	24,0	30,3	24,0	23,5	39,9	0,5	49 B Drill 12 1/4" hole to 2590 m.	BHI,BHI,Geo,MI,OR,OTAS
18.02.2006 23:30	19.02.2006 04:00	0,0	27,8	0,0	30,3	0,0	4,5	40,1	0,0	49 C Optinals: Run casing / wipertrip / run gyro ?.	BHI,BHI,Geo,MI,OR,OTAS
19.02.2006 04:00	19.02.2006 18:30	13,0	28,4	11,0	30,8	11,0	14,5	40,7	0,0	50 Circulate hole clean. Drop Gyro and POOH.	OR,BHI,BHI,Geo,MI,OTAS
19.02.2006 18:30	21.02.2006 02:30	26,0	29,5	22,5	31,7	24,0	32,0	42,0	0,0	51 Perform open hole logging 2 run	OR,Geo,MI,Schlum
21.02.2006 02:30	24.02.2006 21:00	70,0	2,9	43,5	1,8	43,5	90,5	3,8	18,0	PERM P&A [NO 7227/11-1 S]	
21.02.2006 02:30	21.02.2006 03:00	4,0	29,6	3,5	31,9	3,5	0,5	42,0	0,0	52 MU cement stand and LD on cat walk.	OR

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21.02.2006 03:00	21.02.2006 15:00	17,0	30,3	10,0	32,3	10,0	12,0	42,5	0,0	52a RIH 3 1/2" cement stinger and set cement plug from 1301 m to 1043 m. POOH.	OR,Geo,MI,Hall,OTA S
21.02.2006 15:00	22.02.2006 03:30	12,0	30,8	10,0	32,7	10,0	12,5	43,1	0,0	52b Test BOP.	Geo,OR,Hall
22.02.2006 03:30	22.02.2006 09:00	8,0	31,2	5,0	32,9	5,0	5,5	43,3	0,0	52c LD Autotrak and MWD. MU new 12 1/4" BHA.	OR,BHI,BHI
22.02.2006 09:00	22.02.2006 14:30	8,0	31,5	3,0	33,0	3,0	5,5	43,5	0,0	52d RIH, wash down 12 1/4" BHA to TOC.	BHI,BHI,Geo,MI,OR, OTAS
22.02.2006 14:30	24.02.2006 21:00	21,0	32,4	12,0	33,5	12,0	54,5	45,8	18,0	52e Drill out cement in casing/rat hole and kick off to Well 1A. New well when 50% formations in return.	BHI,BHI,Geo,MI,OR, OTAS
24.02.2006 21:00	06.03.2006 10:30	334,0	13,9	258,0	10,8	244,5	230,5	9,6	3,5	12 1/4" [NO 7227/11-1 A]	
24.02.2006 21:00	28.02.2006 23:30	131,0	37,8	108,0	38,0	108,0	98,5	49,9	0,0	52f Drill 12 1/4" hole to 2280 mMD (2233 mTVD) or core pt (1800 m ?)	OR,BHI,BHI,Geo,MI, OTAS
28.02.2006 23:30	01.03.2006 14:00	14,0	38,4	10,0	38,4	10,0	14,5	50,5	0,0	52i Circ.and wipertrip to shoe	BHI,BHI,Geo,MI,OR, OTAS
01.03.2006 14:00	02.03.2006 08:00	19,0	39,2	14,0	39,0	14,0	18,0	51,3	0,0	52j Circ. hole clean. Drop GYRO and POOH	BHI,BHI,Geo,MI,OR, OTAS
02.03.2006 08:00	02.03.2006 21:30	26,0	40,3	12,0	39,5	12,0	13,5	51,8	0,0	52k Perform open hole logging 2 run (?)	Geo,MI,OR,Schlum
02.03.2006 21:29	02.03.2006 21:30	0,0	40,3	0,0	39,5	0,0	0,0	51,8	0,0	52h Optional. Cont drill 12 14" hole to 2280 mMD after coring	BHI,BHI,Geo,MI,OR, OTAS
02.03.2006 21:29	02.03.2006 21:30	0,0	40,3	0,0	39,5	0,0	0,0	51,8	0,0	52 l Optinal : Clean up trip	BHI,BHI,Geo,MI,OR, OTAS
02.03.2006 21:30	02.03.2006 22:30	4,0	40,5	3,0	39,6	3,0	1,0	51,9	0,0	52 m MU cement stand and rack same	OR
02.03.2006 22:29	02.03.2006 22:30	0,0	40,5	0,0	39,6	0,0	0,0	51,9	0,0	52g Optional : Circ./POOH. RIH, cur core, POOH	BHI,OR,Geo,MI,OTA S
02.03.2006 22:30	03.03.2006 17:30	26,0	41,5	22,5	40,6	22,5	19,0	52,6	0,0	53 RU & run 9 5/8" liner to approx 2270 mMD (2233 mTVD)	OR,Geo,MI,Weath,We ath
03.03.2006 17:30	04.03.2006 02:30	9,0	41,9	7,5	40,9	7,5	9,0	53,0	0,5	54 MU liner hanger assy. Continue run on DP landing string.	OR,Geo,MI,Weath,We ath
04.03.2006 02:30	04.03.2006 04:00	7,0	42,2	6,0	41,1	6,0	1,5	53,1	0,0	55 Circulate well. Set hanger.	OR,Geo,MI,Weath
04.03.2006 04:00	04.03.2006 08:30	9,0	42,6	7,5	41,5	7,5	4,5	53,3	0,0	56 Circulate and cement liner, set packer according Weatherford..	OR,Geo,Hall,MI,Weat h
04.03.2006 08:30	04.03.2006 17:30	30,0	43,8	25,5	42,5	12,0	9,0	53,6	3,0	57 Circulate BU. POOH, LD sement std and liner RT.	OR,Geo,Hall,MI,Weat h
04.03.2006 17:30	04.03.2006 23:00	7,0	44,1	6,0	42,8	6,0	5,5	53,9	0,0	58 LD 12 1 /4" BHA.	OR,BHI,BHI,Geo,MI, OTAS

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04.03.2006 23:00	05.03.2006 09:00	12,0	44,6	10,5	43,2	10,5	10,0	54,3	0,0	59 Test BOP.	Weath,MI,OR,Hall,Geo
05.03.2006 09:00	06.03.2006 00:30	16,0	45,3	13,5	43,8	13,5	15,5	54,9	0,0	62 MU & RIH with 8 1/2" BHA.	MI,OTAS,OR,BHI,BHI,Geo
05.03.2006 14:00	05.03.2006 15:00	2,0	45,4	1,5	43,8	1,5	1,0	55,0	0,0	60 Pressure test liner against BSR.	OR,Geo,Hall,MI,Weath
06.03.2006 00:29	06.03.2006 00:30		45,4	0,0	43,8	0,0	0,0	55,0	0,0		OR,Geo,BHI,Hall,MI,BHI,BHI
06.03.2006 00:29	06.03.2006 00:30	10,0	45,8	0,0	43,8	0,0	0,0	55,0	0,0	61 Run gyro on wireline (contingency)	OR,Geo,Scient,Schlum
06.03.2006 00:30	06.03.2006 09:00	7,0	46,1	6,0	44,1	6,0	8,5	55,3	0,0	63 Drill cement, shoe track and clean out rat hole. Drill 3 m new formation	OR,BHI,BHI,Geo,MI,OTAS
06.03.2006 09:00	06.03.2006 10:30	5,0	46,3	4,5	44,3	4,5	1,5	55,4	0,0	64 Circulate hole clean. Perform (X)LOT	OR,BHI,BHI,Geo,MI,OTAS,Hall
06.03.2006 10:30	16.03.2006 17:00	463,0	19,3	444,0	18,5	313,5	246,5	10,3	4,0	8 1/2" [NO 7227/11-1 A]	
06.03.2006 10:30	08.03.2006 06:00	50,0	48,4	43,0	46,1	43,0	43,5	57,2	0,0	66 Drill 8 1/2" hole to alt Carn 2607 +/- m. (7,6 m/h)	MI,OTAS,OR,BHI,BHI,Geo
08.03.2006 05:59	08.03.2006 06:00	11,0	48,8	9,5	46,5	0,0	0,0	57,2	0,0	65 Displace the well to Sildril or KCl mud. Not done.	OR,BHI,BHI,Geo,MI,OTAS,DQ
08.03.2006 05:59	08.03.2006 06:00	20,0	49,7	17,0	47,2	13,0	0,0	57,2	0,0	67 Circulate hole clean and POOH.	OR,BHI,BHI,Geo,MI,OTAS
08.03.2006 05:59	08.03.2006 06:00	41,0	51,4	35,0	48,6	35,0	0,0	57,2	0,0	68 RIH w/ core asseby. Cut core in alt Carn from 2607 m. POOH. RIH 8 1/2" BHA.	OR,BHI,Geo,MI,OTAS
08.03.2006 05:59	08.03.2006 06:00	20,0	52,2	17,0	49,3	12,0	0,0	57,2	0,0	68b Circulate hole clean and POOH.	Geo,MI,OR,OTAS
08.03.2006 05:59	08.03.2006 06:00	19,0	53,0	16,0	50,0	8,0	0,0	57,2	0,0	68a Drill 8 1/2" hole from 2637 to Carn at 2759 m	BHI,BHI,OTAS,Geo,MI,OR
08.03.2006 05:59	08.03.2006 06:00	41,0	54,7	35,0	51,5	35,0	0,0	57,2	0,0	69 RIH w/ core asseby. Cut core in Carn from 2759 m.	OR,BHI,Geo,MI,OTAS
08.03.2006 06:00	11.03.2006 23:00	152,0	61,0	130,0	56,9	59,5	89,0	60,9	0,5	72 Drill 8 1/2" to TD at approx. 3777 mMD (Plan B: 3690 mMn).	OR,BHI,BHI,Geo,MI,OTAS,BHI
11.03.2006 23:00	13.03.2006 03:00	24,0	62,0	20,5	57,7	24,0	28,0	62,1	1,0	73 Perform wiper trip to 9 5/8" shoe. RIH, circulate hole clean and POOH. LD AutoTrak.	OR,BHI,BHI,Geo,MI,OTAS
13.03.2006 02:59	13.03.2006 03:00	0,0	62,0	0,0	57,7	0,0	0,0	62,1	0,0	70 Optional core run	OR,BHI,Geo,MI,OTAS
13.03.2006 02:59	13.03.2006 03:00	15,0	62,7	13,0	58,3	0,0	0,0	62,1	0,0	71 RIH with 8 1/2" BHA.	OR,BHI,BHI,Geo,MI,OTAS
13.03.2006 03:00	14.03.2006 12:00	70,0	65,6	60,0	60,8	36,0	33,0	63,5	2,0	74 Perform OH logging (dry well case: 1 -3 logging runs)	OR,Geo,Schlum,Read

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14.03.2006 12:00	15.03.2006 17:00	0,0	65,6	24,0	61,8	24,0	29,0	64,7	0,5	74 A Perform wiper trip	MI,Geo,BHI,BHI,OR
15.03.2006 17:00	16.03.2006 17:00	0,0	65,6	24,0	62,8	24,0	24,0	65,7	0,0	74 B R/U and perform final part of VSP walk away	OR,Geo,BHI,BHI,MI
16.03.2006 17:00	24.03.2006 03:30	341,0	14,2	293,0	12,2	191,0	178,5	7,4	1,5	PERM P&A [NO 7227/11-1 A]	
16.03.2006 17:00	16.03.2006 23:00	18,0	66,3	15,5	63,4	12,0	6,0	65,9	0,0	75 P/U cement stinger and RIH to 2355 m.	OR,Geo,MI
16.03.2006 22:59	16.03.2006 23:00	52,0	68,5	44,5	65,3	0,0	0,0	65,9	0,0	76 N/A Plug back reservoir section with 3 (+) cement plus.	OR,Geo,Hall,MI,OTA S
16.03.2006 23:00	17.03.2006 01:30	22,0	69,4	19,0	66,1	4,0	2,5	66,0	0,0	77 Install CST and set cement plug from 2350 m to 2140 m.	OR,Geo,Hall,MI,OTA S
17.03.2006 01:30	17.03.2006 04:00		69,4	0,0	66,1	3,0	2,5	66,1	0,0	77 A POOH to 2050 m and circulate BU.	MI,OR,Geo,Hall
17.03.2006 04:00	17.03.2006 09:30		69,4	0,0	66,1	10,0	5,5	66,4	0,0	77 B POOH and LD excess tubulars.	
17.03.2006 09:30	17.03.2006 21:30	22,0	70,3	19,0	66,9	16,0	12,0	66,9	0,0	78 RIH and tag cement plug. Pressure test plug to 180 bar. POOH.	OR,Geo,Hall,MI
17.03.2006 21:30	18.03.2006 03:30	12,0	70,8	10,5	67,3	13,0	6,0	67,1	0,0	79 RIH and set 13 3/8" EZSV at 1010 m. Pressure test to 180 bar.	OR,Geo,Hall
18.03.2006 03:30	18.03.2006 05:00		70,8	0,0	67,3	2,0	1,5	67,2	0,0	79 A Set a 50 m cement plug on top of EZSV.	OR,Geo,Hall
18.03.2006 05:00	18.03.2006 09:30		70,8	0,0	67,3	6,0	4,5	67,4	0,5	79 B POOH to 870 m and circulate BU. POOH.	Geo,Hall,MI,OR
18.03.2006 09:30	18.03.2006 12:00	8,0	71,2	7,0	67,6	3,0	2,5	67,5	0,0	81 Retrieve wearbushing.	OR,DQ,Geo,MI
18.03.2006 11:59	18.03.2006 12:00	6,0	71,4	5,0	67,8	0,0	0,0	67,5	0,0	80 N/A (Displace well to same MW as behind 13 3/8" CSG).	OR,Geo,MI,OTAS
18.03.2006 12:00	18.03.2006 14:30	0,0	71,4	0,0	67,8	5,0	2,5	67,6	0,0	81 A Retrieve seal assembly with annular preventer closed.	Geo,DQ,MI,OR
18.03.2006 14:30	18.03.2006 20:00	22,0	72,3	19,0	68,6	9,0	5,5	67,8	0,0	82 RIH and cut 13 3/8" csg @ 600 m. POOH.	OR,Geo,MI,Weath
18.03.2006 20:00	19.03.2006 04:00	22,0	73,3	19,0	69,4	10,0	8,0	68,1	0,0	83 RIH with spear and retrieve 13 3/8 casing cut.	OR,DQ,Geo,Weath,W eath
19.03.2006 04:00	19.03.2006 10:30	13,0	73,8	11,0	69,8	6,0	6,5	68,4	0,0	84 RIH, set a 100 m highvis pill. Set cement plug from 650 to 500 m.	OR,Geo,Hall,MI,OTA S
19.03.2006 10:30	19.03.2006 14:00	0,0	73,8	0,0	69,8	2,0	3,5	68,5	0,0	84 A POOH to 400 m and circulate BU.	MI,OR,Geo,Hall
19.03.2006 14:00	20.03.2006 03:30	13,0	74,3	11,0	70,3	11,0	13,5	69,1	0,0	85 WOC. Tag and P-test cement plug to 75 bar.	OR,Geo,Hall,MI,OTA S
20.03.2006 03:30	20.03.2006 05:30	0,0	74,3	0,0	70,3	3,0	2,0	69,2	0,0	85 A Displace well to sea water.	Geo,MI,Hall,OR
20.03.2006 05:30	20.03.2006 11:30	9,0	74,7	7,5	70,6	6,0	6,0	69,4	0,0	86 Set surface cement plug from 500 m to 290 m. POOH. RIH and wash BOP, POOH	OR,Geo,Hall,MI,OTA S
20.03.2006 11:30	22.03.2006 00:00	55,0	77,0	47,0	72,6	24,0	36,5	71,0	0,5	87 Pull riser and BOP.	OR,Geo,Ocean
22.03.2006 00:00	22.03.2006 10:30	26,0	78,1	22,5	73,5	6,0	10,5	71,4	0,5	88 RIH with MOST and motor cutting assy. Cut 30"x20" CSG and POOH.	OR,Ocean,Geo,Weath, DQ
22.03.2006 10:30	22.03.2006 14:00	5,0	78,3	4,5	73,7	5,0	3,5	71,5	0,0	89 L/D WH and cutting assembly.	OR,Weath,DQ

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22.03.2006 14:00	23.03.2006 00:00	0,0	78,3	0,0	73,7	4,0	10,0	72,0	0,0	89 A Perform ESD test on rig.	Weath,DQ,OR
23.03.2006 00:00	24.03.2006 03:30	36,0	79,8	31,0	75,0	31,0	27,5	73,1	0,0	90 Pull anchors and demob. equipment. Inspection of seabed with ROV.	OR,Ocean

5.11.3 Bit record

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Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
1	12 1/4"	1 RR	1	HCR605Z	M323	Hughes Christensen
2	8 1/2"	2	3	LD565AHG	M223	Lyng
3	8 1/2"	2RR	3	LD565AHG	M223	Lyng

Run no	Bit size	Bit no	BHA no	Serial no	Nozzles (n/32")				Flow area in
					no x n	no x n	no x n	no x n	
1	12 1/4"	1 RR	1	7004570	7 x 12	x	x	x	0,7740
2	8 1/2"	2	3	2830	3 x 13	3 x 12	x	x	0,7210
3	8 1/2"	2RR	3	2830	x	x	x	x	0,0010

Run no	Bit size	Pump rate l/min	Pump press bar	Depth in mMD	Depth out mMD	Form drld m	Total drld m	Drld hrs	Circ hrs	ROP m/hrs
1	12 1/4"	3500	265	1160,0	2290,0	1130,0	1130,0	76,0	116,6	14,9
2	8 1/2"	2500	263	2290,0	3446,0	1156,0	1208,0	108,0	132,0	10,7
3	8 1/2"									

Run no	Bit size	Min WOB ton	Max WOB ton	Min RPM	Max RPM	Torque Min Nm	Torque Max Nm	Con drag Min 1000 daN	Con drag Max 1000 daN
1	12 1/4"	10	15	150	180	5	25		
2	8 1/2"	2	14	120	150	16	28		
3	8 1/2"								

Run no	Bit size	I	O	DC	L	B	G	OC	RP
1	12 1/4"	2	4	CT	G	X	1/16	WT	TD
2	8 1/2"	4	2	CT	C	X	in	WT	TD
3	8 1/2"								

Run no	Bit size	Remarks
1	12 1/4"	Drilled cement and kicked off from 1093 to 1160 m . Drilled new formation from 1160 m to 2290 m. RR from 7227/11-1 S where drilled halite.
2	8 1/2"	Drilled cement, float collar and shoe track from 2245 m to 2290 m. Restricted ROP to be able to build and drop inclination in halite salt.
3	8 1/2"	Wipetrip

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WELL: NO 7227/11-1 S

Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
1	17 1/2"	1	1	MX-3	135	Hughes Christensen
1	26"/36"	2	1	HOLE OPENER		Odfjell Drilling AS
2	26"	2	2	HOLE OPENER		Odfjell Drilling AS
2	17 1/2"	2	2	HOLE OPENER		Odfjell Drilling AS
2	12 1/4"	2	2	HOLE OPENER		Odfjell Drilling AS
2	9 7/8"	2RR	2	EHT11	117	Reed-Hycalog
3	9 7/8"	3	3	MXC09	437	Hughes Christensen
5	17 1/2"	5	5	HOLE OPENER		Odfjell Drilling AS
5	26"	5	5	HOLE OPENER		Odfjell Drilling AS
5	9 7/8"	5	5	MXC09	437	Hughes Christensen
5	12 1/4"	5	5	HOLEOPENER	PDC	Smith Bits
6	26"	6	6	HOLE OPENER		Odfjell Drilling AS
6	17 1/2"	6	6	MX-3	135	Hughes Christensen
7	17 1/2"	7	7	T13CDH	135	Reed-Hycalog
8	12 1/4"	8	8	HCR605Z	M323	Hughes Christensen
9	12 1/4"	9	9	HCR605Z	M323	Hughes Christensen
10	12 1/4"	9 RR	12	HCR605Z	M323	Hughes Christensen

Run no	Bit size	Bit no	BHA no	Serial no	Nozzles (n/32")				Flow area in
					no x n	no x n	no x n	no x n	
1	17 1/2"	1	1	6031817	3 x 18	1 x 14	x	x	0,8960
1	26"/36"	2	1	OWS-FS-013	3 x 18	3 x 16	x	x	1,3350
2	26"	2	2	RS-HO-158	6 x 14	x	x	x	0,9020
2	17 1/2"	2	2	RS-HO-181	3 x 18	x	x	x	0,7460
2	12 1/4"	2	2	JT-8938	5 x 9	x	x	x	0,3110
2	9 7/8"	2RR	2	PP1750	3 x 14	1 x 10	x	x	0,5280
3	9 7/8"	3	3	5030889	3 x 18	1 x 16	x	x	0,9420
5	17 1/2"	5	5	RS-HO-181	4 x 18	x	x	x	0,9950
5	26"	5	5	RS-HO-158	3 x 14	x	x	x	0,4510
5	9 7/8"	5	5	5030889	3 x 14	1 x 16	x	x	0,6480
5	12 1/4"	5	5	JT-8938	5 x 9	x	x	x	0,3110
6	26"	6	6	RS HO 157	3 x 14	x	x	x	0,4510
6	17 1/2"	6	6	6023434	1 x 14	3 x 18	x	x	0,8960
7	17 1/2"	7	7	J50122	3 x 18	1 x 16	x	x	0,9420
8	12 1/4"	8	8	7004569	7 x 12	x	x	x	0,7740
9	12 1/4"	9	9	7004570	7 x 12	x	x	x	0,7740
10	12 1/4"	9 RR	12	7004570	7 x 12	x	x	x	0,7740

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Run no	Bit size	Pump rate l/min	Pump press bar	Depth in mMD	Depth out mMD	Form drld m	Total drld m	Drld hrs	Circ hrs	ROP m/hrs
1	17 1/2"	4750	105	261,5	312,4	50,9	50,9	3,5		14,5
1	26"/36"	4750	105	261,5	309,6	48,1	50,9	3,5		13,7
2	26"	4500	76	312,0	313,3	1,3	1,3	2,0		0,7
2	17 1/2"	4500	76	312,0	315,8	3,8	3,8	2,0		1,9
2	12 1/4"	4500	76	312,0	318,3	6,3	6,3	2,0		3,2
2	9 7/8"	4500	76	312,0	320,0	8,0	8,0	2,0		4,0
3	9 7/8"	3100	143	320,0	691,0	371,0	371,0	20,5	25,8	18,1
5	17 1/2"	4000	135	409,0	721,0	312,0	312,0	41,6	67,8	7,5
5	26"	4000	135	409,0	721,0	312,0	312,0	41,6	67,8	7,5
5	9 7/8"	4000	135	409,0	721,0	312,0	312,0	41,6	67,8	7,5
5	12 1/4"	4000	135	409,0	721,0	312,0	312,0	41,6	67,8	7,5
6	26"	4700	165	721,0	725,0	4,0	4,0	1,7	5,0	2,4
6	17 1/2"	4700	165	721,0	725,0	4,0	4,0	1,7	5,0	2,4
7	17 1/2"	4450	255	725,0	1100,0	375,0	375,0	22,6	30,5	16,6
8	12 1/4"	3500	256	1100,0	1574,0	474,0	507,0	37,3	89,6	12,7
9	12 1/4"	3500	280	1574,0	2590,0	1016,0	1016,0	42,2	74,4	24,1
10	12 1/4"	3000	185	1093,0	1160,0	67,0	66,0	7,2	14,0	9,3

Run no	Bit size	Min WOB ton	Max WOB ton	Min RPM	Max RPM	Torque Min Nm	Torque Max Nm	Con drag Min 1000 daN	Con drag Max 1000 daN
1	17 1/2"	0	1	40	126	4000	8000		
1	26"/36"	0	1	40	126	4000	8000		
2	26"	0	5	40	50				
2	17 1/2"	0	5	40	50				
2	12 1/4"	0	5	40	50				
2	9 7/8"	0	5	40	50	4000	9000		
3	9 7/8"	1	7	153	185	4000	5000		
5	17 1/2"	1	20	59	104	5	20		
5	26"	1	20	59	104	5	20		
5	9 7/8"	1	20	54	104	5	20		
5	12 1/4"	1	20	59	104	5	20		
6	26"	5	10	86	86	6	8		
6	17 1/2"	5	10	86	86	6	8		
7	17 1/2"	7	22	70	160	5	14		
8	12 1/4"	2	15	150	160	10	30		
9	12 1/4"	2	12	120	175	17	31		
10	12 1/4"	0	10	50	150	6	16		

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Run no	Bit size	I	O	DC	L	B	G	OC	RP
1	17 1/2"	1	1	NO	A	1	1	NO	TD
1	26"/36"	1	1	NO	A	1	1	NO	TD
2	26"	1	1	NO	A				TD
2	17 1/2"	1	1	NO	A	E			TD
2	12 1/4"	1	1	NO	A	X			TD
2	9 7/8"	1	1	NO	A	E			TD
3	9 7/8"	2	2	NO	A	E	I	NO	TD
5	17 1/2"	1	1	NO	A	1	I	NO	PR
5	26"	1	1	NO	A	8		NO	PR
5	9 7/8"	1	1	PN	A	E	1	PN	PR
5	12 1/4"	1	1	NO	A	X	I	NO	PR
6	26"	1	1	NO	A	0	I	NO	TD
6	17 1/2"	1	1	NO	A	E	I	NO	TD
7	17 1/2"	2	2	WT	A	E	I	NO	TD
8	12 1/4"	2	1	WT	A	X	I	CT	BHA
9	12 1/4"	1	1	NO	A	X	1	NO	TD
10	12 1/4"								

Run no	Bit size	Remarks
1	17 1/2"	Pilot bit for 26/36 HO
1	26"/36"	
2	26"	6,75 m behind the 9 7/8" bit
2	17 1/2"	4,21 m from bit
2	12 1/4"	1,66 m behind the 9 7/8" bit
2	9 7/8"	Re-run bit from Guovca - Statoil property
3	9 7/8"	
5	17 1/2"	Odfjell 17 1/2" holeopener. Acc bit revolutions 272k.
5	26"	Odfjell 26" holeopener. Acc bit revolutions 272 k. Not able to gauge.
5	9 7/8"	Re-run the 9 7/8" pilot hole bit. Changed nozzle configuration in the bit to optimise flow distribution across the BHA. Acc bit revolutions 272 k. Found 3 of 4 nozzles plugged.
5	12 1/4"	Smith PDC hole opener type: SHO91VPX Bi-Center. Acc bit revolutions 272 k.
6	26"	Acc bit revolutions 10k.
6	17 1/2"	Acc bit revolutions 10k.
7	17 1/2"	Drilled shoe track from 701 m to 725 m. No cement found in shoe track / rat hole. Stabilizers balled up.
8	12 1/4"	Drilled shoe track from 1067 m to 1093 m, rat hole from 1093 m to 1100 m. Firm to hard cement in shoe track. Total revolutions: 350 k.
9	12 1/4"	Drilled approximatly 900 m Halite. Total revolutions: 400 k.
10	12 1/4"	Revolutions: 95 k. Drilled / kicked off cement plug from 1093 m to 1160 m. Drilled halite.

