

# END OF WELL REPORT

# WELL 6506/3-1

**PL259** 

February, 2002

Partner



**Partner** 







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### 36" Hole Section

Drilling of the 36" hole commenced on the 22nd of July, 2002, once cross tensioning of the anchor chains was completed. The 36" hole was drilled from seabed (366 m) to planned TD of 456 m with seawater and hi-vis pills without problems. The 30" conductor was successfully run and cemented in place.

#### 17 ½" Hole Section

Following clean-out of the 30" conductor shoe and rathole with a 26" bit, the  $8\frac{1}{2}$ " shallow gas pilot hole was drilled to 1383 m with seawater and hi-vis pills. No shallow gas was observed and the  $8\frac{1}{2}$ " hole was opened to  $17\frac{1}{2}$ ".

When running the 13 3/8" casing at 727 m, the casing started to take weight, but the running continued as this was interpreted to be drag in the hole. Shortly thereafter, the ROV sonar showed an unusual reflection and the running was halted. By visual observation, the casing was observed buckled over the wellhead with several joints folded onto the seabed. The casing was pulled to the surface and all joints were recovered, with the exception of two casing centralizers that were lost in hole.

A wiper trip was conducted and the hole was displaced to 1.40 sg KCl inhibited mud. The casing was re-run and successfully cemented in place without any further problems.

The BOP and riser were run. Because of constraints on "over the side work", some waiting on weather took place before the BOPs could be latched to the high pressure wellhead.

#### 8 ½" Hole Section

Following pressure testing of the BOP and 13 3/8" casing, the shoe track was cleaned out with the 8 ½" drilling assembly while displacing the well to 1.45 sg oil based mud. 4 m of new formation was drilled and leak-off tested to 1.84 sg EQMW, before drilling continued.

The ROP was controlled until the top of Brygge flooding surface (secondary objective) at 1654 m was established by use of LWD CDR /ISONIC. With no indications of hydrocarbons, drilling continued and the mud density was gradually increased to 1.50 sg.

During a connection at 1698 m, an increase in pit volume was noted and the well was shut in. A 4 m<sup>3</sup> pit gain was recorded, with 10 bar shut in casing pressure and 14 bar shut in drill pipe pressure. The kick was circulated out using the First Circulation of the Driller's Method. When relaxing the operating pressure on the Upper Annular Preventer to check for trapped gas with both annular preventers closed, the Lower Annular Preventer opened as well, allowing a 2.7 m<sup>3</sup> influx to be taken before the well was shut in. During subsequent circulation, it became apparent that the surface choke was partially plugged. With the surface choke, choke and kill lines cleaned out and a static well with 1.50 sg mud, the well was opened and circulation and rotation was established. An increase in pit level was again noticed and the well was shut in with an incremental pit gain of 7.4 m<sup>3</sup>. The well was killed with 1.57 sg mud using the Driller's Method. The mud on bottoms up was contaminated with saltwater and subsequent logs (MDT) measured a pore pressure of 1.52 sg around this depth.

After a conditioning trip back to the 13 3/8" casing shoe, drilling continued to 3101 m, which was determined to be 13 m into the Lysing Formation (primary objective). At this point, 70 m of formation was cored and 67.7 m of core was recovered. Drilling continued to a total depth of 3667 m and terminated in the Lange Formation.

Induction, Density, Neutron, Spectral Gamma Ray, Oil Based Diplog and Array Sonic wireline logs were successfully run. When running an 8 level Vertical Seismic Log, the tool became temporarily stuck at 3090 m. After coming free with the VSP toolstring, a wiper trip was conducted, followed by running the Modular Dynamic Testing Tool. Pressure points were recorded in the Lysing and Brygge formations and fluid samples were taken from the Lysing Formation. The Vertical Seismic Log was successfully re-run. The final log run was a Sidewall Core Gun, with 29 cores recovered out of 53 shots attempted.

#### Abandonment

Open hole cement plugs were placed across the Lysing Formation, the Brygge Formation, 13 3/8" casing shoe and in the top part of the 13 3/8" casing. The two last plugs were pressure tested to 70 bar above the formation leak-off pressure at the shoe. The oil-based mud was displaced with seawater before the BOP and riser was recovered. It took two attempts to cut the 20" extension joint and 30" conductor before recovery was possible. The ROV performed a seabed survey. While laying down drill pipe, recovery of the anchors and chains took place. The rig was released to Statoil at 01:12 hrs on 19<sup>th</sup> of August.

A total of 33.1 days were spent, including 9.5 days of trouble time.

### 1.5 Attachments

- 1. Daily Operational Summaries
- 2. Figure 1.1 Well Summary

#### 1.1 Introduction

This End of Well Report conforms to requirements laid down in NPD regulations and guidelines relating to drilling and well activities and geological data collection.

### 1.2 Summary of Well Objectives vs. Results

Well 6506/3-1 was Norsk Chevron's first exploration well to be drilled in the PL259 license.

The first objective of this well was to demonstrate the economic potential of two prognosed hydrocarbon reservoirs in Structure A in the Brygge (Paleogene) and Lysing (Cretaceous) Formations. The corresponding prospects were called the Harran and the Grong-A prospects respectively. This objective failed and the main reasons were lack of reservoir in the Harran prospect and lack of seal and proper reservoir in the Grong-A prospect.

The second objective was to gather data for understanding the risks and license strategy. This objective was fulfilled.

### 1.3 Summary of Operational Objectives vs. Results

- Three (3) reportable incidents were reported to NPD vs. none as a goal. No Lost Time Accidents occurred vs. none as a goal.
- No accidental spills were reported vs. none as a goal.
- 33.1 actual days were spent on the well vs. 34 days in the AFE.
- The estimated cost is 136 mill NOK vs. 134 mill NOK in the AFE.

### 1.4 Short Summary of Activities

- All depths are in m MD <u>RKB</u> ( = meter Measured Depth below <u>Rotary Kelly Bushing</u> (<u>Drill floor</u>)).
- See Section 4, Section Synopsis for more details.

### **Transit**

The semi-submersible drilling rig Byford Dolphin was taken under tow from Shell's Garn West location on July 16<sup>th</sup>, 2001 and arrived one day later at the 6506/3-1 location. Anchor handling operations were delayed three days, because of rough weather conditions.

# **Daily Operational Summaries**

PAGE 1 OF 9 OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259 LEASE: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

16-JUL-2001

MW: MD: TVD: CASING: @ CUM COST: KR25,642,764

DOL: DFS: LAST SURVEY: @

1 HR SUMMARY

 $2300~{\rm HRS}\colon$  Last anchor bolstered at shell garn west location; rig on contract to norsk chevron a.s. as of  $2300~{\rm Hrs};$  commence tow to donna west location

PRESENT\_OPERATIONS:

0600 HRS; RIG ON TOW TO DONNA WEST; 66 NAUTICAL MILES TO LOCATION

17-Jul-2001

@

CUM COST: KR28,504,842

MW: MD: 0.0m TVD: 0.0m CASING:

DOL: 1 DFS: LAST SURVEY: @

24 HR SUMMARY

TOW RIG TO DONNA WEST LOCATION USING M/V FAR FOSNA; BALLAST DOWN TO SURVIVAL DRAFT (60FT) TO WOW 5 N-MILES FROM LOCATION -PERFORM RIG MAINTENANCE

PRESENT\_OPERATIONS:

0600 HRS:WOW 5 NAUTICAL MILES FROM DONNA WEST LOCATION - 18 M/S WIND, 4M SEAS

18-JUL-2001

MW: MD: 0.0m TVD: 0.0m CASING: @ CUM COST: KR 31,600,850

DOL: 2 DFS: LAST SURVEY: @

24 HR SUMMARY

WOW 5 NAUTICAL-MILES FROM DONNA WEST LOCATION - PERFORM RIG MAINTENANCE P/TEST LOWER ANNULAR TO 500/7500 PSI AND UPPER ANNULAR TO 500/3500 PSI

PRESENT\_OPERATIONS:

0600HRS: WOW 5 NAUTICAL MILES FROM DONNA WEST LOCATION - 17 M/S WIND, 6M SEAS

19-JUL-2001

MW: MD: 0.0m TVD: 0.0m CASING: @ CUM COST: KR34,778,777

DOL: 3 DFS: LAST SURVEY: @

24 HR SUMMARY

WOW 5 NAUTICAL-MILES FROM DONNA WEST LOCATION - PERFORM RIG MAINTENANCE MODUSPEC INSPECT BOP'S, REPLACE 5 RAM BLOCKS

PRESENT\_OPERATIONS:

0600 HRS: WOW 5 NAUTICAL MILES FROM DONNA WEST LOCATION - 21 M/S WIND, 6M SEAS

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#### OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

20-JUL-2001

MW: MD: 0.0m TVD: 0.0m CASING: @ CUM COST: KR37,906,404

DOL:4 DFS: LAST SURVEY: @

24 HR SUMMARY

WOW 5 NAUTICAL-MILES FROM DONNA WEST LOCATION - DE-BALLAST RIG TO TOWING DRAFT; COMMENCE RUN IN ON LINE TO DEPLOY 1ST ANCHOR

PERFORM RIG MAINTENANCE; P/TEST STANDPIPE EQ. TO 500/5000 PSI

PRESENT OPERATIONS:

0600 HRS: RUN ANCHORS AT DONNA WEST - ANCHORS #2, #5, #6, #8, #10 AND #11 SET

\_\_\_\_\_21-JUL-2001

MW: 1031 MD: 0.0m TVD: 0.0m CASING: @ CUM COST: KR41,091,654

DOL: 5 DFS: LAST SURVEY: @

24 HR SUMMARY

RUN ANCHORS, BALLAST RIG DOWN TO OPERATIONAL DRAFT OF 21.3M (25M AIRGAP) CROSS TENSION ANCHORS IN PAIRS TO 150MT FOR 15 MIN - MEANWHILE, MIX SPUD, KILL & DISPLACEMENT MUD; M/U & TIH WITH 17 1/2 BIT + 26 X 36 H/O BHA FINAL RIG POSITION N65DEG 48MIN 20.82 SEC, UTM 7300302.5 M N FINAL RIG POSITION E06DEG 44MIN 32.36 SEC, UTM 396765.5 M E (312DEG HEADING)

PRESENT\_OPERATIONS:

0600 HRS: DRILL 36" HOLE TO 456M (1496'); DISPLACE HOLE TO 1.2 SG MUD

22-JUL-2001

MW: 1031 MD: 456.0m TVD: 456.0m CASING: 762.0mm@451.0m CUM COST: KR 44,374,480

DOL: 6 DFS: 1 LAST SURVEY: @

24 HR SUMMARY

CONT TIH W/ 17 1/2" BIT + 26" X 36" H/O ASSY AND TAG MUD LINE AT 366M (1201') DRILL 36" HOLE TO 456M (36" CUTTER DEPTH = 454M) & DISPLACE HOLE TO 1.2SG MUD POOH; RUN 30" CONDUCTOR AND 5" INNER STRING TO 451M (1480FT)

CEMENT CONDUCTOR & WOC

PRESENT\_OPERATIONS:

0600 HRS: TIH WITH 26" CLEAN OUT ASSY AND STAB 26" BIT INTO LP HOUSING

22 707 2001

23-JUL-2001

MW: 1031 MD: 456.0m TVD: 456.0m CASING: 762.0mm@451.0m CUM COST: KR47,609,035

DOL: 7 DFS: 2 LAST SURVEY: @

24 HR SUMMARY

WOC; POOH W/ 30" LANDING STRING, M/U 26" CLEAN OUT ASSY & TIH; TAG TOC @ 446M DRILL OUT CEMENT AND SHOE FROM 446 TO 456M (1463-1496FT); POOH & P/U 5" DP.

PRESENT OPERATIONS:

0600 HRS: DRILL 8 1/2" PILOT HOLE @ 591M (1939')

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#### OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259 LEASE: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

24-JUL-2001

MW:1031 MD:1382.0m TVD:1379.8m CASING: 762.0mm@ 451.0m CUM COST: KR50,515,659

DOL:8 DFS: 3 LAST SURVEY: 4.11 @ 1362.4m

24 HR SUMMARY

TIH W/ PILOT HOLE ASSY & DRILL 8 1/2" HOLE F/1496-4534' (456-1382M); DISPLACE HOLE TO 1.2 SG MUD; POOH W/ 8 1/2" ASSY - NO PROBLEMS; L/O MWD/CDR TOOLS.

PRESENT OPERATIONS:

0600 HRS: M/U & RIH W/ 17 1/2" HO ASSY. OPEN HOLE TO 17 1/2" @ 615M (2018')

25-JUL-2001

MW: 1031 MD: 1382.0m TVD: 1379.8m CASING: 762.0mm@451.0m CUM COST: KR53,180,709

DOL: 9 DFS: 4 LAST SURVEY: @

24 HR SUMMARY

M/U 17 1/2" HOLE OPENER ASSY. TIH & OPEN 8 1/2" PILOT F/ 456 TO 1379M (1496-4524'). POOH TO 635M (2083')

PRESENT\_OPERATIONS:

0600 HRS: P/U & RUN 13 3/8" CSG TO 82M (269FT)

26-JUL-2001

MW: 1031 MD: 1382.0m TVD: 1379.8m CASING: 762.0mm@451.0m CUM COST: KR55,570,160

DOL: 10 DFS: 5 LAST SURVEY: @

24 HR SUMMARY

POOH W/ 17 1/2" HOLE OPENER ASSY. JET W/ HEAD. R/U & RUN 13 3/8" CSG TO 810M (2658FT); ROV OBSERVED CSG BUCKLED AT W/ HEAD. COMMENCE POOH W/ 13 3/8" CSG TO 270M (886')

PRESENT\_OPERATIONS:

0600 HRS: M/U & TIH W/ 17 1/2" WIPER TRIP ASSY TO 40M (131')

27-JUL-2001

MW: 1031 MD: 1382.0m TVD: 1379.8m CASING: 762.0mm@451.0m CUM COST: KR58,134,392

DOL: 11 DFS: 6 LAST SURVEY: @

24 HR SUMMARY

POOH & L/D 13 3/8" CSG; M/U 17 1/2" WIPER TRIP ASSY & TIH; WASH & REAM F/ 535 TO 1382M (1755-4534') - 17 1/2" CUTTER DEPTH @ 1379M (4524'); DISPLACE HOLE TO 1.4SG KCL MUD; POOH F/ 1382M (4534') - NO PROBLEMS

PRESENT\_OPERATIONS:

0600 HRS: RUN 13 3/8" CSG @ 455M (148')

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#### OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259 LEASE: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

28-JUL-2001

MW: 0 MD: 1382.0m TVD: 1379.8m CASING: 337.8mm@ 1374.3m CUM COST: KR62,444,976

DOL:12 DFS: 7 LAST SURVEY: @

24 HR SUMMARY

RUN 13 3/8" CASING AND SET AT 1374M (4508'); CIRC CSG VOLUME AND CEMENT CSG W/ 1.56SG LEAD SLURRY AND 1.92SG TAIL SLURRY; DISPLACE CMT W/ SEAWATER BACK OUT AND RETRIEVE RUNNING TOOL; R/U TO RUN BOP'S

PRESENT\_OPERATIONS:

0600 HRS: FUNCTION TEST BOPS BELOW ROTARY TABLE PRIOR TO LATCHING UP TO RISER

\_\_\_\_\_29-JUL-2001

MW: 1440 MD: 1382.0m TVD: 1379.8m CASING: 337.8mm@1374.3m CUM COST: KR66,572,826

DOL: 13 DFS: 8 LAST SURVEY: @

24 HR SUMMARY

RUN BOPS ON RISER TO 250M (820'); P/TEST C&K LINES TO 35/414 BAR EVERY 5 JNTS

PRESENT\_OPERATIONS:

0600 HRS: WOW TO P/U SLIP JNT - 35 KNOTS WIND, 6M SEAS

30-JUL-2001

MW: 1440 MD: 1382.0m TVD: 1379.8m CASING: 337.8mm@1374.3m CUM COST: KR71,658,035

DOL: 14 DFS: 9 LAST SURVEY: @

24 HR SUMMARY

CONT RUN BOP'S ON RISER. WOW T/ P/U SLIP JNT & LANDING JNT. MOVE RIG. LAND & LATCH BOP'S.

PRESENT OPERATIONS:

0600 HRS: M/U 8 1/2" BHA

21 777 0001

31-JUL-2001

MW: 1440 MD: 1386.0m TVD: 1384.0m CASING: 337.8mm@1374.3m CUM COST: KR74,477,877

DOL: 15 DFS: 10 LAST SURVEY: 4.46 @ 1469.6m

24 HR SUMMARY

TEST 13 3/8" CSG TO 30/200 BAR; TEST C&K LINE TO 30/400 BAR; INSTALL DIVERTER M/U 8 1/2" BHA, P/U 21 JNTS 5" DP & TIH; DRILL CMT F/ 1341-1371M (4400-4498') DISPLACE HOLE TO 1.44SG LT-OBM; DRILL SHOE @ 1374M (4508') & CLEAN RATHOLE TO 1382M (4534'); DRILL 8 1/2" HOLE TO 1386M (4547'); CIRC & COND MUD PERFORM LOT W/ 1.44SG MUD TO 1.84SG EMW

PRESENT OPERATIONS:

0530 HRS: DRILL 8 1/2" HOLE @ 1512M (4961')

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#### OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259 LEASE: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

01-AUG-2001

MW:1505 MD:1698.0m TVD:1695.0m CASING: 337.8mm@ 1374.3m CUM COST: KR77,283,408

DOL:16 DFS: 11 LAST SURVEY: 4.55 @ 1641.8m

24 HR SUMMARY

DRL 8 1/2" HOLE F/ 1386 TO 1698M (4547-5571'); WELL FLOWED AT CONN @ 1698M (5571') - SICP=150PSI. CIRC BTM'S UP USING 1.50SG MUD - ISICP=250PSI

PRESENT OPERATIONS:

0600 HRS: CIRC BTM'S UP BY DRILLERS METHOD USING 1.52SG MUD

00.31

02-AUG-2001

MW: 1575 MD: 1698.0m TVD: 1695.0m CASING: 337.8mm@1374.3m CUM COST: KR80,007,403

DOL: 17 DFS: 12 LAST SURVEY: @

24 HR SUMMARY

DISPLACE WELL TO 1.52SG MUD (MAX. GAS 8.9%)- SIDP=90PSI, SICP=0PSI; DISPLACE WELL & RISER TO 1.57 SG - F/C STATIC..

PRESENT\_OPERATIONS:

0600 HRS: POOH TO CASING SHOE

03-AUG-2001

MW: 1570 MD: 1736.0m TVD: 1733.0m CASING: 337.8mm@1374.3m CUM COST: KR82,833,698

DOL: 18 DFS: 13 LAST SURVEY: 4.13 @ 1815.4m

24 HR SUMMARY

POOH F/ 1698 TO 1326M (5571 TO 4350'); PERFORM RIG MAINTENANCE/REPAIRS TIH F/ 1326 TO 1611M (4350-5285'); WASH AND REAM TO 1698M (5571'); CIRC BTM'S UP; DRILL 8 1/2" HOLE F/ 1698 TO 1736M (5571-5696')

PRESENT OPERATIONS:

0600 HRS: DRILL 8 1/2" HOLE @ 1878M (6161')

04.2779.0001

04-AUG-2001

MW: 1576 MD: 2561.0m TVD: 2556.5m CASING: 337.8mm@1374.3m CUM COST: KR85,769,736

DOL: 19 DFS: 14 LAST SURVEY: 1.6 @ 2533.5m

24 HR SUMMARY

DRILL 8 1/2" HOLE F/ 1736 TO 2304M (5696'-7559'); OBSERVE 5 BBL PIT GAIN - F/C - STATIC; CIRC BTM'S UP; DRILL 8 1/2" HOLE F/ 2304 TO 2561M (7559-8402')

PRESENT\_OPERATIONS:

0500 HRS: DRILL 8 1/2" HOLE

**OPERATIONS SUMMARY REPORT** (Metric) PAGE 6 OF 9

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

COUNTRY: NORWAY PROJECT ID: UB5908 - 0 FIELD: PL259 LEASE: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

05-AUG-2001

MW:1575 MD:3101.5m TVD:3096.9m CASING: 337.8mm@ 1374.3m CUM COST: KR88,629,225

1.75 @ 3049.8m DOL:20 DFS: 15 LAST SURVEY:

24 HR SUMMARY

DRILL 8 1/2" HOLE F/ 2561 TO 3101.5M (8402-10176'); CIRC BTM'S UP

POOH TO 2934M (9626')

PRESENT OPERATIONS:

0600 HRS: M/U CORE BIT, P/U CORE BBLS

06-AUG-2001

MW: 1575 MD: 3130.0m TVD: 3125.5m CASING: 337.8mm@1374.3m CUM COST: KR91,615,779

DOL: 21 DFS: 16 LAST SURVEY:

24 HR SUMMARY

POOH W/ 8 1/2 BHA; M/U & TIH W/ 249' OF CORE BARRELS; CORE F/ 3101.5-3130M (10176-10269'.)

PRESENT\_OPERATIONS:

0600 HRS: CIRC & BOOST RISER @ 3070M (10072')

07-AUG-2001

MW: 1575 MD: 3171.5m TVD: 3167.0m CASING: 337.8mm@1374.3m CUM COST: KR94,730,083

DOL: 22 DFS: 17 LAST SURVEY:

24 HR SUMMARY

CUT 8 1/2" CORE F/ 3130 TO 3171.5M (10269-10405'); CORE JAMMED AT 3171.5M CIRC. POOH & L/D CORE (67.7M=222' = 96.7% CORE RECOVERED). M/U 8 1/2" BHA P/U 5" DP

PRESENT\_OPERATIONS:

0530 HRS: TIH W/ 8 1/2" BHA @ 2700M (8858')

08-AUG-2001

MW: 1600 MD: 3437.0m TVD: 3432.0m CASING: 337.8mm@1374.3m CUM COST: KR98,271,192

DOL: 23 DFS: 18 LAST SURVEY: 1.76 @ 3451.1m

24 HR SUMMARY

TIH W/ 8 1/2" BHA; P/U TOTAL OF 51 JNTS OF 5" DP; TIH TO 3043M (9984') WASH AND REAM F/ 3043 TO 3171.5M (9984-10405') - CIRC BTM'S UP - LARGE AMOUNT OF CUTTINGS/CAVINGS; INC. MW F/ 1.57 TO 1.60SG; DRILL 8 1/2" HOLE F/ 3171.5

TO 3437M (10405-11276')

PRESENT\_OPERATIONS:

0600 HRS: DRILL 8 1/2" HOLE @ 3585M (11762')

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#### OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259 LEASE: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

09-AUG-2001

MW:1600 MD:3667.0m TVD:3662.4m CASING: 337.8mm@ 1374.3m CUM COST: KR102,263,858

DOL:24 DFS: 19 LAST SURVEY: 1.9 @ 3641.9m

24 HR SUMMARY

DRILL 8 1/2" HOLE F/ 3437 TO WELL TD @ 3667M (11276-12031')

CIRC & COND MUD; POOH - NO HOLE PROBLEMS

PRESENT OPERATIONS:

0530 HRS: RECORD REPEAT SECTION W/ SCHLUMB PEX LOGGING STRING @3140M (10301')

MW: 1600 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR105,118,192

DOL: 25 DFS: 20 LAST SURVEY: @

24 HR SUMMARY

POOH W/ 8 1/2" BHA & L/D MWD/CDR TOOLS + BIT; R/U WIRELINE LOG RUN #1 AIT-PEX-HNGS: LOG F/ 3663-1374M (12018-4508') - NO HOLE PROBLEMS LOG RUN #2 DSI-GR-AMS-OBDT: LOG F/ 3664-1374M (12021-4508') - NO HOLE PROBLEM LOG RUN #3 PEX: RE-LOG F/ 2000-1590M (6562-5217') DUE TO ANOMALOUS DENSITY DATA F/ 1828-1624M (5997-5328')

PRESENT\_OPERATIONS:

0530 HRS: RIH W/ REED 8-LEVEL DELTA (VSP) TOOL ON E- LINE

11-AUG-2001

MW: MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR107,835,275

DOL: 26 DFS: 21 LAST SURVEY: @

24 HR SUMMARY

COMPLETE LOG RUN #3 (PEX) & POOH; RIH W/ READ 8-LEVEL DELTA VSP TO 3450M (11319') AND LOG UP; TOOL STUCK @ 3403M (11165'); WORK STRING W/ MAX LINE PUL POOH & R/D LOG EQ; M/U & TIH W/ 8 1/2" WIPER TRIP BHA TO 1343M (4406') - CIRC & COND MUD; CONT TIH W/ BHA TO 1900M (6234')

PRESENT\_OPERATIONS:

0530 HRS: CIRC & COND MUD # 3660M (12008')

10.377

12-AUG-2001

MW: 1600 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR110,540,293

DOL: 27 DFS: 22 LAST SURVEY: @

24 HR SUMMARY

TIH W/ 8 1/2" BHA F/ 1900 TO 3600M(6234-11811'); WASH & REAM TO 3667M (12031') CIRC & COND MUD. POOH, R/U SCHLUM W/LINE & RIH W/ MDT TO 1655M (5430') TAKE 10 PRE-TEST F/ 1655-1732.5M (5430-5684'); ATTEMPTS TO TAKE FLUID SAMPLES AT 1673M (5489') AND 1673.5M (5490') FAILED

PRESENT\_OPERATIONS:

0530 HRS: TAKE MDT SAMPLES @ 3091.2M (10142')

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#### OPERATIONS SUMMARY REPORT (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OPERATOR: NORSK CHEVRON AS OP/NON OP: OP

PROJECT ID: UB5908 - 0 COUNTRY: NORWAY FIELD: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

13-AUG-2001

MW:1600 MD:3667.0m TVD:3662.4m CASING: 337.8mm@ 1374.3m CUM COST: KR113,342,581

DOL:28 DFS: 23 LAST SURVEY: @

24 HR SUMMARY

TAKE 5 MDT PRE-TESTS F/ 3091.2-3107.2M (10142-10194'); MAX PRES IN LYSING 1.423SG; MAX PRES IN BRYGGE 1.535SG; TOOK 3X 450 CC WATER SAMPLE IN LYSING F/ 3091.2M (10142'); POOH - NO HOLE PROBLEMS; RIH W/ READ 8-LEVEL DELTA VSP TO 3523M; RECORD VSP SURVEY F/ 3523-2898M (11558-9508') TAKING SHOTS EVERY 10M (33FT); RECORD VSP WALKAWAY SURVEY W/ TOP GEOPHONE @ 2898M (9508') RECORD VSP SURVEY F/ 2898-2240M (9508-7349') TAKING SHOTS EVERY 10M (33FT)

PRESENT OPERATIONS:

0530 HRS: RIH W/ SIDEWALL CORE GUNS

14-AUG-2001

MW: 1600 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR118,218,073

DOL: 29 DFS: 24 LAST SURVEY: @

24 HR SUMMARY

RECORD VSP SURVEY F/ 2240-790M (7349-2592') TAKING SHOTS EVERY 10M (33FT) NO HOLE PROBLEMS. M/U & RIH HOLE SIDEWALL COREGUNS. ATTEMPT 53 CORES - 29 RECOVERED. P/U 3 1/2" PH-6 TBG F/ DECK & TIH TO 1333M (4373')

PRESENT\_OPERATIONS:

0530 HRS: SET CMT PLUG #1 F/ 3190 TO 3025M (10466-9925')

15-AUG-2001

MW: 1610 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR122,713,378

DOL: 30 DFS: 25 LAST SURVEY: @

24 HR SUMMARY

TIH W/ 3 1/2" STINGER F/ 1333 TO 3200M (4373-10499'); SET CMT PLUG #1 F/ 3190-3025M (10466-9925'); POOH TO 1791M (5876'); DROP DART & CIRC BTM'S UP SET CMT PLUG #2 F/ 1791-1491M (5876-4892'); POOH TO 1491M (4892'); DROP DART & CIRC BTM'S UP; SET CMT PLUG #3 F/ 1491-1274M (4892-4180'); POOH TO 1095M (3593'); DROP DART & CIRC BTM'S UP; POOH F/ 1095M TO 444M (1457') & L/D 5" DP POOH & L/D 444M OF 3 1/2" TBG; TIH W/ 5" MULESHOE ON 5" DP TO 374M (1227')

PRESENT OPERATIONS:

0530 HRS: POOH W/ 5" DP TO 411M (1348')

16, 200

16-AUG-2001

MW: 1001 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR127,732,223

DOL: 31 DFS: 26 LAST SURVEY: @

24 HR SUMMARY

TIH W/ 5" DP; TAG TOC WITH 5MT @ 1281M (4203'); POOH TO 661M (2169'); P/TEST CMT PLUG #3 TO 110 BAR; SET CMT PLUG #4 F/ 661-411M (2169-1348'); CIRC BTM'S UP; DISPLACE RISER TO SEAWATER. POOH & L/D 5" DP; RETRIEVE WEAR BUSHING L/D 364M OF 5" DP F/ DERRICK; PULL DIVERTER, UNLATCH BOP'S

PRESENT OPERATIONS:

0530 HRS: POOH & L/O RISER JNT 10 OF 23

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#### **OPERATIONS SUMMARY REPORT** (Metric)

FROM: 16-JUL-2001 TO: 19-AUG-2001

OP/NON OP: OP OPERATOR: NORSK CHEVRON AS

COUNTRY: NORWAY PROJECT ID: UB5908 - 0 LEASE: PL259 FIELD: PL259

WELL NAME: DONNA WEST PROSPECT AFE No: KWENO-650631-001

RIG: BYFORD DOLPHIN CATEGORY: EXP RIG TYPE: SEMI-SUBMERSIBLE

17-AUG-2001

MW:1001 MD:3667.0m TVD:3662.4m CASING: 337.8mm@ 1374.3m CUM COST: KR131,486,754

DOL:32 DFS: 27 LAST SURVEY:

24 HR SUMMARY

PULL RISER & BOPS. M/U & TIH W/ W/FORD MOST TOOL. CUT @ 371M-ATTEMPT TO PULL WELLHEAD - PULL TOOL FREE W/ 45MT O/PULL; KNIFE BLADES BENT BUT WORN TO TOP INDICATING FULL CUT; POOH TO C/O BLADES & SPACE OUT TO CUT @ 370.5M (1216')

PRESENT\_OPERATIONS:

0530 HRS: POOH W/ WELLHEAD AND MOST TOOL

.\_\_\_\_\_

18-AUG-2001

MW: 1001 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR135,172,597

LAST SURVEY: DOL: 33 DFS: 28

24 HR SUMMARY

TIH; CUT CSG @ 370.5M (1216') & PULL WELLHEAD, L/O SAME WHILE PULLING ANCHORS L/D DP FROM DERRICK WHILE PULLING ANCHORS.

