

NORNE



Norne Structure PL 128
Final Well Report Drilling
Well 6608/10-11 S (Trost prospect) and
6608/10-K-3 H (P17)

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Author(s)/Source(s): Sven-Arne Orby	
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Techn. responsible: Programme Drilling Engineer	Name: Sven-Arne Orby	Date/Signature: 7 Dec 06 Sven-Arne Orby
Controlled: Lead Drilling Engineer	Name: Børge Nygård	Date/Signature: 7/02/07 Børge Nygård
Verified: Norne Drilling Superintendent	Name: Oddmund Theodorsen	Date/Signature: 7/2-07 Oddmund Theodorsen
Approved: Norne Drilling Operation Manager	Name: Roger Tønnessen	Date/Signature: 7/2-07 Roger Tønnessen

FINAL WELL REPORT
Drilling
Licence no: PL128
Well: NO 6608/10-11 S &
NO 6608/10-K-3 H

Doc no
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Date
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1 General well data

Licence number: PL128
 Well name: NO 6608/10-11 S & NO 6608/10-K-3 H
 Slot: #3
 Type of well: Exploration well 6608/10-11 S and Production well 6608/10-K-3 H
 Water depth / airgap: 375,70 m / 24 m (All RT depths refer to TOA)
 Wellhead: 18 3/4" FMC UWD

Primary objective: For exploration well 6608/10-11 S (Trost) was to establish the existence of oil or hydrocarbons in the reservoir sandstone in Fangst and Båt Group in the Trost prospect. Trost was to be drilled in combination with 6608/10-K-3 H. Trost was drilled from 13 3/8" csg. Well 6608/10-K-3 H will drain oil from the Ile Formation in Segment C. The well was drilled in one horizontal section of approximately 780 m MD in the Upper Ile Formation (Ile2) to drain remaining oil in the south western part of Segment C.

Completion type: Perforated Liner

Section	Start time	End time	Rig name
NO 6608/10-K-3 H 17 1/2"	15.05.2006 23:00	19.05.2006 12:30	TRANSOCEAN ARCTIC
NO 6608/10-K-3 H MOVE	19.05.2006 12:30	02.09.2006 08:30	TRANSOCEAN ARCTIC
NO 6608/10-11 S MOVE	12.07.2006 01:00	17.07.2006 04:30	TRANSOCEAN ARCTIC
NO 6608/10-11 S 17 1/2"	17.07.2006 04:30	19.07.2006 09:30	TRANSOCEAN ARCTIC
NO 6608/10-11 S 12 1/4"	19.07.2006 09:30	26.07.2006 00:30	TRANSOCEAN ARCTIC
NO 6608/10-11 S 8 1/2"	26.07.2006 00:30	04.08.2006 06:30	TRANSOCEAN ARCTIC
NO 6608/10-11 S 6"	04.08.2006 06:30	10.08.2006 03:30	TRANSOCEAN ARCTIC
NO 6608/10-11 S PERM P&A	10.08.2006 03:30	15.08.2006 04:00	TRANSOCEAN ARCTIC
NO 6608/10-11 S MOVE	15.08.2006 04:00	16.08.2006 00:00	TRANSOCEAN ARCTIC
NO 6608/10-K-3 H RE-ENT.	02.09.2006 08:30	06.09.2006 04:00	TRANSOCEAN ARCTIC
NO 6608/10-K-3 H 12 1/4"	06.09.2006 04:00	12.09.2006 07:30	TRANSOCEAN ARCTIC
NO 6608/10-K-3 H 8 1/2"	12.09.2006 07:30	15.09.2006 04:00	TRANSOCEAN ARCTIC
NO 6608/10-K-3 H COMPL_LINER	15.09.2006 04:00	22.09.2006 03:00	TRANSOCEAN ARCTIC

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Structure centre coordinates :

Geographic: Lat. 66° 00' 48.498" N Long. 08° 03' 14.731" E
UTM: 7321920.75 m N 457090.23 m E

Wellhead coordinates :

Rectangular: 5.64 m N -2.31 m E (from structure centre)

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2 Exemption data

Exception from	Report no	Date	Title
NPD	None		
AR/WR	Projectnote Exploration well 6608/10-11 S	Juni 06	
Drilling program	No resistivity response from MWD while drilling 17 ½" hole (K-3 H)	May 06	
Drilling program	Set TD of 17 ½" section above Kai formation	May 06	
Drilling program	Finalize G-2 H before K-3 H after P&A of Trost since the strike has been called off	July 06	
Drilling program	Cased off Intra Lange and drilled 6" hole to TD (Trost)	August 06	
Drilling program	Plugged back 6" hole, 7" liner and into 9 5/8" casing	August 06	

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

3.1 RUH

Type (colour code)	Synergi code	Number of
Undefined		1
Green	5	15
Green	4	7
Sum		23

3.1.1 RUH details

WELLBORE: NO 6608/10-11 S

Synergi no	Hazard	Description
401187	4	Synergi 401187 (Closed) - 21.07.2006 - Accident - 6608/10-11 S Leak from Slip joint During circulation after completed drilling of 12 1/4" hole section, a leakage of OBM from the slip joint was discovered. The well was under constant suverillance, and the leakage was terminated after six minutes. A total volume of OBM between 1,1-1,2 m3 OBM was discharged to sea. With the given composition of OBM, the discharge of base oil was between 0,682-0,744 m3 (62 volume percent base oil).

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Synergi no	Hazard	Description
401187	4	Synergi 401187 (Closed) - 21.07.2006 - Accident - 6608/10-11 S Leak from Slip joint During circulation after completed drilling of 12 1/4" hole section, a leakage of OBM from the slip joint was discovered. The well was under constant surveillance, and the leakage was terminated after six minutes. A total volume of OBM between 1,1-1,2 m3 OBM was discharged to sea. With the given composition of OBM, the discharge of base oil was between 0,682-0,744 m3 (62 volume percent base oil).
402733	4	Synergi 402733 (Closed) - 01.08.2006 - Other non-conformities - Feil i røyr tally. Under oppbygging av borestrengen for utboring av 'shoe track' blei det lagt inn feil lengder på 3 1/2" DP. Attempted to drill cement with variable flow rates and pressure, variable RPM and WOB while displacing kill and choke lines, booster system and well to 1,30 sg OBM. Equal MW 1,30 sg in/out at 0445 hrs. Parametres: WOB 1-6 ton, 300-1000 LPM / 55 - 130 bar. RPM 0 -60 / 0-12 kNm torque.
404213	4	Synergi 404213 (Closed) - 12.08.2006 - Accident - Person injury. Pinched finger on rig floor One person opened a door between rig floor and the stand pipe manifold. He kept his left hand on the door frame when the wind pushed the door towards the door frame and hit and pinched the person's finger no.2. on his left hand. The injury occurred at 02.00 AM and the injured person visit the medic 08.00 AM, after the night shift.
400006	5	Synergi 400006 (Closed) - 10.07.2006 - Condition - TFG:Potensiell fallende gjenstand, 50 cm 2*4" boks liggende oppå tank. Skulle tømme forre drain tank på cellar dekk. Observerte en 50 cm lang tre bit, 2*4 boks. Denne lå på kanten og vippet og der er gang vei rett under
400008	5	Synergi 400008 (Closed) - 11.07.2006 - Condition - TFG: Potensiell fallende gjenstand, når riggen var deballastet observerte vi løs sparkelist og feste for rekkverk nede på babord akre søyle Inspiserte fra dekk under ankerhåndtering og så at store deller av gangveier, ledere og avsatser er helt og delvis revet av på søylene. Observerte rester av sparkelist og feste for rekkverk som var løs. Fjernet løs del (ca 20 kg) ved hjelp av bærbart skjæreutstyr og MOB båt.
400918	5	Synergi 400918 (Closed) - 17.07.2006 - Condition - TFG: Stropp løsnet fra riserkrankrok Område avspærret. Under riser kjøring med akre traverskrane ble det brukt lange stropper, disse måtte legges dobbelt for å redusere lengden. Grunnen til at for lange stropper ble brukt var at det ikke var flere stropper om bord i den rette lengden. Øyene ble lagt i den ene kroken og bukten i den andre. Stroppen måtte passes på av anhuker for at den ikke skulle klemmes over en skarp kant på riser. Når det var så vidt strekk i slingen, trakk anhuker seg unna for kranfører begynte å hive opp lasten. I det kranfører begynner å løfte på riseren, falt riser ned i den ene enden. Det ene øyet istroppen gled ut av kroken og riseren faller ned i den ene enden på underliggenede riser. Eneste forklaring på dette er at det ene øyet på stroppen ikke har vært skikkelig lagt inn i kroken og har nok balansert på tuppen av kroken for den gled av. Etter at stroppen glapp fikk kranen en "black-out", og riseren hang i denne posisjonen i 10 minutter til elektriker fikk resatt kranen. Vekt 4,5 tonn, fallhøyde 50 cm.
401347	5	Synergi 401347 (Closed) - 22.07.2006 - Other non-conformities - 6608/10-11 S Basket with MWD tools left behind in SSJ 6608/10-11 S Supply boat Normand skipper arrived rig with equipment for 8 1/2" section. During offloading and backloading it was discovered that a basket BL-8-03 containing MWD equipment from Schlumberger was missing. The basket contain equipment essential for the planned operation. Equipment missing was: 2 ea VISION 675 s/n: ARC6D-AA-1512, ARC6D-AA-03-02, and 6 3/4" RAB tool (backup) s/n: RBDC-BA-124.
402120	5	Synergi 402120 (Closed) - 29.07.2006 - Condition - TFG: Bolt og mutter var lagt oppi beam / H-bjelke på toppen av rammen for skidding / guiding av BOP. Det ble observert en bolt og en mutter liggende oppi H-bjelke på BOP-skidderamme som er plassert inntil skott. Bolten og mutteren ligger på øverste bjelke der hvor strekkfisen er montert.
402545	5	Synergi 402545 (Closed) - 01.08.2006 - Condition - TFG: Kjetting med låseklemme lå oppå lastebærer Det ble observert en kjettinglenke som lå oppå en lastebærer (IBC 011 1m3 tank). Kjetting ble fjernet og eier kontaktet. Det viste seg at kjettinglenke hadde blitt fjernet fra utstyr som var i bruk i forbindelse med loggearbeid, og skulle monteres når arbeid var ferdig.

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Synergi no	Hazard	Description
402744	5	Synergi 402744 (Closed) - 01.08.2006 - Condition - TFG: Potensiell fallende del av øvre racking arm førte til nedetid. Under tripping ut av brønnen skulle driller levere stand til øvre racking arm. På grunn av en mulig hydraulisk feil eller uoppmerksomhet fra derrickmann, fikk ikke derrickmann åpnet opp fingeren på armen før driller låret elevatoren ned på racking arm og knakk av skjærpinnene som holder armen i posisjon. Driller stoppet DDM umiddelbart før større skade oppsto.
402768	5	Synergi 402768 (Closed) - 03.08.2006 - Condition - TFG: Det ble funnet ett løst streppe- / strammebånd med strammer oppe på toppen av Altinex-unit på grating. Det ble funnet ett løst strammebånd med strammer oppe på toppen av Altinex-unit liggende løst på grating. Ved dårlig vær og mye vind kunne dette ha blåst ned på området under som er lastestasjon på styrbord side, og arbeidskonteiner til FKS.
402969	5	Synergi 402969 (Closed) - 04.08.2006 - Condition - TFG: Løse stoppskiver på øvre arm. Under inspeksjon av øvre arm i boretårnet viste det seg at stoppskivene for rørdimensjonsplaten hadde skrudd seg ut. Forhold ble straks utbedret og tillopet rapportert.
404439	5	Synergi 404439 (Closed) - 15.08.2006 - Condition - TFG: Skadet løfte skrev under løft fra forsynings fartøy. Under løfting av Umbilical reel nr: LS UMB. winch 100036685 fra Normand Skipper, huket en part av av løfte skrevet seg under en konstruksjon på toppen av vinsjen. Part på løfteskrevet ble skadet og hiv ble satt ned på båt. Kranfører observerte at part på løfteskrevet kom under konstruksjonen, men rakk ikke å slakke ned tidsnok. Vinsjen var så høy at mannskapet på Normand Skipper ikke kunne se dette tidsnok. Uheldig konstruksjon på vinsj. Vind: 30 knots. Bølge høyde 2,5 m.
404440	5	Synergi 404440 (Closed) - 14.08.2006 - Near miss - Vanntett dør inn til sveiseverksted stod åpen. Ved inspeksjon på cellardeck ble det oppdaget at vanntett dør inn til sveise verksted stod åpen. det var ingen i verkstedet.

WELLBORE: NO 6608/10-K-3 H

Synergi no	Hazard	Description
409724	4	Synergi 409724 (Closed) - 15.09.2006 - Other non-conformities - Feil lengde påført på 7" liner jnt 7" liner ble bestilt fra basen Sandnesjøen klar til kjøring; dvs. målt, påført lengde, drifet og påført gjengefett. Ved rutine kontroll av lengde ombord på Transocean Arctic ble det oppdaget at en av jnt som var merket med lengde 11,96 m var 11,46 m.
410069	4	Synergi 410069 (Closed) - 16.09.2006 - Condition - TFG: Potensielt fallende bolt og magnet på magnetåk Under levering av 7" liner til boredekk ble det oppdaget at magnetåket hang skjevt på den ene siden. Etter nærmere undersøkelse ble det oppdaget at en bolt var knekt på magnetåket. På magnetåket henger det fire magneter. Da bolt gikk av kunne i verste fall hele magneten (nr 3 av 4 forfra) falt av. Etter at det oppstod brudd i bolten var det bare en mindre bolt som er der for å hindre magneten i å rotere, som holdt magneten oppe. Den knekte bolten ble fjernet og en ny bolt ble montert på magneten. Grunnen til bruddet i bolten var at det var boret hull for sikringssplint igjennom mutter og bolt på strekkside av mutter. Det bjennomgående hullet svekket derfor godset i bolten i ett område der det oppstår strekkspenninger når man bruker åket. Dette førte til at man fikk brudd i bolten. Området var som alltid sperret av der løfteoperasjonen pågikk.
410069	4	Synergi 410069 (Closed) - 16.09.2006 - Condition - TFG: Potensielt fallende bolt og magnet på magnetåk Under levering av 7" liner til boredekk ble det oppdaget at magnetåket hang skjevt på den ene siden. Etter nærmere undersøkelse ble det oppdaget at en bolt var knekt på magnetåket. På magnetåket henger det fire magneter. Da bolt gikk av kunne i verste fall hele magneten (nr 3 av 4 forfra) falt av. Etter at det oppstod brudd i bolten var det bare en mindre bolt som er der for å hindre magneten i å rotere, som holdt magneten oppe. Den knekte bolten ble fjernet og en ny bolt ble montert på magneten. Grunnen til bruddet i bolten var at det var boret hull for sikringssplint igjennom mutter og bolt på strekkside av mutter. Det bjennomgående hullet svekket derfor godset i bolten i ett område der det oppstår strekkspenninger når man bruker åket. Dette førte til at man fikk brudd i bolten. Området var som alltid sperret av der løfteoperasjonen pågikk.

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Synergi no	Hazard	Description
389561	5	Synergi 389561 (Closed) - 16.05.2006 - Condition - TFG: To bolter med mutter som ikke var sikret på FMC/KOS Support Frame CBRT Det ble oppdaget at to bolter med mutter (ca. 25 cm x Ø 24mm) var løse. Det var ingen sikring på mutter. Begge muttrene var løse og kunne ha skrudd seg ut, og vi ville ha fått fallende gjenstander om dette hadde skjedd når ramme ble løftet med krane.
390202	5	Synergi 390202 (Closed) - 19.05.2006 - Condition - TFG: Person holdt på å miste verktøyveske ned fra radarmast da feste til skulderstroppen til vesken røk. Person skulle opp i radarmast mellom helidekk og brobygning for å skifte en lypære da verktøyvesken huket seg fast. Dette førte til at mellomfeste mellom veske og stropp røk. Person grep fatt i vesken og forhindret den i å falle ned til nivå under. Området rundt mast var avsperrert i forbindelse med jobben som skulle gjøres.
407769	5	Synergi 407769 (Closed) - 04.09.2006 - Other non-conformities - Topdrive maks 90 RPM Under milling av vindu i 13 3/8" casing var det ønskelig å bruke 120 - 130 RPM. Topdrive ga kun 90 RPM.
409802	5	Synergi 409802 (Closed) - 17.09.2006 - Condition - TFG: Ved utlegging av 7" liner var centralizer løs. Ved utlegging av 7" liner ble det oppdaget at klemme for centralizer var løs. Når liner var koblet fra kunne vedkommende dra låsering/centralizer rett av liner.

3.2 Experience listing

Subject: Top wiper plug
Section: NO 6608/10-K-3 H, 17 1/2"
Rep date: 18.05.2006
Keywords: CEMENTING
Downtime:
Comp inv: Halliburton
References:
Synergi no:
Synergi desc:

Pot time improvements:

Cost:

Description:

Required pumped volume to shear top wiper plug is 4360 litre. In detailed procedure for running and cementing 13 3/8" csg 4400 litres SW was suggested to displace with cement unit.

If switching over just before shearing of wiper plug, there is a risk of plug floating and getting stuck.

This was identified during preparation of detailed procedure on board.

Plug sheared at 4500 litres.

Immediate solution:

1. This volume was increased to 4800 litres to ensure shearing of plug before switching over to MP's.

Future recommended solution:

Include margin in volume pumped from cement unit to ensure shearing of wiper plug.

Subject: Drilled 6" hole with Schl. motor (A475M4560XP)
Section: NO 6608/10-11 S, 6"

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Rep date: 01.08.2006

Keywords: BHA

Downtime:

Comp inv: Statoil

References:

Synergi no:

Synergi desc:

Pot time improvements:

Cost:

Description:

The pressure peak in Intra Lange formation was cased off by 7" liner and 6" hole drilled to 3725 m MD with 1,30 sg OBM. In order to mobilize equipment and ready for shipment, decided town to use motor for 6" hole since long tangent section planned. Experienced from drilling was limited by 50 bar differential pressure above motor before string stalled out. Average 18 m/hrs ROP recored. Max 8 mt WOB while drilling based on buckling calculation with 3 1/2" DP including in drilling assembly.

Immediate solution:

Future recommended solution:

If more WOB, hole cleaning and slide required is other drillstring, PD BHA in combination with aggressive bit recommend. Geologist dep. shall not set limit to 20 m/hrs as limit. If Geologist dep. need help to sampling can we send out extra people.

Subject: Testing BOP prior to drill into reservoir

Section: NO 6608/10-11 S, 6"

Rep date: 04.08.2006

Keywords: BOP/WB/BP

Downtime:

Comp inv: Statoil

References:

Synergi no:

Synergi desc:

Pot time improvements: 5

Cost:

Description:

Days since last BOP test was 10 days when 6" drilling BHA was RIH. Drilled shoetrack and POOH with mill tooth bit. Tested BOP before re-run of 6" drilling BHA.

Immediate solution:

Tested BOP with SLT

Future recommended solution:

Carried out BOP testing while RIH w/ drilling BHA, before drilling out of shoetrack. This will save us for rund trip with SLT which take approximately 5 hrs.

Subject: Unable to pass PBR with CMR tool string.

Section: NO 6608/10-11 S, 6"

Rep date: 07.08.2006

Keywords: LOGGING/EVALUATION

Downtime:

Comp inv: Schlumberger

References:

Synergi no:

Synergi desc:

Pot time improvements:

Cost:

Description:

Due to the strong magnet on the CMR and the bow (on the opposite side) used to push the magnet against the borehole, in this case, the casing. The tool could not pass the liner lap and run into the 7" liner. It is believed that the magnet hung up at the top of the liner. There where made several attempts with different RIH speed, but no success. The tool stopped at the same place every time.

Immediate solution:

Future recommended solution:

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Subject: Several logging run carried out in Trost exploration

Section: NO 6608/10-11 S, 6"

Rep date: 07.08.2006

Keywords: LOGGING/EVALUATION

Downtime:

Pot time improvements:

Comp inv: Schlumberger

References:

Synergi no:

Cost:

Synergi desc:

Description:

The wireline logging in the Trost well is now finished. We had some misruns and some good runs. It is not that common to log in 6" hole in a deviated well. The largest wireline tools have an OD above 5 in and there not much room bad hole conditions.

Run 1: PEX-AIT (GR-Den-Neu-Res-1 armed calliper): A very good run, had some problems with the software, but was sorted out. No stickup or hang-ups. The calliper showed a very in gauged hole. Good run.

Run 2: Planned CMR+-ECS (EMS, 6 armed calliper). T Run: CMR+

The ECS was taken out due to large string and to avoid getting stuck. The EMS was taken out due to very good hole conditions. Unfortunately the CMR could not pass the 7" liner lap. Due to the strong magnet on the CMR and the bow (on the opposite side) used to push the magnet against the borehole, in this case, the casing. The tool could not pass the liner lap and run into the 7" liner. It is believed that the magnet hung up at the top of the liner. There where made several attempts with different RIH speed, but no success. The tool stopped at the same place every time.

Run 3: MDT-DSI: Took several pressure points. No problems retracting the probe from the borehole. Experienced a lot of sticking and some hang ups while running in and out of hole. Especially in the Melke and in Not shale. Due to several hang-ups the GR correlation is difficult. But most of the times it seemed to on depth. Good run.

Run 4: MSCT

Experienced a lot hang-ups going into the open hole in the Melke Fm, had to pull max to get loose after a "stuck" situation at 3439 mMD. It was decided to pull out of the hole and do a wiper trip in front of more wireline logging runs. It was later decided that the coring should be taken out of the logging program. The communication of the cancelling was not good. The logging witness observing and planning the well found out from the drilling engineer that the MSCT run was cancelled. The day after the evaluation geologist who has been following up the well from the beginning to the end, found out from the petroleum engineer offshore that it was cancelled. My thought is that it should go through the operational geologist on duty to the logging witness offshore who tells the company man offshore that a run is cancelled.

~The Brugdan project requested the backup MSCT tool and pushed the Trost project to run the MSCT before the sampling was conducted. I know hear that the Brugdan project is delayed for a couple of days. I think this should be discussed between the managers how to handle a situation like this in the future.

Run 5: MDT sampling. Started this run right after the wiper trip. Experienced sticking in the Melke fm and in the Not shale. Had some high tension in the Not sst, probably limestone stringers. Found an ok point with a mobility of 33.6 mD/cP. Got several samples, 5x450 cc (had 1 misfire), 1x1G and 1x2 3/4 G. Two of the samples were taken rather early in the clean up sequence, this just to get some samples if anything should go wrong. This was a really good run, had no problems retracting

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the tool. No over pull was experienced to pull free from the borehole. From the LFA it seemed that we had low contamination below 10%. The results from the gas samples will be finished later today.

In conclusion the logging was a success regarding downtime. The logging in all used 55.5 hrs with downtime of 0.75hrs due to software problems, in all an operation factor of 98.7 %.

The quality of the data we got seems to be very good.

The only big problems seem to be the Melke Fm which seems to be trouble zone for big tools in a 6"

Immediate solution:

Future recommended solution:

Subject:	MDT sampling of gas samples	
Section:	NO 6608/10-11 S, 6"	
Rep date:	11.08.2006	
Keywords:	LOGGING/EVALUATION	
Downtime:		Pot time improvements:
Comp inv:	Statoil	
References:		
Synergi no:		Cost:
Synergi desc:		

Description:

During MDT sampling of gas sample in 6" hole, the volume of 340 liter was pumped into the well. The well was filled with 1,30 sg OBM which gave approx. 70 bars overbalance. Prior to plug back open hole, the cement stinger was run to TD and hole circulated in order to condition the mud. Circulation commenced about 24 hrs after the gas was pumped into the wellbore. A short while after circulation was started a high gas readings were experienced. The gas migrated up well bore and accumulated in the riser. High gas readings lasted until BU was circulated. Due to high overbalance there was no danger that this amount of gas would cause the risk of kick.

Immediate solution:

Circulate gas out.

Future recommended solution:

Evaluate the risk of pumping of gas into well bore while taking MDT samples in wells with low mud overbalance. The underbalance can result in kick.

Subject:	Planning Gyro as contingency equipment	
Section:	NO 6608/10-K-3 H, RE-ENT.	
Rep date:	03.09.2006	
Keywords:	WHIPSTOCK	
Downtime:		Pot time improvements:
Comp inv:	Statoil	
References:		
Synergi no:		Cost:
Synergi desc:		

Description:

On 6608/10-K-3H Gyro has been mobilised as contingency equipment during the operation of orientating the Whipstock and milling 13 3/8" casing. However only Gyrodata personnel came on board on the first of September. AKWS personnel arrived in Brønnøysund on the 3rd of September. The initial plan was to keep AKWS personnel on stand by in Brønnøysund.

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Running gyro is only planned as contingency in case of failure in MWD equipment. It has been judged unlikely to be run in the whipstock/milling phase.

Immediate solution:

AKWS personnel mobilise when in Brønnøysund in order to be stand by offshore together with Gyrodata personnel.

Future recommended solution:

In the future, for similar operations (whipstock and milling) it is suggested to mobilise the equipment offshore, and have relevant personnel on standby onshore.

Subject: Back Up equipment when drilling sections

Section: NO 6608/10-K-3 H, RE-ENT.

Rep date: 04.09.2006

Keywords: DRILLING EQUIPMENT

Downtime:

Pot time improvements:

Comp inv: Statoil

References:

Synergi no:

Cost:

Synergi desc:

Description:

During mobilisation for drilling 12 1/4" section back up equipment was mobilised. This includes:

1. monels (weight: 2000 kg)
2. short collars weight: 1000 kg)
3. stabilisers
4. MWD and powerdrive 900

This equipment is packed in baskets, often with one, or two pieces in each. In a situation with limited As a result of this, the rig fills up quickly. Several of the baskets used have payload of 11000 kg, but only filled with one or two monels, i.e. insufficient use of baskets.

Immediate solution:

Future recommended solution:

Have a structured go through of what equipment to be kept in B/U on board the rig, and what can be kept in stand by in SSJ.

Should have on board:

1. Three full length monels and one short (in case of need for motor)
2. One non magnetic "pony"
3. One full B/U of MWD and Powerdrive 900.
4. One motor

Further discussions should be about:

5. Size and layout of baskets that are used. Often 3,7 m baskets are sent out with one or two items on board.
6. Long baskets with high payload should be optimised with respect to filling/load. Cradles should be used to allow safe and efficient filling.
7. What equipment can be mobilised to the base, and kept there until required.

Subject: Milling window in casing, twisting off mill, fish in hole.

Section: NO 6608/10-K-3 H, RE-ENT.

Rep date: 04.09.2006

Keywords: MILLING

Downtime: 20

Pot time improvements:

Comp inv: Smith Red Baron

References: 407774

Synergi no:

Cost:

Synergi desc:

Description:

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When milling window in 13 3/8" casing from 1322 - 1326 m MD progress was good from 07:00 until approx. 12:00. Torque values varied between 7-27 KNm in that period. From approx. 12:00 little or no progress was made. Torque values decreased from about 20 to around 9 KNm, weight on bit was increased up to 20 MT.

Discussion were made among invloved personnel. POSSible solutions and reasons for lack of progress discussed. At approx. 14:30 it was decided to prepare for POOH and inspect/replace mill.

For details on values see reports on Team site 6608/10-K-3H;

□ Geoservices report: "Time vs data Mill Window BHA1 13_3_8 csg". Note: SI units, torque [KNm].

□ Smith Red Baron report: "Job log Mill Window 13_3_8 csg" / "Whipstock report". Note: Field units, torque [Kft./lbs.]

□ Pictures are available on "Picture Library" on same TS.

Immediate solution:

POOH, realised twisted off mill. Made up new BHA # 2, removed MWD from BHA. RIH and milled window to TD as required per procedure. POOH.

Future recommended solution:

Keep close watch on parameters during milling process. Keep close track on changes in parameters such as;

1. flow pmps
2. torque
3. WOB

Subject: Taking formation pressure points with Periscope

Section: NO 6608/10-K-3 H, 8 1/2"

Rep date: 15.09.2006

Keywords: FPWD

Downtime:

Pot time improvements:

Comp inv: Schlumberger

References:

Synergi no:

Cost:

Synergi desc:

Description:

Taking formation pressure points with Periscope worked ok. Got good test and good result.

Have to be aware of stuck issue as the tool have to stand still for 15-20 min to get the pressure point.

Pulled 30 ton overpull to free the string after the test.

Immediate solution:

Future recommended solution:

Subject: Possible interference while drilling close to production well B-4 DHT2

Section: NO 6608/10-K-3 H, 8 1/2"

Rep date: 21.09.2006

Keywords: DIRECTIONAL

Downtime:

Pot time improvements:

Comp inv: Schlumberger

References:

Synergi no:

Cost:

Synergi desc:

Description:

There was concern that planned trajectory was passing within 20 m of B-4 DHT2 at a depth of 2800 m MD in the 8 1/2" section and there was potential for magnetic interference from this well. The likelihood was small because K-3 H was passing B-4 DHT2 of 90 deg. and that even if interference was experienced it would be in actual fact when drilling no interference was reported.

Immediate solution:

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Future recommended solution:

Subject: Unstable Melke and Not Formations.

Section: NO 6608/10-K-3 H, 8 1/2"

Rep date: 21.09.2006

Keywords: FORMATION

Downtime:

Comp inv: Statoil

References:

Synergi no:

Synergi desc:

Pot time improvements:

Cost:

Description:

The 9 5/8" casing was set at 2671m MD (2524 m TVD) in Melke Fm; incl. 60 deg. The 8 1/2" horizontal hole was drilled through Melke, Garn, Not and Ile 2.2 formation with 1,26 sg OBM. The high DLS up to 7 degrees were created below 9 5/8" shoe in lower part of Melke Fm. After reaching TD, the well was circulating clean by circulating 2,5 x BU. At TD, when starting POOH the string had to be pulled with 120 tonnes O/P. The O/P was most likely caused by differential sticking as the result of high overbalance. After freeing the string no problems were encountered while POOH. The well was circulated clean with BHA inside 9 5/8" casing by pumping 1,5 x BU.

The 7" liner was run and the obstruction was hit at 2759 m MD (2560 m TVD), in Melke Fm. The liner had to be pulled out. The liner was run with 1 and 2 centralizers on each joint. It was believed that the reason for problems with running liner was high DLS area right below the 9 5/8" shoe. The wiper trip assy with milled tooth bit, 2 each 8 3/8" stabilizer and MWD was run in order to smooth the well path. The assembly stopped at the same depth as liner and had to be reamed through interval from 2759 m MD to 2785 m MD (lower part of Melke Fm). During reaming, the hole packed off several times. The hole was backreamed than to 9 5/8" casing. Huge amount of cuttings came over shaker; silt and fine sand and coarse shale cut by milled tooth bit. The hole was circulated clean and wiper assembly was run in open hole. There was no problem while running through Garn Fm. In following Not shale the tight hole was experienced again (3069 mMD, 2605 m TVD - 3100 m MD, 2607 m TVD) and had to be reamed through. There was no problem to trip further through Ile 2.2 sands until another obstruction was hit in Not shale at 3442 m MD, 2624 m TVD after pathing the fault. This interval had to be reamed as well. There was no problem to trip to TD through the Ile 2.2 sands. At TD the hole was circulating clean and displaced to 1,30 sg OBM. The assembly was then pulled out into 9 5/8" casing and the hole was circulated clean.

The 7" liner was run to TD and cemented without any problems. Only 6 centralizers were mounted on the shoetrack.

The conclusion is, that the main reason for hole problems was collapsed shale in Melke and Not formation due to too low mud weight.

Immediate solution:

Future recommended solution:

Make sure that MW is sufficient to stabilize Melke and Not Formations.

Subject: Centraliser placement on liner joints

Section: NO 6608/10-K-3 H, COMPL_LINER

Rep date: 15.09.2006

Keywords: CASING/LINER

Downtime:

Comp inv: Statoil

References:

Synergi no:

Synergi desc:

Pot time improvements:

Cost:

Description:

Stop clamps on some of the liner joints were too close to the box and had to be moved down on the joint to be able to set slips. Need min 1.45 m distance between bottom of box and upper centraliser stop clamp to get enough space for elevator and slips when running liner in hole.

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The joint lengths are varying from 10.8 m to 12.2 m. With the current installation instruction (se attachment) the problem occurs on the short joints. For liner joints with 2 centralisers the installation instructions should be changed. Should not specify fixed length between centralisers. Specify minimum distance from pin and box to stop clamp.

Immediate solution:

Moved centraliser stop ring down on joint to make space for setting slips.

Future recommended solution:

Change installation instructions for the centralisers (see attached drawing).

Subject: 7" liner var dopet både på pinn og box når liner ankommet riggen
Section: NO 6608/10-K-3 H, COMPL_LINER
Rep date: 15.09.2006
Keywords: HOLE CLEANING
Downtime:
Comp inv: Statoil
References:
Synergi no:
Synergi desc:

Pot time improvements:

Cost:

Description:

Når vi er på TD med 8 1/2" BHA og sirk. BU, kan vi rigge up WF uts. Ved oppgjøring av liner med OCR-325 AG fra land som var litt tørr, hadde vi problemer med å få en tilfredsstillende graf. For å løse dette problemet måtte vi vaske boks og dope pin end med litt lub seal pga høy spin in torque med OCR-325 AG dope. Ulempen med OCR-325 AG gjengene tåler mindre inn/utskruing som kan medføre rekutt av rør etter utlegging. Erfaringer viser at lube seal er rett type dope for å hindre/ redusere tiden det tar med oppgjøring av con. med OCSR 235.

Immediate solution:

Future recommended solution:

Subject: Wrong measurement of 7" liner joint from shore base
Section: NO 6608/10-K-3 H, COMPL_LINER
Rep date: 16.09.2006
Keywords: CASING/LINER
Downtime:
Comp inv: Statoil
References:
Synergi no:
Synergi desc:

Pot time improvements:

Cost:

Description:

The 7" liner was ordered from shore ready for RIH (measured, marked, drifted and doped). Re-measured every 5th joint during RIH liner. Joint #18 was marked with 11.96 m from shore but measured (and verified) on rig to 11.46 m.

Discrepancy on tubular lengths is critical for all operations in the well!!!.

Immediate solution:

Corrected tally and continued RIH 7" liner.

Future recommended solution:

All tubing and casing to be sent out to rig ready prepared for RIH. Have to measure joints twice onshore (measure tape and laser) by different people.

Re-measure every joint on rig when RIH.

Subject: Liner hanger packer slips set when POOH with liner hanger
Section: NO 6608/10-K-3 H, COMPL_LINER
Rep date: 17.09.2006

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Keywords: CASING/LINER

Downtime:

Comp inv: Baker Oil Tools

References:

Synergi no:

Synergi desc:

Pot time improvements:

Cost:

Description:

Pulled out with 7" liner. Observed string taking weight when pulling top of liner PBR through diverter. Found liner hanger packer slips set when POOH.

Found that diverter element was in locked position. Top of PBR had most likely hung up on the diverter element when POOH. This activated the slips setting mechanism (see attached drawings). OD of packer slips in set position was 9.75".

Had no heave during operation. String seemed well centralized in rotary.

Immediate solution:

LD liner hanger and prepare to run BU hanger.

Future recommended solution:

Ensure diverter element is unlocked when pulling large OD tools through, to avoid sharp edges to hang up.

Centralise string when RIH/POOH liner hanger through diverter. Use compensator if possible.

Subject: Released ball manually.

Section: NO 6608/10-K-3 H, COMPL_LINER

Rep date: 21.09.2006

Keywords: CASING/LINER

Downtime:

Comp inv: Baker Oil Tools

References:

Synergi no:

Synergi desc:

Pot time improvements:

Cost:

Description:

Attempted to release setting ball by remote panel, no go. we had 110psi pressure on panel. So we had to release the ball manually one man in ride winch.

Immediate solution:

Future recommended solution:

The cement head was tested onshore and everything worked. So we need to check the cement head onshore before we take any solutions.