5.11.4 Bottom hole assemblies (BHA)

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WELLBORE: NO 7227/11-1 A
BHA NO: 1
BHA KIND:
DESCRIPTION: 12 1/4" AutoTrak assembly
BHA NAME: 1

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	12,250		0,37	0,37
AUTOTRAK,	9,500	3,000	2,53	2,90
FLEX SUB W/ STAB	9,500	3,125	3,61	6,51
ON TRAK	9,563	3,125	5,52	12,03
MWD, STAB	9,500	3,125	1,80	13,83
BCPM	9,500	3,125	3,57	17,40
STOP SUB,	9,500	3,500	0,54	17,94
STRING STAB, NM	11,750	2,813	1,58	19,52
FLOAT SUB	8,000	2,813	0,70	20,22
DRILL COL	8,250	2,875	75,40	95,62
JAR,	8,000	2,750	9,71	105,33
DRIL COL	8,250	2,875	28,23	133,56
X-OVER	8,250	2,875	0,86	134,42
HW DRILL PIPE	5,500	3,250	83,88	218,30
DART SUB	7,875	2,125	0,73	219,03
DRIFT SUB	7,000	3,375	1,19	220,22
5 1/2" DRILL PIPE	5,500	4,778		220,22

BHA NO: 2
BHA KIND:
DESCRIPTION: 12 1/4" PEX-DIP wireline assembly
BHA NAME: 2

String component	OD in	ID in	Length m	Acc length m
FMI	4,000		8,28	8,28
DSI	3,628		15,55	23,83
PEX	4,000		7,81	31,64
TELEMETRY SECTION	3,875		3,09	34,73
ECRD	3,375		0,89	35,62

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BHA NO: 3
BHA KIND:
DESCRIPTION: 8 1/2" AutoTrak assembly
BHA NAME: 3

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	8,500		0,28	0,28
ATK STEERABLE STAB	6,500	2,250	2,16	2,44
FLEX SUB W/ STAB	7,000	2,250	2,49	4,93
ON TRAK	7,000	2,250	4,93	9,86
MWD, STAB	7,000	2,250	1,27	11,13
BCPM	7,000	2,250	2,23	13,36
NM SUB-STOP	7,000	2,250	0,46	13,82
STRING STAB	8,375	3,000	1,50	15,32
FLOAT SUB,	6,750	3,000	0,75	16,07
DRIL COL	6,750	2,875	75,38	91,45
JAR	6,500	2,250	10,11	101,56
DRIL COL	6,750	2,875	28,35	129,91
HW DRILL PIPE	5,000	3,250	84,26	214,17
DP 5"	5,000	3,750	1724,50	1938,67
X-OVER	7,000	3,000	0,94	1939,61
DP 5 1/2"	5,000	4,778	28,50	1968,11
DART SUB	7,875	2,125	0,73	1968,84

BHA NO: 4
BHA KIND:
DESCRIPTION: 8 1/2" VSP.
BHA NAME: 4

String component	OD in	ID in	Length m	Acc length m
VSP				

BHA NO: 5
BHA KIND:
DESCRIPTION: 8 1/2" PEX-DIP assembly.
BHA NAME: 5

String component	OD in	ID in	Length m	Acc length m
FMI	4,000		8,28	8,28
DSI	3,628		15,55	23,83
PEX	4,000		7,81	31,64
TELEMETRY SECTION	3,875		3,09	34,73
ECRD	3,375		0,89	35,62

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BHA NO: 7
BHA KIND:
DESCRIPTION: Cleanout / cement dress off assembly.
BHA NAME: 7

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	8,500		0,28	0,28
FLOAT SUB,	6,750	2,750	0,98	1,26
DRIL COL	6,750	2,875	75,38	76,64
JAR	6,500	2,250	10,11	86,75
DRIL COL	6,750	2,875	28,35	115,10
HW DRILL PIPE	5,000	3,250	84,26	199,36
X-OVER	7,000	3,000	0,94	200,30
DP 5 1/2"	5,000	4,778		200,30

BHA NO: 8
BHA KIND:
DESCRIPTION: 13 3/8" casing cutting BHA
BHA NAME: 8

String component	OD in	ID in	Length m	Acc length m
BULL NOSE	8,000	2,000	1,10	1,10
CASING CUTTER	12,000	1,875	1,56	2,66
TOP SUB	10,000	3,500	0,38	3,04
X-OVER	8,000	3,000	1,01	4,05
PUP JOINT	7,000	2,750	2,45	6,50
DP 5 1/2"	5,500	3,750	345,32	351,82
X-OVER	8,000	3,375	0,92	352,74
MARINE SWIVEL	14,125	2,750	2,12	354,86
SPACER SUB	8,313	2,813	1,98	356,84
SPACER SUB	8,125	2,813	4,27	361,11
SPACER SUB	8,000	2,750	1,30	362,41
X-OVER	8,000	2,750	0,91	363,32
ANNULAR SWIVEL	8,875	2,813	4,76	368,08
X-OVER	7,063	3,063	0,88	368,96
PUP JOINT	7,000	2,750	2,45	371,41

BHA NO: 9
BHA KIND:
DESCRIPTION: 13 3/8" casing spear BHA.
BHA NAME: 9

String component	OD in	ID in	Length m	Acc length m
PACK OFF TOOL FOR 13 3/8" CSG	12,375	2,250	0,86	0,86
SPEAR	12,381	2,750	1,35	2,21
SPACER	8,000	2,813	1,98	4,19
SPEAR STOP	14,125	3,500	0,76	4,95
BUMBER SUB	8,000	3,000	4,43	9,38
DRIL COL	8,250	2,875	28,14	37,52
X-OVER	8,250	2,875	0,86	38,38
HW DRILL PIPE	5,500	3,250	56,02	94,40

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BHA NO: 10
BHA KIND:
DESCRIPTION: MOST BHA.
BHA NAME: 10

String component	OD in	ID in	Length m	Acc length m
BULL NOSE	8,000	2,000	0,35	0,35
CUTTER	12,000	1,000	1,83	2,18
TOP SUB	10,000	3,000	0,95	3,13
NON ROTATING STAB	17,500	3,000	1,51	4,64
SPACER SUB	8,000	3,000	2,21	6,85
SPACER SUB	8,000	3,000	0,35	7,20
X-O PIN X PIN	8,000	3,000	0,85	8,05
MOST TOOL				8,05
MOTOR			8,75	16,80
8 1/4" DRILL COLLAR	8,250	2,875	56,40	73,20
X-OVER	8,250	2,875	0,86	74,06
5 1/2" HWDP	5,500	3,250	56,02	130,08
5 1/2" DRILL PIPE	5,500	4,778		130,08

WELLBORE: NO 7227/11-1 S
BHA NO: 1
BHA KIND:
DESCRIPTION: 17 1/2" x 26" x 36" HO assy
BHA NAME: 1

String component	OD in	ID in	Length m	Acc length m
BIT	17,500		0,42	0,42
WEIGHT SUB W/FLOAT	9,500	3,000	0,71	1,13
HO TWO STAGE 26" X 36"	36,000	3,000	3,96	5,09
BIT SUB	9,500	3,000	0,89	5,98
ANDERDRIFT	9,500	2,813	2,93	8,91
9 1/2" DRILL COLLAR	9,500	3,000	47,32	56,23
X-OVER	9,000	3,063	0,86	57,09
8 1/4" DRILL COLLAR	8,250	2,875	56,51	113,60
X-OVER	8,250	2,875	0,86	114,46

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BHA NO: 2
BHA KIND:
DESCRIPTION: 26" HO clean out assy
BHA NAME: 2

String component	OD in	ID in	Length m	Acc length m
BIT	9,875		0,28	0,28
BIT SUB,	8,000		0,97	1,25
HOLE OPENER	12,250		1,30	2,55
PIN X PIN SUB	8,000		0,97	3,52
HOLE OPENER	17,500		1,95	5,47
X-OVER	9,005		0,75	6,22
HOLE OPENER	26,000		1,76	7,98
BIT SUB	9,000		0,91	8,89
DRILL COLLAR	9,500	3,000	47,32	56,21
X-O BIT SUB	9,000	3,063	0,86	57,07
DRILL COLLAR	8,250	2,875	56,51	113,58
X-OVER	8,250	2,875	0,86	114,44
H W DRILL PIPE	5,500	3,250	83,88	198,32
DP 5 1/2"				198,32

BHA NO: 3
BHA KIND:
DESCRIPTION: 9 7/8" pilot hole assy
BHA NAME: 3

String component	OD in	ID in	Length m	Acc length m
BIT	9,875		0,26	0,26
MPR SUB	8,250		5,01	5,27
APX	8,250		10,64	15,91
MWD DCP	8,250		11,05	26,96
SAVER SUB,	8,250		0,99	27,95
FLOAT SUB,	8,250		1,08	29,03
DRILL COLLAR	8,250	2,875	103,63	132,66
JAR	8,000	2,750	9,71	142,37
DRILL COLLAR	8,250	2,875	28,14	170,51
X-OVER	8,250	2,875	0,86	171,37
H W DRILL PIPE	5,500	3,250	83,88	255,25

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BHA NO: 4
BHA KIND:
DESCRIPTION: 26" HO assy with bullnose
BHA NAME: 4

String component	OD in	ID in	Length m	Acc length m
BULL NOSE	8,000	1,000	1,22	1,22
FLOAT SUB	8,000	2,750	0,76	1,98
STRING STAB	9,875	2,750	2,10	4,08
HOLE OPENER,	12,250	2,750	1,30	5,38
PIN X PIN SUB	8,000	2,750	0,97	6,35
HOLE OPENER	17,500	2,750	1,95	8,30
X-OVER	9,125	3,000	0,75	9,05
HOLE OPENER	26,000	2,750	1,79	10,84
BIT SUB	9,000	2,750	0,91	11,75
DRILL COLLAR	9,500	3,000	9,45	21,20
STRING STAB	9,500	3,000	2,26	23,46
DRILL COLLAR	9,500	3,000	37,87	61,33
X-OVER	9,000	3,063	0,86	62,19
DRILL COLLAR	8,250	3,000	47,14	109,33
JAR	8,000	2,750	9,71	119,04
DRILL COLLAR	8,250	3,000	28,26	147,30
X-OVER	8,250	2,875	0,86	148,16
H W DRILL PIPE	5,500	3,880	83,88	232,04
DRIFT SUB	6,875	3,250	1,17	233,21

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BHA NO: 5
BHA KIND:
DESCRIPTION: 26" HO with 9 7/8" bit
BHA NAME: 5

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	9,875	1,000	0,26	0,26
FLOAT SUB	8,000	2,750	0,76	1,02
STRING STAB	9,875	2,750	2,10	3,12
HOLE OPENER,	12,250	2,750	1,30	4,42
PIN X PIN SUB	8,000	2,750	0,97	5,39
HOLE OPENER	17,500	2,750	1,95	7,34
X-OVER	9,125	3,000	0,75	8,09
HOLE OPENER	26,000	2,750	1,79	9,88
BIT SUB	9,000	2,750	0,91	10,79
DRILL COLLAR	9,500	3,000	9,45	20,24
STRING STAB	25,750	3,000	2,26	22,50
X-OVER	9,000	3,063	0,86	23,36
PIN X PIN SUB	8,250	3,000	0,99	24,35
MPR SUB	8,250	2,750	5,01	29,36
MWD DCP	8,250	2,750	11,05	40,41
SAVER SUB	8,250	3,000	0,99	41,40
FLOAT SUB	8,250	3,000	1,08	42,48
X-OVER	9,500	3,000	1,02	43,50
STRING STAB	25,750	3,000	2,02	45,52
X-OVER	9,500	3,000	0,85	46,37
DRILL COLLAR	8,250	3,000	75,40	121,77
JAR	8,000	2,750	9,71	131,48
DRILL COLLAR	8,250	3,000	28,23	159,71
X-OVER	8,250	2,875	0,86	160,57
H W DRILL PIPE	5,500	3,250	83,88	244,45
DRIFT SUB	6,250	3,250	1,17	245,62
5 1/2" DRILL PIPE	5,500	4,780		245,62

BHA NO: 6
BHA KIND:
DESCRIPTION: 26" HO with 17 1/2" bit
BHA NAME: 6

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	17,500		0,42	0,42
FLOAT SUB	9,500	3,000	0,99	1,41
PIN X PIN SUB	9,500	3,000	0,72	2,13
HOLE OPENER	26,000	3,000	1,67	3,80
BIT SUB	9,500	3,000	0,91	4,71
DRILL COLLAR	9,500	3,000	9,45	14,16
STRING STAB	25,750	3,000	2,26	16,42
X-OVER	9,500	3,000	0,85	17,27
DRILL COLLAR	8,250	2,875	75,40	92,67
JAR	8,000	2,750	9,71	102,38
DRILL COLLAR	8,250	2,875	28,23	130,61
X-OVER	8,250	2,875	0,86	131,47
H W DRILL PIPE	5,500	3,250	83,88	215,35
5 1/2" DRILL PIPE	5,500	4,780		215,35

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BHA NO: 7
BHA KIND:
DESCRIPTION: 17 1/2" Autotrak G3.0 assy
BHA NAME: 7

String component	OD in	ID in	Length m	Acc length m
BIT, TRI CONE	17,500		0,47	0,47
ATK STEERABLE STAB	9,500	3,000	2,53	3,00
FLEX SUB W/ STAB	17,375	3,250	3,56	6,56
MWD, ONTRAK W/GR&RES	9,500	3,250	5,51	12,07
STAB MODULAR	16,875	3,125	1,68	13,75
MWD BCPM (PULSER)	9,500	3,125	3,56	17,31
STOP SUB AT	9,500	3,125	0,60	17,91
STAB STRING	17,000	2,810	2,49	20,40
FLOAT SUB	8,000	2,810	0,70	21,10
DRILL COLLAR	8,250	2,875	75,40	96,50
JAR	8,000	2,750	9,71	106,21
DRILL COLLAR	8,250	2,875	28,23	134,44
XO SUB	8,350	2,875	0,86	135,30
HWDP 5 1/2"	5,500	3,250	83,88	219,18
DRILL PIPE,	5,500	4,778		219,18

BHA NO: 8
BHA KIND:
DESCRIPTION: 12 1/4" Autotrak G3,0 assy
BHA NAME: 8

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	12,250		0,37	0,37
AUTOTRAK,	9,500		2,54	2,91
FLEX SUB W/ STAB	9,500	3,000	3,61	6,52
ON TRAK	9,500	3,125	5,25	11,77
MWD, STAB	9,500	3,125	1,82	13,59
BCPM	9,500	3,125	3,66	17,25
STOP SUB	9,500	3,500	0,51	17,76
FLOAT SUB,	8,000	2,813	0,70	18,46
DRIL COL	8,250	2,875	75,40	93,86
JAR	9,710	2,750	9,71	103,57
DRIL COL	8,250	2,750	28,23	131,80
X-OVER	8,250	2,875	0,86	132,66
H W DRILL PIPE	5,250	3,250	83,88	216,54

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BHA NO: 9
BHA KIND:
DESCRIPTION: 12 1/4" Autotrack G3,0 assy
BHA NAME: 9

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	12,250		0,37	0,37
AUTOTRAK,	9,500		2,54	2,91
FLEX SUB W/ STAB	9,500	3,000	3,61	6,52
ON TRAK	9,500	3,125	5,25	11,77
MWD, STAB	9,500	3,125	1,82	13,59
BCPM	9,500	3,125	3,66	17,25
STOP SUB	9,500	3,500	0,51	17,76
STRING STAB, NM	8,000	2,813	1,58	19,34
FLOAT SUB,	8,000	2,813	0,70	20,04
DRIL COL	8,250	2,875	75,40	95,44
JAR	9,710	2,750	9,71	105,15
DRIL COL	8,250	2,750	28,23	133,38
X-OVER	8,250	2,875	0,86	134,24
H W DRILL PIPE	5,250	3,250	83,88	218,12
5 1/2" DRILL PIPE	5,500	4,778		218,12

BHA NO: 10
BHA KIND:
DESCRIPTION: Log run #1: FMI-GR-PPC-MSIP.
BHA NAME: 10

String component	OD in	ID in	Length m	Acc length m
FMI	4,000		8,28	8,28
GR	3,375		2,87	11,15
PPC1-B	4,500		1,98	13,13
SONIC TOOL	3,625		12,59	25,72
ACTS	3,625		3,20	28,92
SAH-F	3,875		1,48	30,40
ECRD	3,375		0,89	31,29
E-LINE	0,500			31,29

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BHA NO: 11
BHA KIND:
DESCRIPTION: Log run #2: TLD-CCN-GR.
BHA NAME: 11

String component	OD in	ID in	Length m	Acc length m
TLD	4,000		3,87	3,87
CNT/GR	3,375		2,87	6,74
ACTS	3,275		2,13	8,87
SAH-F	3,875		1,49	10,36
ECRD	3,375		0,89	11,25
E-LINE	0,500			11,25

BHA NO: 12
BHA KIND:
DESCRIPTION: 12 1/4" Autotrack G3,0 assy
BHA NAME:

String component	OD in	ID in	Length m	Acc length m
BIT, PDC	12,250		0,37	0,37
AUTOTRAK,	9,500	3,000	2,53	2,90
FLEX SUB W/ STAB	9,500	3,125	3,61	6,51
ON TRAK	9,563	3,125	5,52	12,03
MWD, STAB	9,500	3,125	1,80	13,83
BCPM	9,500	3,125	3,57	17,40
STOP SUB	9,500	3,500	0,54	17,94
STRING STAB, NM	11,750	2,813	1,58	19,52
FLOAT SUB,	8,000	2,813	0,70	20,22
DRIL COL	8,250	2,875	75,40	95,62
JAR	8,000	2,750	9,71	105,33
DRIL COL	8,250	2,875	28,23	133,56
X-OVER	8,250	2,875	0,86	134,42
H W DRILL PIPE	5,500	3,250	83,88	218,30
DART SUB	7,875	2,125	0,73	219,03
DRIFT SUB	7,000	3,375	1,19	220,22
5 1/2" DRILL PIPE	5,500	4,778		220,22

5.11.5 *Drilling fluids summary*

7227/11-1S															7227/11-1S															7227/11-1S														
Well:															Field:															Rig:														
PL 202, Uranus															PL 202, Uranus															PL 202, Uranus														
Eirik Raude															Eirik Raude															Eirik Raude														
HOLE		Casing		MUD TYPE		MW	Funnel Visc.	Fann 3 rpm	10 sec.	10 min.	PV	YP	API FL	pH	MBT	Ca ++	KCl	Silicate	Sulphate	LGS	Usage volume																							
		SIZE	TVD MD																			SIZE	TVD MD																					
36"	312	312	310	SW/ Bentonite/ Polymer	1.03-1.35	> 150		[Pa]	[Pa]	[Pa]	[cP]	[Pa]	[ml]		[kg/m³]	[mg/l]	[kg/m³]	[%]	[mg/l]	[kg/m³]	[m³]																							
	312	310																																										
Section drilled by use of sea water and Bentonite high visc sweeps. 5 m3 of high visc pumped every 15 m drilled. At TD the hole was displaced to 1.35 sg Bentonite mud before pulling out to run 30" conductor. The drilling fluid worked as expected and no mud related problem was observed.																																												
26"	725	725	715	SW/ Bentonite/ Polymer	1.03-1.35	>150															1236																							
	725	715																																										
A 9 7/8" pilot hole was drilled and opened up to 26". The hole was drilled by use of sea water and Bentonite high visc pills. 5 m3 high visc was pumped every 15 m drilled. The pilot hole was first filled to 1.35 sg Bentonite mud. After opened up the hole to 26", the kill mud was diluted to 1.35 sg and used as displacement fluid. The drilling fluid worked as expected and no mud related problem was observed.																																												
17 1/2"	1082	1100	1076	Sildril	1.20-1.45	na	6-12	4-6	5.5-8	11-16	13-15	2.8-4.5	11.7-11.9	14	152-186	12-15				15-56	68																							
	1100	1094																																										
Started section with 1.20sg Sildril mud with 16% Sildril L. Increased mud weight to 1.30 sg from 980 m depth and to 1.45 sg before pulling out of hole at TD at 1000 m depth. Concentration of Sildril L was kept at 13-14% throughout the section. Due to effective shakers the volume was mainly maintained by addition of drilling fluid with the same specific gravity as the active drilling fluid, occasionally light premix were bleeding into the active system to keep mud weight at specification. Experienced some pressure cavings over the shakers when circulating hole clean at 1000 m depth, indicating too low mud weight. Experienced problems pulling out of hole due to tight hole and mud weight was increased to 1.45 sg before pulling out.																																												
12 1/4"	2294	2590	0	Sildril/ KCL Saturated/ Polymer	1.5	na	7-61	3.5-19.5	7.5-21	10-32	10-20.5	3.4-10	9.7-11.9	14-28	122-160	0-13				58-167	233																							
	2590	0																																										
Using the initial Sildril drilling fluid, pump-pressure, ECD and the hole cleaning was excellent. But a problem occurred with the drilling fluid in the Flair gas reading equipment. When heated, the fluid which exhibited normal parameters when circulating in the well and at low temperatures, dramatically changed nature when heated to mud test temperature at 50°C and especially so when heated to 90°C in the Flair gas reading equipment. The fluid got super viscous, and the mud clogged up this equipment, rendering it useless. Reference is made to extensive pilot tests results mailed town as the testing commenced. Started dilutions in excess of 20%. The treatment helped in managing viscosities at acceptable levels. This dilution hurt other parameters, added more chemicals to compensate for this. After some drilling run into salt formation, the chlorides raised from 66000 to 100000. It was decided to saturate the system with KCl salt. Meanwhile, further pilot tests were run to see the effect on the mud. Decision was made to change out the circulation system with a supersaturated reserve mud volume. Displacing out the old system with new, viscosity profile was back into known territory and drilling commenced. When drilling in the Hallett formation, the NaCl concentration in the mud increased from 0 to approximately 250 kg/m3 depleting the KCl concentration from around 160 to around 120 kg/m3. Using KCl-brine with a calculated concentration of 13% Sildril, viscosity once again kept up. Tests on the brine uncovered an approximate 30% concentration of Sildril silicate. This is believed have been the result of static fluid in the brine tank, allowing the silicate to settle at the bottom of the tank. Brine containing no silicate was mixed at location. This fluid was used to adjust the viscosity profile downwards while pilot testing revealed that a blend with the silicate brine mix with success could be used for volume and to maintain properties in a controlled manner to obtain the required properties for drilling the section.																																												