PRESENT\_OPERATIONS:

0600 HRS: LAST ANCHOR BOLSTERED AND RIG HANDED OVER TO STATOIL 0112HRS

19-AUG-2001

MW: 1001 MD: 3667.0m TVD: 3662.4m CASING: 337.8mm@1374.3m CUM COST: KR136,431,507

DOL: 34 DFS: 29 LAST SURVEY: @

1.5 HR SUMMARY

COMPLETE L/O OF TUBULARS F/ DERRICK, CONCLUDE ANCHOR HANDLING WORK & HAND WELL OVER TO STATOIL @ 0112HRS

PRESENT OPERATIONS:

FINAL REPORT - RIG OFF CONTRACT

# Figure 1.1 Well Summary

#### Figure 1.1 Well Summary Well 6506/3-1 Surface location: 65° 48' 20.82" 7300302.2 mN Water depth: 341m MSL Location: Norway Chevron Well Type/Status: Exploration 06° 44' 32.36" Rotary-MSL: 25m Target Tolerance: 200m Radius @ Lysing Rotary - Seabed: 366m Production Licence : Pl 259 Licencees: Chevron (40%), Agip (30%), Enterprise (30%) Actual TD: 3662 mTVD / 3667 mMD Target Formation(s): Brygge Sst. / Lysing Sst. Rig Name: Byford Dolphin Days on Location: 33.1 days Planned TD: 3625mTVD / 3625 mMD Rig on Contract : July 17<sup>th</sup>, 2001 at 2300 hrs AFE Davs: 33.6 days Maximum Hole Angle: 4.55° Norsk Chevron AS Rig off Contract : August 19th, 2001 at 0112 hrs Estimated Well Cost: 136.4 mill NOK Rig Heading: 313.6° (True) AFE Cost: 134.0 mill NOK FIT DATA Relevant drilling problems and Directional Lithology **Wellbore Schematic** Actulal and AFE Time vs Depth (Davs) Formation Tops Mud Syster Logging & Coring Pore & Frac.Pressure and Mud Density MD RT Surveys Drilling After Plug and Abandonment Days 30 0.9 1 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2 2. 0-25m Airgap 25 MSI Retrievable - Actual Mud Weight 18 3/4" DrilQuip SS15 74.5 hrs Lost Time for WOW Guide Base ROV survey of seabed Prognozed Fractur Pressure Prognozed Pore otal section NPT = 74.5 hrs 502 SW - Spud Mu 30" @ 451mMD Cement plug # 3, 661 - 411mMD. luckled 13 3/8" casing and and layed Dicarlace Pliocene Wedge TOC is estimated, pressure tested to out casing on the seabed. Recovered W - Spud Mu 8 1/2" pilot hol MDT Brygge ame, performed a wipertrip and re-ran 125 bar w. seawater ■ MDT Lysing 20" x 10 m ext. x 13-3/8" XO Swage Displaced to WOW 4.5 hrs Lost Time Du 13-3/8" 72# L80 Modified BTC Logging VOW to run BOP KCI mud Ander Drift otal section NPT= 61.5 hrs prior to 13-3/8" @1374mMD Fook a 4 m<sup>3</sup> saltwater kick at 1698 nMD (Brygge Formation) during a 1500 iSONIC to 3102 m r Water Kick Cement plug # 2, 1791-1281 mMD, load teste connection. Increased MW to 1.57 SG 1552 and killed well. (MDT pressure = 1.52 (VERSAVERT OBM to 5 mT and pressure tested to 110 bar. 1604 SG formation pressure) Brygge Fm. (LOT) 1654 Flooding Plain Min.MW emporarily stuck with VSP tool. 1741 Tare -1 44 SG 1797 Top Cretaceou 2000

otal section NPT = 80.5 hrs

Unable to recover WH after first cut, re

cut and revovered WH and quidebase

Total section NPT = 10.5 hrs

3088 3138 3667	Lange —		s		Cored Lysing	Total Depth : 3667		90 - 3025 mMD.		238 m²  Cuttings Generated: 274.2 MT		(96.7% recovery)  MDT Fluid Sample from Lysing.	3500	3500 Recovery 2.0 Hrs Rig Repair
	Bits			Services			Peop		Boats	Experience	Summary of Operations			
#	Bit size	Make & Type	D.out D	orld.	Name	Service	Name	Service	Name	Function	Boat name	Function		
			(mMD)	(m)	AnaDrill	MWD/CDR/iSonic	MI Anchor	Mud	lan King	Drilling project Manager	Sartor	Standby	<ol> <li>Dedicated supply for shipping of OBM cuttings req.</li> </ol>	Moved from previous location, WOW, positioned and anchored rig.
1	17 1/2" Bit	Smith DGJ	456	90	Cambriam	Site Geologist	ModuSpec	BOP/Rig Inspection	Terje Lokke-Sorensen	Drilling Engineer	Higland Star	Supply Vessel	2 No shallow gas observed	Drilled 36" hole (no boulders)
2	26 x 36" HO	IPE	454	88	Corepro	Core preservation	NorCargo	Transport	Thomas L.Smith	HSE Representative	Skandi Stolmen	Supply Vessel (Statoil)	3 No boulders observed (tight spots in 17 1/2" hole)	Ran & cemented 30" csg with PGB
3	26" Bit	Hugh GTXCMG1	456	0	DBS	Coring	Oceaneering	ROV	Johan Myrdal / Herold Zahl	Logistic Co-Ordinator	Normand Progre	ss AHV (arrival)	4 No LTA	Drilled 8-1/2" Pilot Hole (no shallow gas)
4	8 1/2" Bit (PH)	Hugh MXC-1	1382	926	DNV	Risk & Environmnetal Ar	alysis Odfjell	Casing Running	Mitch Elkins / Roger Moore	Senior Offshore Drilling Rep.	Far Fosna	AHV (arrival)		Opened Pilot to 17-1/2"
5	17 1/2" HO	IPE	1382	926	Dolphin	Drilling Contractor	Pertotech	PVT analysis	S. deJonge / M.Hollinshead / S.Bjorheim	Offshore Drilling Eng. & Rep.	Normand Jarl	AHV (arrival)		Ran 13-3/8" Casing , buckled above WH, re-ran and cemented
6	8 1/2" PDC Bit	Hugh ABD536PH			DrilQuip	Wellhead and Conductor	Read	VSP	Torleiv Agdestein	Lead Project Geologist	Nothern Corrona			Ran riser and BOP's
7	8 1/2" Core Bit	DBS FC274	3172		Fugro GeoServices	Rig positioning	Helgelandsbase	Shore base	Mike Donovan / Ed Linaker	Operational & Wellsite Geolog	st Havila Crown	AHV (departure)		Drilled 8-1/2" hole to Lysing coring point (kick in Brygge)
8	8 1/2" PDC Bit	Hugh BD445HA	3667	495	GeoServices	Mudlogging	SAR Helicopter	SAR	Debbie South	Project Geologist	Normand Borg	AHV (departure)		Cored Lysing, cont. drilling to TD
					Halliburton	Cementing & DST Testing		Wirline logging	Svein Johansen	Project Geophycisist				Wireline logged (stuck with VSP)
					Helicopter Services	Helicopters (Kristiansund	) Swaco	Cuttings collec.& disp.	Dag Andreassen	Marine Advisor				Plugged back hole (cement plugs)
					Mediteam	Heath Service	Weatherford / IPE	Fishing eq., wellhead	Steve Pattie / Myke Wynne	Well Testing and MDT	1			Pulled BOP's, cut and retrieved WH & PGB, pulled anchors
								cutting, hole openers	Ruth-Liv Chaplin	Admin. Assistant				
	•				•		•			•		•		·

verage prop

PV - 41 cP

VP-11Pa

10sGel=7Pa

10mGel=10Pa

O/W = 72/28

Vol. Used

Wireline Logging:

AIT-PEX-HNGS DSI-GR-AMS-OBDT

MDT

VSP

SWC

Cored Lysina

3101.5 - 3171.5 mMD

2420

AFE Time

.ost Time .0 Hrs Logging Tools lus Rerun

# This section contains:

2.1	Licensees	. 2
2.2	Well Location Plot	. 3
	Well Results vs. Objectives	
	Operational Safety Results vs. Objectives	
2.5	Well Progress Curve	. 7
	Well Status after Abandonment	
2.7	Time Distribution Summary	. 8
	Cost Summary	

# 2.1 Licensees

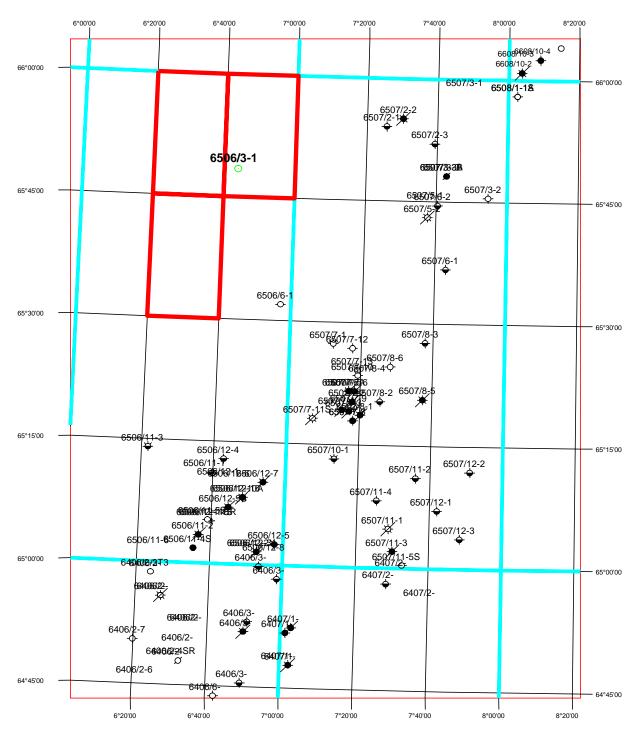
The Production Licence 259 was awarded May 12, 2000 to:

NORSK CHEVRON A/S 40% (Operator)

ENTERPRISE OIL NORWEGIAN A/S 30% NORSK AGIP A/S 30%

and consists of blocks 6506/2, 6506/3 and 6506/5 covering an area of 1276.144 km<sup>2</sup>.

### 2.2 Well Location Plot



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#### 2.3 Well Objectives vs. Results

### **Objectives**

The first objective for this well was to demonstrate economic potential of hydrocarbon reservoirs in Structure A in Brygge (Paleogene) and Lysing (Cretaceous) Formations named the Harran and Grong prospects respectively. This was to be done by:

- identifying and evaluating the reservoir sands and by
- identifying fluid content in the identified reservoir sands.

The second objective was to gather data for understanding the risks and license strategy.

#### Results

Brygge vs. objectives:

The economic potential of the Brygge unit in structure A (Harran Prospect) was not demonstrated. The well was not able to identify and hence not able to evaluate Brygge reservoir sands. However, we were able to crudely identify the fluid content in the Brygge unit, due to a water kick. MDT sampling of the Brygge unit was not possible to perform due to the physical properties of the encountered diatomite lithofacies.

Brygge details: The 131.5m thick Brygge diatomite unit has an average porosity of 38% (max.60%) and very low permeability. Sand reservoirs were not encountered. SEM photographs and XRD results show diatomite to be the dominant lithofacies in the Brygge interval with some component of volcanic glass. N/G is 95%, Sw = 1, formation pressure = 1.52 SG and fluid gradient 1.04 g/cc. The Opal A to Opal CT transformation has only partly taken place at the base of the unit. The unit was water filled and significantly over-pressured. Hydrocarbon migration through the formation can only be inferred from the gas log data, which indicate a significant amount of methane present when the formation back-flowed.

### Lysing vs. objectives:

The economic potential of the Lysing in structure A (Grong Prospect) was not demonstrated. The well was able to identify the Lysing reservoir sands (22m gross sand interval) by logging, coring and SWC. The fluid type after recovering MDT samples (3 bottles of fluids) were identified to be water under-saturated with gas and containing traces of phenols and organic acids.

Lysing details: Lysing Fm was 49.5m thick with 22m gross sand interval at the top, out of which some 3m of net sand was encountered. N/G = 14% and average effective porosity 17% (max 22%). Permeability in the form of best mobility is 113.8 md/cp (MDT). Sw was 1 (No free gas) and the formation pressure was 1.422 SG. Rw=0.192 at 103 degC. No free gas was found in any of the samples. Methane and longer chain hydrocarbons were present. The samples were under-saturated with gas, rich in organic acids and traces of phenols were present. The Lysing sand package is present, but has thinned and partly shaled out at the crest of the A structure. The 3m sand at the very top top is of good quality but is water filled. The solution gas, the organic acid content and the phenol concentration indicate that the sampled water has been in contact with a hydrocarbon accumulation. The water is strongly under-saturated with gas and is not in close contact with a hydrocarbon accumulation at present.

# 2.4 Operational Safety Results vs. Objectives

The objectives for the well were:

- 1. Establish a functional Safety Management System in compliance with regulatory requirements.
- 2. Avoid accidents and loss during project execution. Take necessary preventive measures to limit the consequences if accidents should occur and thereby provide safety for personnel, external environment and property.
- 3. Provide operational solutions and emergency preparedness measures that, as a total for the project and rig, provide a good health and working environment, reduce risk and minimise pollution.
- 4. Operate with the minimum of discharges and emissions, both with respect to quantities, toxicity, and other environmental impacts.
- 5. Establish a functional emergency preparedness system in Compliance with Chevron and Regulatory requirements.

And the following sub goals for the PL259 project were established:

- Development of an HS&E awareness throughout the total organisation that provides necessary attention to HS&E in planning, procurement, drilling and reporting tasks being performed. This is obtained by active management and active involvement of participating HS&E organisation's.
- Continue to utilise waste segregation on the Byford Dolphin.
- Health and environmental friendly chemicals to be preferred.
- Reduce exposure of personnel to hazardous situations and accidents by focusing on injuries and ill health which cause absence from work; special attention will be paid to lifting operations.

The lessons learned reviews following the project did indeed verify that the PL 259 HSE objectives established were met, both regarding the personnel and environmental aspects.

From the lessons learned reviews there were three particular aspects which were seen to contribute to the successful outcome on the PL 259 project;

- A full openness in all regulatory matters between Norsk Chevron and the Norwegian Authorities.
- Use of well known advisors and contractors (i.e. RC Consultants, DNV, MediTeam, Aktiv Beredskap, Vest Drill and NorSea Logistics services) in the Norwegian Petroleum industry for local guidance through the various Authority's consent processes.
- Extended co-operation with Chevron Europe HSE expertise.

A total of 43 RUHs (undesired event reports; equivalent to a combination of Stop cards-Incident reports) were registered. There were three incidents reported to the Authorities:

- Casing buckling incident
- Well influx incident
- Falling objects (nut and bolt from derrick) incident

The Authorities commented upon the openness shown when reporting incidents and the time requirement of two hrs for serious incident to be reported to the NPD was not met although a verbal notification was made official. The timing until any serious incident is registered with the NPD is an area which needs improving for the next Norsk Chevron operation in Norway.

The onboard HSE incident reporting was satisfactory. A practice that was utilised for HSE follow-up, namely a weekly rig-shore telephone meeting was found to be worth while and is recommended for future drilling operations. In addition the use of regular compliance meetings (for follow-up of outstanding regulatory deviations) was found most useful, both prior to and during the drilling campaign.

Regarding discharges from the drilling operations, water based drilling fluids were used at the top sections, whilst oil based drilling fluids were used for the lower section. With exception of the waterbased displacement fluids, no chemicals were discharged to sea at the lower section. Cuttings from the oil based drilling section were brought onboard the Byford Dolphin, collected in enclosed containers and shipped ashore for disposal.

A separate assessment of the development of the environmental risk was not conducted for this project (this is the first PL 259 well). The Environmental risk assessment concluded that this isolated exploration drilling operation was a relatively low environmental risk (both for the coastline zone and the sea bird populations) and below the ALARP (As Low As Reasonably Practicable) region found in Norsk Chevron's accepted criteria. In the area specific environmental risk assessment, the environmental effects are categorised as minimum, mainly due to the fact that the majority of the drilling waste which is discharged consists of cuttings and inorganic waste from the drilling chemicals. The effects of this will be

temporary alterations in the local upper settlement of fauna, plus some small temporary alterations to the local sediment composition. It is considered that the actual effects regarding plankton and fish at an early stadium, is negligible due to the small discharge volume.

# 2.5 Well Progress Curve

See Figure 1.1. Well Summary

### 2.6 Well Status after Abandonment

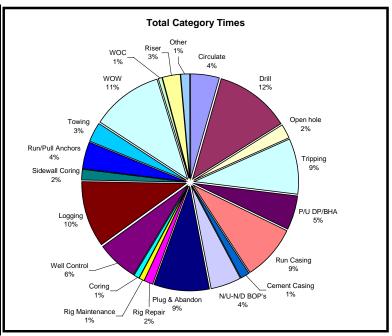
See Figure 1.1. Well Summary

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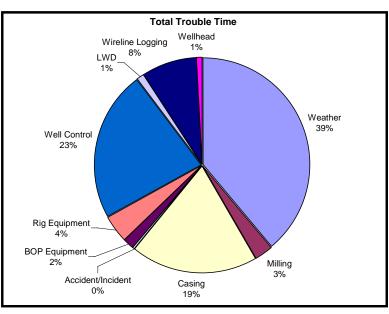
# 2.7 Time Distribution Summary

The overall rig time distribution and trouble time (non productive time) are as follows:

All Categories								
Code	Category Description	Total time (hrs)						
1	Circulate	35.0						
2	Drill	94.0						
3	Open hole	16.0						
4	Reaming	1.5						
5	Tripping	68.0						
6	Surveying	0.5						
7	P/U DP/BHA	42.5						
8	Run Casing	69.5						
9	Cement Casing	11.5						
13	N/U-N/D BOP's	35.5						
14	Test BOP's	2.0						
15	Drill float eq.	3.5						
16	Test Casing	1.5						
17	LOT	1.5						
19	Plug & Abandon	68.5						
20	Rig Repair	13.0						
21	Rig Maintenance	5.0						
22	Coring	7.5						
23	Well Control	51.5						
25	Logging	81.0						
26	Sidewall Coring	12.0						
40	Run/Pull Anchors	34.5						
41	Towing	23.5						
42	WOW	88.0						
43	WOC	5.0						
53	Riser	22.0						
62	Safety Meeting	0.5						
	Total (hrs)	794.5						
	Total (days)	33.1						



Trouble Time								
Code	Category Description	Total time (hrs)						
102	Weather	88.0						
104	Milling	6.5						
107	Casing Problems	43.5						
108	Accident/Incident	0.5						
201	BOP Equipment	4.0						
202	Rig Equipment	9.5						
406	Well Control	51.5						
501	LWD	3.0						
503	Wireline Logging	18.5						
504	Wellhead	2.0						
	Total (hrs)	227						
	Total (days)	9.46						



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# 2.8 Cost Summary

The AFE (Appropriation For Expenditure) was 134.3 million NOK, which was based on:

- Dry hole design.
- Trouble free time of 29.2 days, plus a contingency of 15% (4.4 days).
- Cost contingency of +15%. on non-time related costs.
- Exchange rates of 9.00 NOK/USD and 13.5 NOK/GBP.
- Total depth of 3600 mMSL.

The latest estimation (February 7, 2002) of well costs (captured in DisWin) is 133 million NOK. The AFE budget was 134 million NOK.

See attachment 2.10 for detailed comparison of estimated actual costs vs. estimated cost per line item in the AFE.

The books have not been closed yet and the final well reconciliation and final audit will be produced later this year.

# Cost Comparison Estimated Actual vs AFE



			NORSK C	<b>HEVRON A</b>	S							
	Drilling Cost Estin		I	Estimated Actual D	rilling Cost							
General:		Summary:				Summary:						
Author: Checked by: Approved by: Date of Estimate: Well Name: Well Type: Total Depth:	Terje Lokke-Sorensen Ian King Chris Riccobono 31.5.2001 6506/3-1 Vertical Exploration Well 3600 m	то	Intangible Costs: Tangible Costs: Trouble Free Cost: Contingency Cost: TAL WELL COST	114,832,143 1,689,667 116,521,809 17,478,191 134,000,000	NOK NOK <mark>NOK</mark> NOK	In T	tangible Costs : Cangible Costs :	131,199,556 1,747,951 132,947,507				
Revision Number: Estimate Classification : Exhange rate (NOK/USD): Exhange rate (NOK/GBP): Contingency :	A 0 9.00 13.50 15%	Total	Trouble Free Time: Contingency time: ne incl. contingency:	2,150,893 NOK 29.2 days 4.4 days 33.6 days				20.000	20.000			
Line Item	Description	Days	Daily	Fixed Costs	Total Costs	Actual Days	DisWin Daily	DisWin Fixed Costs	DisWin Total Costs	DisWin Cost - AFE Cost		
1.0 4 1.0 111	D'. D. D. (	20.2	Cost (NOK)	(NOK)	(NOK)	22.1	Cost (NOK)	(NOK)	(NOK)	(NOK)		
1. Contract Drilling	Rig Day Rate	29.2	1,436,586		41,956,694	33.1	1,436,586		47,526,942	5,570,248		
	Additional allowance for operating out of Sandnessjoen	29.2	10,000		292,058	33.1	10,000		331,000	38,942		
	Dolphin - crew charges for handling OBM			500.000	500 000	18.0	2,538		45,684	45,684		
	Misc. re-imbursement (equip. and personnel)			500,000	500,000				0	-500,000		
	Safety incentive			200,000	200,000				0	-200,000		
	Helicopter Underwater Evacuation courses			500,000	500,000				U	-500,000		
	Contingency				6,517,248				47.002.626	-6,517,248		
4.6	Total (incl. contingency)	20.2	22.050		49,966,000	20.0	25,000		47,903,626	-2,062,374		
4. Supervision	Rig Supervision (2 persons)	29.2	22,050		643,989	39.0			982,000	338,011		
	Drilling Engineer (1 person on the rig)	29.2 29.2	12,600		367,994	18.0 20.0	12,000		216,000	-151,994 -329,460		
	Rig Site Geologist (2 persons)		15,903		464,460	20.0	6,750		135,000			
	FE Specialist/Geologist (1 person)	14	14,940 10,000	20,000	209,160 160,000				0	-209,160 -160,000		
	Marine Representative	14	10,000	20,000	160,000	4	0.000		22,000			
	IT - support				276,397	4	8,000		32,000	32,000 -276,397		
	Contingency				2,122,000				1,365,000			
( Feel Weter & December	Total (incl. contingency)	20.2	45 101		, ,		2267/ 42		, ,	- <b>757,000</b> 387,510		
6. Fuel, Water & Power	Fuel (rig)	29.2	45,181		1,319,541		2267/m^3		1,707,051			
	Water				107.450		13/m^3		59,150	59,150		
	Contingency				197,459				1.766.201	-197,459		
0 D 1111 EI 1 1	Total (incl. contingency)	20.2	50.055	121.010	1,517,000				1,766,201	249,201		
9. Drilling Fluids	Mud engineering	29.2 29.2	53,255 37,400	121,910 938,500	1,677,253				1,623,935	-53,318 -1,109,429		
	Cuttings collection and disposal	29.2	37,400		2,030,798				921,369			
	Drilling fluids (36"hole section)			78,510 424,830	78,510 424,830				65,351	-13,159		
	Drilling fluids (17 1/2" hole section) Drilling fluids (8-1/2" hole section)			1,592,424	424,830 1,592,424				985,062 1,991,598	560,232 399,174		
	Contingency			1,392,424	1,592,424 870,184				1,991,398	-870,184		
	Total (incl. contingency)				6,674,000				5,587,315	-1,086,685		
10. Well Supplies	Miscellaneous	29.2	10,000	32,826	324,884			996	996	-323,888		
10. Wen Supplies	Contingency	29.2	10,000	32,820	48,866			990	990	-48,866		
	Total (incl. contingency)				373,750				996	-372,754		
11. Transportation	Helicopter	29.2	45,000		1,314,263			1,646,432	1,646,432	332,169		
11. 11ansportation	Standby vessel	29.2	64,500		1,883,776	33.5	62,500	1,040,432	2,091,667	207,891		
	Supply vessel	29.2	50,000		1,460,292	28.0			1,400,000	-60,292		
	Ad-hoc supply vessel	18.0	200,000		3,600,000	27.5	243,000	-1,000,000	5,682,500	2,082,500		
	Transport of casing (UK-N-UK)	13.0	200,000	202,500	202,500	27.3	2-13,000	120,000	120,000	-82,500		
	Survival suit rental	29.2	1,000	202,500	29,206			120,000	0	-29,206		
	Moving materials from Stavanger to base	27.2	1,300	1,000,000	1,000,000			275,000	275,000	-725,000		
	Contingency			1,000,000	1,423,963			275,530	275,500	-1,423,963		
	Total (incl. contingency)				10,914,000				11,215,599	301,599		
12. Directional Drilling	Anderdrift	14	6,350	10,150	99,050				0	-99,050		
Direction Diming		17	0,330	10,130	77,050		1,400		<u> </u>			
	Single shot kit					44	1.400		61,600	61,600		