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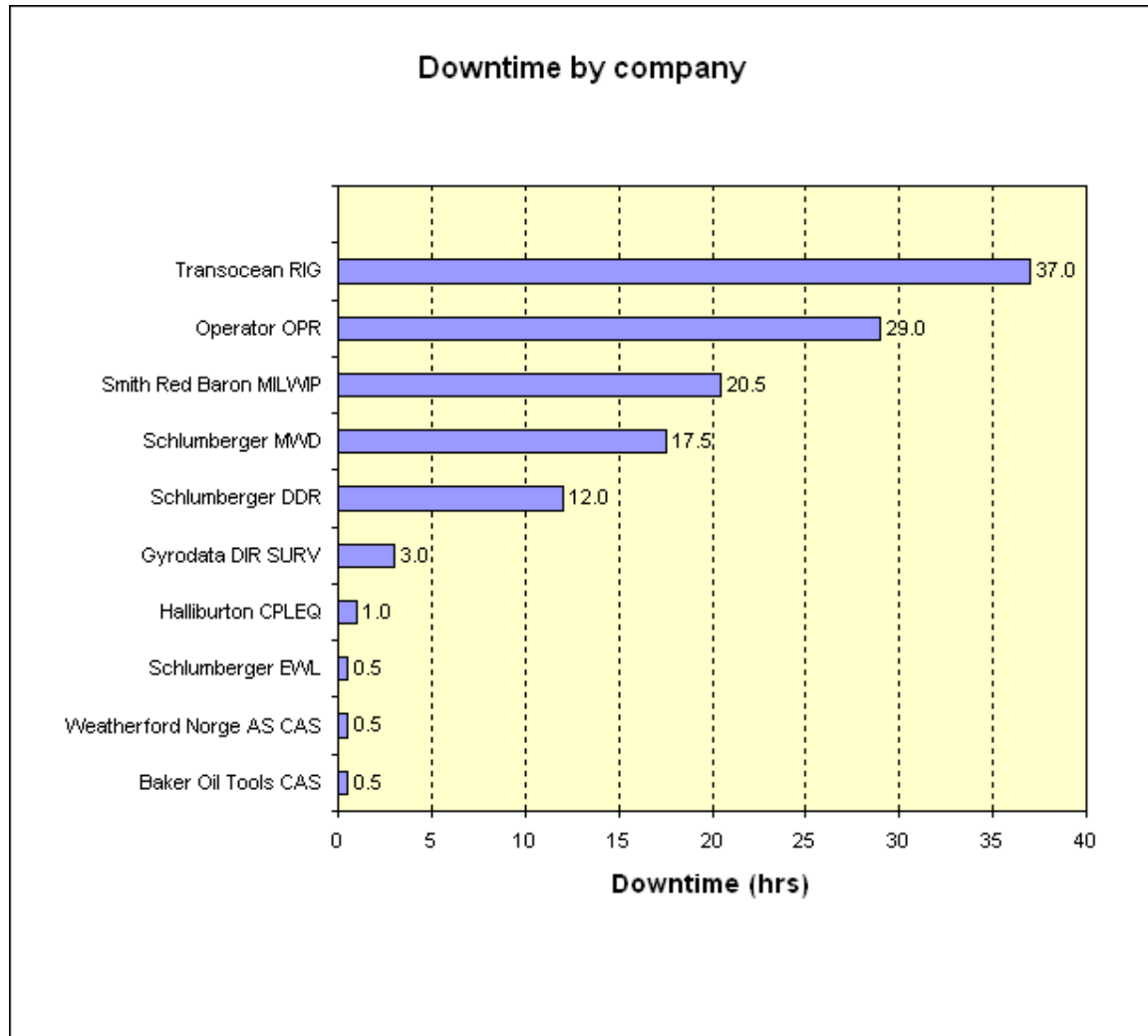
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3.3 Incidents by service and company



SERVICE COMPANY:
WELLBORE: NO 6608/10-11 S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
26.07.2006 00:30:00	-					18,0		
			Total	0				

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SERVICE COMPANY: Casing Crew Service CAS Baker Oil Tools
WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
21.09.2006 06:00:00	CAS-E20 Other equipment	410554	måtte frigjøre lande ball manuelt på sement hode.	63750	3060000	0,5	100	0,5
			Total	63750				0,5

SERVICE COMPANY: Casing Crew Service CAS Weatherford Norge AS
WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
15.09.2006 09:00:00	CAS-E01 Remote oper. tongs w/integrated B-U	409621	Skiftet roller på WF tang	63750	3060000	0,5	100	0,5
			Total	63750				0,5

SERVICE COMPANY: Compl/sand contr. equip. CPLEQ Halliburton
WELLBORE: NO 6608/10-11 S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
31.07.2006 23:00:00	CPLEQ-01 Procedure	402562	Under sementering av 7" Liner lekket trykket i bulk tank (cmt silo #2).	125500	3012000	1,0	100	1,0
			Total	125500				1,0

SERVICE COMPANY: Directional Drilling DDR Schlumberger
WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
16.05.2006 14:30:00	DDR-05 Missing target	389594	Powerdrive failure - 17 1/2" section	1461000	2922000	12,0	100	12,0
			Total	1461000				12,0

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SERVICE COMPANY: Directional survey DIR SURV Gyrodata
WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
11.09.2006 04:30:00	DIR SURV-E01 Electrical logging equipment	408762	Erratic data from CCL. Had to POOH and change CCL.	367500	2940000	3,0	100	3,0
			Total	367500				3,0

SERVICE COMPANY: Electric Wireline Logging EWL Schlumberger
WELLBORE: NO 6608/10-11 S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
07.08.2006 04:00:00	EWL-E03 Acquisition/Computers	403161	Trouble shooting on GR offset problem.	63750	3060000	0,5	100	0,5
			Total	63750				0,5

SERVICE COMPANY: Measurement While Drilling MWD Schlumberger
WELLBORE: NO 6608/10-11 S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
04.08.2006 06:30:00	MWD-E01 Transmission	402912	MWD failure while drilling 6" hole	2129250	2920114	17,5	100	17,5
			Total	2129250				17,5

SERVICE COMPANY: Milling/Wipstock MILWIP Smith Red Baron
WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
04.09.2006 12:00:00	MILWIP-E01 Mill assembly	407774	Twist off on 7 1/2" body below follow mill.	2453000	2871805	20,5	100	20,5
			Total	2453000				20,5

SERVICE COMPANY: Operator OPR Operator

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WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
18.05.2006 16:30:00	CAS-E20 Other equipment	390167	Umulig å skru av plastprotectorer på 13 3/8" casing.	122000	2928000	1,0	100	1,0
01.09.2006 00:00:00	RIG-08 Unscdeduled maintenance	407429	6608/10-K-3H Twist on anchor line #5	428250	2936571	3,5	100	3,5
16.09.2006 14:00:00	RIG-03 Procedure not followed	409723	Pumpet spacer istendenfor OBM ved sirkulering.	975000	955102	24,5	100	24,5
			Total	1525250				29,0

SERVICE COMPANY: Rig Operations RIG Transocean

WELLBORE: NO 6608/10-11 S

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
20.07.2006 06:00:00	RIG-E303 Travelling block	401152	Leaking Wash pipe	185250	8892000	0,5	100	0,5
20.07.2006 12:30:00	RIG-E303 Travelling block	401152	Leaking Wash pipe	185250	4446000	1,0	100	1,0
21.07.2006 16:00:00	RIG-08 Unscdeduled maintenance	401191	Installed jaw on iron roughneck.	63750	3060000	0,5	100	0,5
27.07.2006 06:00:00	RIG-E388 General	401969	Tap av lufttrykk	63750	3060000	0,5	100	0,5
01.08.2006 15:30:00	RIG-E341 Vert pipe handling system	402704	Nedetid. Stopp i tripp inn i hullet. Problemer med øvre arm.	64250	3084000	0,5	100	0,5
14.08.2006 11:30:00	RIG-E03 BOP stack/valves	404262	Spooling on yellow pod winch failed.	248000	2976000	2,0	100	2,0

WELLBORE: NO 6608/10-K-3 H

Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
01.09.2006 08:30:00	RIG-E09 Electric power system	407418	6608/10-K-3H Problems with Silicon Control Rectifier (Electrical distribution system) on anchor winch 1.	124500	2988000	1,0	100	1,0

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Incident start time	Failure code	Synergi no	Title	Quality cost		Downtime		
				NOK	NOK/d	Total hrs	Comp share %	Comp share hrs
02.09.2006 08:30:00	RIG-E08 Hydraulic power system	407763	6608/10-K-3H Operation stopped due to burst on hydraulic support to BOP skid.	128000	3072000	1,0	100	1,0
08.09.2006 06:00:00	RIG-E388 General	408413	Damaged wash pipe on DDM.	63750	3060000	0,5	100	0,5
09.09.2006 06:00:00	RIG-E347 Pipe handling equ/sys other	408557	Feil på "pipe shutle" på forre rørdekk.	63750	3060000	0,5	100	0,5
09.09.2006 12:00:00	RIG-E06 Deck crane	408573	Problems with brake on hoist system for magnet yoke on overhead crane. 0,5 hours down time.	106250	5100000	0,5	100	0,5
12.09.2006 15:30:00	RIG-E16 Cuttings reinjection system	409196	Problems with cuttings conveyor.	60750	2916000	0,5	100	0,5
14.09.2006 15:00:00	RIG-E388 General	409531	Leak in wash pipe on DDM.	63750	3060000	0,5	100	0,5
16.09.2006 12:00:00	RIG-03 Procedure not followed	409723	Pumpet spacer istendenfor OBM ved sirkulering.	975000	1141463	20,5	100	20,5
18.09.2006 00:00:00	RIG-E14 Mud pumps	409881	Shut down mud pump no. 1	124500	2988000	1,0	100	1,0
20.09.2006 00:00:00	RIG-E06 Deck crane	410216	Problems with brake on pipe deck gantry crane.	610500	2930400	5,0	100	5,0
20.09.2006 22:30:00	RIG-E10 Drawwork	410385	Got backlash on drawwork and tangeled drill line on drum.	63750	3060000	0,5	100	0,5
21.09.2006 00:30:00	RIG-E342 Drillfloor tub handl system	410386	Got hydraulic leak on iron rough neck	63750	3060000	0,5	100	0,5
			Total	3258500				37,0

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3.4 Time distribution

Section	Start time	Length m	Budget		TL		Actual		Ops (f)
			hrs	days	hrs	days	hrs	days	
NO 6608/10-K-3 H 17 1/2"	15.05.2006 23:00	904,0	82,0	3,4	52,0	2,2	85,5	3,6	84,2
NO 6608/10-K-3 H MOVE	19.05.2006 12:30	0,0	52,0	2,2	48,0	2,0	58,5	2,4	92,3
NO 6608/10-11 S MOVE	12.07.2006 01:00	0,0	35,0	1,5	28,0	1,2	123,5	5,1	100,0
NO 6608/10-11 S 17 1/2"	17.07.2006 04:30	0,0	48,0	2,0	40,0	1,7	53,0	2,2	100,0
NO 6608/10-11 S 12 1/4"	19.07.2006 09:30	1480,0	165,0	6,9	138,0	5,8	159,0	6,6	98,7
NO 6608/10-11 S 8 1/2"	26.07.2006 00:30	541,0	179,5	7,5	185,5	7,7	222,0	9,3	91,0
NO 6608/10-11 S 6"	04.08.2006 06:30	333,0	77,0	3,2	130,0	5,4	141,0	5,9	87,2
NO 6608/10-11 S PERM P&A	10.08.2006 03:30	0,0	134,5	5,6	114,0	4,8	120,5	5,0	98,3
NO 6608/10-11 S MOVE	15.08.2006 04:00	0,0	20,0	0,8	24,0	1,0	20,0	0,8	100,0
NO 6608/10-K-3 H RE-ENT.	02.09.2006 08:30	0,0	71,0	3,0	59,0	2,5	91,5	3,8	76,5
NO 6608/10-K-3 H 12 1/4"	06.09.2006 04:00	1349,0	195,0	8,1	159,0	6,6	147,5	6,1	96,9
NO 6608/10-K-3 H 8 1/2"	12.09.2006 07:30	1172,0	100,0	4,2	82,0	3,4	68,5	2,9	98,5
NO 6608/10-K-3 H COMPL LINER	15.09.2006 04:00	0,0	71,0	3,0	122,0	5,1	167,0	7,0	68,3
Sum			1230,0	51,4	1181,5	49,4	1457,5	60,7	

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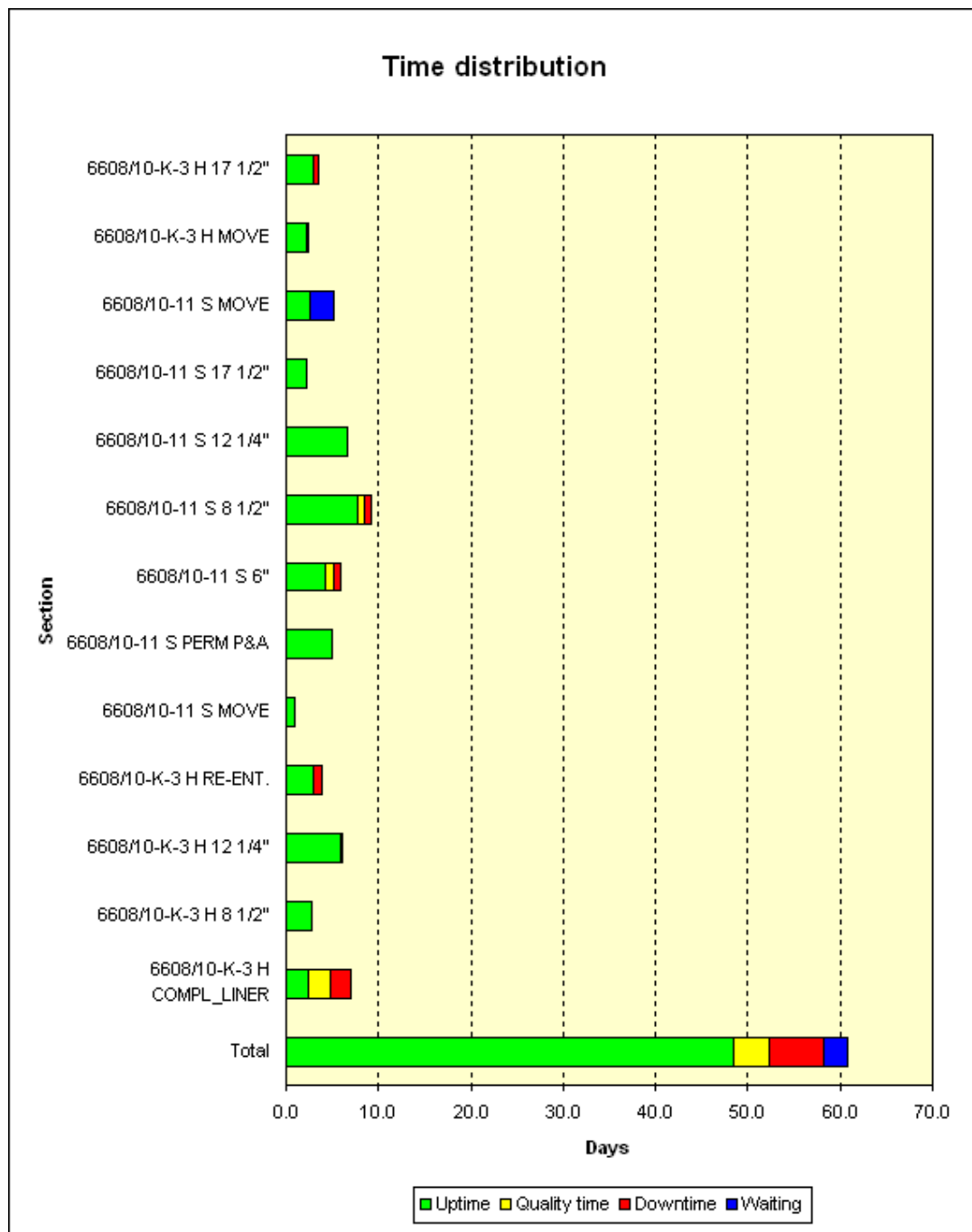
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The graph above is based on the following details:

Section	Downtime	Uptime	Quality time	Waiting time	Total time
6608/10-K-3 H 17 1/2"	0,6	3,0	0,0	0,0	3,6
6608/10-K-3 H MOVE	0,2	2,3	0,0	0,0	2,4
6608/10-11 S MOVE	0,0	2,6	0,0	2,5	5,1

FINAL WELL REPORT
Drilling
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Well: NO 6608/10-11 S &
NO 6608/10-K-3 H

Doc no
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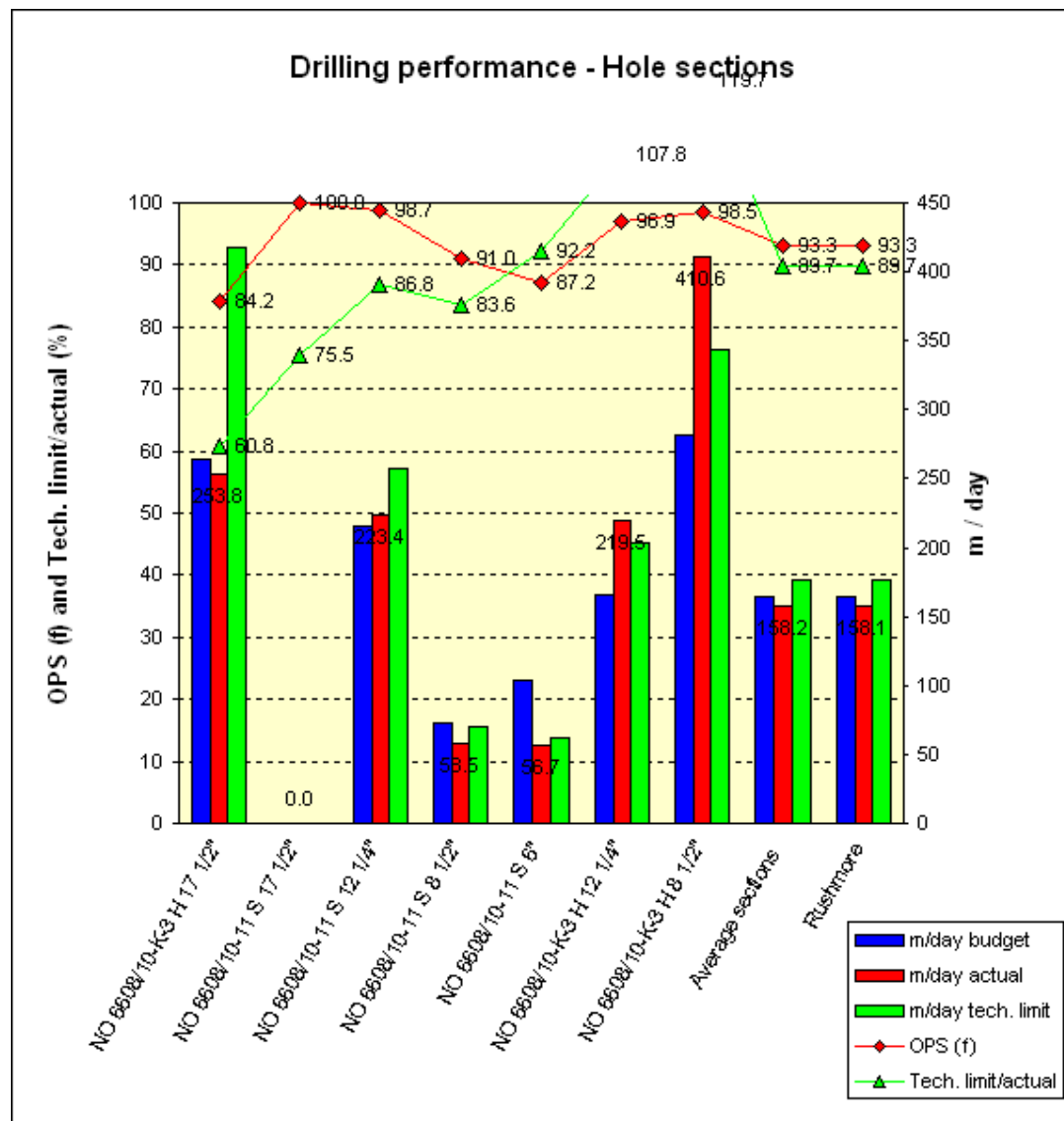
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Section	Downtime	Uptime	Quality time	Waiting time	Total time
6608/10-11 S 17 1/2"	0,0	2,2	0,0	0,0	2,2
6608/10-11 S 12 1/4"	0,1	6,5	0,0	0,0	6,6
6608/10-11 S 8 1/2"	0,8	7,7	0,7	0,0	9,3
6608/10-11 S 6"	0,8	4,2	0,9	0,0	5,9
6608/10-11 S PERM P&A	0,1	4,9	0,0	0,0	5,0
6608/10-11 S MOVE	0,0	0,8	0,0	0,0	0,8
6608/10-K-3 H RE-ENT.	0,9	2,9	0,0	0,0	3,8
6608/10-K-3 H 12 1/4"	0,2	6,0	0,0	0,0	6,1
6608/10-K-3 H 8 1/2"	0,0	2,8	0,0	0,0	2,9
6608/10-K-3 H COMPL LINER	2,2	2,5	2,3	0,0	7,0
Total	5,8	48,5	3,9	2,5	60,7



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3.5 Cost

Project kind	WBS	Currency	Budget	Actual cost
Completion	L.O128C.001.9CD03B02	NOK		110 334 463
Drilling	L.O128C.001.9CD03B01	NOK		81 948 199
Move	L.O128C.001.9CD03B03	NOK		22 856 845
Slot Recovery	L.O128C.001.9CD03B04	NOK		8 537 517
Total				223 677 024

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4 Activity highlights

4.1 NO 6608/10-K-3 H, 17 1/2" (15.05.2006 23:00)

START: 15.05.2006 23:00 467 mMD
END : 19.05.2006 12:30 1371 mMD

OBJECTIVE

The objective of this section was mainly to case off the Naust formation and provides sufficient formation strength to drill 12 ¼" section to top of the reservoir. (Separate FWR for Top holes drilling on K-1 H and K-3 H will be finalized).

SUMMARY

The 17 ½" section was started drilled with a PowerDrive1100 + Hughes bit. However, it was found that they could not achieve more than 2 deg/30m doglegs, where 3 deg/30m was required. At 940 m MD, the BHA was pulled and the PowerDrive and bit changed out.

The rest of the 17 ½" section was drilled successfully to TD at 1371 m MD RKB and the average ROP increasing from 37.2 m/hr in the first run to 49.5 m/hr.

4.2 NO 6608/10-K-3 H, MOVE (19.05.2006 12:30)

START: 19.05.2006 12:30 1371 mMD
END : 02.09.2006 08:30 1371 mMD

SUMMARY

Pulled anchor and moved rig to G-Template (G-1 H and G-4 H) after cement 13 ¾" casing on K-3 H. Moved rig back to K-3 H after completed G-2 H and plugged back Trost.

4.3 NO 6608/10-11 S, MOVE (12.07.2006 01:00)

START: 12.07.2006 01:00 1371 mMD
END : 17.07.2006 04:30 1371 mMD

SUMMARY

Moved rig from G-2 H (Temporary plugged back) due to strike. Anchor handling on K-3 H prior to start up on Trost includes 48 hrs WOW.

4.4 NO 6608/10-11 S, 17 1/2" (17.07.2006 04:30)

START: 17.07.2006 04:30 1371 mMD
END : 19.07.2006 09:30 1371 mMD

OBJECTIVE

Run and land BOP. Displace well to 1.44 SG OBM while drilling 13 3/8" casing shoe.

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SUMMARY

Retrieved WH cap and landed BOP. Installed 18 3/4" HWWB and tested BOP. Displaced well to 1,44 SG OBM while drilling 13 3/8" casing shoe.

4.5 NO 6608/10-11 S, 12 1/4" (19.07.2006 09:30)

START: 19.07.2006 09:30 1371 mMD

END : 26.07.2006 00:30 2851 mMD

OBJECTIVE

The objective of this section was mainly to case off the Tertiary formations and the pore pressure peak in Rogaland / Hordaland group, to be able to reduce mud weight when drilling the reservoir section.

SUMMARY

Drilled 12 1/4" section with PowerDrive from 13 3/8" csg shoe at 1366 m to 2851 m MD in Springar formation with 1,44 SG OBM, 2700-3450 lpm, 170-294 bar, 1-11 mt WOB, 70-160 RPM, 5-18 Knm, ECD 1,47-1,50 SG EMW.

To complete the build a setting of 40% and a toolface was used which produced on average 1.4dl per 30m. Note when we needed to drop a setting of 60% 180 degree toolface was needed. This produced varying dogleg but on average was around 0.5 degrees per 30m . Once at section TD we circulated bottoms up and pooh without overpull and prepared to run 9 5/8" casing.

4.6 NO 6608/10-11 S, 8 1/2" (26.07.2006 00:30)

START: 26.07.2006 00:30 2851 mMD

END : 04.08.2006 06:30 3392 mMD

OBJECTIVE

The main objective with this section was to drill 8 1/2" hole to TD in Åre formation at 3758 m MD/3299 m TVD and carry out coring, sampling and logging if hydrocarbons are present. If no hydrocarbons are present TD will be set to 100 m TVD below Top Fangst.

Prior to drill 6" hole with reduced MW was Intra Lange cased off with 7" liner.

SUMMARY

Drilled 8 1/2" hole with PowerDrive from 9 5/8" csg at 2845 m to 2918 m MD with 1,20 SG OBM. Observed 1m3 gain in the active system. Flowed check well on triptank and observed 1,6 m3 gain in the active system, total 2,6 m3 influx. Shut in well and circulated out kick with 1,44 SG OMB and displaced well to 1,52 SG OBM by using Wait and Weight method. Drilled 8 1/2" hole to TD at 3392 m MD/ 2955 m TVD.

Initially 20% / 0 settings were enough to hold the angle . However, from 3040m, 40% hi-side was needed to maintain tangency and then from 3300m 60% setting was needed to build angle back up to 36 degrees.

LOGGING

The main purpose for the logging was to investigate the Lange sst Formation and try to take pressure points to establish a gradient in the sandstone interval. The sandstone interval was based on the cuttings, not from the MWD logs.

Run 1: PEX-DSI-ECS. got good data. From the logs the sandstone interval looked very tight.

Run 2: MDT pressure points: No pressure points was obtained in the sandstone interval. Obtained one pressure point in the kick zone.

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4.7 NO 6608/10-11 S, 6" (04.08.2006 06:30)

START: 04.08.2006 06:30 3392 mMD

END : 10.08.2006 03:30 3725 mMD

OBJECTIVE

Drill 6" section to TD, if dry cases run PEXN-DSI and if discovery cases run MDT, CMR and ECS logging.

SUMMARY

Drilled cement plug from 3315 m to 3345 m while displaced well to 1,30 SG OBM. POOH due to no progress. RIH w/ 6" junk bit while waiting on logging BHA. Drilled landing collar at 3359 m and cement to 3392 m. RIH w/ drilling BHA and drilled 6" hole to 3420 m. POOH and change MWD due to signal loss. RIH w/ drilling BHA and drilled 6" hole to TD at 3725 m MD/3243 m TVD.

The BHA dropped from 2.6° - 0,75° /30m down to @ 3560m (Ile Sandstone) from where it held to a slight build tendency (upto 0.3°/30m). A discovery was made in the Not Sandstone where a 21m TVD pay sand was found. No problems were encountered during the run and TD was set at 3725m (@ 50m early).

LOGGING

Goal was to prove HC in Fangst Formation. Take pressure points to establish a gradient and collect HC samples. The goals were met.

Run 1: PEX-AIT: Proved HC was in the Garn formation and water in the Ile formation.

Run 2: CMR: Did not get any data from this run. Could not pass the 7" liner lap.

Run 3: MDT pressure points: Got pressure points in the 6" hole. Proved a gas gradient in the Garn sst, and a water gradient in the Ile and Tofte Fm.

Run 4: MSCT: No data. POOH due to sticky formation, decided to do wiper trip before doing anymore logging. The MSCT was cancelled during the wiper trip.

Run 5: MDT HC and water sampling: Water sampling was cancelled, obtained good gas samples with the MDT.

4.8 NO 6608/10-11 S, PERM P&A (10.08.2006 03:30)

START: 10.08.2006 03:30 3725 mMD

END : 15.08.2006 04:00 3725 mMD

OBJECTIVE

Plug back pilot hole by setting balanced cement plugs into 9 5/8" casing in steps and cut/pull 9 5/8" csg to prepare for whipstock installation.

SUMMARY

PU 2 7/8" cement stinger and RIH. Set 4 balanced cement plugs from 3725 m to 2725 m. Pressure tested cement plug to 210 bar/10 min. RIH with casing cutter assembly and cutted 9 5/8" casing at 1360 m. Pulled 10 3/4" casing hanger and 9 5/8" casing. Installed HWWB and set 13 3/8" EZCV on DP at 1336 m. Displaced well to seawater. Pulled BOP and anchors.

4.9 NO 6608/10-11 S, MOVE (15.08.2006 04:00)

START: 15.08.2006 04:00 1336 mMD

END : 16.08.2006 00:00 1336 mMD

SUMMARY

Moved rig to G-2 H and completed well.

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4.10 NO 6608/10-K-3 H, RE-ENT. (02.09.2006 08:30)

START: 02.09.2006 08:30 1371 mMD

END : 06.09.2006 04:00 1371 mMD

OBJECTIVE

Land an test BOP. Install 13 3/8" whipstock and displaced well to 1,44 SG OBM.

SUMMARY

Landed BOP and tested WH connector to 345 bar/10 min w/ SLT. Oriented whipstock w/ whipface at 59 deg to the left of high side. Set whipstock according to SRB. Milled window in 13 3/8" casing from 1322 m-1326 m. Suddenly lost torque and pumping pressure on mill at centerpoint after 8,5 hrs milling operation. POOH w/ milling assembly. Lower part of milling assembly lost in hole. MU over shot and fishing assembly. Washed down and tagged fish at 1325 m. Pulled fish. RIH w/ milling assembly and milled/polished 12 1/4" window from 1326 m-1328,5 m in 13 3/8" casing. RIH w/ 12 1/4" PowerDrive assembly.

Conclusion from Bodycote failure investigation of milling assembly report:

The reason for the mill assembly failure is not fully understood. Due to the smeared surfaces, that also are covered with corrosion products, no conclusive evidence could be found suggesting the fracture mode of the shaft. Torque values and the lack of major deformation in the shaft however discard plastic/ductile overloading.

The mechanical testing and chemistry of the material in the shaft does not conform to the certificates for heat Y6407, the deviations are at a level that suggests that the material is of another origin.

The very low impact values show that the material has a tendency towards brittle behaviour. It is concluded that the lower mechanical properties, especially the low impact values of the material, has contributed to the failure.

4.11 NO 6608/10-K-3 H, 12 1/4" (06.09.2006 04:00)

START: 06.09.2006 04:00 1328 mMD

END : 12.09.2006 07:30 2677 mMD

OBJECTIVE

The objective of this section was mainly to case off the Tertiary formations and the pore pressure peak in Rogaland / Hordaland group, to be able to reduce mud weight when drilling the reservoir section.

SUMMARY

Drilled 12 1/4" section with PowerDrive from window in 13 3/8" csg at 1333 m to TD at 2677 m MD / 2527 m TVD in Melke formation with 1,44 SG OBM, 3000-3390 lpm, 190-275 bar, 1-15 mt WOB, 57-168 RPM, 7-20 KNm, ECD 1,46-1,48 SG EMW. Circulated hole clean and POOH. Retrieved 18 3/4" HWWB. Ran and installed 10 3/4" x 9 5/8" csing. Filled every 5 joints with 1,44 SG OBM. Washed and worked casing through tight area between 2596 m - 2620 m. Ran gyro inside 9 5/8" casing on 5/16" cabel to 1000 m. POOH w/ gyro due to erratic signal. Changed CCL and performed Gyro survey. Pressure tested 9 5/8" casing to 345 bar/10 min while making up 8 1/2" PowerDrive BHA. Displaced well to 1,26 SG OBM while drilling shoetrack.

The plan was to hold 28 deg of inclination and then drop to 0 deg holding a Azimuth of 300 deg. Continue turning the well to the right to an azimuth of 220 deg and build up to 57 deg.

In the beginning of the build up section we was using 340 / 80% setting and this gave us a DLS of 3.4 deg and the plan was planned with a DLS of 3.5deg. I a setting of 341/100% gave us an average DLS of 4.5 deg and drilled ahead with setting for 3 stand and reduced the power setting to 80% for 65m, this give us an average DLS of 3.40. The PowerDrive was reset to 341/100% to catch up with the well trajectory.

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4.12 NO 6608/10-K-3 H, 8 1/2" (12.09.2006 07:30)

START: 12.09.2006 07:30 2677 mMD

END : 15.09.2006 04:00 3849 mMD

OBJECTIVE

The main objective with this section was to drill 8 1/2" hole to TD in Ile formation at 3751 m MD.

SUMMARY

Drilled 8 1/2" hole with PowerDrive from 9 5/8" csg at 2671 m to TD at 3849 m MD with 1,26 SG OBM, 2200-2400 lpm, 205-291 bar, 2-15 mt WOB, 60-180 RPM, 14-22 KNm, ECD 1,45-1,53 SG EMW. Took formation pressure point to 253 bar at 3485 m MD. Circulated 2,5 BU. Hole in good condition while POOH to inside 9 5/8" casing. Pulled string free with 120 mt overpull at TD after racking back drilling stand due to leak on wash pipe. Minor over pulled recorded after pressure point at 3485 m. Circulated 1,5 BU. Added 2 m3 Omnulube at TD and 4 m3 Omnulube inside casing shoe.

Drilling the floats proved difficult and took 4 hours during which time the mud system was displaced to the lighter 1.26sg system. Once drilling commenced the directional priority was to avoid well B-4 DHT2 which the planned well passed at 2800m with a separation of 19m. However since the well path at the 9 5/8" casing shoe was 7.0m below planned it was necessary to build at a higher than planned rate to increase the separation and avoid having to close in the live well. Once B-4 DHT2 had been successfully negotiated the priority switched back to intersecting target 1 and geosteering the well as per the geologist instructions.

The response from the powerdrive was not completely predictable throughout and seemed to vary depending on the formation drilled. The dogleg output recorded in the harder intervals deminished greatly when the formation became easier to drill. The well path was extended by 80m as a third fault was intersected prior to hitting target 3.

At the surface an inspection revealed three washed pistons on the PowerDrive.

4.13 NO 6608/10-K-3 H, COMPL_LINER (15.09.2006 04:00)

START: 15.09.2006 04:00 3849 mMD

END : 22.09.2006 03:00 3849 mMD

OBJECTIVE

The 7" liner will be installed and cemented to seal off Garn formation and perforated in the Ile formation.

SUMMARY

Ran 7" liner and filled every 10 jnts w/ 1,23 SG OBM due to reduce ECD while cement 7" liner. RIH and worked liner from 2753 m MD and liner stopped at 2759 m MD in Melke formation. Max 40 mt ovepull. POOH to 9 5/8" casing shoe and circulated well to 1,23 SG OBM (spacer was accidentally pumped into liner). POOH and lay down liner. RIH w/ wiper trip BHA. Hit obstruction at 2762 m MD. Attempted to wash down and backream out. String stalled out and packed off several times. Worked string free with varying parameters. Backreamed and worked string into 9 5/8" casing. Circulated well. Lot of sand in returns. RIH and washed/worked string down to 2839 m. Worked and reamed area from 2839 m to 3069 m. String packed off and stalled out several times. Backreamed out to 9 5/8" casing shoe and circulated 4 BU. Silt, fine sand and shale in returns. RIH and washed/worked area from 3069 m-3102 m and 3442 m-3477 m. At TD (3849 m MD) circulated hole clean and increased mud weight from 1,23 SG-126 SG-1,30 SG OBM.

Ran 7" liner to TD at 3849 m MD. Displaced well from 1,30 SG OBM to 1,26 SG OBM prior to cement 7" liner. Attempted to rotate liner with max 30 KNm without success. Set liner hanger with top PBR at 2610 m MD. Cemented liner, no losses observed. Set packer and applied 40 mt weight without and with rotation twice, no indication of setting packer by observing landing string.

Pulling of the string without any problems indicates that there was no hole instability and that the hole was not especially poorly cleaned at this time.

There is no obvious reason as to why the liner and wiper trip stopped up at the same place.

The combination of lower mud weight and lots of working the pipe in the hole during the wiper trip can lead to washing out / collapse, especially in shale zones. Reduced mud weight meant the working of the pipe was more damaging. That there also came sand into the wellbore can perhaps indicate thin sand layers within the shale, since homogenous sands do not collapse in overbalance, and certainly do not wash out as easily as shale when exposed to mechanical effects.

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5 Formation evaluation

5.1 Coring summary

None.