HOLE		CASING																			
SIZE	TVD MD	SIZE	TVD MD	MUD TYPE	MW [g/cm ³]	Funnel Visc. [sec.]	Ann 3 rpm	10 sec. [P-a]	10 min. [P-a]	PV [cP]	YP [Pa]	API FL [ml]	pH	MBT [kg/m ³]	Ca ++ [mg/l]	KCl [kg/m ³]	Silicate, [%]	Sulphate [mg/l]	LGS [kg/m ³]	Usage Volume [m ³]	
12.25"	2231 2290	9.5/8"	2232 2289	KCl Saturated fpolymer	1.5	na	8-12	5-6	9-13.5	23-28	18-22.5	3.4-4.6	8-10.7	11-21		124-162	0		112-151	57	
Continued using the same KCl/polymer mud as for the first 12 1/2" section when kicking off into well 72227H1-A. Treated the system with Sodium Bicarbonate and Citric Acid when drilling the cement. From kick off point at 160 m we drilled through sandstone, claystone, siltstone and anhydrite. Halite encountered from 1603 m giving no cuttings at the shakers. Incorporated drill solids (Halite) into active system thereby Halite cuttings back to shakers when the system became saturated. The chloride concentration rose from 168000 to 256000 mg/l, increasing the NaCl concentration and reducing the saturation of the system with dual salts. KCl concentration from 160 to 130 kg/m3. Maintain KCl content by direct addition of high salinity premix and KCl powder. TD at 2230 m was set in Halite. References from Stacil on this section as mentioned above on the first 12 1/2" section. When running in with 8 1/2" BHA tagged and drilled cement from 2243 mMD to shoe, before drilling three meters new formation and performing an FIT. Planned vs. actual properties																					
8 1/2"	3198 3446	P&A		KCl Saturated fpolymer	1.5	na	8-12	5-7	9-14		20-24	3.4-5.2	8.9-10	7-11		118-145			123-145	162	
Ten cubic meters of cement spacer - containing 180 kg/m³ NaCl - were incorporated into active from the previous sections cement job. As a direct result, approximately 30 meter of new formation were drilled before cuttings were seen at the shakers. To negate the effect of drilling cement an incorporating spacer, the active system was treated with 15 kg/m³ Citric Acid, 2 kg/m³ Sodium Bicarbonate plus Duotec NS an Polipac ELV. To maintain the KCl concentration at +/- 120 kg/m³, addition of pure KCl premix and KCl big bags were added directly to the active. As the pH and calcium concentration were reduced, the API fluid loss was stable at +/- 4 cc. The mud kept very stable throughout the section. Only minor maintenance was required on rheology and fluid loss. As the well was in very good condition when performing wipetrip directly after reaching TD this shows that the mud performed as intended. When performing a second wipetrip 4 days later the pipe got stuck at approximately 3200 m. That is at the bottom of the salt formation. But according to the geologist that was due to formations moving and not related to mud performance																					

5.11.6 *Cement programme*

CEMENT PROGRAMME																	
Well: 7227/11-1 S Field: Uranus Rig: Eirik Raude																	
HOLE	SIZE	CASING SHOE		TOC	VOLUME/ EXCESS	Components	Lead [lb/ft] [kg]	Tail [lb/ft] [kg]	Density [SG]	Yield [lb/ft³] [kg]	Stat. / Circ. Temp [°C]	Thickness g time [hr to 30 B-c]	API Free Water [%]	API Fluid loss cc/30min	24 hrs C.S. [psi]	SPACER	DISPLACEMENT Fluids and Rates
		TYD MD	SIZE														
36"	312 312	30"	310 310	Sea bed Sea bed	27 m³ 150 %	X-lite cement NF-6 Seawater		0.10 56.31	1.52	103.84 Code DWLSE	6 - 8 API	03.05 (to 70 BC)	n/a	n/a	700	Min. 30 m3 Sea water	Sea water up to 2000 lpm
36"		30" Gravel		Sea bed Sea bed	7.5 m³ 400 %	Norcem "G" + 0.1% EZ-FLO CaCl₂ liquid NF-6 Sea water		4.35 0.10 39.56	1.95	75.06 Code ST110	4 - 6 API	4 - 4	n/a	n/a	47-500	Sea water	Sea water 2500 lpm
26"	725 725	20"	715 715	Sea bed Sea bed	Lead: 77 m³ Tail: 20 m³ 50% on lead	Norcem "G" + 0.1% EZ-FLO Econolite CaCl₂ liquid NF-6 Sea water	3.20 0.10 95.07	4.35 0.10 39.54	L: 1.56 T: 1.95	L: 129.49 Code ST110 T: 75.10 Code ST110	17 / 10 Wellcat	L: 10:50 T: 05:35	n/a	n/a	L: 130 T: 630	Casing volume Sea water	Sea water 3000 lpm
17 1/2"	1082 1100	13 3/8"	1076 1094	959 964	25 m³ 20%	Norcem "G" + 0.1% EZ-FLO Halad-99LE+ HR-4L NF-6 Fresh water		0.50 0.50 0.10 44.61	1.90	76.79 Code MBT14	30 / 25 API	02.38	0.64	n/a	1400	20 m³ 1,65 SG Tuned Spacer	WBM 3000 lpm
12 1/4"		KOP	1239 1301	1008 1043	21 m³ colliper	Norcem "G" + 0.1% EZ-FLO CFR-8L HR-4L NF-6 Fresh water		1.00 0.50 0.10 33.24	2.05	65.89 Code KOEME	36 / 20 API	03.56	0.14	n/a	2400	10 m³ 1,75 SG Tuned Spacer	WBM 1200 lpm

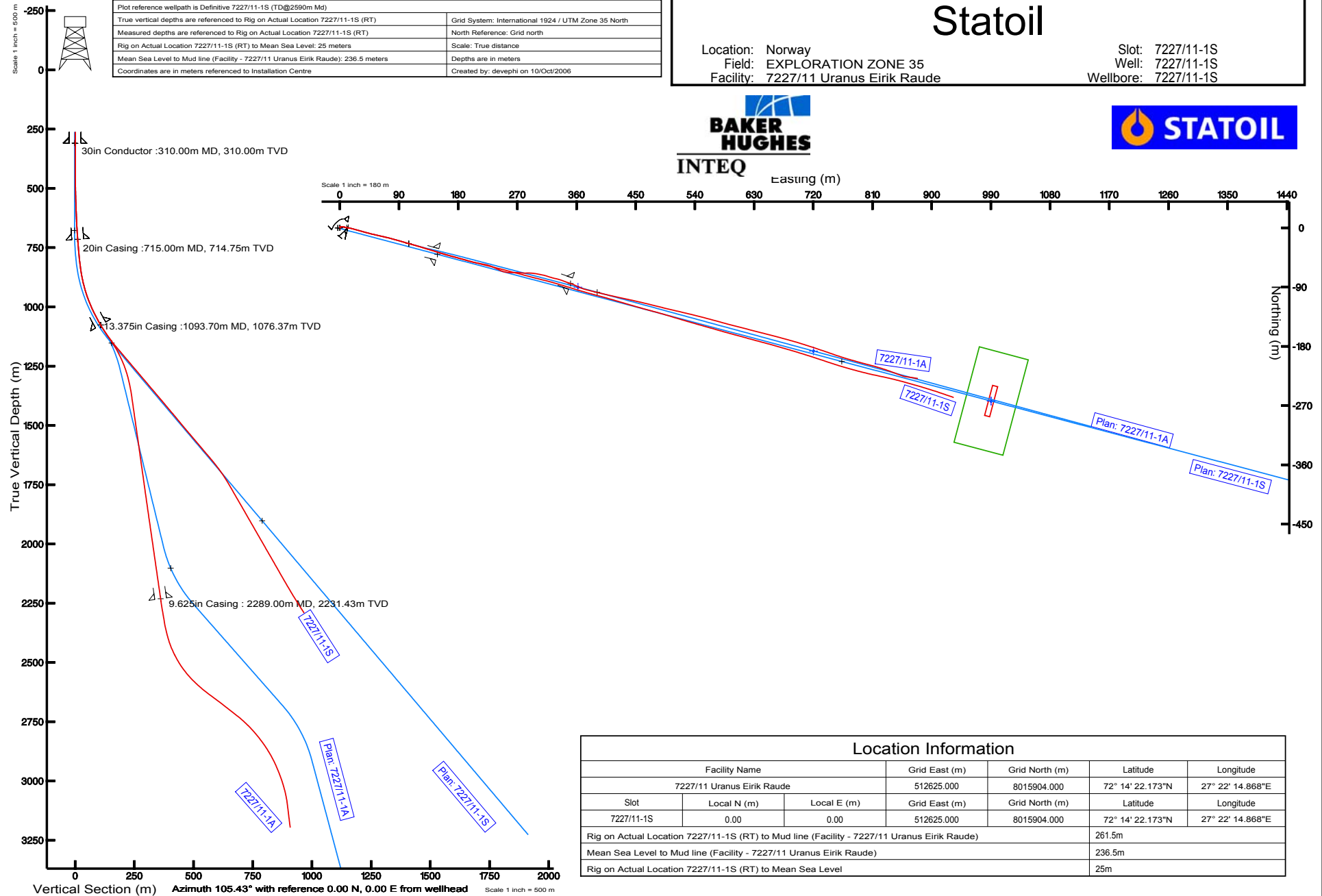
CEMENT PROGRAMME																	
Well: 7227/11-1 A Field: Uranus Rig: Eirik Raude																	
HOLE		CASING SHOE		TOC		VOLUME/ EXCESS	CEMENT SLURRY DESIGN								SPACER	DISPLACEMENT	
SIZE	TYD MD	SIZE	TYD MD	TYD MD	MD		Components	Lead litres m ³	Tail litres m ³	Density [SG]	Yield [lt/100kg]	Stat. / Circ. Temp [°C]	Thickness g/m ² [m ³]	API Free Water [%]	API Fluid loss [cc]	24 hrs C.S. [psi]	
12 1/4"	2233	9 5/8"	2232	1170	1200	33 m ³	Norcem "G" + 0,1% EZ-FLO Gascon 489 HR-5L CFR-8L Halad-400L NF-6 18% NaCl water	3.50 0.30 2.00 4.00 0.10 42.28	1.90	83.24 PO slurry	75/56 API	05.48	0	62	2500	20 m ³ 1,70 SG Tuned Spacer (incl. 18% BWO/NaCl)	WBM 2500 lpm
	2230		2289														
8 1/2" x 9 5/8"		P&A Plug #1	2300 2350	2093 2140	9,3 m ³ 50 %	Norcem "G" + 0,1% EZ-FLO HR-4L NF-6 18% NaCl water	0.30 0.10 51.69	1.90	83.17 PO slurry	69/56 API	03.51	0.6	n.a.	2400	8 m ³ ahead 1,70 SG Tuned Spacer	WBM 1300 lpm	
13 3/8"		P&A Plug #2	1002 1010	960 960	5,5 m ³	Norcem "G" + 0,1% EZ-FLO NF-6 Fresh water	0.10 45.50	1.90	76.68 Code-SIINI	26/20 API	04.52	n.a.	n.a.	1000	5 m ³ ahead 1,70 SG Tuned Spacer	WBM 800 lpm	
13 3/8" x 20"		P&A Plug #3	650 650	500 500	22 m ³	Norcem "G" + 0,1% EZ-FLO CaCl2 NF-6 Sea water	2.20 0.10 41.08	1.95	74.46 Code-SIINI	16/14 API	03.10	n.a.	n.a.	950	9 m ³ ahead 1,70 SG Tuned Spacer	WBM 1000 lpm	
20"		P&A Plug #4	500 500	290 290	35 m ³	Norcem "G" + 0,1% EZ-FLO NF-6 Sea water	0.10 46.74	1.90	77.90 Code-SIINI	12/10 API	+/- 4	n.a.	n.a.	+/- 500	Sea water	Sea water 1000 lpm	

5.11.7 *Well path*

Statoil

Location: Norway
Field: EXPLORATION ZONE 35
Facility: 7227/11 Uranus Eirik Raude

Slot: 7227/11-1S
Well: 7227/11-1S
Wellbore: 7227/11-1S



App A Operational experience, operational listing

WELLBORE ID: NO 7227/11-1 S
INTERVAL: MOVE
START TIME: 10.01.2006 02:00
END TIME: 13.01.2006 02:30

Report date	Description
10.01.2006	Rig handed over from ENI Norge at 02:00 hrs. Unloaded Skandi Admiral.
11.01.2006	Unloaded Skandi Admiral at sheltered location Rolfsøysund. Rig in transit from position 71 deg 03,2' N 024 deg 23,2' E to position 72 deg 05,4 N 026 deg 57,0' E. Distance to location 11,4 nm.
12.01.2006	Moved rig to location 7227/11-1S, Uranus. WOW. Anchorhandling.

INTERVAL: 36"
START TIME: 13.01.2006 02:30
END TIME: 15.01.2006 18:30

Report date	Description
13.01.2006	Ran anchors on Uranus location well 7227/11 - 1 S. Cross tensioned anchors to 230 ton. M/U 36 " BHA. Ran in to sea bed on 5 1/2" DP. Spudded well and drilled 36" hole from 261,5 m to 296 m.
14.01.2006	Drilled 36" hole to TD 310 m. Displaced hole to 1,35 sg. mud. POOH. Rig up to run csg. WOW
15.01.2006	WOW to run 30" conductor. Ran 30" conductor. Held conductor in suspension while cementing. WOC. Disconnected WHRT and POOH.

INTERVAL: 9 7/8"
START TIME: 15.01.2006 18:30
END TIME: 17.01.2006 16:00

Report date	Description
16.01.2006	MU and RIH with 26" cleanout BHA. Drilled out cement, shoe and new formation to 320 m. POOH. Grouted conductor. MU 9 7/8" pilot BHA and RIH. Drilled 9 7/8" pilot to 411 m.
17.01.2006	Drilled 9 7/8" pilot hole from 411 m to TD 691 m. Circulated hole clean with a 20 m3 hi-vis sweep at TD. Flow checked well by use of ROV. Displaced hole to 1,35sg mud. POOH with 9 7/8" pilot hole BHA.

INTERVAL: 26"
START TIME: 17.01.2006 16:00
END TIME: 04.02.2006 03:30

Report date	Description
18.01.2006	POOH and LD 9 7/8" pilot hole assembly. MU and RIH with 26" HO BHA with bullnose. Opened up 9 7/8" pilot hole to 26" hole from 321m to 409 m. Attempted to advance past 409 m without success. POOH and modified BHA. RIH with 26" HO assy and 9 7/8" bit.
19.01.2006	MU 26" HO assembly including MWD. RIH and opened 9 7/8" pilot hole from 409 m to 427 m. Pulled back into 30" conductor shoe at 308 m and had "Time out for safety". RIH and opened 9 7/8" pilot hole to 26".
20.01.2006	Opened 9 7/8" pilot hole to 26" from 479 m to 629 m.
21.01.2006	Opened 9 7/8" pilot hole to 26" from 629 m to 691 m. Drilled new formation from 691 m to 720 m (26" hole opener at 711 m).
22.01.2006	Opened new 26" hole from 720 m to 721 m. Not able to continue drilling. Circulated hole clean and displaced to 1.35 sg Mud. POOH. MU new 17 1/2" Bit and new 26" HO and RIH to 620 m.
23.01.2006	RIH from 620 m to bottom. Opened/drilled 26" hole to 722 m (17 1/2" Bit to 725 m). Circulated hole clean, displaced to 1.35 sg mud and POOH. Installed wiper plug in wellhead housing. Made up cement assembly. R/U for running 20" casing.

Report date	Description
24.01.2006	Ran, landed and cemented 20" casing. Released and retrieved running tool. POOH and laid down WH RT. Rigged down casing running equipment. Laid down 26" HO assembly.
25.01.2006	Trouble shot BOP. Performed general rig maintenance. Laid out 9 1/2" DC used in previous BHA. Made up HOT. Pressure tested mud hose and manual IBOP. Prepared to change out auto IBOP. Performed VSP logging.
26.01.2006	Trouble shot BOP. Performed general rig maintenance. Replaced and tested auto IBOP to 35/345 bar 5/10 min.OK. Made up and racked back 17 1/2" BHA.
27.01.2006	Trouble shot BOP. General rig maintenance. Made up and laid down cement stand & 13 3/8" casing hanger. Rigged up for running riser/BOP.
28.01.2006	Trouble shot BOP. General rig maintenance.
29.01.2006	Trouble shot BOP. General rig maintenance.
30.01.2006	Trouble shot BOP. General rig maintenance. WOW.
31.01.2006	WOW. General rig maintenance. Made up 2 riser joints. Changed out and tested SIM card on yellow SEM A.
01.02.2006	Continued to change out and test SIM card on yellow SEM A. Ran BOP to 75 m. Attempted to pressure test kill line NO GO. Pulled BOP to surface and changed out seal in kill line. Ran riser/BOP to 160 m.
02.02.2006	Ran riser/BOP to 254 metres. WOW.
03.02.2006	WOW. Prepared for landing BOP. Landed BOP. Pressure tested wellhead connector and casing against BSR to 75 bar 15 min. Installed diverter. Rigged down riser running equipment.

INTERVAL: 17 1/2"

START TIME: 04.02.2006 03:30

END TIME: 09.02.2006 21:30

Report date	Description
04.02.2006	LD riser handling equipment. RIH. Displaced hole to 1,20 sg mud. Drilled float collar and 20" shoe. Drilled 3 m new formation to 728 m. Circulated bottoms up. Performed FIT. Drilled 17 1/2" hole.
05.02.2006	Drilled and oriented 17 1/2" hole from 743 m to 1052 m.
06.02.2006	Drilled and oriented 17 1/2" hole to section TD at 1100 m. Circulated bottoms up. Back reamed to 960 m. Reamed back to bottom. Raised mud weight from 1,30 sg to 1,45 sg. POOH to 960 m.
07.02.2006	Made wiper trip into 20" casing shoe. Circulated bottoms up. POOH. RIH bore protector pulling/ wash tool. Pulled bore protector and washed well head. POOH. RU casing handling equipment.
08.02.2006	Ran and cemented 13 3/8" casing. Set seal assembly and released running tool. POOH.
09.02.2006	Pressure tested BOP. Installed wear busing. Performed VSP logging. LD cement head and 17 1/2" BHA. Pressure tested BOP surface equipment. MU 12 1/4" BHA. Pressure tested 13 3/8" casing. RIH 12 1/4" BHA to 1024 m.

INTERVAL: 12 1/4"

START TIME: 09.02.2006 21:30

END TIME: 21.02.2006 02:30

Report date	Description
10.02.2006	Drilled shoe track and 3 m new formation. Increased mud weight. Circulated bottoms up. Performed FIT to 1.80 sg. Drilled 12 1/4" hole to 1141 m. Stopped back loading of cuttings to boat due to weather condition. WOW.
11.02.2006	Circulated hole while waited on weater condition to allow boat to recieve cuttings. Drilled and oriented 12 1/4" hole from 1141m to 1150 m. Circulated bottoms for sampling. Drilled and orienting 12 1/4" hole from 1150 m to 1318 m
12.02.2006	Drilled and oriented 12 1/4" hole from 1318 m to 1446 m. Circulated and treated active mud system. Drilled and oriented 12 1/4" hole from 1446 m to 1462 m
13.02.2006	Drilled 12 1/4" hole from 1462 m to 1486 m. Circulated and conditioned mud. Drilled 12 1/4" hole from 1486 m to 1574 m. Pumped and backreamed out of open hole. Circulated and waited on mudchemicals from Hammerfest.
14.02.2006	Waited on salt from Hammerfest, POOH, Prepared for WL run, Rigged down same, RIH w/ 12 1/4" bit assembly to 800 m, Slipped and cut drilling line, Changed washpipe, Cont. RIH to shoe, Troubleshoot and rectified leakage around washpipe.
15.02.2006	Troubleshoot and rectified leakage around washpipe, Circulated, Funtiontested BOP, M/U 5" DP and racked same back in derrick. Meanwhile mixed new salt saturated mud system.
16.02.2006	P/U and racked back 5" DP, RIH to shoe, Circulated, RIH to TD, Circulated, Displaced well to salt saturated mud, Circulated while prepared premix, Drilled 12 1/4" hole from 1574 m to 1714 m.
17.02.2006	Drilled and oriented 12 1/4" hole from 1714 m to 2105 m

Report date	Description
18.02.2006	Drilled and oriented 12 1/4" hole from 2105 m to 2243 m, Circulated, POOH to shoe, Circulated, RIH to bottom, Drilled and oriented 12 1/4" hole from 2243 m to 2355 m.
19.02.2006	Drilled and oriented 12 1/4" hole from 2355 m to 2590 m, Circulated, Wipertripped 20 stands, Circulated.
20.02.2006	Dropped Gyro, POOH. M/U WL equipment. Prepared and ran WL log no1: FMI-GR-PPC-MSIP.

INTERVAL: PERM P&A

START TIME: 21.02.2006 02:30

END TIME: 24.02.2006 21:00

Report date	Description
21.02.2006	Schlumberger ran WL log no1: FMI-GR-PPC-MSIP, Schlumberger R/U and ran WL log no 2: TLD, CNL, GR, Rigged down WL equipment, M/U cementing stand, M/U and RIH w/ 3 1/2" cementing stinger.
22.02.2006	RIH w/cmt stinger, Circulated, Set at balanced kick off plug from 1301 m to 1043 m, Pulled to 897 m, Circulated, POOH, RIH, tested BOP, POOH, M/U 12 1/4" Sidetrack assy.
23.02.2006	M/U 12 1/4" Sidetrack assy and RIH to 900 m, Washed down from 900 m to 1093 m, Drilled cement from 1093 m to 1110 m. Attempted to sidetrack from 1110 m to 1153 m, Pulled into shoe, WOW
24.02.2006	WOW. Troubleshoot Geoservices computer. Picked up and racked back 5" DP.

WELLBORE ID: NO 7227/11-1 A

INTERVAL: 12 1/4"

START TIME: 24.02.2006 21:00

END TIME: 06.03.2006 10:30

Report date	Description
25.02.2006	Kicked off from well 7227/11-1 S at 1160 mMD RKB. Drilled and oriented 12,25" hole from 1160 m to 1229 m.
26.02.2006	Drilled and oriented 12,25" hole from 1229 m to 1425 m.
27.02.2006	Drilled and oriented 12,25" hole from 1425 m to 1737 m.
28.02.2006	Drilled and oriented 12,25" hole from 1737 m to 2087 m.
01.03.2006	Drilled and oriented 12,25" hole from 2087 m to section TD at 2290 m. Circulated hole clean. Flow checked well. POOH to 1196 m.
02.03.2006	Worked tight spot from 1179 m 1146 m. Pulled into 13 3/8" casing shoe. Circulated b/u at 1080 m. Function tested BOP. Ran in hole to 2290 m. Circulated hole clean, meanwhile prepared for dropping Gyro. Dropped Gyro. Pulled out of hole from 2290 m to 180 m.
03.03.2006	POOH. Recovered drop gyro. Performed logging run #1; FMI-DIP, DSI, PEX logs. R/d wireline equipment. Made up and racked back cement stand. R/u and ran 9 5/8" liner to 119 m.
04.03.2006	Ran 9 5/8" liner from 119 m to 1066 m. PU and installed liner hanger. Ran liner on 5 1/2" DP landing string from 1066 m to 2289 m. Sat liner hanger. Cemented 9 5/8" liner.
05.03.2006	Displaced cement. Set and tested TSP. POOH with 9 5/8" liner running string. Held time out for safety. Laid down 12 1/4" BHA. Made up and ran in hole with BOP test tool. Pressure tested BOP. Pressure tested choke manifold to 275 bar.
06.03.2006	Pressure tested 9 5/8" liner to 275 bar against USR. Made up and ran in hole with 8 1/2" BHA. Performed choke drill with crew. Drilled cement, float collar and shoe track from 2245 m to 2261 m.

INTERVAL: 8 1/2"

START TIME: 06.03.2006 10:30

END TIME: 16.03.2006 17:00

Report date	Description
07.03.2006	Drilled cement, float collar and shoe track from 2261 m to 2290 m. Drilled 3 m new formation. Circulated hole clean until even mud weight in/out. Performed FIT to 1,80 sg. Drilled and oriented 8 1/2" hole to 2474 m.
08.03.2006	Drilled, oriented and surveyed 8 1/2" hole from 2474 m to 2721 m.
09.03.2006	Drilled and oriented 8 1/2" hole from 2721 m to 2955 m.

Report date	Description
10.03.2006	Drilled and oriented 8 1/2" hole from 2955 m to 3135 m.
11.03.2006	Drilled and oriented 8 1/2" hole from 3115 m to 3392 m
12.03.2006	Drilled and oriented 8 1/2" hole from 3392 m to well TD at 3446 m. Circulated bottoms up. Flow checked well. POOH into 9 5/8" liner shoe at 2289 m. Circulated bottoms up.
13.03.2006	RIH from liner shoe at 2289 m to TD at 3446 m. Circulated bottoms up. POOH to 9 5/8" liner lap at 1140 m. Changed leaking wash pipe. Circulated bottoms up. POOH to 850 m. Performed weekly function test on BOP. POOH and racked back BHA. Downloaded MWD tool. RU and ran VSP.
14.03.2006	Troubleshoot communication error betwixt VPS tool and surface computer. Ran VPS tool string and logged inside casing as per programme. Attempted to enter open hole with VSP tool string,- no go. POOH and LD VSP tool string. MU and ran tool string no 2. Logged hole as per programme.
15.03.2006	Logged 8 1/2" open from 2289 m to 3255 m with FMI-DIP/DSI/PEX-ACTS-ECRD.POOH. LD toolstring and surface equipment. RIH 8 1/2" BHA for wipertrip. Tagged obstruction at 3250 m. Attempted to ream through obstruction. Got stuck. Worked string free. Circulated bottoms up. POOH to 9 5/8" liner shoe at 2289 m. Circulated bottoms up. POOH.
16.03.2006	POOH w/ wipertrip assembly, Slipped and cut drilling line, Rigged up WL equipment, Ran VSP to 3225 m, Pulled logging string into shoe and WOW.