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Line Item	Description	Days	Daily	Fixed Costs	Total Costs	Actual Days	DisWin Daily	DisWin Fixed Costs	DisWin Total Costs	DisWin Cost - AFE Cost
			Cost (NOK)	(NOK)	(NOK)		Cost (NOK)	(NOK)	(NOK)	(NOK)
	Total (incl. contingency)				114,000				61,600	-52,400
13. Drill String Rental	Bits			1,500,000	1,500,000			640,800	640,800	-859,200
& Service	Jars	29.2	1000	20,920	50,126	45		33,600	128,100	77,974
	36" Hole Opener			200,000	200,000	49	1217	170,500	230,120	30,120
	Anderdrift					26	6350	10,150	175,250	175,250
	Odfjell pony DC rental (x4)					38.5	520		20,020	20,020
	Contingency				262,874					-262,874
	Total (incl. contingency)				2,013,000				1,194,290	-818,710
14. Other Rentals & Service	Base , Helgelandsbase	29.2	30,951	90,000	993,962	35	187,088		6,548,080	5,554,118
	Container and basket rental					34	30,000		1,020,000	1,020,000
	Wellhead Equipment Rental & Service	20	8,775	491,117	666,617	11	8,775	546,806	643,331	-23,286
	Backup Piggy Back anchors					8	1,520	20,600	32,760	32,760
	Casing Running Equipment	10	11,090	79,000	189,900	21	2,285	281,000	328,365	138,465
	Casing Crew (2x - 1 leader + 1 operator per crew)	14	22,060		308,840	9	22,060	7,702	206,242	-102,598
	P&A Package + personnel (x2)	5	21,000	243,699	348,699				0	-348,699
	Weather Service	29.2	500		14,603			53,606	53,606	39,003
	BOP Inspection			250,000	250,000	9.0	10,800	101,250	198,450	-51,550
	Communications and data link	29.2	5,000	200,000	346,029				0	-346,029
	Personnel Onboard System, incl. training			200,000	200,000				0	-200,000
	Dolphin - meals service personnel (19x)					30	9,690		290,700	290,700
	NPD compatible Daily Reporting System			150,000	150,000	34	1,100	1,000	38,400	-111,600
	Pore pressure prognosis			270,000	270,000				0	-270,000
	Diving Support/ROV	29.2	26,556		775,588			1,152,884	1,152,884	377,296
	Contingency				676,762					-676,762
	Total (incl. contingency)				5,191,000				10,512,818	5,321,818
20. Coring	DBS Personnel (2x)	10	14,770		147,700	7.5	14,770	3,500	114,275	-33,425
	DBS Equipement rental	20	1,900		38,000	19	1,900		36,100	-1,900
	8 1/2" cores (72 m)	72m	4596/m	330,912	330,912	70.5m	4596/m	323,844	323,844	-7,068
	Corpro Personnel (2x)					9	10,800	4,000	101,200	101,200
	Corpro Equipment					19	3,665		69,635	69,635
	Core analysis			600,000	600,000				0	-600,000
	Contingency				167,388					-167,388
	Total (incl. contingency)				1,284,000				645,054	-638,946
21. Testing	Mob./de-mob downhole & surface test equipment			1,530,000	1,530,000				0	-1,530,000
	Planning			683,500	683,500			1,021,327	1,021,327	337,827
	Steve Pattie					31	6,500		201,500	201,500
	Mike Wynne					14	6,500		91,000	91,000
	Petrotech personnel (2x)					9.5	19,600		186,200	186,200
	Petrotech Equipment					19	14,160		269,040	269,040
	Contingency				332,500					-332,500
	Total (incl. contingency)				2,546,000				1,769,067	-776,933
22. Logging-Wireline and LWD	MWD/LWD Services - personnel	29.2	14,360		419,396	29.5	14,360		423,620	4,224
55 5	MWD/LWD Services - equipment (DIR/GR/CDR)			1,918,359	1,918,359				2,501,351	582,992
	PVT Simulations for MDT			, , , , , ,	, .,			52,000	52,000	52,000
	Log run #1 (Dens,Neu,Res,SGR)			863,055	863,055			,	0	-863,055
	Log run #2 (Sonic, Image, Dips)			741,960	741,960				n	-741,960
		1		1,686,947	1,686,947			+	0	-1,686,947
	Log run #3 (MDT press., samples)			, ,	, ,			1.002.000	1,002,000	
	Log run #4 (VSP)			2,286,000	2,286,000			1,002,000	1,002,000	-1,284,000
	Log run #5 SWC	10	64.710	232,470	232,470	21	54.150	05.620	1 222 222	-232,470
	WL Crew Charges (2 Engineer + 4 Operator) + 1 Specialist	10	64,719		647,190	21	54,162	85,630	1,223,032	575,842
	Logging tool rental + operating charges					26	97,478	1,802,880	4,342,180	4,342,180
	Logging unit + tool package rental			1.467.000	1.465.000	33	14,769	1	491,439	491,439
	Analysis (MDT, SWC)			1,467,000	1,467,000				0	-1,467,000
	Contingency				1,539,623				10.005.600	-1,539,623
	Total (incl. contingency)				11,802,000				10,035,622	-1,766,378

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Line Item	Description	Days	Daily Cost (NOK)	Fixed Costs (NOK)	Total Costs (NOK)	Actual Days	DisWin Daily Cost (NOK)	DisWin Fixed Costs (NOK)	DisWin Total Costs (NOK)	DisWin Cost - AFE Cost (NOK)
23. Logging-Mud	Mud Logging Unit	29.2	6,860	( ) = /	200,342	30.0	205,790	10,450	6,184,150	5,983,80
	Personnel	29.2	17,148		500,822	33.0		,,,,,	489,164	-11,65
	Reserval unit		,		,				57,470	57,4
	Contingency				104,836				,	-104,83
32. Cement & Cementing	Total (incl. contingency)				806,000				6,730,784	5,924,78
32. Cement & Cementing	Operator and cement unit rental	29.2	19,850		579,744	33.1	18,257		604,155	24,41
	Onshore support	29.2	1,593	143,394	189,927	33.0	1,593		52,569	-137,35
	Cement & additives		,	1,000,000	1,000,000			640,248	640,248	-359,75
	Sections costs			173,652	173,652			172,829	172,829	-82
	Centralisers, EZSV for 13 3/8", 13 3/8" shoetrack etc.			21,800	21,800			96,534	96,534	74,73
	3 1/2" Tubing + handling equipment			·	·	29	2,676	15,745	93,349	93,34
	Contingency				294,877					-294,8
	Total (incl. contingency)				2,260,000				1,659,684	-600,3
40. Fishing Cost	Contingent fishing gear	29.2	5,000		146,029			86,180	86,180	-59,84
40. Fishing Cost	P & A package (MOST Tool)		2,200		, , , , , ,			297,199	297,199	297,19
	Weatherford Engineer (P & A)					4.0	10,500	-2.,422	42,000	42,0
	Contingency				21,970	4.0	10,500		.2,530	-21,9
	Total (incl. contingency)				168,000				425,379	257,3'
52. Drillsite Cost	Site survey			3,600,000	3,600,000			3,067,387	3,067,387	-532,6
52. Dimsite Cost	Rig positioning			144,000	144,000		19,800	200,142	200,142	56,14
	Anchor handling vessels (3 ea)	7	600,000	144,000	4,200,000	8.5	892,500	200,142	7,585,771	3,385,77
	Marine Representative		000,000		4,200,000	9.5	10,350	27,141	120,291	120,29
	Contingency				1,192,000		10,550	27,141	120,271	-1.192.00
	Total (incl. contingency)				9,136,000				10.973.591	1,837,59
61. G&A Drilling Department	Onshore support - Sandnes Office	29.2	45,436	9,771,180	11,098,188				10,973,391	-11,098,18
61. G&A Drining Department	Onshore support - Oslo Office	29.2	43,430	4,000,000	4,000,000				0	-4,000,00
	Onshore support - Osio Office Onshore support - Aberdeen Office	29.2	5,000	798,971	945,000				0	-4,000,00
	Total Daily Charge for onshore costs	29.2	3,000	790,971	943,000	50.0	81,124	7,476,230	11,532,430	-943,00
	Contingency				2,406,062	30.0	01,124	7,470,230	11,332,430	-2,406,06
	0 7				, ,				11 522 420	
CO. T. Provid Alliand Communication	Total (incl. contingency)			242.000	18,449,250 243,000				11,532,430	<b>-6,916,82</b> -243,00
62. Indirect Allocations	Emergency Response Training			243,000 2,090,000	2,090,000			4.720.000	4.720.000	
	HSE (NOFO, NPD, Health Serv., Emerg.Resp., RA)			3,000,000	3,000,000			4,728,000 3,092,500	4,728,000 3,092,500	2,638,00 92,50
	Env. Risk and Oil Spill Cont. Analysis (DnV)	20.2	15 500	3,000,000	, ,			3,092,500	3,092,500	,
	Shearing of SAR helicopter at Heidrun	29.2	17,500		511,102				U	-511,10
	Contingency				876,898					-876,89
	Total (incl. contingency)				6,721,000				7,820,500	1,099,50
Total Intangibles					114,832,143				131,199,556	16,367,41
Total Contingency Intangibles					17,224,858					(17,224,85
Total Intangibles (incl. Continger					132,057,001		1		131,199,556	(857,44
20 Well Dine (Care & That)	TANGIBLE COSTS	П	Г	515,970	515,970			442,845	442,845	-73,12
30. Well Pipe (Csg & Tbg)	30" Casing (96 m) 13-3/8" Casing (1000 m)									
				1,073,697	1,073,697			1,305,106	1,305,106	231,40
	9-5/8" Casing (contingency)				0		<b> </b>		0	
	7" Casing (contingency)			100.000	100,000				0	100.00
	Misc.			100,000	253,333				0	-100,00 -253,33
	Contingency				,				1.7.17.051	
	Total (incl. contingency)				1,943,000				1,747,951	-195,04
Total Tangibles					1,689,667				1,747,951	
Total Contingency Tangibles					253,333				0	
Total Tangibles (incl. Contingen	cy)				1,943,000				1,747,951	
TOTAL WELL COST					134.00				132.95	

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#### 3.1 **Geology Summary**

Boulders were not observed during drilling, but the Quaternary sedimentary package will always constitute a boulder challenge/risk for future wells in the license and in the region.

High-risk, shallow gas filled sands was neither prognosed nor observed in this well. A low to medium risk shallow gas hazard was defined at 1180-1270m, albeit considered to be a dim spot caused by lithological change across a debris flow/slump deposit. No significant increase in gas readings were observed from that same level during drilling, leading to the conclusion that the dim spot was indeed set up by a geophysical contrast between a debris flow lithofacies and a laterally located 'background' facies.

Two prospect target levels were defined and prognosed in this well, the Paleogene Brygge sands and the Cretaceous Lysing sands. One of the main objectives was to identify and evaluate these sands. Only the Lysing target contained sands (21m gross TVT sand interval). One of the partners had an additional Cretaceous Nise sand as a primary prospect target, and this particular potential sand unit was added to the prognosed lithocolumn by the Operator as a high risk sand lead to accommodate our partner. The Lange sands were also added to the prognosed lithocolumn as a high risk sand lead. Neither the Nise nor the Lange sands were present in this well.

### Paleogene, 'Brygge' Target (Harran Prospect)

The seismic sequence defined as the 'Brygge' Target contained parts of the Tare Formation (from 1654m MDRKB) and the upper part (37m) of the Tang Formation and contains disappointingly 104m of siliceous diatomite and volcanics (tuffaceous) facies.

If the upper part of the diatomaceous Tare Formation and the above Brygge Formation is added the total diatomite thickness is around 140m MT (Measured Thickness). SEM and XRD results prove that diatomite (also containing Radiolarians and sponge spicules) is the dominant lithofacies with some component of volcanic glass. The unit was water filled and significantly over-pressured. 38% average porosity (representing high microporosity within the diatom tests) and very low permeability were recognised in the diatomite. The only presence of hydrocarbons was from the gas log data indicating some amount of methane present when the formation back-flowed in a saltwater kick. The lack of reservoir was the main failure in this prospect. Failing of the vertical seal (faults?) during inversion is seen as the most likely cause for this Brygge back-flow zone being water bearing.

# Cretaceous, 'Lysing' Target (Grong-W Prospect)

The seismic sequence constituting the Lysing target was some 50m thick in the well, but the Lysing Formation sandstone unit was only 21.0 m thick (TVT) out of which at best some 3m of the uppermost sands had porosity of 20%. The Lysing Formation sandstone thinned and 'fined out' more than expected at the crest of Structure A indicating that Structure A was a paleo-high during the deposition of the Lysing Formation.

The solution gas, the organic acid content and the phenol concentration of the water obtained from wireline fluid sampling indicate that the sample has, at some point been in contact with a



hydrocarbon accumulation. The water is strongly under-saturated with gas and is not in close contact with a hydrocarbon accumulation at present. Failure of the vertical seal is the most likely cause for this Lysing Formation sandstone being water bearing.

# 3.2 Well Stratigraphy

#### Introduction

The 1:500 Composite log (Enclosure 3) is helpful when reading this chapter. Reference is also made to Ichron (2001A) and Ichron (2001B) for petrography and biostratigraphy respectively.

The prognosed and the actual lithocolumns are shown in Figure 3.2-1 and the prognosed and actual stratigraphic tops are compared in Table 3.2-1 and Table 3.2-2. Except for the Top Nise prognosis, all actual tops came inside the estimated uncertainty range in the prognosis. The reason for this error on the prognosed top Nise was caused by the seismic pick being 'phantomized' through most of the study area due to very poor seismic response. The main target (Top Lysing Fm) was encountered 17 m deeper than expected and well within the +155m -125m uncertainty range.

#### Seabed

The rig was oriented such that the anchors and the anchor chains did not interfere with some identified and mapped positive mound features scattered on the seabed inside the site survey (potential coral colonies). The well was drilled between closely spaced iceberg scours.

# Quaternary deposits, 366.0 (341.0) – 451.0 (426.0) m MDRKB (TVDSS) (Mid? Plesitocene – Holocene, Neogene)

The well was drilled with returns to seabed down to 1382m MDRKB. The lithology description for this unit is therefore based on the well logs and offset well information. This uppermost stratigraphic package consists of unconsolidated clays, silt-sands and boulders. No boulders were encountered at this level, but boulders have been recorded in numerous wells all over the Mid-Norwegian shelf supporting their presence close to this well bore also. The site survey only recognised boulders on the high-resolution seabed map. The vertical seismic sections did not have sufficient resolution to image boulders.

# Naust Fm, 451.0 (426.0) – 1624.0 (1596.0) m MDRKB (TVDSS) (Late Pliocene - Early-Mid? Pleistocene, Neogene)

These deposits range from over-consolidated clays with pebbles and occasional boulders in the upper section down to about ~700m, passing into predominantly clays with minor silt stringers down to 1100-1200m. The lower section, below ~1100-1200m to 1624.0m MDRKB contains more consolidated claystone with minor silts and sand stringers. Below 1382m MDRKB, cuttings were available for lithological description generally confirming the prognosis. The clays are dominantly light to medium grey with occasional green/grey and brown clays. Traces of limestone, pyrite, micromicaceous material and shell material occur throughout the formation. The base of this unit is an erosional unconformity and the unit is itself base-lapping onto the structurally inverted and partly eroded Brygge Formation. Medium to medium dark grey to greyish green claystone were encountered, occasionally coloured dark yellowish green, being soft to moderately firm, sub-blocky to amorphous and sticky in places. Traces of



carbonaceous material, occasionally micromicaceous and rare traces of pyrite have been recognised in this claystone. The unit is non- to occasionally moderately calcareous.

# Kai Fm, 1624.0 (1596.0) – 1624.0 (1596.0) m MDRKB (TVDSS) (Miocene, Neogene)

This stratigraphic unit is <u>absent</u> in the well due to erosion and non-deposition, resulting in a significant erosional unconformity and a large hiatus across 1624.0m MDRKB (see below).

### (?) Chattian Unconformity:

A large hiatus is present in this well at 1624.0m MDRKB. Erosion and non-deposition caused the development of a significant regional unconformity. The hiatus ranges from the onset of the Oligocene to the close of the Miocene stage. The erosion causes the <u>absence of the Kai Formation and the youngest part of Brygge Formation in this well.</u> The unconformity is tentatively correlated to the super-regional Chattian unconformity related to a general uplift of the western Fennoscandian shield. Superimposed inversion and associated erosion/non-deposition related to the plate-tectonic opening of the Norwegian Sea during the Tertiary probably caused further enhancement of this unconformity.

# Brygge Fm, 1624.0 (1596.0) – 1645.0 (1617.0) m MDRKB (TVDSS) (Early Eocene – Mid Eocene (Possibly partly incl. Late Eocene?), Paleogene)

The top of this formation is an erosional unconformity consisting of pale yellow, very fine <u>sandstone</u> grading to <u>siltstone</u> and <u>claystone</u> according to cuttings. Three sidewall cores indicated <u>diatomaceous</u> and tuffaceous (volcanic glass) facies. This facies becomes purer diatomite downward into the Tare Formation and indicates a gradual, but incomplete change from from Opal A to Opal CT in the same unit. The ultimate Opal CT transition depth is probably slightly deeper than base of the diatomite facies (>1740m MDRKB).

# Tare Fm, 1657.0 (1629.0) – 1756.0 (1728.0) m MDRKB (TVDSS) (Early Eocene, Paleogene)

The Tare Formation consists of light grey to grey <u>diatomaceous</u> and <u>tuffaceous</u> facies within a background lithofacies of grey to grey green with some brown claystone, possibly with thin limestone and sandstone stringers. The mineralogy of this facies changes gradually, but incompletely from Opal A to Opal CT. The 100% Opal CT depth, however, is probably slightly deeper than base of the diatomaceous facies (below 1740m MDRKB). SEM images and XRD analyses on SWC samples qualitatively proved the diatomaceous facies and the Opal-A/Opal-CT trend and hence overrule the limited and often misleading information from the cuttings, missing (meshing) out on the minute diatom grain sizes. The 40-60% microporosity and very low permeability make the diatomite a very poor reservoir unless fractured.

# Tang Fm, 1756.0 (1728.0) – 1796.5 (1768.0) m MDRKB (TVDSS) (Late Paleocene – Earliest Eocene, Paleogene)

The Tang Formation consists of light to dark grey and green/grey <u>claystone</u> with occasional meter-thick sandstone and limestone stringers. Here also (in the upper 25m of the unit) beds of diatomaceous facies has been inferred based on the character calibrated to SEM and XRD results from the sidewall cores in the Tare formation. The description of cuttings renders no information on diatomite identification for reasons given above.

# Springar Fm, 1796.5 (1768.0) – 2023.0 (1994.0) m MDRKB (TVDSS) (Early Campanian –Early Maastrichtian, Late Cretaceous)

This interval consists mainly of medium to dark grey and olive grey <u>claystone</u> with limestone and dolomite stringers. The unit is firm, sub-blocky, micromicaceous, occasionally with silts and traces of carbonaceous material. Crystalline pyrite is locally common Occasional stringers of micro- to cryptocrystalline dolomite also occur.

# Nise Fm, 2023.0 (1994.0) - 2300.0 (2271) m MDRKB (TVDSS)

### (Late Santonian – Early Campanian, Late Cretaceous)

This unit consists mainly of medium to dark grey and olive grey <u>claystone</u> with occasional and minor limestone and dolomite stringers. The unit is firm, blocky to amorphous, micromicaceous, having traces of glauconite and pyrite and tuffaceous material.

# Kvitnos Fm, 2300.0 (2271) – 3090.0 (3060.0) m MDRKB (TVDSS) (Early Coniacian – Late Santonian, Late Cretaceous)

This interval consists mainly of medium to dark grey to medium grey/brown, and occasionally olive grey <u>claystone</u>, with several minor micro- and cryptocrystalline limestone stringers and one thin micro-crystalline to crystalline dolomite stringer.

# Lysing Fm, 3090.0 (3060.0) - 3110.5 (3081.0) m MDRKB (TVDSS) (Early Coniacian, Late Cretaceous)

The 21m (TVT) thick Lysing Formation shows an upward increase in grain-size from claystones to medium grained sandstones. The top and the base of the of the Lysing Formation equals the top and the base of the gross sandstone interval. The top is easily recognised on the top of a 1m thick carbonate cemented sandstone bed. The base of the Lysing Formation has a gamma ray, density and velocity increase and a neutron porosity decrease going down and out of the sand into the claystone. The spiky increase in gamma ray to some 230-250 API units below base Lysing Formation (in the Lange Fm) probably represents a sequence boundary marking the base of a depositional sequence where Lysing Formation is included in the upper half. With regard to lithofacies, however, this belongs to the Lange Fm.

Thin sections show relatively 'clean' sandstones intercalated with detrital clay laminae. Based on the abundance of these detrital clay laminae, wackes and arenites have been recognised. Some lithic grains, dominantly mudstone intraclasts are abundant in two of the thin sections (25%). One sample contained 18.3% kaolinite and, hence, is classified as 'kaolinitic'.

The diagenetic history of the the Lysing sandstone is characterised by at least two periods of grain dissolution and abundant kaolinite cementation, interrupted by a pulse of quartz cementation which apparently predates compaction and protected remaining porosity from the same. The kaolinite crystals appear relatively fresh, with no evidence of illitisation. Only mica-and feldspar-replacive clast decay illitization (2%) has occurred as opposed to grain-rimming illitization. Abundant but patchy replacive and porefilling dolomite, and local poikilotopic porefilling calcite cementation followed the later period of secondary porosity development.

# 3. Geology, Geophysics and Petrophysics

The abundance of detrital clay laminae and a combination of abundant kaolinite and carbonate cementation, together with minor compaction effects controlled the Lysing reservoir quality. The kaolinite cement contains significant micro-porosity, as do the detrital clay laminae. Thus, much of the measured Helium porosity comprises poorly permeable micro-porosity. Quartz cementation is generally sparse, but in two samples it is sufficient to have protected earlier porosity from compaction. However, compaction is not a significant factor in the low to moderate reservoir quality of these samples, which is primarily controlled by the abundant cement.

# Lange Fm, 3110.5 (3081.0) – TD 3667.0 (3637.0) m MDRKB (TVDSS) (Mid - Late Turonian, Late Cretaceous)

The Lange Formation consists mainly of medium to dark grey claystones, being firm to moderately hard, sub-blocky to blocky, splintery to sub-fissile and micromicaceous.

Some 32 thin stringers of micro- and cryptocrystalline limestone are evenly distributed all over the Lange Fm. Traces of siltstone and sandstone have been reported from the cuttings in the upper 100m of the formation. TD was reached at 3667 (3637)m within the Lange Fm. No Lange sands were identified on the logs.

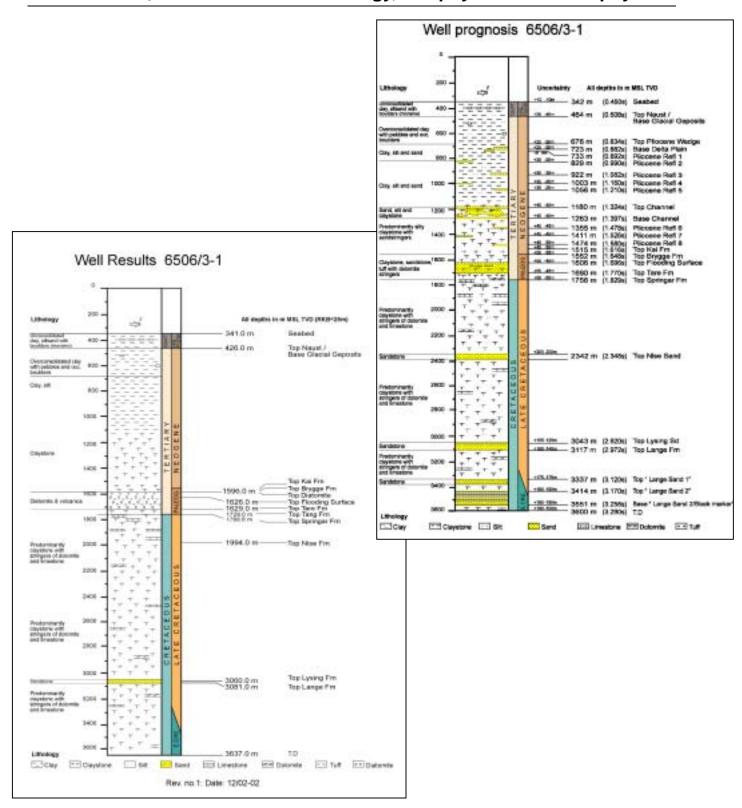


Figure 3.2-1 Actual (left) and prognosed (right) lithocolumns, well 6506/3-1

Prognosed Formation Tops	TWT (seis)	<b>Depth</b>	<u>Depth</u>	<u>Uncertainty</u>	
	(ms)	(mTVDSS)	(mTVDRKB)	(m)	(m)
Seabed	452	342	367	10	-10
Top Naust Fm	608	464	489	25	-25
Top Pliocene Wedge	834	676	701	25	25
Top Kai Fm	1616	1515	1540	45	-50
Top Brygge Fm = Top Diatomite	1648	1552	1577	50	-55
Top Flooding Surface	1696	1606	1631	55	-45
Top Tare Fm	1770	1690	1715	55	-45
Top Tang Fm	NI	NI	NI	NI	NI
Top Springar Fm	1829	1756	1781	50	-50
Top Nise Fm *	2348	2342	2367	200	-200*
Top Kvitnos Fm	NI	NI	NI	NI	NI
Top Lysing Sand	2920	3043	3068	155	-125
Top Lange Fm	2972	3117	3142	160	-140
Top Lange Sand 1	3120	3337	3362	175	-175
Top Lange Sand 2	3170	3414	3439	190	-190
Base Lange Sand 2/Black Marker	3258	3551	3576	190	-190
TD	3290	3600	3625		

**Table 3.2-1: Prognosed formation tops** 

Actual Formation Tops	TWT (well)	<u>Depth</u>	<u>Depth</u>	<u>Difference</u>
	(ms)	(mTVDSS)	(mTVDRKB)	(m)
Seabed	NA	341.0	366.0	-0.6
Top Naust Fm	NA	426.0	451.0	-38.0
Top Pliocene Wedge	NI	NI	NI	NI
Top Kai Fm	1666.0	1596.0	1624.0	81.0
Top Brygge Fm = Top Diatomite	1666.0	1596.0	1624.0	44.0
Top Flooding Surface	1695.0	1626.0	1654.0	20.0
Top Tare Fm	1698.0	1629.0	1657.0	-61.0
Top Tang Fm	1804.0	1728.0	1756.0	NI
Top Springar Fm	1846.0	1768.6	1796.5	12.6
Top Nise Fm *	2080.0	1994.0	2023.0	-348.0
Top Kvitnos Fm	2338.0	2271.0	2300.0	NI
Top Lysing Sand	2936.0	3060.0	3090.0	17.0
Top Lange Fm	2945.8	3081.0	3110.5	-36.0
Top Lange Sand 1	Absent	Absent	Absent	Absent
Top Lange Sand 2	Absent	Absent	Absent	Absent
Base Lange Sand 2/Black Marker	Absent	Absent	Absent	Absent
TD		3637.0	3667.0	37.0

\* 'phantomized' on very poor Upper Cretaceous seismic image

**Table 3.2-2: Actual formation tops** 

Chevron

Norsk Chevron AS

# 3. Geology, Geophysics and Petrophysics

# 3.3 Geochemistry

The phenols and the organic acids as reported in the Lysing MDT samples indicate that the water has been in contact with a hydrocarbon accumulation at an earlier stage.