5.2 Pressure points

Trost 8 ½" section:

Test no	Depth m MD RKB	Depth m TVD RKB	Initial reservoir pressure (bar)	Measured reservoir pressure (bar)	Pore pressure (sg) EMW RKB	Formation	Comments
1	2913,8	2534,9		#N/A	#N/A	Lange FM	No seal
2	2915,0	2565,9		#N/A	#N/A	Lange FM	No seal
3	2914,5	2565,5		#N/A	#N/A	Lange FM	No seal
4	2928,0	2576,7		#N/A	#N/A	Lange FM	Tight
5	2932,7	2580,7		#N/A	#N/A	Lange FM	Tight
6	2937,5	2584,7		#N/A	#N/A	Lange FM	Tight
7	2944,6	2590,6		#N/A	#N/A	Lange FM	Tight
8	2948,0	2593,4		#N/A	#N/A	Lange FM	Tight
9	2915,3	2566,2		361.75	1.437	Lange FM	Good
10	2903,0	2555,9		#N/A	#N/A	Lange FM	Tight

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Trost 6" section:

Test no	Depth m MD RKB	Depth m TVD RKB	Initial reservoir pressure (bar)	Measured reservoir pressure (bar)	Pore pressure (sg) EMW RKB	Formation	Comments
1	3507.4	3052.2		323,11	1,09	Not sst	Good
2	3509.9	3054.3		323,16	1,09	Not sst	Good
3	3510.9	3055.2		323,18	1,09	Not sst	Good
4	3513.4	3057.4		323,23	1,09	Not sst	Good
5	3514.9	3058.7		323,25	1,09	Not sst	Good
6	3515.6	3059.3		323,42	1,09	Not sst	Good
7	3521.4	3064.4		323,37	1,08	Not sst	Good
8	3524.4	3067.0		323,43	1,08	Not sst	Good
9	3525.9	3068.3		323,46	1,08	Not sst	Good
10	3528.4	3070.5		#N/A	0,00	Not sst	Tight
11	3528.0	3070.2		323,51	1,08	Not sst	Good
12	3528.2	3070.3		323,50	1,08	Not sst	Good
13	3536.9	3078.0		324,98	1,09	Not sst	Tight
14	3540.4	3081.0		328,24	1,09	Not sst	Tight
15	3551.4	3090.7		324,91	1,08	Ile	Good
16	3560.4	3098.7		326,03	1,08	Ile	Super charged
17	3565.4	3103.1		326,86	1,08	Ile	Super charged
18	3567.9	3105.3		327,39	1,08	Ile	Super charged
19	3579.9	3115.9		328,02	1,08	Tofte	Tight
20	3591.9	3126.5		328,28	1,08	Tofte	Good
21	3598.4	3132.2		328,85	1,08	Tofte	Good
22	3638.4	3167.3		332,32	1,08	Tofte	Good
23	3682.4	3205.9		336,07	1,08	Tofte	Good

K-3 H 8 ½" section :

Test no	Depth m MD RKB	Depth m TVD RKB	Initial reservoir pressure (bar)	Measured reservoir pressure (bar)	Pore pressure (sg) EMW RKB	Formation	Comments
1	3485	2626	270.0	253.1	0.982	Ile 2.2	

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5.3 Geological formation tops

Formation Tops with UTM-coordinates, Well 6608/10-11 S

GROUP	FM / ZONE	Depth (m) TVD MSL	Depth (m) TVD RT	*Depth (m) MD	**UTM north	**UTM east
Nordland	Kai Fm	-1322.85	1346.85	1387.00	7322068.7	456957.6
Hordaland	Brygge Fm	-1554.25	1578.25	1656.00	7322174.6	456871.9
	Brygge Tuff Mbr	-1640.41	1664.41	1760.00	7322229.9	456854.3
Rogaland	Tare Fm	-1827.25	1851.25	2005.00	7322384.9	456822.6
	Tang Fm	-1882.19	1906.19	2079.00	7322433.1	456810.9
Shetland	Springar Fm	-1919.53	1943.53	2129.00	7322465.1	456801.8
Cromer Knoll	Lyr Fm	-2575.93	2599.93	2956.00	7322936.8	456631.6
Viking	Spekk Fm	-2697.00	2721.00	3105.00	7323020.3	456607.9
	Melke Fm	-2734.76	2758.76	3151.00	7323045.0	456599.1
	Melke sst Mbr. 3	-2947.58	2971.58	3411.70	7323188.1	456552.0
	Melke sst Mbr. 2	-2966.65	2990.65	3435.00	7323200.8	456548.2
	Melke sst Mbr. 1	-2985.72	3009.72	3457.80	7323212.9	456544.7
Fangst	Not 3	-3002.99	3026.99	3478.20	7323223.3	456541.6
	Not 2.3	-3026.09	3050.09	3505.00	7323236.3	456537.9
	Not 2.2	-3034.26	3058.26	3514.40	7323240.7	456536.6
	Not 2.1	-3044.84	3068.84	3526.50	7323246.4	456535.0
	Not 1	-3056.72	3080.72	3540.00	7323252.6	456533.2
	Ile 2.2	-3064.63	3088.63	3549.00	7323256.7	456532.0
	Ile 2.2.1	-3072.56	3096.56	3558.00	7323260.8	456530.9
	Ile 2.1	-3078.17	3102.17	3564.40	7323263.7	456530.0
	Ile 1.3	-3088.88	3112.88	3576.50	7323269.2	456528.4
	Ile 1.2	-3093.73	3117.73	3582.00	7323271.6	456527.7
	Ile 1.1	-3113.89	3137.89	3604.90	7323282.0	456524.6
	Tofte 2.1.8	-3141.05	3165.05	3635.80	7323296.2	456520.3
	Tilje Fm	-3191.68	3215.68	3693.60	7323322.8	456512.2
	TD	-3219.3	3243.3	3725.10	7323337.4	456507.7

* m MD referenced to RT on Transocean Arctic (24m)

**UTM coordinates calculated with azimuth referenced to true north

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Formation Tops with UTM-coordinates, Well 6608/10-K-3 H

GROUP	FM / ZONE	Depth (m) TVD MSL	Depth (m) TVD RT	*Depth (m) MD	**UTM north	**UTM east
Nordland	Kai Fm	-1305.98	1329.98	1369.03	7322062.8	456961.4
Hordaland	Brygge Fm	-1549.92	1573.92	1639.14	7322096.3	456857.2
	Brygge Tuff Mbr	-1651.12	1675.12	1741.64	7322099.8	456842.3
Rogaland	Tare Fm	-1830.71	1854.71	1922.19	7322104.1	456854.2
	Tang Fm	-1883.66	1907.66	1976.33	7322106.4	456865.3
Shetland	Springar Fm	-1926.50	1950.50	2020.14	7322107.8	456874.3
Cromer Knoll	Lyr Fm	-2330.01	2354.01	2435.36	7322050.4	456882.8
Viking	Spekk Fm	-2355.50	2379.50	2464.51	7322037.8	456876.5
	Melke Fm	-2358.40	2382.40	2467.91	7322036.2	456875.7
	Melke sst Mbr. 3	-2459.54	2483.54	2601.36	7321963.3	456829.6
	Melke sst Mbr. 2	-2479.86	2503.86	2633.52	7321943.0	456815.2
	Melke sst Mbr. 1	-2510.31	2534.31	2689.65	7321905.1	456787.2
Fangst	Not 3	-2532.01	2556.01	2742.42	7321865.6	456760.1
	Not 2.3	-2542.89	2566.89	2784.69	7321831.7	456737.4
	Not 2.2	-2547.54	2571.54	2812.24	7321809.8	456721.4
	Not 2.1	-2562.62	2586.62	2901.02	7321742.5	456665.6
	Not 1	-2573.77	2597.77	2960.76	7321699.8	456625.4
	Ile 2.2	-2584.38	2608.38	3107.09	7321599.1	456519.9
	Not 1	-2599.86	2623.86	3441.96	7321352.4	456294.3
	Ile 2.2	-2600.82	2624.82	3462.54	7321337.0	456280.8
	TD	-2612.56	2636.56	3849.00	7321057.6	456014.4

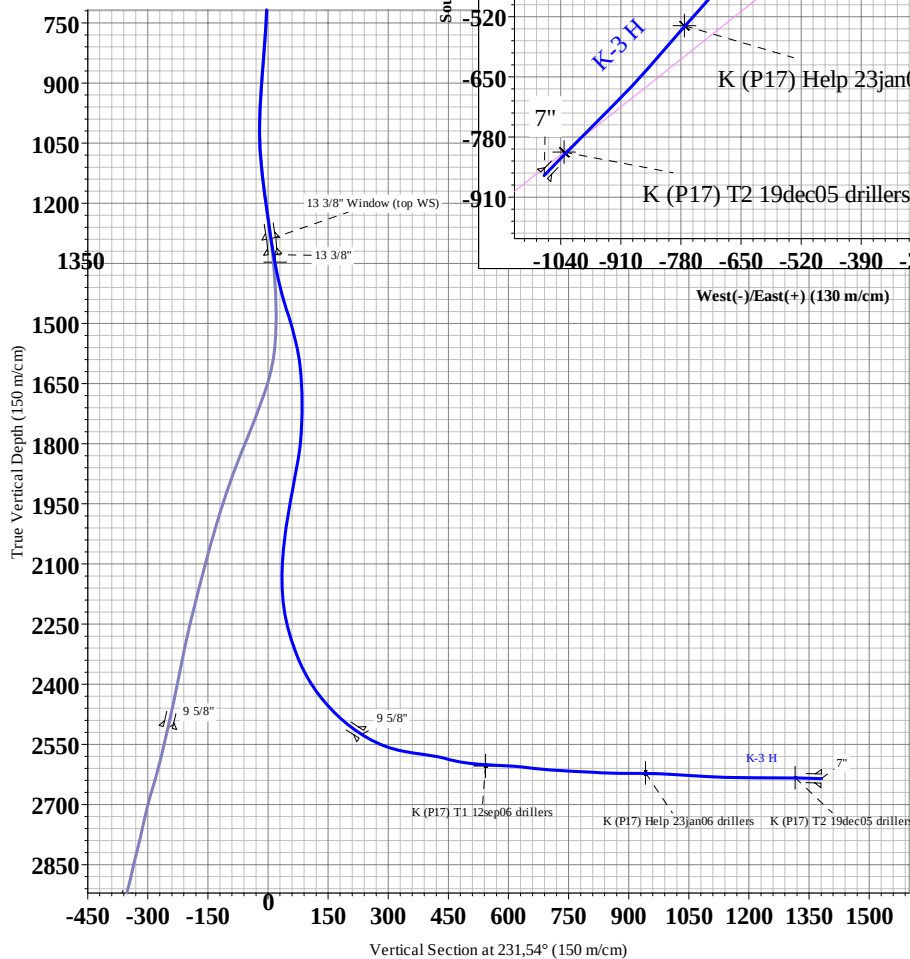
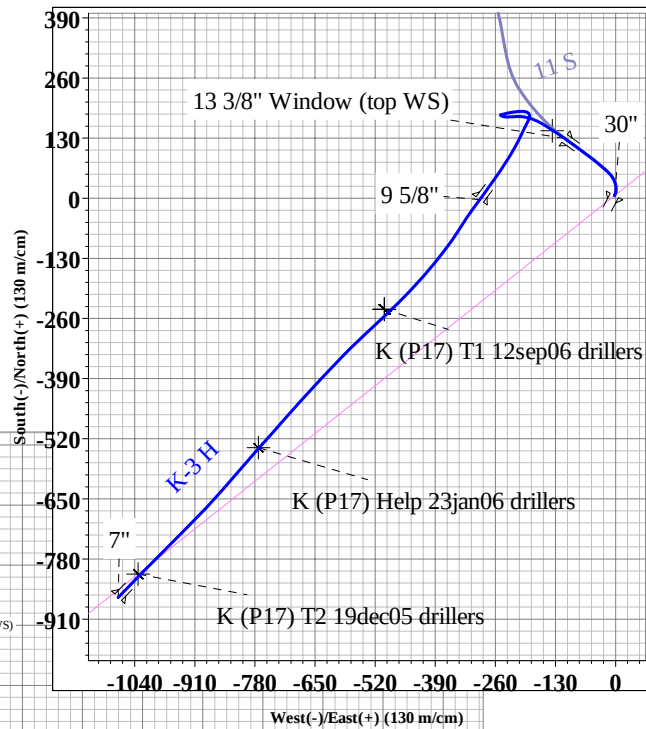
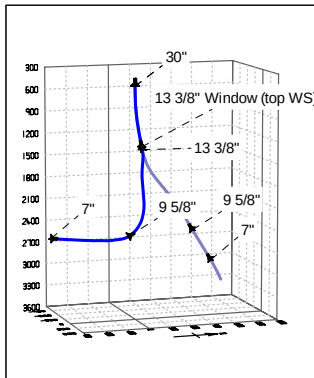
* m MD referenced to RT on Transocean Arctic (24m)

**UTM coordinates calculated with azimuth referenced to true north

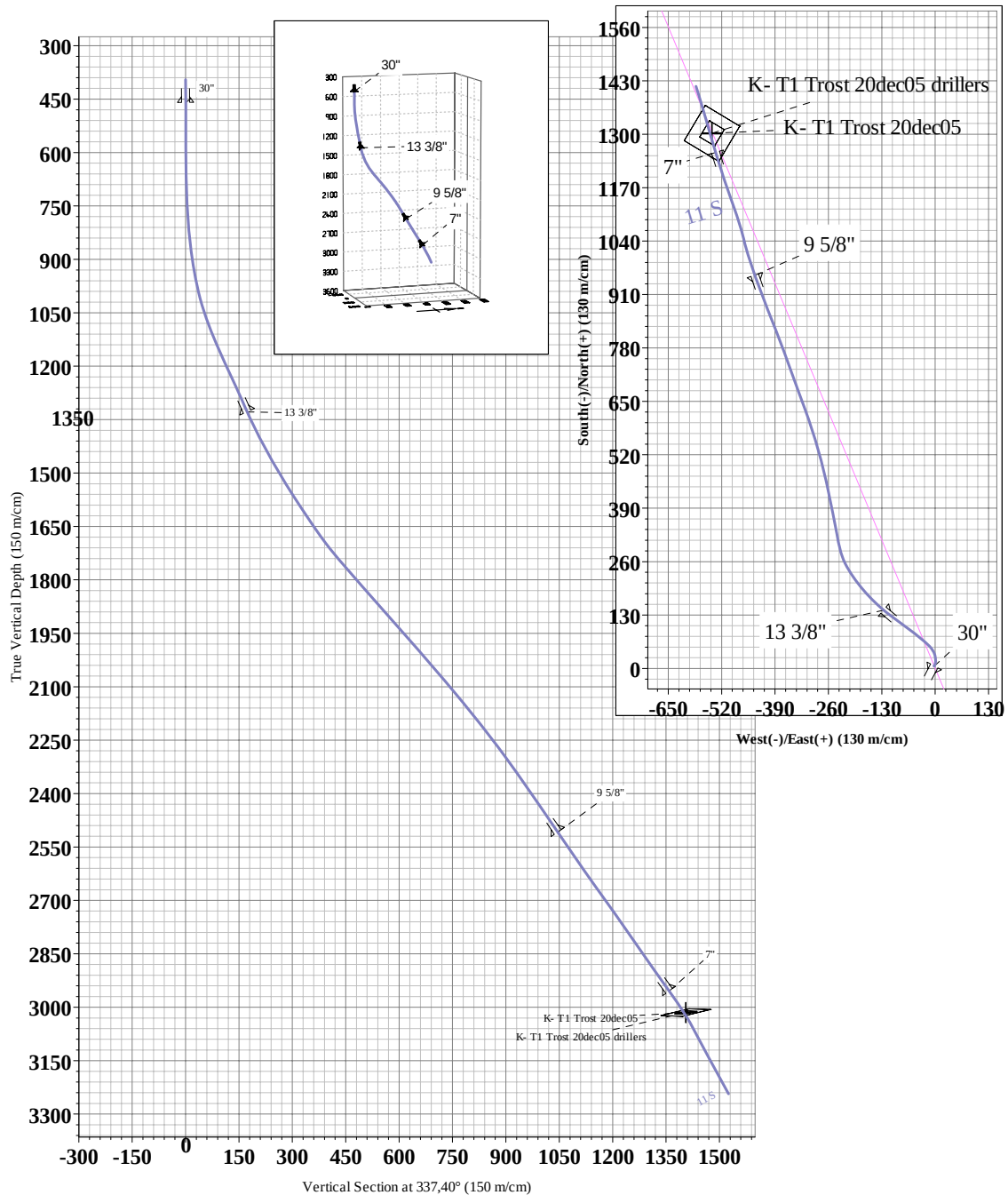
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6 Appendix 1: Directional data

Project: NORNE
Site: Norne K
Well: 6608/10-K-3 H
Wellbore: K-3 H
Design: K-3 H



Project: NORNE
Site: Norne K
Well: 6608/10-K-3 H
Wellbore: 11 S
Design: 11 S



STATOIL - Norway

NORNE

Norne K

6608/10-K-3 H - Slot 3

11 S

Design: 11 S

Survey Report - Geographic

01 desember, 2006

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Project	NORNE, Norway		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 32N (6 E to 12 E)		Using geodetic scale factor

Site		Norne K, 6608/10			
Site Position:		Northing:	7 321 920,75 m	Latitude:	66° 0' 48,498 N
From:	Map	Easting:	457 090,23 m	Longitude:	8° 3' 14,731 E
Position Uncertainty:	0,00 m	Slot Radius:	in	Grid Convergence:	-0,86 °

Well	6608/10-K-3 H - Slot 3					
Well Position	+N/-S	5,64 m	Northing:	7 321 926,39 m	Latitude:	66° 0' 48,679 N
	+E/-W	-2,31 m	Easting:	457 087,92 m	Longitude:	8° 3' 14,541 E
Position Uncertainty		0,00 m	Wellhead Depth:	371,50 m	Water Depth:	375,70 m

Wellbore	11 S				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MNETICREFERENCE	01.08.2006	-0,18	76,11	52 002

Design	11 S				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	395,50
Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)	
	395,50	5,64	-2,31	337,40	

Survey Program	Date	08.09.2006			
From (m)	To (m)	Survey (Wellbore)	Tool Name	Description	
420,00	2 800,00	K-3 11S Gyro 12 1/4" (11 S)	Wellbore Surveyor, cont	Gyro Tool from GD	
2 800,01	2 856,00	K-3 11S MWD 12 1/4" (11 S)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)	
2 856,03	3 374,48	K-3 11S MWD 8 1/2" (11 S)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)	
3 411,23	3 699,65	K-3 11S MWD 6" (11 S)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)	

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Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
395,50	0,00	0,00	395,50	5,64	-2,31	7 321 926,39	457 087,92	66° 0' 48,679 N	8° 3' 14,541 E
420,00	0,19	26,84	420,00	5,68	-2,29	7 321 926,43	457 087,94	66° 0' 48,681 N	8° 3' 14,542 E
450,00	0,29	29,24	450,00	5,79	-2,23	7 321 926,54	457 088,00	66° 0' 48,684 N	8° 3' 14,547 E
459,00	0,33	27,88	459,00	5,83	-2,21	7 321 926,58	457 088,02	66° 0' 48,686 N	8° 3' 14,548 E
30"									
480,00	0,44	25,80	480,00	5,96	-2,15	7 321 926,71	457 088,09	66° 0' 48,690 N	8° 3' 14,553 E
510,00	0,53	21,12	510,00	6,19	-2,05	7 321 926,94	457 088,19	66° 0' 48,697 N	8° 3' 14,561 E
540,00	0,52	19,38	540,00	6,45	-1,95	7 321 927,20	457 088,28	66° 0' 48,706 N	8° 3' 14,568 E
570,00	0,54	21,19	570,00	6,71	-1,85	7 321 927,46	457 088,38	66° 0' 48,714 N	8° 3' 14,576 E
600,00	0,62	21,01	599,99	6,99	-1,74	7 321 927,74	457 088,49	66° 0' 48,723 N	8° 3' 14,584 E
630,00	0,88	22,52	629,99	7,36	-1,60	7 321 928,11	457 088,63	66° 0' 48,735 N	8° 3' 14,595 E
660,00	1,26	26,81	659,99	7,87	-1,36	7 321 928,61	457 088,87	66° 0' 48,752 N	8° 3' 14,613 E
690,00	1,68	24,66	689,98	8,56	-1,03	7 321 929,31	457 089,20	66° 0' 48,774 N	8° 3' 14,639 E
720,00	2,72	21,40	719,95	9,62	-0,59	7 321 930,37	457 089,64	66° 0' 48,809 N	8° 3' 14,673 E
750,00	3,48	19,34	749,91	11,14	-0,02	7 321 931,89	457 090,21	66° 0' 48,858 N	8° 3' 14,715 E
780,00	4,66	13,10	779,83	13,19	0,55	7 321 933,93	457 090,78	66° 0' 48,924 N	8° 3' 14,759 E
810,00	6,24	3,17	809,70	16,00	0,92	7 321 936,75	457 091,15	66° 0' 49,015 N	8° 3' 14,784 E
840,00	7,01	359,02	839,50	19,46	0,98	7 321 940,21	457 091,21	66° 0' 49,127 N	8° 3' 14,785 E
870,00	7,68	355,32	869,25	23,29	0,78	7 321 944,03	457 091,01	66° 0' 49,251 N	8° 3' 14,765 E
900,00	8,17	351,39	898,96	27,40	0,30	7 321 948,14	457 090,53	66° 0' 49,383 N	8° 3' 14,722 E
930,00	9,03	347,08	928,63	31,80	-0,54	7 321 952,54	457 089,69	66° 0' 49,525 N	8° 3' 14,649 E
960,00	11,07	338,41	958,17	36,77	-2,13	7 321 957,51	457 088,10	66° 0' 49,684 N	8° 3' 14,518 E
990,00	13,54	329,82	987,48	42,49	-4,96	7 321 963,22	457 085,27	66° 0' 49,867 N	8° 3' 14,287 E
1 020,00	16,65	322,30	1 016,44	48,93	-9,35	7 321 969,66	457 080,88	66° 0' 50,073 N	8° 3' 13,930 E
1 030,00	17,59	319,77	1 026,00	51,21	-11,20	7 321 971,94	457 079,03	66° 0' 50,146 N	8° 3' 13,781 E
1 040,00	18,54	317,25	1 035,51	53,54	-13,26	7 321 974,26	457 076,98	66° 0' 50,220 N	8° 3' 13,615 E
1 050,00	19,48	315,30	1 044,96	55,89	-15,51	7 321 976,62	457 074,72	66° 0' 50,295 N	8° 3' 13,433 E
1 060,00	20,42	313,39	1 054,36	58,27	-17,95	7 321 979,00	457 072,28	66° 0' 50,371 N	8° 3' 13,237 E
1 070,00	21,23	311,99	1 063,71	60,68	-20,57	7 321 981,41	457 069,67	66° 0' 50,447 N	8° 3' 13,027 E
1 080,00	21,88	311,25	1 073,01	63,12	-23,31	7 321 983,85	457 066,93	66° 0' 50,525 N	8° 3' 12,806 E
1 090,00	22,52	310,51	1 082,27	65,59	-26,17	7 321 986,32	457 064,07	66° 0' 50,603 N	8° 3' 12,576 E
1 100,00	23,07	310,03	1 091,49	68,10	-29,13	7 321 988,82	457 061,12	66° 0' 50,682 N	8° 3' 12,339 E
1 110,00	23,61	309,56	1 100,67	70,63	-32,17	7 321 991,36	457 058,07	66° 0' 50,763 N	8° 3' 12,094 E
1 120,00	24,16	309,15	1 109,81	73,20	-35,30	7 321 993,92	457 054,94	66° 0' 50,844 N	8° 3' 11,843 E
1 130,00	24,73	308,82	1 118,91	75,80	-38,52	7 321 996,53	457 051,73	66° 0' 50,927 N	8° 3' 11,585 E
1 140,00	25,30	308,48	1 127,98	78,44	-41,82	7 321 999,17	457 048,43	66° 0' 51,010 N	8° 3' 11,320 E
1 150,00	25,85	308,27	1 137,00	81,12	-45,20	7 322 001,84	457 045,04	66° 0' 51,095 N	8° 3' 11,048 E
1 160,00	26,39	308,06	1 145,98	83,85	-48,67	7 322 004,56	457 041,58	66° 0' 51,181 N	8° 3' 10,770 E
1 170,00	26,86	307,93	1 154,91	86,60	-52,20	7 322 007,32	457 038,05	66° 0' 51,268 N	8° 3' 10,487 E
1 180,00	27,23	307,90	1 163,82	89,40	-55,78	7 322 010,11	457 034,47	66° 0' 51,357 N	8° 3' 10,199 E
1 190,00	27,60	307,86	1 172,70	92,23	-59,42	7 322 012,94	457 030,83	66° 0' 51,446 N	8° 3' 9,907 E
1 200,00	27,92	307,56	1 181,55	95,07	-63,10	7 322 015,79	457 027,15	66° 0' 51,537 N	8° 3' 9,612 E
1 210,00	28,24	307,23	1 190,37	97,93	-66,84	7 322 018,65	457 023,41	66° 0' 51,627 N	8° 3' 9,312 E
1 220,00	28,54	306,93	1 199,17	100,80	-70,64	7 322 021,51	457 019,62	66° 0' 51,718 N	8° 3' 9,007 E
1 230,00	28,81	306,68	1 207,94	103,67	-74,48	7 322 024,38	457 015,78	66° 0' 51,809 N	8° 3' 8,699 E
1 240,00	29,08	306,42	1 216,69	106,56	-78,37	7 322 027,27	457 011,89	66° 0' 51,900 N	8° 3' 8,387 E
1 250,00	28,99	306,15	1 225,44	109,43	-82,28	7 322 030,14	457 007,98	66° 0' 51,991 N	8° 3' 8,073 E
1 260,00	28,88	305,87	1 234,19	112,27	-86,19	7 322 032,98	457 004,07	66° 0' 52,080 N	8° 3' 7,760 E
1 270,00	28,73	305,67	1 242,95	115,09	-90,10	7 322 035,80	457 000,16	66° 0' 52,169 N	8° 3' 7,446 E
1 280,00	28,53	305,57	1 251,73	117,88	-94,00	7 322 038,59	456 996,27	66° 0' 52,258 N	8° 3' 7,134 E
1 290,00	28,29	305,63	1 260,52	120,65	-97,87	7 322 041,35	456 992,40	66° 0' 52,345 N	8° 3' 6,824 E
1 300,00	28,04	305,77	1 269,34	123,40	-101,70	7 322 044,11	456 988,57	66° 0' 52,432 N	8° 3' 6,516 E
1 310,00	27,73	306,03	1 278,18	126,15	-105,49	7 322 046,85	456 984,78	66° 0' 52,519 N	8° 3' 6,213 E
1 320,00	27,42	306,29	1 287,04	128,88	-109,22	7 322 049,58	456 981,05	66° 0' 52,605 N	8° 3' 5,913 E
1 330,00	27,06	307,16	1 295,93	131,61	-112,89	7 322 052,31	456 977,38	66° 0' 52,692 N	8° 3' 5,619 E

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Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
1 340,00	26,69	308,20	1 304,85	134,38	-116,47	7 322 055,08	456 973,80	66° 0' 52,779 N	8° 3' 5,331 E
1 350,00	26,45	309,15	1 313,80	137,17	-119,96	7 322 057,87	456 970,31	66° 0' 52,868 N	8° 3' 5,051 E
1 360,00	26,53	309,85	1 322,75	140,01	-123,40	7 322 060,71	456 966,87	66° 0' 52,958 N	8° 3' 4,775 E
1 366,10	26,58	310,28	1 328,20	141,76	-125,49	7 322 062,46	456 964,79	66° 0' 53,013 N	8° 3' 4,607 E
13 3/8"									
1 370,00	26,61	310,56	1 331,69	142,90	-126,82	7 322 063,59	456 963,46	66° 0' 53,049 N	8° 3' 4,500 E
1 380,00	26,95	311,15	1 340,62	145,84	-130,23	7 322 066,54	456 960,05	66° 0' 53,143 N	8° 3' 4,226 E
1 390,00	27,37	311,71	1 349,52	148,86	-133,65	7 322 069,56	456 956,63	66° 0' 53,238 N	8° 3' 3,951 E
1 400,00	27,77	312,29	1 358,38	151,96	-137,09	7 322 072,65	456 953,19	66° 0' 53,337 N	8° 3' 3,675 E
1 410,00	28,11	312,93	1 367,21	155,13	-140,54	7 322 075,83	456 949,74	66° 0' 53,437 N	8° 3' 3,397 E
1 420,00	28,46	313,57	1 376,02	158,38	-143,99	7 322 079,07	456 946,29	66° 0' 53,541 N	8° 3' 3,120 E
1 430,00	28,74	314,22	1 384,80	161,70	-147,44	7 322 082,39	456 942,85	66° 0' 53,646 N	8° 3' 2,842 E
1 440,00	29,00	314,87	1 393,56	165,09	-150,88	7 322 085,77	456 939,41	66° 0' 53,754 N	8° 3' 2,565 E
1 450,00	29,25	315,49	1 402,29	168,54	-154,31	7 322 089,23	456 935,98	66° 0' 53,863 N	8° 3' 2,289 E
1 460,00	29,48	316,04	1 411,01	172,05	-157,73	7 322 092,74	456 932,56	66° 0' 53,975 N	8° 3' 2,013 E
1 470,00	29,72	316,61	1 419,70	175,62	-161,14	7 322 096,31	456 929,15	66° 0' 54,089 N	8° 3' 1,739 E
1 480,00	29,97	317,22	1 428,38	179,26	-164,54	7 322 099,94	456 925,75	66° 0' 54,204 N	8° 3' 1,465 E
1 490,00	30,21	317,84	1 437,03	182,96	-167,93	7 322 103,64	456 922,37	66° 0' 54,322 N	8° 3' 1,192 E
1 500,00	30,39	318,53	1 445,66	186,72	-171,29	7 322 107,40	456 919,00	66° 0' 54,442 N	8° 3' 0,920 E
1 510,00	30,57	319,23	1 454,28	190,54	-174,63	7 322 111,22	456 915,67	66° 0' 54,564 N	8° 3' 0,651 E
1 520,00	30,75	319,99	1 462,88	194,42	-177,93	7 322 115,10	456 912,37	66° 0' 54,687 N	8° 3' 0,384 E
1 530,00	30,91	320,82	1 471,47	198,37	-181,20	7 322 119,05	456 909,10	66° 0' 54,813 N	8° 3' 0,121 E
1 540,00	31,08	321,66	1 480,04	202,39	-184,42	7 322 123,06	456 905,88	66° 0' 54,941 N	8° 2' 59,860 E
1 550,00	31,23	322,47	1 488,60	206,47	-187,60	7 322 127,14	456 902,70	66° 0' 55,071 N	8° 2' 59,603 E
1 560,00	31,38	323,28	1 497,14	210,61	-190,74	7 322 131,28	456 899,57	66° 0' 55,204 N	8° 2' 59,349 E
1 570,00	31,55	324,03	1 505,67	214,82	-193,83	7 322 135,48	456 896,47	66° 0' 55,338 N	8° 2' 59,099 E
1 580,00	31,77	324,70	1 514,19	219,08	-196,89	7 322 139,75	456 893,42	66° 0' 55,474 N	8° 2' 58,851 E
1 590,00	31,99	325,36	1 522,68	223,41	-199,91	7 322 144,07	456 890,39	66° 0' 55,612 N	8° 2' 58,606 E
1 600,00	32,21	326,31	1 531,15	227,81	-202,90	7 322 148,47	456 887,41	66° 0' 55,753 N	8° 2' 58,364 E
1 610,00	32,43	327,27	1 539,60	232,28	-205,83	7 322 152,94	456 884,48	66° 0' 55,896 N	8° 2' 58,126 E
1 620,00	32,63	328,31	1 548,03	236,83	-208,69	7 322 157,49	456 881,62	66° 0' 56,041 N	8° 2' 57,893 E
1 630,00	32,80	329,46	1 556,44	241,46	-211,49	7 322 162,11	456 878,82	66° 0' 56,189 N	8° 2' 57,666 E
1 640,00	32,97	330,62	1 564,84	246,16	-214,20	7 322 166,82	456 876,11	66° 0' 56,340 N	8° 2' 57,445 E
1 650,00	33,12	332,18	1 573,22	250,95	-216,81	7 322 171,60	456 873,50	66° 0' 56,493 N	8° 2' 57,233 E
1 660,00	33,27	333,77	1 581,59	255,82	-219,29	7 322 176,48	456 871,02	66° 0' 56,649 N	8° 2' 57,029 E
1 670,00	33,41	335,53	1 589,95	260,79	-221,65	7 322 181,44	456 868,67	66° 0' 56,808 N	8° 2' 56,837 E
1 680,00	33,53	337,53	1 598,29	265,85	-223,84	7 322 186,50	456 866,47	66° 0' 56,971 N	8° 2' 56,657 E
1 690,00	33,65	339,52	1 606,62	271,00	-225,87	7 322 191,64	456 864,45	66° 0' 57,136 N	8° 2' 56,490 E
1 700,00	33,77	341,26	1 614,94	276,22	-227,73	7 322 196,87	456 862,59	66° 0' 57,304 N	8° 2' 56,336 E
1 710,00	33,88	342,99	1 623,25	281,52	-229,44	7 322 202,16	456 860,88	66° 0' 57,474 N	8° 2' 56,194 E
1 720,00	34,06	344,79	1 631,54	286,89	-230,99	7 322 207,53	456 859,33	66° 0' 57,646 N	8° 2' 56,064 E
1 730,00	34,36	346,32	1 639,81	292,33	-232,39	7 322 212,97	456 857,93	66° 0' 57,821 N	8° 2' 55,947 E
1 740,00	34,65	347,84	1 648,05	297,85	-233,66	7 322 218,49	456 856,66	66° 0' 57,999 N	8° 2' 55,840 E
1 750,00	35,08	348,71	1 656,26	303,45	-234,82	7 322 224,09	456 855,50	66° 0' 58,179 N	8° 2' 55,741 E
1 760,00	35,65	349,00	1 664,41	309,13	-235,94	7 322 229,76	456 854,38	66° 0' 58,362 N	8° 2' 55,645 E
1 770,00	36,21	349,29	1 672,51	314,89	-237,04	7 322 235,52	456 853,28	66° 0' 58,547 N	8° 2' 55,551 E
1 780,00	36,77	349,16	1 680,55	320,73	-238,15	7 322 241,36	456 852,17	66° 0' 58,735 N	8° 2' 55,455 E
1 790,00	37,32	349,03	1 688,53	326,65	-239,29	7 322 247,28	456 851,03	66° 0' 58,926 N	8° 2' 55,358 E
1 800,00	37,82	349,01	1 696,45	332,64	-240,46	7 322 253,26	456 849,87	66° 0' 59,118 N	8° 2' 55,259 E
1 810,00	38,27	349,08	1 704,33	338,69	-241,63	7 322 259,31	456 848,69	66° 0' 59,313 N	8° 2' 55,158 E
1 820,00	38,72	349,14	1 712,16	344,80	-242,80	7 322 265,42	456 847,52	66° 0' 59,510 N	8° 2' 55,058 E
1 830,00	39,36	349,11	1 719,92	350,98	-243,99	7 322 271,60	456 846,33	66° 0' 59,709 N	8° 2' 54,956 E
1 840,00	40,00	349,08	1 727,62	357,25	-245,20	7 322 277,87	456 845,12	66° 0' 59,911 N	8° 2' 54,853 E
1 850,00	40,53	349,01	1 735,25	363,60	-246,43	7 322 284,21	456 843,90	66° 1' 0,115 N	8° 2' 54,748 E
1 860,00	40,95	348,89	1 742,83	370,00	-247,68	7 322 290,62	456 842,65	66° 1' 0,321 N	8° 2' 54,641 E