INTERVAL: PERM P&A

START TIME: 16.03.2006 17:00

END TIME: 24.03.2006 03:30

Report date	Description
17.03.2006	Performed VSP log from rig, WOW, Performed walk away VSP, Rigged down WL eq., RIH w/ 3 1/2" cementing stinger. Circulated, Set cement plug #1 in 8 1/2" open hole from 2350 m to 2140 m. Pulled to 1940 m, Circulated, POOH.
18.03.2006	POOH 3 1/2" cement stinger, RIH 8 1/2" bit, Load and pressure tested open hole cement plug #1, POOH, RIH and set 13 3/8" EZSV at 1010 m, Set a cement plug #2 above 9 5/8" liner in 13 3/8" casing from 1005 m to 935 m, Pulled above plug and circulated.
19.03.2006	POOH, Retrieved wear bushing, Retrieved seal assy, RIH 13 3/8" casing cutter, Cut 13 3/8" casing at 603 m, POOH, RIH 13 3/8" spear assy, POOH and L/D 13 3/8" casing cut, RIH 3 1/2" cementing stinger.
20.03.2006	Circulated, Set cement plug #3 across the 13 3/8" casing cut 650 m - 500 m, WOC, Load and pressure tested cement plug #3, Displaced well to seawater.
21.03.2006	Set surface cement plug, plug #4, at 290 m - 500 m, Circulated above plug, POOH, RIH and jet washed BOP, POOH, Prepared and pulled BOP
22.03.2006	Pulled riser and BOP. RIH and cut 20" x 30 casing.
23.03.2006	POOH 20" x 30" casing cut, WOW to pull anchors, Deballasted rig.

App B Directional data, survey listing

Baker Hughes Incorporated

Survey Report

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site 7227/11-1 S
Project:	EXPLORATION - UTM Zone 35	TVD Reference:	RT @ 25.00m (Eirik Raude)
Site:	7227/11-1 S	MD Reference:	RT @ 25.00m (Eirik Raude)
Well:	7227/11-1 S	North Reference:	Grid
Wellbore:	1 S	Survey Calculation Method:	Minimum Curvature
Design:	Definitive 7227/11-1 S (TD@2590m Md)	Database:	EDM R200.14 on oracle

Project	EXPLORATION - UTM Zone 35, Norway		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 35N (24 E to 30 E)		Using geodetic scale factor

Site		7227/11-1 S, 7227/11-1			
Site Position:		Northing:	8,015,904.00m	Latitude:	72° 14' 22.173 N
From:	Map	Easting:	512,625.00m	Longitude:	27° 22' 14.868 E
Position Uncertainty:	0.00 m	Slot Radius:	0.000in	Grid Convergence:	0.35 °

Well	7227/11-1 S					
Well Position	+N-S	0.00 m	Northing:	8,015,904.00 m	Latitude:	72° 14' 22.173 N
	+E-W	0.00 m	Easting:	512,625.00 m	Longitude:	27° 22' 14.868 E
Position Uncertainty		0.00 m	Wellhead Depth:	m	Water Depth:	236.50 m

Wellbore	1 S				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/Oct/2006	12.12	79.58	54,112

Design		Definitive 7227/11-1 S (TD@2590m Md)			
Audit Notes:					
Version:		1.0	Phase:	ACTUAL	Tie On Depth: 261.50
Vertical Section:		Depth From (TVD)	+N/-S	+E/-W	Direction
		(m)	(m)	(m)	(°)
		261.50	0.00	0.00	105.43

Survey Program	Date	10/Oct/2006			
From (m)	To (m)	Survey (Wellbore)	Tool Name	Description	
332.00	682.10	MWD 26" (1 S)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)	
722.50	1,087.70	MWD 17 1/2" (1 S)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)	
1,097.00	2,576.80	MWD 12 1/4" (1 S)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)	

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	
261.50	0.00	0.00	261.50	0.00	0.00	0.00	0.000	0.00	0.00	
332.00	0.40	9.60	332.00	0.24	0.04	-0.02	0.170	0.17	0.00	
372.00	0.40	8.90	372.00	0.52	0.09	-0.06	0.004	0.00	-0.52	
398.00	0.50	3.20	398.00	0.72	0.11	-0.09	0.126	0.12	-6.58	
428.00	0.70	33.70	428.00	1.00	0.22	-0.06	0.370	0.20	30.50	
455.00	0.90	64.30	454.99	1.23	0.50	0.15	0.516	0.22	34.00	
484.00	1.20	69.10	483.99	1.44	0.99	0.57	0.323	0.31	4.97	
515.00	1.70	78.40	514.98	1.65	1.74	1.24	0.533	0.48	9.00	
541.00	1.70	86.70	540.97	1.75	2.50	1.95	0.284	0.00	9.58	
598.00	2.40	94.50	597.93	1.70	4.54	3.92	0.396	0.37	4.11	
627.00	2.60	102.20	626.90	1.52	5.79	5.17	0.404	0.21	7.97	
655.00	3.00	103.60	654.87	1.21	7.12	6.54	0.435	0.43	1.50	
668.00	3.00	105.80	667.85	1.04	7.78	7.22	0.266	0.00	5.08	
682.10	3.36	106.26	681.93	0.82	8.53	8.00	0.768	0.77	0.98	
722.50	4.88	98.64	722.22	0.23	11.36	10.89	1.197	1.13	-5.66	
752.00	4.85	96.99	751.62	-0.11	13.84	13.37	0.146	-0.03	-1.68	

Baker Hughes Incorporated

Survey Report

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site 7227/11-1 S
Project:	EXPLORATION - UTM Zone 35	TVD Reference:	RT @ 25.00m (Eirik Raude)
Site:	7227/11-1 S	MD Reference:	RT @ 25.00m (Eirik Raude)
Well:	7227/11-1 S	North Reference:	Grid
Wellbore:	1 S	Survey Calculation Method:	Minimum Curvature
Design:	Definitive 7227/11-1 S (TD@2590m N	Database:	EDM R200.14 on oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
781.50	4.84	101.14	781.01	-0.50	16.30	15.85	0.357	-0.01	4.22
810.00	7.00	106.93	809.36	-1.24	19.14	18.78	2.356	2.27	6.09
839.90	7.92	104.80	839.01	-2.30	22.88	22.66	0.964	0.92	-2.14
867.50	10.25	104.58	866.26	-3.40	27.09	27.02	2.533	2.53	-0.24
896.50	12.99	106.39	894.66	-4.97	32.72	32.86	2.859	2.83	1.87
924.60	15.42	105.57	921.90	-6.86	39.35	39.75	2.603	2.59	-0.88
953.90	18.69	103.90	949.91	-9.04	47.66	48.35	3.385	3.35	-1.71
982.30	21.57	102.52	976.57	-11.26	57.17	58.11	3.083	3.04	-1.46
1,011.80	24.04	103.01	1,003.76	-13.79	68.32	69.53	2.519	2.51	0.50
1,040.50	26.81	105.26	1,029.68	-16.81	80.27	81.85	3.066	2.90	2.35
1,069.20	28.64	106.22	1,055.08	-20.44	93.12	95.20	1.969	1.91	1.00
1,087.70	30.19	105.94	1,071.20	-22.95	101.85	104.28	2.523	2.51	-0.45
1,097.00	30.93	105.09	1,079.21	-24.22	106.40	109.01	2.764	2.39	-2.74
1,124.50	33.35	107.05	1,102.49	-28.27	120.46	123.64	2.874	2.64	2.14
1,155.00	35.99	106.51	1,127.57	-33.28	137.07	140.98	2.614	2.60	-0.53
1,182.60	38.21	106.54	1,149.59	-38.01	153.03	157.62	2.413	2.41	0.03
1,211.50	40.27	105.35	1,171.97	-43.03	170.60	175.90	2.277	2.14	-1.24
1,238.70	40.31	105.78	1,192.72	-47.75	187.55	193.49	0.310	0.04	0.47
1,268.40	40.36	104.46	1,215.36	-52.77	206.10	212.71	0.864	0.05	-1.33
1,296.70	40.26	103.73	1,236.94	-57.22	223.86	231.02	0.512	-0.11	-0.77
1,326.23	40.35	104.54	1,259.46	-61.89	242.38	250.11	0.540	0.09	0.82
1,356.30	40.28	104.58	1,282.39	-66.78	261.21	269.57	0.074	-0.07	0.04
1,385.70	40.37	104.86	1,304.80	-71.61	279.61	288.59	0.206	0.09	0.29
1,413.30	40.25	104.04	1,325.85	-76.07	296.90	306.44	0.591	-0.13	-0.89
1,440.60	40.35	104.44	1,346.67	-80.41	314.02	324.10	0.305	0.11	0.44
1,471.60	40.41	106.39	1,370.28	-85.75	333.38	344.18	1.224	0.06	1.89
1,500.30	39.99	107.24	1,392.20	-91.11	351.11	362.70	0.722	-0.44	0.89
1,528.50	40.30	106.15	1,413.76	-96.33	368.53	380.87	0.817	0.33	-1.16
1,555.30	39.99	104.91	1,434.25	-100.96	385.17	398.15	0.960	-0.35	-1.39
1,586.60	39.89	105.58	1,458.25	-106.24	404.56	418.24	0.423	-0.10	0.64
1,615.70	39.53	106.43	1,480.63	-111.37	422.43	436.83	0.672	-0.37	0.88
1,643.00	39.96	106.33	1,501.62	-116.29	439.18	454.29	0.478	0.47	-0.11
1,672.30	40.25	105.99	1,524.03	-121.54	457.31	473.16	0.372	0.30	-0.35
1,701.80	40.39	104.73	1,546.53	-126.60	475.71	492.25	0.841	0.14	-1.28
1,731.10	40.25	106.51	1,568.87	-131.70	493.97	511.20	1.188	-0.14	1.82
1,759.60	40.26	107.14	1,590.62	-137.03	511.60	529.62	0.429	0.01	0.66
1,787.00	40.25	106.06	1,611.53	-142.09	528.56	547.32	0.764	-0.01	-1.18
1,815.50	40.40	105.87	1,633.26	-147.16	546.29	565.76	0.204	0.16	-0.20
1,843.80	39.36	105.63	1,654.97	-152.09	563.76	583.90	1.114	-1.10	-0.25
1,871.90	37.14	106.19	1,677.04	-156.86	580.49	601.30	2.399	-2.37	0.60
1,904.80	34.40	104.68	1,703.73	-161.98	599.02	620.53	2.625	-2.50	-1.38
1,933.50	32.16	105.66	1,727.72	-166.10	614.22	636.27	2.408	-2.34	1.02
1,961.70	30.36	105.10	1,751.83	-169.98	628.33	650.91	1.940	-1.91	-0.60
1,992.00	29.94	104.90	1,778.03	-173.92	643.03	666.12	0.428	-0.42	-0.20
2,019.80	29.97	105.53	1,802.11	-177.56	656.42	680.01	0.341	0.03	0.68
2,048.70	30.09	105.84	1,827.14	-181.47	670.35	694.47	0.204	0.12	0.32
2,078.20	29.96	106.27	1,852.68	-185.56	684.53	709.23	0.256	-0.13	0.44
2,106.20	29.95	107.15	1,876.94	-189.58	697.92	723.21	0.471	-0.01	0.94
2,135.20	29.86	107.67	1,902.08	-193.90	711.72	737.66	0.284	-0.09	0.54
2,162.10	29.90	108.10	1,925.40	-198.02	724.47	751.04	0.243	0.04	0.48
2,192.20	30.03	108.50	1,951.48	-202.74	738.75	766.06	0.238	0.13	0.40
2,222.20	29.97	108.02	1,977.46	-207.44	752.99	781.04	0.247	-0.06	-0.48
2,249.60	29.98	106.24	2,001.19	-211.47	766.07	794.72	0.974	0.01	-1.95
2,277.00	29.79	105.36	2,024.95	-215.19	779.21	808.37	0.523	-0.21	-0.96
2,306.40	30.05	104.46	2,050.43	-218.96	793.38	823.04	0.529	0.27	-0.92
2,336.50	29.99	102.52	2,076.49	-222.47	808.02	838.09	0.969	-0.06	-1.93
2,364.20	29.77	101.87	2,100.51	-225.39	821.51	851.86	0.424	-0.24	-0.70
2,392.20	29.66	102.86	2,124.83	-228.36	835.06	865.72	0.539	-0.12	1.06
2,421.90	30.13	104.50	2,150.58	-231.86	849.45	880.52	0.952	0.47	1.66

Baker Hughes Incorporated

Survey Report

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site 7227/11-1 S
Project:	EXPLORATION - UTM Zone 35	TVD Reference:	RT @ 25.00m (Eirik Raude)
Site:	7227/11-1 S	MD Reference:	RT @ 25.00m (Eirik Raude)
Well:	7227/11-1 S	North Reference:	Grid
Wellbore:	1 S	Survey Calculation Method:	Minimum Curvature
Design:	Definitive 7227/11-1 S (TD@2590m)	Database:	EDM R200.14 on oracle

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	
2,451.50	30.47	105.55	2,176.13	-235.73	863.87	895.45	0.638	0.34	1.06	
2,479.50	30.92	106.35	2,200.21	-239.66	877.61	909.74	0.651	0.48	0.86	
2,507.60	31.37	106.78	2,224.26	-243.81	891.54	924.27	0.536	0.48	0.46	
2,537.20	32.37	108.00	2,249.40	-248.48	906.45	939.89	1.206	1.01	1.24	
2,565.80	32.74	109.41	2,273.51	-253.41	921.03	955.26	0.885	0.39	1.48	
2,576.80	32.71	108.82	2,282.76	-255.36	926.65	961.19	0.874	-0.08	-1.61	
2,590.00	32.71	108.82	2,293.87	-257.66	933.40	968.31	0.000	0.00	0.00	

Casing Points					
Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)	
310.00	310.00	30"	30.000	36.000	
715.00	714.75	20"	20.000	26.000	
1,093.70	1,076.37	13 3/8"	13.375	17.500	

Checked By: _____ Approved By: _____ Date: _____

Baker Hughes Incorporated

Survey Report

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site 7227/11-1 S
Project:	EXPLORATION - UTM Zone 35	TVD Reference:	RT @ 25.00m (Eirik Raude)
Site:	7227/11-1 S	MD Reference:	RT @ 25.00m (Eirik Raude)
Well:	7227/11-1 S	North Reference:	Grid
Wellbore:	1 A	Survey Calculation Method:	Minimum Curvature
Design:	Definitive 7227/11-1 A (TD@3446m N)	Database:	EDM R200.14 on oracle

Project	EXPLORATION - UTM Zone 35, Norway
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Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 35N (24 E to 30 E)		Using geodetic scale factor

Site	7227/11-1 S, 7227/11-1
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Site Position:		Northing:	8,015,904.00m	Latitude:	72° 14' 22.173 N
From:	Map	Easting:	512,625.00m	Longitude:	27° 22' 14.868 E
Position Uncertainty:	0.00 m	Slot Radius:	0.000in	Grid Convergence:	0.35 °

Well	7227/11-1 S
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Well Position	+N/-S	0.00 m	Northing:	8,015,904.00 m	Latitude:	72° 14' 22.173 N
	+E/-W	0.00 m	Easting:	512,625.00 m	Longitude:	27° 22' 14.868 E
Position Uncertainty		0.00 m	Wellhead Depth:	m	Water Depth:	236.50 m

Wellbore	1 A
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/Oct/2006	12.12	79.58	54,112

Design	Definitive 7227/11-1 A (TD@3446m Md)
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Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 1,155.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(m)	(m)	(m)	(°)
	261.50	0.00	0.00	104.83

Survey Program		Date 10/Oct/2006		
From (m)	To (m)	Survey (Wellbore)	Tool Name	Description
332.00	682.10	MWD 26" (1 S)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
722.50	1,087.70	MWD 17 1/2" (1 S)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
1,097.00	1,155.00	MWD 12 1/4" (1 S)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
1,174.00	2,263.60	Gyro Cont (1 A)	Gyro, cont	Other Gyro Tools
2,278.70	2,278.70	MWD 12 1/4" (1 A)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)
2,304.10	3,429.30	MWD 8 1/2" (1 A)	Magnetic, std, mag-corr	Magnetic Tools (MWD, EMS)

Survey	Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
	261.50	0.00	0.00	261.50	0.00	0.00	0.00	0.000	0.00	0.00
	332.00	0.40	9.60	332.00	0.24	0.04	-0.02	0.170	0.17	0.00
	372.00	0.40	8.90	372.00	0.52	0.09	-0.05	0.004	0.00	-0.52
	398.00	0.50	3.20	398.00	0.72	0.11	-0.08	0.126	0.12	-6.58
	428.00	0.70	33.70	428.00	1.00	0.22	-0.05	0.370	0.20	30.50
	455.00	0.90	64.30	454.99	1.23	0.50	0.17	0.516	0.22	34.00
	484.00	1.20	69.10	483.99	1.44	0.99	0.59	0.323	0.31	4.97
	515.00	1.70	78.40	514.98	1.65	1.74	1.26	0.533	0.48	9.00
	541.00	1.70	86.70	540.97	1.75	2.50	1.97	0.284	0.00	9.58
	598.00	2.40	94.50	597.93	1.70	4.54	3.95	0.396	0.37	4.11
	627.00	2.60	102.20	626.90	1.52	5.79	5.20	0.404	0.21	7.97
	655.00	3.00	103.60	654.87	1.21	7.12	6.57	0.435	0.43	1.50
	668.00	3.00	105.80	667.85	1.04	7.78	7.25	0.266	0.00	5.08

Baker Hughes Incorporated

Survey Report

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site 7227/11-1 S
Project:	EXPLORATION - UTM Zone 35	TVD Reference:	RT @ 25.00m (Eirik Raude)
Site:	7227/11-1 S	MD Reference:	RT @ 25.00m (Eirik Raude)
Well:	7227/11-1 S	North Reference:	Grid
Wellbore:	1 A	Survey Calculation Method:	Minimum Curvature
Design:	Definitive 7227/11-1 A (TD@3446m)	Database:	EDM R200.14 on oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
682.10	3.36	106.26	681.93	0.82	8.53	8.03	0.768	0.77	0.98
722.50	4.88	98.64	722.22	0.23	11.36	10.93	1.197	1.13	-5.66
752.00	4.85	96.99	751.62	-0.11	13.84	13.41	0.146	-0.03	-1.68
781.50	4.84	101.14	781.01	-0.50	16.30	15.89	0.357	-0.01	4.22
810.00	7.00	106.93	809.36	-1.24	19.14	18.82	2.356	2.27	6.09
839.90	7.92	104.80	839.01	-2.30	22.88	22.70	0.964	0.92	-2.14
867.50	10.25	104.58	866.26	-3.40	27.09	27.06	2.533	2.53	-0.24
896.50	12.99	106.39	894.66	-4.97	32.72	32.90	2.859	2.83	1.87
924.60	15.42	105.57	921.90	-6.86	39.35	39.79	2.603	2.59	-0.88
953.90	18.69	103.90	949.91	-9.04	47.66	48.38	3.385	3.35	-1.71
982.30	21.57	102.52	976.57	-11.26	57.17	58.15	3.083	3.04	-1.46
1,011.80	24.04	103.01	1,003.76	-13.79	68.32	69.58	2.519	2.51	0.50
1,040.50	26.81	105.26	1,029.68	-16.81	80.27	81.90	3.066	2.90	2.35
1,069.20	28.64	106.22	1,055.08	-20.44	93.12	95.25	1.969	1.91	1.00
1,087.70	30.19	105.94	1,071.20	-22.95	101.85	104.33	2.523	2.51	-0.45
1,097.00	30.93	105.09	1,079.21	-24.22	106.40	109.06	2.764	2.39	-2.74
1,124.50	33.35	107.05	1,102.49	-28.27	120.46	123.68	2.874	2.64	2.14
1,155.00	35.99	106.51	1,127.57	-33.28	137.07	141.02	2.614	2.60	-0.53
1,174.00	33.49	108.84	1,143.19	-36.56	147.38	151.83	4.469	-3.95	3.68
1,202.70	30.74	105.20	1,167.50	-41.04	161.96	167.07	3.514	-2.87	-3.80
1,231.60	27.93	104.56	1,192.69	-44.68	175.64	181.22	2.935	-2.92	-0.66
1,260.50	25.09	105.94	1,218.55	-48.06	188.09	194.12	3.016	-2.95	1.43
1,289.20	21.36	104.89	1,244.92	-51.08	198.99	205.44	3.923	-3.90	-1.10
1,318.10	17.67	101.14	1,272.15	-53.28	208.38	215.08	4.043	-3.83	-3.89
1,346.90	14.53	100.36	1,299.82	-54.77	216.23	223.05	3.279	-3.27	-0.81
1,375.80	12.34	103.59	1,327.93	-56.15	222.80	229.75	2.402	-2.27	3.35
1,404.60	9.43	107.82	1,356.21	-57.60	228.04	235.18	3.141	-3.03	4.41
1,433.50	8.20	112.31	1,384.76	-59.11	232.20	239.59	1.462	-1.28	4.66
1,461.80	8.23	115.15	1,412.77	-60.73	235.90	243.58	0.431	0.03	3.01
1,490.20	8.24	115.46	1,440.88	-62.47	239.58	247.58	0.048	0.01	0.33
1,518.70	8.21	116.07	1,469.09	-64.24	243.25	251.59	0.097	-0.03	0.64
1,547.30	8.23	109.52	1,497.40	-65.82	247.01	255.63	0.982	0.02	-6.87
1,576.20	8.25	101.89	1,526.00	-66.94	250.99	259.76	1.135	0.02	-7.92
1,605.20	8.26	97.38	1,554.70	-67.64	255.09	263.91	0.670	0.01	-4.67
1,633.90	8.26	88.83	1,583.10	-67.86	259.20	267.93	1.283	0.00	-8.94
1,662.70	8.26	88.82	1,611.60	-67.78	263.33	271.91	0.001	0.00	-0.01
1,691.70	8.26	91.14	1,640.30	-67.78	267.50	275.94	0.345	0.00	2.40
1,720.50	8.25	93.73	1,668.80	-67.95	271.63	279.97	0.387	-0.01	2.70
1,749.30	8.22	97.11	1,697.31	-68.34	275.73	284.04	0.505	-0.03	3.52
1,778.20	8.26	90.72	1,725.91	-68.62	279.86	288.10	0.951	0.04	-6.63
1,807.10	8.28	88.43	1,754.51	-68.59	284.02	292.11	0.343	0.02	-2.38
1,836.20	8.28	91.22	1,783.30	-68.58	288.21	296.16	0.414	0.00	2.88
1,865.10	8.20	94.75	1,811.91	-68.79	292.34	300.21	0.532	-0.08	3.66
1,894.20	8.25	99.09	1,840.71	-69.30	296.47	304.33	0.642	0.05	4.47
1,923.10	8.27	99.83	1,869.31	-69.98	300.57	308.46	0.112	0.02	0.77
1,952.10	8.25	101.75	1,898.01	-70.76	304.66	312.62	0.286	-0.02	1.99
1,980.80	8.28	102.18	1,926.41	-71.61	308.69	316.74	0.072	0.03	0.45
2,009.40	8.12	105.34	1,954.72	-72.58	312.65	320.82	0.502	-0.17	3.31
2,038.10	8.29	109.54	1,983.12	-73.81	316.56	324.91	0.651	0.18	4.39
2,066.80	8.28	105.71	2,011.52	-75.06	320.50	329.03	0.577	-0.01	-4.00
2,095.50	8.09	105.26	2,039.93	-76.15	324.44	333.12	0.210	-0.20	-0.47
2,124.00	8.29	101.58	2,068.14	-77.09	328.38	337.18	0.591	0.21	-3.87
2,152.90	8.25	106.15	2,096.74	-78.09	332.42	341.33	0.683	-0.04	4.74
2,181.70	8.27	109.11	2,125.24	-79.34	336.36	345.46	0.443	0.02	3.08
2,210.20	8.28	110.50	2,153.45	-80.73	340.22	349.55	0.211	0.01	1.46
2,237.60	8.30	110.63	2,180.56	-82.12	343.92	353.48	0.030	0.02	0.14
2,263.60	8.27	108.47	2,206.29	-83.37	347.45	357.21	0.361	-0.03	-2.49
2,278.70	8.03	108.56	2,221.24	-84.05	349.48	359.35	0.477	-0.48	0.18
2,304.10	8.24	109.95	2,246.38	-85.24	352.87	362.93	0.340	0.25	1.64

Baker Hughes Incorporated

Survey Report

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site 7227/11-1 S
Project:	EXPLORATION - UTM Zone 35	TVD Reference:	RT @ 25.00m (Eirik Raude)
Site:	7227/11-1 S	MD Reference:	RT @ 25.00m (Eirik Raude)
Well:	7227/11-1 S	North Reference:	Grid
Wellbore:	1 A	Survey Calculation Method:	Minimum Curvature
Design:	Definitive 7227/11-1 A (TD@3446m)	Database:	EDM R200.14 on oracle