No other routine geochemistry studies were undertaken in this well, as no source rocks were penetrated and no hydrocarbon bearing zones were encountered/sampled.

### 3.4 Geophysics

# **Acoustic logs**

Wireline sonic (ISONIC) and density logs were recorded in open hole section for both the Tertiary and the Cretaceous target levels. Both P-sonic and S-sonic logs were acquired. The quality of the logs across both target levels is very good, but the S-sonic log is suffering from poor registrations in the interval below Top Springar Fm. However, the poor data quality section does not interfere with any of the targets for well 6506/3-1.

#### **VSP/Checkshot Survey**

A zero offset VSP for well 6506/3-1 was acquired by READ Well Services. The survey ranged from 3664m to 950m MD RKB. The result of the study is presented in a separate report. The report describes the Zero Offset VSP data acquisition and processing, sonic calibration and generation of synthetic seismograms for well 6506/3-1.

The receiver array consisted of 8 satellites, each containing a 3 component geophone cartridge. Thus, 8 levels were acquired simultaneously. The geophone spacing was 20m. The spacing between registration levels in the hole was 10m from 3664m to 1270m MDRKB, apart from a few levels of spacing, and 20m from 1270m to 950m MDRKB.

The seismic source employed was a 2 x 150 cubic inch sleeve gun, located at 3.5m depth and with an air capacity of 1800psi.

A checkshot list was computed from the first arrival values and survey geometry. Based on the checkshot values the P-sonic was calibrated to real time values.

#### **Seismic Calibration**

Apart from the calibration presented in the Zero offset VSP report, an independent calibration was performed applying SynTool as the software. See Figures 3.4-1 to 3.4-4. The outcome of this effort is presented in this report. The sonic calibration is based on the checkshot data generated from the Zero Offset VSP. The display is according to normal SEG convention, with increase in acoustic impedance represented as a peak. The wavelets used to convolve the reflection series from the well are extracted from DTW2000 in a 500ms time window at the Tertiary and Cretaceous target levels.

The synthetic trace for both the Tertiary and Cretaceous display panels are compared with seismic traces and lines from 3D DTW2000 nearest to the penetration point for the well at the two levels.

For the Tertiary the "best fit parameters" and the tie as displayed in Figure 3.4-1 are all very good. The DTW2000 survey has to be shifted 12ms downwards to give the best possible match to the synthetic seismogram. This shift is in accordance with the results reported from the Zero Offset Report by READ. The tie points can be read directly from the displays in Figures 3.4-1 and 3.4-3.

# 6506/3-1, PL259 End of Well Report

# 3. Geology, Geophysics and Petrophysics

The tie between the seismic at the Cretaceous targets and the synthetic is good, the seismic has to be downshifted by only 2ms to give the best possible match to the synthetic seismogram, as illustrated in Figures 3.4-2 and 3.4-4.

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Figure 3.4-1 Synthetic to seismic tie For the Tertiary, well 6506/3-1

At the Tertiary target level the Trace 7762 has to be shifted 12ms downward to match the synthetic

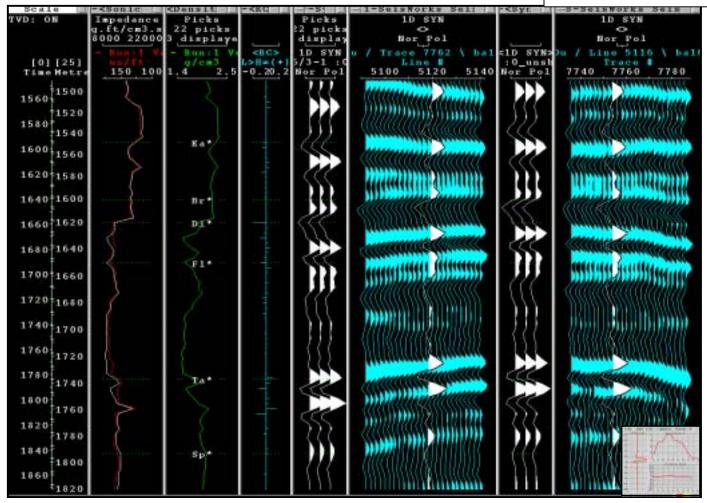


Figure 3.4-1 Synthetic to seismic tie for the Tertiary, well 6506/3-1

Figure 3.4-2 Synthetic to seismic tie for the Cretaceous, well 6506/3-1

At the Lysing sand level trace 7764 from DTW2000 has to be shifted 2ms TWT downwards to tie the synthetic

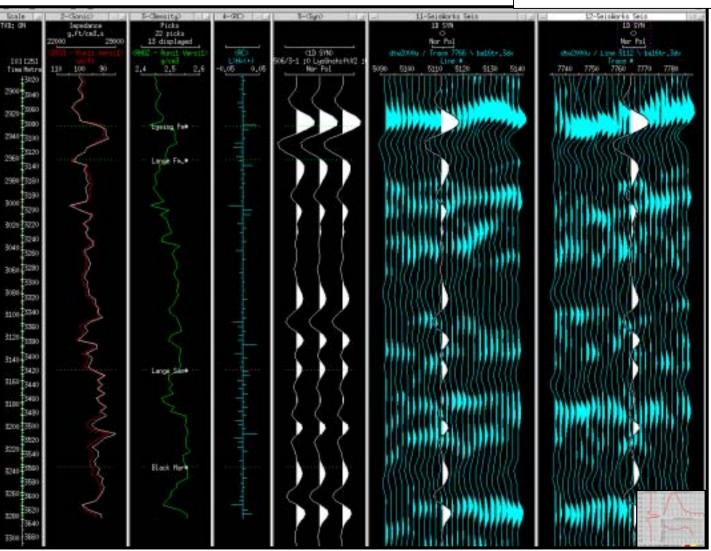


Figure 3.4-2 Synthetic to seismic tie for the Cretaceous, well 6506/3-1

Figure 3.4-2 Synthetic to seismic tie for the Cretaceous, well 6506/3-1

At the Lysing sand level trace 7764 from DTW2000 has to be shifted 2ms TWT downwards to tie the synthetic

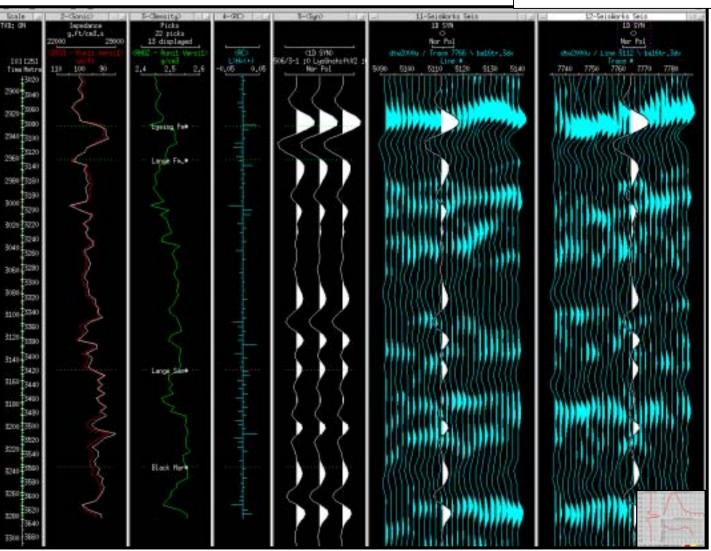


Figure 3.4-2 Synthetic to seismic tie for the Cretaceous, well 6506/3-1

At the Lysing sand level trace 7764 from DTW2000 has to be

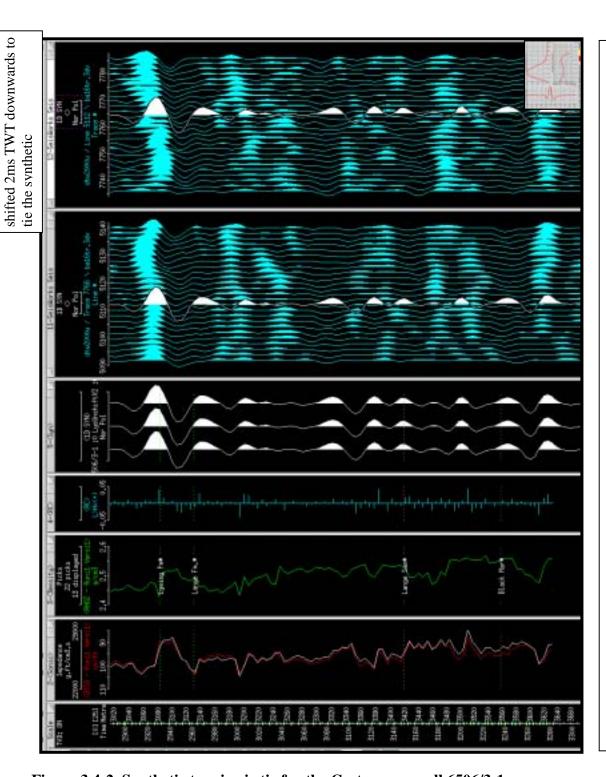


Figure 3.4-2 Synthetic to seismic tie for the Cretaceous, well 6506/3-1

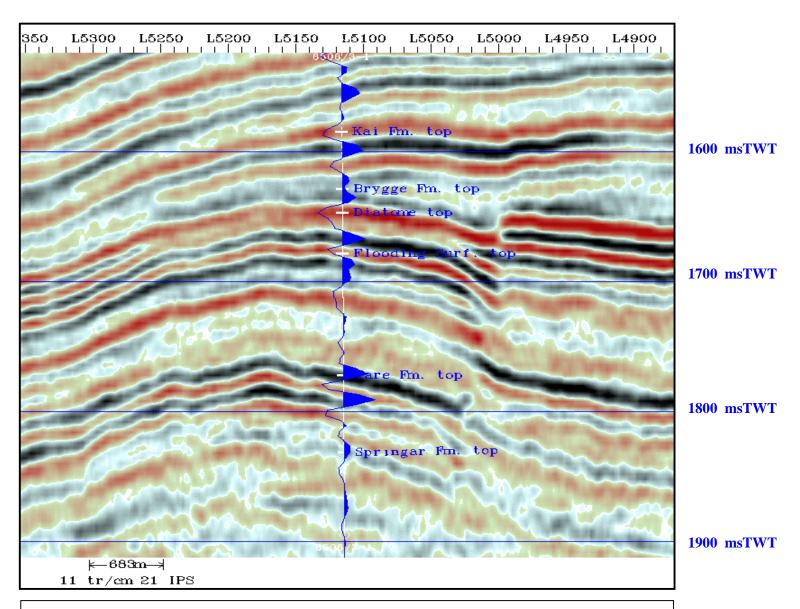


Figure 3.4-3 Synthetic tie of the Tertiary events to 3D DTW2000 trace 7762

Figure 3.4-4 Synthetic tie of the Cretaceous events to 3D DTW2000 trace 7764 (Slight deviation of well trajectory caused slight increase in DTW2000 trace number)

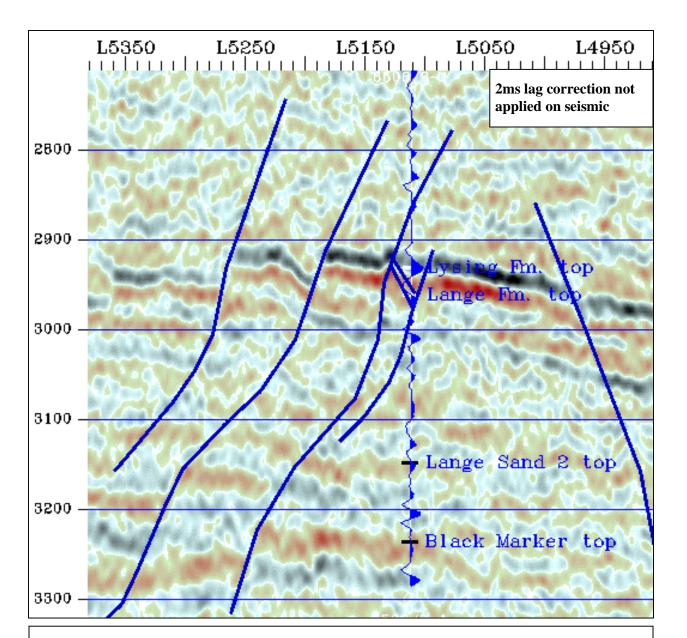


Figure 3.4-4 Synthetic tie of the Cretaceous events to 3D DTW2000 trace 7764

### 3.5 Petrophysics

#### 3.5.1 Composite Log Curve Data

The three LWD runs and the two wireline logs were reviewed to create the composite log curves. Wireline logs were run over the entire 8 ½" section giving a good continuous dataset. The dipole sonic log was reprocessed to optimise data quality in the Tertiary as well as the washed out interval from 2115 m to 2300 m in the Cretaceous. The washouts have also affected the density and neutron data. Sections where the data could not be restored have been replaced with null values.

Environmental corrections were applied to the data at the wellsite and onshore. These corrections include:

Neutron: Borehole salinity, pressure, temperature, hole size, mud cake and mud weight.

Density: Hole size.

Array Induction: Hole size.

Spectral Gamma Ray (HNGS): Barite in mud.

The curves used to create the HQLD curves and the splice points selected are listed in the following table (Table 3.5.1-1).

HQLD composite log curves									
Curve Name	Description	8 ½" Pilot	8 ½" Main Hole	Splice Point					
		453-1382m	1382 to 3667m						
HGR	Gamma Ray	LWD-GR	WL-HNGS-SGR	1369.1					
HCAL	Caliper		WL-PEX-HCAL	N/A					
HRHO	Density		WL-PEX-RHOZ	N/A					
HDRO	Density Corr		WL-PEX-HDRA	N/A					
HPHI	TNPH Neutron		WL-PEX-TNPH	N/A					
HDTC	Sonic (P)		WL-DIPOLE-DTCO	N/A					
HDTS	Sonic (S)		WL-DIPOLE-DTSM	N/A					
HRD	Deep Resistivity	LWD-ATR	WL-AIT-RT	1371.3					
HRM	Medium Resistivity	LWD-PSR	WL-AIT-AT30	1371.3					
HRS	Shallow Resistivity		WL-AIT-AT10	N/A					

Table 3.5.1-1 HQLD composite log curves

#### 3.5.2 Formation Evaluation - Cretaceous

The Cretaceous was penetrated with the 8 ½ hole to a depth that allowed complete logging of the "Black Marker" in the Lange formation. The only significant sand interval was the Lysing sand. The interval was evaluated with core, wireline logs, and a sidewall core. Fluid samples were retrieved from the formation and the analysis of those samples indicated the sands to be water bearing. The log data quality across the Lysing sands is excellent and no noticeable wellbore effects are present.

Log data quality throughout the Cretaceous is good. However, significant washouts in the Upper Cretaceous from 2115 m to 2400 m have adversely affected density, neutron and shear sonic data. No attempt has been made to repair this data as the section where the washout occurred is of little relevance to the analysis of the well.

### Log Analysis

The analysis of the Lysing sand is presented in Figure 3.5.2-1 and Table 3.5.2-1. The analysis was performed as follows:

- Vsh was calculated using GR.
- Density porosity was calculated using a RHOMA of 2.66g/cc and a RHOFL of 0.79 g/cc (Versavert base oil).
- Density porosity was shale corrected to give PHIE
- Rw was measured from the MDT water samples and temperature corrected to 0.192 Ohm-m @ 103 degC
- Sw was calculated using the Archie equation with a, m and N values of 1, 2 and 2 respectively.
- Net sand was determined using an effective porosity cutoff of 12%.

The log analysis results indicate the presence of hydrocarbon with high Sw at the very top of the Lysing sand. Bed boundary effects caused by the high resistivity calcite stringer immediately above the Lysing sand are thought to cause this. This agrees with the MDT water samples that contained no free gas and, when restored to down hole conditions, were undersaturated with gas.

The three MPSR water samples were analysed by Petrotech to determine the composition of the formation water. Sub-samples of the recovered water were sent to the University of Bergen (UiB) to determine if organic acids and phenols were present. The data from UiB and Petrotech was analysed by Dewpoint AS to determine if the water was in contact with hydrocarbon. The analysis report from Dewpoint AS can be stuided in the Appendix.

Lysing net sand analysis summary								
Gross Sand	Net Sand	Net/Gross	Average Phi	Average Phi				
Interval			(Net Above 12%)	(Net Above 15%)				
20.5 m	3 m	14%						

Table 3.5.2-1: Lysing net sand analysis summary

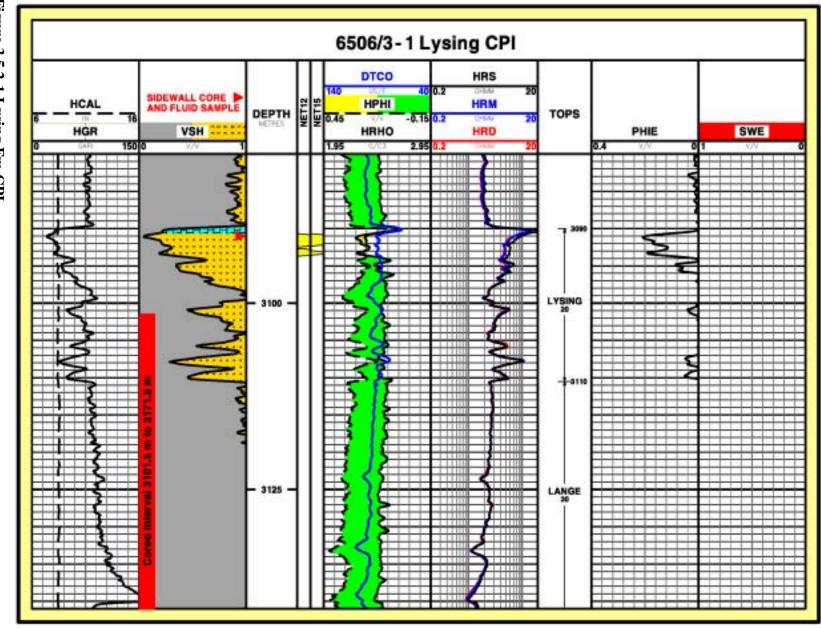


Figure 3.5.2-1 Lysing Fm CPI



#### 3.5.3 Formation Evaluation – Tertiary

The Brygge, Tare and 37m of the Tang Formation contained a total of 140.5m (Measured Thickness) of diatomaceous material and volcanics. Sand reservoirs were not encountered. SEM and XRD results show diatomite to be the dominant lithofacies in this interval with some component of volcanic glass. The Opal A to Opal CT transformation has only partly taken place at the base of the unit. The unit was water filled and significantly over-pressured.

The interval was evaluated with wireline logs, cuttings and sidewall cores. The log data quality across the interval is excellent with wellbore effects are only apparent from 1630m to 1655m MDRKB. The wireline data is presented in Figure 3.5.3-1. The scales on the density and the neutron porosity logs are 1.45 to 2.45 g/cc and 0.75 to 0.15 respectively.

Pressure data was recorded across the interval and showed a significant overpressure of 1.53 SG. The gradient indicated a fluid density of 1.04 g/cc. The pressure data is presented in Figure 3.5.3-2. No fluid samples were retrieved from the formation although fluid samples were attempted. The cause of the failure to acquire fluid samples was the formation collapsing around the MDT probe. Drawdown pressures after a short pumping time were high and increasing indicating probe plugging or a lack of connected reservoir porosity. Hydrocarbon migration through the formation can only be inferred from the gas log data, which indicate a significant amount of methane present when the formation back-flowed at 1698 m.

#### Log Analysis

Due to the complex makeup of the formation matrix, no significant attempt was made to evaluate the porosity. A simple density porosity calculation using an assumed grain density of 2.25 g/cc and a fluid density of 0.79 g/cc (Versavert base oil) gave an average porosity of 38% for the interval. There is no net reservoir in the interval.

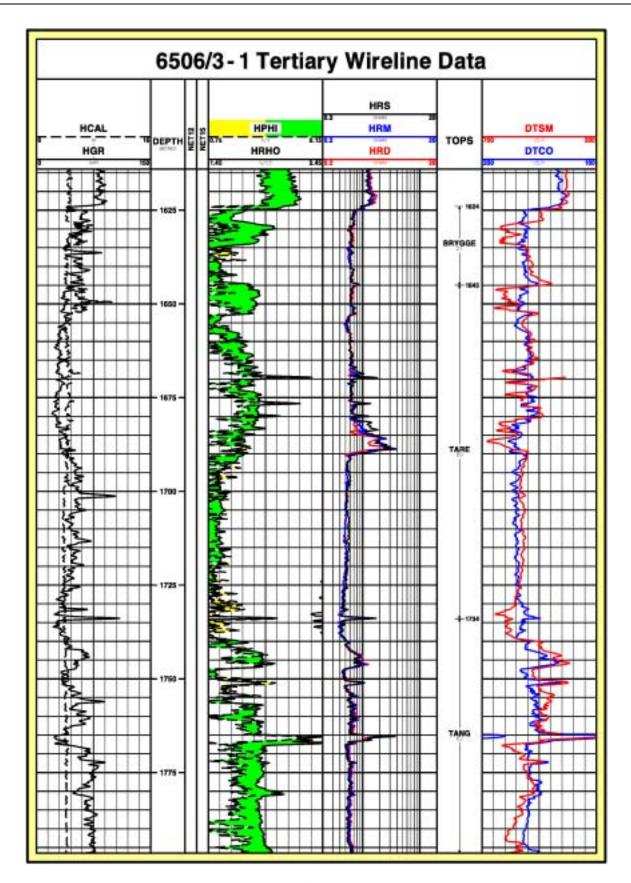


Figure 3.5.3-1 Tertiary target raw wireline data

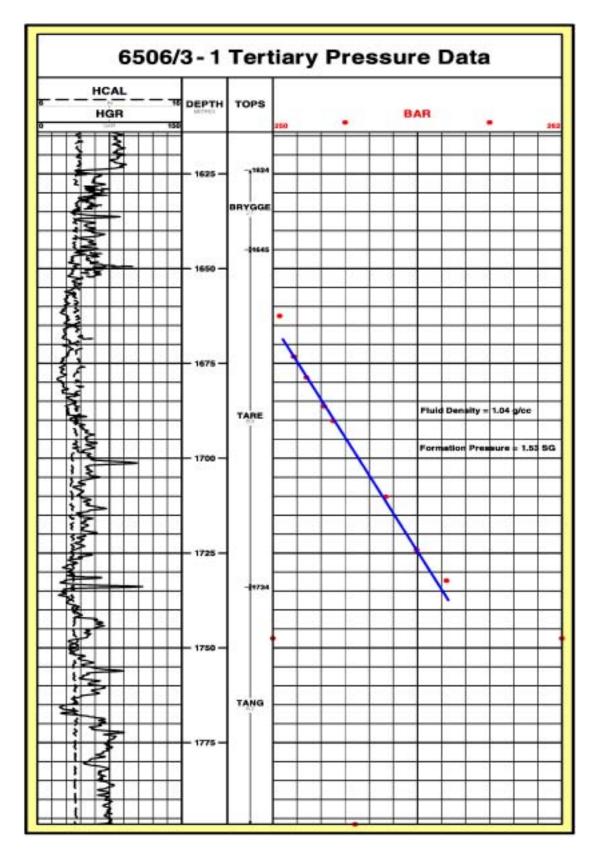


Figure 3.5.3-2 Tertiary target pressure data

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# 3.6 Bottom Hole Temperature

CHEVRON Horner BHT Calcula							lation
Well: 6506/3-1 Field: Location: Wildcat						dcat	
Date: 15-0	ct-01	Geologists: Mike Donovan, Ed Linaker					
	Dept	h, Circula	tion and T	emperatu	ıre Data		
					Date	Time	
Depth:	3667 mBRT		Circulat	tion stopped:	9-Aug-01	17:30	
TVD:	3662 mTVD						
RT-SB:	366 m		Seabed <sup>-</sup>	Temperature:	5	(5 deg C is defa	ult)
Log	Run No	Date	Bottom Log	Max	Time Since	Circulation	Log to
			Interval	Temp	Circ stopped	Time	Bottom?
PEX/AIT	1A	10-Aug-01	3667	112	12.7	3	Y
DSI/OBDT	1A	10-Aug-01	3667	116	24	3	Υ

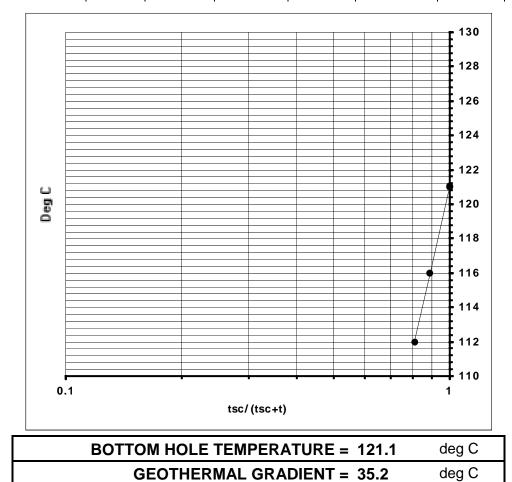


Figure 3.6-1 Bottom hole temperature

# 3.7 Summaries

# 3.7.1 Temperature Profile

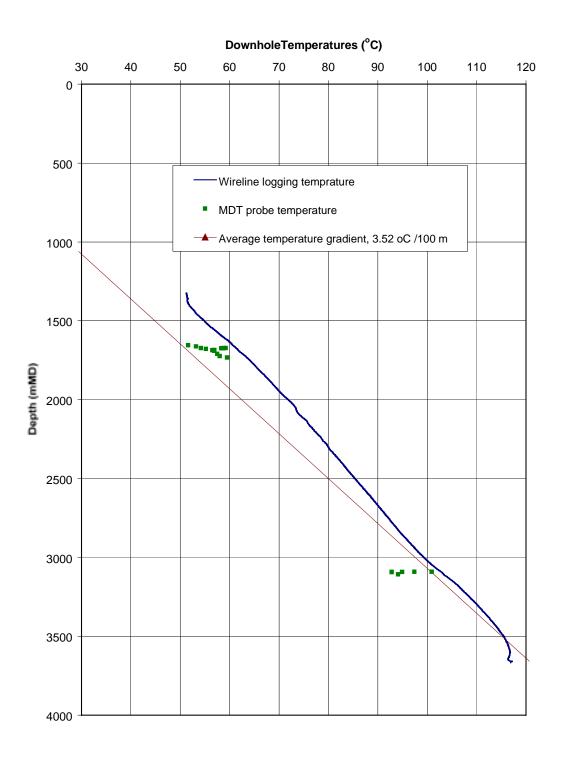


Figure 3.7.1-1 Downhole temperature profile

# 3.7.2 Geological Sampling Summary

The geological sampling program for the 6506/3-1 well is shown in Table 3.7.2-1:

Open ho	Open hole well cuttings and mud sampling										
Interval	From (m)	To (m)	Standard Sample Rate	Biostrat Sample Interval	Mud Samples (Lag Depth m)						
1	1386	1625	10	20	2 Litres @ 1618						
2	1625	1700	3		2 Litres @ 1635						
3	1700	3088	10 (*)		3 Litres @ 3078						
4	3088	3171.5	3		3 Litres While Coring						
5	3171.5	3667	10 (*)								

Table 3.7.2-1: Open hole well cuttings and mud sampling

The conventional core and sidewall core programs for the 6506/3-1 well is shown in Table 3.7.2-2 and 3.7.2-3 respectively. Conventional core descriptions can be found in Section 3.7.5. Percussion sidewall core summary can be found in section 3.7.6 and percussion sidewall core descriptions are placed in the Appendix.