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Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
1 870,00	41,36	348,78	1 750,36	376,46	-248,95	7 322 297,07	456 841,37	66° 1' 0,529 N	8° 2' 54,532 E
1 880,00	41,49	348,65	1 757,85	382,95	-250,25	7 322 303,56	456 840,08	66° 1' 0,738 N	8° 2' 54,421 E
1 890,00	41,62	348,52	1 765,34	389,45	-251,56	7 322 310,05	456 838,77	66° 1' 0,947 N	8° 2' 54,309 E
1 900,00	41,66	348,40	1 772,81	395,96	-252,89	7 322 316,56	456 837,44	66° 1' 1,156 N	8° 2' 54,196 E
1 910,00	41,62	348,27	1 780,28	402,47	-254,23	7 322 323,07	456 836,09	66° 1' 1,366 N	8° 2' 54,082 E
1 920,00	41,59	348,15	1 787,76	408,97	-255,59	7 322 329,56	456 834,74	66° 1' 1,575 N	8° 2' 53,966 E
1 930,00	41,53	348,00	1 795,24	415,46	-256,96	7 322 336,05	456 833,37	66° 1' 1,784 N	8° 2' 53,850 E
1 940,00	41,48	347,85	1 802,73	421,94	-258,35	7 322 342,53	456 831,98	66° 1' 1,992 N	8° 2' 53,732 E
1 950,00	41,51	347,75	1 810,22	428,42	-259,75	7 322 349,00	456 830,58	66° 1' 2,201 N	8° 2' 53,613 E
1 960,00	41,61	347,69	1 817,71	434,90	-261,16	7 322 355,48	456 829,17	66° 1' 2,409 N	8° 2' 53,493 E
1 970,00	41,71	347,63	1 825,18	441,39	-262,58	7 322 361,98	456 827,75	66° 1' 2,618 N	8° 2' 53,373 E
1 980,00	41,78	347,57	1 832,64	447,89	-264,01	7 322 368,48	456 826,32	66° 1' 2,827 N	8° 2' 53,251 E
1 990,00	41,84	347,51	1 840,09	454,40	-265,45	7 322 374,98	456 824,88	66° 1' 3,037 N	8° 2' 53,129 E
2 000,00	41,99	347,48	1 847,53	460,93	-266,89	7 322 381,50	456 823,44	66° 1' 3,246 N	8° 2' 53,007 E
2 010,00	42,12	347,21	1 854,96	467,46	-268,36	7 322 388,04	456 821,97	66° 1' 3,457 N	8° 2' 52,883 E
2 020,00	42,26	346,94	1 862,37	474,01	-269,86	7 322 394,58	456 820,47	66° 1' 3,667 N	8° 2' 52,756 E
2 030,00	42,24	346,68	1 869,77	480,55	-271,40	7 322 401,12	456 818,94	66° 1' 3,878 N	8° 2' 52,626 E
2 040,00	42,14	346,43	1 877,18	487,09	-272,96	7 322 407,65	456 817,38	66° 1' 4,088 N	8° 2' 52,494 E
2 050,00	42,04	346,16	1 884,60	493,60	-274,55	7 322 414,16	456 815,79	66° 1' 4,297 N	8° 2' 52,360 E
2 060,00	41,93	345,77	1 892,03	500,09	-276,17	7 322 420,65	456 814,17	66° 1' 4,506 N	8° 2' 52,224 E
2 070,00	41,82	345,37	1 899,48	506,55	-277,83	7 322 427,11	456 812,50	66° 1' 4,714 N	8° 2' 52,084 E
2 080,00	41,78	344,98	1 906,93	513,00	-279,54	7 322 433,55	456 810,80	66° 1' 4,921 N	8° 2' 51,941 E
2 090,00	41,76	344,59	1 914,39	519,42	-281,29	7 322 439,98	456 809,05	66° 1' 5,128 N	8° 2' 51,795 E
2 100,00	41,74	344,22	1 921,85	525,84	-283,08	7 322 446,39	456 807,26	66° 1' 5,334 N	8° 2' 51,645 E
2 110,00	41,66	343,98	1 929,32	532,23	-284,90	7 322 452,78	456 805,44	66° 1' 5,539 N	8° 2' 51,493 E
2 120,00	41,58	343,73	1 936,79	538,61	-286,74	7 322 459,16	456 803,59	66° 1' 5,744 N	8° 2' 51,338 E
2 130,00	41,45	343,46	1 944,28	544,97	-288,62	7 322 465,52	456 801,72	66° 1' 5,949 N	8° 2' 51,182 E
2 140,00	41,30	343,17	1 951,79	551,30	-290,51	7 322 471,85	456 799,83	66° 1' 6,152 N	8° 2' 51,024 E
2 150,00	41,16	342,89	1 959,31	557,61	-292,44	7 322 478,15	456 797,90	66° 1' 6,355 N	8° 2' 50,864 E
2 160,00	41,04	342,60	1 966,84	563,89	-294,39	7 322 484,42	456 795,95	66° 1' 6,556 N	8° 2' 50,702 E
2 170,00	40,92	342,30	1 974,39	570,14	-296,37	7 322 490,67	456 793,98	66° 1' 6,757 N	8° 2' 50,537 E
2 180,00	40,86	341,99	1 981,95	576,37	-298,37	7 322 496,90	456 791,97	66° 1' 6,957 N	8° 2' 50,371 E
2 190,00	40,83	341,67	1 989,52	582,58	-300,41	7 322 503,11	456 789,93	66° 1' 7,157 N	8° 2' 50,201 E
2 200,00	40,79	341,37	1 997,09	588,78	-302,48	7 322 509,31	456 787,86	66° 1' 7,356 N	8° 2' 50,029 E
2 210,00	40,74	341,20	2 004,66	594,97	-304,58	7 322 515,49	456 785,77	66° 1' 7,555 N	8° 2' 49,856 E
2 220,00	40,69	341,04	2 012,24	601,14	-306,69	7 322 521,66	456 783,66	66° 1' 7,753 N	8° 2' 49,681 E
2 230,00	40,71	340,87	2 019,82	607,30	-308,82	7 322 527,82	456 781,53	66° 1' 7,951 N	8° 2' 49,505 E
2 240,00	40,77	340,71	2 027,40	613,47	-310,96	7 322 533,98	456 779,38	66° 1' 8,149 N	8° 2' 49,327 E
2 250,00	40,82	340,55	2 034,97	619,63	-313,13	7 322 540,15	456 777,22	66° 1' 8,347 N	8° 2' 49,147 E
2 260,00	40,82	340,34	2 042,54	625,79	-315,32	7 322 546,30	456 775,03	66° 1' 8,544 N	8° 2' 48,966 E
2 270,00	40,82	340,13	2 050,10	631,94	-317,53	7 322 552,45	456 772,82	66° 1' 8,742 N	8° 2' 48,784 E
2 280,00	40,82	340,08	2 057,67	638,09	-319,75	7 322 558,60	456 770,60	66° 1' 8,939 N	8° 2' 48,600 E
2 290,00	40,82	340,12	2 065,24	644,23	-321,98	7 322 564,74	456 768,37	66° 1' 9,137 N	8° 2' 48,416 E
2 300,00	40,81	340,15	2 072,81	650,38	-324,20	7 322 570,89	456 766,15	66° 1' 9,334 N	8° 2' 48,232 E
2 310,00	40,67	340,07	2 080,38	656,52	-326,42	7 322 577,02	456 763,93	66° 1' 9,531 N	8° 2' 48,049 E
2 320,00	40,46	339,98	2 087,98	662,63	-328,64	7 322 583,13	456 761,71	66° 1' 9,727 N	8° 2' 47,865 E
2 330,00	40,25	339,88	2 095,60	668,71	-330,86	7 322 589,21	456 759,49	66° 1' 9,922 N	8° 2' 47,681 E
2 340,00	40,17	339,93	2 103,24	674,77	-333,08	7 322 595,27	456 757,27	66° 1' 10,117 N	8° 2' 47,498 E
2 350,00	40,12	340,02	2 110,88	680,83	-335,29	7 322 601,33	456 755,07	66° 1' 10,311 N	8° 2' 47,316 E
2 360,00	40,05	340,05	2 118,53	686,88	-337,49	7 322 607,38	456 752,87	66° 1' 10,506 N	8° 2' 47,134 E
2 370,00	39,94	340,01	2 126,19	692,93	-339,68	7 322 613,41	456 750,67	66° 1' 10,700 N	8° 2' 46,953 E
2 380,00	39,84	339,97	2 133,87	698,95	-341,88	7 322 619,44	456 748,48	66° 1' 10,893 N	8° 2' 46,771 E
2 390,00	39,70	339,97	2 141,55	704,96	-344,07	7 322 625,45	456 746,29	66° 1' 11,086 N	8° 2' 46,590 E
2 400,00	39,55	339,97	2 149,26	710,95	-346,25	7 322 631,43	456 744,11	66° 1' 11,278 N	8° 2' 46,410 E
2 410,00	39,40	340,00	2 156,97	716,93	-348,43	7 322 637,41	456 741,93	66° 1' 11,470 N	8° 2' 46,230 E

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
2 420,00	39,27	340,08	2 164,71	722,88	-350,59	7 322 643,36	456 739,77	66° 1' 11,661 N	8° 2' 46,051 E
2 430,00	39,14	340,16	2 172,46	728,83	-352,74	7 322 649,30	456 737,62	66° 1' 11,852 N	8° 2' 45,873 E
2 440,00	38,89	340,05	2 180,23	734,75	-354,89	7 322 655,22	456 735,48	66° 1' 12,042 N	8° 2' 45,696 E
2 450,00	38,63	339,91	2 188,03	740,63	-357,03	7 322 661,10	456 733,34	66° 1' 12,231 N	8° 2' 45,519 E
2 460,00	38,40	339,80	2 195,85	746,48	-359,17	7 322 666,95	456 731,19	66° 1' 12,419 N	8° 2' 45,342 E
2 470,00	38,24	339,77	2 203,70	752,30	-361,32	7 322 672,76	456 729,05	66° 1' 12,605 N	8° 2' 45,165 E
2 480,00	38,08	339,74	2 211,56	758,09	-363,45	7 322 678,56	456 726,91	66° 1' 12,791 N	8° 2' 44,988 E
2 490,00	38,00	339,79	2 219,43	763,87	-365,58	7 322 684,34	456 724,78	66° 1' 12,977 N	8° 2' 44,812 E
2 500,00	37,94	339,86	2 227,32	769,65	-367,71	7 322 690,11	456 722,66	66° 1' 13,162 N	8° 2' 44,637 E
2 510,00	37,83	339,86	2 235,21	775,41	-369,82	7 322 695,87	456 720,55	66° 1' 13,347 N	8° 2' 44,462 E
2 520,00	37,66	339,75	2 243,12	781,16	-371,93	7 322 701,61	456 718,44	66° 1' 13,532 N	8° 2' 44,287 E
2 530,00	37,49	339,64	2 251,04	786,88	-374,05	7 322 707,33	456 716,32	66° 1' 13,715 N	8° 2' 44,113 E
2 540,00	37,25	339,51	2 258,99	792,57	-376,17	7 322 713,02	456 714,20	66° 1' 13,898 N	8° 2' 43,938 E
2 550,00	37,00	339,38	2 266,96	798,22	-378,29	7 322 718,67	456 712,09	66° 1' 14,079 N	8° 2' 43,763 E
2 560,00	36,76	339,26	2 274,96	803,83	-380,41	7 322 724,28	456 709,97	66° 1' 14,260 N	8° 2' 43,588 E
2 570,00	36,57	339,19	2 282,98	809,42	-382,53	7 322 729,86	456 707,85	66° 1' 14,439 N	8° 2' 43,413 E
2 580,00	36,38	339,12	2 291,02	814,97	-384,64	7 322 735,41	456 705,73	66° 1' 14,617 N	8° 2' 43,239 E
2 590,00	36,14	339,01	2 299,09	820,50	-386,75	7 322 740,94	456 703,62	66° 1' 14,794 N	8° 2' 43,064 E
2 600,00	35,90	338,89	2 307,18	825,98	-388,87	7 322 746,42	456 701,51	66° 1' 14,970 N	8° 2' 42,890 E
2 610,00	35,61	338,67	2 315,29	831,43	-390,98	7 322 751,87	456 699,40	66° 1' 15,145 N	8° 2' 42,716 E
2 620,00	35,40	338,56	2 323,43	836,84	-393,10	7 322 757,27	456 697,28	66° 1' 15,319 N	8° 2' 42,541 E
2 630,00	35,20	338,47	2 331,59	842,22	-395,22	7 322 762,65	456 695,16	66° 1' 15,491 N	8° 2' 42,367 E
2 640,00	35,06	338,38	2 339,77	847,57	-397,33	7 322 768,00	456 693,05	66° 1' 15,663 N	8° 2' 42,192 E
2 650,00	34,97	338,30	2 347,96	852,90	-399,45	7 322 773,33	456 690,93	66° 1' 15,834 N	8° 2' 42,018 E
2 660,00	34,89	338,22	2 356,16	858,22	-401,57	7 322 778,64	456 688,81	66° 1' 16,005 N	8° 2' 41,843 E
2 670,00	34,89	338,19	2 364,36	863,53	-403,69	7 322 783,95	456 686,69	66° 1' 16,175 N	8° 2' 41,668 E
2 680,00	34,90	338,16	2 372,56	868,84	-405,82	7 322 789,26	456 684,56	66° 1' 16,346 N	8° 2' 41,493 E
2 690,00	34,88	338,15	2 380,77	874,15	-407,95	7 322 794,57	456 682,44	66° 1' 16,516 N	8° 2' 41,318 E
2 700,00	34,84	338,17	2 388,97	879,45	-410,07	7 322 799,87	456 680,31	66° 1' 16,686 N	8° 2' 41,143 E
2 710,00	34,80	338,19	2 397,18	884,76	-412,20	7 322 805,17	456 678,19	66° 1' 16,856 N	8° 2' 40,968 E
2 720,00	34,80	338,26	2 405,39	890,06	-414,31	7 322 810,47	456 676,07	66° 1' 17,026 N	8° 2' 40,794 E
2 730,00	34,80	338,32	2 413,61	895,36	-416,43	7 322 815,77	456 673,96	66° 1' 17,196 N	8° 2' 40,620 E
2 740,00	34,79	338,48	2 421,82	900,66	-418,53	7 322 821,07	456 671,86	66° 1' 17,367 N	8° 2' 40,447 E
2 750,00	34,76	338,73	2 430,03	905,97	-420,61	7 322 826,38	456 669,78	66° 1' 17,537 N	8° 2' 40,275 E
2 760,00	34,74	338,99	2 438,25	911,29	-422,66	7 322 831,70	456 667,73	66° 1' 17,708 N	8° 2' 40,105 E
2 770,00	34,73	339,27	2 446,47	916,61	-424,69	7 322 837,02	456 665,70	66° 1' 17,878 N	8° 2' 39,938 E
2 780,00	34,73	339,55	2 454,68	921,95	-426,70	7 322 842,35	456 663,70	66° 1' 18,050 N	8° 2' 39,773 E
2 790,00	34,75	339,85	2 462,90	927,29	-428,67	7 322 847,69	456 661,72	66° 1' 18,221 N	8° 2' 39,609 E
2 800,00	34,80	340,15	2 471,12	932,65	-430,62	7 322 853,05	456 659,77	66° 1' 18,393 N	8° 2' 39,448 E
2 807,90	34,77	340,67	2 477,60	936,90	-432,13	7 322 857,29	456 658,26	66° 1' 18,529 N	8° 2' 39,323 E
2 830,34	34,82	341,46	2 496,03	949,01	-436,29	7 322 869,40	456 654,10	66° 1' 18,918 N	8° 2' 38,979 E
2 845,00	34,75	341,45	2 508,07	956,94	-438,95	7 322 877,33	456 651,45	66° 1' 19,173 N	8° 2' 38,758 E
9 5/8"									
2 856,03	34,70	341,45	2 517,14	962,90	-440,95	7 322 883,28	456 649,45	66° 1' 19,364 N	8° 2' 38,592 E
2 885,52	34,25	341,73	2 541,45	978,73	-446,22	7 322 899,11	456 644,18	66° 1' 19,873 N	8° 2' 38,155 E
2 914,12	33,68	340,94	2 565,17	993,87	-451,33	7 322 914,25	456 639,07	66° 1' 20,359 N	8° 2' 37,731 E
2 942,94	33,60	342,76	2 589,16	1 009,04	-456,31	7 322 929,41	456 634,10	66° 1' 20,846 N	8° 2' 37,318 E
2 972,66	35,60	344,09	2 613,63	1 025,22	-461,12	7 322 945,58	456 629,29	66° 1' 21,366 N	8° 2' 36,917 E
3 001,61	36,40	345,26	2 637,05	1 041,63	-465,61	7 322 961,98	456 624,80	66° 1' 21,894 N	8° 2' 36,540 E
3 029,20	36,31	345,06	2 659,27	1 057,44	-469,80	7 322 977,79	456 620,61	66° 1' 22,402 N	8° 2' 36,189 E
3 057,83	36,23	345,28	2 682,35	1 073,81	-474,13	7 322 994,15	456 616,27	66° 1' 22,928 N	8° 2' 35,825 E
3 085,17	34,47	342,51	2 704,65	1 089,01	-478,51	7 323 009,34	456 611,90	66° 1' 23,417 N	8° 2' 35,459 E
3 114,15	34,58	339,83	2 728,53	1 104,55	-483,81	7 323 024,88	456 606,60	66° 1' 23,916 N	8° 2' 35,020 E
3 143,90	34,98	340,05	2 752,96	1 120,49	-489,63	7 323 040,82	456 600,78	66° 1' 24,427 N	8° 2' 34,539 E
3 175,11	35,84	341,14	2 778,40	1 137,55	-495,64	7 323 057,87	456 594,78	66° 1' 24,975 N	8° 2' 34,041 E

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
3 203,55	36,01	341,18	2 801,43	1 153,34	-501,03	7 323 073,65	456 589,39	66° 1' 25,482 N	8° 2' 33,595 E
3 231,35	35,47	341,63	2 823,99	1 168,73	-506,21	7 323 089,04	456 584,21	66° 1' 25,976 N	8° 2' 33,165 E
3 260,56	34,68	341,67	2 847,90	1 184,66	-511,49	7 323 104,96	456 578,93	66° 1' 26,488 N	8° 2' 32,726 E
3 288,83	34,58	341,78	2 871,16	1 199,91	-516,53	7 323 120,21	456 573,89	66° 1' 26,978 N	8° 2' 32,308 E
3 318,38	34,70	342,01	2 895,47	1 215,88	-521,75	7 323 136,17	456 568,68	66° 1' 27,491 N	8° 2' 31,875 E
3 348,99	35,00	341,89	2 920,59	1 232,51	-527,17	7 323 152,79	456 563,26	66° 1' 28,025 N	8° 2' 31,424 E
3 374,48	36,01	342,52	2 941,34	1 246,61	-531,69	7 323 166,89	456 558,74	66° 1' 28,478 N	8° 2' 31,048 E
3 391,00	35,81	343,07	2 954,72	1 255,86	-534,56	7 323 176,14	456 555,87	66° 1' 28,775 N	8° 2' 30,810 E
7"									
3 411,23	35,57	343,74	2 971,15	1 267,17	-537,93	7 323 187,44	456 552,50	66° 1' 29,138 N	8° 2' 30,529 E
3 440,24	34,03	342,94	2 994,97	1 283,03	-542,67	7 323 203,30	456 547,76	66° 1' 29,648 N	8° 2' 30,133 E
3 469,04	32,13	344,11	3 019,11	1 298,10	-547,14	7 323 218,36	456 543,30	66° 1' 30,132 N	8° 2' 29,761 E
3 496,25	29,76	343,79	3 042,44	1 311,55	-551,00	7 323 231,80	456 539,43	66° 1' 30,564 N	8° 2' 29,437 E
3 505,00	29,48	343,89	3 050,05	1 315,70	-552,21	7 323 235,96	456 538,23	66° 1' 30,698 N	8° 2' 29,337 E
Not Sst									
3 525,00	28,83	344,12	3 067,51	1 325,07	-554,89	7 323 245,32	456 535,55	66° 1' 30,999 N	8° 2' 29,112 E
3 541,00	28,41	344,20	3 081,56	1 332,44	-556,98	7 323 252,69	456 533,46	66° 1' 31,236 N	8° 2' 28,937 E
Not Shale									
3 549,00	28,21	344,23	3 088,60	1 336,09	-558,02	7 323 256,34	456 532,42	66° 1' 31,353 N	8° 2' 28,851 E
Ile									
3 556,15	28,02	344,27	3 094,91	1 339,34	-558,93	7 323 259,58	456 531,51	66° 1' 31,457 N	8° 2' 28,775 E
3 585,02	28,01	343,20	3 120,40	1 352,35	-562,73	7 323 272,59	456 527,71	66° 1' 31,876 N	8° 2' 28,457 E
3 589,00	28,11	343,16	3 123,91	1 354,15	-563,27	7 323 274,38	456 527,17	66° 1' 31,933 N	8° 2' 28,412 E
Tofte Alt1									
3 613,35	28,72	342,90	3 145,32	1 365,23	-566,65	7 323 285,46	456 523,79	66° 1' 32,289 N	8° 2' 28,130 E
3 636,00	28,66	343,37	3 165,19	1 375,63	-569,81	7 323 295,86	456 520,64	66° 1' 32,624 N	8° 2' 27,868 E
Tofte Alt2									
3 641,21	28,65	343,48	3 169,76	1 378,03	-570,52	7 323 298,26	456 519,93	66° 1' 32,701 N	8° 2' 27,808 E
3 671,37	28,74	343,00	3 196,22	1 391,89	-574,70	7 323 312,12	456 515,75	66° 1' 33,146 N	8° 2' 27,460 E
3 699,65	28,93	342,75	3 220,99	1 404,93	-578,71	7 323 325,15	456 511,74	66° 1' 33,565 N	8° 2' 27,125 E
3 725,00	28,93	342,75	3 243,18	1 416,64	-582,35	7 323 336,86	456 508,10	66° 1' 33,941 N	8° 2' 26,823 E

Statoil
Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	11 S	Survey Calculation Method:	Minimum Curvature
Design:	11 S	Database:	EDM Oracle

Casing Points					
Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)	
459,00	459,00	30"	30,000	36,000	
1 366,10	1 328,20	13 3/8"	13,375	17,500	
2 845,00	2 508,07	9 5/8"	9,625	12,250	
3 391,00	2 954,72	7"	7,000	7,500	

Formations					
Measured Depth (m)	Vertical Depth (m)	Name	Lithology	Dip (°)	Dip Direction (°)
3 505,00	3 050,05	Not Sst		0,00	
3 541,00	3 081,56	Not Shale		0,00	
3 549,00	3 088,60	Ile		0,00	
3 589,00	3 123,91	Tofte Alt1		0,00	
3 636,00	3 165,19	Tofte Alt2		0,00	

Checked By: _____	Approved By: _____	Date: _____
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STATOIL - Norway

NORNE

Norne K

6608/10-K-3 H - Slot 3

K-3 H

Design: K-3 H

Survey Report - Geographic

28 november, 2006

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	K-3 H	Survey Calculation Method:	Minimum Curvature
Design:	K-3 H	Database:	EDM Oracle

Project	NORNE, Norway		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 32N (6 E to 12 E)		Using geodetic scale factor

Site		Norne K, 6608/10			
Site Position:		Northing:	7 321 920,75 m	Latitude:	66° 0' 48,498 N
From:	Map	Easting:	457 090,23 m	Longitude:	8° 3' 14,731 E
Position Uncertainty:	0,00 m	Slot Radius:	in	Grid Convergence:	-0,86 °

Well	6608/10-K-3 H - Slot 3					
Well Position	+N/-S	5,64 m	Northing:	7 321 926,39 m	Latitude:	66° 0' 48,679 N
	+E/-W	-2,31 m	Easting:	457 087,92 m	Longitude:	8° 3' 14,541 E
Position Uncertainty		0,00 m	Wellhead Depth:	371,50 m	Water Depth:	375,70 m

Wellbore	K-3 H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MNETICREFERENCE	24.04.2006	-0,23	76,10	51 995

Design	K-3 H				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	1 320,00
Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)	
	395,50	5,64	-2,31	231,54	

Survey Program	Date	28.11.2006			
From (m)	To (m)	Survey (Wellbore)	Tool Name	Description	
420,00	1 320,00	K-3 11S Gyro 12 1/4" (11 S)	Wellbore Surveyor, cont	Gyro Tool from GD	
1 330,00	2 640,01	K 3H 9 5/8 Casing Gyro (K-3 H)	Wellbore Surveyor, cont	Gyro Tool from GD	
2 640,50	2 655,00	K-3 H MWD 12 1/4" (K-3 H)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)	
2 656,00	3 849,00	K-3 H MWD 8 1/2" (K-3 H)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)	

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	K-3 H	Survey Calculation Method:	Minimum Curvature
Design:	K-3 H	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
395,50	0,00	0,00	395,50	5,64	-2,31	7 321 926,39	457 087,92	66° 0' 48,679 N	8° 3' 14,541 E
420,00	0,19	26,84	420,00	5,68	-2,29	7 321 926,43	457 087,94	66° 0' 48,681 N	8° 3' 14,542 E
450,00	0,29	29,24	450,00	5,79	-2,23	7 321 926,54	457 088,00	66° 0' 48,684 N	8° 3' 14,547 E
480,00	0,44	25,80	480,00	5,96	-2,15	7 321 926,71	457 088,09	66° 0' 48,690 N	8° 3' 14,553 E
510,00	0,53	21,12	510,00	6,19	-2,05	7 321 926,94	457 088,19	66° 0' 48,697 N	8° 3' 14,561 E
540,00	0,52	19,38	540,00	6,45	-1,95	7 321 927,20	457 088,28	66° 0' 48,706 N	8° 3' 14,568 E
570,00	0,54	21,19	570,00	6,71	-1,85	7 321 927,46	457 088,38	66° 0' 48,714 N	8° 3' 14,576 E
600,00	0,62	21,01	599,99	6,99	-1,74	7 321 927,74	457 088,49	66° 0' 48,723 N	8° 3' 14,584 E
630,00	0,88	22,52	629,99	7,36	-1,60	7 321 928,11	457 088,63	66° 0' 48,735 N	8° 3' 14,595 E
660,00	1,26	26,81	659,99	7,87	-1,36	7 321 928,61	457 088,87	66° 0' 48,752 N	8° 3' 14,613 E
690,00	1,68	24,66	689,98	8,56	-1,03	7 321 929,31	457 089,20	66° 0' 48,774 N	8° 3' 14,639 E
720,00	2,72	21,40	719,95	9,62	-0,59	7 321 930,37	457 089,64	66° 0' 48,809 N	8° 3' 14,673 E
750,00	3,48	19,34	749,91	11,14	-0,02	7 321 931,89	457 090,21	66° 0' 48,858 N	8° 3' 14,715 E
780,00	4,66	13,10	779,83	13,19	0,55	7 321 933,93	457 090,78	66° 0' 48,924 N	8° 3' 14,759 E
810,00	6,24	3,17	809,70	16,00	0,92	7 321 936,75	457 091,15	66° 0' 49,015 N	8° 3' 14,784 E
840,00	7,01	359,02	839,50	19,46	0,98	7 321 940,21	457 091,21	66° 0' 49,127 N	8° 3' 14,785 E
870,00	7,68	355,32	869,25	23,29	0,78	7 321 944,03	457 091,01	66° 0' 49,251 N	8° 3' 14,765 E
900,00	8,17	351,39	898,96	27,40	0,30	7 321 948,14	457 090,53	66° 0' 49,383 N	8° 3' 14,722 E
930,00	9,03	347,08	928,63	31,80	-0,54	7 321 952,54	457 089,69	66° 0' 49,525 N	8° 3' 14,649 E
960,00	11,07	338,41	958,17	36,77	-2,13	7 321 957,51	457 088,10	66° 0' 49,684 N	8° 3' 14,518 E
990,00	13,54	329,82	987,48	42,49	-4,96	7 321 963,22	457 085,27	66° 0' 49,867 N	8° 3' 14,287 E
1 020,00	16,65	322,30	1 016,44	48,93	-9,35	7 321 969,66	457 080,88	66° 0' 50,073 N	8° 3' 13,930 E
1 030,00	17,59	319,77	1 026,00	51,21	-11,20	7 321 971,94	457 079,03	66° 0' 50,146 N	8° 3' 13,781 E
1 040,00	18,54	317,25	1 035,51	53,54	-13,26	7 321 974,26	457 076,98	66° 0' 50,220 N	8° 3' 13,615 E
1 050,00	19,48	315,30	1 044,96	55,89	-15,51	7 321 976,62	457 074,72	66° 0' 50,295 N	8° 3' 13,433 E
1 060,00	20,42	313,39	1 054,36	58,27	-17,95	7 321 979,00	457 072,28	66° 0' 50,371 N	8° 3' 13,237 E
1 070,00	21,23	311,99	1 063,71	60,68	-20,57	7 321 981,41	457 069,67	66° 0' 50,447 N	8° 3' 13,027 E
1 080,00	21,88	311,25	1 073,01	63,12	-23,31	7 321 983,85	457 066,93	66° 0' 50,525 N	8° 3' 12,806 E
1 090,00	22,52	310,51	1 082,27	65,59	-26,17	7 321 986,32	457 064,07	66° 0' 50,603 N	8° 3' 12,576 E
1 100,00	23,07	310,03	1 091,49	68,10	-29,13	7 321 988,82	457 061,12	66° 0' 50,682 N	8° 3' 12,339 E
1 110,00	23,61	309,56	1 100,67	70,63	-32,17	7 321 991,36	457 058,07	66° 0' 50,763 N	8° 3' 12,094 E
1 120,00	24,16	309,15	1 109,81	73,20	-35,30	7 321 993,92	457 054,94	66° 0' 50,844 N	8° 3' 11,843 E
1 130,00	24,73	308,82	1 118,91	75,80	-38,52	7 321 996,53	457 051,73	66° 0' 50,927 N	8° 3' 11,585 E
1 140,00	25,30	308,48	1 127,98	78,44	-41,82	7 321 999,17	457 048,43	66° 0' 51,010 N	8° 3' 11,320 E
1 150,00	25,85	308,27	1 137,00	81,12	-45,20	7 322 001,84	457 045,04	66° 0' 51,095 N	8° 3' 11,048 E
1 160,00	26,39	308,06	1 145,98	83,85	-48,67	7 322 004,56	457 041,58	66° 0' 51,181 N	8° 3' 10,770 E
1 170,00	26,86	307,93	1 154,91	86,60	-52,20	7 322 007,32	457 038,05	66° 0' 51,268 N	8° 3' 10,487 E
1 180,00	27,23	307,90	1 163,82	89,40	-55,78	7 322 010,11	457 034,47	66° 0' 51,357 N	8° 3' 10,199 E
1 190,00	27,60	307,86	1 172,70	92,23	-59,42	7 322 012,94	457 030,83	66° 0' 51,446 N	8° 3' 9,907 E
1 200,00	27,92	307,56	1 181,55	95,07	-63,10	7 322 015,79	457 027,15	66° 0' 51,537 N	8° 3' 9,612 E
1 210,00	28,24	307,23	1 190,37	97,93	-66,84	7 322 018,65	457 023,41	66° 0' 51,627 N	8° 3' 9,312 E
1 220,00	28,54	306,93	1 199,17	100,80	-70,64	7 322 021,51	457 019,62	66° 0' 51,718 N	8° 3' 9,007 E
1 230,00	28,81	306,68	1 207,94	103,67	-74,48	7 322 024,38	457 015,78	66° 0' 51,809 N	8° 3' 8,699 E
1 240,00	29,08	306,42	1 216,69	106,56	-78,37	7 322 027,27	457 011,89	66° 0' 51,900 N	8° 3' 8,387 E
1 250,00	28,99	306,15	1 225,44	109,43	-82,28	7 322 030,14	457 007,98	66° 0' 51,991 N	8° 3' 8,073 E
1 260,00	28,88	305,87	1 234,19	112,27	-86,19	7 322 032,98	457 004,07	66° 0' 52,080 N	8° 3' 7,760 E
1 270,00	28,73	305,67	1 242,95	115,09	-90,10	7 322 035,80	457 000,16	66° 0' 52,169 N	8° 3' 7,446 E
1 280,00	28,53	305,57	1 251,73	117,88	-94,00	7 322 038,59	456 996,27	66° 0' 52,258 N	8° 3' 7,134 E
1 290,00	28,29	305,63	1 260,52	120,65	-97,87	7 322 041,35	456 992,40	66° 0' 52,345 N	8° 3' 6,824 E
1 300,00	28,04	305,77	1 269,34	123,40	-101,70	7 322 044,11	456 988,57	66° 0' 52,432 N	8° 3' 6,516 E
1 310,00	27,73	306,03	1 278,18	126,15	-105,49	7 322 046,85	456 984,78	66° 0' 52,519 N	8° 3' 6,213 E
1 320,00	27,42	306,29	1 287,04	128,88	-109,22	7 322 049,58	456 981,05	66° 0' 52,605 N	8° 3' 5,913 E
1 330,00	28,55	303,40	1 295,87	131,56	-113,08	7 322 052,26	456 977,20	66° 0' 52,690 N	8° 3' 5,604 E
1 340,00	28,80	303,46	1 304,65	134,20	-117,08	7 322 054,90	456 973,19	66° 0' 52,773 N	8° 3' 5,283 E
1 350,00	29,06	303,65	1 313,40	136,87	-121,11	7 322 057,57	456 969,16	66° 0' 52,858 N	8° 3' 4,960 E

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	K-3 H	Survey Calculation Method:	Minimum Curvature
Design:	K-3 H	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
1 360,00	29,36	303,95	1 322,13	139,59	-125,17	7 322 060,29	456 965,11	66° 0' 52,943 N	8° 3' 4,635 E
1 369,00	29,64	304,00	1 329,96	142,06	-128,84	7 322 062,76	456 961,44	66° 0' 53,021 N	8° 3' 4,341 E
Kai									
1 370,00	29,67	304,01	1 330,83	142,34	-129,25	7 322 063,04	456 961,03	66° 0' 53,030 N	8° 3' 4,308 E
1 380,00	29,94	303,93	1 339,51	145,12	-133,37	7 322 065,81	456 956,91	66° 0' 53,118 N	8° 3' 3,978 E
1 388,66	30,13	303,70	1 347,00	147,53	-136,97	7 322 068,22	456 953,31	66° 0' 53,194 N	8° 3' 3,689 E
Kai (6608/10-K-3 H K-3 H K-3 H (P17) 08aug06)									
1 390,00	30,16	303,67	1 348,16	147,90	-137,54	7 322 068,60	456 952,75	66° 0' 53,206 N	8° 3' 3,644 E
1 400,00	30,49	303,26	1 356,79	150,69	-141,75	7 322 071,38	456 948,54	66° 0' 53,293 N	8° 3' 3,307 E
1 410,00	30,70	302,81	1 365,40	153,46	-146,01	7 322 074,16	456 944,27	66° 0' 53,381 N	8° 3' 2,965 E
1 420,00	30,86	302,37	1 373,99	156,22	-150,33	7 322 076,91	456 939,96	66° 0' 53,468 N	8° 3' 2,620 E
1 430,00	30,67	301,16	1 382,59	158,91	-154,67	7 322 079,60	456 935,61	66° 0' 53,553 N	8° 3' 2,272 E
1 440,00	30,17	299,29	1 391,21	161,46	-159,05	7 322 082,15	456 931,24	66° 0' 53,633 N	8° 3' 1,922 E
1 450,00	29,74	297,33	1 399,87	163,83	-163,44	7 322 084,52	456 926,85	66° 0' 53,707 N	8° 3' 1,570 E
1 460,00	29,27	295,45	1 408,58	166,02	-167,85	7 322 086,71	456 922,44	66° 0' 53,775 N	8° 3' 1,218 E
1 470,00	28,86	293,46	1 417,32	168,03	-172,28	7 322 088,72	456 918,02	66° 0' 53,838 N	8° 3' 0,865 E
1 480,00	28,34	291,33	1 426,10	169,85	-176,70	7 322 090,54	456 913,60	66° 0' 53,895 N	8° 3' 0,511 E
1 490,00	27,90	289,39	1 434,92	171,49	-181,12	7 322 092,18	456 909,18	66° 0' 53,946 N	8° 3' 0,159 E
1 500,00	27,28	286,75	1 443,78	172,93	-185,52	7 322 093,62	456 904,78	66° 0' 53,990 N	8° 2' 59,808 E
1 510,00	26,89	284,35	1 452,68	174,15	-189,91	7 322 094,84	456 900,40	66° 0' 54,027 N	8° 2' 59,459 E
1 520,00	26,38	281,16	1 461,62	175,14	-194,28	7 322 095,83	456 896,03	66° 0' 54,057 N	8° 2' 59,111 E
1 530,00	25,61	277,02	1 470,61	175,84	-198,60	7 322 096,52	456 891,70	66° 0' 54,077 N	8° 2' 58,767 E
1 540,00	24,18	274,25	1 479,68	176,25	-202,79	7 322 096,94	456 887,52	66° 0' 54,089 N	8° 2' 58,434 E
1 550,00	22,33	271,87	1 488,87	176,47	-206,73	7 322 097,15	456 883,58	66° 0' 54,094 N	8° 2' 58,121 E
1 560,00	20,76	269,72	1 498,17	176,52	-210,40	7 322 097,20	456 879,91	66° 0' 54,094 N	8° 2' 57,830 E
1 570,00	19,65	268,72	1 507,56	176,47	-213,86	7 322 097,16	456 876,45	66° 0' 54,090 N	8° 2' 57,556 E
1 580,00	18,70	268,11	1 517,00	176,38	-217,14	7 322 097,07	456 873,17	66° 0' 54,086 N	8° 2' 57,296 E
1 590,00	17,61	267,16	1 526,50	176,26	-220,25	7 322 096,94	456 870,06	66° 0' 54,080 N	8° 2' 57,049 E
1 600,00	16,53	266,31	1 536,06	176,09	-223,18	7 322 096,77	456 867,13	66° 0' 54,073 N	8° 2' 56,817 E
1 610,00	15,67	265,57	1 545,67	175,89	-225,95	7 322 096,58	456 864,37	66° 0' 54,066 N	8° 2' 56,598 E
1 620,00	14,77	266,33	1 555,32	175,71	-228,57	7 322 096,39	456 861,75	66° 0' 54,059 N	8° 2' 56,390 E
1 650,00	12,27	271,20	1 584,49	175,53	-235,57	7 322 096,21	456 854,75	66° 0' 54,049 N	8° 2' 55,835 E
1 680,00	9,41	282,35	1 613,95	176,12	-241,16	7 322 096,80	456 849,16	66° 0' 54,066 N	8° 2' 55,391 E
1 710,00	7,39	296,56	1 643,63	177,51	-245,28	7 322 098,19	456 845,04	66° 0' 54,108 N	8° 2' 55,063 E
1 740,00	4,00	306,17	1 673,48	178,99	-247,85	7 322 099,67	456 842,47	66° 0' 54,155 N	8° 2' 54,857 E
1 770,00	1,24	331,10	1 703,45	179,89	-248,85	7 322 100,57	456 841,47	66° 0' 54,184 N	8° 2' 54,776 E
1 800,00	0,82	70,14	1 733,44	180,25	-248,81	7 322 100,93	456 841,52	66° 0' 54,195 N	8° 2' 54,779 E
1 830,00	2,91	73,48	1 763,43	180,54	-247,87	7 322 101,22	456 842,45	66° 0' 54,205 N	8° 2' 54,853 E
1 860,00	6,00	76,41	1 793,33	181,12	-245,62	7 322 101,80	456 844,70	66° 0' 54,225 N	8° 2' 55,031 E
1 890,00	9,30	77,29	1 823,06	182,03	-241,73	7 322 102,71	456 848,59	66° 0' 54,256 N	8° 2' 55,339 E
1 920,00	11,45	76,81	1 852,57	183,24	-236,47	7 322 103,92	456 853,85	66° 0' 54,298 N	8° 2' 55,755 E
1 922,00	11,49	76,89	1 854,53	183,33	-236,08	7 322 104,01	456 854,24	66° 0' 54,301 N	8° 2' 55,785 E
Tare									
1 950,00	12,08	78,00	1 881,94	184,57	-230,50	7 322 105,25	456 859,82	66° 0' 54,344 N	8° 2' 56,227 E
1 976,00	12,53	79,33	1 907,34	185,66	-225,06	7 322 106,34	456 865,25	66° 0' 54,381 N	8° 2' 56,656 E
Tang									
1 980,00	12,60	79,53	1 911,24	185,82	-224,21	7 322 106,50	456 866,11	66° 0' 54,387 N	8° 2' 56,724 E
2 010,00	11,79	82,13	1 940,57	186,83	-217,95	7 322 107,51	456 872,36	66° 0' 54,423 N	8° 2' 57,219 E
2 020,00	11,58	83,10	1 950,36	187,09	-215,95	7 322 107,77	456 874,37	66° 0' 54,432 N	8° 2' 57,378 E
Springar									
2 040,00	11,17	85,14	1 969,97	187,50	-212,02	7 322 108,18	456 878,29	66° 0' 54,447 N	8° 2' 57,688 E
2 070,00	10,02	89,03	1 999,46	187,79	-206,52	7 322 108,47	456 883,79	66° 0' 54,459 N	8° 2' 58,125 E
2 100,00	9,41	90,59	2 029,03	187,81	-201,46	7 322 108,49	456 888,85	66° 0' 54,462 N	8° 2' 58,526 E
2 130,00	8,63	95,36	2 058,65	187,57	-196,76	7 322 108,25	456 893,54	66° 0' 54,457 N	8° 2' 58,899 E
2 160,00	8,06	111,18	2 088,34	186,60	-192,56	7 322 107,28	456 897,74	66° 0' 54,428 N	8° 2' 59,233 E