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	
2,334.00	9.46	114.13	2,275.92	-86.97	357.13	367.49	1.383	1.22	4.19	
2,362.20	10.20	115.32	2,303.71	-88.99	361.50	372.23	0.816	0.79	1.27	
2,390.00	9.00	113.03	2,331.12	-90.89	365.72	376.81	1.359	-1.29	-2.47	
2,419.60	13.29	107.25	2,360.16	-92.81	371.11	382.50	4.488	4.35	-5.86	
2,448.30	14.86	104.29	2,387.99	-94.69	377.82	389.48	1.805	1.64	-3.09	
2,478.30	18.55	103.63	2,416.72	-96.77	386.19	398.10	3.695	3.69	-0.66	
2,506.40	23.47	103.55	2,442.95	-99.13	395.98	408.16	5.253	5.25	-0.09	
2,535.20	26.78	103.15	2,469.02	-101.96	407.88	420.39	3.452	3.45	-0.42	
2,564.40	30.41	102.46	2,494.65	-105.05	421.50	434.35	3.745	3.73	-0.71	
2,593.30	34.40	101.85	2,519.05	-108.30	436.64	449.82	4.156	4.14	-0.63	
2,621.80	38.78	103.02	2,541.92	-111.97	453.23	466.79	4.668	4.61	1.23	
2,651.40	42.95	103.85	2,564.30	-116.47	472.06	486.14	4.262	4.23	0.84	
2,679.70	46.17	104.07	2,584.47	-121.26	491.32	506.00	3.417	3.41	0.23	
2,708.80	48.91	102.90	2,604.11	-126.26	512.20	527.46	2.961	2.82	-1.21	
2,737.80	51.63	103.61	2,622.64	-131.38	533.91	549.75	2.870	2.81	0.73	
2,766.40	53.84	104.73	2,639.96	-136.96	555.97	572.51	2.500	2.32	1.17	
2,794.70	53.30	105.56	2,656.77	-142.90	577.95	595.27	0.910	-0.57	0.88	
2,823.70	52.38	104.40	2,674.28	-148.88	600.27	618.39	1.349	-0.95	-1.20	
2,852.90	52.07	104.44	2,692.17	-154.63	622.63	641.46	0.320	-0.32	0.04	
2,880.60	52.11	104.15	2,709.19	-160.02	643.81	663.32	0.252	0.04	-0.31	
2,910.00	51.41	105.04	2,727.39	-165.84	666.15	686.41	1.009	-0.71	0.91	
2,938.00	48.65	105.70	2,745.37	-171.52	686.84	707.86	3.006	-2.96	0.71	
2,967.80	44.92	107.67	2,765.78	-177.75	707.64	729.57	4.023	-3.76	1.98	
2,996.80	42.67	108.52	2,786.71	-183.98	726.72	749.60	2.406	-2.33	0.88	
3,026.60	39.06	109.25	2,809.24	-190.28	745.17	769.05	3.666	-3.63	0.73	
3,054.30	37.02	108.08	2,831.05	-195.75	761.33	786.08	2.343	-2.21	-1.27	
3,082.70	34.12	105.79	2,854.15	-200.57	777.13	802.58	3.371	-3.06	-2.42	
3,111.40	31.26	105.41	2,878.31	-204.74	792.06	818.08	2.997	-2.99	-0.40	
3,139.80	28.11	104.48	2,902.98	-208.37	805.64	832.14	3.363	-3.33	-0.98	
3,169.80	24.43	106.56	2,929.87	-211.91	818.44	845.41	3.793	-3.68	2.08	
3,198.80	22.35	108.34	2,956.49	-215.35	829.42	856.91	2.272	-2.15	1.84	
3,227.20	20.26	110.50	2,982.95	-218.78	839.15	867.20	2.358	-2.21	2.28	
3,256.60	17.19	110.89	3,010.79	-222.11	847.98	876.58	3.135	-3.13	0.40	
3,283.30	14.83	108.81	3,036.45	-224.62	854.90	883.92	2.728	-2.65	-2.34	
3,312.00	11.83	97.97	3,064.38	-226.21	861.30	890.51	4.069	-3.14	-11.33	
3,340.50	7.46	97.69	3,092.47	-226.86	866.03	895.24	4.600	-4.60	-0.29	
3,369.70	7.05	98.31	3,121.43	-227.38	869.68	898.91	0.429	-0.42	0.64	
3,399.20	7.04	100.08	3,150.71	-227.95	873.25	902.51	0.221	-0.01	1.80	
3,425.70	7.06	98.49	3,177.01	-228.48	876.46	905.74	0.222	0.02	-1.80	
3,429.30	6.98	98.25	3,180.58	-228.54	876.89	906.18	0.710	-0.67	-2.00	
3,446.00	6.98	98.25	3,197.16	-228.83	878.90	908.20	0.000	0.00	0.00	

Casing Points					
Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)	
310.00	310.00	30"	30.000	36.000	
715.00	714.75	20"	20.000	26.000	
1,093.70	1,076.37	13 3/8"	13.375	17.500	
2,289.00	2,231.43	9 5/8"	9.625	12.250	

Checked By: _____ Approved By: _____ Date: _____

App C Contractors list

Service	Contract no	Contractor
Cementing	SAP4600002160	Halliburton
Core company	SAP4600004965	Baker Hughes Inteq
Directional Drilling	SAP4600002063	Baker Hughes Inteq
Liner Hanger Equipment	SAP4600002689	Weatherford Norge AS
Plug	SAP4600004878	Weatherford Norge AS
ROV Systems	SAP4600002882	Oceaneering
Electric Wireline Logging	SAP4600005543	READ Well Services
Directional survey	SAP4600005275	Scientific Drilling
Drilling Fluids	SAP4600002159	M-I Drilling Fluids
Cuttings injection	SAP4500632698	Oil Tools AS
Rig Operations	SAP4600006100	Ocean Rig ASA
Measurement While Drilling	SAP4600002063	Baker Hughes Inteq
Mud Logging	SAP4600002064	Geoservices
Subsea WH/X-mas tree	SAP4600005076	Drill Quip
Casing Crew Service	SAP4600004001	Weatherford Norge AS
Electric Wireline Logging	SAP4600002337	Schlumberger

App D Wellsite sample descriptions

WELLSITE SAMPLE DESCRIPTION				Page 1 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 17 1/2"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

728	50	Cmt	
	50	Clst:	dk gry, sft-frm, blkly, n-slily calc, Tr crs rnd Sd Gr.
	Tr	Dol:	med gry, v hd, brit, arg, microxln.
730	80	Clst:	a.a., Tr Pyr.
	20	Cmt	
	Tr	Dol:	occ carb frag, loc grad xln Calc.
740	95	Clst:	dk gry, frm, blkly, non-slily calc, Tr Pyr, Tr crs rnd Sd Gr.
	5	Dol/Ls:	med gry-brn gry, v hd, brit, microxln, occ grad Calc.
750	a.a.		
760	a.a.		
770	95	Clst:	no Sd Gr, a.a.
	5	Dol/Ls:	a.a.
780	a.a.		
790	95	Clst:	Tr crs rnd Sd Gr, a.a.
	5	Dol/Ls:	a.a.
800	95	Clst:	no Sd Gr, a.a.
	5	Ls:	occ dol, a.a.
810	100	Clst:	a.a.
	Tr	Ls:	a.a.
820	a.a.		
830	100	Clst:	a.a.
	Tr	Dol/Ls:	a.a.
840	a.a.		
850	90	Clst:	occ Glauc, a.a.
	10	Dol/Ls:	a.a.
860	95	Clst:	a.a.
	5	Dol/Ls:	a.a.
870	100	Clst:	dk gry, frm, blkly, non-slily calc, occ Pyr, occ Glauc.
	Tr	Dol/Ls:	med gry-brn gry, v hd, brit, microxln, occ grad Calc.
880	a.a.		
890	a.a.		
900	95	Clst:	dk gry, sft-frm, sbblkly, stky, occ slty, n-slily calc.
	5	Dol/Ls:	a.a.

WELLSITE SAMPLE DESCRIPTION				Page 2 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 17 ½"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

910	100 Tr	Clst: a.a. Dol/Ls: a.a.	
920	100 Tr	Clst: occ med-dk gry, Tr yel gry, a.a. Dol/Ls: a.a.	
930	100	Clst: a.a.	
940	100 Tr	Clst: med-dk gry, Tr lt gry, occ miromic, n calc. Dol/Ls: a.a.	
950	100 Tr	Clst: Tr f-m, sbang-sbrndd Sd, a.a. Dol: dk brn-med brn gry, hd, brit, Tr suc, crp-microxln.	
960	100 Tr	Clst: a.a. Sd: clr, trnsp, lse, f, occ med, sbang-rnd.	
970	100 Tr	Clst: med-dk gry, occ lt gry, sft-frm, blk, occ crumb, micromic, occ microcarb, Tr Pyr, Tr Sd, n calc. Dol: a.a.	
980	100 Tr	Clst: a.a. Dol: occ gry rd, a.a.	
990	100 Tr	Clst: a.a. Dol: a.a.	
1000	100 Tr	Clst: occ gry blk, a.a. Dol: a.a.	
1010	100 Tr	Clst: med-dk gry, occ lt gry, sft-frm, blk, occ crumb, micromic, Tr microcarb, Tr Pyr, Tr Sd, n calc. Dol/Ls: dk brn-med brn gry, hd, brit, Tr suc, crp-microxln.	
1020	100 Tr	Clst: med gry, occ lt gry, Tr v f Sd, a.a. Dol/Ls: med brn, occ lt gry, frm-hd, crumb-brit, arg, crp-microxln.	
1030	100 Tr	Clst: varic, med gry, lt gry, rd brn, occ lt beige. Dol/Ls: a.a.	
1040	100 Tr	Clst: med gry-lt gry, occ rd brn, frm-occ mod hd, blk, occ micropyr, microglauc. Dol/Ls: med brn gry-pa yel wh, hd-v hd, microxln.	
1050	a.a.		
1060	100 Tr	Clst: micromic, else a.a. Dol/Ls: a.a.	
1070	a.a.		
1080	90	Clst: occ v pyr, else a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 3 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 17 ½"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

10 Dol/Ls: a.a.
 Tr Sd: med-crs, mdd Qtz Gr.
 Tr Pyr

1090 70 Ls: wh-pa yel wh, frm, blk, microxln, occ micropyr, occ grad Calc.
 15 Mrl: mod-dk rd brn, frm, blk.
 15 Clst: med gry-occ grysh blk, frm-mod hd, blk, occ micropyr, occ micromic.

1100 90 Clst: dsky yel blk-occ gry blk, frm-mod hd, blk, micropyr, micromic, n calc.
 10 Ls: wh-pa yel wh, frm, blk, pyr, occ grad Calc, microxln.
 Tr Glauc
 Tr Pyr

TD of 17 ½" section @ 1100 mMD RKB

WELLSITE SAMPLE DESCRIPTION				Page 4 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1103	60	Clst:	med-dk brn, Tr brick rd, frm, blk, microcarb, micromic, occ pyr, Tr v f Sd, n calc.	
	40	Cmt		
1106	80	Clst:	med-dk brn, med-dk gry, a.a.	
	20	Cmt		
1109	100	Clst:	dk brn gry, slty, a.a.	
1112	100	Clst:	a.a.	
1115	100	Clst:	a.a.	
	Tr	Ls:	off wh, frm, crumb, micr-microxln.	
1118	100	Clst:	med-dk brn, gry brn, a.a.	
	Tr	Ls:	a.a.	
1121	100	Clst:	Tr v f Sd, a.a.	
	Tr	Ls:	occ fibr xln, a.a.	
1124	100	Clst:	slty, Tr v f Sd, a.a.	
1127	100	Clst:	med brn, med brn gry, lt-med gry, sft-frm, blk, micromic, microcarb, Tr Glauc, r Tr Pyr.	
	Tr	Ls:	a.a.	
1130	100	Clst:	lt gry, med brn, com pyr, Glauc, Tr v f Sd.	
1133				No sample
1136				No sample
1139	100	Clst:	lt gry, med brn.	
1142	70	Clst:	lt gry, brn gry, dk gry, sft-frm, blk, loc slty, microcarb, micromic, Tr v f Sd, n calc.	n/s
	30	Ls:	off wh, frm, crumb, occ arg Lam, Tr v f Sd, micr-microxln	
1145	80	Sst:	clr-trnsl Qtz, lse, med-crs, wl srted, sbrnd-rnd, occ sbang, occ microglauc.	n/s
	10	Ls:	wh-pa yel wh, sft-frm, blk, microxln, occ microglauc, occ arg.	
	10	Clst:	brn gry-dk gry, frm-mod hd, microcarb, micromic, n calc.	
1148	100	Sst:	clr-trnsl Qtz, lse, med-crs, wl srted, sbrnd-rnd, occ sbang, occ microglauc.	n/s
	Tr	Ls:	a.a.	
	Tr	Clst:	a.a.	
	Tr	Pyr		
1151	95	Sst:	a.a.	n/s
	5	Clst:	lt gry-med gry, else a.a.	
	Tr	Ls:	a.a.	
	Tr	Pyr		

WELLSITE SAMPLE DESCRIPTION						Page 5 of 54
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro				
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen				
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.	
1154						No sample
1157						No sample
1160	90	Sst:	a.a.			n/s
	5	Clst:	a.a.			
	5	Ls:	a.a.			
	Tr	Pyr				
1163	95	Sst:	a.a.			n/s
	5	Ls:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Pyr				
1166	100	Sst:	a.a.			n/s
	Tr	Clst:	a.a.			
	Tr	Ls:	a.a.			
	Tr	Pyr				
1169						No sample
1172	95	Sst:	a.a.			n/s
	5	Ls:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Pyr				
1175	100	Sst:	grad v f Sst, mod srtd, else a.a.			n/s
	Tr	Ls:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Pyr				
1178						No sample
1181	90	Sst:	a.a.			n/s
	10	Sltst:	lt brn gry, blk, grad v f Sst, sft-frm, micromic, micropyr, n calc.			
	Tr	Clst:	a.a.			
	Tr	Ls:	a.a.			
	Tr	Pyr				
1184						No sample
1187						No sample
1190	100	Sst:	clr-trnsl Qtz, lse, med-crs, wl srtd, sbrnd-rnd, occ sbang, occ microglauc.			n/s
	Tr	Sltst:	lt brn gry-lt gry, blk, grad v f Sst, sft-frm, micromic, micropyr, n calc.			
	Tr	Clst:	a.a.			
	Tr	Ls:	a.a.			
	Tr	Pyr				
1193	80	Sst:	a.a.			n/s
	10	Sltst:	a.a.			
	5	Ls:	a.a.			

WELLSITE SAMPLE DESCRIPTION						Page 6 of 54	
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro					
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen					
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006		
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
	5	Pyr					
1196	100	Sst:	a.a.			n/s	
	Tr	Clst:	a.a.				
	Tr	Ls:	a.a.				
	Tr	Pyr					
1199	a.a.						
1202						No sample	
1205	75	Sst:	a.a.			n/s	
	20	Clst:	a.a.				
	5	Pyr					
	Tr	Ls:	a.a.				
1208	a.a.						
1211	65	Sst:	a.a.			n/s	
	25	Clst:	a.a.				
	5	Ls:	a.a.				
	5	Pyr					
1214	a.a.						
1217	70	Clst:	med-dk gry, sft-frm, slily slty, Tr microcarb, occ micromic, slily-mod calc.				
	30	Sst:	clr-mky wh, trnsp-trnsl, pred lse, f-med, occ crs, mod srt, ang-sbrnd, sbelong-spher, occ wk calc Cmt, Tr Glauc, com Pyr.				
1220	70	Clst:	a.a.				
	20	Ls:	off wh-wh, frm, blkly-crumb, micr, occ fibr xln.				
	10	Sst:	a.a.				
1223	90	Clst:	med-dk gry, a.a.				
	10	Ls:	a.a.				
	Tr	Sst:	a.a.				
1226	60	Clst:	a.a.				
	40	Sst:	Tr Kao, a.a.				
	Tr	Ls:	a.a.				
1229	50	Clst:	a.a.				
	50	Sst:	a.a.				
1232	80	Sst:	a.a.				
	20	Clst:	a.a.				
1235	70	Clst:	lt gry, frm, crumb, v f Sd Gr, v mic, carb, mod calc, Pyr.				
	30	Sst:	pred lse, trnsp, f, occ c, mod srt, sbang-rnd, spher, mic, Pyr, f Glauc.				
1238						No sample	

WELLSITE SAMPLE DESCRIPTION				Page 7 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1241 80 Sst: lse, clss, trnsp, f, ang-sbrnd, Tr v c, wl srt, sbelong-sbspher, occ kao, mic, pyr, Tr wk calc Cmt.
20 Clst: med gry, sft-frm, blkly-crumb, slty, v mic, Tr Pyr, occ carb, mod calc.
Tr Ls: wh-lt gry, sft-frm, crumb, micr.

1244 100 Clst: lt gry, med gry, dk gry, frm, crumb, a.a.
Tr Sst: a.a.
Tr Ls: a.a.

1247 80 Sst: a.a.
20 Clst: a.a.
Tr Ls: a.a.

1250 No sample

1253 60 Sst: clr, lse, trnsp, f, ang-sbrnd, Tr v c, w srt, sbelong-sbsph, occ kao, mic, Pyr, Tr wk calc Cmt.
20 Kao: wh, sft-frm, crumb, assoc w/Sst.
20 Clst: med gry, sft-frm, blkly-crumb, slty, v mic, Tr Pyr, occ carb, mod calc.
Tr Ls: wh, frm, crumb, micr.

1256 70 Clst: lt gry, frm, crumb, slty, sdy, mic, micropyr, slily calc.
20 Sst: a.a.
10 Kao: a.a.

1259 50 Clst: a.a.
40 Sst: a.a.
10 Kao: a.a.

1262 80 Sst: lt gry, frm, crumb, v mic, kao, pred lse Qtz Gr, a.a.
10 Kao: a.a.
10 Clst: a.a.
Tr Ls: a.a.

1265 No sample

1268 90 Sst: a.a.
10 Clst: a.a.
Tr Ls: a.a.
Tr Kao: a.a.

1271 90 Sst: lse, clss-mky wh, v f-f, sbang-rnd, sbspher, wl srt, kao, v f Glauc, occ wk calc Cmt.
10 Clst: lt-med gry, frm, blkly-crumb, slty, occ mic, mod-v calc.

1273 No sample

1277 90 Sst: occ Pyr, a.a.
10 Clst: a.a.
Tr Kao: a.a.

WELLSITE SAMPLE DESCRIPTION				Page 8 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1280 No sample

1283 80 Clst: lt gry, frm, crumb, slty, v f Sd, mic, grad Sltst, mod calc.
10 Sst: clr-mky wh, lse, v f-f, sbang-rnd, sbspher, wl srt, kao, v f Glauc, occ wk calc Cmt.
10 Kao: a.a.

1286 100 Sst: a.a.
Tr Clst: a.a.

1289 No sample

1292 No sample

1295 90 Sst: a.a.
10 Clst: a.a.

1298 60 Sst: occ pyr, mic, mky wh, dissem Gr, Tr Glauc, a.a.
40 Clst: med-dk gry, frm, blk, crumb, calc, loc Sltst.

1301 70 Clst: a.a.
30 Sst: a.a.
Tr Kao: a.a.

1304 90 Sst: clr-trnsl Qtz, pred lse, wh, v f – f, occ med, mod srtd, sbang-sbrnd, n/s
micromic, kao, occ calc Cmt, occ micropyr.
10 Clst: med dk gry-brn gry, frm, blk, micromic, loc slty grad Sltst, loc microglauc, calc, occ micropyr.
Tr Ls: a.a.
Tr Kao: a.a.
Tr Pyr

1307 No sample

1310 a.a.

1313 70 Sst: a.a. n/s
15 Ls: a.a.
15 Clst: a.a.
Tr Kao: a.a.
Tr Pyr

1316 80 Sst: clr-trnsl Qtz, pred lse, wh, v f-f, occ med, mod srtd, sbang-sbrnd, n/s
micromic, kao, occ calc Cmt, occ micropyr.
10 Kao: a.a.
5 Clst: med dk gry-brn gry, frm, blk, micromic, loc slty grad Sltst, loc microglauc, calc, occ micropyr.
5 Ls: wh-pa yel wh, frm, blk, arg i.p., occ micropyr.
Tr Pyr

1319 No sample

WELLSITE SAMPLE DESCRIPTION						Page 9 of 54
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro				
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen				
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.
1322	90	Sst:	a.a.			n/s
	5	Ls:	a.a.			
	5	Kao:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Pyr				
1325	100	Sst:	a.a.			n/s
	Tr	Ls:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Kao:	a.a.			
	Tr	Pyr				
1328						No sample
1331	a.a.					
1334						No sample
1337	85	Sst:	a.a.			n/s
	15	Kao:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Ls:	a.a.			
	Tr	Pyr				
1340	80	Sst:	n microglauc, else a.a.			n/s
	20	Ls:	lt gry-med lt gry, frm, blk, slty-occ v f Sd, occ micromic.			
	Tr	Clst:	a.a.			
	Tr	Kao:	a.a.			
	Tr	Pyr				
1343						No sample
1346	75	Sst:	a.a.			n/s
	20	Ls:	a.a.			
	5	Kao:	a.a.			
	Tr	Clst:	a.a.			
	Tr	Pyr				
1349	a.a.					
1352						No sample
1355	70	Sst:	a.a.			
	20	Ls:	a.a.			
	5	Kao:	a.a.			
	5	Clst:	a.a.			
	Tr	Pyr				
1358	85	Sst:	clr-trnsl Qtz, pred lse, wh, v f-f, occ med, mod srtd, sbang-sbrnd, micromic, kao, occ calc Cmt, occ micropyr			n/s
	10	Ls:	wh-pa yel wh, frm, blk, arg i.p., occ micropyr			
	5	Kao:	a.a.			

WELLSITE SAMPLE DESCRIPTION				Page 10 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

Tr Clst: a.a.
Tr Pyr
Tr Mic

1361 No sample

1364 90 Sst: microglauc, a.a. n/s
5 Clst: a.a.
5 Ls: a.a.
Tr Kao: a.a.
Tr Pyr
Tr Mic

1367 No sample

1370 50 Clst: a.a.
30 Sst: a.a. n/s
15 Ls: a.a.
5 Kao: a.a.
Tr Pyr
Tr Mic

1373 No sample

1376 50 Sst: a.a. n/s
45 Clst: a.a.
5 Ls: a.a.
Tr Kao
Tr Pyr
Tr Mic

1379 No sample

1382 90 Sst: lt gry-med lt gry, v f-f, occ slty, sbang-sbrnd, v calc cmt, frm, blk, n/s
micromic, occ kao i.p.
5 Clst: a.a.
5 Kao

1385 No sample

1388 No sample

1391 75 Sst: lt gry-med lt gry, v f-f, occ slty, sbang-sbrnd, v calc cmt, frm, blk, n/s
micromic, occ kao i.p.
20 Ls: wh-pa yel wh, frm, blk, arg, microxln.
5 Clst: med dk gry-brn gry, frm, blk, micromic, loc slty grad Slst, calc, occ micropyr.

1394 70 Sst: a.a. n/s
25 Ls: a.a.
5 Clst: a.a.
Tr Pyr

WELLSITE SAMPLE DESCRIPTION				Page 11 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1397	80	Sst:	a.a.	n/s
	15	Ls:	a.a.	
	5	Clst:	a.a.	
	Tr	Pyr		
1400	60	Sst:	a.a.	n/s
	30	Ls:	a.a.	
	10	Clst:	a.a.	
1403				No sample
1406				No sample
1409				No sample
1412	80	Sst:	a.a.	n/s
	10	Ls:	a.a.	
	10	Clst:	a.a.	
1415				No sample
1418	60	Sst:	a.a.	n/s
	30	Ls:	a.a.	
	10	Clst:	a.a.	
1424	90	Sst:	clr, trnsp, pred lse, vf-f, sbang-rnd, spher, wl srt, loc mod-gd calc Cmt, arg, lt-med gry, frm-hd.	
	10	Clst:	med-dk gry, frm, slty.	
1427	50	Sst:	a.a.	
	30	Ls:	wh, frm, crumb, occ arg lam, f sdy, micr-microxln.	
	20	Clst:	a.a.	
1430				No sample
1433	90	Clst:	a.a.	
	10	Ls:	a.a.	
	Tr	Sst:	a.a.	
1436				No sample
1439	70	Clst:	a.a.	
	20	Sst:	a.a.	
	10	Ls:	a.a.	
1442	60	Clst:	a.a.	
	30	Ls:	a.a.	
	20	Sst:	a.a.	
1445				No sample

WELLSITE SAMPLE DESCRIPTION				Page 12 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1448	70	Clst:	a.a.	
	20	Sst:	a.a.	
	10	Ls:	a.a.	
1451	70	Clst:	a.a.	
	20	Ls:	a.a.	
	10	Sst:	a.a.	
	Tr	Anhy:	pa pk, mod hd, suc, brit-crumb.	
1454				No sample
1457	70	Clst:	a.a.	
	30	Anhy/Ls:	interlam, wh-v lt gry, frm, blk, occ arg.	
	Tr	Sst:	a.a.	
1460	70	Anhy/Ls:	a.a.	
	30	Clst:	med-dk gry, frm, slty.	
	Tr	Sst:	a.a.	
	Tr	Pyr		
1463				No sample
1466				No sample
1469	95	Clst:	a.a.	
	5	Ls:	wh-v lt gry, frm, blk, occ arg.	
	Tr	Sst:	a.a.	
1472				No sample
1475	80	Clst:	a.a.	
	20	Anhy/Ls:	a.a.	
	Tr	Sst:	a.a.	
1478	a.a.			
1481	70	Clst:	a.a.	
	30	Anhy/Ls:	a.a.	
	Tr	Sst:	a.a.	
	Tr	Pyr		
1484	a.a.			
1487	a.a.			
1490	80	Clst:	med-dk gry, frm, blk, slty, micromic, micropyr.	
	20	Anhy/Ls:	a.a.	
	Tr	Sst:	a.a.	
	Tr	Pyr		
1493				No sample

WELLSITE SAMPLE DESCRIPTION						Page 13 of 54	
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro					
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen					
Hole size: 12 ¼"		Cut solvent: Iso Proanol				Date: 03. – 18.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
1496	80	Sst:	clr-trnsl Qtz, pred lse, vf-f, sbang-rnd, spher, wl srt.				n/s
	10	Clst:	a.a.				
	10	Anhy/Ls:	a.a.				
	Tr	Pyr					
1499							No sample
1502	80	Sst:	clr-trnsl Qtz, pred lse, vf-f, sbang-rnd, spher, wl srt.				n/s
	15	Anhy/Ls:	interlam, wh-v lt gry, frm, blk, occ arg.				
	5	Clst:	med-dk gry, frm, blk, slty, micromic, micropyr.				
1505	50	Sst:	a.a.				n/s
	30	Anhy/Ls:	a.a.				
	20	Clst:	a.a.				
	Tr	Pyr					
1508	70	Clst:	a.a.				
	15	Anhy:	pred wh, else a.a.				
	15	Ls:	pred pa brn gry-v lt gry, else a.a.				
	Tr	Sst:	a.a.				
	Tr	Pyr					
1511	50	Clst:	a.a.				
	20	Sst:	lse, a.a.				
	20	Anhy:	a.a.				
	10	Ls:	a.a.				
1514	40	Anhy:	a.a.				
	30	Clst:	a.a.				
	20	Sst:	a.a.				
	10	Ls:	a.a.				
	Tr	Pyr					
1517							No sample
1520	50	Anhy:	a.a.				
	30	Clst:	a.a.				
	10	Ls:	a.a.				
	10	Sst:	a.a.				
	Tr	Pyr					
1523							No sample
1526							No sample
1529	70	Clst:	med-dk gry, frm, blk, slty, micromic, micropyr.				
	20	Anhy:	wh, frm, blk, occ arg.				
	10	Ls:	pa brn gry-v lt gry, frm, blk, arg, microxln-occ suc.				
	Tr	Pyr					
1532							No sample

WELLSITE SAMPLE DESCRIPTION						Page 14 of 54	
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro					
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen					
Hole size: 12 ¼"		Cut solvent: Iso Proanol				Date: 03. – 18.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
1535	50	Clst:	a.a.				
	45	Ls:	a.a.				
	5	Anhy:	a.a.				
	Tr	Pyr					
1538	100	Clst:	med-dk gry, frm, blkly-crumb, micromic, slty, slily-v calc, Tr Pyr.				
	Tr	Ls:	off wh-lt gry, frm, crumb, arg, micr.				
1541	90	Clst:	a.a.				
	10	Sst:	lse, clr, v f-f, sbang-rnd, spher, wl srt.				
	Tr	Ls:	a.a.				
	Tr	Anhy:	wh, sft-frm, crumb, occ suc.				
1544							No sample
1547	70	Clst:	a.a.				
	20	Ls:	a.a.				
	10	Anhy:	a.a.				
1550	80	Clst:	a.a.				
	20	Ls:	a.a.				
	Tr	Anhy:	a.a.				
	Tr	Sst:	a.a.				
1553							No sample
1556	70	Clst:	a.a.				
	20	Anhy:	a.a.				
	10	Ls:	a.a.				Hal dissolved
1559-1568							Lost while fixing gas trap
1571	60	Clst:	a.a.				
	30	Anhy:	wh, clr, sft-frm, crumb-brit, suc i.p., microxln-xln, occ Sel.				
	10	Sst:	lse, clr, v f-f, ang-sb rnd, wl srt.				
1574	60	Clst:	med-dk gry, frm, blkly-crumb, micromic, n-slily calc.				
	40	Anhy:	a.a.				
	Tr	Sst:	a.a.				
1577	90	Clst:	a.a.				pred Cvg
	10	Anhy:	wh-lt gry, sft-frm, crumb-brit, occ suc, microxln-xln, occ arg.				
1580	70	Clst:	a.a.				pred Cvg
	30	Anhy:	a.a.				
1583	70	Clst:	a.a.				pred Cvg
	30	Anhy:	a.a.				
1586	60	Anhy:	a.a.				Hal dissolved
	40	Clst:	a.a.				