Conv	Conventional cores									
Core	De	Cut	Reco	vered						
No.	Drilled	Recovered	Log Corrected	(m)	(m)	%				
1	3101.5- 3171.5	3101.5 - 3169.2	3102.6-3170	67.7	67.7	96.7				

Table 3.7.2-2: Conventional cores

Percussion sidewall cores									
Run No.	Depth Interval (mBRT)	Attempted	Recovered	%					
1A	3650 - 1447	53	29	54.7					

Table 3.7.2-3: Percussion sidewall cores

The MDT fluid sample program follows Table 3.7.2-4. Analysis of the MDT samples can be found in the Appendix.

<b>MDT</b> fluid	MDT fluid samples								
Run No.	Depth (mBRT)	Chamber	Fluid Recovered	Comment					
1A	3109.2	MPSR 712	Filtrate and Water	No free gas in sample					
1A	3109.2	MPSR 753	Filtrate and Water	No free gas in sample					
1A	3109.2	MPSR 856	Filtrate and Water	No free gas in sample					

Table 3.7.2-4: MDT fluid samples

<sup>(\*)</sup> Some samples were missed due to the high drill rates in these intervals.

### 3.7.3 LWD Operations Summary

A total of three LWD/MWD (Formation Evaluation Measurements and Directional Data) runs were made in 6506/3-1. Schlumberger Anadrill provided all LWD services. There were no reported tool failures, however, the Isonic tended to peak at 135  $\mu$ s/ft in the Brygge Formation in Run 2 in both real time and memory data modes. Subsequent DSI data indicated more than 160  $\mu$ s/ft velocity reduction in this zone.

LWD/MWD operations and tool performance are summarised below in Table 3.7.3-1. Additional details can be found in Schlumberger Anadrill's End of Well Report.

LWD Op	LWD Operations									
Interval (mMD)	Tools	Sensor Distance to Bit	Memory	Real Time	Comments					
Run #1: 453-1382	MWD CDR	GR: 11.48m RES: 8.13m D&I:18.87m	10 sec. sampling	6 bps	No tool problems. The real time data quality was good.  Memory data was successfully downloaded and a memory log was produced at wellsite.					
Run #2: 1382-3101.5	MWD ISONIC CDR	GR- 11.52m, RES- 8.17m ISONIC:19.27m D&I: 26.42m	10 sec. sampling	3 bps	The window for the real time sonic processing was set from 150 to 100 us/ft and showed no evidence of flat-lining at 150 us/ft with the tool reading about 135 us/ft throughout much of the Brygge zone. Processing of the Isonic memory data gave similar results. Subsequent logging with the DSI wireline sonic indicated a slowness of over 160 us/ft. That was compatible with wireline density measurements. These measurements are within the Isonic's published range that is between 40 and 180 us/ft.  Memory data was successfully downloaded and a memory log of the CDR data was produced at wellsite. The ISONIC data required further reprocessing onshore.					
Run #3: 3171.5-3667	MWD CDR	GR: 11.56m RES: 8.21m D&I: 18.95m	10 sec. sampling	3 bps.	Reamed from 3050-3171.5m MDRKB (Core 1). No tool problems. The real time data quality was good, Memory data was successfully downloaded and a memory log was produced in town.					

Figure 3.7.3-1: LWD operations

### 3.7.4 Open Hole Wireline Logging Summary

Open hole wireline logs were not run in the 36" or the 8 ½" pilot hole. Gamma ray and resistivity data were acquired over the 8 ½" pilot hole using Anadrill's LWD. Wireline log data was recorded using a Schlumberger MCU for all services except the VSP that was recorded using Reed's surface unit. The VSP data was recorded using Schlumberger's cable and winching equipment.

All continuous data was recorded in the 8 ½" hole section from TD to 13 3/8" casing in two descents. The PEX density was relogged across the Brygge, Tare and Tang formations due to anomalous density readings that effectively repeated.

Descent four with the VSP was aborted due to tool sticking and a conditioning trip was performed. Three further descents were made after the conditioning trip without further problems.

A summary of the wireline logging operations and can be found in Table 3.7.4-1 and Table 3.7.4-2 on the subsequent two pages. A detailed breakdown of the logging operation can be found in the Appendix.

Wire	line logg	ing – sun	nmary				
Run #	Date	Tool String	Max Temp	Time Since circ. *		Interval BRT)	Remarks
			(°C)	(hr:min)	From	То	
1A	10.08.01	AIT-PEX- HNGS	113 112 112	12:40	1374	3665.5	Repeat section 3060- 3180m, Problem with AIT meant relogging from 3150- 2690m
1A	10.08.01	DSI-GR- AMS- OBDT	116 116 116	24:00	1374	3665.8	Repeat section 2998 - 3188m. Maximum AMS Temp -116.9 degC
2A	10.08.01 - 11.08.01	PEX	-	31:10	1590	2000	Relog of anomalous density data in Brygge Fm.
1A	11.08.01	VSP-GR	-	38:30	-	-	Stuck at 3402m and again at 3088m POOH for conditioning trip.
1A	12.08.01 - 13.08.01	MDT-GR	101.9	23:11*	1655	3107.2	20 Pretests and samples at 3091.2m (3xMPSR)
1A	13.08.01 - 14.08.01	VSP-GR	-	30:05*	790	3660	10m intervals 3660-1270m. 20m intervals 1270-950m and Walkaway VSP at 2898m.
1A	14.08.01	CST-GR	-	48:05*	1447	3650	53 CST's shot Recovered 29, 2 Empty, 14 Lost, 8 Misfire, Recovery 55%

**Table 3.7.4-1: Wireline logging - summary** 

Time bre	Time breakdown									
Descent	Date	Tool String	Opr. Time	Lost time						
			(hrs:min)	(hrs:min)						
1	10.08.01	AIT-PEX-HNGS	11:55	1:15 TT						
				0:20 RT						
2	10.08.01	DSI-GR-AMS-OBDT	8:45	-						
3	10.08.01	PEX	3:55	-						
4	11.08.01	VSP-GR	14:00	-						
5*	12.08.01	MDT-GR	19:00	-						
6*	13.08.01	VSP-GR	17:30	-						
7*	14:08.01	CST-GR	12:00	-						
			Total	Total						
			87:05	1:15 TT						
				0:20 RT						

Last circulation on bottom: 09.08.01@17:30hrs

Table 3.7.4-2: Time breakdown

<sup>\*</sup>For runs after Conditioning trip performed between runs 4 and 5 Last circulation on bottom was 12:08.09@10:15hrs

#### 3.7.5 Conventional Coring Summary

A single core was cut on 6506/3-1 in the Lysing Fm. The core was cut using standard 4" aluminum inner barrels. The bit used was an 8 1/2" DBS FC274 Corehead.

The coring information is summarized in Table 3.7.5-1 below:

Conventional Core – 6506/3-1										
Core	Barrel		Depth Interval							
No.	ID (in)	Drilled	Recovered	Log Corrected	(m)	(m)	(%)			
1	4	3101.5-3171.5	3101.5-3169.2	3102.6-3170	70	67.7	96.7			

**Table 3.7.5-1 Conventional core – 6506/3-1** 

Core 1, in the Cretaceous Lysing and Lange Fms, was taken from 3101.5m MDRKB when LWD readings indicated the presence of sand beneath the carbonate stringer that locally overlies the Lysing Sand formation. LWD sensors were 8.5m from the bit. A 73m core barrel assembly (inner barrel length = 73m) was picked up, run into the hole, and coring commenced. At 3171.5m the torque dropped back to a steady 6000Nm and a slight pressure drop was seen, indicating that core had jammed. No attempt was made to restart the core. At surface, 67.7m of core was recovered.

Of the 67.7m of recovered only 8m of core came from the target Lysing formation due to the unexpected thinning of the sand unit. The core contained no net sand.

Precautions were taken to relieve pressure while pulling out of the hole to minimize damage caused by trapped pressure. The barrels were separated at surface and a guillotine cutter was used to break the core to reduce fracturing of the core.

#### **Core Processing**

The cores were measured and cut into 1m lengths then scanned with a core gamma device. The wellsite geologist took core chips from each 1 m length for core description. No core plugs were cut at the wellsite.

1 m sections of the core from 3120m, 3155m, 3137m, 3138m, 3139m were preserved in oil at the wellsite for top seal analysis.

Core analysis by Corepro in Stavanger included:

- Spectral gamma ray logging
- Helium porosity determination
- Permeability determination
- Preservation of whole core samples in Seal Peel for reference purposes
- Slabbing

- Thin sections
- Digital and white light photography

Preserved whole core samples								
Depth From (mMDRT)	Depth To (mMDRT)	Comment						
3106.22 m	3106.50 m							
3115.10 m	3115.36 m							
3120.40 m	3120.55 m	Taken by Leeds University						
3124.00 m	3124.28 m							
3136.00 m	3136.32 m							
3139.25 m	3139.40 m	Taken by Leeds University						
3144.55 m	3144.81 m							
3154.06 m	3154.30 m							
3155.72 m	3155.86 m	Taken by Leeds University						
3164.75 m	3165.00 m							

Table 3.7.5-2: Preserved whole core samples

Detailed results of the core analysis performed by Corpro can be found in their report. Wellsite descriptions of the core chips can be found in the Appendix.

Figure 3.7.5-1 compares the wireline logs over the Lysing cored interval with the core gamma logs supplied by Corpro. The core gamma logs were recorded on driller's depth.

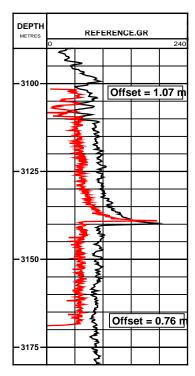


Figure 3.7.5-1: Core gamma ray versus reference wireline gamma ray

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### 3.7.6 Percussion Sidewall Coring Summary

A single descent with a combined 60 shot CST sidewall core gun was made for lithology identification, biostratigraphic control and top seal analysis.

Core depths, core bullets and gun rings were selected using open hole wireline log data. Correlation logs were run at TD, prior to the Lysing and prior to the Brygge formations. Core recovery was poor below the Lysing Formation due to misfires, bullets getting stuck and possibly due to the core gun being stuck at 2987 m. 53 bullets were shot out of which 29 were recovered, 2 were empty, 8 misfired and 14 were lost. The run is summarized in Table 3.7.6-1 below.

Sidewall core recovery and descriptions										
SWC	Depth	Reco.	Lithology and Show Description	Porosity						
No.	mBRT	cm		Р	F	G				
1	3650	-	Lost							
2	3600	-	Lost							
3	3550	-	Lost							
4	3500	-	Lost							
5	3450	-	Lost							
6	3399.5	-	Lost							
7	3330	1.7	Claystone with common fine <0.5mm Sandstone							
	2205		laminations. CLAYSTONE: medium grey to occasionally medium light grey, firm to moderately hard, blocky to subfissile, micromicaceous, silty, grading to SILTSTONE, occasional coarse mica flakes, slightly to non calcareous.  SANDSTONE: off white to very pale grey, firm, blocky, friable in places, very fine to silt grained, occasionally fine grained, transluscent, off white to very pale grey, subangular to subrounded, subspherical, poor to moderately sorted, moderate calcite cement, good trace glauconite, rare coarse mica flakes, no visible porosity, NO SHOWS.							
8	3305	-	Lost							
9	3250	-	Lost							
10	3101	-	Lost							
11	3096	-	Lost							
12	3095	-	Lost							
13	3093.4	-	Lost							
14	3093.1	-	Lost							
15	3092	-	Lost							
16	3091.5	-	Misfire							

			y and descriptions (continued)		orosi	
SWC No.		Depth Reco. Lithology and Show Description mBRT cm				
17	3091.1	1.6	<b>SANDSTONE</b> : off white to very pale grey, firm, friable, blocky, very fine to medium grained, clear to transluscent, colourless to very pale grey, subangular to subrounded, occasionally angular, subspherical, occasionally subelongate, poor to moderately sorted, moderate calcite cement, common glauconite, trace iron staining, poor to occasionally fair visible porosity, NO SHOWS.	X	X	
18	3080	-	Misfire			
19	3065	3.1	<b>CALCAREOUS CLAYSTONE</b> : medium to medium light grey, firm to moderately hard, blocky, micromicaceous, rare trace glauconite, silty, grading to SILTSTONE, trace calcite grains, very calcareous.			
20	2800	3.4	<b>CLAYSTONE</b> : medium to medium light grey, firm to moderately hard, blocky, micromicaceous, silty in places, trace very fine carbonaceous material, slightly to moderately calcareous.			
21	2600	-	Misfire			
22	2450	5.1	<b>CLAYSTONE</b> : medium to medium light grey, firm to moderately hard, blocky, micromicaceous, slightly silty in places, occasional very fine carbonaceous material, rare micropyrite veins >0.5mm by 3mm (fossil burrows?), moderately calcareous.			
23	2435	5.3	<b>CLAYSTONE</b> : medium to medium light grey, olive grey, firm to moderately hard, blocky, micromicaceous, occasional very fine disseminated micropyrite, slightly to moderately calcareous.			
24	2397	-	Misfire			
25	2156	4.2	<b>CLAYSTONE</b> : medium to medium light grey, olive grey, firm to moderately hard, blocky, micromicaceous in places, rare calcite grains, slightly to occasionally moderately calcareous, sandy in places, common SANDSTONE vesicles, very fine grained, transluscent, colourless to off white, subangular to subrounded, no visible porosity, NO SHOWS.			
26	1950	4.0	<b>CLAYSTONE</b> : greenish grey to light olive grey, occasionally pale green, firm to moderately hard, blocky, micromicaceous, in places, rare coarse mica flakes, occasional to locally abundant very fine disseminated micropyrite, occasional very fine carbonaceous material, slightly to moderately calcareous, occasionally very calcareous			
27	1799	-	Misfire			
28	1790	-	Misfire			
29	1749	-	Misfire			
30	1744	-	Misfire			

Sidew	all core	recover	y and descriptions (continued)		
SWC	Depth	Reco.	Lithology and Show Description	Po	orosity
No.	mBRT	cm			
31	1738	4.7	<b>DIATOMATIOUS EARTH???:</b> medium dark grey to olive grey to brownish grey, soft, friable, subblocky in places, earthy, granular texture, very fine grained, opaque, occasional very fine to fine grained quartz, very fine disseminated micropyrite, micromicaceous in places, non calcareous, occasional pale yellowish brown argillaceous matrix. no to poor visible porosity.	X	
32	1732	3.0	<b>DIATOMATIOUS EARTH???</b> : medium dark grey to olive grey to brownish grey, soft, friable, subblocky in places, earthy, granular texture, very fine to silt grained, opaque, occasional very fine to fine grained quartz, very fine disseminated micropyrite, abundantly micromicaceous, non calcareous, occasional pale yellowish brown argillaceous matrix. no visible porosity.		
33	1730	5.0	Claystone with a Sandstone band around 1mm thick and common very fine Sandstone laminations.  CLAYSTONE: medium to light medium grey, light olive grey to olive grey, soft to moderately firm, blocky, occasionally crumbly, micromicaceous in places, non calcareous,  SANDSTONE: white to off white, soft to firm, blocky, friable in places, very fine grained, transluscent to clear, colourless to off white, subangular to subrounded, subspherical, moderately sorted, occasional slight calcite cement, no visible porosity, NO SHOWS.		
34	1722	5.0	<b>DIATOMATIOUS EARTH???:</b> medium dark grey to olive grey to brownish grey, very soft to soft, friable/crumbly, subblocky in places, earthy, granular texture, very fine grained, opaque, occasional very fine to fine grained quartz, very fine disseminated micropyrite, abundantly micromicaceous in places, non calcareous, occasional pale yellowish brown argillaceous matrix. no to rare poor visible porosity.	X	
35	1707	5.2	<b>CLAYSTONE</b> : medium to light medium grey, olive grey, soft to moderately firm, blocky to subblocky, micromicaceous, rarely silty, non calcareous.		
36	1701	4.8	<b>CLAYSTONE</b> : medium to light medium grey olive grey, moderately firm, blocky to subblocky, micromicaceous, rarely silty, non calcareous.		

SWC	Depth	Reco.	y and descriptions (continued)  Lithology and Show Description	Porosity
No.	mBRT	cm	Enthology and onow bosonphion	1 010010
37	1697	5.3	<b>DIATOMATIOUS EARTH???</b> : medium dark grey to olive	
57	1077	3.3	grey to brownish grey, soft, friable, subblocky in places,	
			earthy, granular texture, very fine grained, opaque, occasional	
			very fine to fine grained quartz, very common fine	
			disseminated micropyrite, micromicaceous in places, non	
			calcareous, occasional pale yellowish brown argillaceous	
20	1.600	~ ~	matrix. no visible porosity.	
38	1692	5.5	<b>DIATOMATIOUS EARTH???</b> : medium dark grey, olive	
			grey, soft, friable, subblocky in places, earthy, granular	
			texture, silt to very fine grained, rare fine grained quartz,	
			common pyrite filled vesicles, common	
			mica/micromicaceous, occasional argillaceous matrix, non	
			calcareous, no visible porosity.	
39	1686	5.5	<b>DIATOMATIOUS EARTH???</b> : medium dark grey, olive	
			grey, soft, friable, subblocky in places, earthy, granular	
			texture, silt to very fine grained, becoming silty, rare fine	
			grained quartz, rare pyrite, common mica/micromicaceous,	
			common argillaceous matrix, occasionally grading to	
			CLAYSTONE, non calcareous, no visible porosity.	
40	1678	4.8	<b>SANDSTONE</b> : very pale grey to off white, firm	
			friable/crumbly, subblocky, very fine to silt grained,	
			transluscent off white to very pale grey, subangular to	
			subrounded, subspherical, poorly to moderately sorted,	
			common pyrite, common carbonaceous material, occasionally	
			grading to SILTSTONE, trace glauconite, micromicaceous,	
			trace glauconite, no visible porosity, NO SHOWS.	
41	1672	5.0	CLAYSTONE: light grey to light olive grey, occasionally	
41	1072	3.0		
			pale grey green, soft to firm, subblocky to crumbly, commonly micromicaceous, common very fine carbonaceous,	
			1 · · · · · · · · · · · · · · · · · · ·	
			silty in places, abundant diatomatious material?, non	
10	1.660	- A	calcareous.	
42	1662	5.4	CLAYSTONE: as 1672m	
43	1656	5.5	<b>CLAYSTONE</b> : medium to medium light grey, olive grey,	
			moderately firm, subblocky to blocky, micromicaceous,	
			occasional micropyrite, occasional very fine carbonaceous	
			material, non calcareous.	
44	1652	4.9	<b>DIATOMATIOUS EARTH???</b> : light brownish grey to	
			light medeium grey, soft to firm, blocky to crumbly, granular	
			texture, very fine grained, occasional fine grained quartz,	
			common mica, trace glauconite, common light grey	
			argillaceous matrix, grading to CLAYSTONE in places, non	
			calcareous, no visible porosity.	
45	1644	5.0	<b>CLAYSTONE</b> : light grey to light olive grey to pale grey	
=			green, firm, subblocky, crumbly in places, micromicaceous,	
			common fine grained black spherical carbonaceous? material,	
	1	l	tominon time granica chack spherical carbonaccous. material,	1 1

SWC No.	Depth mBRT	Reco. cm	Lithology and Show Description	Ро	rosit	y
46	1642	4.8	CLAYSTONE: as 1644			
47	1635	4.8	<b>CLAYSTONE</b> : light grey to light olive grey to pale grey			
			green, firm, subblocky, crumbly, micromicaceous, rare very			
			fine carbonaceous material, non calcareous.			
48	1618	4.3	<b>CLAYSTONE</b> : medium dark grey to medium grey, olive			
			grey, firm, subblocky, occasionally crumbly,			
			micromicaceous, slightly calcareous.			
49	1607	3.4	<b>CLAYSTONE</b> : medium dark grey to medium grey, olive			
			grey, firm, subblocky, occasionally crumbly,			
			micromicaceous, occasional very fine to fine sand grains,			
			moderately calcareous.			
50	1577	-	Empty			
51	1537	-	Empty			
52	1477	5.2	<b>CLAYSTONE</b> : medium dark grey to medium grey, olive			
			grey, firm, subblocky, occasionally crumbly,			
			micromicaceous, moderately calcareous.			
53	1447	3.5	<b>CLAYSTONE</b> : medium dark grey to medium grey, olive			
			grey, firm, subblocky, occasionally crumbly, occasional very			
			fine carbonaceous material, micromicaceous, rare medium			
			grained mica, moderately calcareous.			

Table 3.7.6-1: Sidewall core recovery and description

# 3.7.7 MDT Pressure and Sampling Summary

Tables 3.7.7-1 and 3.7.7-2 summarize the MDT operations. Pressure data and samples were gathered on a single descent with the MDT. A good quality gradient was determined below the 'Flooding Surface' that indicated the formation contained water. The pressure in this formation ranged from 1.52 to 1.53 SG. Fluid sampling attempts in this formation were aborted after three attempts due to formation collapsed and probe plugging.

In the Lysing Formation a pressure gradient could not be determined because of a lack of sand. Formation fluids from the high quality sand at the top of the reservoir were sampled. three MPSR sample chambers were filled. Lack of compressibility at the surface indicated no free gas. The samples were sent to Petrotech for analysis where it was determined that they contained formation water and OBM filtrate. The results of the analysis appear in the Appendix section of this report.

<b>MDT</b>	pretest su	ımmary					
Test	Depth	TVD	Mobility	Mud Pr	essure	Formation	Comments
No.	(m)	(m)	(md/cp)	Before	After	Pressure	
						(Bar)	
1	1654.97	1651.97		260.74	260.68		Dry Test
2	1662.45	1659.42	1.95	261.90	261.86	249.83	Slightly Supercharged
4	1673.18	1670.12	119.32	263.59	263.55	250.41	Good Pretest
6	1678.67	1675.60	22.77	264.44	264.41	250.95	Good Pretest
7	1685.15	1682.06		265.46	265.36		Dry Test
8	1686.3	1683.21	11.72	265.59	265.58	251.71	Good Pretest
9	1690.14	1687.03	91.81	266.24	266.18	252.08	Good Pretest
10	1710.15	1706.98	3.7	269.40	269.34	254.29	Good Pretest
11	1724.18	1720.97	6.01	271.60	271.56	255.58	Good Pretest
12	1732.26	1729.03	2.24	272.70	272.68	257.22	Slightly Supercharged
12	1672.96	1669.90		263.01	263.16		Dry Test
13	1673.45	1670.39		263.31	263.34		Dry Test
15	3093.14	3088.45	1.17	483.15	483.43	431.00	Good Pretest
16	3107.2	3102.50		485.56	485.63		Dry Test
14	3092.19	3087.50		482.87	483.33		Dry Test

Table 3.7.7-1: MDT pretest summary

MDT san	MDT sampling summary							
Depth (m)	Mobility (md/cp)	Formation Pressure (Bar)	Comments					
1674.00	13.2	250.40	Attempt to sample - Lost Seal					
1674.47	16.6	250.43	Attempt to sample - Formation Collapse					
1674.50			Attempt to sample - Formation Collapse- Probe Plugging					
3091.90	22.2	430.75	Attempt to sample - Tight					
3091.40	72.3	430.69	Attempt to sample - Tight					
3091.20	113.8	430.70	Sampled 3 MPSR Chambers					

Table 3.7.7-2: MDT sampling summary

# 3. Geology, Geophysics and Petrophysics

# Literature:

**Ichron, 2001 A:** Petrographical analysis of rock samples from well 6506/3-1. Ref: 01/460/S. (Authors: John Cater)

**Ichron, 2001 B:** A Biostratigraphic Evaluation of the Pleistocene to Late Cretaceous interval in well 6506/3-1, NOCS. Ref: 01/433/B. (Authors: Mike Ayress, Nicholas Holmes and Paul Dodsworth)

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#### 4.1 SECTION SYNOPSIS

#### 4.1.1 PREPARATIONS

#### **Well Handover**

The Semi-Submersible drilling rig "Byford Dolphin" was handed over from Norsk Shell to Norsk Chevron at the Garn West location at 23:00 hrs on 16 July 2001; formalities were based upon an agreed handover document.

#### **Tow to Location**

With the last anchor bolstered, the rig went under the tow of the "Far Fosna" for the 91 nautical mile journey to the Donna West location. It was accompanied by two anchor handling vessels: the "Normand Progress" and the "Normand Jarl". Average speed was ~4 knots. However, after 21 hrs under tow the weather and sea state deteriorated (32 knot winds and 3m seas) and the decision was taken to go to survival draft (18.3m). This was completed within 3 hrs. The rig was towed the remaining 5 nautical miles to the Donna West location and held just off station pending an improvement on the weather for running anchors.

Forecasts issued midday on the 20 July suggested an imminent improvement in the weather. At 16:30 hrs the decision was made to de-ballast the rig back to towing draft. This was completed in 4 hrs and by 23:00 hrs the sea state had improved sufficiently to work anchors.

Prior to, and during the tow, ModuSpec carried out a full BOP inspection. No significant problems were found with the exception of one cracked 5" ram block. A replacement set of rams were sourced and flown to the rig for installation prior to running the stack.

#### **Running Anchors**

The rig was 'Run in on Line' at 23:00 hrs 20 July and anchor handling started with #5 pennant being handed to the "Normand Progress" at 01:00 on the 21 July. With anchors #5, #11 & #2 deployed, the "Far Fosna" released its tow to assist in handling the remaining anchors. The 12 anchors were deployed in the following order #5, #11, #2, #8, #10, #6, #9, #7, #3, #4 & #12 and operation were complete by 13:30 hrs on 21 July. Ballasting down to operational draft (21.3m – 25m air gap) commenced at 12:40 hrs and was completed within 7 hrs. The anchors were cross tensioning to 150MT for 15 minutes in the following pairs #1 & #7, #2 & #8, #3 & #9, #4 & #10, #5 & #11, #6 & #12. Cross tensioning was completed by midnight on the 21 July.