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Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	K-3 H	Survey Calculation Method:	Minimum Curvature
Design:	K-3 H	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
2 190,00	7,57	129,13	2 118,07	184,59	-189,07	7 322 105,27	456 901,24	66° 0' 54,365 N	8° 2' 59,513 E
2 220,00	7,00	150,67	2 147,83	181,75	-186,64	7 322 102,43	456 903,66	66° 0' 54,274 N	8° 2' 59,709 E
2 250,00	7,68	176,03	2 177,59	178,16	-185,60	7 322 098,84	456 904,70	66° 0' 54,159 N	8° 2' 59,795 E
2 280,00	9,27	198,78	2 207,27	173,87	-186,24	7 322 094,55	456 904,06	66° 0' 54,020 N	8° 2' 59,750 E
2 310,00	12,85	204,28	2 236,71	168,54	-188,39	7 322 089,23	456 901,91	66° 0' 53,847 N	8° 2' 59,586 E
2 340,00	16,41	207,54	2 265,73	161,74	-191,72	7 322 082,43	456 898,58	66° 0' 53,626 N	8° 2' 59,330 E
2 350,00	17,63	207,75	2 275,30	159,15	-193,08	7 322 079,84	456 897,22	66° 0' 53,541 N	8° 2' 59,225 E
2 360,00	18,89	207,56	2 284,79	156,37	-194,54	7 322 077,06	456 895,77	66° 0' 53,451 N	8° 2' 59,113 E
2 370,00	20,13	207,13	2 294,22	153,40	-196,07	7 322 074,10	456 894,23	66° 0' 53,354 N	8° 2' 58,995 E
2 380,00	21,22	206,51	2 303,57	150,25	-197,66	7 322 070,95	456 892,64	66° 0' 53,252 N	8° 2' 58,872 E
2 390,00	22,32	205,92	2 312,86	146,92	-199,30	7 322 067,62	456 891,00	66° 0' 53,144 N	8° 2' 58,746 E
2 400,00	23,39	205,50	2 322,07	143,43	-200,98	7 322 064,12	456 889,32	66° 0' 53,030 N	8° 2' 58,617 E
2 410,00	24,50	205,10	2 331,21	139,76	-202,72	7 322 060,45	456 887,59	66° 0' 52,911 N	8° 2' 58,484 E
2 420,00	25,65	204,82	2 340,27	135,91	-204,51	7 322 056,61	456 885,80	66° 0' 52,786 N	8° 2' 58,347 E
2 430,00	26,68	204,91	2 349,25	131,91	-206,36	7 322 052,61	456 883,95	66° 0' 52,656 N	8° 2' 58,204 E
2 435,00	27,21	205,24	2 353,70	129,86	-207,32	7 322 050,56	456 882,99	66° 0' 52,589 N	8° 2' 58,131 E
Lyr									
2 440,00	27,74	205,55	2 358,14	127,78	-208,31	7 322 048,48	456 882,00	66° 0' 52,521 N	8° 2' 58,055 E
2 450,00	29,00	206,54	2 366,94	123,51	-210,40	7 322 044,21	456 879,91	66° 0' 52,382 N	8° 2' 57,894 E
2 460,00	30,34	207,50	2 375,63	119,10	-212,65	7 322 039,80	456 877,66	66° 0' 52,239 N	8° 2' 57,721 E
2 465,00	31,01	207,94	2 379,93	116,84	-213,83	7 322 037,55	456 876,48	66° 0' 52,166 N	8° 2' 57,630 E
Spekk									
2 468,00	31,42	208,19	2 382,49	115,47	-214,57	7 322 036,18	456 875,75	66° 0' 52,121 N	8° 2' 57,573 E
Melke									
2 470,00	31,69	208,36	2 384,20	114,55	-215,06	7 322 035,25	456 875,25	66° 0' 52,091 N	8° 2' 57,535 E
2 480,00	33,12	209,15	2 392,64	109,85	-217,64	7 322 030,56	456 872,67	66° 0' 51,938 N	8° 2' 57,336 E
2 490,00	34,56	210,00	2 400,95	105,01	-220,39	7 322 025,72	456 869,92	66° 0' 51,780 N	8° 2' 57,124 E
2 500,00	36,06	210,77	2 409,11	100,02	-223,31	7 322 020,73	456 867,00	66° 0' 51,618 N	8° 2' 56,898 E
2 510,00	37,63	211,47	2 417,11	94,89	-226,41	7 322 015,60	456 863,90	66° 0' 51,451 N	8° 2' 56,658 E
2 520,00	39,20	212,00	2 424,94	89,60	-229,68	7 322 010,32	456 860,64	66° 0' 51,279 N	8° 2' 56,406 E
2 530,00	40,55	212,43	2 432,62	84,18	-233,10	7 322 004,90	456 857,22	66° 0' 51,102 N	8° 2' 56,141 E
2 540,00	41,75	212,85	2 440,15	78,64	-236,65	7 321 999,36	456 853,67	66° 0' 50,921 N	8° 2' 55,866 E
2 550,00	42,77	213,09	2 447,55	73,00	-240,31	7 321 993,72	456 850,01	66° 0' 50,737 N	8° 2' 55,583 E
2 560,00	43,80	213,32	2 454,83	67,26	-244,06	7 321 987,99	456 846,26	66° 0' 50,550 N	8° 2' 55,292 E
2 570,00	44,85	213,60	2 461,98	61,43	-247,92	7 321 982,16	456 842,41	66° 0' 50,360 N	8° 2' 54,993 E
2 580,00	45,87	213,90	2 469,01	55,52	-251,87	7 321 976,25	456 838,46	66° 0' 50,167 N	8° 2' 54,687 E
2 590,00	46,97	214,23	2 475,90	49,52	-255,93	7 321 970,25	456 834,40	66° 0' 49,972 N	8° 2' 54,372 E
2 600,00	48,16	214,58	2 482,65	43,43	-260,10	7 321 964,16	456 830,23	66° 0' 49,773 N	8° 2' 54,049 E
2 601,00	48,30	214,61	2 483,32	42,81	-260,52	7 321 963,55	456 829,81	66° 0' 49,753 N	8° 2' 54,016 E
Melke CU3									
2 610,00	49,53	214,92	2 489,23	37,24	-264,39	7 321 957,98	456 825,94	66° 0' 49,571 N	8° 2' 53,716 E
2 620,00	51,16	215,37	2 495,61	30,95	-268,82	7 321 951,68	456 821,51	66° 0' 49,366 N	8° 2' 53,372 E
2 630,00	52,83	215,85	2 501,77	24,54	-273,41	7 321 945,28	456 816,92	66° 0' 49,157 N	8° 2' 53,016 E
2 634,00	53,35	216,00	2 504,17	21,95	-275,29	7 321 942,69	456 815,05	66° 0' 49,072 N	8° 2' 52,870 E
Melke CU2									
2 640,00	54,12	216,22	2 507,72	18,04	-278,14	7 321 938,79	456 812,20	66° 0' 48,945 N	8° 2' 52,648 E
2 654,68	57,43	216,27	2 515,98	8,25	-285,31	7 321 929,00	456 805,03	66° 0' 48,625 N	8° 2' 52,091 E
2 693,69	61,07	216,77	2 535,92	-18,68	-305,26	7 321 902,07	456 785,08	66° 0' 47,746 N	8° 2' 50,541 E
2 723,84	66,97	213,57	2 549,12	-40,83	-320,85	7 321 879,93	456 769,50	66° 0' 47,023 N	8° 2' 49,332 E
2 751,26	73,18	212,37	2 558,46	-62,45	-334,87	7 321 858,32	456 755,49	66° 0' 46,319 N	8° 2' 48,246 E
2 779,32	78,16	214,75	2 565,41	-85,10	-349,89	7 321 835,69	456 740,47	66° 0' 45,580 N	8° 2' 47,081 E
2 785,00	78,88	215,23	2 566,54	-89,66	-353,09	7 321 831,13	456 737,28	66° 0' 45,432 N	8° 2' 46,834 E
Garn 3									
2 809,60	82,01	217,30	2 570,62	-109,21	-367,43	7 321 811,58	456 722,93	66° 0' 44,793 N	8° 2' 45,719 E

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	K-3 H	Survey Calculation Method:	Minimum Curvature
Design:	K-3 H	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
2 812,00	82,03	217,30	2 570,95	-111,10	-368,88	7 321 809,69	456 721,49	66° 0' 44,732 N	8° 2' 45,607 E
Garn 2									
2 838,34	82,24	217,35	2 574,56	-131,85	-384,70	7 321 788,95	456 705,68	66° 0' 44,054 N	8° 2' 44,377 E
2 867,82	79,49	220,75	2 579,24	-154,45	-403,03	7 321 766,36	456 687,36	66° 0' 43,316 N	8° 2' 42,951 E
2 896,25	77,09	223,05	2 585,01	-175,17	-421,61	7 321 745,65	456 668,78	66° 0' 42,638 N	8° 2' 41,502 E
2 901,00	77,14	222,95	2 586,07	-178,56	-424,77	7 321 742,26	456 665,62	66° 0' 42,527 N	8° 2' 41,255 E
Garn 1									
2 926,50	77,43	222,40	2 591,68	-196,84	-441,63	7 321 723,98	456 648,77	66° 0' 41,928 N	8° 2' 39,940 E
2 955,13	82,62	224,74	2 596,64	-217,26	-461,06	7 321 703,57	456 629,34	66° 0' 41,260 N	8° 2' 38,424 E
2 961,00	83,26	224,92	2 597,36	-221,39	-465,17	7 321 699,44	456 625,24	66° 0' 41,124 N	8° 2' 38,103 E
Not									
2 982,51	85,60	225,56	2 599,45	-236,47	-480,37	7 321 684,37	456 610,04	66° 0' 40,630 N	8° 2' 36,916 E
3 011,51	86,80	226,70	2 601,37	-256,52	-501,23	7 321 664,33	456 589,19	66° 0' 39,973 N	8° 2' 35,286 E
3 041,07	87,57	227,38	2 602,82	-276,64	-522,83	7 321 644,21	456 567,59	66° 0' 39,312 N	8° 2' 33,597 E
3 045,11	87,36	227,30	2 603,00	-279,37	-525,80	7 321 641,48	456 564,63	66° 0' 39,223 N	8° 2' 33,365 E
K (P17) T1 12sep06 drillers									
3 063,54	86,42	226,91	2 604,00	-291,90	-539,29	7 321 628,96	456 551,15	66° 0' 38,812 N	8° 2' 32,311 E
K (P17) T1 23jan06 drillers									
3 069,36	86,12	226,79	2 604,38	-295,87	-543,52	7 321 624,99	456 546,91	66° 0' 38,681 N	8° 2' 31,979 E
3 098,37	84,03	225,87	2 606,87	-315,83	-564,43	7 321 605,04	456 526,02	66° 0' 38,027 N	8° 2' 30,346 E
3 108,00	83,81	225,29	2 607,89	-322,53	-571,27	7 321 598,34	456 519,18	66° 0' 37,807 N	8° 2' 29,811 E
Ile 2.2									
3 112,00	83,72	225,06	2 608,32	-325,33	-574,09	7 321 595,54	456 516,36	66° 0' 37,715 N	8° 2' 29,591 E
GOC (provisional)									
3 127,45	83,36	224,13	2 610,06	-336,27	-584,86	7 321 584,61	456 505,59	66° 0' 37,357 N	8° 2' 28,750 E
3 156,32	84,19	223,93	2 613,19	-356,90	-604,81	7 321 563,98	456 485,65	66° 0' 36,681 N	8° 2' 27,193 E
3 185,08	87,26	223,30	2 615,34	-377,66	-624,59	7 321 543,23	456 465,87	66° 0' 36,001 N	8° 2' 25,649 E
3 214,36	87,57	223,37	2 616,66	-398,94	-644,67	7 321 521,96	456 445,81	66° 0' 35,305 N	8° 2' 24,083 E
3 243,40	87,00	222,36	2 618,03	-420,20	-664,40	7 321 500,71	456 426,08	66° 0' 34,609 N	8° 2' 22,544 E
3 250,00	86,95	222,24	2 618,38	-425,07	-668,83	7 321 495,84	456 421,65	66° 0' 34,449 N	8° 2' 22,198 E
Fault 1									
3 271,17	86,80	221,84	2 619,53	-440,77	-682,99	7 321 480,14	456 407,50	66° 0' 33,935 N	8° 2' 21,095 E
3 298,86	87,13	221,35	2 621,00	-461,45	-701,34	7 321 459,47	456 389,15	66° 0' 33,259 N	8° 2' 19,664 E
K (P17) Help 23jan06 drillers									
3 300,23	87,15	221,33	2 621,07	-462,48	-702,25	7 321 458,45	456 388,25	66° 0' 33,225 N	8° 2' 19,594 E
3 328,72	88,37	221,58	2 622,18	-483,81	-721,10	7 321 437,12	456 369,41	66° 0' 32,527 N	8° 2' 18,125 E
3 357,11	90,14	221,23	2 622,55	-505,11	-739,87	7 321 415,83	456 350,64	66° 0' 31,830 N	8° 2' 16,662 E
3 387,04	89,66	221,48	2 622,60	-527,57	-759,65	7 321 393,38	456 330,87	66° 0' 31,095 N	8° 2' 15,121 E
3 416,10	89,80	221,88	2 622,74	-549,28	-778,97	7 321 371,68	456 311,55	66° 0' 30,385 N	8° 2' 13,615 E
3 442,00	87,93	221,31	2 623,25	-568,64	-796,16	7 321 352,32	456 294,37	66° 0' 29,752 N	8° 2' 12,276 E
Fault 2									
3 444,87	87,72	221,25	2 623,36	-570,80	-798,05	7 321 350,17	456 292,48	66° 0' 29,681 N	8° 2' 12,128 E
3 466,00	86,82	220,93	2 624,37	-586,70	-811,92	7 321 334,27	456 278,61	66° 0' 29,161 N	8° 2' 11,048 E
Ile 2.2									
3 475,03	86,43	220,80	2 624,90	-593,52	-817,82	7 321 327,46	456 272,72	66° 0' 28,938 N	8° 2' 10,588 E
3 485,00	86,13	220,87	2 625,55	-601,05	-824,33	7 321 319,93	456 266,21	66° 0' 28,692 N	8° 2' 10,082 E
Fault 3									
3 504,69	85,54	221,00	2 626,98	-615,88	-837,19	7 321 305,10	456 253,35	66° 0' 28,206 N	8° 2' 9,079 E
3 533,43	86,28	221,38	2 629,03	-637,45	-856,07	7 321 283,54	456 234,48	66° 0' 27,501 N	8° 2' 7,609 E
3 561,18	87,80	222,76	2 630,46	-658,03	-874,64	7 321 262,97	456 215,92	66° 0' 26,827 N	8° 2' 6,161 E
3 589,94	88,40	224,10	2 631,41	-678,90	-894,40	7 321 242,11	456 196,17	66° 0' 26,144 N	8° 2' 4,620 E
3 619,17	87,77	224,65	2 632,39	-699,78	-914,83	7 321 221,23	456 175,74	66° 0' 25,460 N	8° 2' 3,025 E
3 645,21	89,55	224,84	2 633,00	-718,27	-933,16	7 321 202,75	456 157,42	66° 0' 24,854 N	8° 2' 1,595 E
K (P17) T2 19dec05 drillers									

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	Local Co-ordinate Reference:	Site Norne K
Project:	NORNE	TVD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Site:	Norne K	MD Reference:	RT#1 @ 24,00m (Transocean Arctic (RT))
Well:	6608/10-K-3 H	North Reference:	Grid
Wellbore:	K-3 H	Survey Calculation Method:	Minimum Curvature
Design:	K-3 H	Database:	EDM Oracle

Survey									
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
3 648,82	89,80	224,87	2 633,02	-720,83	-935,70	7 321 200,19	456 154,88	66° 0' 24,770 N	8° 2' 1,396 E
3 677,60	89,91	224,39	2 633,09	-741,31	-955,92	7 321 179,72	456 134,67	66° 0' 24,099 N	8° 1' 59,818 E
3 706,49	89,43	224,53	2 633,26	-761,93	-976,16	7 321 159,11	456 114,44	66° 0' 23,423 N	8° 1' 58,239 E
3 734,44	89,80	224,84	2 633,45	-781,80	-995,81	7 321 139,25	456 094,80	66° 0' 22,772 N	8° 1' 56,705 E
3 763,30	89,91	224,88	2 633,52	-802,26	-1 016,17	7 321 118,80	456 074,45	66° 0' 22,101 N	8° 1' 55,115 E
3 792,77	88,54	224,49	2 633,92	-823,21	-1 036,89	7 321 097,85	456 053,73	66° 0' 21,415 N	8° 1' 53,498 E
3 821,13	88,00	224,19	2 634,78	-843,48	-1 056,70	7 321 077,59	456 033,93	66° 0' 20,750 N	8° 1' 51,952 E
3 849,00	88,00	224,19	2 635,75	-863,45	-1 076,12	7 321 057,62	456 014,52	66° 0' 20,096 N	8° 1' 50,437 E

Casing Points					
Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)	
459,00	459,00	30"	30,000	36,000	
1 322,00	1 288,81	13 3/8" Window (top WS)	13,375	17,500	
2 671,00	2 524,58	9 5/8"	9,625	12,250	
3 848,00	2 635,71	7"	7,000	8,500	

Formations						
Measured Depth (m)	Vertical Depth (m)	Name	Lithology	Dip (°)	Dip Direction (°)	
1 369,00	1 329,96	Kai		0,00		
1 922,00	1 854,53	Tare		0,00		
1 976,00	1 907,34	Tang		0,00		
2 020,00	1 950,36	Springar		0,00		
2 435,00	2 353,70	Lyr		0,00		
2 465,00	2 379,93	Spekk		0,00		
2 468,00	2 382,49	Melke		0,00		
2 601,00	2 483,32	Melke CU3		0,00		
2 634,00	2 504,17	Melke CU2		0,00		
2 785,00	2 566,54	Garn 3		0,00		
2 812,00	2 570,95	Garn 2		0,00		
2 901,00	2 586,07	Garn 1		0,00		
2 961,00	2 597,36	Not		0,00		
3 108,00	2 607,89	Ile 2.2		0,00		
3 112,00	2 608,32	GOC (provisional)		0,00		
3 250,00	2 618,38	Fault 1		0,00		
3 442,00	2 623,25	Fault 2		0,00		
3 466,00	2 624,37	Ile 2.2		0,00		
3 485,00	2 625,55	Fault 3		0,00		

Checked By: _____	Approved By: _____	Date: _____
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7 Appendix 2: Operational experience

N O T A T

Harstad
29.09.2006

TIL:	Jostein Gaasemyr	UPN Norne
	Roger Tønnessen	UPN Norne B&B
	Arnt Eirik Rørnes	UPN LET HNO
KOPI:	Geir Tungesvik	UPN LET OPR
	Viggo Larsen	UPN LET OPR
	Ole Magnar Drønen	UPN Norne PETEK
FRA:	Stig Vassmyr	UPN LET HNO NO

SAK: **Oppsummering av vann kick hendelse brønn
6608/10-11S TROST, Transocean Artic, 26.07.2006**

Utarbeidet av: Sven-Arne Orby, Sveinung Tysse, Espen Granberg

1. Kort beskrivelse av forløpet:

Den 26.07.2006 ble letebrønn 6608/10-11S kontrollert stengt inne pga kick i Langeformasjonen. Under boring av 8 ½" seksjon på 2918 m MD/2568 m TVD med 1,20 SG OBM ble det observert 2,6 m³ gain i aktivt system. Upper Annular Preventer (UAP) ble umiddelbart stengt og brønnen ble observert. Et innestengningstrykk på 47-53 bar ble observert på choke line. Vann kick ble sirkulert ut med 1,44 SG OBM, og observerte brønn. Brønn ble fortrent til 1,52 SG OBM. Referer til Synergi no. 402885

2. Kompenserende tiltak, umiddelbare på riggen:

Land ble varslet og brønnen ble stengt inne. Brønnen ble så drept med Wait and Weight metoden.

3. Årsak til feilprognose:

I utgangspunktet var Intra Lange sandsteinen over Trost prospektet (Garnformasjonen hoved mål) tolket til å kunne stå i kommunikasjon med Garn reservoaret på Norne feltet. Dette ble lagt til grunn for poretrykksberegningen i Lange sandsteinen. Ut fra dette kom man frem til at maks poretrykk ved kommunikasjon mellom Garn Fm på Norne feltet og Lange sandsteinen på Trost prospektet.

Alve og Skarv feltene ble ikke vurdert når poretrykks beregning ble utført. Poretrykksevaluering av data etter kicket viste tydelig likhets trekk med Alve og Skarv feltet. Se kommentar under i kursiv:

Poretrykk Alve: I Cromer Knoll gruppen (Lysing, Lange og Lyr) på Alve feltet er det en høytrykksone på opp til 1.52 sg i poretrykk på 2992 TVD MSL. I reservoaret (Garn og Ile) er det også en høyt trykk, 1.33 sg..

Poretrykk Skarv: I Cromer Knoll gruppen (Lysing, Lange og Lyr) på Skarv feltet er det en høytrykksone på opp til 1.45 sg i poretrykk på 2995.2 TVD MSL. I reservoaret (Garn og Ile) er det normal trykk i reservoaret tilsvarende det en finner på Norne og de fleste brønner i Nordland området.

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Cromer Knoll på Trost ligger noe grunnere; ca 400 meter.

Fra et geologisk tolknings synspunkt mht. kommunikasjon og migrasjon mellom Alve og Trost er det lite sannsynlig i Garn/Not da det er flere forkastninger mellom disse brønnene. Poretrykket i kritt sekvensen på Trost er mer lik Alve og Skarv enn på Norne feltet. Tolker en poretrykk på Trost ved å bruke sonic loggen (fra wireline logging) gir det tilsvarende trykk som en ser på Alve og Skarv.

4. Erfaringer:

I ettertid ser en at bredere QC på poretrykket kunne fanget feiltolkning slik at Skarv og Alve hadde blitt vurdert. Realtime poretrykksoppfølging ved bruk av Predict kunne vært nyttig i denne brønnen da en fikk klare indikasjoner fra resistivitet logg om økning i poretrykket.

Det skal samtidig nevnes at i en pre-brønn evaluering ville man uansett måtte hensynta at sandsteiner i Lange formasjonen kunne stå i kommunikasjon med et hydrokarbonfylt Norne reservoar.

Nye brønner i samme området vil bli sammenlignet med flere felter enn bare Norne.

Håndtering av kicken onshore/offshore ble håndtert profesjonelt og ”utført etter boka”.

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K-3 H Geo-steering Summary

The objective of the geo-steered section was to steer the 8.5” hole section as close to the roof of the Ile 2.2 Formation without entering the overlying Not Shale. Two faults were expected along the planned trajectory.

The 9-5/8” casing shoe in the lower Melke Formation was set 7m tvd deeper than planned. This caused an anti-collision issue with the B-4 DHT2 after drilling out the shoe. In order to avoid this, the well bore was steered upward. Unintended dog legs of up to 7 deg were achieved. This took the well bore above the planned trajectory. The well bore passed through target 1 as planned but at a steeper inclination. It entered the Ile 2.2 reservoir section at 2785m MD, approximately 30m vertical section further along the well bore than intended. This had an affect (albeit minor) of reducing the perforated interval in the reservoir section.

After entering the Ile 2.2, the well was steered to the base of the Ile 2.2 prior to crossing Fault #1. The throw on the fault was expected to be 8-10m, down thrown on the near side. The well bore crossed fault #1 at 3250m MD, 2619m TVDRT and entered the upper part of the Ile 2.2 on the far side of the fault as planned. The well bore was only 3m below the roof on the far side. The roof was climbing away from the well bore along hole at 2 deg inclination. The well bore was initially steered down at 88 deg and then to 90 deg before dipping to 87 deg prior to crossing Fault #2.

The wellbore crossed fault #2 at 3442m MD, 2624m TVDRT and entered the Not Shale. The inclination was lowered to 86 deg to steer back into Ile 2.2 reservoir. The well bore penetrated 24m MD of Not Shale before emerging back into Ile 2.2. The well bore was then planned to steer back to 87 deg, however it continued to steer at 85.5 – 86 deg. A request was made to steer to an inclination of 89 deg at 3532m MD, 2630m TVDRT. The well bore continued to encounter difficulty in building inclination. At 3640m MD, it was requested that the wellbore steer at 90 deg inclination and at 3717m MD it was requested to build to 91 deg. An unprognosed fault was crossed at 3730m MD. The well bore passed 1m tvd below the roof of the reservoir. Biostratigraphy indicated it was in the lower part of Ile 2.2, indicating a possible erosion surface.

At 3757m MD, the well bore achieved 90 deg and it was decided to stay at this inclination until TD at 3840m MD.

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7.1 Appendix 2.1: Operational listing

WELLBORE ID: NO 6608/10-K-3 H

INTERVAL: 17 1/2"

START TIME: 15.05.2006 23:00

END TIME: 19.05.2006 12:30

Report date	Description
16.05.2006	Ran 17 1/2" bit and BHA to 10 m above seabed. Moved rig to well center. Stabbed bit into well. RIH and tagged cmt at 455 m. Drilled out cmt in shoetrack. Checked mudpump. Drilled through rathole. Drilled 17 1/2" hole to 611 m.
17.05.2006	Drilled 17 1/2" hole from 611 m to 940 m. Unable to achieve expected inclination from Powerdrive. Circulated hole clean and displaced well to 1,05 Hi-vis mud. POOH. Released J-tool from WHIM. Pulled out and changed bit, Powerdrive and CDR tool. Ran 17 1/2" bit and BHA down to 10 m above seabed. Entered WHIM with bit and BHA. Engaged J-tool. RIH to 936 m. Set PowerDrive prior to continue drilling 17 1/2" hole.

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Report date	Description
18.05.2006	Drilled 17 1/2" hole with PowerDrive from 940 m to 1371 m. Circulated hole clean and displaced to 1,30 sg mud. POOH and retrieved WHIM from WH. Pulled 17 1/2" bit, BHA and WHIM to surface. Racked BHA in derrick and parked WHIM on spider in moonpool. Prepared cmt stand. RU to run 13 3/8" csg.
19.05.2006	Ran 13 3/8" casing. Landed 18 3/4" WH in 30 " housing with casing shoe at 1366 m. Circulated 2 x annulus volumes. Cementing 13 3/8" casing.

INTERVAL: MOVE

START TIME: 19.05.2006 12:30

END TIME: 02.09.2006 08:30

Report date	Description
20.05.2006	Cemented 13 3/8" casing. Released and POOH 18 3/4" WH RT. Deballasted rig and performed anchor handling. Meanwhile LD BHA, cement stand from derrick and performed general rig maintenance.
01.09.2006	Moved rig from well G-2 H to well K-3 H. Anchor handling.
02.09.2006	Anchor handling.

WELLBORE ID: NO 6608/10-11 S

INTERVAL: MOVE

START TIME: 12.07.2006 01:00

END TIME: 17.07.2006 04:30

Report date	Description
12.07.2006	Rig in transit from G-template to K-template. Anchor handling.
13.07.2006	WOW. Meanwhile performed rig maintenance.
14.07.2006	WOW. Meanwhile performed rig maintenance.
15.07.2006	WOW. Anchor handling.
16.07.2006	Anchor handling.

INTERVAL: 17 1/2"

START TIME: 17.07.2006 04:30

END TIME: 19.07.2006 09:30

Report date	Description
17.07.2006	Anchor handling. Moved rig 50 m off template. RU to run BOP and riser.
18.07.2006	Ran BOP and riser. Moved rig to well center. adjusted position and prepared to land BOP on well head.
19.07.2006	Landed BOP. Locked WH connector and performed 25 mt overpull test. Stroked out slip joint and installed diverter. Tested casing to 160 bar. Installed HWWB and tested WH connector to 345 bar. RIH with 12 1/4" bit and BHA. Drilled cement wiper plugs. Displaced kill, choke and booster lines to 1,44 sg OBM.

INTERVAL: 12 1/4"

START TIME: 19.07.2006 09:30

END TIME: 26.07.2006 00:30

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Report date	Description
20.07.2006	Displaced well to 1,44 sg OBM while drilling shoe track. Drilled 12 1/4" hole with PowerDrive from 1371 m to 1877 m.
21.07.2006	Drilled 12 1/4" hole from 1877 m to 2571 m.
22.07.2006	Drilled 12 1/4" hole with PowerDrive from 2571 m to TD at 2851 m. Circulated hole clean. POOH with to 109 m.
23.07.2006	POOH from 109 m and L/D 12 1/4" BHA. RIH and washed well head. Retrieved heavy walled wear bushing. R/U to run casing. Ran 9 5/8" casing to 836 m.
24.07.2006	RIH with 9 5/8" casing from 836 m to 2845 m. Landed casing hanger in well head. Circulated and conditioned mud. Lined up for pumping base oil and spacer.
25.07.2006	Cemented 9 5/8" casing. POOH with running tool. L/D landing string. R/D cement equipment. Installed wear bushing. R/U wire line and ran gyro inside 9 5/8" casing. R/D wire line equipment.

INTERVAL: 8 1/2"

START TIME: 26.07.2006 00:30

END TIME: 04.08.2006 06:30

Report date	Description
26.07.2006	M/U 8 1/2" PowerDrive BHA. RIH and tagged TOC at 2818 m. Displaced well to 1,20 sg OB. Drilled shoe track and cleaned rat hole to 2851 m. Drilled 8 1/2" pilot hole to 2918 m. Observed 2,6 m3 influx. Shut in well and prepared to kill well.
27.07.2006	Circulated out kick with 1,44 sg kill mud. Displaced well to 1,52 sg OBM. Drilled and oriented 8 1/2" hole from 2918 m to 3003 m.
28.07.2006	Drilled and oriented 8 1/2" hole from 3003 m to 3388 m.
29.07.2006	Drilled 8 1/2" hole to TD at 3392 m. Circulated hole clean. POOH. LD PowerDrive BHA. Rigged up and ran DSI/PEX-N-ECS logging tool. Logged well. POOH to 2130 m.
30.07.2006	POOH and L/D DSI/PEX-N-ECS logging sting. MU and RIH with MDT logging tool. Logged well to 2990 m. POOH and L/D MDT tool string. M/U and RIH with WAVSP survey tool. Perform WAVSP.
31.07.2006	POOH with WAVSP survey tool. Rigged up and ran 7" liner to 494 m.
01.08.2006	RIH with 7" liner to 590 m. MU liner hanger and RIH with liner on 5 1/2" HWDP and 5 1/2" DP to 3391 m. Set hanger. Circulated and cemented liner. Set packer. Pumped slug and prepared to POOH with running tool.
02.08.2006	POOH and LD liner running tool. MU BHA for drilling shoe track. RIH to 3315 m. Drilled cement and plug from 3315 m to 3345 m while displacing to 1,30 sg OBM. Prepared to POOH due to lack of progress.
03.08.2006	POOH with 6" BHA. MU and RIH with new 6" BHA for drilling shoetrack to 3315 m. Washed down to 3359 m. Drilled landing collar at 3359 m and drilled cement to 3374 m.
04.08.2006	Drilled shoetrack to 3392 m. Flow checked well and slugged pipe. POOH and LD BHA. RIH new BHA for drilling 6" hole to 3390 m.

INTERVAL: 6"

START TIME: 04.08.2006 06:30

END TIME: 10.08.2006 03:30

Report date	Description
05.08.2006	Drilled 6" hole from 3392 m to 3420 m MD RKB. POOH to change MWD due to signal loss. Pressure tested BOP to 35/320 bar 5/10 min. RIH with 6" drilling BHA to 1090 m.
06.08.2006	RIH with 6" drilling BHA. Drilled 6" hole from 3420 m to 3638 m MD RKB.
07.08.2006	Drilled 6" hole to 3725 m MD RT. Circulated hole clean. POOH and LD 6" drilling BHA. RU for WL logging. RIH logging run #1 and logged PEX-AIT. Trouble shooting on depth offset in logging software.
08.08.2006	RIH logging run #1 and logged PEX-AIT. RIH logging run #2, CMR. Not able to pass PBR. RIH logging run #3 and logged MDT-DSI. POOH with MDT-DSI.
09.08.2006	POOH and LD MDT logging string. MU and RIH MSCT logging string. Tool hung up when entering open hole. RIH to 3450 m. Tool hung up. Had to pull max allowable tension (7000 lbs) to free tool string. Pulled MSCT logging string into 7 liner and evaluated situation. Decided to POOH for wiper trip. RIH 6" wiper trip assy and circulated 1,5 times BU. Flow checked well and POOH to 3384 m.