WELLSITE SAMPLE DESCRIPTION				Page 15 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1589	90	Anhy:	a.a.	
	10	Clst:	a.a.	
1592	90	Anhy:	a.a.	
	10	Clst:	a.a.	
1595				No sample
1598	80	Anhy:	a.a.	
	20	Clst:	a.a.	
1601	90	Anhy:	a.a.	Hal dissolved
	10	Clst:	a.a.	
1604				No sample
1607	90	Anhy:	a.a.	
	10	Clst:	a.a.	
1610	80	Anhy:	a.a.	
	20	Clst:	a.a.	
1613				No sample
1616				No sample
1619				No sample
1622	90	Anhy:	wh-lt gry, sft-frm, crumb-brit, occ suc, microxln-xln, occ arg.	Hal dissolved
	10	Clst:	med-dk gry, frm-mod hd, blkly-crumb, micromic, n-slily calc.	
1625	90	Anhy:	a.a.	
	10	Clst:	a.a.	
1631	80	Anhy:	a.a.	
	20	Clst:	a.a.	
	Tr	Hal/KCl:	clr-mky wh, occ lt rd, mod hd, brit, crpxln-xln.	Mud KCl saturated, Hal not dissolved
1634				No sample
1637	50	Clst:	med gry, sft, plty-crumb, mic, slty, occ microcarb, n calc.	
	40	Anhy:	a.a.	
	10	Hal/KCl:	a.a.	
1640				No sample
1643				No sample
1646				No sample

WELLSITE SAMPLE DESCRIPTION

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Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1649	50	Clst:	a.a.	
	30	Anhy:	a.a.	
	20	Hal:	a.a.	
1652	60	Clst:	a.a.	
	30	Anhy:	a.a.	
	10	Hal:	n KCl, a.a.	
1655				No sample
1658	40	Anhy:	occ med gry, suc, arg, microcarb, a.a.	
	30	Hal:	a.a.	
	30	Clst:	a.a.	
1661	90	Anhy:	lt gry-wh, sft frm, crumb, occ xln, pred microxln, slily arg i.p.	
	10	Hal:	a.a.	
	Tr	Clst:	a.a.	
1664	100	Anhy:	a.a.	
	Tr	Hal:	a.a.	
	Tr	Clst:	a.a.	
1667	100	Anhy:	a.a.	Gas sample @ 1666
1670	100	Anhy:	a.a.	
1673	100	Anhy:	wh, sft, crumb, slily arg i.p.	
1676	60	Anhy:	a.a.	
	40	Clst:	med gry, sft, plty-crumb, mic, slty, occ microcarb, n calc.	
1679				No sample
1682	60	Clst:	a.a.	
	40	Anhy:	occ suc, arg, a.a.	
1685				No sample
1688				No sample
1691	50	Clst:	a.a.	
	50	Anhy:	a.a.	
1694				No sample
1697	50	Clst:	a.a.	
	50	Anhy:	a.a.	
1700	50	Clst:	a.a.	
	50	Anhy:	a.a.	
1703	a.a.			

WELLSITE SAMPLE DESCRIPTION					Page 17 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin			Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro			
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen			
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

1706 No sample

1709 50 Clst: a.a.
50 Anhy: a.a.

1712 No sample

1715 60 Anhy: occ lt gry, a.a.
40 Clst: med dk gry-dk gry, a.a.

1718 60 Anhy: a.a.
40 Clst: a.a.
Tr Ls

1721 80 Anhy: a.a.
20 Clst: a.a.

1724 No sample

1727 80 Anhy: a.a.
20 Clst: pred med gry, a.a.

1730 60 Anhy: wh, occ lt gry, sft-frm, crumb, occ xln, pred microxln, slily arg i.p.
40 Clst: med-dk gry, sft-frm, plty-crumb, i.p. sbblky, loc mic, occ slty, occ microcarb, n calc.

1733 No sample

1736 No sample

1739 80 Anhy: a.a.
20 Clst: a.a.

1742 80 Anhy: a.a.
20 Clst: a.a.
Tr Pyr Nod

1745 No sample

1748 80 Anhy: a.a.
20 Clst: a.a.

1751 a.a.

1754 No sample

1757 No sample

1760 80 Anhy: a.a.
20 Clst: a.a.
Tr Ls

WELLSITE SAMPLE DESCRIPTION					Page 18 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin			Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro			
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen			
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

1763					No sample
1766	80 20 Tr	Anhy: Clst: Pyr Nod	a.a. a.a.		
1769					No sample
1772	80 20	Anhy: Clst:	a.a. a.a.		
1775					No sample
1778	70 30	Anhy: Clst:	wh, occ lt gry, sft frm, crumb, occ xln, pred microxln, slily arg i.p. med-dk gry, frm, occ mod hd, sbbly, occ pty, loc mic, occ slty, occ microcarb, n calc.		
1781	50 30 20	Anhy: Clst: Hal:	a.a. a.a. clr-mlky wh, mod hd, brit, crpxln-xln.		Pred crs Gr
1784					No sample
1787	70 20 10	Anhy: Clst: Hal:	a.a. a.a. a.a.		
1790- 1799					No sample
1802	50 30 20 Tr	Anhy: Hal: Clst: Ls	a.a. Tr blsh grn, a.a. a.a.		
1805	40 30 30	Clst: Anhy: Hal:	a.a. a.a. clr-mky wh, a.a.		
1808- 1817					No sample
1820	40 30 30	Anhy: Hal: Clst:	a.a. a.a. a.a.		
1823- 1829					No sample
1832	80 10	Hal: Anhy:	a.a. a.a.		6m sampling interval

WELLSITE SAMPLE DESCRIPTION						Page 19 of 54	
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro					
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen					
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006		
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
	10	Clst:	a.a.				
1838	100	Hal:	clr-mky wh, mod hd, brit, crpxln-xln.				
	Tr	Anhy:	wh, occ lt gry, sft-frm, crumb, occ xln, pred microxln, slily arg i.p.				
	Tr	Clst:	med-dk gry, frm, occ mod hd, sbbkly, occ plty, loc mic, occ slty, occ microcarb, n calc.				prob Cvg
1844	a.a.						
1850	a.a.						
1856	a.a.						
1862	100	Hal:	clr-trnsl-op, mod hd, brit, xln.				
	Tr	Clst:	dk gry-gry blk, frm-mod hd, sbblky, carb, n calc.				prob Cvg
1868	a.a.						
1874	a.a.						
1880	a.a.						
1886	100	Hal:	a.a.				
	Tr	Clst:	dk gry-gry blk, frm-mod hd, sbblky-blky, carb, n calc.				
1887	a.a.						Spot sample, 16% gas peak
1892	100	Hal:	clr-trnsl-op, mod hd, brit, xln.				
	Tr	Clst:	a.a.				
1898	100	Hal:	a.a.				
	Tr	Clst:	a.a.				Clst prob Cvg
1904	a.a.						
1910	a.a.						
1916	a.a.						
1922	100	Hal:	clr-trnsl-op, occ mky wh, mod hd, brit, xln.				
	Tr	Anhy:	lt gry-off wh, sft, amor-microxln.				
	Tr	Clst:	med gry-dk gry, frm, sbblky, n calc.				
1928	100	Hal:	clr-trnsl, mod hd, brit, xln.				
1934	100	Hal:	clr-trnsl-op, occ mky wh, mod hd, brit, xln.				
	Tr	Clst:	dk gry-gry blk, mod hd, sbblky, n calc.				
1940	100	Hal:	a.a.				
1946	100	Hal:	clr-trnsl-op, occ mky wh, mod hd, brit, xln, r slily arg, r slily anhy.				

WELLSITE SAMPLE DESCRIPTION				Page 20 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1952	100	Hal:	a.a.	
1958	100	Hal:	r pk rd, else a.a.	
1964	100 Tr	Hal: Anhy:	a.a. v lt gry-lt gry, sft-mod hd, amor-xln.	
1970	100	Hal:	clr-trnsl-op, occ mky wh, mod hd, brit, xln, r anhy.	
1976	100	Hal:	a.a.	
1982	100	Hal:	clr-trnsl, occ op, mod hd, brit, xln.	
1988				No sample
1994				No sample
2000	100	Hal:	clr-trnsl-op, mod hd, brit, xln.	
2006	100	Hal:	a.a.	
2012	100 Tr	Hal: Clst:	clr-trnsl-op, occ mky wh, mod hd, brit, xln. dk gry-gry blk, frm-mod hd, sbblky-blky, n calc.	
2018	100 Tr	Hal: Clst:	clr-trnsl-op, occ mky wh, mod hd, brit, xln, r anhy. brn gry-brn blk, sft-frm, amor-sbblky, v sol, calc.	
2024	80 20	Hal: Clst:	a.a. pa brn gry-brn gry, occ brn blk, sft-frm, amor-sbbly, v sol, slty/sdy i.p., mod-v calc	Permian
2027	50 40 10	Hal: Clst: Sst:	a.a. a.a. pa brn gry-brn gry, clr-trnsl Qtz, v f, occ f, i.p. grad Sltst, arg, calc cmtd, n-occ pr vis por.	
2030				No sample
2033	60 40	Clst: Sst:	brn gry, sft-frm, amor-sbblky, v sol, slty/sdy i.p., mod-v calc. arg-v arg, a.a.	Permian, n/s
2036				No sample
2039	70 30	Clst: Sst:	a.a. v f, grad Sltst i.p., a.a.	
2042	80 20	Clst: Sst:	pa brn gry-brn gry, sft-frm, amor-sbblky, v sol, slty/sdy i.p., mod-v calc. v f, grad Sltst, a.a.	
2045	a.a.			

WELLSITE SAMPLE DESCRIPTION						Page 21 of 54	
Country: Norway			Area: Barents Sea, Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro					
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen					
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006		
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
2048	90	Clst:	slily sdy/slty, a.a.				
	10	Sst:	grad Slst, a.a.				
2051	a.a.						
2057	70	Hal:	clr-trns-op, mod hd, brit, xln.				
	20	Clst:	a.a.				
	10	Anhy:	lt gry, sft, amor, com arg.				
2063	80	Hal:	a.a.				
	10	Anhy:	a.a.				
	10	Clst:	a.a.				
2069	100	Hal:	clr-trnsl-op, occ mky wh, mod hd, brit, xln.				
	Tr	Anhy:	a.a.				
2075	100	Hal:	a.a.				
	Tr	Anhy:	wh-lt gry, sft-frm, occ amor, i.p. arg.				
	Tr	Ls:	wh-gry wh, lt gry, frm-brit, i.p.arg lam.				
2081	a.a.						
2087	a.a.						
2093	100	Hal:	a.a.				
	Tr	Anhy:	a.a.				
	Tr	Ls:	a.a.				
	Tr	Clst:	grysh blk, frm, slily slty, n calc.				
2099	100	Hal:	a.a.				
	Tr	Anhy:	a.a.				
	Tr	Ls:	a.a.				
	Tr	Clst:	loc micropyr, a.a.				
2105	100	Hal:	a.a.				
	Tr	Anhy:	a.a.				
	Tr	Ls:	a.a.				
2111	a.a.						
2117	a.a.						
2123	100	Hal:	a.a.				
	Tr	Anhy:	a.a.				
	Tr	Ls:	a.a.				
	Tr	Clst:	a.a.				
2129	a.a.						
2135							No sample
2141	a.a.						

WELLSITE SAMPLE DESCRIPTION				Page 22 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2147	100 Tr Tr	Hal: Anhy: Ls:	a.a. a.a. a.a.	
2153	100 Tr	Hal: Ls:	clr-trnsl-op, occ mky wh, mod hd, brit, xln. wh-gry wh, lt gry, frm-brit, arg lam i.p.	
2159				No sample
2165	100 Tr	Hal: Ls:	a.a. a.a.	
2171	a.a.			
2177				No sample
2183				No sample
2189	100 Tr	Hal: Ls:	a.a. a.a.	
2195	a.a.			
2201	a.a.			
2207				No sample
2213	100 Tr	Hal: Ls:	a.a. a.a.	
2219				No sample
2225	80 10 10	Hal: Anhy/Ls: Clst:	a.a. yel wh-pl yel brn, frm, microxln, slily arg. olv blk, sft-frm, slily slty, n calc.	
2231	100 Tr	Hal: Ls:	a.a. a.a.	
2237			Poor sample with abund Cvg, first sample after wiper trip	
2243	80 20 Tr	Hal: Anhy: Clst:	clr-trnsl, occ op, mod hd, brit, xln. wh-lt gry, sft-frm, amor-microxln, slily arg. dk gry-gry blk, frm-mod hd, sbblky, carb i.p., n-slily calc.	
2249	100 Tr Tr	Hal: Anhy: Clst:	clr-trnsl-op, occ mky wh, mod hd, brit, xln, slily anhy. wh-lt gry, sft-frm, amor-microxln, slily arg. dk gry-gry blk, frm-mod hd, sbblky, carb i.p., n-slily calc.	
2255	100 Tr	Hal: Anhy:	a.a. a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 23 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

	Tr	Clst:	gry blk-brn blk, frm, sbblky-blky, carb, n-slily calc.	
2261	90	Hal:	a.a.	
	10	Anhy:	a.a.	
	Tr	Clst:	a.a.	
2267	60	Clst:	olv blk-brn blk, olv gry, sft-frm, amor-sbblky, v sol, carb i.p., slily anhy, n-slily calc.	
	40	Hal:	clr-trnsl-op, mod hd, brit, xln.	
	Tr	Anhy:	wh-lt gry, sft, amor, slily arg.	
2273	90	Anhy:	v lt gry-lt gry, sft-frm, amor-microxln, com arg.	
	10	Dol:	pa brn gry-brn gry, med gry, mod hd-hd, microxln-xln, r suc.	
	Tr	Clst:	a.a.	
2279	70	Hal:	a.a.	
	30	Anhy:	a.a.	
	Tr	Clst:	a.a.	
2285	100	Hal:	a.a.	
	Tr	Clst:	a.a.	
	Tr	Anhy:	a.a.	
2291	100	Hal:	a.a.	
	Tr	Anhy:	a.a.	
2297-2303			Lost sample, not allowed in shaker room due to high gas readings in mud.	
2309	100	Hal:	a.a.	
	Tr	Anhy:	a.a.	
2315	100	Hal:	clr-trnsl-op, mod hd, brit, xln.	
	Tr	Anhy:	wh-lt gry, sft, amor-microxln.	
2321	100	Hal:	a.a.	
	Tr	Anhy:	a.a.	
	Tr	Clst:	brn gry, olv blk-brn blk, frm-mod hd, sbblky, n calc.	
2327	a.a.			
2333	100	Hal:	a.a.	
2339	100	Hal:	a.a.	
	Tr	Anhy:	wh-v lt gry, sft, amor-microxln.	
2345	100	Hal:	a.a.	
2351	100	Hal:	a.a.	
	Tr	Ls:	wh-gry wh, lt gry, frm-brit, arg lam i.p.	
2357	a.a.			

WELLSITE SAMPLE DESCRIPTION					Page 24 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin			Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro			
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen			
Hole size: 12 ¼"		Cut solvent: Iso Proanol			Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.

2363 a.a.

2369 No sample

2375 a.a.

2381 a.a.

2387 a.a.

2393 100 Hal: a.a.
Tr Ls: a.a.
Tr Anhy: lt gry-lt brn gry, sft-crumb, microxln.

2399 100 Hal: a.a.
Tr Ls: a.a.

2405 a.a.

2411 a.a.

2417 100 Hal: clr-trns-op, mod hd, brit, xln.
Tr Ls: wh-gry wh, frm-brit, arg lam i.p., micr-microxln.

2423 a.a.

2429 a.a.

2435 a.a.

2441 No sample

2447 No sample

2453 a.a.

2459 No sample

2465 No sample

2471 a.a.

2477 a.a.

2483 a.a.

2489 a.a.

2495 a.a.

2501 a.a.

WELLSITE SAMPLE DESCRIPTION				Page 25 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2507					No sample
2513	a.a.				
2519	100	Hal:	a.a.		
2525					No sample
2531	100	Hal:	a.a.		
	Tr	LS:	a.a.		
2537	100	Hal:	clr-trnsl-op, mod hd, brit, xln.		
2543	a.a.				
2549	100	Hal:	a.a.		
	Tr	Anhy:	wh-v lt gry, sft-frm, amor-microxln.		
2550	50	Clst:	brn blk-olv blk, sft-frm, amor-sbblky, v sol, carb, slily-mod calc.		Spot sample
	30	Hal:	a.a.		
	10	Anhy:	wh-lt gry, frm, amor-microxln, calc i.p.		
	10	LS:	wh-lt gry, frm-mod hd, micr-microxln, com anhy.		
2555	50	Clst:	brn blk, olv blk, sft-frm, amor-sbblky, v sol, carb, anhy i.p., slily-mod calc.		Clst v sol, percentage prob underestimated
	50	Anhy:	wh-lt gry, sf-frm, amor-microxln, slily-occ mod calc, arg i.p.		
2561	90	Anhy:	a.a.		
	10	Clst:	a.a.		
2564	60	Clst:	a.a.		
	40	Anhy:	a.a.		
2570	70	Clst:	a.a.		
	20	Anhy:	a.a.		
	10	Hal:	clr-trnsl-op, mod hd, brit, xln.		
2573	70	Hal:	a.a.		
	20	Anhy:	a.a.		
	10	Clst:	a.a.		
2579	90	Hal:	a.a.		
	10	Anhy:	a.a.		
	Tr	Clst:	a.a.		
2585	80	Hal:	a.a.		
	10	Anhy:	wh-lt gry, sft, amor-microxln, occ slily arg.		
	10	Clst:	brn blk-olv blk, sft, v sol, amor, carb, anhy i.p., n-occ slily carb.		Clst v sol, percentage prob underestimated
2590	60	Hal:	a.a.		Spot sample

WELLSITE SAMPLE DESCRIPTION				Page 26 of 54
Country: Norway		Area: Barents Sea, Nordkapp Basin		Field: Uranus
Well no: 7227/11-1S		Company: Statoil ASA, Norsk Hydro		
RKB: 25 meters		Geologist: Wayne, Rasmussen, Greve, Kristensen		
Hole size: 12 ¼"		Cut solvent: Iso Proanol		Date: 03. – 18.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

20	Anhy:	a.a.	
20	Clst:	a.a.	Clst v sol, percentage prob underestimated

TD of well @ 2590 mMD RKB

WELLSITE SAMPLE DESCRIPTION						Page 27 of 54	
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA					
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen					
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol			Date: 22 - 24.02.2006		
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
1123	100	Cmt					Attempting to sidetrack
	Tr	Clst:	gry blk, mod hd, sbblky-blky, micropyr, micromic, carb, n calc.				
1126	100	Cmt					
	Tr	Clst:	a.a.				
1129	a.a.						
1132	100	Cmt					
1135	100	Cmt					
	Tr	Clst:	a.a.				
1138	100	Cmt					
	Tr	Sltst:	lt gry, grad v f Sst, fri-mod hd, calc, arg.				
	Tr	Clst:	med gry, sft, amor, sol, slily slty.				
	Tr	Clst:	gry blk, a.a.				
1141	100	Cmt					
	Tr	Ls:	lt gry, frm, micr, slily arg, sdy i.p.				
	Tr	Clst:	gry blk, a.a.				
1144	100	Cmt					
	Tr	Sst:	clr-trnsl Qtz, f-crs, p srt, sbang-sbrndd, ap lse, Tr Glauc.				
1147	100	Cmt					
	Tr	Sst:	a.a.				
	Tr	Clst:	gry blk, a.a.				
1150	a.a.						
1153	a.a.						
1156	70	Cmt					
	30	Sst:	clr-trnsl Qtz, v f-crs, p srt, sbang-rndd, ap lse Gr.				
	Tr	Clst:	gry blk-brn blk, frm, sbblky-blky, carb, micromic, micropyr, n calc.				
1159	80	Cmt					
	10	Sst:	v f-med, a.a.				
	10	Clst:	a.a.				
1162	50	Sst:	v f-med, occ crs, arg, wk calc Cmt, a.a.			Sidetracked to 7227/11-1A @ 1160m	
	10	Clst:	a.a.				
	40	Cmt					
1165	70	Sst:	clr-trnsl Qtz, f-crs, occ v crs-gran, p srt, sbang-rndd, lse-mod hd, calc cmtd i.p., occ slily glauc, loc arg.			Late Toarcian	
	Tr	Clst:	a.a.				
	30	Cmt					

WELLSITE SAMPLE DESCRIPTION				Page 28 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 24 - 25.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1168	90	Sst:	clr-trnsl Qtz, f-crs, p srt, sbang-rnidd, pred lse, occ mod hd, wk calc Cmt, loc w/ lt gry arg Mtrx.	Stø Fm
	10	Clst:	brn gry-brn blk, sft, sol, amor, sdy/slty i.p., n-slily calc	
1171	100	Sst:	clr-trnsl Qtz, pred f-med, occ crs, wl srt, sbang-rnidd, ap lse, i.p. arg, ex vis por.	
	Tr	Clst:	a.a.	
	Tr	Pyr		
1177	90	Sst:	a.a., Tr calc Cmt	Nordmela Fm
	10	Lig:	brn-brn blk, frm-mod hd, fibr Tex i.p., arg i.p., n calc.	
	Tr	Pyr		
1183	90	Sst:	a.a.	a.a.
	10	Sltst:	pa brn gry-brn gry, mod hd, arg, carb-v carb, i.p. grad Lig, com blk, brn carb Frag, micromic i.p., n calc.	
1189	70	Sst:	a.a.	a.a.
	20	Clst:	med gry, frm, sbblky-blky, slty, micromic, n calc.	
	10	Sltst:	slily carb, else a.a.	
1195	60	Clst:	med gry, med lt gry, sft-frm, sbblky-blky, slty/sdy, micromic, loc micropyr, n calc.	a.a.
	10	Sltst:	a.a.	
	30	Sst:	lt gry, clr-trnsl Qtz, pred v f-f, wl srt, sbang-sbrnidd, fri-mod hd, calc Cmt, arg i.p.	
	Tr	Pyr		
1198	90	Sst:	clr – trnsl qtz, f – crs, occ v f, occ crs, mod srt, sbang – rnidd, app lse	a.a.
	10	Clst:	lt gry – med gry, brn gry, frm, sbblky – blky, slty/sdy i.p., micromic i.p., occ carb, non calc	
1201	70	Sst:	lt gry, clr – trnsl qtz, f – crs, pr srt, sbang – sbrnidd, lse –hd, com calc cmt, tr sil cmt, pyr i.p.	??
	20	Clst:	brn gry, dk brn – brn blk, frm – mod hd, blky, carb – v carb, com carb frags, slty i.p., micropyr – pyr, non calc	
	10	Ls:	v lt gry – lt gry, frm, micr, com arg lam	
	Tr	Pyr		
1204	80	Sst:	pred lse, rare calc cmt, else a.a.	
	10	Ls:	a.a.	
	10	Clst:	pred brn gry, mod carb i.p., else a.a.	
	Tr	Pyr	abd	
1210	70	Clst	brn blk – gry blk, brn gry, frm – mod hd, sbblky – blky, slty/sdy, carb, micropyr – v micropyr, loc pyr, micromic, none – mod calc, occ v calc	
	20	Sst:	lt gry – med gry, clr – trnsl qtz, f – crs, pr srt, sbang – sbrnidd, fri – hd, calc cmt, arg i.p.	
	10	Ls:	a.a.	
	Tr	Pyr	abd	