Note: Additional chain for #1, #6; #7, #12 (150m each) needed to be removed and layed down on AHV's, because the rig chain lockers were not capable of handling same. This required approximately two hours of rig time to add the chain back to these anchors.

The final rig position on a heading of 313.6° (True) was recorded as:

Long: N 65° 48' 20.82" UTM 7 300 302.5m N Lat: E 6° 44' 32.36" UTM 396 765.5m E

While ballasting down and cross tensioning the anchors drill water was taken into the pits and the mixing of Spud and Kill Mud commenced. In addition, the drill floor started to make up the 17.1/2" x 26" x 36" hole opener assembly.

#### **Delays**

Wait on Weather (20:30 – 17/7/01 to 23:00 – 20/7/01): 74.5 hrs Section Total: 74.5 hrs

#### 4.1.2 36" HOLE SECTION

#### Spud & 36" Hole Section

While ballasting down and cross tensioning the anchors, the 17.1/2" x 26" x 36" hole opener assy. was made up as listed below:

17.1/2" Smiths DGJ Rock Bit (c/w 3 x 28/32" nozzles)
26" x 36" Heavy Duty Hole Opener (c/w 6 x 18/32" nozzles)
Bit Sub (c/w non-ported float)
Anderdrift Tool (0° to 5° inclination flask)
3 x 9.1/2" Spiral Steel Drill Collars
Cross Over
3 x 8" Spiral Steel Drill Collars
Cross Over
3 x 5" HWDP
6.1/2" Weir-Houston Hydraulic Jars
14 x 5" HWDP

The Anderdrift tool was surface tested with 1940 lpm, 50 bar when below sea level. The 17 1/2" bit tagged the mudline at 366m (tide corrected depth) and an Anderdrift survey taken to confirm the verticality of the assy. The well was then spudded at 00:30 hrs on the 22 July and the 36" hole drilled to 456m (a 36" cutter depth of 454m) in 5.5 hrs. 10m³ hi-vis sweeps were pumped each half stand and apart form some erratic torque at approximately 390m no hole or bolder problems were encountered. Typical drilling parameters were 5000 lpm, 142 bar, 50 -80 rpm, 8000 - 14,000 Nm torque, 2.3 - 4.5 MT WOB. Anderdrift surveys (6m behind the bit) were taken on each connection with the following results:

Mudline  $(366m) = 0^{\circ}$ ,  $374m = 0^{\circ}$ ,  $385m = 1^{\circ}$ ,  $397m = 2^{\circ}$ ,  $427m = 2.5^{\circ}$ ,  $449m = 3.5^{\circ}$ .

At TD (17 ½" TD of 456m, 36" cutter depth at 454m), the hole was displaced to 1.2 s.g. Spud mud at 4625 lpm, 166 bar. A total of 80m<sup>3</sup> or 1.5 x hole volume was pumped. The trip out of hole to the mudline was slick and so the decision was taken to run conductor without making a wiper trip.

No discernible wear was evident on either stage of the hole opener or on the 17.1/2" bit. All were graded 0, 0, NO, A7, E, IN, NO, TD.

#### Run & Cement 30" Conductor

The 30" conductor was run as configured in Fig: 1 below. It was handled on the drill floor using a 30" false rotary and hand slips. A 5" drill pipe inner string was run using a false rotary and was spaced out to be 19m above the 30" float shoe when the running tool was made up. A 28" bowspring centraliser was installed on the bottom single of the inner string. The inner string was made up to the 30" running tool which in turn was made up to the 30" Low Pressure (LP) housing with 5 LH turns.

The housing was locked into the Permanent Guide Base (PGB), located in the moon pool, and the whole assy. run in hole to the mudline. No problems were encountered locating, stabbing into and running down through the 36" hole. The conductor was suspended off bottom to provide the PGB with a 1.5m stick up above the mud line. Observation of the forward bullseye indicated a 1.5° tilt to starboard. The guidewire and anchor tensions were adjusted to reduce this by a quarter degree to 1.25°.

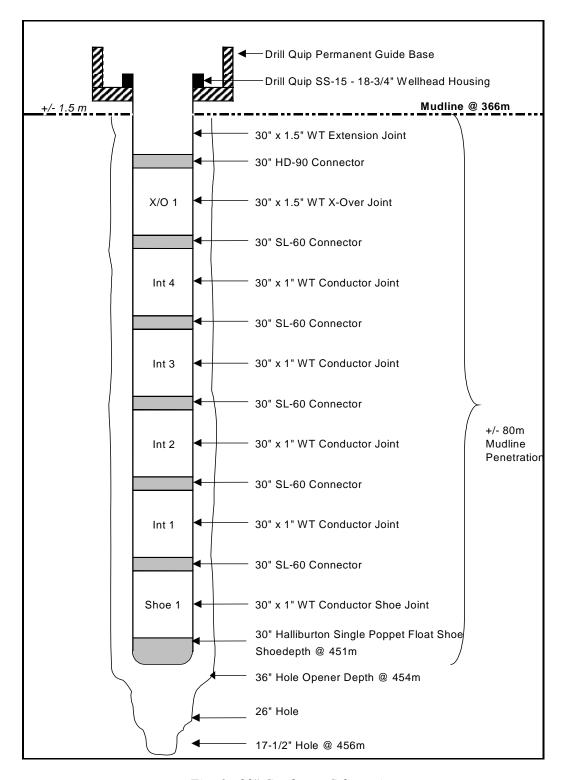


Fig: 1 - 30" Conductor Schematic

Circulation was broken with the rig pump and a total of  $97~\text{m}^3$  of seawater circulated at 1955~lpm prior to the 30" cement job. The 30" was cemented as per program, pumping both a lead and tail to reduce the initial hydrostatic pressure on the borehole. An excess of 200% was used. A wiper dart was released through a TIW valve and the cement displaced with the cement unit at  $1.4~\text{m}^3/\text{min}$  to leave 5m of cement above the shoe. Final displacement pressure was 10~bar at  $0.2~\text{m}^3/\text{min}$ .

Cement returns were seen at the mudline while observing with the ROV.

Wait on cement time was 5 hrs, after which the landing string weight was slacked off and the forward bullseye observed with the ROV. No movement of the PGB was seen. The running tool was backed out with 5 RH turns and the landing and inner string POOH. At the mud line the wellhead was flushed with seawater at 4900 lpm, 41 bar.

#### **Delays**

None

#### 4.1.3 8.1/2" x 17.1/2" PILOT HOLE SECTION

#### 26" Clean Out Run

The following 26" clean out assy. was made up and run in hole:

26" Hughes GTXCMG1 Rock Bit (c/w 1 x 24/32" & 3 x 20/32" nozzles). Bit Sub (c/w non-ported float)
Anderdrift Tool (0° to 5° inclination)
3 x 9.1/2" Spiral Steel Drill Collars
Cross Over
3 x 8" Spiral Steel Drill Collars
Cross Over
3 x 5" HWDP
6.1/2" Weir-Houston Hydraulic Jars
14 x 5" HWDP

The assy. was washed down and cement tagged, as expected, at 446m. The cement and shoe were drilled out with 4600 lpm, 122 bar, 50 rpm, 7,200 N.m torque and 10 - 11 MT WOB.  $10\text{m}^3$  hi-vis sweeps were pumped as required to clean the hole. The rathole was cleaned out to 456m. The assy. was POOH and racked back.

Prior to drilling ahead with the 8.1/2" pilot hole an additional 47 stands of 5" drill pipe was picked up and racked back. All pipe was drifted to 2.3/4" in the 'V' door.

#### **Drilling 8.1/2" Pilot Hole Section**

With a total of 2760m of pipe in the derrick, work commenced on making up the following 8.1/2" pilot hole assy:

8.1/2" Hughes MXC-1 Rock Bit (c/w 2 x 14/32" & 2 x 16/32" nozzles).

8.1/2" Near Bit Stab (c/w non-ported float)

2.6m x 6.1/2" Pony Drill Collar

8.1/2" String Stab

CDR Tool

8.3/8" In Line Stabiliser

**MWD** 

6.1/2" NMDC

5 x 6.1/2" Steel Drill Collars

3 x 5" HWDP

6.1/2" Weir-Houston Hydraulic Jars

14 x 5" HWDP

The BHA was tripped in hole and washed down to tag the 26" rathole at 456m. The pilot hole was drilled to a section TD of 1382m in 15 hrs.

The Anderdrift had indicated approximately 3.5° inclination at the 30" shoe. When free of casing interference the MWD tool confirmed this. The hole angle varied between 4.34° & 2.89° in a predominantly SSW direction. The final bottom hole location was projected to be:

MD - 1382m, TVD (RT) - 1379.8m, South - 62.52m, West - 7.68m.

Various drilling parameter were used in an attempt to control this angle: 3150 lpm (limited by MWD tool), 176 - 197 bar, 60 - 150 rpm, 2,300 - 6,100 Nm torque, 0 - 7 MT WOB.

5 - 10m³ hi-vis sweeps were pumped as required to clean the hole. At TD a final hi-vis pill was swept from the hole with seawater and the hole displaced to 1.2 s.g. Spud mud (98m³ pumped in total). The pipe was slugged and the assy. tripped to the 30" shoe. No excess drag was noted. At the 30" shoe, 80m³ of seawater was circulated at 4500 lpm, 295 bar to clean out the conductor. The top drive was again made up at the mudline and the PGB flushed of cuttings before finally POOH and racking back the assy. The MWD, ILS & CDR were laid out to be re-programmed for configuration with the ISONIC Tool planned or the 8.1/2" main hole section.

The bit had been heavily eroded and was graded: 8, 5, WT, A, E, 1/8", ER, TD.

#### **Open Hole to 17.1/2"**

The 12.1/4" x 17.1/2" hole opener assy. was made up as follows:

6.1/2" Bullnose

12.1/4" Hole Opener 17.1/2" Hole Opener Bit Sub (c/w non-ported float) Anderdrift Tool (0° to 5° inclination) 3 x 9.1/2" Spiral Steel Drill Collars Cross Over 3 x 8" Spiral Steel Drill Collars Cross Over 3 x 5" HWDP 6.1/2" Weir-Houston Hydraulic Jars 14 x 5" HWDP

This assy was run down into the 30" wellhead where the Anderdrift tool was tested. It was then run in and washed down to tag the top of the 8.1/2" pilot hole at 456m. The pilot hole was then opened up to 17.1/2" with 3200 - 4200 lpm, 66 - 150 bar, 120 - 150 rpm, 5000 -14,300 N.m torque and 1 - 8 MT WOB. 10m<sup>3</sup> hi-vis sweeps were pumped every stand and an Anderdrift survey taken every other stand to confirm that the hole was not side tracked. Drilling at times was ratty with erratic torque and occasional string stalls. The hole was opened to the section TD (1382m) in 16 hrs with a final 17.1/2" cutter depth of 1379m. The overall ROP of 58 m/hr was slower than anticipated.

The hole was displaced to 1.2 s.g. Spud Mud. No hole problems were experienced during the trip out of the hole. Both the 12.1/4" and 17.1/2" hole opener were very heavily worn and graded 8, 8, WT, A7, 4, 3/4", ER, TD.

#### Run & Cement 13.3/8" Casing

Handling gear was rigged up to run the 13.3/8", 72#, L-80, Mod Buttress casing. The single joint shoe track was made up and the casing string run in hole. 11 bowspring centralisers were fitted as per original program. The ROV visually monitored the casing enter the wellhead and then returned to its protective cage approximately 15m from well centre. There it continued to monitor the operation on sonar providing a gas watch. At approximately 727m, the string began to take weight, 9 MT. The Driller informed the Toolpusher but as it was assumed to be normal hole drag the casing running operation continued. approximately 810m the ROV noticed an unusual sonar reflection and was flown over to investigate. On visual inspection it could be seen that the casing had buckled at the wellhead with seven joints laying out on the seabed.

The decision was made to attempt to pull the casing string back to surface. This was successful and the entire string was recovered. On surface a number of joints were rejected due to being either buckled or split. The two bowspring centralizers from the shoe joint were missing.

A wiper trip was performed using the racked back BHA complete with the back up 17.1/2" hole opener and bullnose. When the assy, took weight at 535m it was washed and reamed down to the existing 17.1/2" section TD of 1379m with 3234 lpm, 152 bar, 150 rpm. The hole was swept clean prior to displacement to 1.4 s.g. inhibited KCl mud. During the trip out of hole a few tight spots of 10 - 15 MT drag were noticed. These were worked through without problem. No markings or scratches were seen on the bullnose and hole opener.

The racked back shoetrack was re-run. All damaged centralizers were removed with others being relocated to result in the casing string configuration shown in Fig. 2. This string was run in hole with the ROV providing a continuous visual watch. The casing was filled with 1.4 s.g. inhibited KCl mud while running in hole from 450 to 1374m. It was washed down from 1335 to 1379m with 3000 lpm. A casing swedge was used.

The casing was cemented as per program using a 100% open hole excess. Good returns were seen with ROV throughout the entire cement job. At theoretical strokes the 13.3/8" cement plug had not bumped and the displacement halted. The final circulating pressure was 55 bar (cement was observed at the seabed). When the pressure was bled down, the floats were seen to be holding. The running tool was backed out with 6 RH turns after which the landing string was POOH.

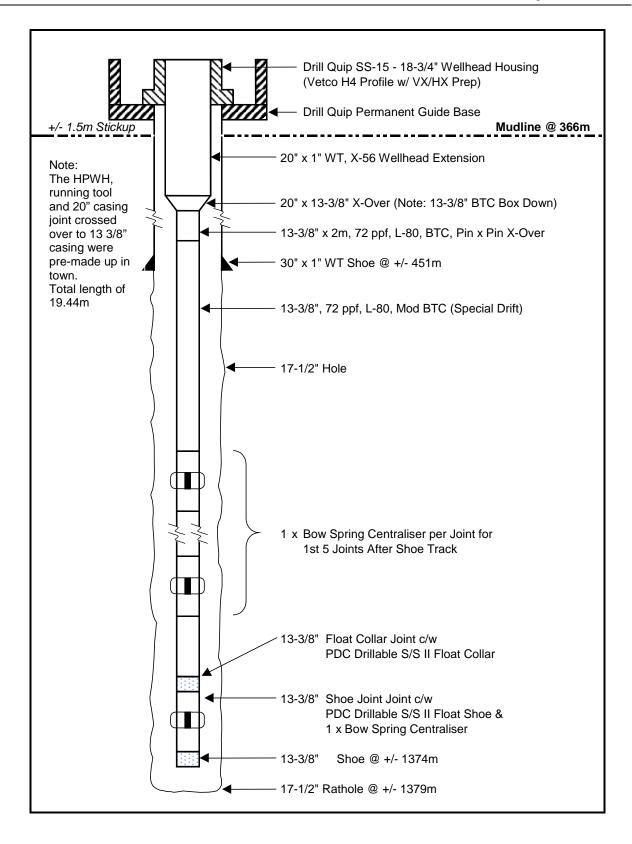


Fig: 2 – 13.3/8" Surface Casing Schematic

#### **Running the Riser and BOP**

The BOPs were inspected by a Moduspec Engineer during the tow to the location. No major work had to be performed on the BOP, except for changing out one cracked 5" ram block. The configuration of the Byford Dolphins stack is as shown in Table 1 below. Each Ram or Annular was stump tested as per the following schedule.

Ram / Annular	Model	Type	Stump pressure
			(bar)
Upper Annular	Hydrill GL –	-	240
(LMRP)	5k		
Lower Annular	Hydrill GL –	-	520
(LMRP)	10k		
Blind Shear Rams	Hydrill – 15k	-	520
<b>Upper Pipe Rams</b>	Hydrill – 15k	3½" – 5" VBR	520
Middle Pipe Rams	Hydrill – 15k	5" fixed	520
Lower Pipe Rams	Hydrill – 15k	5" fixed	520

*Table 1 − BOP Test Schedule* 

The BOP, Riser and Diverter were run in a total of 54 hrs, including 17 hours trouble time. It was noted with the BOP's in the moonpool area, that the choke line was not draining fast enough. Upon inspection, the target sleeve was found to be misaligned. The choke and kill lines were pressure tested to 35 / 414 bar every 5 connections. With the BOPs at well centre, and just prior to latching, the following bullseye readings were taken:

BOP – 
$$0.5^{\circ}$$
, LMRP –  $0.5^{\circ}$ , Flex Jnt –  $0.75^{\circ}$ .

After having latched and taken a 25MT overpull the following readings were taken.

$$BOP - 2^{\circ}$$
 (stb fwd),  $LMRP - 2^{\circ}$  (stb fwd), Flex  $Jnt - 0.5^{\circ}$  (stb),  $PGB - 1.75^{\circ}$  (stb fwd).

With the BOPs latched, the wellhead connector, the LMRP connector and the 13.3/8" casing were all successfully pressure tested to 30/200 bar for 5/10 min respectively.

#### **Delays**

Buckling of 13.3/8" Casing (inc. wiper trip)	43.5 hrs
Replace Broken Snap Rings on Calipers of Drawworks	1.0 hrs
Incorrectly Oriented Target Sleeve on Upper Inner Choke Line	3.5 hrs
Wait On Weather to Pick Up Slip Joint (no over-side work)	13.5 hrs
Section Total	61.5 hrs

#### 4.1.4 8.1/2" MAIN HOLE SECTION

#### Drill Out 13.3/8" Shoe and LOT

The 8.1/2" main hole section BHA consisted of:

8.1/2" Hughes ABD536PH PDC Bit (c/w 4 x 18/32" nozzles).

8.1/2" Near Bit Stab (c/w non-ported float)

2.6m x 6.1/2" Pony Drill Collar

8.1/2" String Stab

CDR Tool

8.3/8" In Line Stabilizer

**ISONIC** 

**MWD** 

6.1/2" NMDC

6 x 6.1/2" Steel Drill Collars

9 x 5" HWDP

6.1/2" Weir-Houston Hydraulic Jars

8 x 5" HWDP

After making up the BHA an additional 21 joints of 5" DP were picked up to allow the assy. to reach the coring point in the Lysing formation. The assy. was tripped into hole and washed down to tag cement at 1341m. Within 30 minutes, the cement was washed / drilled away with 2000 lpm, 70 rpm, 0 - 2MT WOB. The hole was displaced to 1.44 s.g. Versavert (low tox OBM) mud. The shoetrack was drilled, the rathole cleaned out to 1382m and an additional 4m of formation drilled to 1386m with 2100 lpm, 120 rpm, 0 - 1MT WOB.

A LOT was performed using 1.44 s.g. mud. Leak-off occurred at 775 psi (1.84 s.g. EMW) after which the pressure bled off to 745 psi (1.82 s.g. EMW) in 5 mins. and to 700 psi (1.80 s.g. EMW) in 15 mins.

#### **Drill 8.1/2" Main Hole Section**

The mud weight was increased to 1.45 s.g. prior to commencing drilling. To maintain the inclination and get the BHA clear of the 13.3/8" casing, the drilling parameters were initially controlled to 250 lpm, 120 - 180 rpm, 0 - 3 MT WOB, and 5000 - 8000 N.m torque. This resulted in an average ROP of 25 m/hr (including connections). At 1530m the parameters were increased to 2750 lpm, 5 - 7 MT WOB. The desired 3000 lpm could not be achieved due to the mud pump pop-offs releasing at 276 bar (6" liners installed). ROP was controlled to 30m/hr from 1615m down after the top of the Kai and Brygge formations were picked at 1552m and 1604m respectively. Average background gas had been 0.6% until several stringers below 1670m were drilled. A gas peak of approximately 3.2% was noted after bottoms up from the first stringer at 1671m.

With the CDR indicating that the Brygge formation was water wet (with top flooding surface at 1654m) the planned weight up of the mud system began. It had been held at 1.45 s.g for formation evaluation purposes but was then increased to 1.50s.g. and planned to go to 1.55 s.g. by 1900m.

#### Well Control Incident at 1698m

During a connection at 1698m, an increase in pit volume was noted. The well was shut in using the Upper Annular. The SICP was 200 psi and a 4m<sup>3</sup> pit gain was recorded. The float was bumped to obtain the SIDP of 300 psi. An additional 0.5m<sup>3</sup> of mud was bled off through the choke but the casing pressure remained at 200 psi. It was decided at this point to begin circulating out the influx via the Drillers Method of well control.

The maximum gas at bottoms up was 4.6% and no other contaminants could be identified at this time. The final background gas was 2% and with the well shut in the SICP was 150 psi and the SIDP 200 psi. Trapped pressure was bled down and the casing and drill pipe pressure remained at 0 psi over 45 minutes while the riser was displaced to 1.50 SG mud.

To minimize the possibility of stack gas it was decided to close the Lower Annular and attempt to reduce the pressure on the Upper Annular. However, on the Byford Dolphin a single regulator controls both Upper and Lower Annulars and so when attempting to reduce the pressure on the Upper Annular both annulars relaxed resulting in a second influx being taken into the wellbore. An incremental pit gain of 2.7 m<sup>3</sup> was recorded. The well was shut in on the Lower Annular and the SICP built to 150 psi.

An attempt to bump the float in the string failed, with the drill pipe pressure increasing to 420 psi with no resultant change in casing pressure seen. This was repeated several times with no success, indicating that there was an obstruction somewhere between the drill pipe and choke. The well was isolated and the surface choke, kill and choke lines were flushed to clear obstructions, probably caused by cuttings settling out in the choke line.

The well was then shut-in on the Lower Annular and opened back to the choke line and flow checked for 10 minutes with the choke line open to the trip tank. The well was static. The well was then opened up and the pipe moved. No flow was observed. Rotation was established at 120 rpm, 5500 N.m torque. However, when starting to pump slowly with 260 lpm, 500 psi, the flow rate was seen to increase and a further pit gain noted. Rotation was stopped and the Lower Annular closed. SICP was 250 psi and the incremental pit gain 7.4 m<sup>3</sup>.

While the mud in the pits was weighted up to 1.52 SG the casing pressure increased from 250 to 290 psi. The well was displaced to 1.52 SG mud with 485 lpm, 600 psi. The influx was circulated out, recording a maximum gas of 8.9% and a lowest mud weight of 1.32 SG. Salt water contamination was identified in the mud. The mud was circulated and conditioned for a full system volume with a maximum gas peak of 1.7% observed on the last bottoms up.

With 1.52 SG mud in the well and the trapped pressure was bled off, SICP reduced to 0 psi and SIDP to 90 psi. When opening the choke line, slight flow into the trip tank was noted. The decision was made to displace the hole to an increased 1.57 SG mud. Circulation with the existing 1.52 SG mud was maintained while weighting up the mud in the pits due to the problems experienced getting the mud to move each time circulation was started.

The well was displaced to 1.57 SG mud using the Second Circulation of the Drillers Method. Stack gas was checked for by displacing choke and kill lines to Base Fluid and then to 1.57 SG mud. The well was flow checked and was seen to be static. The Lower Annular was opened and circulation established. The pumps were staged up over the first bottoms up to 1620 lpm, 134 bar, with 120 rpm. Max gas at bottoms up was 3.3%.

A conditioning trip was made back into the 13.3/8" casing with some difficulty being noted getting the BHA back into the shoe. At 1420m a 5MT overpull was taken. The interval 1410 to 1439m was worked over three times without problem. At 1395m a second overpull of 10MT was taken. It was necessary to wash and ream through this interval with very erratic torque from 1385 to 1381m. Inside the shoe at ~1326m a bottoms up was circulated and cement pieces were observed in the returns over the shakers. While performing rig maintenance and rig repairs, the well was monitored on the trip tank. The hole took a total of 0.65 m³ mud over this 4 hour period.

#### **Drill to Coring Point @ 3101.5m**

The assy. was tripped back in hole to 1611m and washed down from there to 1698m. Circulation was established and a bottoms up gas peak of 0.5% seen. Drilling re-commenced with 2580 lpm, 180 rpm, 5500 N.m torque and 0-1 MT WOB. Two sacks of Calcium Carbonate were added every hour to minimise seepage losses. ROP's were controlled to 30 m/hr initially while drilling the Brygge Flooding Surface and thereafter to be able to react to possible pore pressure increases. When entering the Springar formation at 1800m (Tare formation having been seen at 1741m) the controlled ROP's were increased to 45 m/hr. Since inclination held/dropped slightly, ROP's were again increased to 60 m/hr or higher using the maximum obtainable flow rate (without the pump pop-offs blowing), 180 rpm, 4000-5000 N.m torque and 0-5 MT WOB. Gas readings remained below 0.4% while drilling the Tare formation.

Drilling continued to 3101m. A clear increase in the LWD resistivity readings showed a Lysing formation consisting mainly of claystone with 30% water wet sand in the cuttings. Top Lysing was picked at 3088m (Note: GR and Resistivity sensors were 11.5m and 8m behind the bit, respectively). While drilling ahead the riser was boosted and SCR's were taken every 200m. Two sack per hour of calcium carbonate continued to be added to the active mud system to counter seepage losses. The hole was circulated clean at 3101m and an increase in sand noted in the samples.

The trip out of hole at core point was problem free with the hole being slick. The bit was graded 3, 5, CT, A, X, IN, BT, CP with several cutters being broken. The bottom string stabiliser was also scarred and a piece was missing from one of the blades.

Using LT-OBM, no cuttings could be discharged to the sea in this hole section. The Swaco cuttings collection system, involving vacuum pumps, drop off tanks and 4 weighting scales were used to collect all the cuttings. No major problems were experienced. Skip usage throughout the section averaged 30m of hole / skip.

#### **Coring Operations**

The 8.1/2" Coring assembly listed below was made up and run in hole:

8.1/2" DBS FC274 Corehead 75.78m of Stabilized Core Barrel 6 x 6.1/2" Steel Drill Collars 9 x 5" HWDP 6.1/2" Weir-Houston Hydraulic Jars 8 x 5" HWDP

Eight outer core barrels, totaling 76m in outer length, complete with inner core barrels that allowed up to 73m recoverable core length were run. During the trip in hole it became necessary to wash and ream from 1405 to 1417m and from 2150 to 2319m. A lot of cuttings / cavings were seen over the shakers. The final section from 3040 to 3101m was also washed down before circulating bottoms up. The maximum gas seen during this circulation was 6.8% and corresponded to ~2450m.

The interval from 3101.5 to 3171.5m was cored with 1050 lpm, 129 bar, 100 rpm, 5000 – 10,000 N.m torque. The additions of 2 sacks per hour of calcium carbonate continued through this cored interval. At 3171.5m the torque dropped back to a steady 6000 Nm and a slight pressure drop was seen, indicating that core had jammed. The assy, was pumped out of the hole from this depth to 3069m. A bottoms up was then circulated. During the trip out of hole it was necessary to work the pipe from 1583 to 1430m with a maximum overpull of 9MT. No further problems were encountered. At surface 67.7m of core was recovered equating to 96.7% recovery. The corehead was graded 7, 3, LT, XN, X, IN, JD, PR with 14 cutters missing from the nose area.