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INTERVAL: PERM P&A
START TIME: 10.08.2006 03:30
END TIME: 15.08.2006 04:00

Report date	Description
10.08.2006	POOH with 6" wiper trip BHA. RU WL. RIH and performed MDT sampling. POOH and RD MDT tool string and WL equipment. PU and RIH 2 7/8" cement stinger to 90 m.
11.08.2006	RIH with 2 7/8" DP cement stinger on 5 1/2" DP to 3723 m. Circulated and conditioned 1,30 s.g. OBM. Mixed, pumped and displaced 3 cement plugs from 3725 m to 2975 m.
12.08.2006	Mixed, pumped and displaced cement plug from 2975 m to 2725 m. POOH with 2 7/8" DP cement stinger. MU 10 3/4" casing spear stand and racked back in derrick. MU 9 5/8" casing cutter assembly and RIH to 345 m. Pressure tested cement plug to 210 bar for 10 minutes. RIH with 9 5/8" casing cutter to 1360 m. Cut 9 5/8" casing at 1360 m. POOH with 9 5/8" casing cutter.
13.08.2006	POOH with 9 5/8" casing cutter and LD same. Retrieved wear bushing and seal assembly with SLT on 5 1/2" drill pipe. RIH with 10 3/4" casing spear and pulled out with 10 3/4" casing hanger. LD 10 3/4" casing hanger, 13 3/8" spacer sleeve and x-over. POOH and LD 9 5/8" casing.
14.08.2006	LD 9 5/8" casing. Installed HWWB. Set and tested EZSV at 1336 m. Displaced well from 1,30 s.g. OBM to seawater. Prepared to disconnect and pull MR / BOP.

INTERVAL: MOVE
START TIME: 15.08.2006 04:00
END TIME: 16.08.2006 00:00

Report date	Description
15.08.2006	Pulled MR and BOP. Handled supply vessel. Move rig 150 m S/W to anchor handling position.

WELLBORE ID: NO 6608/10-K-3 H
INTERVAL: RE-ENT.
START TIME: 02.09.2006 08:30
END TIME: 06.09.2006 04:00

Report date	Description
03.09.2006	Anchor handling. RU and ran BOP and riser. Moved rig to well center. Landed BOP on WH. Locked WH connector and performed pull test to 25 mt overpull.
04.09.2006	MU and RIH with SLT. Pressure tested WH connector to 345 bar. POOH with SLT. RIH with 13 3/8" whipstock and 12 1/4" milling assembly. Set whipstock and sheared milling assembly free. Displaced well from sea water to 1,42 sg OBM.
05.09.2006	Milled window in 13 3/8" casing from 1322 m to 1326 m. POOH due to lack of progress. Lower part of milling assembly lost in hole. RIH with 11 3/4" overshot. Latched on to fish and POOH.

INTERVAL: 12 1/4"
START TIME: 06.09.2006 04:00
END TIME: 12.09.2006 07:30

Report date	Description
06.09.2006	RIH. Milled and polished 12 1/4" window in 13 3/8" casing. Drilled 12 1/4" hole to 1333 m. POOH. MU cement stand. RIH with 12 1/4" bit and PowerDrive BHA. Drilled 12 1/4" hole from 1333 m to 1375 m.
07.09.2006	Drilled 12 1/4" hole with PowerDrive from 1375 m to 1983 m.
08.09.2006	Drilled 12 1/4" hole with Powerdrive from 1983 m to 2628 m.

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Report date	Description
09.09.2006	Drilled 12 1/4" hole to TD at 2677 m. Circulated hole clean and POOH. Retrieved heavy wall wear bushing. RU and ran 9 5/8" casing to 37 m.
10.09.2006	Ran 9 5/8" casing from 37 m to 2153 m.
11.09.2006	Ran 9 5/8" x 10 3/4" csg from 2153 m and landed csg hanger with 9 5/8" shoe at 2671 m. Circulated and cemented csg. Displaced cement and bumped plug. Bled off pressure and checked float for back flow. Set and tested seal assembly. Released RT and POOH with landing string. LD RT and casing running equipment. Installed 10 3/4" wear bushing and pressure tested BOP to 345 bar. POOH and LD BOP test tool and SLT. LD cement stand. RU WL for running Gyro inside casing. RIH with Gyro to 1000 m on 5/16" WL. POOH to 100 m to change CCL due to erratic signal.
12.09.2006	POOH with Gyro and changed CCL. RIH and performed Gyro survey on 5/16" WL. MU 8 1/2" PowerDrive BHA. Pressure tested 9 5/8 x 10 3/4" csg to 345 bar/10 min. RIH and tagged landing collar at 2644 m. Drilled wiper plugs and float and displaced well to 1.26 sg OBM. Drilled 9 5/8" shoe track to 2672 m.

INTERVAL: 8 1/2"

START TIME: 12.09.2006 07:30

END TIME: 15.09.2006 04:00

Report date	Description
13.09.2006	Drilled and oriented 8 1/2" hole from 2672 m to 3158 m.
14.09.2006	Drilled and oriented 8 1/2" hole from 3158 m to 3693 m. Took formation pressure point showing 253 bar at 3485 m MD/2626 m TVD RT.

INTERVAL: COMPL LINER

START TIME: 15.09.2006 04:00

END TIME: 22.09.2006 03:00

Report date	Description
15.09.2006	Drilled 8 1/2" hole to TD at 3849 m. Circulated hole clean. Got leak on wash pipe and aborted circulation. Got differential stuck after racking back drilling stand. Pulled string free with 120 ton overpull. POOH into 9 5/8" casing and changed wash pipe. Circulated 1,5 times btms up at 2550 m. POOH and LD 8 1/2" BHA. Rigged up for running 7" liner.
16.09.2006	RIH with 7" liner at 1227 m. MU 7" liner hanger.
17.09.2006	Made up 7" liner hanger and circulated one liner volume with 1.23 sg OBM. RIH w/7" liner. Stopped at 2759 m. Circulated and worked string down. Unable to pass. Accidentally pumped 1.70 sg cement spacer. Pulled into csg shoe and circulated out spacer. POOH and LD 7" liner to 635 m.
18.09.2006	POOH and LD 7" liner. MU and RIH w/ wiper BHA. Hit obstruction at 2762 m. Attempted to wash down and backream ream out. String stalled out and packed off several times. Had stuck pipe tendencies while working string free. Worked string free with varying parameters. Backreamed and worked string into csg shoe. Circulated well clean. Had lots of fine sand and cuttings in returns. RIH to 2740 m. Washed and worked string down to 2839 m.
19.09.2006	Worked and reamed area from 2839 m to 3069 m. String packed off and stalled out several times. Back reamed out to 9 5/8" csg shoe and circulated hole clean. RIH. Washed and worked tight area from 3069 m to 3102 m and 3442 m to 3477 m. RIH to TD at 3849 m. Started to circulate hole clean and increase mud weight from 1.23 sg to 1.26 sg.
20.09.2006	Circulated on TD and increased MW in two steps from 1.23 sg to 1.30 sg. POOH to 9 5/8" shoe and circulated 1.5 x BU. POOH and racked BHA. RU and RIH 7" liner to 358 m.
21.09.2006	RIH with 7" liner to 1226 m. MU hanger and circulated 1 liner volume. RIH with 7" liner on DP to TD at 3849 m. Spaced out and MU cement head. Circulated while displacing well from 1.30 SG to 1.26 SG OBM.

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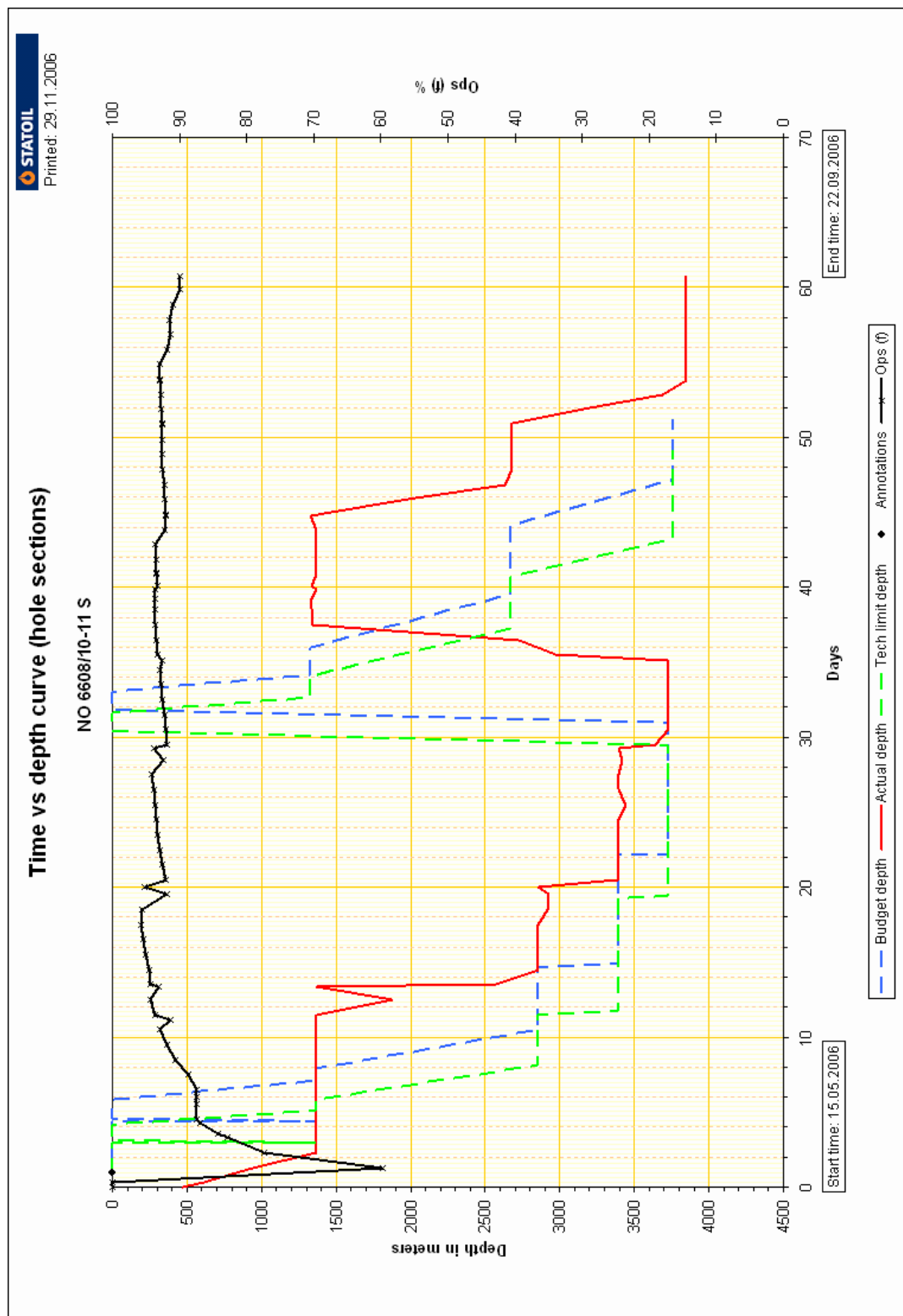
8 Appendix 3: Figures and tables

8.1 Wellbore schematic

Well: 6608/10-K-3 H (P17) & 6608/10-11 S (Trost)															WELL SCHEMATIC	
Field: Norne		Rig: TOA (24m MSL - RKB)														
HOLE		CASING				LOT FIT	TOC		CSG. SHOE		RKB		Inclin.	M.W. [SG]	LWD LOGS	SURV CSG/ OH
SIZE	TVD MD	SIZE	TYPE / RAD. MARKERS	CENTRALIZERS	TEST PRESS [BAR]		TVD	MD	TVD	MD					WL LOGS	
SB	399,7															
36"	467 467	30"	30", 309,7#, X-56, ST-2		N/A				459	459			1			
17 1/2"	1332 1371	13 3/8"	18 3/4" WH x 20", 133 #, X-56, Antares pin 20" Antares box x 13 3/8", 72# Vam Top box 13 3/8", 72 #, Vam Top pin x pin 13 3/8" 72#, N-80, Vam Top	2 ea on shoetrack	160				1327	1366			26			
12 1/4"	2513 2851	9 5/8"	10 3/4" 60,7#, VamTop box x 9 5/8" Vam Top Pin Cutted 9 5/8", 53.5#, C-95, Vam top at 1360 m MD	1 cent per jnt to approx. 2445 m MD First 2 jts of Shoetrack 2 centr./jnt.	345		2184	2445					39	1,44 SG OBM	GR Resist.	
							2410	2725								
							2459	2785								
8 1/2"	2955 3392	7"	TOL - TD m MD: 7", 29#, 13CR-80, Vam Top	1 cent per jnt					2508	2845			35		GR Resist.	
									2955	3391			36		MDT ECS VSP Dens Neu Sonic	
														1,30 SG OBM	GR Resist.	

WELL SCHEMATIC																
Well: 6608/10-K-3 H (P17)																
Field: Norne																
Rig: TOA (24m MSL - RKB)																
HOLE		CASING				LOT FIT	TOC		CSG. SHOE		RKB		Inclin.	M.W. [SG]	LWD LOGS WL LOGS	SURY CSG OH
SIZE	TVD MD	SIZE	TYPE / RAD. MARKERS	CENTRALIZERS	TEST PRESS [BAR]		TVD	MD	TVD	MD						
SB	399,7															
36"	467 467	30"	30", 309,7#, X-56, ST-2		N/A			459	459				1			
17 1/2"	1332 1371	13 3/8"	18 3/4" WH x 20", 133 #, X-56, Antares pin 20" Antares box x 13 3/8", 72# Vam Top box 13 3/8", 72 #, Vam Top pin x pin 13 3/8" 72#, N-80, Vam Top	2 ea on shoetrack jnts.	160			1327	1366				30			
12 1/4"	2528 2677	9 5/8"	401-514 m MD : 10 3/4", 60.7 ppf, C-95, Vam top 514- 2442 m MD : 9 5/8", 53.5#, C-95, Vam top from 2442 m to shoetrack: 9 5/8", 53.5#, 13CR-80, Vam Top shoetrack -TD m MD : 9 5/8", 53.5#, C-95, Vam top	1 cent per jnt to 2271 m MD First 3 jts of Shoetrack (2 centr./jnt.)	345		2198 2489	2271 2610	2525 2671				9 58	1,44 SG OBM	GR Resist.	
8 1/2"	2636 3849	7"	TOL - TD m MD: 7", 29#, 13CR-80, Vam Top	First 3 jts of Shoetrack (2 centr./jnt.)	345									1,26 SG OBM	ARC-ADN Periscope Telescope	
Comments:																

8.2 Time/depth curve



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8.3 Project planner

Project planner

6608/10-11 S (Trost)

T.O128A.AP.TROST

		Start time	End time	Budget time hrs	Acc Budget days	Tech limit hrs	Acc tech days	Planned time hrs	Actual time hrs	Acc actual days	% comp	Hours remain	Description	Companies
		12.07.06 01:00	17.07.06 04:30	35.0	1.5	28.0	1.2	76.0	123.5	5.1			MOVE [NO 6608/10-11 S]	
	1	Wed 12.07.06 01:00	12.07.06 05:00	5.0	0.2	4.0	0.2	4.0	4.0	0.2	100	0.0	1 Move rig from G-Template to Trost on K-3 H slot	Trans
	2	Wed 12.07.06 05:00	17.07.06 04:30	30.0	1.5	24.0	1.2	72.0	119.5	5.1	100	0.0	2 Anchor handling (Incl 48 hrs WOW)	Trans
		17.07.06 04:30	19.07.06 09:30	48.0	2.0	40.0	1.7	40.0	53.0	2.2			17 1/2" [NO 6608/10-11 S]	
	3	Mon 17.07.06 04:30	18.07.06 09:30	30.0	2.7	24.0	2.2	24.0	29.0	6.4	100	0.0	3 Retrieve WH cap and run BOP on slot no 3	Trans,Ocean,FKS
	4	Tue 18.07.06 09:30	18.07.06 14:00	8.0	3.0	6.0	2.4	6.0	4.5	6.5	100	0.0	4 RIH and install HWWB and test BOP	Trans,FKS
	5	Tue 18.07.06 14:00	19.07.06 04:00	6.0	3.3	7.0	2.7	7.0	14.0	7.1	100	0.0	5 M/U and RIH with 12 1/4" PD BHA	Trans,BHI,Schlum,Schlum,Schlum
	6	Wed 19.07.06 04:00	19.07.06 09:30	4.0	3.5	3.0	2.8	3.0	5.5	7.4	100	0.0	6 Displace well to 1,44 sg OBM while drilling shoe track	Trans,BHI,Schlum,Schlum,Schlum
		19.07.06 09:30	26.07.06 00:30	165.0	6.9	138.0	5.8	138.0	159.0	6.6			12 1/4" [NO 6608/10-11 S]	
	7	Wed 19.07.06 09:30	21.07.06 16:00	64.0	6.1	55.0	5.1	55.0	54.5	9.6	100	0.0	7 Drill 12 1/4" hole to section TD at +/- 2851 m	Trans,BHI,Schlum,Schlum,Schlum
	8	Fri 21.07.06 16:00	21.07.06 21:00	4.0	6.3	3.0	5.3	3.0	5.0	9.8	100	0.0	8 Circulate hole clean	Trans,BHI,Schlum,Schlum,Schlum
	9	Fri 21.07.06 21:00	22.07.06 09:00	10.0	6.7	10.0	5.7	10.0	12.0	10.3	100	0.0	9 POOH and LD BHA	Trans,Schlum,Schlum,Schlum
	10	Sat 22.07.06 09:00	22.07.06 17:00	9.0	7.1	5.0	5.9	5.0	8.0	10.7	100	0.0	10 RIH & wash wellhead. Retrieve HWWB	Trans,FKS
	11	Sat 22.07.06 17:00	22.07.06 18:30	3.0	7.2	3.0	6.0	3.0	1.5	10.7	100	0.0	11 R/U to run 9 5/8" csg	Trans,Weath
	12	Sat 22.07.06 18:30	24.07.06 04:30	33.0	8.6	24.0	7.0	24.0	34.0	12.1	100	0.0	12 RIH w/ 9 5/8" x 10 3/4" casing. Land csg in WH	Trans,Weath,FKS
	13	Mon 24.07.06 04:30	24.07.06 10:30	8.0	8.9	6.0	7.3	6.0	6.0	12.4	100	0.0	13 Circulate & cement casing. Set & test SA	Trans,Hall,BHI,FKS
	14	Mon 24.07.06 10:30	24.07.06 14:00	3.0	9.0	3.0	7.4	3.0	3.5	12.5	100	0.0	14 POOH w/ RT. L/D landing string. R/D cement equipment	Trans,Weath,FKS
	15	Mon 24.07.06 14:00	24.07.06 16:30	6.0	9.3	4.0	7.5	4.0	2.5	12.6	100	0.0	15 Install WB	FKS,Trans
	16	Mon 24.07.06 16:30	24.07.06 21:30	0.0	9.3	6.0	7.8	6.0	5.0	12.9	100	0.0	16 Test BOP.	FKS,Trans
	17	Mon 24.07.06 21:30	25.07.06 06:00	11.0	9.8	9.0	8.2	9.0	8.5	13.2	100	0.0	17 RU wire-line and run gyro inside csg	Trans,AKWS,Gyrodatta
	18	Tue 25.07.06 06:00	25.07.06 10:30	3.0	9.9	2.0	8.3	2.0	4.5	13.4	100	0.0	18 MU 8 1/2" PD BHA and test casing	Trans,Schlum,Schlum
	19	Tue 25.07.06 10:30	26.07.06 00:30	11.0	10.3	8.0	8.6	8.0	14.0	14.0	100	0.0	19 RIH and displace well to 1,20 sg OBM while drilling shoe track	Trans,BHI,Schlum,Schlum,Schlum
		26.07.06 00:30	04.08.06 06:30	179.5	7.5	185.5	7.7	204.5	222.0	9.3			8 1/2" [NO 6608/10-11 S]	
	20	Wed 26.07.06 00:30	26.07.06 06:00	5.0	10.5	5.0	8.8	5.0	5.5	14.2	100	0.0	20 Drill ahead 8 1/2" hole into Not 2918 m	Trans,Schlum,Schlum,Schlum,BHI
	21	Wed 26.07.06 06:00	26.07.06 22:30	0.0	10.5	16.0	9.5	16.0	16.5	14.9	100	0.0	21 Kick situation	Schlum,Schlum,Schlum,BHI,Trans
	22	Wed 26.07.06 22:30	28.07.06 06:30	43.0	12.3	35.0	10.9	35.0	32.0	16.2	100	0.0	22 Drill 8 1/2" pilot hole from 2918 m to top Not	Schlum,Schlum,Schlum,BHI,Trans
	23	Fri 28.07.06 06:30	28.07.06 09:00	3.5	12.5	3.5	11.1	3.5	2.5	16.3	100	0.0	23 Circ hole clean	Trans,BHI,Schlum,Schlum,Schlum
	24	Fri 28.07.06 09:00	28.07.06 19:00	12.0	13.0	10.0	11.5	10.0	10.0	16.8	100	0.0	24 POOH and LD BHA	Trans,Schlum,Schlum,Schlum
	25	Fri 28.07.06 19:00	29.07.06 09:00	13.5	13.5	12.0	12.0	12.0	14.0	17.3	100	0.0	25 Log well. Run #1: PEX.	Trans,AKWS,Schlum
	26	Sat 29.07.06 09:00	29.07.06 17:00	17.0	14.3	15.0	12.6	15.0	8.0	17.7	100	0.0	26 Log wel. Run #2: MDT	AKWS,Schlum,Trans
	27	Sat 29.07.06 17:00	30.07.06 12:30	27.5	15.4	24.0	13.6	24.0	19.5	18.5	100	0.0	27 Log well: Run #3: WAVSP.	AKWS,Trans
	28	Sun 30.07.06 12:30	31.07.06 22:00	20.0	16.2	16.0	14.3	16.0	33.5	19.9	100	0.0	28 Run 7" liner	Trans,BOT,Weath,BOT
	29	Mon 31.07.06 21:59	31.07.06 22:00	38.0	17.8	0.0	14.3	0.0	0.0	19.9	100		29 Option: MDT sample and MSCT logging	Trans,BOT,Weath,BOT
	30	Mon 31.07.06 22:00	01.08.06 05:30	0.0	17.8	5.0	14.5	5.0	7.5	20.2	100	0.0	30 Circulate, cement liner and set packer	Schlum,Schlum,Schlum,BHI,Trans,BOT,Hall,BOT
	31	Tue 01.08.06 05:30	01.08.06 10:30	0.0	17.8	6.0	14.7	6.0	5.0	20.4	100	0.0	31 POOH and LD RT	Trans,BOT,BOT
	32	Tue 01.08.06 10:30	01.08.06 14:30	0.0	17.8	3.0	14.9	3.0	4.0	20.6	100	0.0	32 PU 4 3/4" drill out BHA	Trans,Schlum,Schlum,BOT
	33	Tue 01.08.06 14:30	01.08.06 23:30	0.0	17.8	6.0	15.1	6.0	9.0	20.9	100	0.0	33 RIH w/6" bit to TOC	Trans,BOT
	34	Tue 01.08.06 23:30	02.08.06 16:00	0.0	17.8	5.0	15.3	7.0	16.5	21.6	100	0.0	34 Displace well to 1,30 SG OBM while drilling shoetrack	Trans,BHI,Schlum,BOT

Project planner

6608/10-11 S (Trost)

T.O128A.AP.TROST

		Start time	End time	Budget time hrs	Acc Budget days	Tech limit hrs	Acc tech days	Planned time hrs	Actual time hrs	Acc actual days	% comp	Hours remain	Description	Companies
		26.07.06 00:30	04.08.06 06:30	179.5	7.5	185.5	7.7	204.5	222.0	9.3			8 1/2" [NO 6608/10-11 S]	
	35	Wed 02.08.06 16:00	03.08.06 13:00	0.0	17.8	7.0	15.6	24.0	21.0	22.5	100	0.0	35 RIH with Junk bit. Drill out junk and rest shoe track, POOH	Trans
	36	Thu 03.08.06 13:00	03.08.06 19:00	0.0	17.8	10.0	16.0	10.0	6.0	22.8	100	0.0	36 POOH and re-arrange to PU logging BHA	Schlum,BHI,Trans
	37	Thu 03.08.06 19:00	04.08.06 06:30		17.8	7.0	16.3	7.0	11.5	23.2	100	0.0	37 RIH with drilling BHA.	Trans,Schlum,Schlum
		04.08.06 06:30	10.08.06 03:30	77.0	3.2	130.0	5.4	156.0	141.0	5.9			6" [NO 6608/10-11 S]	
	38	Fri 04.08.06 06:30	04.08.06 09:30	0.0	17.8	4.0	16.5	4.0	3.0	23.4	100	0.0	38 Drill 6" hole to 3420 m. MWD failure	Trans,Schlum,BHI,Schlum,Schlum
	39	Fri 04.08.06 09:30	04.08.06 17:30	0.0	17.8	6.0	16.7	6.0	8.0	23.7	100	0.0	39 POOH and LD MWD	Schlum,Schlum,Trans,Schlum
	40	Fri 04.08.06 17:30	05.08.06 02:00	0.0	17.8	5.0	16.9	5.0	8.5	24.0	100	0.0	40 Test BOP	Trans
	41	Sat 05.08.06 02:00	05.08.06 11:30	0.0	17.8	10.0	17.4	10.0	9.5	24.4	100	0.0	41 PU MWD and RIH w/drilling BHA	Trans,Schlum,Schlum,Schlum
	42	Sat 05.08.06 11:30	06.08.06 11:30	0.0	17.8	24.0	18.4	24.0	24.0	25.4	100	0.0	42 Drill 6" hole to TD	Trans,BHI
	43	Sun 06.08.06 11:30	06.08.06 16:30	0.0	17.8	4.0	18.5	4.0	5.0	25.6	100	0.0	43 Circulate hole clean	Trans,BHI
	44	Sun 06.08.06 16:30	07.08.06 00:00	0.0	17.8	7.0	18.8	7.0	7.5	26.0	100	0.0	44 POOH and LD drilling BHA	Trans,Schlum,Schlum
	45	Mon 07.08.06 00:00	08.08.06 17:30	77.0	21.0	40.0	20.5	66.0	41.5	27.7	100	0.0	45 Dry case: Run PEXN-DSI, if discovery case: 66 hrs logging time planned	Trans,Schlum,AKWS
	46	Tue 08.08.06 17:30	09.08.06 12:00	0.0	21.0	15.0	21.1	15.0	18.5	28.5	100	0.0	46 Perform wiper trip	Trans,BHI
	47	Wed 09.08.06 12:00	10.08.06 03:30	0.0	21.0	15.0	21.7	15.0	15.5	29.1	100	0.0	47 Run MDT sampling	AKWS,Schlum,Trans
		10.08.06 03:30	15.08.06 04:00	134.5	5.6	114.0	4.8	108.0	120.5	5.0			PERM P&A [NO 6608/10-11 S]	
	48	Thu 10.08.06 03:30	10.08.06 18:30	15.0	21.6	12.0	22.2	11.0	15.0	29.7	100	0.0	48 PU cmt stinger while RIH	Trans
	49	Thu 10.08.06 18:30	11.08.06 12:00	18.0	22.4	15.0	22.9	15.0	17.5	30.5	100	0.0	49 Plug back pilot hole with 4 x 250 m cement plugs.	Trans,Hall
	50	Fri 11.08.06 12:00	11.08.06 21:00	0.0	22.4	9.0	23.2	9.0	9.0	30.8	100	0.0	50 POOH with cement stinger. LD 2 7/8" pipe.	Trans,Hall
	51	Fri 11.08.06 21:00	12.08.06 05:00	16.0	23.1	7.0	23.5	7.0	8.0	31.2	100	0.0	51 MU and RIH w/ 9 5/8" csg cutter. Cut csg at +/- 1360 m	Trans,Smith-RB
	52	Sat 12.08.06 05:00	12.08.06 10:00	5.0	23.3	4.0	23.7	4.0	5.0	31.4	100	0.0	52 POOH. Rack back 9 5/8" csg cutting assy	Trans,Smith-RB
	53	Sat 12.08.06 10:00	12.08.06 15:00	4.0	23.4	4.0	23.9	4.0	5.0	31.6	100	0.0	53 Retrieve WB	Trans,FKS
	54	Sat 12.08.06 15:00	12.08.06 18:00	5.0	23.6	5.0	24.1	5.0	3.0	31.7	100	0.0	54 Retrieve 10 3/4" M2M seal assy. w SLT. Observe well	Trans,FKS
	55	Sat 12.08.06 18:00	12.08.06 19:30	8.0	24.0	6.0	24.3	6.0	1.5	31.8	100	0.0	55 MU 10 3/4" spear assy and RIH. Release hanger and circ BU	Trans,Smith-RB,FKS
	56	Sat 12.08.06 19:30	13.08.06 09:30	20.0	24.8	15.0	24.9	11.0	14.0	32.4	100	0.0	56 Pull csg free. POOH w/ 10 3/4" csg hanger and 9 5/8" casing	Trans,Smith-RB,FKS,Weath
	57	Sun 13.08.06 09:30	13.08.06 11:30	3.0	24.9	2.0	25.0	1.0	2.0	32.4	100	0.0	57 LD csg handling equipment & spear	Trans,Smith-RB
	58	Sun 13.08.06 11:30	13.08.06 16:00	4.5	25.1	4.0	25.2	4.0	4.5	32.6	100	0.0	58 Install 18 3/4" HWWB	Trans,Smith-RB,FKS
	59	Sun 13.08.06 16:00	13.08.06 21:00	5.0	25.3	6.0	25.4	6.0	5.0	32.8	100	0.0	59 Install 13 3/8" EZSV on DP	Hall,Trans
	60	Sun 13.08.06 21:00	14.08.06 02:30	5.5	25.6	3.0	25.6	3.0	5.5	33.1	100	0.0	60 Test 13 3/8" EZSV and displace to SW	Trans,Hall,BHI
	61	Mon 14.08.06 02:30	15.08.06 04:00	25.5	26.6	22.0	26.5	22.0	25.5	34.1	100	0.0	61 Pull BOP, install Wellhead cap and roof.	Trans,Ocean
		15.08.06 04:00	16.08.06 00:00	20.0	0.8	24.0	1.0	24.0	20.0	0.8			MOVE [NO 6608/10-11 S]	
	62	Tue 15.08.06 04:00	16.08.06 00:00	20.0	27.5	24.0	27.5	24.0	20.0	35.0	100	0.0	62 Anchor handling (move rig to G-Template)	Trans
				27.5 days		27.5 days		31.1	35.0 days					

Project planner

NO 6608/10-K-3 H Drilling Completion

L.O128C.001.9CD03B01/02/03/04

		Start time	End time	Budget time hrs	Acc Budget days	Tech limit hrs	Acc tech days	Planned time hrs	Actual time hrs	Acc actual days	% comp	Hours remain	Description	Companies
		15.05.06 23:00	19.05.06 12:30	82.0	3.4	52.0	2.2	73.0	85.5	3.6			17 1/2" [NO 6608/10-K-3 H]	
	1 Mon	15.05.06 23:00	17.05.06 20:30	40.0	1.7	20.0	0.8	36.0	45.5	1.9	100	0.0	1 Drill 17 1/2" hole to section TD at +/- 1400 m	BHI,Gyrodara,Schlum,Schlum,Trans
	2 Wed	17.05.06 20:30	18.05.06 05:00	8.0	2.0	6.0	1.1	6.0	8.5	2.3	100	0.0	2 Circulate and POOH	Trans,BHI
	3 Thu	18.05.06 05:00	18.05.06 08:30	3.0	2.1	2.0	1.2	2.0	3.5	2.4	100	0.0	3 R/U to run 13 3/8" csg	Trans,Weath,FKS
	4 Thu	18.05.06 08:30	19.05.06 02:30	20.0	3.0	15.0	1.8	20.0	18.0	3.1	100	0.0	4 RIH w/ 13 3/8" casing on 5 1/2" landing string	Trans,Weath
	5 Fri	19.05.06 02:30	19.05.06 09:00	7.0	3.3	6.0	2.0	6.0	6.5	3.4	100	0.0	5 Cement 13 3/8" casing	Trans,Hall,FKS
	6 Fri	19.05.06 09:00	19.05.06 12:30	4.0	3.4	3.0	2.2	3.0	3.5	3.6	100	0.0	6 Release RT and POOH with landing string (install WH cap in parallel)	Trans,FKS
		19.05.06 12:30	02.09.06 08:30	52.0	2.2	48.0	2.0	46.5	58.5	2.4			MOVE [NO 6608/10-K-3 H]	
	7 Fri	19.05.06 12:30	20.05.06 06:00	24.0	4.4	20.0	3.0	18.5	17.5	4.3	100	0.0	7 Anchor handling (move rig to G-Template)	Trans
	8 Thu	31.08.06 15:30	31.08.06 18:00	4.0	4.6	4.0	3.2	4.0	2.5	4.4	100	0.0	8 Move rig from G-Template to K-3 H	Trans
	9 Thu	31.08.06 18:00	02.09.06 08:30	24.0	5.6	24.0	4.2	24.0	38.5	6.0	100	0.0	9 Anchor handling	Trans
		02.09.06 08:30	06.09.06 04:00	71.0	3.0	59.0	2.5	87.0	91.5	3.8			RE-ENT. [NO 6608/10-K-3 H]	
	10 Sat	02.09.06 08:30	03.09.06 09:30	27.0	6.7	24.0	5.2	24.0	25.0	7.0	100	0.0	10 Run BOP. Retrieve WH cap.	Trans,FKS,Ocean
	11 Sun	03.09.06 09:30	03.09.06 13:00	0.0	6.7	5.0	5.4	5.0	3.5	7.2	100	0.0	11 RIH with SLT. Test BOP/WH connector. POOH.	Trans,FKS,Ocean
	12 Sun	03.09.06 13:00	03.09.06 21:00	8.0	7.0	4.0	5.5	4.0	8.0	7.5	100	0.0	12 MU wipstock assembly	Trans,Smith-RB
	13 Sun	03.09.06 21:00	04.09.06 06:30	16.0	7.7	10.0	6.0	10.0	9.5	7.9	100	0.0	13 RIH & orient/set Whipstock and displace well to 1,44 SG OBM	Trans,Smith-RB,Gyrodara
	14 Mon	04.09.06 06:30	05.09.06 20:30	10.0	8.1	8.0	6.3	36.0	38.0	9.5	100	0.0	14 Mill window to 1326 m. POOH change mill. Mill window POOH LD Mill Assy.	Trans,Smith-RB
	15 Tue	05.09.06 20:30	05.09.06 21:30	6.0	8.4	5.0	6.5	5.0	1.0	9.5	100	0.0	15 Rack back cmt head and P/U 12 1/4" PD	Trans,Schlum,Schlum
	16 Tue	05.09.06 21:30	06.09.06 04:00	4.0	8.5	3.0	6.6	3.0	6.5	9.8	100	0.0	16 RIH and check window	Trans,Schlum,Schlum
		06.09.06 04:00	12.09.06 07:30	195.0	8.1	159.0	6.6	159.5	147.5	6.1			12 1/4" [NO 6608/10-K-3 H]	
	17 Wed	06.09.06 04:00	08.09.06 09:00	86.0	12.1	75.0	9.8	75.0	53.0	12.0	100	0.0	17 Drill ahead to TD at +/- 2671 m	Trans,BHI,Schlum,Schlum
	18 Fri	08.09.06 09:00	08.09.06 21:30	10.0	12.5	8.0	10.1	9.5	12.5	12.5	100	0.0	18 Circulate hole clean and POOH. LD logging BHA. Slip & Cut drlg line	Trans,BHI,Schlum,Schlum
	19 Fri	08.09.06 21:30	09.09.06 02:00	5.0	12.8	4.0	10.3	4.0	4.5	12.7	100	0.0	19 RIH & wash wellhead. Retrieve HWWB	Trans,BHI,FKS
	20 Sat	09.09.06 02:00	09.09.06 05:00	4.0	12.9	3.0	10.4	3.0	3.0	12.9	100	0.0	20 RU to run 9 5/8" x 10 3/4" casing	Trans,Hall,Weath
	21 Sat	09.09.06 05:00	10.09.06 12:00	34.0	14.3	24.0	11.4	24.0	31.0	14.1	100	0.0	21 RIH w/ 9 5/8" x 10 3/4" casing. Land csg in wellhead	Trans,Weath
	22 Sun	10.09.06 12:00	10.09.06 17:00	10.0	14.8	8.0	11.7	8.0	5.0	14.4	100	0.0	22 Circulate & cement casing. Set & test SA	Trans,Hall,BHI,FKS
	23 Sun	10.09.06 17:00	10.09.06 19:30	4.0	14.9	3.0	11.8	3.0	2.5	14.5	100	0.0	23 POOH w/ RT. L/D landing string. R/D cement equipment	Trans,Hall,FKS
	24 Sun	10.09.06 19:30	11.09.06 01:30	8.0	15.3	9.0	12.2	10.0	6.0	14.7	100	0.0	24 Install WB & test BOP.	Trans,FKS
	25 Mon	11.09.06 01:30	11.09.06 02:30	6.0	15.5	4.0	12.4	2.0	1.0	14.8	100	0.0	25 LD cmt head	Trans,Hall
	26 Mon	11.09.06 02:30	11.09.06 13:30	12.0	16.0	8.0	12.7	8.0	11.0	15.2	100	0.0	26 RU WL & run gyro inside csg	Trans,AKWS,Gyrodara
	27 Mon	11.09.06 13:30	12.09.06 00:30	12.0	16.5	10.0	13.1	10.0	11.0	15.7	100	0.0	27 MU and RIH w 8 1/2" BHA to TOC	Trans,Schlum,Schlum
	28 Tue	12.09.06 00:30	12.09.06 07:30	4.0	16.7	3.0	13.3	3.0	7.0	16.0	100	0.0	28 Displace well to 1,26 SG OBM while drilling shoetrack	Trans,BHI,Schlum
		12.09.06 07:30	15.09.06 04:00	100.0	4.2	82.0	3.4	87.0	68.5	2.9			8 1/2" [NO 6608/10-K-3 H]	
	29 Tue	12.09.06 07:30	14.09.06 12:30	74.0	19.8	60.0	15.8	65.0	53.0	18.2	100	0.0	29 Drill 8 1/2" hole to TD at +/- 3762 m	Trans,BHI,Schlum,Schlum,Schlum
	30 Thu	14.09.06 12:29	14.09.06 12:30	6.0	20.0	6.0	16.0	6.0	0.0	18.2	100		30 pressure point while POOH	BHI,Schlum,Trans,Schlum,Schlum
	31 Thu	14.09.06 12:30	14.09.06 14:30	6.0	20.3	4.0	16.2	4.0	2.0	18.3	100	0.0	31 Circ hole clean	Trans,BHI,Schlum,Schlum,Schlum
	32 Thu	14.09.06 14:30	15.09.06 04:00	14.0	20.8	12.0	16.7	12.0	13.5	18.8	100	0.0	32 POOH and laydown 8 1/2" BHA	Trans,Schlum,Schlum