WELLSITE SAMPLE DESCRIPTION

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Country: Norway	Area: Barents Sea / Nordkapp Basin	Field: Uranus
Well no: 7227/11-1 A	Company: Statoil ASA, Norsk Hydro ASA	
RKB: 25 meters	Geologist: S. Greve, T. F. Kristensen	
Hole size: 12 1/4"	Cut solvent: Iso Propyl Alcohol	Date: 25.02.2006

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

1213	60	Sst:	clr – trnsl qtz, tr pk trnsl qtz, f – crs, pr srt, sbang – sbrnidd, app lse	The clay is very souble, and probably underrepresented in the samples.
	30	Clst:	med gry – med dk gry, occ gry blk, frm – mod hd, sbblky – blk, slty/sdy, loc grdg Slst, pyr i.p., mod – v calc, occ grdg Mrl	
	10	Ls:	v lt gry, frm, micr – microxln, com w/arg lam	
	Tr	Pyr		
1216	50	Clst:	brn blk, gry blk, frm – mod hd, sbblky – blk, sol, slty/sdy i.p., carb, micropyr – v micropyr, micromic, mod – v calc	
	40	Sst:	tr calc cmt, occ pyr, else a.a.	
	Tr	Pyr	abd	
1219	80	Sst:	lt gry, clr – trnsl qtz, f – crs, pr srt, sbang – sbrnidd, lse – mod hd, calc cmt, occ pyr	
	20	Clst:	a.a.	
	Tr	Pyr		
1222	70	Clst:	brn blk a.a.	
	20	Ls:	lt gry – med lt gry, sft – frm, micr, arg	
	10	Sst:	a.a.	
	Gd tr	Dol:	pa brn gry, mod hd, microxln	
1225	80	Clst:	brn gry – brn blk, sft – frm, sol, sbblky – blk, slty/sdy, grdg Slst i.p., micropyr, micromic, carb i.p., mod – v calc	
	20	Ls:	lt gry – med gry, sft – frm, micr, arg, grdg Mrl i.p.	
	Tr	Sst:	a.a.	
1228	70	Clst:	pred a.a.	
	20	Ls:	gry wh – lt gry, loc arg lam, else a.a.	
	10	Sst:	lse, clr – trnsl, v f – m, mod srtd	
	tr	Pyr nods		
1231	90	Ls:	occ v arg grad mrl	
	10	Clst:	a.a.	
1234			a.a.	
1237	70	Ls:	lt gry – med gry, sft – frm, gen arg grad mrl	
	20	Clst:	also olv gry, sft, v calc grad mrl, else a.a.	
	10	Sst:	tr sst frags, v f – slt, mic, calc, else a.a.	
	tr	Pyr nods		
1240	60	Clst:	olv gry, sft, stky, calc, i.p. grad mrl	
	20	Mrl:	med gry – olv gry, sft, stky, i.p. grad clst	
	20	Ls:	a.a.	
	tr	Sst:	a.a.	
1243			lost	
1246	60	Clst:	a.a.	
	20	Mrl:	a.a.	
	10	Ls:	a.a.	
	10	Sst:	a.a.	

WELLSITE SAMPLE DESCRIPTION						Page 30 of 54
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA				
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen				
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol				Date: 25.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.
1249	60	Clst:	olv gry, sft, stky, calc, i.p. grad mrl			
	30	Mrl:	med gry – olv gry, sft, stky, i.p grad clst			
	10	Ls:	lt gry – med gry, sft – frm, gen arg grad mrl			
1252	70	Ls:	lt gry – med gry, sft – frm, arg/arg lam, occ grad mrl			
	20	Sst:	lse, clr – trnsl, v f – v crs, v prly srtd, ang – sbrndd			
	10	Clst:	olv gry, sft, stky, calc, i.p. grad mrl, also olv blk, frm – mod hd			
	tr	Pyr nods				
1255	80	Ls:	a.a.			
	10	Clst:	a.a.			
	10	Sst:	tr sst frags, v f – slt, mic, calc, else a.a.			
1258	80	Ls:	a.a.			
	20	Clst:	olv blk – gn blk, frm, occ mod hd, non calc			
	tr	Sst:	a.a.			
1261	80	Ls:	a.a.			
	10	Sst:	lse qtz a.a., tr sst frags, v f, else a.a.			
	10	Clst:	frm, sli calc, occ micropyr, else a.a.			
1264	50	Ls:	lt gry – med gry, pred sft, arg/arg lam			
	30	Sst:	a.a.			
	20	Clst:	olv gry, sft, calc			
1267	40	Ls:	a.a.			
	30	Sst:	a.a.			
	20	Anhy:	off wh – v lt gry, sft, amor – sbblky, i.p. arg lam			
	10	Clst:	a.a.			
1270			a.a.			
1273	50	Anhy:	a.a.			
	40	LS:	a.a.			
	10	Clst:	a.a.			
1276	40	Anhy:	a.a.			
	40	Ls:	a.a.			
	20	Clst:	olv blk – gn blk a.a., also med gry – olv gry, sft, stky i.p., calc, occ micropyr			
1279	70	Clst:	med lt gry – olv gry, sft, amor, i.p. stkt, mod – v calc, loc grad mrl			
	20	Anhy:	off wh – med lt gry, else a.a.			
	10	Ls:	a.a.			
1282			lost			
1285	70	Clst:	a.a.			
	20	Ls:	a.a.			
	10	Anhy:	a.a.			
	tr	Sst:	a.a.			
1288			lost			

WELLSITE SAMPLE DESCRIPTION						Page 31 of 54
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA				
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen				
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol				Date: 25.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.
1291	70	Clst:	med lt gry – olv gry, sft, amor, i.p. stkt, mod – v calc, loc grad mrl			
	20	Ls:	gry wh - lt gry, pred sft, arg/arg lam			
	10	Sst:	lse qtz, clr – trnsl, v f – f, mod srt, gen sbang – sbrndd			
	tr	Anhy:	off wh – v lt gry, sft, amor – sbblky, i.p. arg lam			
1294	60	Clst:	a.a.			
	20	Sst:	a.a.			
	20	Ls:	a.a.			
1297	50	Clst:	a.a.			
	30	Sst:	a.a.			
	20	Ls:	a.a.			
1300			a.a.			
1303	50	Sst:	lse qtz, occ m, else a.a., tr sst frags, v f, occ mic, calc			
	30	Clst:	a.a.			
	20	Ls:	a.a.			
1306	50	Clst:	a.a.			
	30	Ls:	a.a.			
	20	Sst:	a.a.			
1309	50	Ls:	off wh – gry wh,else a.a.			
	20	Sst:	a.a.			
	20	Anhy:	wh – v lt gry, sft, pred sbblky, occ calc			
	10	Clst:	olv gry, sft, occ frm, calc			
	tr	Pyr nods				
1312	40	Ls:	a.a.			
	40	Clst:	a.a.			
	20	Sst:	occ m – crs, mod – prly srt, occ ang, else a.a.			
	tr	Anhy:	a.a.			
	tr	Pyr nods				
1315	80	Sst:	lt gry, clr – trnsl qtz, rare pk trnsl qtz, pred f, mod srt, sbang – sbrndd, pred lse – occ mod hd, calc cmt, occ arg, pyr i.p.			
	20	Clst:	med lt gry – med gry, sft, amor, sol, mod calc – v calc, grdg Mrl i.p., com slty/sdy			
	Tr	Anhy:	wh – v lt gry, sft, amor, arg i.p., slily calc			
	Tr	Pyr	abd			
1318	70	Sst:	f – med, occ crs, mod srt, else a.a.			
	20	Clst:	a.a.			
	10	Anhy:	wh – lt gry, sft, amor, com arg, occ slily calc			
	Tr	Pyr				
1321	80	Sst:	clr – trnsl qtz, f – crs, pr srt, sbang – sbrndd, pred lse, occ fri – mod hd, wk calc cmt, rare pyr			
	20	Clst:	Anhy i.p., else a.a.			
	Tr	Anhy:	wh, sft, amor, com w/ arg lam			
	Sl Tr	Pyr				

WELLSITE SAMPLE DESCRIPTION				Page 32 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 25.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1324

No sample

1327 60 Ls: lt gry, sft – occ mod hd, micr, slily – v sdy, i.p. grdg calc Sst
40 Sst: lt gry, clr – trnsd qtz, f – med, pr srt, sbang – sbrndd, app lse – mod hd, com calc cmt/mtrx

1330 60 Clst: med lt gry – med gry, sft, amor, sol, calc – v calc grdg Mrl i.p., com sdy
40 Sst: a.a.

1333 100 Clst: med lt gry – med gry, sft, amor, calc – v calc grdg Mrl i.p., com sdy

1336 90 Clst: a.a.
10 Sst: lt gry, clr – trnsd qtz, v f – f, wl srt, sbang – sbrndd, app lse – mod hd, calc cmt/mtrx, arg i.p.

1339 100 Clst: a.a.

1342 50 Clst: lt – med gry, a.a.
30 Sst: lt gry – pa brn gry, clr – trnsd qtz, f – med, pr srt, sbang – sbrndd, app lse – mod hd, calc cmt, arg i.p.
20 Clst: brn gry – brn, brn blk – gry blk, frm, sbblky – blk, sol, carb, micropyr, slty i.p., mod – v calc

1345 50 Clst: brn gry – brn, brn blk – gry blk, a.a.
40 Sst: lt gry, clr – trnsd qtz, v f – f, occ med, mod srt, sbang – sbrndd, fri – mod hd, calc cmt, pyr i.p., arg i.p.
10 Ls: lt gry, sft, amor, micr, com sdy, slily arg

1348 80 Clst: a.a.
20 Ls: lt gry, sft – frm, micr – microxln, occ arg, occ slily sdy
Tr Sst: calc cmt a.a.

1351

No sample

1354 100 Clst: brn gry – brn blk, gry blk, frm, sbblky – blk, sol, carb, micropyr, micromic, slty i.p., mod – v calc
Gd tr Sst: calc cmt a.a.
Gd tr Ls: a.a.

1357 50 Sst: lt gry, clr – trnsd qtz, v f – f, wl srt, sbang – sbrndd, fri – mod hd, calc cmt, arg i.p., mic i.p., rare pyr
40 Clst: brn gry – brn blk, gry blk, frm, sbblky – blk, sol, carb, micropyr, micromic, slty i.p., mod – v calc
10 Ls: v lt gry – lt gry, sft – frm, micr, arg i.p., slily sdy – v sdy, loc grdg calc Sst

1360 50 Clst: brn gry a.a.
50 Clst: lt gry – med gry, sft, amor, sol, mod – v calc grdg Mrl i.p.
Tr Sst: calc cmt a.a.
Tr Anhy: wh, sft, amor, com w/ arg lam

WELLSITE SAMPLE DESCRIPTION				Page 33 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 26.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1363				No sample
1366	80	Clst:	brn blk – gry blk, frm – mod hd, sbblky – blk, sol, carb, micromic, micropyr, non calc	
	20	Sst:	lt gry – pa brn gry, v f – f, wl srt, sbang – sbrndd, fri – mod hd, calc cmted, arg i.p., slty i.p., mic i.p.	
1369	80	Clst:	mod – v calc, else a.a.	
	20	Sst:	a.a.	
	Gd tr	Ls:	lt gry, sft – frm, micr, v arg grdg Mrl i.p.	
1372	100	Clst:	brn blk – gry blk, frm – mod hd, sbblky – blk, sol, carb, micromic, micropyr, non calc – occ slily calc	
	Tr	Sst:	a.a.	
1375	90	Clst:	brn blk – gry blk a.a.	
	10	Anhy:	wh – v lt gry, sft – frm, amor, com thin arg lam, occ slily calc	
1378				No sample
1381	80	Anhy:	a.a.	
	10	Clst:	brn blk – gry blk a.a.	
	10	Slst:	brn gry, mod hd, arg, micromic, sdy i.p., micropyr, non calc	
1384	100	Anhy	wh – v lt gry, sft – frm, amor, com thin arg lam, occ slily calc	
	Tr	Clst:a.a.		
	Tr	Slst:	a.a.	
1387	50	Anhy:	a.a.	
	50	Clst:	brn blk – olv blk, sft – frm, sbblky – blk, sol, carb, slty i.p., micromic, micropyr, anhy i.p., non – occ slily calc	
1390	80	Clst:	brn gry – brn blk, gry blk, sft – frm, sol, sbblky – blk, carb, micromic, micropyr, slty i.p., anhy i.p., non – slily calc	
	20	Anhy:	a.a.	
1393				No sample
1396	90	Clst:	brn gry, brn blk – gry blk, sft – frm, sbblky – blk, sol, carb, micromic, i.p. slty – v slty, loc grdg Slst, occ sdy, mod – v calc, occ grdg Mrl	
	10	Anhy:	a.a.	
1399	70	Ls:	lt olv gry, sft, micr, arg – v arg, loc grdg Mrl, slily sdy/slty	
	30	Anhy:	wh – v lt gry, sft – frm, amor, com thin arg lam, occ slily calc	
1402	50	Ls:	anhy i.p., else a.a.	
	50	Anhy:	a.a.	
1405	100	Anhy:	a.a.	Possibly drilled Halite that dissolved in the mud
	Tr	Ls:	a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 34 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 26.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1408	100 Tr	Anhy:	wh – v lt gry, sft, amor, occ w/arg lam, occ slily calc	
		Clst:	brn blk – blk, frm, blk, carb, micropyr, non calc	
1411	90	Clst:	brn gry, brn blk – gry blk, frm – mod hd, blk, occ sbfis, carb, micromic, micropyr, slily – mod calc	
	10	Anhy:	a.a.	
1414	60	Anhy:	a.a.	
	40	Clst:	a.a.	
	Tr	Dol:	buff – brn blk, mod hd – hd, microxln – xln, slily calc, arg/carb	
	Tr	Calc:	lt gry, mod hd, xln, fibr text	
1417	90	Anhy:	a.a.	
	10	Clst:	a.a.	
	tr	Ls:	.a.a	
1420	70	Clst:	olv gry – olv blk, occ dk gn gry, frm, occ sft, amor – sbblk, non – sli calc, occ mod calc	
	30	Anhy:	a.a.	
	tr	Ls:	a.a.	
1423			lost	
1426	80	Clst:	a.a.	
	20	Anhy:	a.a.	
1429	80	Clst:	a.a.	
	10	Anhy:	a.a.	
	10	Ls:	gry wh, frm, micr, arg lam	
	tr	Sst:	lse, v f – f, clr – trnl, mod – wl srted	
1431			lost	
1435	70	Clst:	a.a.	
	20	Ls:	a.a.	
	10	Anhy:	a.a.	
	tr	Sst:	a.a.	
1438	50	Anhy:	a.a.	
	30	Clst:	a.a.	
	10	Sst:	tr mlky wh, occ m, mod srted, else a.a.	
	10	Ls:	a.a.	
	tr	Pyr nods		
1441	90	Anhy:	a.a.	
	10	Clst:	a.a.	
	tr	Ls:	a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 35 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 26.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

1444	50	Clst:	olv gry – olv blk, frm, occ sft, amor – sbblky, i.p. slty, non – sli calc, occ mod calc
	40	Anhy:	wh – v lt gry, sft, amor, occ w/arg lam, occ sli calc
	10	Ls:	gry wh, frm, micr, arg lam
1447	50	Clst:	a.a.
	20	Sst:	lse qtz, v f – f, occ m, mod srtd, also sst frags, med lt gry, v f, wl srtd, calc/sil cmtd
	20	Anhy:	a.a.
	10	Ls:	occ yel brn, frm – mod hd, dol, else a.a.
	tr	Pyr nods	
1450	40	Sst:	.a.a
	30	Clst:	a.a.
	20	Ls:	a.a.
	10	Anhy:	a.a.
1453			lost
1456	50	Sst:	pred lse qtz, tr m – crs, else a.a.
	20	Clst:	a.a.
	20	Ls:	a.a.
	10	Anhy:	a.a.
1459	70	Sst:	pred lse qtz, v f – f, occ m, else a.a.
	20	Clst:	a.a.
	10	Ls:	a.a.
	tr	Anhy:	a.a.
1462	40	Clst:	a.a.
	30	Sst:	a.a.
	20	Anh:	a.a.
	10	Ls:	a.a.
	tr	Pyr nods	
1465	40	Sst:	tr m – crs, tr glau, else a.a.
	20	Clst:	a.a.
	20	Ls:	else a.a.
	20	Anhy:	a.a.
1468	30	Sst:	a.a.
	30	Ls:	a.a.
	20	Clst:	a.a.
	20	Anhy:	a.a.
	tr	Pyr nods	
1471	50	Clst:	a.a.
	20	Sst:	tr mic, else a.a.
	20	Ls:	a.a.
	10	Anhy:	a.a.
	tr	Pyr nods	

WELLSITE SAMPLE DESCRIPTION						Page 36 of 54
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA				
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen				
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol				Date: 26.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.
1474			lost			
1477			lost			
1480	30	Clst:	olv gry – olv blk, frm, occ sft, sbblky, occ amor, i.p. slty, gen non – sli			
			calc			
	30	Sst:	pred lse qtz, clr – trnsl, v f – f, occ m, tr crs, mod srted			
	30	Ls:	gry wh, yel brn, frm, micr – microxln, loc arg, i.p. dol			
	10	Anhy:	wh – v lt gry, sft, amor - sbblky, occ w/arg lam			
	tr	Pyr nods				
1483			lost			
1486	40	Clst:	occ slty, occ mic, else a.a.			
	30	Ls:	a.a.			
	20	Sst:	tr v crs, else a.a.			
	10	Anhy:	a.a.			
		Pyr nods				
1489	40	Clst:				
	30	Sst:	tr sst frags, lt gry, frm, v f, wl srted, calc/sil cmted, else .a.			
	20	Ls:	a.a.			
	10	Anhy:	a.a.			
1492	50	Clst:	olv blk – blk, frm – mod hd, blk – sbblky, occ plty, occ slty, tr mic,			
			pred non calc			
	30	Sst:	sst frags & lse grns a.a.			
	20	Ls:	s.s.			
	tr	Anhy:	a.a.			
1495	50	Sst:	a.a.			
	30	Ls:	pred gry wh a.a.			
	20	Clst:	a.a.			
	tr	Anhy:	a.a.			
1498	60	Sst:	tr m – crs, else a.a.			
	20	Ls:	a.a.			
	20	Clst:	a.a.			
	tr	Anhy:	a.a.			
	tr	Pyr nods				
1501	40	Sst:	lse sd & sst frags a.a.			
	40	Clst:	occ slty, tr mic, else a.a.			
	20	Ls:	a.a.			
	tr	Anhy:	a.a.			
	tr	Pyr nods				
1504	60	Clst:	a.a.			
	20	Sst:	tr micropyr, else a.a.			
	10	Ls:	a.a.			
	10	Anhy:	a.a.			
	tr	Pyr nods				

WELLSITE SAMPLE DESCRIPTION						Page 37 of 54	
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA					
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen					
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol			Date: 26 - 27.02.2006		
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
1507	60	Clst:	olv blk – blk, frm – mod hd, blk – sbblky, occ plty, occ slty, tr mic, pred non calc				
	20	Sst:	lt gry, frm, v f, wl srtd, calc/sil cmttd, also lse qtz, clr – trnsl, v f – f, tr m – crs, - crs, mod srtd				
	10	Ls:	gry wh, yel brn, frm, micr - microxln, loc arg, occ dol				
	10	Anhy:	wh – v lt gry, sft, amor - sbblky, occ w/arg lam				
	tr	Pyr nods					
1510	30	Clst:	a.a.				
	30	Anhy:	a.a.				
	20	Sst:	a.a.				
	20	Ls:	a.a.				
	tr	Pyr nods					
1513			No return of cuttings. Drilling pure Halite which dissolves in the mud No samples down to 1609m due to no return of cuttings over shakers.				
1612	70	Slst:	lt brn gry – brn gry, med gry, mod hd, arg, micromic, loc sdy grdg v f				Pr sample Clst v sol and easily washes away, hence probably underestimated in samples. Slstt/Sst washed out of Clst???
	30	Clst:	Sst, occ slily carb, noncalc – slily calc olv blk – brn blk, gry blk, sft, sol, amor – sbblky, micromic, micropyr, carb, non calc				
	Tr	Anhy:	v lt gry, sft, amor				
1615	70	Slst:	grdg v f Sst a.a.				a.a.
	30	Clst:	a.a., Clst underestimated, Slstt probably washed out of Clst				
	Tr	Anhy:	a.a.				
1618							No sample
1621	40	Slst:	a.a.				a.a.
	30	Clst:	a.a.				
	20	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln				
	10	Anhy:	a.a.				
1624							No sample
1627	80	Hal:	a.a.				Spot sample
	20	Clst:	olv blk – gry blk, sft, amor, sol, non – slily calc				
	Tr	Anhy:	a.a.				
1630							No sample
1633							No sample
1636	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, anhy i.p.				6m samples through Halite, high ROP
	Tr	Anhy:	v lt gry, sft, amor				
1642	100	Hal:	a.a.				

WELLSITE SAMPLE DESCRIPTION						Page 38 of 54
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA				
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen				
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol			Date: 27.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.
1648	100	Hal:	clr – trnsl op, mod hd, brit, xln			
1654	100 Sl tr	Hal: Anhy:	clr – trnsl – op, occ mlky, mod hd, brit, xln, occ slily anhy wh, sft amor			
1660	a.a.					
1666	a.a.					
1672	100	Hal:	a.a.			
1678	a.a.					
1684	100 Sl tr	Hal: Anhy:	a.a. v lt gry, sft, amor			
1690	a.a.					
1696	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln			
1702	100	Hal:	occ slily anhy, else a.a.			
1708	a.a.					
1714	a.a.					
1717	100 Tr	Hal: Anhy:	clr – trnsl – op, occ mlky, mod hd, brit, xln, slily anhy i.p., slily arg v lt gry, sft, amor, slily arg			
1720	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ slily anhy			
1726			a.a.			
1732			a.a.			
1738	100 tr	Hal: Ls:	a.a. gry wh, sft, micr, loc arg; occ lt yel brn, frm - mod hd, microxln			
1744	100	Hal:	a.a.			
1750			a.a.			
1756			a.a.			
1762	100 tr	Hal: Ls:	a.a. a.a.			
1768	100 tr tr	Hal: Sst: Ls:	a.a. lse qtz, clr – trnsl, v f – f, wl srtd a.a.			

WELLSITE SAMPLE DESCRIPTION					Page 39 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus	
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA			
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen			
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 27.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.	
1771	40	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ slily anhy		
	30	Anhy:	wh, lt gry, sft, amor, slily arg		
	20	Clst:	olv blk, occ olv gry, frm – mod hd, occ sft, loc slty, tr glau, non – sli calc		
	10	Ls:	gry wh, sft, micr, loc arg; occ lt yel brn, frm - mod hd, microxln		
	tr	Sst:	lse qtz, clr – trnsl, v f – f, wl srted; tr sst frags, gry wh – yel gry, frm, brit, v f, wl srted, calc		
1774	40	Clst:	a.a.		
	30	Anhy:	a.a.		
	10	Sst:	a.a.		
	10	Ls:	a.a.		
	10	Hal:	a.a.		
1777	60	Anhy:	a.a.		
	30	Clst:	a.a.		
	10	Sst:	a.a.		
	tr	Hal:	a.a.		
	tr	Ls:	a.a.		
1780	90	Hal:	a.a.		
	10	Anhy:	a.a.		
1786	85	Hal:	a.a.		
	10	Anhy:	a.a.		
	5	Clst:	a.a.		
1892			lost		
1898	90	Hal:	a.a.		
	5	Anhy:	a.a.		
	5	Clst:	a.a.		
1804	100	Hal:	a.a.		
	tr	Anhy:	a.a.		
	tr	Clst:	a.a.		
1810			a.a.		
1816	100	Hal:	a.a.		
	tr	Anhy:	a.a.		
	tr	Clst:	a.a.		
	tr	Ls:	a.a.		
1822			a.a.		
1828	70	Hal:	a.a.		
	20	Clst:	a.a.		
	10	Sst:	sst frags, olv gry, v f – slt, arg, calc; also lse a.a.		
	tr	Ls:	a.a.		