#### Drill to TD

The following BHA was made up and run in hole. It was essentially the main 8.1/2" BHA with a new bit and no ISONIC tool:

8.1/2" Hughes BD445 Bit (c/w 4 x 20/32" nozzles). 8.1/2" Near Bit Stab (c/w non-ported float) 2.6m x 6.1/2" Pony Drill Collar 8.1/2" String Stab
CDR Tool
8.3/8" In Line Stabiliser
MWD
6.1/2" NMDC
6 x 6.1/2" Steel Drill Collars
9 x 5" HWDP
6.1/2" Weir-Houston Hydraulic Jars
8 x 5" HWDP

No problems were encountered running in hole. However, when circulating bottoms up, a maximum gas reading of 3% was recorded and a large amount of cuttings / cavings (non-pressurized) seen at surface. The hole was circulated clean (filling 11 skips while coring/working from 3101 to 3170m). During this period of circulating the mud weight was raised from 1.57 s.g. to 1.60 s.g.

With the hole clean drilling re-commenced with 2425 lpm, 285 bar, 180 rpm, 8000 - 16,000 N.m torque, 1 - 5 MT WOB. The Lange formation was drilled (all claystone with no clear sign of the predicted markers). TD of the well was determined to be 3667m. The final MWD survey was projected TD to be:

MD = 3667m, TVD (RT) = 3662.02m, South = 141.67m, East = 8.56m.

With the shakers clean and the gas level below 0.2%, a flow check was performed. The well was static. The subsequent trip out of hole went without problem with the LWD and MWD tools being laid out at surface. The bit was graded: 1, 1, WT, A, X, IN, BT, TD. However, a large piece of matrix was broken off one of the 6 blades.

#### **Open Hole Logging Operations**

#### Run #1 - AIT-PEX-HNGS (Weak Point – ECRD – 8000 lbs)

With the rig floor cleared Schlumberger wireline was rigged up and the Run #1 Induction, Density, Neutron, Spectral Gamma Ray toolstring (AIT-PEX-HNGS) made up. This was run in hole and a repeat section logged. TD was tagged with a tide corrected depth of 3665.7m. Sections of the main log had to be repeated due to 'high' shallow resistivity readings that did not repeat correctly. Despite this, the log was completed in 9 hrs 15 mins with no excess drag or overpulls being seen. 1 hr 15 mins was recorded as Trouble Time against the tool and 20 mins against the rig for a sheared compensator pin. Logged from 3663 to 1374m. Most of the hole was seen to be in gauge, bar a heavily washed out section of the Springar formation from 2117m to approximately 2400m. ID's of up to 19" were recorded with an average excess of 24.5% over this interval. The average excess for the entire openhole section was 2.8%.

Run #2 - DIS-GR-AMS-OBDT (Weak Point – ECRD – 8000 lbs)

Run #2 was with the Oil Based Diplog, Array Sonic toolstring (DIS-GR-AMS-OBDT). This was also run without problem and completed within 8 hrs 45 mins, logging from 3664 to 1374m.

#### Run #3 - Back-up PEX (Weak Point – ECRD – 8000 lbs)

After analysing the data from Run #1, the density tool was seen to be reading unusually 'low' through the Brygge and Tare formations (between 1828m and 1624m). It was decided to relog this section with the back up Density, Neutron (PEX) toolstring. This Run #3 (2000 to 1590m) was completed in 3 hrs 55 mins and was seen to repeat with the previous PEX run, Run #1.

#### Run #4 - Read 8 Level VSP (Weak Point – Yellow – 4800 to 5400 lbs)

The Read 8 level Delta VSP tool was made up and run in hole on the Schlumberger line. It stood up at 2060m but was freed with a 2000 lbs overpull and worked through to bottom. However, two attempts to correlate the toolstring on depth failed due to sticking, the first requiring a 3000 lbs overpull to free. On the second attempt the tool became stuck at ~3403m (top geophone depth) for 45 mins. The toolstring was eventually freed by working it with up to 7000 lbs line pull (normal logging tension - 3400 lbs & toolstring weight - 900 lbs). While pulling out from this depth, additional overpulls were experienced and the toolstring became stuck again at approximately 3090m (top geophone depth). It was immediately worked to a maximum line pull of 7000 lbs but without success. The air gun array was fired and the signal monitored on the geophones in an attempt to determine where the toolstring was stuck.

After being stuck for 3 hrs 50 mins the string freed itself while holding 7000 lbs line pull. Communications with the toolstring confirmed it was complete and it was pulled out of hole without further incident – there was no damage to the tools.

#### Wiper Trip

With the VSP toolstring on surface, wireline was rigged down and the following 8.1/2" wiper trip assy. made up:

8.1/2" Hughes ABD536PH PDC Bit (c/w 4 x 18/32" nozzles).

8.1/2" Near Bit Stab (c/w non-ported float)

6.1/2" Drill Collar

8.1/2" String Stab

5 x 6.1/2" Steel Drill Collars

12 x 5" HWDP

6.1/2" Weir-Houston Hydraulic Jars

8 x 5" HWDP

This was run in hole to the casing shoe, filling the pipe and breaking circulation every 20 stands. At the shoe the drill line was slipped and cut and the mud circulated for half an hour at 2010 lpm, 151 bar, 112 rpm. The trip to bottom was without incident, with the last 2 stands being washed & reamed to bottom (from 3600 to 3660m) as a precaution with (2100 lpm, 211 bar, 120 rpm, 7000 - 8000 N.m torque). TD was tagged on depth at 3667m (tide corrected) with no fill. A total of 2.5 bottoms up were circulated with 2400 lpm, 280 bar, 120 rpm, 6000 - 7000 Nm torque while working the bottom 2 singles. A first gas peak of 6.4% was seen to have come from ~2100m with a second peak of 5% arriving at bottoms up. Following bottoms up the riser was boosted and the header box jetted. A total of 1.4MT of cuttings was removed from the well, riser and header box during this period of circulating.

Prior to POOH the choke and kill lines were flushed and SCR's taken. Only 2 stands were pulled before a hydraulic hose on the upper racking arm burst. The hole was circulated for one hour with full strokes while the burst hose was replaced. With only 2 stands out of hole it was decided to run back to TD and circulate an additional bottoms up. TD was tagged with no fill recorded and a further bottoms up circulated. An increase in cavings was seen when the header box was jetted, but the hole and riser cleaned up and after a total of 1.5 hrs circulating the hole was again flow checked and the trip out of hole begun.

No hole problems were encountered during the trip out. However, at 2902m an incident occurred when a bolt from the top drive bell guide worked loose and fell. The bolt landed on the upper racking arm but the associated washer fell and landed on the doghouse roof window. The operation was suspended while the origin of the bolt was determined. With it replaced and re-wired the trip out of hole continued without further problem.

#### Run #5 – MDT-GR (Weak Point – ECRD – 8000 lbs)

Rigged up Schlumberger logging equipment. The weather had deteriorated to the point where the sea state would not allow m/v the 'Highland Star' to handle the air gun array required for the VSP walkaway survey. Therefore, the decision was made to run the MDT first. Once correlated on depth (at 1600 m using the AIT-PEX-HNGS run of the 10th August 2001), pretesting began in the Brygge. 10 good tests were taken between 1655m and 1732m (wireline depth) with no lost seals. The maximum formation pressure through this interval was 1.535 SG. A fluid sample was then attempted at various depths between 1673m and 1673.5m MDRKB without success. The formation proved to be too soft and on all occasions the seal was lost or the probe plugged. The attempt was abandoned.

The MDT tool was run down to ~3100m MDRKB and re-correlated over the Lysing. Five pre-test were taken between 3091.2m and 3107.2m (wireline depth) with a maximum formation pressure of 1.423 SG. A fluid sample was required in the Lysing. Two attempts were aborted due to poor permeability and tool telemetry problems. One water sample was obtained from 3091.2m MDRKB. Three 450cc sample bottles were filled with what appeared to be water over a period of 5.5 hrs. The tool was then closed. No problems were encountered pulling free of the formation and during the subsequent trip out of hole. The

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fluid sample bottles were extracted at surface and attempts to compress them suggested that no gas was present in the samples.

#### Run #6 – Re-run Read 8 Level VSP (Weak Point – Pink – 5400 to 6000 lbs)

On surface the Schlumberger cable head was swapped out and the Read 8 Level VSP tool rigged up. It was run in hole without difficulties with check shots being taken at 1280m, 2400m & 3200m (wireline depth). The tool string was correlated over the Lysing to the AIT-PEX-HNGS run of the 10th August 2001 and run down to tag TD. The VSP survey was recorded at 10m intervals from 3523m to 2898m (wireline top geophone depth). At 2898m, the walkaway survey was conducted. With the walkaway completed, the survey continued, again at 10m intervals from 2898m to the final station at 790m. No hole problems or overpulls were encountered throughout the survey. The tool-string was pulled and laid out.

#### Run #7 – Sidewall Cores (Weak Point Green – 5450 to 6900 lbs)

On surface, poor insulation on line 7 of the Schlumberger cable-head required that it be rebuilt. This resulted in 0.5 hrs Trouble Time. Radio silence was established and the two tandem coreguns, loaded with a total of 60 bullets, were armed. The toolstring was run in hole and correlated at ~3450m. A total of 53 shots were taken between 3659m and 1447m. Significant overpulls were taken following the shots made in the Lysing formation and it was feared that some of the barrels had been lost. A number of misfires were also experienced, something confirmed when the guns were back on surface. No problems or overpulls were attributed to hole conditions. The final shot summary on surface was:

Shots Attempted	53
Cores Recovered	29
Empty Barrels	2
Misfires	8
Lost Barrels	14

Overall Recovery 55%

#### **Delays**

Well Control Incident	50.0 hrs
Repair to Drawworks Caliper	2.5 hrs
Repair to Faulty Weight Indicator on Rig	2.0 hrs
Wiper Trip to Repeat LWD log due to Questionable Data	1.5 hrs
Noticed 5 bbl Gain in Active; Flowcheck and Circulate Bottoms Up	1.5 hrs
Repair to Leaking Rig Pump	0.5 hrs
Trouble Shoot Comms Problem with MWD	1.5 hrs
Trouble Shoot Problem with Trip Tank	0.5 hrs
Broken Compensator Pin during Logging	0.5 hrs

Re-log AIT-PEX-HNGS due to bad Shallow Resistivity	1.5 hrs
Re-log PEX due to Anomalous Density Data	3.5 hrs
Stuck VSP Tool (not inc. wiper trip)	13.0 hrs
Repair Burst Hydrualic Hose on Upper Racking Arm	1.0 hrs
Investigate Dropped Object Incident	0.5 hrs
Re-build Schlumberger Cablehead due to Poor Insulation	0.5 hrs
Section Total	80.5 hrs

#### 4.1.5 ABANDONMENT

#### **Abandonment Cement Plugs**

A 3.1/2" cement stinger with PH-6 connections was used to set the abandonment plugs and a total of 47 joint (444m) were picked up from the deck. The rig equipment was not capable of handling the make up of this tool joint and it was therefore necessary to mobilize a tubing power tong. An open ended mule shoe was installed on the bottom of the cement stinger. Circulation was established at the shoe and at 3200m, where a full bottoms up produced a max gas peak of 1.53%. The first of the four cement plugs was set from 3190m to 3025m as per program. It was mixed and pumped with out problems and both it, and the 5 m<sup>3</sup> tuned spacer pumped ahead of it, were displaced with the rig pumps leaving it under-displaced by 0.75 m<sup>3</sup>. No circulation was done at the top of the first plug, instead the string was tripped back to 1791m (the setting depth of the second), a drill pipe wiper dart pumped and a full bottoms up circulated.

The second cement plug was spotted from 1791m to 1491m as per program and this time without a spacer being pumped ahead of it. It too was under-displaced by 0.75 m<sup>3</sup> using the rig pumps before the string was pulled back to the Theoretical Top of Cement (1491m) and the excess circulated out of the hole. Again a drill pipe wiper dart was pumped.

The third plug was spotted (with a 5 m<sup>3</sup> spacer pumped ahead) right on top of the second from 1491m to 1274m. It too was under-displaced by 0.75 m<sup>3</sup> using the rig pumps. The string was pulled back to 1095m a wiper dart pump and a bottoms up circulated. A slug was pumped and the string pulled to surface laying out all the drill pipe and the 3.1/2" cement stinger. This was the best utilization of the Waiting On Cement time prior to a combined weight and pressure test of the plug.

A mule shoe was picked up and run in hole on 5" drill pipe. It was washed down to tag the top of plug three at 1281m (7m deep on theoretical) with 5 MT. The string was then pulled back to 661m (or the setting depth of plug four) and the upper annular closed in preparation for the planned pressure test with mud, using the rig pumps. However, the upper annular was seen to be leaking and it was decided to space out to close in on the Middle Pipe Rams. The pressure test to 110 bar / 5 mins was successfully concluded, this time using seawater from the cement unit. 0.6 m<sup>3</sup> was pumped and returned.

Cement plug four was set inside the 13.3/8" casing from 661m to 411m as per program. No spacer was pumped ahead of the slurry. It too was underdisplaced by 0.75 m<sup>3</sup> using the rig

pumps. The string was pulled to Theoretical Top of Cement and the hole circulated clean. After the displacement of the riser to seawater, the cement plug was pressure tested to 125 bar / 5 min.

Note: All plugs were pumped and displaced without pipe rotation.

#### Wellbore Clean Up

Prior to the wellbore / riser clean up, the choke, kill and riser booster line were displaced to seawater using the cement unit. This was due to pit space limitations. Next the following spacer train was pumped and displaced with seawater at a controlled 2265 lpm, 170 rpm:

Base Oil	$8 \text{ m}^3$
Weighted Hi-Vis Pill	$30 \text{ m}^3$
Hi-Vis Wash Pill	$30 \text{ m}^3$
Solvent Pill	$30 \text{ m}^3$
Hi-Vis Clean Up Pill	$10 \text{ m}^3$

All returns were captured as slops ( $142 \text{ m}^3$  in total) with no discharges to sea. The remaining drill pipe in the hole was pulled and laid out.

A trip in hole was made with the universal tool and adapter to latch and pull the wearbushing (13.6 MT overpull required to shear the retaining pins). While POOH with the wearbushing the Blind Shear Rams were closed and plug four successfully pressure tested with seawater to 125 bar / 5 mins. 0.3 m<sup>3</sup> was pumped and returned.

#### **Pulling BOP & Riser**

February, 2002

Rev.: 1-TAGD

The rig floor was cleared and the riser handling equipment rigged up. The diverter, slip joint, 23 joints of riser and the BOPs were pulled in 17 hrs. 3 hrs was required to split and secure the BOPs and LMRP in the Cellar Deck. On inspecting the BOPs it was found that a keyseat had developed in the flex joint housing that would require attention prior to being re run. Beyond this no other damage or excessive wear was noted.

#### **Cut and Retrieve the Wellhead**

The Weatherford MOST tool was made up and spaced out to cut 5m below the mudline. It was run in hole and the wellhead engaged. The cut was initiated with a set down weight of 6MT and a pump rate of 3240 lpm. After 1.5 hrs cutting an unsuccessful attempt was made to free the wellhead and PGB with a 140MT overpull. The wellhead was engaged a second time and the cut was re-initiated at the same depth. After a further 30 mins cutting the motor began to stall out giving indications that the cut was complete. However, a second attempt to pull the wellhead free with 140MT overpull also proved unsuccessful. The tool was pulled above the wellhead to expose the knife blades and a visual inspection with the ROV showed a wear

pattern that indicated full travel and suggested that the cut was complete. An attempt to reinitiate the cut a second time was unsuccessful with the motor stalling out and on this occasion the tool became stuck while attempting to pick up. It was freed with a 45MT overpull but inspection of the knife blades with the ROV showed then to be distorted in the open position and the tool was pulled. On surface the blades were swapped out and the space out altered to make a fresh cut 0.5m higher than the first.

With the tool back at the mudline and the wellhead engaged a second successful cut was made in 1.5 hrs with good indications of returns below the PGB seen on the ROV. An overpull of 158MT was still required to free the wellhead. The tool, wellhead and PGB were POOH with the running string of Drill Collars, HWDP and Drill Pipe all being laid out sideways.

In the moonpool, with the PGB on the spider beams, the MOST tool was released without problem. However, attempts to disengaged the 30" LP Housing from the PGB as per Dril-Quip procedures were unsuccessful. Eventually the lock ring had to be cut with a welding torch to allow the LP & HP Housings, complete with 30" conductor stump, to be pulled with the 18.3/4" running tool. The rig next commenced to lay out the remaining drill pipe from the derrick.

#### **Anchor Handling**

Anchor handling had started while running in hole with the MOST tool. The "Havila Crown", "Northern Corona" and the "Normand Borg" were on location and had begun to remove excess chain from the four anchors (#1, #5, #6, #12) that required this due to chain locker capacity. Once complete these anchors were re-deployed on the seabed.

With the wellhead cut and pulled, de-ballasting commenced and the anchor handling started in earnest. Handling continued concurrently with the laying out of remaining drillpipe from the derrick and was complete with the last anchor being bolstered at 01:12 hrs on 19th August 2001. At this point the rig was off contract and handed over to Statoil. 22 stand of drill pipe remained in the derrick and were planned to be left there for the duration of the tow.

#### **Delays**

Trouble Shoot and Repair Drawworks Parking Brake	1.5 hrs
Leaking Annular During Cement Plug Pressure Test	0.5 hrs
Difficulties Cutting and Pulling Wellhead	6.5 hrs
Cut Wellhead Housing 'Lock Ring' with Welding Torch	2.0 hrs
Section Total	10.5 hrs

#### 4.2 SUMMARIES

# **4.2.1 Mooring Summary**

See attached Initial Floater Report.

## 4.2.2 Drilling Fluid Summary

See attached Drilling Fluid Properties for Oil based Mud. See Enclosure, Drilling Fluids Summary report from Anchor MI.

# 4.2.3 BHA Summary

See attached Bottom Hole Assembly Details reports.

## 4.2.4 Bit Summary

See attached Bit Record.

# 4.2.5 Survey Summary

Table 4.1.10 Survey Listing

Seq	Measured	TVD	Incl.	Azimuth	Course	Vertical	Displ.	Displ.	Total	At	DLS	Survey
#	depth	depth	angle	angle	length	section	+N/S-	+E/W-	displ	Azim	(deg/	tool
-	(m)	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(deg)	10m)	type
1	366.0	366.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00	TIP
2	453.2	453.1	4.51	205.57	87.2	-3.1	-3.1	-1.5	3.4	205.6	0.52	MWD
3	485.0	484.9	3.76	203.81	31.8	-5.2	-5.2	-2.4	5.7	205.3	0.24	MWD
4	513.6	513.4	3.28	202.93	28.6	-6.8	-6.8	-3.1	7.5	204.8	0.17	MWD
5	542.5	542.2	3.07	203.87	28.9	-8.3	-8.3	-3.8	9.1	204.6	0.07	MWD
6	567.4	567.1	3.51	208.93	24.9	-9.5	-9.5	-4.4	10.5	204.8	0.21	MWD
7	599.6	599.2	3.41	209.84	32.2	-11.2	-11.2	-5.4	12.4	205.5	0.04	MWD
8	630.3	629.9	3.05	212.48	30.7	-12.7	-12.7	-6.3	14.2	206.2	0.13	MWD
9	657.7	657.2	2.89	212.95	27.4	-13.9	-13.9	-7.0	15.6	206.8	0.06	MWD
10	686.4	685.9	2.89	206.48	28.8	-15.2	-15.2	-7.7	17.0	207.1	0.11	MWD
11	715.3	714.7	3.51	190.67	28.8	-16.7	-16.7	-8.2	18.6	206.3	0.37	MWD
12	743.8	743.2	3.05	188.14	28.5	-18.3	-18.3	-8.5	20.2	204.9	0.17	MWD
13	772.5	771.9	3.12	188.66	28.8	-19.8	-19.8	-8.7	21.7	203.8	0.03	MWD
14	801.1	800.4	4.27	183.13	28.6	-21.7	-21.7	-8.9	23.4	202.4	0.42	MWD

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	Measured			Azimuth				Displ.	Total	At	DLS	Survey
#	depth	depth	angle	angle	length	section	+N/S-	+E/W-	displ	Azim	(deg/	tool
-	(m)	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(deg)	10m)	type
15	829.8	829.0	4.32	182.28	28.7	-23.8	-23.8	-9.0	25.4	200.7	0.03	MWD
16	858.6	857.8	4.34	182.48	28.8	-26.0	-26.0	-9.1	27.5	199.3	0.01	MWD
17	885.7	884.8	4.24	189.42	27.1	-28.0	-28.0	-9.3	29.5	198.4	0.19	MWD
18	915.1	914.1	4.27	192.66	29.4	-30.1	-30.1	-9.7	31.7	197.9	0.08	MWD
19	943.8	942.8	4.15	189.73	28.8	-32.2	-32.2	-10.1	33.7	197.5	0.09	MWD
20	972.4	971.3	3.99	186.97	28.6	-34.2	-34.2	-10.4	35.8	197.0	0.09	MWD
21	1001.1	999.8	4.04	189.15	28.6	-36.2	-36.2	-10.7	37.7	196.5	0.06	MWD
22	1029.3	1028.0	3.92	187.00	28.2	-38.1	-38.1	-11.0	39.7	196.1	0.07	MWD
23	1058.1	1056.7	3.79	187.45	28.8	-40.0	-40.0	-11.2	41.6	195.7	0.05	MWD
24	1086.6	1085.2	4.01	180.33	28.5	-42.0	-42.0	-11.4	43.5	195.1	0.19	MWD
25	1114.6	1113.1	4.02	178.74	28.0	-43.9	-43.9	-11.3	45.4	194.5	0.04	MWD
26	1144.1	1142.6	3.98	173.70	29.6	-46.0	-46.0	-11.2	47.3	193.7	0.12	MWD
27	1173.4	1171.7	4.09	172.81	29.2	-48.0	-48.0	-11.0	49.3	192.9	0.04	MWD
28	1202.5	1200.8	4.03	171.56	29.1	-50.1	-50.1	-10.7	51.2	192.0	0.04	MWD
29	1231.1	1229.4	3.95	171.73	28.7	-52.0	-52.0	-10.4	53.1	191.3	0.03	MWD
30	1259.9	1258.1	4.14	166.43	28.8	-54.0	-54.0	-10.0	55.0	190.5	0.15	MWD
31	1289.0	1287.1	4.16	168.61	29.1	-56.1	-56.1	-9.6	56.9	189.7	0.05	MWD
32	1317.3	1315.3	4.15	167.23	28.3	-58.1	-58.1	-9.1	58.8	188.9	0.04	MWD
33	1346.1	1344.1	4.19	163.74	28.9	-60.1	-60.1	-8.6	60.7	188.1	0.09	MWD
34	1362.4	1360.3	4.11	157.77	16.3	-61.2	-61.2	-8.2	61.8	187.6	0.27	MWD
35	1383.1	1380.9	3.95	146.90	20.7	-62.5	-62.5	-7.5	63.0	186.9	0.38	MWD
36	1411.4	1409.1	4.29	149.02	28.3	-64.2	-64.2	-6.5	64.6	185.7	0.13	MWD
37	1441.8	1439.5	4.41	149.01	30.5	-66.2	-66.2	-5.3	66.4	184.6	0.04	MWD
38	1469.7	1467.2	4.46	150.46	27.8	-68.1	-68.1	-4.2	68.2	183.5	0.04	MWD
39	1498.2	1495.7	4.52	151.26	28.6	-70.0	-70.0	-3.1	70.1	182.5	0.03	MWD
40	1527.1	1524.5	4.48	148.81	28.9	-72.0	-72.0	-2.0	72.0	181.6	0.07	MWD
41	1555.6	1553.0	4.58	147.89	28.5	-73.9	-73.9	-0.8	73.9	180.6	0.04	MWD
42	1584.6	1581.8	4.57	146.38	29.0	-75.9	-75.9	0.5	75.9	179.7	0.04	MWD
43	1613.1	1610.3	4.54	147.28	28.5	-77.8	-77.8	1.7	77.8	178.7	0.03	MWD
44	1641.8	1638.9	4.55	147.28	28.7	-79.7	-79.7	2.9	79.7	177.9	0.00	MWD
45	1670.7	1667.6	4.52	144.86	28.8	-81.6	-81.6	4.2	81.7	177.1	0.07	MWD
46	1699.3	1696.2	4.46	140.09	28.6	-83.3	-83.3	5.6	83.5	176.2	0.13	MWD
47	1728.4	1725.2	4.38	140.28	29.2	-85.1	-85.1	7.0	85.3	175.3	0.03	MWD
48	1757.7	1754.4	4.22	142.59	29.2	-86.8	-86.8	8.4	87.2	174.5	0.08	MWD
49	1786.9	1783.5	4.25	142.20	29.2	-88.5	-88.5	9.7	89.0	173.8	0.01	MWD
50	1815.4	1811.9	4.13	142.39	28.5	-90.1	-90.1	11.0	90.8	173.1	0.04	MWD
51	1843.9	1840.3	4.03	142.59	28.5	-91.7	-91.7	12.2	92.5	172.4	0.04	MWD
52	1872.5	1868.9	4.07	143.02	28.7	-93.3	-93.3	13.4	94.3	171.8	0.02	MWD
53	1901.1	1897.4	4.13	142.82	28.6	-95.0	-95.0	14.7	96.1	171.2	0.02	MWD
54	1930.1	1926.3	4.13	142.19	29.0	-96.6	-96.6	15.9	97.9	170.6	0.02	MWD
55	1958.2	1954.4	4.07	141.73	28.2	-98.2	-98.2	17.2	99.7	170.1	0.02	MWD
56	1986.7	1982.8	4.01	142.48	28.5	-99.8	-99.8	18.4	101.5	169.6	0.03	MWD
57	2015.4	2011.4	3.94	141.54	28.7	-101.4	-101.4	19.6	103.3	169.0	0.03	MWD
58	2043.8	2039.8	3.38	145.43	28.4	-102.8	-102.8	20.7	104.9	168.6	0.22	MWD
59	2072.5	2068.5	3.43	149.15	28.8	-104.3	-104.3	21.6	106.5	168.3	0.08	MWD
60	2100.8	2096.7	3.35	150.09	28.3	-105.7	-105.7	22.5	108.1	168.0	0.03	MWD
61	2129.8	2125.6	3.50	155.92	29.0	-107.2	-107.2	23.3	109.7	167.8	0.13	MWD
62	2158.9	2154.6	3.27	155.29	29.1	-108.8	-108.8	24.0	111.4	167.6	0.08	MWD
63	2188.0	2183.7	3.28	151.32	29.2	-110.3	-110.3	24.7	113.0	167.4	0.08	MWD