Project planner

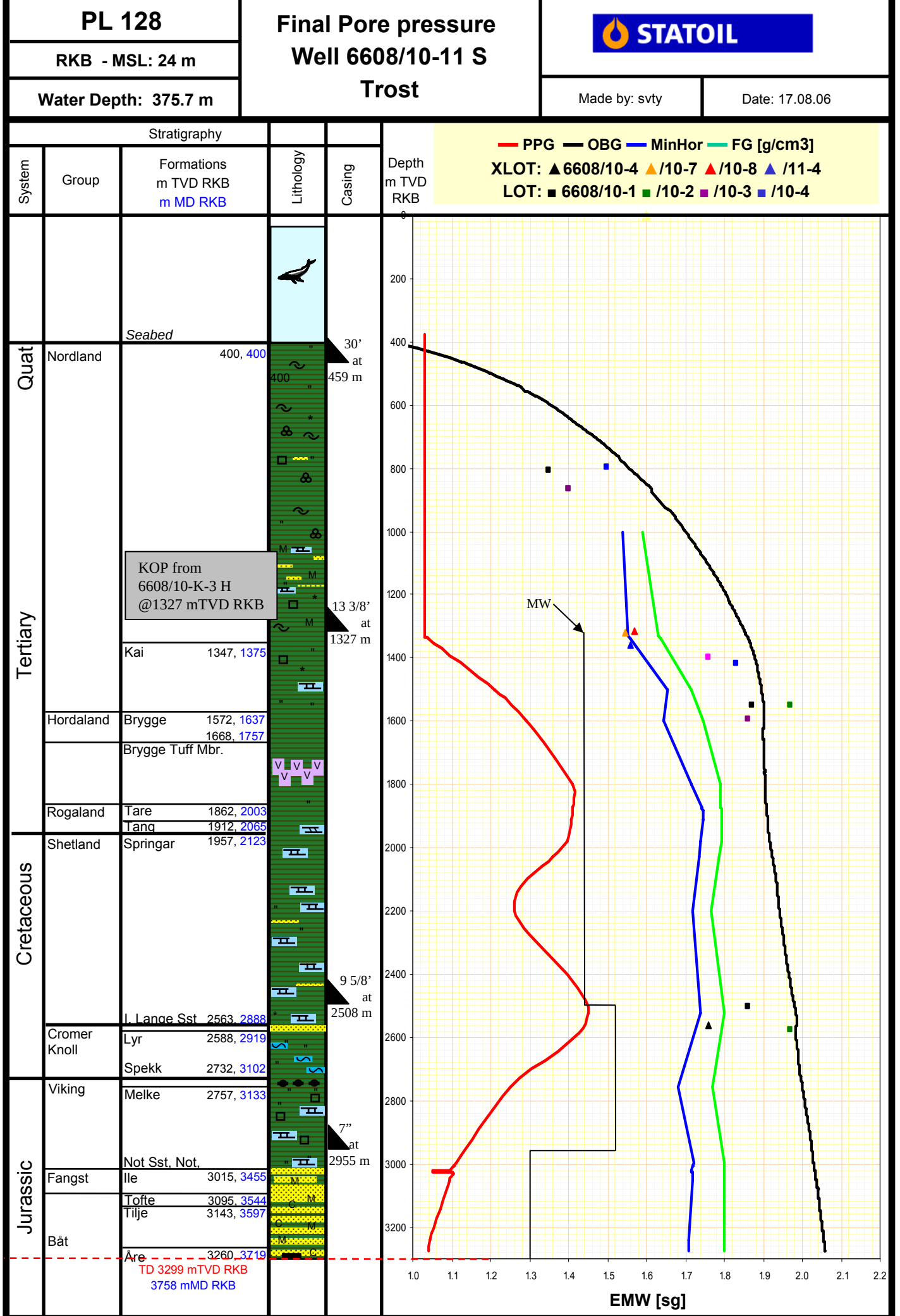
NO 6608/10-K-3 H Drilling _Completion

L.O128C.001.9CD03B01/02/03/04

			Start time	End time	Budget time hrs	Acc Budget days	Tech limit hrs	Acc tech days	Planned time hrs	Actual time hrs	Acc actual days	% comp	Hours remain	Description	Companies
			15.09.06 04:00	22.09.06 03:00	71.0	3.0	122.0	5.1	114.0	167.0	7.0			COMPL LINER [NO 6608/10-K-3 H]	
	33	Fri	15.09.06 04:00	15.09.06 07:30	3.0	21.0	2.0	16.8	2.0	3.5	19.0	100	0.0	33 RU to run 7" liner	Trans,Weath,BOT,BOT
	34	Fri	15.09.06 07:30	16.09.06 15:00	36.0	22.5	24.0	17.8	24.0	31.5	20.3	100	0.0	34 RIH w/ 7" liner on 5 1/2" DP to 2759 m.	Trans,Weath,BOT,BOT
	35	Sat	16.09.06 15:00	16.09.06 18:30	0.0	22.5	5.0	18.0	5.0	3.5	20.4	100	0.0	35 POOH to csg shoe and circulate.	Weath,BOT,Trans,BOT
	36	Sat	16.09.06 18:30	17.09.06 13:30	0.0	22.5	15.0	18.6	15.0	19.0	21.2	100	0.0	36 POOH w/7" liner.	Trans,Weath,BOT
	37	Sun	17.09.06 13:30	19.09.06 21:30	0.0	22.5	24.0	19.6	24.0	56.0	23.5	100	0.0	37 Perform wiper trip.	Trans,BHI,Schlum,Schlum,BOT
	38	Tue	19.09.06 21:30	19.09.06 22:30	0.0	22.5	3.5	19.7	0.5	1.0	23.6	100	0.0	38 RU to run 7" liner.	Trans,Weath,BOT,BOT
	39	Tue	19.09.06 22:30	21.09.06 04:30	0.0	22.5	24.0	20.7	20.5	30.0	24.8	100	0.0	39 RIH w/7" liner on DP.	Trans,Weath,BOT,BOT
	40	Thu	21.09.06 04:30	21.09.06 12:00	10.0	22.9	5.0	20.9	6.0	7.5	25.1	100	0.0	40 Circ and set liner hanger prior to cementing	Trans,BHI,Weath,BOT,Hall,BOT
	41	Thu	21.09.06 12:00	21.09.06 16:00	10.0	23.3	6.0	21.2	4.0	4.0	25.3	100	0.0	41 Cement 7" liner, set packer, pull above PBR. Circ out excess cement	Trans,BHI,Hall,Weath,Hall,BOT,BOT
	42	Thu	21.09.06 16:00	21.09.06 17:00	8.0	23.6	6.0	21.4	5.0	1.0	25.4	100	0.0	42 POOH w LHRT	Trans,BOT,BOT
	43	Thu	21.09.06 17:00	21.09.06 19:00	0.0	23.6	1.5	21.5	2.0	2.0	25.4	100	0.0	43 Slip & cut drill-line	Trans
	44	Thu	21.09.06 19:00	22.09.06 00:00	0.0	23.6	4.0	21.7	4.0	5.0	25.6	100	0.0	44 Continue POOH w/ LHRT and LD same	Trans
	45	Fri	22.09.06 00:00	22.09.06 03:00	4.0	23.8	2.0	21.8	2.0	3.0	25.8	100	0.0	45 LD 8 1/2" BHA	Trans,BOT
					23.8 days		21.8 days		23.6	25.8 days					

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8.4 Borehole stability figure with MW and final pressure/fracture gradients



Pore Pressure prognosis 6608/10-K-3 H



Made by: LKH

Date: 08.08.06

Stratigraphy

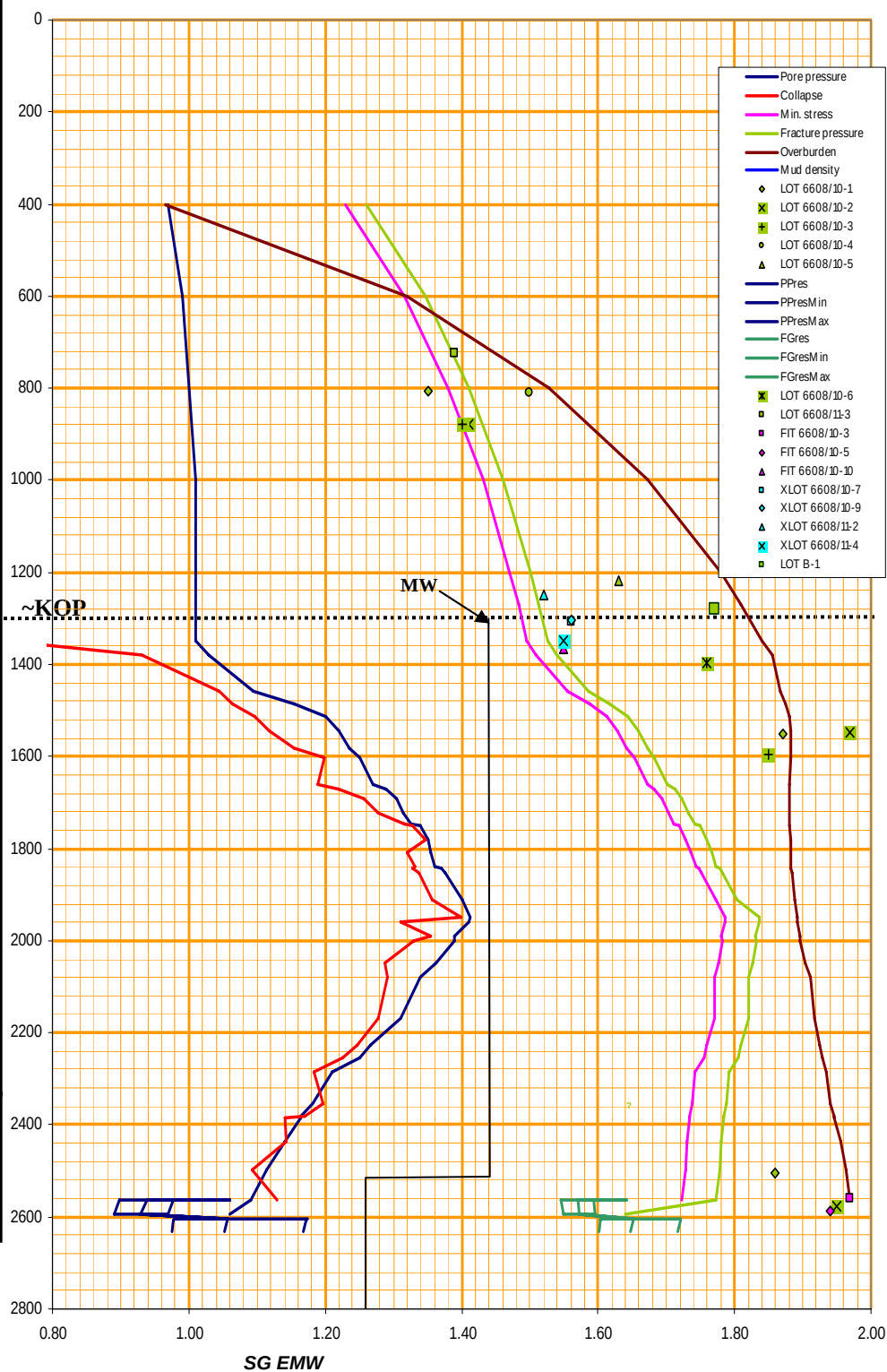
System	Group	Formation	Lithology
			Seabed
TERTIARY	Nordland	Naust	
		Kai	
	Hordaland	Brygge	
		Brygge Tuff	
	Rogaland	Tare	
		Tang	
	Shetland	Springar	
	C.Knoll	Lyr	
CRETACEOUS			
JURASSIC	Viking	Spekk/ Melke	
	Fangst	Garn, Not lle	

TD: 2633m TVD RKB

M TVD RKB

Comments to the prognosis :

The collapse gradient is corrected for wellbore inclination..



The reservoir section is shown in detail on page 2

PL 128-Norne

RKB - Sea: 24 m

Water Depth: 376 m MSL

**Pore Pressure
prognosis
6608/10-K-3 H
Reservoir section**

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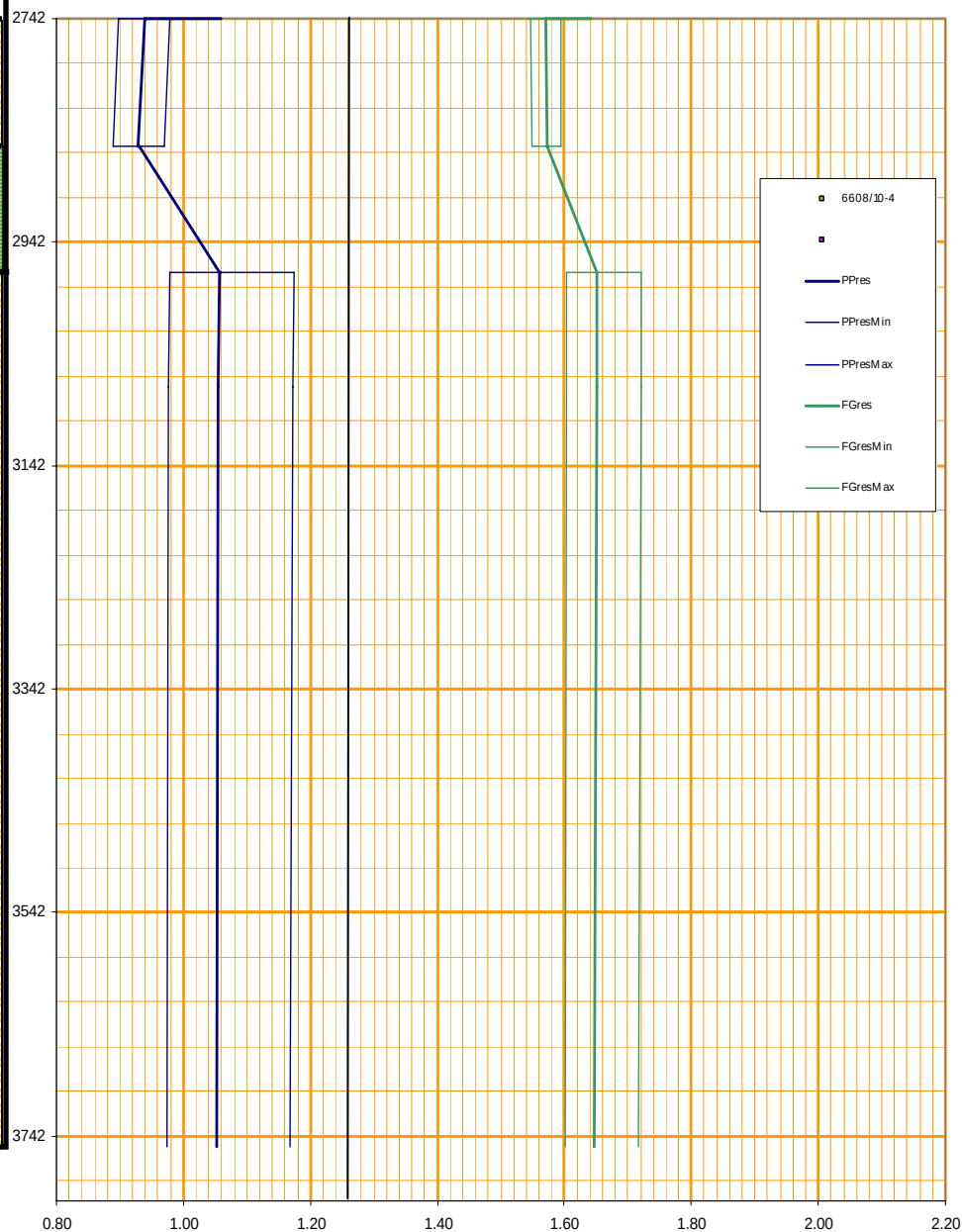
Made by: LKH

Date: 08.08.06

Stratigraphy (m MD RKB)

SG EMW

System	Group	Formation	Lithology
JURASSIC	FANGST	Garn	2564/ 2742
		Not	2595/ 2856
		Ile	2604/ 2969



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8.5 Bit record

WELL: NO 6608/10-11 S

Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
1	12 1/4"	1	2	LD573HG3V	M323	Lyng
3	8 1/2"	2	4	LD570RS	M322	Lyng
8	6"	3	9	XS4	216 S	Security DBS
9	6"	4	10	XS4	216 S	Security DBS
10	6"	5	11	DSX711M-B14	M433	Reed-Hycalog
11	6"	5RR	12	DSX711M-B14	M433	Reed-Hycalog
16	6"	4 RR	17	XS4	216 S	Security DBS

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	2	3110	6 x 13	2 x 14	x	x	1,0790
3	8 1/2"	2	4	2806	5 x 13	x	x	x	0,6490
8	6"	3	9	10825653	3 x 20	x	x	x	0,9210
9	6"	4	10	10779057	3 x 20	x	x	x	0,9210
10	6"	5	11	112908	4 x 16	x	x	x	0,7860
11	6"	5RR	12	112908	4 x 16	x	x	x	0,7860
16	6"	4 RR	17	10779057	3 x 20	x	x	x	0,9210

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"			1339,0	2851,0	1512,0	1512,0	34,9	43,7	43,3
3	8 1/2"			2851,0			574,0			
8	6"			3392,0	3392,0	0,0	28,0	0,0	8,7	
9	6"			3392,0	3392,0	0,0	16,0	0,0	7,2	
10	6"	960	160	3392,0	3420,0	28,0	28,0	28,0	5,1	1,0
11	6"	980	240	3420,0	3725,0	305,0	305,0	18,8	27,3	16,2
16	6"	1700	310							

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"								
3	8 1/2"								
8	6"								
9	6"								
10	6"	1	4	40	40	13	14		
11	6"	2	8	50	70	14	16	120	154
16	6"	0	0		150	10	11		

Run no	Bit size	I	O	DC	L	B	G	OC	RP
1	12 1/4"	3	4	BT	S	X	iN	CT	TD
3	8 1/2"								
8	6"	1	4	BT	M	E	1	JD	PR
9	6"	1	2	BT	M	E	I	JD	PR
10	6"	0	0	NO	A	X	IN	NO	DTF
11	6"	0	1	NO	A	X	IN	NO	TD

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Run no	Bit size	I	O	DC	L	B	G	OC	RP
16	6"	1	2	BT	M	E	I	JD	LOG

Run no	Bit size	Remarks
1	12 1/4"	
3	8 1/2"	
8	6"	Bit comments: Excessive damage on one cone(#3). Middle row completely broken teeth. Also some broken teeth on middle row cone #1. Junk damage on shirrtail, shoulder & gauge. Erosion on the gauge and body of matrix. Possible junk trapped in cone and ripped of all teeth on middle row on 1 cone. Less teeth broken on cone #2 and minor on cone # 3. This means that "possible" junk was broken in 2 or several pieces.
9	6"	4 teeth broken off bit. Drilled inside shoe track.
10	6"	
11	6"	Rerun bit from run #5. Bit grading in: 0-0-No-A-X-IN-No-DTF
16	6"	Wiper trip prior to logging MDT sampling on WL.

WELL: NO 6608/10-K-3 H

Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
2	17 1/2"	2	2	MXL-ST303DX	415	Hughes Christensen
3	17 1/2"	3	4	MXL-ST303DX	415	Hughes Christensen
7	12 1/4"	1	8	RSX819S	S422	HYCLOG
11	8 1/2"	2	12	FMR3753Z	M423	Security DBS
12	8 1/2"	3 rr	13	EBXSC1S	117W	Security DBS

Nozzles (n/32")									
Run no	Bit size	Bit no	BHA no	Serial no	no x n	no x n	no x n	no x n	Flow area in
2	17 1/2"	2	2	6046934	1 x 18	3 x 20	x	x	1,1690
3	17 1/2"	3	4	6046935	1 x 18	3 x 20	x	x	1,1690
7	12 1/4"	1	8	209818	2 x 14	6 x 13	x	x	1,0790
11	8 1/2"	2	12	10856246	4 x 15	x	x	x	0,6910
12	8 1/2"	3 rr	13	10706290	3 x 20	x	x	x	0,9210

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
2	17 1/2"			467,0	940,0	473,0	473,0	12,7	22,5	37,2
3	17 1/2"	4400	187	940,0	1371,0	431,0	431,0	8,7	16,2	49,5
7	12 1/4"			1331,0	2677,0	1346,0	1346,0	33,9	52,1	39,7
11	8 1/2"	2400	268	2677,0	3849,0	1172,0	1172,0	36,0	59,2	32,6
12	8 1/2"			2671,0			0,0	0,0	31,9	

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
2	17 1/2"								
3	17 1/2"	9	17	131	140	7	17		
7	12 1/4"								
11	8 1/2"	5	9	150	160	18	21		

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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
12	8 1/2"								

Run no	Bit size	I	O	DC	L	B	G	OC	RP
2	17 1/2"	2	2	WT	M	E	I	BT	BHA
3	17 1/2"	1	3	BT	M	E	I	CT	TD
7	12 1/4"	2	2	CT	A	X	IN	PN	TD
11	8 1/2"	1	2	CT	G	E	IN	NO	TD
12	8 1/2"	1	1	WT	A	E	IN	NO	TD

Run no	Bit size	Remarks
2	17 1/2"	5 broken teeth.
3	17 1/2"	Lot of cutters missing on middle road.
7	12 1/4"	New bit premade to Powerdrive
11	8 1/2"	All three pads on PowerDrive had signs of a washout.
12	8 1/2"	Re-run bit from other wells. Used previously to drill out cement and clean out run

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WELLBORE: NO 6608/10-11 S
BHA NO: 2
BHA KIND:
DESCRIPTION: Drilling with PowerDrive.
BHA NAME: 1

String component	OD in	ID in	Length m	Acc length m
LD573HG3V~12 1/4"	12,250		0,33	0,33
POWERDRIVE XTRA 900	11,800		9,27	9,60
CDR 900	9,625		6,39	15,99
POWERPULSE 900	9,500		7,65	23,64
STABILIZER, NM	12,125	2,800	1,78	25,42
NM DRILL COLLAR	8,000	2,813	17,98	43,40
DRILL COLLAR	8,000	2,813	56,60	100,00
HYDRAULIC JAR	8,000	3,000	9,79	109,79
DRILL COLLAR	8,000	2,813	28,31	138,10
XO SUB	8,000	3,000	1,25	139,35
DRILL PIPE	5,500	2,625	27,96	167,31

BHA NO: 4
BHA KIND:
DESCRIPTION: 8 1/2" PowerDrive BHA.
BHA NAME: 3

String component	OD in	ID in	Length m	Acc length m
LD570RS~8 1/2"	8,500		0,21	0,21
POWERDRIVE XTRA 675	6,750		5,89	6,10
GVR 675	8,250		3,50	9,60
HW DRILL PIPE	7,000		2,79	12,39
POWERPULSE 675	6,875		7,76	20,15
ARC 675	6,750		6,25	26,40
STABILIZER, NM	6,750	2,875	1,93	28,33
NM HW DRILL PIPE	6,750	2,875	18,32	46,65
HW DRILL PIPE, 5"	6,500	3,000	18,78	65,43
HYDRAULIC JAR	6,500	2,750	9,65	75,08
HW DRILL PIPE, 5"	6,500	3,000	28,17	103,25
ACCELERATOR	6,500	2,750	10,23	113,48
HW DRILL PIPE, 5"	6,500	3,000	18,76	132,24
XO SUB	7,125	2,875	1,13	133,37

BHA NO: 5
BHA KIND:
DESCRIPTION: Logging run #1
BHA NAME: 4

String component	OD in	ID in	Length m	Acc length m
PEX	4,750		16,12	16,12

BHA NO: 6
BHA KIND:

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DESCRIPTION: Logging run #2

BHA NAME: 5

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

BHA NO: 7

BHA KIND:

DESCRIPTION: Logging run #3

BHA NAME: 6

String component	OD in	ID in	Length m	Acc length m
VSP	3,625		179,60	179,60

BHA NO: 9

BHA KIND:

DESCRIPTION: Clean out run #1

BHA NAME: 8

String component	OD in	ID in	Length m	Acc length m
XS4~NA	6,000		0,18	0,18
STABILIZER, NB	5,875	2,250	1,79	1,97
PONY COLLAR, NM	4,750	2,250	4,45	6,42
STABILIZER, NM	5,750	2,250	1,94	8,36
HW DRILL PIPE, NM	3,500	2,250	9,31	17,67
HW DRILL PIPE, 5"	3,500	2,250	140,85	158,52
HYDRAULIC JAR	4,750	2,250	9,06	167,58
HW DRILL PIPE, 5"	3,500	2,250	28,17	195,75
DP 3 1/2"	3,500		864,90	1060,65
X-OVER	6,440	2,688	0,50	1061,15
HW DRILL PIPE, 5"	5,000		9,38	1070,53
X-OVER	6,875	3,000	0,66	1071,19

BHA NO: 10

BHA KIND:

DESCRIPTION: Clean out run #2

BHA NAME: 9

String component	OD in	ID in	Length m	Acc length m
XS4~NA	6,000		0,18	0,18
STABILIZER, NB	5,875	2,250	1,79	1,97
PONY COLLAR, NM	4,750	2,250	4,45	6,42
STABILIZER, NM	5,750	2,250	1,94	8,36
HW DRILL PIPE, NM	3,500	2,250	9,31	17,67
HW DRILL PIPE, 5"	3,500	2,250	140,85	158,52
HYDRAULIC JAR	4,750	2,250	9,06	167,58
HW DRILL PIPE, 5"	3,500	2,250	28,17	195,75
DP 3 1/2"	3,500		432,75	628,50
X-OVER	6,440	2,688	0,50	629,00
HW DRILL PIPE, 5"	5,000		9,38	638,38
X-OVER	6,875	3,000	0,66	639,04

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BHA NO: 11
BHA KIND:
DESCRIPTION: 6" hole. Motor run #1
BHA NAME: 10

String component	OD in	ID in	Length m	Acc length m
DSX711M-B14-6"	6,000		0,23	0,23
POWERPAK A475	4,750		6,43	6,66
FLOAT SUB	4,750	2,250	0,48	7,14
STABILIZER	5,750	2,250	2,14	9,28
NM DRILL COLLAR	4,750	2,250	9,20	18,48
IMPULSE	5,250		11,32	29,80
LWD/MWD TOOL	4,750		5,13	34,93
STABILIZER	5,750	2,250	1,94	36,87
HW DRILL PIPE, NM	3,500	2,250	9,31	46,18
HW DRILL PIPE, 5"	3,500	2,250	140,85	187,03
HYDRAULIC JAR	4,750	2,250	9,06	196,09
HW DRILL PIPE, 5"	3,500	2,250	28,17	224,26
DP 3 1/2"	3,500		865,54	1089,80
X-OVER	6,440	2,688	0,50	1090,30
HW DRILL PIPE, 5"	5,000		9,38	1099,68
X-OVER	6,875	3,000	0,66	1100,34

BHA NO: 12
BHA KIND:
DESCRIPTION: 6" hole. Motor run #2
BHA NAME: 11

String component	OD in	ID in	Length m	Acc length m
DSX711M-B14-6"	6,000		0,23	0,23
POWERPAK A475	4,750		6,43	6,66
FLOAT SUB	4,750	2,250	0,48	7,14
STABILIZER	5,750	2,250	2,14	9,28
NM DRILL COLLAR	4,750	2,250	9,20	18,48
IMPULSE	5,250		10,56	29,04
LWD/MWD TOOL	4,750		5,13	34,17
STABILIZER	5,750	2,250	1,94	36,11
HW DRILL PIPE, NM	3,500	2,250	9,31	45,42
HW DRILL PIPE, 5"	3,500	2,250	140,85	186,27
HYDRAULIC JAR	4,750	2,250	9,06	195,33
HW DRILL PIPE, 5"	3,500	2,250	28,17	223,50
DP 3 1/2"	3,500		865,54	1089,04
X-OVER	6,440	2,688	0,50	1089,54
HW DRILL PIPE, 5"	5,000		9,38	1098,92
X-OVER	6,875	3,000	0,66	1099,58

BHA NO: 13
BHA KIND:
DESCRIPTION: WL logging run # 1, PEX-AIT
BHA NAME: 12

String component	OD in	ID in	Length m	Acc length m
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String component	OD in	ID in	Length m	Acc length m
AIT	4,630		4,88	4,88
HILT-FTB	4,630		6,60	11,48
DTC-H	4,630		0,91	12,39
ACTS-B1	4,630		1,22	13,61
LEH-QT	4,630		0,89	14,50

BHA NO: 14

BHA KIND:

DESCRIPTION: WL logging run # 2, CMR

BHA NAME: 13

String component	OD in	ID in	Length m	Acc length m
DSST-B	4,750		15,68	15,68
MRBA	4,750		0,27	15,95
MRPS	4,750		2,44	18,39
MRHY	4,750		2,57	20,96
MRPC	4,750		1,52	22,48
DTA-A	4,750		1,22	23,70
SGT-N	4,750		1,67	25,37
DTC-H	4,750		0,92	26,29
ACTS-B1	4,750		1,22	27,51
LEH-QT	4,750		0,89	28,40

BHA NO: 15

BHA KIND:

DESCRIPTION: WL logging run # 3, MDT (pressure points)

BHA NAME: 14

String component	OD in	ID in	Length m	Acc length m
BNS-CCS	5,300		0,14	0,14
LDS-B	5,300		3,30	3,44
LDSC-B	5,300		1,07	4,51
AH-184	5,300		0,61	5,12
AH-107	5,300		0,61	5,73
IN-LINE CENTRALIZER	5,300		2,44	8,17
CMRT-B	5,300		4,75	12,92
SGT-N	5,300		1,67	14,59
DTC-H	5,300		0,92	15,51
ACTS-B1	5,300		1,22	16,73
LEH-ECRD	5,300		0,89	17,62

BHA NO: 16

BHA KIND:

DESCRIPTION: WL logging run # 4, MSCT (sidewall coring)

BHA NAME: 15

String component	OD in	ID in	Length m	Acc length m
MSCT	5,250		8,81	8,81
SGT-E	5,250		1,53	10,34
LEH-Q	5,250		0,67	11,01

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BHA NO: 17
BHA KIND:
DESCRIPTION: 6" BHA for wiper trip
BHA NAME: 16

String component	OD in	ID in	Length m	Acc length m
XS4~NA	6,000	1,500	0,16	0,16
STAB W/FLOAT	5,875	2,250	1,79	1,95
HW DRILL PIPE, 5"	3,500	2,250	115,60	117,55
HYDRAULIC JAR	4,750	2,250	9,06	126,61
HW DRILL PIPE, 5"	3,500	2,250	28,17	154,78
DP 3 1/2"	3,500		913,63	1068,41
X-OVER	6,440	2,250	0,97	1069,38
HW DRILL PIPE, 5"	5,000		9,38	1078,76
X-OVER	6,875	3,000	0,49	1079,25
DP 5 1/2"				1079,25

BHA NO: 18
BHA KIND:
DESCRIPTION: WL logging run # 5, MDT (sampling)
BHA NAME: 17

String component	OD in	ID in	Length m	Acc length m
MRPS	5,000		2,44	2,44
MRHY	5,000		2,57	5,01
MRPO	5,000		3,24	8,25
LFA	5,000		1,55	9,80
MRSC	5,000		2,88	12,68
MRSC	5,000		1,87	14,55
MRMS	5,000		4,02	18,57
MRPC	5,000		1,52	20,09
DTA-A	5,000		1,21	21,30
SGT-N	5,000		1,68	22,98
DTC-H	5,000		0,92	23,90
ACTS-B1	5,000		1,21	25,11
LEH-ECRD	5,000		0,89	26,00

BHA NO: 19
BHA KIND:
DESCRIPTION: 2 7/8" x 3 1/2" cement stinger
BHA NAME: 18

String component	OD in	ID in	Length m	Acc length m
MULE SHOE	2,875	2,259	1,37	1,37
DP 2 7/8"	2,875	2,259	303,98	305,35
X-OVER	4,250		0,62	305,97
DP 3 1/2"	3,500	2,250	662,94	968,91
X-OVER	7,250		0,69	969,60
DP 5 1/2"	5,500	3,500		969,60

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BHA NO: 20

BHA KIND:

DESCRIPTION: 9 5/8" casing cutter with 10 3/4" knife set

BHA NAME: 19

String component	OD in	ID in	Length m	Acc length m
CASING CUTTER	8,250		1,39	1,39
FLOAT SUB	8,500		0,95	2,34
X-OVER	7,250		0,61	2,95
DP 5 1/2"	5,500		957,14	960,09
DP PUP JOINT	5,500		4,71	964,80
X-OVER	8,000		1,45	966,25
SWIVEL SUB	13,750		1,43	967,68
X-OVER	8,000		1,01	968,69
DP PUP JOINT	5,000		2,00	970,69
DP PUP JOINT	5,000		4,49	975,18
SWIVEL SUB	8,750		4,76	979,94
X-OVER	6,940		0,98	980,92
DP 5 1/2"	5,500		382,28	1363,20

BHA NO: 21

BHA KIND:

DESCRIPTION: Pull 10 3/4" wear bushing and seal assembly using SLT on drill pipe.