WELLSITE SAMPLE DESCRIPTION					Page 40 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus	
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA			
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen			
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 27.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.	
1831	50	Clst:	olv blk, occ olv gry, frm – mod hd, occ sft, loc slty, non – sli calc		
	30	Anhy:	wh, lt gry, sft, amor, loc sli arg		
	20	Sst:	sst frags, olv gry, v f – slt, arg, tr mic, calc/sil; also lse gns, clr – trnsl, v f – f, tr m – crs		
	tr	Pyr nods			
1834	80	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ slily anhy		
	20	Anhy:	a.a.		
1837			a.a.		
1840	90	Hal:	a.a.		
	10	Anhy:	a.a.		
1846	90	Hal:	a.a.		
	10	Anhy:	a.a.		
	tr	Ls:	gry wh, tr pl yel brn, sft – frm, micr, loc arg		
1852			lost		
1858	90	Hal:	a.a.		
	10	Anhy:	a.a.		
	tr	Ls:	a.a.		
1864	75	Hal:	a.a.		
	20	Anhy:	a.a.		
	5	Sst:	olv gry – gry brn, frm, v f – slt, arg; also lse gns, clr – trnsl, v f		
1870	90	Hal:	a.a.		
	10	Anhy:	a.a.		
1876	100	Hal:	a.a.		
	tr	Anhy:	a.a.		
1882	100	Hal:	a.a.		
	tr	Anhy:	a.a.		
	tr	Ls:	a.a.		
1888			a.a.		
1894	100	Hal:	a.a.		
	tr	Anhy:	a.a.		
	tr	Clst:	a.a.		
1900	100	Hal:	a.a.		
1906	100	Hal:	a.a.		
	tr	Anhy:	a.a.		
1912			a.a.		

WELLSITE SAMPLE DESCRIPTION						Page 41 of 54	
Country: Norway			Area: Barents Sea / Nordkapp Basin			Field: Uranus	
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA					
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen					
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol				Date: 27 - 28.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description				Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination				Shows, cavings, mud additives, etc.	
1918			a.a.				
1924	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ slily anhy				
1930	100	Hal:	slily arg i.p., else a.a.				
1936	100 Sl tr	Hal: Clst:	a.a. olv blk – brn blk, frm – mod hd, sbblky – blky, micromic, micropyr, non calc, (cvg?)				
1942	a.a.						
1948	100	Hal:	clr – trnsl – op, rare mlky, tr pk trnsl, mod hd, brit, xln, occ slily anhy, arg/carb i.p.				
1954	a.a.						
1960	100 Sl tr	Hal: Clst:	com arg/carb, else a.a. brn gry – brn blk, sft – frmsol, amor, non calc				
1966	100	Hal:	i.p. v arg/carb, else a.a.				
1972	100 Sl tr	Hal: Anhy:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ slily anhy, i.p. mod – v arg/carb wh – v lt gry, sft, amor				
1978	100	Hal:	clr – trnsl – op, occ mlky, mod hd, brit, xln, occ slily anhy, arg/carb i.p.				
1984	100	Hal:	rare arg/carb, else a.a.				
1990	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ slily anhy				
1996	100	Hal:	clr – trnsl – op, rare mlky, occ orng – pk trnsl, mod hd, brit, xln, occ slily anhy				
2002	100	Hal:	occ orng – pa yel op, else a.a.				GR>100 API K/Mg salts??
2008	100 Sl tr	Hal: Anhy:	clr – trnsl – op, mlky i.p., rare yel trnsl, mod hd, brit, xln, anhy i.p. wh, sft, amor				a.a.
2011	100	Hal:	clr – trnsl – op – mlky, occ pa yel trnsl – op, mod hd, brit, xln, com anhy				a.a.
2014	100 Sl tr	Hal: Anhy:	a.a. wh, sft, amor				a.a.
2017	100	Hal:	com anhy a.a.				a.a.
2020	100	Hal:	occ slily arg, else a.a.				a.a.
2026	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, anhy i.p., occ slily arg				a.a.

WELLSITE SAMPLE DESCRIPTION					Page 42 of 54	
Country: Norway			Area: Barents Sea / Nordkapp Basin		Field: Uranus	
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA				
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen				
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol			Date: 27 - 28.02.2006	
Depth (m RKB)	Lithology (%)	Lithological Description			Remarks	
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination			Shows, cavings, mud additives, etc.	
2032	90 10 Gd tr	Hal: Anhy: Clst:	clr – trnsl – op – mlky, mod hd, brit, xln, com anhy, slily arg i.p. wh – v lt gry, sft, amor olv blk – brn blk, mod hd, blk, micropyr, non calc			GR>150 API K/Mg salts??
2038	100 Gd tr Tr	Hal: Anhy: Clst:	clr – trnsl – orng yel trnsl – op, orng yel – orng op i.p., mod hd, brit, xln, anhy i.p., occ slily arg a.a. a.a.			a.a.
2044	80 20	Hal: Anhy:	clr – pa yel – orng yel, trnsl – op, mod hd, brit, xln, com anhy, slily arg/carb i.p. wh – v lt gry, sft, amor, occ arg			a.a.
2047	80 20	Hal: Anhy:	orng op i.p., else a.a. a.a.			a.a.
2050	90 10	Hal: Anhy:	pred clr – trnsl, i.p. pa yel – orng yel trnsl, else a.a. a.a.			a.a.
2053	90 10	Hal: Anhy:	clr – trnsl – op, occ mlky, rare pa yel trnsl, mod hd, brit, xln, com anhy a.a.			GR= 20 API BG from KCL mud
2056	90 10	Hal: Anhy:	clr – trnsl, occ op – mlky, else a.a. a.a.			a.a.
2059	100 Gd tr	Hal: Anhy:	a.a. wh – v lt gry, sft amor			a.a.
2065	100 Gd tr	Hal: Anhy:	com anhy, occ v anhy, else a.a. a.a.			a.a.
2071	100 Tr	Hal: Anhy:	clr – trnsl, occ op – mlky, mod hd, brit, xln, com anhy a.a.			a.a.
2077	100 Gd tr	Hal: Anhy:	a.a. a.a.			a.a.
2083	90 10	Hal: Anhy:	a.a. a.a.			a.a.
2089			a.a.			
2095	80 20	Hal: Anhy:	a.a. a.a.			a.a.
2098	80 20 tr	Hal: Anhy: Ls:	a.a. a.a. gry hw, lt yel brn, frm – mod hd, micr – microxln			a.a.

WELLSITE SAMPLE DESCRIPTION				Page 43 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 28.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2101 90 Hal: clr – trns, occ op – mlky, mod hd, brit, xln, i.p. anhy
10 Anhy: wh – v lt gry, sft – frm, gen sbblky, loc hal

2104 a.a.

2107 90 Hal: a.a.
10 Anhy: a.a.
tr Ls: gry hw, lt yel brn, frm – mod hd, micr – microxln

2110 100 Hal: a.a.
tr Anhy: a.a.
tr Ls: loc arg lam, else a.a.

2113 a.a.

2116 a.a.

2119 a.a.

2125 100 Hal: loc sli arg/carb, else a.a.
tr Anhy: a.a.
tr Ls: a.a.

2128 a.a.

2134 100 Hal: tr sli arg/carb, else a.a.

2137 a.a.

2140 100 Hal: clr – trns, occ op – mlky, mod hd, brit, xln, i.p. anhy
tr Ls: a.a.

2143 - No sample
2146

2149 100 Hal: clr – trns, occ op – mlky, mod hd, brit, xln, i.p. anhy
tr Ls: a.a.

2152 a.a.

2155 - No sample
2164

2167 100 Hal: clr – trns, occ op – mlky, mod hd, brit, xln, i.p. anhy

2170 100 Hal: a.a.
tr Ls: a.a.

2173 lost

2176 a.a.

WELLSITE SAMPLE DESCRIPTION				Page 44 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 28.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2179	100	Hal:	a.a.	
	tr	Clst:	grysh blk, frm – mod hd, blk – sbblky, loc slty, non – sli calc	
2182	100	Hal:	clr – trns, occ op – mlky, mod hd, brit, xln, i.p. anhy	
2185			a.a.	
2188	100	Hal:	a.a.	
	tr	Ls:	gry wh, sft – frm, sbblky, micr, arg lam	
2191	100	Hal:	a.a.	
2194	100	Hal:	a.a.	
	tr	Anhy:	wh – v lt gry, sft – frm, sbblky	
	tr	Ls:	a.a.	
2197			lost	
2200	100	Hal:	a.a.	
2203			a.a.	
2206	100	Hal:	a.a.	
	tr	Clst:	a.a.	
2209	100	Hal:	clr – trns – occ op, rare mlky, mod hd, brit, xln, rare slily anhy	
2212	100	Hal:	a.a.	
2218	100	Hal:	occ slily anhy, else a.a.	
2221	100	Hal:	rare anhy, else a.a.	
2224	100	Hal:	a.a.	
2227	100	Hal:	occ anhy, else a.a.	
2230	100	Hal:	rare anhy, else a.a.	
2233	100	Hal:	a.a.	
2239	100	Hal:	clr – trns – op, rare mlky, mod hd, brit, xln, rare anhy	
2242	100	Hal:	occ anhy, else a.a.	
2245	100	Hal:	rare anhy, else a.a.	
2248	100	Hal:	occ anhy, else a.a.	
2251	100	Hal:	a.a.	
2254	100	Hal:	a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 45 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: S. Greve, T. F. Kristensen		
Hole size: 12 1/4"		Cut solvent: Iso Propyl Alcohol		Date: 28.02.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2260	100	Hal:	a.a.	
2263	100	Hal:	clr – trnsl – op, rare mlky, mod hd, brit, xln, occ anhy	
2266	100	Hal:	anhy i.p., else a.a.	
2269	100	Hal:	a.a.	
2272	100	Hal:	a.a.	
2275	100 Sl tr	Hal:	a.a.	
		Anhy:	wh, sft, amor	
2278	100 Sl tr	Hal:	a.a.	
		Anhy:	a.a.	
2281	100 Sl tr	Hal:	a.a.	
		Anhy:	a.a.	
2284	100	Hal:	a.a.	
2287	100	Hal:	a.a.	
2290	100	Hal:	a.a.	

TD of 12 ¼" section @ 2290 mMD RKB

WELLSITE SAMPLE DESCRIPTION				Page 46 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

No samples from 2290 to 2347 m MD due to formation dissolving into the mud system.
Descriptions from 2347 to 2389 m MD are missing because of corrupt data file.

2389	100	Hal	clr – trnsp – op, mod hd, xln, brit.	
2395	80	Hal	a.a.	
	20	Anhy	wh – off wh, sft, amor, occ lt gry – or lam.	
2398	80	Anhy	pred a.a.	
	10	Hal	a.a.	
	10	Clst	m dk gry – gry blk, frm – mod hd, blk, non calc, slily micromic, Pyr.	
2401	95	Anhy	a.a.	
	5	Clst	dk gry – gry blk, dk grn, else a.a.	
2407	95	Anhy	a.a.	
	5	Hal	a.a.	
2419	95	Anhy	a.a.	
	5	Clst	a.a Tr Pyr Nod.	Clst: Cvg from above?
	Tr	Hal	a.a.	
2431	80	Anhy	a.a.	
	10	Clst	a.a.	
	10	Hal	a.a.	
2437	80	Anhy	a.a.	
	10	Clst	a.a.	
	10	Hal	a.a.	
2443	50	Hal	clr, mod hd, pred a.a.	
	50	Anhy	a.a.	
	Tr	Clst	dk gry – blk, Tr Pyr.	
2449	50	Hal	a.a.	
	50	Anhy	a.a.	
	Tr	Clst	a.a.	Cvg?
2455	90	Hal	a.a.	
	10	Anhy	a.a.	
	Tr	Clst	a.a.	
2461	a.a.			
2467	100	Hal	a.a.	
	Tr	Anhy	a.a.	
	Tr	Clst	a.a.	
2473	a.a.			
2479	100	Hal	clr – trnsp – op, mod hd, xln, brit.	
	Tr	Anhy	wh – off wh, sft, amor, occ lt gry – or lam.	

WELLSITE SAMPLE DESCRIPTION				Page 47 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

Tr Clst m dk gry – grysh blk, frm-mod hd, blk, non calc, slily micromic, Pyr.

2485 100 Hal a.a.
Tr Anhy a.a.

2491 a.a.

2497 a.a.

2503 a.a.

2509 100 Hal a.a.

2515 100 Hal a.a.

2521 100 Hal a.a.

2527 100 Hal a.a.

2536 100 Hal a.a.
Tr Anhy a.a.
Tr Clst olv blk, frm – mod hd, sbblk, non calc

2542 a.a.

2548 a.a.

2557 100 Hal a.a.
Tr Anhy a.a.

2563 a.a.

2569 100 Hal a.a.

2575 100 Hal a.a.

2581 100 Hal a.a.

2587 100 Hal a.a.

2593 100 Hal a.a.

2599 100 Hal a.a.

2605 100 Hal a.a. + Tr Anhy
2611 100 Hal clr – trns, mod hd, cln, crs xln.

2617 - 100 Hal a.a.
2821

2824 95 Hal a.a.
5 Anhy a.a.

WELLSITE SAMPLE DESCRIPTION				Page 48 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2830 5 Hal a.a.
 95 Anhy a.a.

2836 100 Anhy a.a.
 a.a.

2842 50 Anhy a.a.
 50 Hal a.a.

2848 50 Anhy a.a.
 50 Hal a.a.

2854 50 Anhy a.a.
 50 Hal a.a.

2860 50 Anhy a.a.
 50 Hal a.a.

2866 No sample

2872 95 Hal a.a.
 5 Anhy a.a.

2876 90 Hal a.a.
 10 Anhy a.a.

2884 95 Hal a.a.
 5 Anhy a.a.

2890 95 Hal a.a.
 5 Anhy a.a.

2896 100 Hal a.a.

2902 - 100 Hal a.a.
 2938

2944 90 Hal a.a.
 10 Anhy a.a.

2946 60 Anhy a.a.
 40 Hal a.a.

2950 50 Anhy a.a.
 50 Hal a.a.

2956 30 Anhy a.a.
 70 Hal a.a.

2962 10 Anhy a.a.
 90 Hal a.a.

2968 a.a.

WELLSITE SAMPLE DESCRIPTION				Page 49 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

2974	a.a.			
2980	100	Hal	a.a.	
	Tr	Anhy	a.a.	
2986	100	Hal	a.a.	
	Tr	Anhy	a.a.	
2992	a.a.			
2998	a.a.			
3004	a.a.			
3010	a.a.			
	Tr	Clst	olv blk, frm, slily stky, sbblky, non calc.	
3016	100	Hal	a.a.	
	Tr	Clst	olv blk, frm – mod hd, sbblky, v calc.	
	Tr	Anhy	a.a.	
3022	90	Hal	a.a.	
	10	Clst	a.a.	
	Tr	Anhy	a.a.	
3031	80	Anhy	a.a.	
	10	Clst	a.a.	
	10	Hal	a.a.	
3037	80	Anhy	a.a.	
	20	Clst	a.a.	
	Tr	Hal	a.a.	
3040	50	Anhy	a.a.	
	50	Clst	olv blk, olv gry, lt yelsh brn, sft – mod hd, v calc, stky.	
3043	40	Anhy	a.a.	
	60	Clst	calc, else a.a.	
3052	80	Clst	m dk gry – brn gry – yel gry, olv blk, sft – frm, sbblky, v calc, sl slty i.p.	
	20	Anhy	off wh – lt gry, sft, amor, arg lam.	
3058	70	Clst	a.a.	
	30	Anhy	Dol, else a.a.	
3064	60	Clst	a.a.	
	40	Anhy	a.a plus Dol 5-10%	
3070	80	Anhy	a.a.	
	20	Clst	a.a.	
	Tr	Dol	lt brn – dsky yel brn, mod hd – hd, microxln.	

WELLSITE SAMPLE DESCRIPTION				Page 50 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3076	60	Anhy	a.a.
	30	Hal	clr – trnsl, crs xln, mod hd.
	10	Clst	pred a.a

3082	55	Anhy	a.a.
	40	Hal	a.a.
	5	Clst	a.a.

3088	60	Anhy	a.a.
	25	Hal	a.a.
	15	Clst	a.a.

3094				No sample
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3100	95	Hal	a.a.
	5	Anhy	a.a.

3106	60	Anhy	a.a.
	35	Hal	a.a.
	5	Clst	a.a.
	Tr	Lst/Dol	

3112	90	Anhy	a.a.
	10	Clst	dk gry – olv gry else a.a.

3118	95	Anhy	a.a.
	5	Clst	a.a.

3124	60	Anhy	a.a.
	35	Clst	a.a.
	5	Lst/Dol	a.a.

3130	80	Clst	a.a.
	20	Anhy	a.a.

3136	80	Clst	olv blk-gry blk, frm, mod hd, sbblky, v calc.
	20	Anhy	wh-off wh, sft, amor, dk gry-blk microlam.

3142	90	Clst	a.a.
	10	Anhy	a.a.

3148	50	Clst	a.a.
	50	Anhy	a.a.

3154	50	Hal	clr-trnsl, crs xln, mod hd, cln.
	30	Anhy	a.a.
	20	Clst	a.a.

3160	90	Hal	a.a.
	5	Anhy	a.a.
	5	Clst	a.a.

WELLSITE SAMPLE DESCRIPTION				Page 51 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3166 90 Hal a.a.
5 Anhy a.a.
5 Clst a.a.

3172 90 Hal a.a.
5 Anhy a.a.
5 Clst a.a.

3181 100 Hal a.a.
Tr Anhy a.a.
Tr Clst a.a.

3187-93 No sample

3196 100 Hal a.a.
Tr Anhy a.a.

3202 100 Hal a.a.
Tr Anhy a.a.

3211 100 Hal clr-trnsl, crs xln, mod hd, cln.

3220 100 Hal a.a.

3226 90 Hal a.a.
10 Anhy wh-off wh, sft, amor, dk gry-blk microlam.

3232 95 Hal a.a.
5 Anhy a.a.

3238 80 Hal clr, trnsp-trnsl, hd, brit, occ Anhy incl, crpxln-cubic xln.
10 Anhy wh, sft-frm, crumb, microxln.
10 Clst v dk gry-blk, sft-frm, subfis, sl-mod dol.

3244 60 Clst dk olv gry, sft-frm, blk, ea, micromic, occ carb, non-Tr dol/calc.
20 Hal a.a.
20 Anhy a.a.

3253 90 Clst med-v dk gry, sft-frm, blk, non-mod calc/dol
10 Anhy a.a.

3259 60 Hal a.a.
30 Clst med-dk gry, sft, amor-blk, sl slty.
10 Anhy a.a. sl-mod calc.

3265 50 Hal a.a.
30 Clst a.a. non-sl cac, occ mod calc.
20 Anhy a.a.

3271 90 Anhy off wh-lt gry, sft, amor, occ crumb, sl-mod arg, calc.
10 Clst a.a.

WELLSITE SAMPLE DESCRIPTION				Page 52 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.
3277	90	Anhy	a.a.	
	10	Clst	a.a.	
3283	90	Anhy	a.a.	
	10	Clst	a.a.	
3289	80	Anhy	a.a.	
	10	Clst	a.a.	
	10	Hal	a.a.	
3295	80	Anhy	a.a.	
	10	Clst	a.a.	
	10	Hal	a.a.	
3701	90	Anhy	a.a.	
	10	Clst	a.a.	
	Tr	Hal	a.a.	
3307	80	Aanhy	off wh, lt gry, occ lt rd brn, arg, grdg Ls/Dol	
	20	Clst	a.a.	
	Tr	Hal	clr, trnsp-trnsl, hd, brit, occ Anhy incl, crpxln-cubic xln.	
3313	60	Clst	med-dk gry, sft-frm, blk, Tr microcarb, v calc, loc grdg Mrl.	
	40	Anhy	a.a.	
3319	90	Clst	a.a.	
	10	Anhy	off wh-lt gry, frm, crumb, microxln, non-sl calc.	
3325	90	Clst	a.a.	
	10	Anhy	a.a..	
3331	40	Clst	a.a. Tr Pyr	
	30	Anhy	a.a.	
	30	Hal	a.a.	
	Tr	Ls	lt gry, frm, crumb-brit, sl arg, micr-microxln.	
3337	50	Clst	a.a.	
	30	Anhy	a.a.	
	20	Hal	a.a.	
	Tr	Ls	a.a.	
3343	40	Hal	a.a.	
	40	Clst	a.a.	
	10	Sst	trnsl-mky wh, crs-v crs, rnd-w rnd, lse, frstd (aeolian).	
	10	Anhy	a.a.	
3349	50	Hal	a.a.	
	30	Clst	a.a.	
	10	Sst	a.a.	
	10	Anhy	a.a.	
3355	20	Hal	a.a.	

WELLSITE SAMPLE DESCRIPTION				Page 53 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

20 Sst trnsl Qtz, med-v crs, rnd-w rnd, frstd.
 10 Anhy off wh, a.a.
 10 Ls lt gry, frm-mod hd, micr.
 40 Clst med gry-med dk gry a.a.

3361 No sample

3367 30 Sst a.a.
 10 Hal a.a.
 10 Anhy a.a.
 45 Ls a.a.
 5 Clst a.a.

3373 30 Sst a.a.
 10 Hal a.a.
 10 Anhy a.a.
 10 Clst a.a, also bec blk, blk, frm-mod hd, carb, non calc.
 40 Ls a.a.

3379 60 Ls off wh-lt gry, amor, frm-md hd, micr.
 10 Sst clr-trnsl Qtz, med-crs, Tr v crs, rnd, frstd.
 10 Anhy off wh-wh, frm, amor.
 20 Clst blk, flky-blky, mod hd, non calc, carb.

3385 60 Ls a.a.
 10 Sst a.a.
 10 Anhy a.a.
 20 Clst a.a.

3391 60 Ls a.a.
 10 Sst a.a.
 10 Anhy a.a.
 20 Clst a.a.

3397 80 Anhy wh-off wh, amor, sl calc-v calc.
 15 Clst blk-dk gry a.a.
 5 Ls a.a.

3403 50 Ls a.a.
 20 Clst a.a.
 25 Anhy a.a.
 5 Sst a.a, med, occ v crs, med srt, sbang-sbrnd.

3409 60 Ls a.a.
 20 Clst a.a.
 20 Anhy a.a.
 Tr Sst a.a.

3412 80 Ls a.a.
 10 Clst a.a.
 10 Anhy a.a.

WELLSITE SAMPLE DESCRIPTION				Page 54 of 54
Country: Norway		Area: Barents Sea / Nordkapp Basin		Field: Uranus
Well no: 7227/11-1 A		Company: Statoil ASA, Norsk Hydro ASA		
RKB: 25 meters		Geologist: B. Kjellin, O. Beyer, J. Wayne		
Hole size: 8 ½"		Cut solvent: Iso Propyl Alcohol		Date: 08.03.2006
Depth (m RKB)	Lithology (%)	Lithological Description		Remarks
		Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Shows, cavings, mud additives, etc.

3415	70	Ls	a.a.	
	25	Clst	a.a.	
	5	Anhy	a.a.	
3421	60	Anhy	wh-off wh, amor, sl calc-v calc.	
	35	Clst	blk, flky-blky, mod hd, non calc, carb.	
	5	Sst	clr-trnsl Qtz, med-crs, Tr v crs, rnd, frstd.	
3427	90	Anhy	a.a.	
	10	Clst	a.a.	
	Tr	Hal	clr, trnsp-trnsl, hd, brit, occ Anhy Incl, crpxln-cubic xln.	
3433	90	Anhy	a.a.	
	10	Clst	a.a.	
3439	80	Anhy	a.a.	
	10	Clst	a.a.	
	10	Ls	lt gry, frm, blk-y-crumb, arg, micr.	
3443	60	Anhy	a.a.	
	30	Ls	a.a.	
	10	Clst	a.a.	

TD of well @ 3446 mMD RKB

App E List of additional available reports

List of additional available reports

Baker Hughes INTEQ:	End of Well Report: MWD & Dir.drilling Well 7227/11-1S & 11-1A: Final LWD data.
Fugro Robertson:	7227/11-1S and 7227/11-1A Wells Barents Sea, Well site Biostratigraphy of the Intervals 728m-2591m TD (-1S) and 1141m- 3443.6m TD (-1A)
Fugro Survey AS:	Navigation and Positioning Report of the Eirik Raude to well 7227/11-1S, Uranus
Gardline Geosurvey:	Barents Sea Site Survey; Well 7227/11-1S ST0489 Site Survey Block 7227/11 PL202 July 2004-11-05. Well 7227/11-1S Results Report
Geoservices:	Final Well Report Well 7227/11-1S and 1A (mudlogging) Fluid Logging and Analysis in Real Time, Well 7227/11-1A & 11-1S (FLAIR)
Oceaneering:	End of Well Survey Well 7227/11-1S (video)
Schlumberger:	Well 7227/11-1S Uranus, Reprocessing Sonic Scanner, Open and Cased Hole Well 7227/11-1S Uranus, Sonic Scanner Preprocessing Files: 19 OH, 20 OH/CH and 23 CH Well 7227/11-1S Uranus, Log files: FMI-(Dip)-GR Well 7227/11-1A Uranus, Log files: PEX-DSI-FMI 8.5" section Well 7227/11-1A Uranus, Log files: PEX-DSI-FMI 12.25" section
Statoil ASA:	Permanent P&A Programme, well 7227/11-1S & 11-1A Søknad om samtykke til leteboring med "Eirik Raude", Well 7227/11- 1S Well Programme PL202, well 7227/11-1S

App F Distribution list

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App G ENCLOSURES

Composite logs

Formation evaluation logs (Geoservices)

Pressure logs (Geoservices)