BHA NAME: 20

String component	OD in	ID in	Length m	Acc length m
BULL NOSE	6,375	3,000	0,70	0,70
JET SUB	6,625	3,000	1,47	2,17
X-OVER	7,063	3,000	0,66	2,83
DP 5 1/2"	5,500	4,280	28,89	31,72
X-OVER	7,063	3,500	1,00	32,72
SPRING LOADED TOOL		3,500	1,54	34,26
X-OVER	7,375	3,000	0,57	34,83
DP PUP JOINT	5,500	4,280	3,15	37,98
DP 5 1/2"	5,500	4,280		37,98

BHA NO: 22

BHA KIND:

DESCRIPTION: Pull 10 3/4" casing hanger and 9 5/8" casing with 10 3/4" spear on drill pipe

BHA NAME: 21

String component	OD in	ID in	Length m	Acc length m
PACK OFF TOOL FOR 10 3/4" CSG	8,750	2,690	0,81	0,81
SPEAR,	8,250	2,750	1,33	2,14
SPEAR STOP RING	8,000	2,690	0,80	2,94
BUMPER SUB	8,000	3,500	1,56	4,50
DRILL COLLAR	8,000		28,26	32,76
X-OVER			1,24	34,00
DP 5 1/2"				34,00

BHA NO: 23

BHA KIND:

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DESCRIPTION: Install HWWB with SLT
BHA NAME: 22

String component	OD in	ID in	Length m	Acc length m
BULL NOSE	6,375	3,000	0,70	0,70
JET SUB	6,625	3,000	1,47	2,17
X-OVER	7,063	3,000	0,66	2,83
DP 5 1/2"	5,500	4,280	28,89	31,72
X-OVER	7,063	3,500	1,00	32,72
SPRING LOADED TOOL		3,500	1,54	34,26
X-OVER	7,375	3,000	0,57	34,83
DP PUP JOINT	5,500	4,280	3,15	37,98

BHA NO: 24
BHA KIND:
DESCRIPTION: Install 13 3/8" EZSV as mechanical plug.
BHA NAME: 23

String component	OD in	ID in	Length m	Acc length m
EZSV	11,700		1,47	1,47
SETTING TOOL	71,625		1,48	2,95

WELLBORE: NO 6608/10-K-3 H
BHA NO: 2
BHA KIND:
DESCRIPTION:
BHA NAME: 2

String component	OD in	ID in	Length m	Acc length m
MXL-ST303DX~17 1/2"	17,500		0,42	0,42
POWERDRIVE XTRA 1100	9,750	3,200	4,61	5,03
STRING STAB	17,125	3,500	1,82	6,85
FLEX COLLAR, NM	6,630	3,500	2,92	9,77
CDR 900	9,500	4,850	6,83	16,60
STABILIZER	17,250	3,250	1,50	18,10
POWERPULSE 900	9,500	6,250	8,58	26,68
DRILL COLLAR, NM	9,500	3,060	8,14	34,82
STABILIZER, NM	17,250	3,060	1,87	36,69
DRILL COLLAR, NM	9,500	3,060	9,28	45,97
DRILL COL	9,500	2,440	53,74	99,71
X-OVER	9,560	3,000	0,97	100,68
DRILL COL	8,000	2,810	18,86	119,54
JAR	8,000	3,000	9,95	129,49
DRILL COLLAR	8,000	2,810	28,31	157,80
X-OVER	8,060	3,500	1,22	159,02
HW DRILL PIPE, 5"	5,500	2,630	55,90	214,92

BHA NO: 4
BHA KIND:
DESCRIPTION:
BHA NAME: 3

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String component	OD in	ID in	Length m	Acc length m
MXL-ST303DX~17 1/2"	17,500		0,42	0,42
POWERDRIVE XTRA 1100	9,750	3,200	4,60	5,02
STRING STAB	17,125	3,500	1,82	6,84
FLEX COLLAR, NM	6,630	3,500	2,95	9,79
CDR 900	9,500	4,850	6,64	16,43
POWERPULSE 900	9,500	6,250	8,58	25,01
DRILL COLLAR, NM	9,500	3,060	8,14	33,15
STABILIZER, NM	17,250	3,060	1,87	35,02
DRILL COLLAR, NM	9,500	3,060	9,28	44,30
DRILL COL	9,500	2,440	53,74	98,04
X-OVER	9,560	3,000	0,97	99,01
DRILL COL	8,000	2,810	18,86	117,87
JAR	8,000	3,000	9,95	127,82
DRILL COLLAR	8,000	2,810	28,31	156,13
X-OVER	8,060	3,500	1,22	157,35
HW DRILL PIPE, 5"	5,500	2,630	55,90	213,25

BHA NO: 5

BHA KIND:

DESCRIPTION: Run whipstock & Window mill. Twistoff body below follow mill

BHA NAME: 4

String component	OD in	ID in	Length m	Acc length m
WHIPSTOCK	11,813		10,40	10,40
TRACKMASTER TRI MILL	12,250	3,250	7,08	17,48
X-OVER	8,000		1,22	18,70
OTHER	8,000		1,99	20,69
X-OVER	7,875	3,500	0,68	21,37
HW DRILL PIPE, 5"	6,625	4,000	9,31	30,68
X-OVER	8,000	3,000	1,01	31,69
MCBPV	8,000	3,188	1,61	33,30
LWD/MWD TOOL	8,375		8,77	42,07
UBHO, NM	8,000		0,81	42,88
DRILL COLLAR	8,000	2,813	113,21	156,09
X-OVER	8,000	3,125	1,23	157,32
NM HW DRILL PIPE	5,500	2,625	83,86	241,18

BHA NO: 6

BHA KIND:

DESCRIPTION: Fishing

BHA NAME: 5

String component	OD in	ID in	Length m	Acc length m
OVERSHOT	11,750	3,500	1,27	1,27
JAR	8,000	3,125	9,56	10,83
DRILL COLLAR	8,000	2,813	84,90	95,73
X-OVER	8,000	3,125	1,23	96,96
HW DRILL PIPE, 5"	5,500	2,625	27,96	124,92

BHA NO: 7

BHA KIND:

DESCRIPTION: Window mill.

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BHA NAME: 6

String component	OD in	ID in	Length m	Acc length m
TRACKMASTER TRI MILL	12,250	3,250	4,54	4,54
FLOAT SUB	8,000		0,76	5,30
X-OVER	7,875	3,500	0,68	5,98
HW DRILL PIPE, 5"	6,625	4,000	9,31	15,29
X-OVER	8,000	3,000	1,01	16,30
DRILL COLLAR	8,000	2,813	113,21	129,51
X-OVER	8,000	3,125	1,23	130,74
HW DRILL PIPE, 5"	5,500	2,625	83,86	214,60

BHA NO: 8

BHA KIND:

DESCRIPTION: 12 1/4" bit and PowerDrive.

BHA NAME: 7

String component	OD in	ID in	Length m	Acc length m
RSX819S~12 1/4"	12,250		0,24	0,24
POWERDRIVE XTRA 900	9,250	3,000	9,28	9,52
CDR 825	8,250	5,000	6,45	15,97
POWERPULSE 825	8,250	5,900	8,40	24,37
STABILIZER, NM	12,125	2,810	1,56	25,93
DRILL COLLAR, NM	8,000	2,810	18,05	43,98
DRILL COLLAR	8,000	2,810	56,61	100,59
HYDRAULIC JAR	8,000	3,000	9,56	110,15
DRILL COLLAR	8,000	2,810	28,29	138,44
X-OVER	8,000	3,000	1,23	139,67
HW DRILL PIPE, 5"	5,500	2,625	27,96	167,63
DP 5 1/2"	5,500	4,780		167,63

BHA NO: 9

BHA KIND:

DESCRIPTION: Pulling HWWB

BHA NAME: 8

String component	OD in	ID in	Length m	Acc length m
BULL NOSE	6,375	3,000	0,70	0,70
JET SUB	6,625	3,000	1,47	2,17
X-OVER	7,063	3,000	0,66	2,83
DP 5 1/2"	5,500	4,280	28,89	31,72
X-OVER	7,063	3,500	1,00	32,72
SPRING LOADED TOOL		3,500	1,54	34,26
X-OVER	7,375	3,000	0,57	34,83
DP PUP JOINT	5,500	4,280	3,15	37,98

BHA NO: 10

BHA KIND:

DESCRIPTION: Installed 10 3/4" WB on SLT and pressure tested BOP.

BHA NAME: 9

String component	OD in	ID in	Length m	Acc length m
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String component	OD in	ID in	Length m	Acc length m
DP PUP JOINT	5,500	3,500	1,08	1,08
SPRING LOADED TOOL	18,720	3,500	0,75	1,83
DRILL PIPE, PUP	6,500	3,000	2,69	4,52
SUB	9,620	4,280	3,15	7,67
DRILL PIPE, PUP	5,500	3,500	1,57	9,24
DP 5 1/2"	5,500	3,500		9,24

BHA NO: 11
BHA KIND:
DESCRIPTION: Run Gyro in casing on 5/16" WL
BHA NAME: 10

String component	OD in	ID in	Length m	Acc length m
CABLE HEAD	2,500		0,30	0,30
CCL	2,500		0,80	1,10
OTHER	3,700		6,90	8,00

BHA NO: 12
BHA KIND:
DESCRIPTION: 8 1/2" bit and PowerDrive
BHA NAME: 11

String component	OD in	ID in	Length m	Acc length m
FMR3753Z~8 1/2"	8,500		0,23	0,23
POWERDRIVE XTRA 675	6,750		8,67	8,90
PERISCOPE	6,875		6,22	15,12
ARC 675	6,875		5,74	20,86
TELESCOPE 675	6,875		8,48	29,34
STETHOSCOPE	6,750		10,10	39,44
ADN 675	6,875		6,47	45,91
NM HW DRILL PIPE	5,000	2,813	18,74	64,65
HYDRAULIC JAR	6,375	3,000	9,82	74,47
HW DRILL PIPE, 5"	5,000	3,000	27,90	102,37
ACCELERATOR	6,375	2,750	9,69	112,06
HW DRILL PIPE, 5"	5,000	3,000	18,68	130,74
X-OVER	6,240	3,000	0,65	131,39
PUP JOINT	5,500	3,000	3,16	134,55

BHA NO: 13
BHA KIND:
DESCRIPTION: 8 1/2" wiper trip BHA
BHA NAME: 12

String component	OD in	ID in	Length m	Acc length m
EBXSC1S~12 1/4"	8,500	2,250	0,25	0,25
STABILIZER, NB	8,375	2,810	2,13	2,38
PONY COLLAR, NM	6,750	2,810	4,40	6,78
STABILIZER, NM	8,375	2,810	1,85	8,63
TELESCOPE 675	6,750	5,110	9,25	17,88
HW DRILL PIPE, NM	5,000	2,810	18,74	36,62
HYDRAULIC JAR	6,500	2,750	9,82	46,44

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String component	OD in	ID in	Length m	Acc length m
HW DRILL PIPE, 5"	5,000	3,000	27,90	74,34
ACCELERATOR	6,500	2,750	9,69	84,03
HW DRILL PIPE, 5"	5,000	3,000	18,68	102,71
X-OVER	7,000	3,500	0,49	103,20

BHA NO: 14

BHA KIND:

DESCRIPTION: 7 x 9 5/8"x 10 3/4" clean out run

BHA NAME: 13

String component	OD in	ID in	Length m	Acc length m
FM3643C~6"	6,000		0,18	0,18
BIT SUB	4,750	1,500	0,75	0,93
DP PUP JOINT	4,750	2,313	2,44	3,37
RAZOR BACK	6,400	2,000	8,58	11,95
DP PUP JOINT	4,750	3,400	3,10	15,05
DP 3 1/2"	4,750	3,400	1173,80	1188,85
DP PUP JOINT	4,750	3,400	4,63	1193,48
TOP DRESS MILL	7,920	2,200	10,17	1203,65
MFCT	9,000	2,000	8,70	1212,35
HW DRILL PIPE, 5½"	7,000	2,600	55,90	1268,25
DP 5 1/2"	7,000	3,500	2035,34	3303,59
RAZOR BACK	9,000	2,700	9,66	3313,25
DP PUP JOINT	7,000	3,500	1,67	3314,92
DP PUP JOINT	7,000	3,500	4,70	3319,62
X-OVER	7,000	2,740	1,00	3320,62
DP PUP JOINT	7,000	3,500	2,00	3322,62
DP 5 1/2"	7,000	3,500	86,83	3409,45
DP 5 1/2"	7,000	3,500	9,64	3419,09
DP 5 1/2"	7,000	3,500	401,62	3820,71

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8.6 Drilling fluids

Well: 6608/10-K-3 H (P17) & 6608/10-11 S (Trost) DRILLING FLUIDS PROGRAM																					
Field: Norne																					
Rig: TOA (24m MSL - RKB)																					
HOLE		CASING		MUD TYPE	MW	LGS	10 sec.	10 min.	Fann 100 rpm	Fann 3 rpm	O / W ratio	PV	API FL	HTHP FL	MBT	pH	W.P.S	Activity	ES	DFE	Total Volume Old Volume New Volume Usage [m³]
SIZE	TVD MD	SIZE	TVD MD																		
12 1/4"	2513 2851	9 5/8"	2508 2845	Carbo-Sea OBM	1,44	67-144	4-6	5-8			76/24	22-27		3,00				>0.91	310		473 350 123 152
				Comments:																	
8 1/2"	2955 3392	7"	2955 3391	Carbo-Sea OBM	1,52	101-171	5-6	7			75/25	24-28		2,00				>0.91	400		410 320 90 129
				Comments:																	
6"	3243 3725			Carbo-Sea OBM	1,30	87-145	6	7			76/24	25		2				>0.81	428		367 300 67 76
				Comments:																	

Well: 6608/10-K-3 H (P17)																					DRILLING FLUIDS PROGRAM									
Field: Norne																														
Rig: TOA (24m MSL - RKB)																														
HOLE		CASING		MUD TYPE	MW	LGS	10 sec.	10 min.	Fann 100 rpm	Fann 3 rpm	O / W ratio	PV	API FL	HTHP FL	MBT	pH	W.P.S	Activity	ES	DFE	Total Volume Old Volume New Volume Usage [m³]									
SIZE	TVD MD	SIZE	TVD MD																			[SG]	[KG/m³]	[Pa]	[Pa]	(cP)	[ml]	[ml]	[KG/m³]	[KG/m³]
36"	467 467	30"	459 459	Seawater/ Hi-vis pills/ Displ. Mud	1,30							26	10			8,5					149									
				Comments:																										
17 1/2"	1332 1371	13 3/8"	1327 1366	Seawater/ Hi-vis pills/ Displ. Mud	1,30							27	10			8,5					594									
				Comments:																										
12 1/4"	2528 2677	9 5/8"	2525 2671	CarboSea OBM	1.44	74-167	4-6	6-8	..	8	76/24- 79/21	21-26	n/a	3,00	n/a	n/a		>0.92	340		529 360 169 176									
				Comments:																										
8 1/2"	2636 3849	7"	2636 3849	CarboSea OBM	1.26	116-193	5-6	7-8	..	8-11	75/25- 77/23	20-25	n/a	2,00	n/a	n/a		>0.92	420		372 320 52 70									
				Comments:																										

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8.7 Cementing

Well: 6608/10-K-3 H (P17) & 6608/10-11 S (Trost) Field: Norne Rig: TOA (24m MSL - RKB) CEMENT PROGRAM																
HOLE		CASING SHOE		TOC	VOLUME/ EXCESS	CEMENT SLURRY DESIGN									SPACER	DISPLACEMENT Fluids and Rates
SIZE	TVD MD	SIZE	TVD MD	TVD MD		Components	Lead [ltr/100kg]	Tail [ltr/100kg]	Density [SG]	Yield [ltr/100kg]	Stat. / Circ. Temp [°C]	Thickening time [hrs to 30 Bc]	API Free Water [%]	API Fluid loss [cc/30min]	Compressive strength	
12 1/4"	2513 2851	9 5/8"	2508 2845	2184 2445	17.3-m3 40 % OH	Slurry name: Norcem "G" Cmt EZ-FLO, dry blended CFR-8L HR-5L Halad-400L Gascon NF-6 Fresh water		16B-GTT90 100% 0,10 1,30 1,40 2,5 3,50 0,10 37,82	1,90	77,80	91 / 55	4,24	0	42	2379	5 m3 baseoil + 20 m3 Spacer 4T 35 kg/m3 Tuned Spacer 815 kg/m3 Ilmenite 24 ltr/m3 Musol 12 ltr/m3 Sem-8 3 ltr/m3 NF-6 OBM @ 1500-lpm
8 1/2"	2955 3392	7"	2955 3391		14.6-m3 40 % OH	Slurry name: Norcem "G" Cmt SSA-1, dry blended EZ-FLO, dry blended CFR-8L HR-5L Halad-400L Gascon NF-6 Fresh water		21-HTG90 100% 35% 0,10 2,50 1,70 3,00 5,00 0,10 44,54	1,90	102,73	115 / 82	08:18	0	41	1760	5 m3 baseoil + 10 m3 Spacer 4T 35 kg/m3 Tuned Spacer 815 kg/m3 Ilmenite 24 ltr/m3 Musol 12 ltr/m3 Sem-8 3 ltr/m3 NF-6 OBM @ 1000-lpm
6"	3243 3725				plug #1 - 3 HTG90 6-m3 31% excess Plug #4 GTT90 8-m3 20% excess	Slurry name: Norcem "G" Cmt SSA-1, dry blended EZ-FLO, dry blende CFR-8L HR-5L Halad-400L Gascon NF-6 Fresh water	21-HTG90 100% 35% 0,10 2,50 2,80 4,00 5,00 0,10 43,86	16B-GTT90 100% - 0,10 2,00 1,00 3,50 3,50 0,10 36,72	plug #1-3 1,90 plug #4 1,90	102,74 78,00	128 / 105 99 / 64	05:05 04:12	0 0	37 25	2284 2804	4 times 8-m3 Spacer 4T 35 kg/m3 Tuned Spacer 639 kg/m3 Ilmenite 24 ltr/m3 Musol 12 ltr/m3 Sem-8 3 ltr/m3 NF-6 OBM @ 1500-lpm

Well: 6608/10-K-3 H (P17)																		
Field: Norne																		
Rig: TOA (24m MSL - RKB)																		
HOLE		CASING SHOE		TOC	VOLUME/ EXCESS	CEMENT SLURRY DESIGN										SPACER	DISPLACEMENT	
SIZE	TVD MD	SIZE	TVD MD	TVD MD		Components	Lead [ltr/100kg]	Tail [ltr/100kg]	Density [SG]	Yield [ltr/100kg]	Stat. / Circ. Temp [°C]	Thickening time [hrs to 30 Bc]	API Free Water [%]	API Fluid loss [cc/30min]	Compressive strength		Fluids and Rates	
36"	467 467	30"	459 459	Seabed Seabed	Lead 12-m3 Tail 15-m3 100 %	Slurry name: Norcem "G" EZ-FLO, dry blended Econolite CaCl2 NF-6 Sea Water	STL10 100% 0,10 3,20 - 0,10 95,18	STT10 100% 0,10 - 4,35 0,10 39,61	Lead 1,56 Tail 1,95	Lead 129,56 Tail 75,14	7 12	Lead 9:50 Tail 9:10	Lead 0,6 Tail 0	n/a	Lead 300 Tail 610	BU - seawater	Seawater @ 1000 - 1500-lpm	
17 1/2"	1332 1371	13 3/8"	1327 1366	Seabed Seabed	Lead 89-m3 Tail 19-m3 50 %	Slurry name: Norcem "G" Cement EZ-FLO, dry blended Gascon Halad-400L Halad-99LE+ HR-4L NF-6 Fresh Water	GTTLT 100% 0,10 10,00 6,00 2,00 1,50 0,10 76,29	MPT14 100% 0,10 - 0,5 1,00 0,10 42,54	Lead 1,56 Tail 1,92	Lead 126,98 Tail 75,22	43 30	Lead 7:22 Tail 4:40	Lead 0 Tail 0	n/a	Lead 239 Tail 2460	BU - seawater	Seawater @ 3000-lpm	
12 1/4"	2528 2677	9 5/8"	2525 2671	2198 2271	17.3-m3 40 % OH	Slurry name: Norcem "G" Cmt EZ-FLO, dry blended CFR-8L HR-5L Halad-400L Gascon NF-6 Fresh water	- 100% 0,10 1,30 1,50 2,5 3,50 0,10 37,74	16B-GTT90 100% 0,10 1,30 1,50 2,5 3,50 0,10 37,74	1,90	77,82	92 / 55	5:18	0	38	1789	5 m3 baseoil + 20 m3 Spacer 4T 35 kg/m3 Tuned Spacer 815 kg/m3 Ilmenite 24 ltr/m3 Musol 12 ltr/m3 Sem-8 3 ltr/m3 NF-6	OBM @ 1500-lpm	
8 1/2"	2636 3849	7"	2636 3849	2489 2610	25-m³ 68% OH	Slurry name: Norcem "G" Cmt EZ-FLO, dry blended CFR-8L HR-5L Halad-400L Gascon NF-6 Fresh water	- 100% 0,10 2,50 1,40 2,50 3,50 0,10 36,83	16B-GTT90 100% 0,10 2,50 1,40 2,50 3,50 0,10 36,83	1,90	87,01	101 / 77	7:17	0	44	2559	5 m3 baseoil + 15 m3 Spacer 4T 21 kg/m3 Tuned Spacer 661 kg/m3 Ilmenite 24 ltr/m3 Musol 12 ltr/m3 Sem-8 3 ltr/m3 NF-6	OBM @ 1500-lpm	

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8.7.1 Casing/Liner cementing

WELLBORE ID: NO 6608/10-K-3 H

CASING SIZE: 13 3/8"

STAGE CEMENTING: No

REPORT DATE: 20.05.2006

REMARKS: Lead slurry, gastight design. Tail slurry freshwater with HR-4L. Rig pump efficiency 96 %.

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Lead	Cement Slurry 35-GTLLT	1,56	89,0	905	15	F	Freshwater	42,54	l/100kg	1,00	
							EZ-FLO added to cmt onshore	0,10	kg/100kg		
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							HR-4L	1,50	l/100kg	1,18	
							HALAD-99LE+	2,00	l/100kg	1,02	
							HALAD 400L	6,00	l/100kg		
							Norcem "G"	100,00	kg/100kg	3,22	
							Gascon 469	10,00	l/100kg		
Tail	Cement Slurry 24B-MPT14	1,92	19,0	905	15	F	Norcem "G"	100,00	kg/100kg	3,22	
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							HR-4L	1,00	l/100kg	1,18	
							HALAD-99LE+	0,50	l/100kg	1,02	
							Freshwater	42,54	l/100kg	1,00	
							EZ-FLO added to cmt onshore	0,10	kg/100kg		

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WELLBORE ID: NO 6608/10-11 S
CASING SIZE: 9 5/8"
STAGE CEMENTING: 1
REPORT DATE: 24.07.2006
REMARKS:

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Preflush	BASEOIL	0,83	5,0	990	42	F	BASE OIL	5,00	l/m3	0,83	
Spacer before	Spacer 4	1,66	18,8	1500	71	F	TUNED SPACER E+	35,00	kg/m3		
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							MUSOL E	24,00	l/m3	0,92	
							DRILL WATER	773,00	l/m3		
							Ilmenite	815,00	kg/m3	4,65	
							NF-6, DEFOAMER	3,00	l/m3	0,94	
Lead	Cement Slurry 16B-GTT90	1,90	17,3	840	126	F	EZ-FLO added to cmt onshore	0,10	kg/100kg		
							DRILL WATER	37,82	l/100kg		
							GASCON	3,50	l/100kg	1,10	
							HALAD 400L	2,50	l/100kg		
							HR-5L	1,40	l/100kg	1,16	
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							Norcem "G"	100,00	kg/100kg	3,22	
Spacer after	Spacer 4	1,66	1,2	1000		F	Ilmenite	815,00	kg/m3	4,65	
							MUSOL E	24,00	l/m3	0,92	
							DRILL WATER	773,00	l/m3		
							NF-6, DEFOAMER	3,00	l/m3	0,94	
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							TUNED SPACER E+	35,00	kg/m3		

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CASING SIZE: 7"

STAGE CEMENTING: No

REPORT DATE: 01.08.2006

REMARKS: While cement passing shoe at 1000 lpm, ECD 1,99 s.g.

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Preflush	BASEOIL	0,85	5,0	950	84	F	BASE OIL	5,00		0,85	
Spacer before	Spacer 4	1,66	9,7	870	88	F	TUNED SPACER E+	35,00	kg/m3		
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							NF-6, DEFOAMER	3,00	l/m3	0,94	
							MUSOL E	24,00	l/m3	0,92	
							Ilmenite	815,00	kg/m3	4,65	
							DRILL WATER	773,00	l/m3		
Lead	Cement Slurry 21A-HTG90	1,90	14,6			F	HR-5L	1,70	l/100kg	1,16	
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							Norcem "G"	100,00	kg/100kg	3,22	Y
							GASCON	5,00	l/100kg	1,10	
							CFR-8L	2,50	l/100kg		
							HALAD 400L	3,00	l/100kg		
							Freshwater	44,54	l/100kg	1,00	
							EZ-FLO added to cmt onshore	0,10	kg/100kg		
							SSA-1	35,00	kg/100kg	2,63	Y
Spacer after	Spacer 4	1,66	0,3			F	Ilmenite	815,00	kg/m3	4,65	
							Freshwater	773,00	l/m3	1,00	
							MUSOL E	24,00	l/m3	0,92	
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							TUNED SPACER E+	35,00	kg/m3		
							NF-6, DEFOAMER	3,00	l/m3	0,94	

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WELLBORE ID: NO 6608/10-K-3 H

CASING SIZE: 9 5/8"

STAGE CEMENTING: No

REPORT DATE: 11.09.2006

REMARKS:

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Preflush	BASEOIL	0,83	5,0	1000	38	F					
Spacer before	Spacer Non Standard	1,66	20,0	1000	38	F	Freshwater	773,00	l/m3	1,00	
							NF-6, DEFOAMER	3,00	l/m3	0,94	
							TUNED SPACER E+	35,00	kg/m3	2,65	
							MUSOL E	24,00	l/m3	0,92	
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							Ilmenite	815,00	kg/m3	4,65	
Lead	Cement Slurry 16B-GTT90	1,90	17,3	1000	26	F	CFR-8L	1,30	l/100kg		
							EZ-FLO added to cmt onshore	0,10	kg/100kg		
							Freshwater	37,74	l/100kg	1,00	
							GASCON	3,50	l/100kg	1,10	
							HALAD 400L	2,50	l/100kg		
							HR-5L	1,50	l/100kg	1,16	
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							Norcem "G"	100,00	kg/100kg	3,22	
Displacement	Oil Based Mud	1,44	90,6	1500	18	F					

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CASING SIZE: 7"

STAGE CEMENTING: No

REPORT DATE: 22.09.2006

REMARKS:

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Preflush	BASEOIL	0,83	5,0	1000							
Spacer before	Spacer 4	1,53	15,0	1500			NF-6, DEFOAMER	3,00	l/m3	0,94	
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							TUNED SPACER E+	21,00	kg/m3		
							MUSOL E	24,00	l/m3	0,92	
							Ilmenite	661,00	kg/m3	4,65	
							Freshwater	810,00	l/m3	1,00	
Lead	Cement Slurry 16B-GTT90	1,90	25,0	850			Freshwater	36,83	l/100kg	1,00	
							GASCON	3,50	l/100kg	1,10	
							HALAD 400L	2,50	l/100kg		
							HR-5L	1,40	l/100kg	1,16	
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							Norcem "G"	100,00	kg/100kg	3,22	
							CFR-8L	2,50	l/100kg		
							EZ-FLO added to cmt onshore	0,10	kg/100kg		

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8.7.2 Plugging

WELLBORE ID: NO 6608/10-11 S

REPORT DATE: 12.08.2006

PLUG NO: 1

TOP DEPTH: 3475

BOTTOM DEPTH: 3725

CASING SIZE:

HOLE DIAMETER: 6"

CEMENTING TYPE: OPEN HOLE

REMARKS: Composition of cement slurry and spacer is the same for plug #1, 2 and 3. Set with balanced plug methode.

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Spacer before	Spacer 4	1,60	5,0				NF-6, DEFOAMER	3,00	l/m3	0,94	
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	
							MUSOL E	24,00	l/m3	0,92	
							DRILL WATER	788,90	kg/m3	1,00	
							Ilmenite	739,00	kg/m3	4,65	
							TUNED SPACER E+	35,00	kg/m3	2,65	
Slurry	Cement Slurry 20A-HTG80	1,90	5,0				EZ-FLO added to cmt onshore	0,10	kg/100kg		
							Freshwater	43,86	l/100kg	1,00	
							HR-5L	2,80	l/100kg	1,16	
							HALAD 400L	4,00	l/100kg		
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							CFR-8L	2,50	l/100kg		
							GASCON	5,00	l/100kg	1,10	
							SSA-1	35,00	kg/100kg	2,63	
							Norcem "G"	100,00	kg/100kg	3,22	
Spacer after	Spacer 4	1,60	0,9				Freshwater	788,90	l/m3	1,00	
							NF-6, DEFOAMER	3,00	l/m3	0,94	

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Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
							MUSOL E	24,00	l/m3	0,92	
							TUNED SPACER E+	35,00	kg/m3		
							Ilmenite	739,00	kg/m3	4,65	
							SEM-8, WATER WETTING AGENT	12,00	l/m3	0,99	

PLUG NO: 2

TOP DEPTH: 3225

BOTTOM DEPTH: 3475

CASING SIZE: 7"

HOLE DIAMETER: 6"

CEMENTING TYPE: OPEN HOLE/CSG

REMARKS: Composition of cement slurry and spacer is the same for plug #1, 2 and 3. Set with balanced plug method

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Spacer before	Spacer 4	1,60	5,0								
Slurry	Cement Slurry 21A-HTG90	1,90	5,0								
Spacer after	Spacer 4	1,60	0,9								

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PLUG NO: 3

TOP DEPTH: 2975

BOTTOM DEPTH: 3225

CASING SIZE: 7"

HOLE DIAMETER: NA

CEMENTING TYPE: CASING

REMARKS: Composition of cement slurry and spacer is the same for plug #1, 2 and 3. Set with balanced plug methode.

Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Spacer before	Spacer 4	1,60	5,0								
Slurry	Cement Slurry 21A-HTG90	1,90	6,0								
Spacer after	Spacer 4	1,60	0,7								

PLUG NO: 4

TOP DEPTH: 2725

BOTTOM DEPTH: 2975

CASING SIZE: 7"

HOLE DIAMETER:

CEMENTING TYPE: CASING/CASING

REMARKS: Spacer composition is the same on all 4 plugs. Set with balanced plug methode.

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Fluids pumped	Type	Density SG	Volume m3	Pump Rate l/min	Pump Press bar	Return	Component	Quantity	Unit	Density SG	Premixed in mixwater
Spacer before	Spacer 4	1,60	8,0								
Slurry	Cement Slurry 16B-GTT90	1,90	8,0				GASCON	3,50	l/100kg	1,10	
							NF-6, DEFOAMER	0,10	l/100kg	0,94	
							CFR-8L	2,00	l/100kg		
							HR-5L	1,00	l/100kg	1,16	
							HALAD 400L	3,50	l/100kg		
							Freshwater	36,72	l/100kg	1,00	
							EZ-FLO added to cmt onshore	0,10	kg/100kg		
							Norcem "G"	100,00	kg/100kg	3,22	
Spacer after	Spacer 4	1,60	0,6								

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8.7.3 *Mechanical plug*

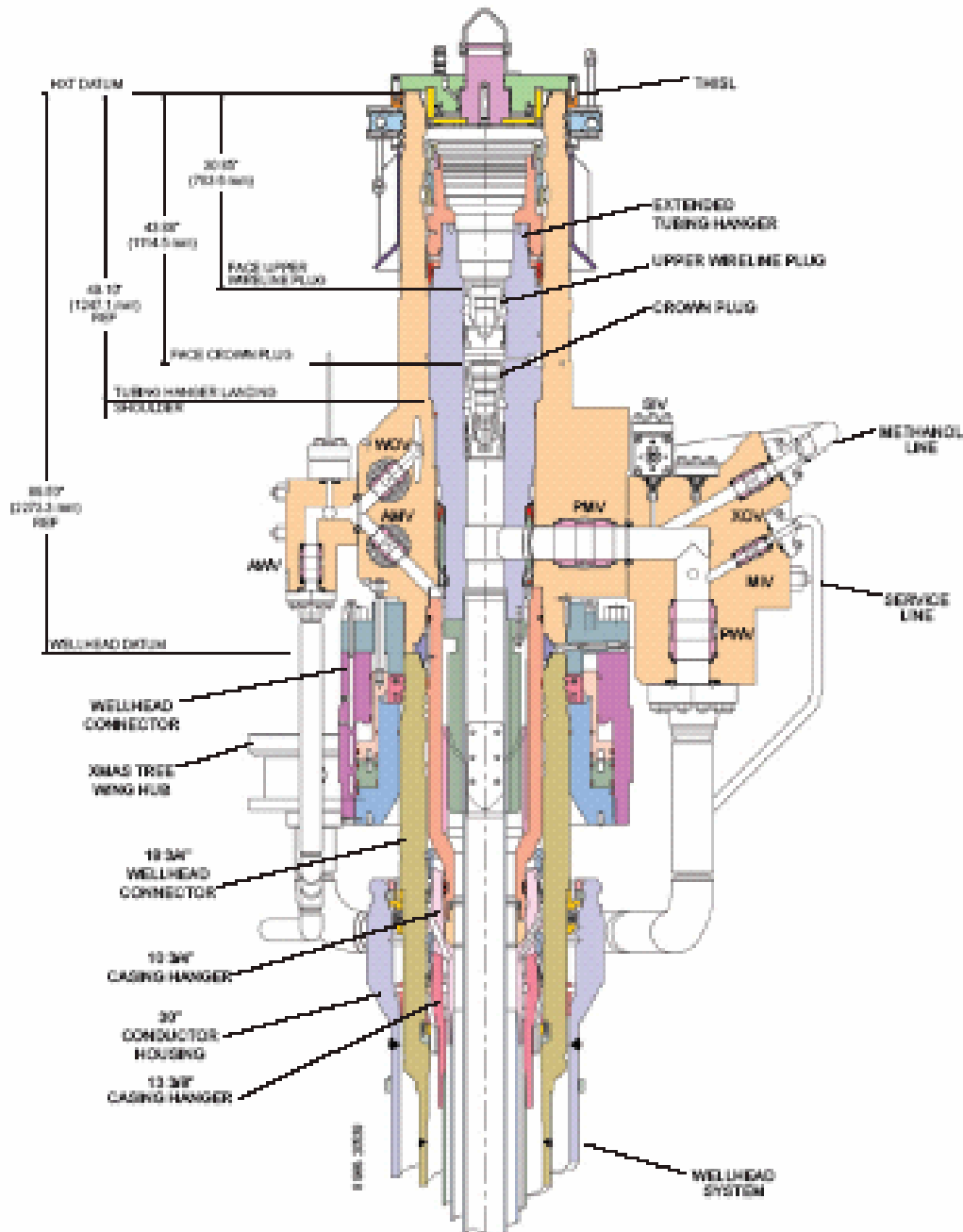
WELLBORE ID: NO 6608/10-11 S

Report date	Depth mMD	Diam. in	Plug type	Tagged depth mMD	Pressure test bar	Setting time	Pulling time	Remarks
14.08.2006	1336,0	13 3/8"	EZSV	1336,0	160,0	14.08.2006		Sat as an mechanical plug.

8.8 **Completion schematic**

Refer to separate Completion FWR

8.9 Wellhead /X-tree schematic



Xmas Tree Production, section drawing

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9 Appendix 4: Contractors list (optional)

Service	Contract no	Contractor
Liner Hanger Equipment	SAP4600002226	Baker Oil Tools
Plug	SAP4600002226	Baker Oil Tools
Milling/Wipstock	Dummy Smith Red Baron	Smith Red Baron
Cementing	SAP4600002160	Halliburton
Drilling Fluids	SAP4600006226	Baker Hughes Inteq
Measurement While Drilling	SAP4600004881	Schlumberger
Mud Logging	SAP4600004881	Schlumberger
Electric Wireline Logging	SAP4600007180	Schlumberger
Wireline	SAP4600004872	Aker Kværner Well Services
Casing Crew Service	SAP4600002226	Baker Oil Tools
Compl/sand contr. equip.	SAP4600002160	Halliburton
Casing Crew Service	SAP4600004001	Weatherford Norge AS
Rig Operations	SAP4600005980	Transocean
Directional Drilling	SAP4600004881	Schlumberger
ROV Systems	SAP4600006702	Oceaneering
Directional survey	SAP4600005276	Gyrodatta
Subsea WH/X-mas tree	SAP4600004804	FKS

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10 Appendix 5: Distribution list

E-mail
Roger Tønnessen, Norne B&B
Randi Jøsok, Norne B&B
Børge Nygård, Norne B&B
Karl-Gunnar Klausen, Norne B&B
Oddmund Theodorsen, Norne B&B
Knut Arne Jakobsen, Norne B&B
Leif-Mikal Madsen, Norne B&B
Odd-Are Klaussen, Norne B&B BOR
Geir Korneliussen, Norne B&B
Frode Sareussen, Norne B&B
Ole Magnar Drønen, Norne PETEK
Bjørn Holden Hansen, Norne PETEK
Bård Osdal, Norne PETEK
Anita Høiås, Norne PETEK
Bjørn Tore Samuelsen, Norne PETEK
Martin Springer, Norne PETEK
Trine Alsos, Norne PETEK
Tim Allen, Norne PETEK
Sveinung Tysse, Norne LET
Espen Granberg, Norne LET
Reslab v/Jan Meltveit, Ove Martin Utsola, Olav Byberg
Schlumberger v/Andy de Verteuil, Mikki Corcoran
Transocean ASA v/Runar Ellingsen
BHI v/Ole Georg Røyland
Halliburton v/ Jakob Mo, Finn Norman Lode
Lyng v/ Erik Aasland
SRB v/ Carl Otto Herrem
AKWS v/ Svein-Terje Høyer
FMC v/ Karl-Arne Bertelsen
Weatherford v/ Lasse Hetland
Reed hycalog v/ Olav K. Hareid
Baker v/ Jan-Ove Sørheim
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