Seq	Measured	TVD	Incl.	Azimuth	Course	Vertical	Displ.	Displ.	Total	At	DLS	Survey
#	depth	depth	angle	angle	length	section	+N/S-	+E/W-	displ	Azim	(deg/	tool
-	(m)	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(deg)	10m)	type
64	2216.7	2212.4	2.96	150.43	28.7	-111.7	-111.7	25.5	114.5	167.2	0.11	MWD
65	2246.4	2242.0	2.60	151.00	29.7	-112.9	-112.9	26.2	115.9	167.0	0.12	MWD
66	2275.3	2270.9	2.22	147.44	28.9	-114.0	-114.0	26.8	117.1	166.8	0.14	MWD
67	2303.8	2299.4	2.21	154.14	28.5	-114.9	-114.9	27.3	118.1	166.6	0.09	MWD
68	2390.4	2385.9	2.08	152.82	86.6	-117.8	-117.8	28.8	121.3	166.3	0.02	MWD
69	2419.2	2414.8	1.92	146.45	28.9	-118.7	-118.7	29.3	122.2	166.1	0.09	MWD
70	2447.9	2443.4	1.98	149.21	28.7	-119.5	-119.5	29.8	123.2	166.0	0.04	MWD
71	2533.5	2529.0	1.60	161.93	85.6	-121.9	-121.9	30.9	125.8	165.8	0.06	MWD
72	2620.7	2616.1	1.26	178.57	87.2	-124.0	-124.0	31.3	127.9	165.8	0.06	MWD
73	2649.5	2644.9	1.22	185.29	28.8	-124.7	-124.7	31.3	128.5	165.9	0.05	MWD
74	2708.0	2703.4	1.07	190.81	58.5	-125.8	-125.8	31.2	129.6	166.1	0.03	MWD
75	2737.0	2732.4	0.94	206.76	29.0	-126.3	-126.3	31.0	130.0	166.2	0.11	MWD
76	2766.0	2761.4	0.99	218.17	29.0	-126.7	-126.7	30.7	130.4	166.4	0.07	MWD
77	2794.0	2789.4	1.06	225.85	28.0	-127.1	-127.1	30.4	130.7	166.6	0.06	MWD
78	2823.0	2818.4	1.06	219.22	29.0	-127.5	-127.5	30.0	131.0	166.7	0.04	MWD
79	2851.0	2846.4	1.06	217.50	28.1	-127.9	-127.9	29.7	131.3	166.9	0.01	MWD
80	2879.0	2874.4	1.23	227.59	28.0	-128.3	-128.3	29.3	131.6	167.1	0.09	MWD
81	2907.2	2902.6	1.44	228.04	28.2	-128.7	-128.7	28.9	131.9	167.4	0.07	MWD
82	2963.3	2958.6	1.46	230.04	56.1	-129.7	-129.7	27.8	132.6	167.9	0.01	MWD
83	2993.1	2988.4	1.66	227.26	29.8	-130.2	-130.2	27.2	133.0	168.2	0.07	MWD
84	3049.8	3045.2	1.75	232.80	56.8	-131.3	-131.3	25.9	133.8	168.9	0.03	MWD
85	3109.1	3104.4	1.78	237.55	59.2	-132.3	-132.3	24.4	134.5	169.6	0.03	MWD
86	3137.7	3133.0	1.80	238.89	28.7	-132.8	-132.8	23.6	134.9	169.9	0.02	MWD
87	3167.1	3162.4	1.83	240.49	29.4	-133.3	-133.3	22.8	135.2	170.3	0.02	MWD
88	3195.7	3191.0	1.76	241.98	28.6	-133.7	-133.7	22.0	135.5	170.6	0.03	MWD
89	3224.4	3219.7	1.73	239.58	28.7	-134.1	-134.1	21.3	135.8	171.0	0.03	MWD
90	3281.1	3276.3	2.04	238.38	56.7	-135.1	-135.1	19.7	136.5	171.7	0.06	MWD
91	3337.4	3332.6	2.12	243.07	56.3	-136.1	-136.1	17.9	137.2	172.5	0.03	MWD
92	3394.8	3390.0	1.82	240.73	57.4	-137.0	-137.0	16.1	137.9	173.3	0.05	MWD
93	3451.1	3446.2	1.76	239.93	56.2	-137.9	-137.9	14.6	138.6	174.0	0.01	MWD
94	3537.2	3532.3	1.83	235.40	86.1	-139.3	-139.3	12.3	139.9	174.9	0.02	MWD
95	3566.4	3561.5	1.77	238.98	29.3	-139.8	-139.8	11.6	140.3	175.3	0.04	MWD
96	3596.1	3591.2	1.81	239.38	29.7	-140.3	-140.3	10.8	140.7	175.6	0.01	MWD
97	3625.4	3620.4	1.82	236.08	29.3	-140.8	-140.8	10.0	141.1	175.9	0.04	MWD
98	3641.9	3636.9	1.90	232.64	16.5	-141.1	-141.1	9.6	141.4	176.1	0.08	MWD
TD	3667.0	3662.4	1.90	233.00	25.1	-141.7	-141.7	8.6	141.7	176.4	0.00	Proj.

Figure 4.1.10 A, Horizontal Projection

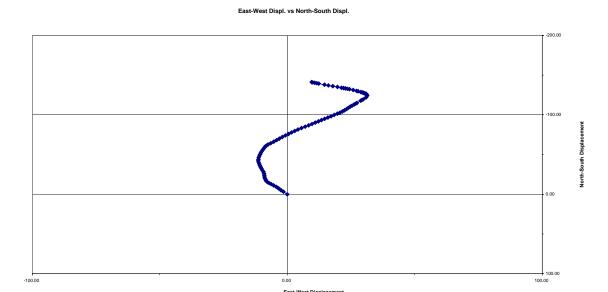
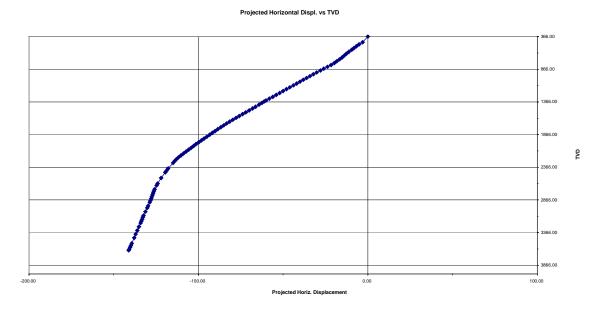


Figure 4.1.10 B, Vertical Profile



# 4.2.6 Casing Summary

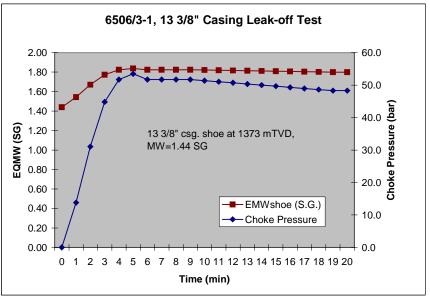
See attached Casing Details records

# 4.2.7 Cementing Summary

See attached Casing Details records and Enclosure 1, End of Well Report from Halliburton

## 4.2.8 Casing Leak-off Test

Time	Volume	Rig floor choke	EMW shoe
	pumped	line pressure	
min.	ltr	Bar	SG
0	0	0.0	1.44
1	80	13.8	1.54
2	160	31.0	1.67
3	240	44.8	1.77
4	320	51.7	1.82
5	360	53.4	1.84
6		51.7	1.82
7		51.7	1.82
8		51.7	1.82
9		51.7	1.82
10		51.4	1.82
11		51.0	1.82
12		50.7	1.82
13		50.3	1.81
14		50.0	1.81
15		49.7	1.81
16		49.3	1.81
17		49.0	1.80
18		48.6	1.80
19		48.3	1.80
20		48.3	1.80



# **4.3 ATTACHMENTS**

- 4.3.6 Initial Floater Report
- 4.3.7 Daily Mud Properties for the 8 ½" Section
- 4.3.8 BHA Summary Records
- 4.3.9 Bit Record
- 4.3.11 Casing Details

# Attachment 4.3.6 Initial Floater Report

Second   S									•	e, <b>1111014</b>		_
Sept   131-3		******* Mooring Configuration *******										
Mail   Trickinens   Trickinen	HUGHES - IIPE HMF 21" OD X 5/8" WALL X 50"	Vessel Heading:	315.0 DE	G		1	1					_
Cold Grade	e O.D.: 533.0	Line Number	1	2	3	4	5	6	7	8	9	10
Standard   Standard	1 Thickness: 50.8	Size (Chain)	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
R. Alt W@supenary:	el Grade:	Length Deployed	1019.0	1135.0	1126.0	1106.0	1024.0	1066.0	1054.0	1102.0	1083.0	1083.0
Marker: Special Section of Special Section   Marker: Special Section	/M. In Air:	Size (Wire)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
## 75 FROME Size FACTOR   Pender   Size Type	/M. In Air W/Buoyancy:	Length Deployed		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Mac. Mr. 1. Nation Wilstynney:	/M. In Water:	Anchor, Type, Wt.	VRIJHOF 15M7	r VRIJHOF 15MT	VRIJHOF 15MT	VRIJHOF 15MT	VRIJHOF 15MT	VRIJHOF 15M7	VRIJHOF 15MT	VRIJHOF 15MI	VRIJHOF 15MT	VRIJHOF 15M
Length Each Joint:	/M. In Water W/Buoyancy:	Pendent Size, Type										
Test Tension	. W/Buoyancy:	Pendent Length		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
### Fill Up Valve In System?*    Marking Tansien	gth Each Joint:	Piggy Back, Type-W	īt.									
Marking Tension   Marking Te	gth Of Pups:	Test Tension		0	0	0	0	0	0	0	0	0
RED To Valve:  Rechor Az 329.4 5.2 20.7 60.7 89.4 120.1 149.2 179.9 214.8 7  Dynamic Positioning System Description:  Note:  Note:  Make: SHAPFER - AIR/HDD NI, 69-00291 Number: 8 Capacity, Each: 80000  Make: HUGHES - DOUBLE PACKER  length:  Stroke: 55 FEET  Weight: Coverall Stack Reight:  Overall Stack Reight: 342.00  Nate: Tespich: 342.00  REG: WARDON DOUBLE AND	er Fill-Up Valve In System?:	Working Tension		0	0	0	0	0	0	0	0	0
Dynamic Positioning System Description:   Make:	To Valve:	Anchor Az	329.4	5.2	20.7	60.7	89.4	120.1	149.2	179.9	214.8	240.4
SEPRET   Separate	******* Slip Joint ****** e:  HUGHES - DOUBLE PACKER											
Weight: Overall Stack Height:  *******Measurements ******  RKB To Sea level:  25.00  Water Depth:  342.00  RKB To Wellhead:  367.00  Rig: BYFORD DOLPH  AFE No: KWENO-650631-001  Well ID: UB5908  Project No: 0 Page: 1 Of	oke: 55 ppr											
*******Measurements ******  RKB To Sea level: 25.00  Water Depth: 342.00  RKB To Wellhead: 367.00  Rig: BYFORD DOLPH  Rig: BYFORD DOLPH  AFE No: KWENO-650631-001  Well ID: UB5908  Project No: 0 Page: 1 Of												
RKB To Sea level: 25.00  Water Depth: 342.00  RKB To Wellhead: 367.00  Rig: BYFORD DOLPH  Rig: BYFORD DOLPH  AFE No: KWENO-650631-001  Well ID: UB5908  Project No: 0 Page: 1 Of	rall Stack Height:											
Rig: BYFORD DOLPH Well ID: UB5908 Project No: 0 Page: 1 Of	25.00 ter Depth: 342.00											
S BYFORD DOLPH (B5908 TESTED ) PAGE: I OT	367.00	+	, n	FF No: KWENO-6	550631-001	Well II	D:		Project No:	2	Degra: 1	o€ 0
Drilling Rep:       Field:	P BYFORD DOLPH  lling Rep: ELKINS/HOLLINSHEAD Field: PL259		Lease: PL259				Well Number: 6506/3-1			_	Page: 1 Of  Date: 17-JUL-2001	

****** Riser ******				***	**** Mooring Conf	iguration *****	*					
Make: HUGHES - TYPE HMF 21" OD X 5/8" WALL X 50"	Vessel Heading: 315.0 DEG											
Size O.D.: 533.0	Line Number	11	12									
Wall Thickness: 50.8	Size (Chain)	76.2	76.2									
Steel Grade:	Length Deployed	1076.0	1011.0									
Wt./M. In Air:	Size (Wire)	0.0	0.0									
Wt./M. In Air W/Buoyancy:	Length Deployed	0.0	0.0									
Wt./M. In Water:	Anchor, Type, Wt.		VRIJHOF 15MT									
Wt./M. In Water W/Buoyancy:	Pendent Size, Type											
O.D. W/Buoyancy:	Pendent Length	0.0	0.0									
Length Each Joint:	Piggy Back, Type-Wt											
Length Of Pups:	Test Tension	0	0									
Riser Fill-Up Valve In System?:	Working Tension	0	0									
RKB To Valve:	Anchor Az	270.0	300.8									
Number: 8 Capacity, Each: 80000  ******* Slip Joint ******  Make: HUGHES - DOUBLE PACKER  Length:	Mooring Schematic											
Stroke: 55 FEET												
Weight:												
Overall Stack Height:												
*******Measurements ******  RKB To Sea level: 25.00  Water Depth: 342.00  RKB To Wellhead: 267.00												
307.00		1	DE NE LEURING CEGG	1 001	Well ID:		Project No: 0					
Rig: BYFORD DOLPH		1 _	FE No: KWENO-65063	2T-00T	UDS	908	troject wo. 0	Page: 2 Of 2				
rilling Rep: ELKINS/HOLLINSHEAD Field: PL259		Lease: PL25	9		Well Number: 65	506/3-1		Date: 17-JUL-2001				

# Attachment 4.3.7 Daily Mud Properties 8-1/2" Section

Operator: CHEVRON Well: 6506/3-1 Rig: Byford Dolphin pH Pf Mf CI- TH Ca++ KCI Solids MBT HGS LGS Sand Glycol K+ FSR Date Depth MW T FV VG-meter readings @ 50C AV PV YP Gel Gel HTHP 600 300 200 100 60 30 6 3 10 sec10 min x 1000 m sg °C s/qt. rpm rpm rpm rpm rpm rpm rpm rpm rpm cP cP Pa Pa Pa ml

 36" Socion Security (Parts 1)

 37" Socion Security (Parts 1)

 38" Soci • ml ml kg/m3 mg/l mg/l kg/m3 % kg/m3 kg/m3 kg/m3 % % kg/m3 36" Section: Seawater / Bentonite 1 21-07 367 1.03 **2 22-07** 456 1.03 100+ 17 1/2" Section: Seawater / Bentonite **3 23-07** 459 1.03 100+ 4 24-07 1382 1.05 100+ **5 25-07** 1382 1.05 100+ 6 26-07 1382 1.05 100+ 7 27-07 1382 1.40 100+ **8 28-07 1382 1.40** 100+ 9 29-07 1382 1.44 100+ Minimun 1.03 0.00 0.00 Maximur 1.44 0.00 0.00 Average 1.20 #DIV/0! #DIV/0! Daily drilling properties FSR 1-9

# Mud Properties, daily record

Operator: Chevron Well: 6506/3-1 Rig: Byford Dolphin

FSR	Date	Depth	MW	т	F.Vis			VG-r	neter	readings @	50 C			ΑV	PV	ΥP	Gel	Gel	ES	Мр	Excess	НТНР	CaCl2	WPS	Solids	Oil	Water	O/W	Sand	HGS	LGS
no.	2001			Temp		600	300	200	100	60	30	6	3			10 sec10 min				Lime	250°F	50°F Chlorides					RATIO				
		m	sg	οС	s/qt.	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	cР	cР	Pa	Pa	Pa	volts	ml	kg/m3	ml	kg/m3	k Cl	vol %	vol %	vol %	vol %	vol %	kg/m3	kg/m3
	8 1/2"	Section	: Ve	rsav	ert - (	Oil b	ased	d sy	stem	1																					
13	29-07	1382	1.44	n/a	100+	119	71	55	37	n/a	n/a	14	12	60	48	11.5	7	9	531	2.1	7.6	2.6	129	83	20	56	24.0	70/30	Trace	609	125
14	30-07	1382	1.44	n/a	100+	119	71	55	37	n/a	n/a	14	12	60	48	11.5	7	9	531	2.1	7.6	2.6	129	83	20	56	24.0	70/30	Trace	609	125
15	31-07	1409	1.44	n/a	100+	123	75	57	39	n/a	n/a	15	12	62	48	13.5	8	1	629	2.8	10.4	3.0	168	108	20	56	24.0	70/30	0.75	574	140
16	01-08		1.51	27	100+			65	45	n/a	n/a	18	16	69	53	16.0	10	14	672	2.0	7.2	2.0	207	133	20	56	24.0	70/30	Trace	574	140
17	02-08		1.57	22	92	76	44	33	21	n/a	n/a	8	7	38	32	6.0	5	7	672	2.0	7.2	3.0	147	94	23	59	18.0	77/23	0.25	830	68
18	03-08		1.57	20	100+	107		50	34	n/a	n/a	13	11	54	40	13.5	7	10	704	2.5	9.3	2.2	172	110	23	57	20.0	74/26	0.20	798	82.4
19	04-08		1.57	35	95	111		54	37		n/a	15	14	56	42	13.5	9	13	808	0.7	2.6	2.0	215	138	22.6	55.5	21.0	73/27	1.00	776	102
20	05-08	3101			95	104		50	33		n/a	13	12		38	14.0	8	11	854	3.4	12.6	2.2	253	162	24	55	21.0	72/28	1.25	744	129
21	06-08		1.57	23	100+			55	38		n/a	14	13	58	45	13.0	8	12	746	3.2	11.8	3.1	217	139	24.0	53.0	23.0	70/30	1.25	721	146
22	07-08		1.57	23	100+			53	37		n/a	14	13	59	46	12.5	8	12	790	3.2	11.8	2.0	220	141	22.8	53.0	23.0	70/30	1.25	733	137
23	80-80				92	106		49	34		n/a	14		53	41	12.0	8	11	770	3.2	11.8	2.0	296	190	24.0	55.0	21.0	72/28	1.50	763	110
24	09-08		1.60	35	80	90	53	40	27		n/a	10	9	45	37	8.0	7	9	876	3.2	11.8	2.0	226	145	25.5	55.5	20.0	74/26	1.50	797	114
25	10-08		1.60	n/a	80	90	53	40	27		n/a	10	9	45	37	8.0	7	9	876	3.2	11.8	2.0	226	145	25.5	55.5	20.0	74/26	1.50	797	114
26	11-08			n/a	83	90	53	40	27		n/a	10	9	45	37	8.0	7	9	815	3.5	13.0	2.0	234	150	24.5	55.5	20.0	74/26	1.50	796	114
27	12-08		1.60	23	100+	91	55	42	27		n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
28	13-08		1.60	23	100+	91	55	42	27		n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
29	14-08		1.60		100+		55	42	27		n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
30	15-08		1.60	23	100+		55	42	27		n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
31	16-08	3667	1.60	23	100+	91	55	42	27	n/a	n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
ī																															
		Minimum		20	00	70	4.4	22	04	0	^		7	20	20	_	_	,	504	,	2	0	400	00	00	50	40	70/20	0	F74	CO
		Minimun		20	80	76	44	33	21	0	0	8	1	38	32	6	5	1	531	1	3	2	129	83	20	53	18	70/30	0	574	68
		Maximur			95	138		65	45	#DDV//OL #F	0	18	16	69	53	16	10	14	876	4	13	3	296	190	26	59	24	74/26	2	830	146
		Averag€	1.56	26	88	103	63	48	32	#DIV/0! #E	OIV/0!	12	11	52	41	11	7	10	759	3	10	2	216	138	23	55	21	72/28	1	735	123
				Daily	drillin	g pro	perti	i <u>es</u> F	SR 13	-31																					

# Attachment 4.3.8 BHA Summary Records

#### CHEVRON

### BHA Data Report

Page: 1 of 1 23-OCT-2001

PROJECT UB5908-0 WELL NAME: DONNA WEST PROSPECT FIELD: PL259

				(Metric)
2010011	Depth Out (MD)	Total BHA Length	BHA Type Code	RHA Description
366.0	456.0	232.87	НО	17.1/2" SMITH DGJ ROCK BIT - 26" X 36" H/OPENER - BIT SUB C/W FLOAT - ANDERDRIFT - 3 X 9.1/2" DC - X/OVER - 3 X 8" DC - X/OVER - 3 X 5" HWDP - 6.1/2" WEIR HOUSTON JARS - 14 X 5" HWDP
456.0	456.0	229.68	SL	26" HUGHES GTXCMG1 ROCK BIT - BIT SUB C/W FLOAT - ANDERDRIFT - 3 X 9.1/2" DC - X/OVER - 3 X 8" DC - X/OVER - 3 X 5" HWDP - 6.1/2" WEIR HOUSTON JARS - 14 X 5" HWDP
456.0	1382.0	245.36	PH	8.1/2" HUGHES MXC-1 ROCK BIT - 8.1/2" NB STAB C/W FLOAT - 2.6M X 6.1/2" PONY DC - 8.1/2" STRING STAB - CDR - 8.3/8" IN LINE STAB - MWD - 9.3M X 6.1/2" NMDC - 5 X 6.1/2" STEEL DC - 3 X 5" HWDP - 6.1/2" WEIR HOUSTON JARS - 14 X 5" HWDP
1382.0	1382.0	233.50	НО	BULLNOSE - 12.1/4" HOLE OPENER - 17.1/2" HOLE OPENER - BIT SUB C/W FLOAT - ANDERDRIFT - 3 X 9.1/2" DC - X/OVER - 3 X 8" DC - X/OVER - 3 X 5" HWDP - 6.1/2" WEIR HOUSTON JARS - 14 X 5" HWDP
1382.0	1382.0	234.36	НО	BULLNOSE - BIT SUB - PIN X PIN SUB - X/OVER - 17.1/2" HOLE OPENER - BIT SUB (C/W FLOAT) - ANDERDRIFT - 3 X 9.1/2" DC - X/OVER - 3 X 8" DC - X/OVER - 3 X 5" HWDP - 6.1/2" WEIR HOUSTON JARS - 14 X 5" HWDP
1382.0	3101.6	262.12	DR	8 1/2" ABD536PH PDC BIT - NB STAB C/W FLOAT - 6 1/2" PONY DC, 8 1/2" NM-STAB - CDR - 8 3/8" ILS - IOSONIC MWD SUB - MWD - 7* 6 1/2" DC - 9X 5" HWDP - 6 1/2" JARS - 8X 5" HWDP
3101.5	3171.4	298.23	CO	8 1/2"-4" FC274 DBS CORE HEAD - 76M OUTER COREBARRELS (73M RECOVERABLE CORE) - 6*6 1/2" DC - 9X 5" HWDP - 6 1/2" JARS - 8X 5" HWDP
3171.5	3667.0	254.65	DR	8.1/2" BD445HA PDC BIT - NB STAB C/W FLOAT - 6.1/2" PONY DC - 8.1/2" NM STAB - CDR - 8.3/8" ILS - MWD - 7 X 6.1/2" DC - 9 X 5" HWDP - 6.1/2" JARS - 8 X 5" HWDP
3171.5	3667.0	253.66	OT	8.1/2" BD445HA PDC BIT - NB STAB (C/W FLOAT) - 6.1/2" DC - 8.1/2" STRING STAB - 5 X 6.1/2" DC - 12 X 5" HWDP - 6.1/2" JARS - 8 X 5" HWDP
3171.5	3667.0	444.04	OT	MULE SHOE - 47 X JNTS 3.1/2" PH-6 TUBING - X/OVER TO 4.1/2" IF
3171.5	3667.0	262.45	FI	BULLNOSE - CASING CUTTER ASSY - DRILLEX MOTOR & MOST TOOL ASSY - 3 X 8" DRILL COLLARS - X/OVER - 6.1/2" DRILL COLLAR - 8.1/2" STRING STAB - 5 X 6.1/2" DRILL COLLARS - 18 X 5" HWDP
	In (MD)  366.0  456.0  456.0  1382.0  1382.0  3101.5  3171.5  3171.5	Depth Out (MD)  366.0 456.0  456.0 456.0  456.0 1382.0  1382.0 1382.0  1382.0 3101.6  3101.5 3171.4  3171.5 3667.0  3171.5 3667.0	Depth In (MD)         Out (MD)         BHA Length           366.0         456.0         232.87           456.0         456.0         229.68           456.0         1382.0         245.36           1382.0         1382.0         233.50           1382.0         1382.0         234.36           1382.0         3101.6         262.12           3101.5         3171.4         298.23           3171.5         3667.0         254.65           3171.5         3667.0         444.04	Depth In (MD)         Out (MD)         BHA Length Code         Type Code           366.0         456.0         232.87         HO           456.0         456.0         229.68         SL           456.0         1382.0         245.36         PH           1382.0         1382.0         233.50         HO           1382.0         1382.0         234.36         HO           1382.0         3101.6         262.12         DR           3101.5         3171.4         298.23         CO           3171.5         3667.0         254.65         DR           3171.5         3667.0         253.66         OT           3171.5         3667.0         444.04         OT

# Attachment 4.3.9 Bit Record

(Metric) Bit Record

CH	EV	RO:	N

	RON																					(MECLIC	) BIC Recor
																В	it Grad	ding					
	Serial Number	Date Pulled	Size	Make	Type	IADC Code	Jets (mm) 1 2 3 4	5	TFA	Depth POOH	Meters Drilled	Total Avg Bit Rate/ Av Hours Hour WC	g Avg B RPM	Avg Mud Pump Wt. PRS KG/M	Bit 3 KW	Bit HHP Mud SQIN <sub>M3PM</sub>	e e l r r R R C o o h	c a a r t i i n	g a	R e a s o n P u l Tri e Tir d Hrs	ip ne s Angle	Cost/ Meter	Remarks
49	9335	22-JUL-2001	444.5	SMITH	DGJ	1-3-1	22.2		1161	456.0	90.0	5.5 0.000 4.	5 80	140 1031	248.50	1.4 5.02	0 0 NC	A7 E	I NO I	D 1.	0 3.50	9747.64	
39	9252	22-JUL-2001	914.4	1PE	26" X 36" HO	)	14.3		961	454.0	0.0	0.0 0.000 4.	5 80	140 1031	362.20	0.5 5.02	0 0 100	A7 E	I ON I	'n 1.	0 3.50	0.00	
D9	92DM53	23-JUL-2001	660.4	HUGHE	GTXCMG1	1-1-5	19.1 15.9		877	456.0	0.0	0.0 0.000 11	. 50	122 1031	333.20	0.6 4.60	1 1 WI	A7 E	I ON I	'n 1.	0 3.50	0.00	
W2	97ZS :	24-JUL-2001	215.9	HUGHE	MXC-1	1-1-7	7 11.1 12.7		445	1382.0	926.0	15.0 61.720 7.	0 150	197 1031	413.20	7.3 3.15	8 5 WI	A7 E	1/8 ER T	'n 2.	0 4.50	78.28	
17	752012	26-JUL-2001	444.5	IPE	17.1/2" H/O		22.2 9.5 14.3		1561	1382.0	0.0	16.0 0.000 5.	0 150	153 1031	74.60	0.3 4.10	8 8 WI	A7 4	3/4 ER T	'n 4.	0 4.50	0.00	
		27-JUL-2001	444.5	IPE	17.1/2" H/O		22.2 14.3		871	1382.0	0.0	0.0 0.000 5.	0 150	152 1400	160.90	0.7 3.23	1 1 WI	A7 E	IN NO T	'n 4.	0 4.00	0.00	
12	213767	05-AUG-2001	215.9	HUGHE	ABD536PH		14.3		639	3101.5	1719.5	54.5 31.550 6.	0 180	286 1570	139.10	2.5 2.42	3 5 CI	A7 X	IN BT C	P 8.	0 2.00	5300.72	
		07-AUG-2001	215.9	S-DBS	FC274				0	3171.5	70.0	7.5 9.330 12	. 100	129 1570	0.00	0.0 1.05	7 3 LI	XN X	IN JD F	R 12.	0 2.00	34821.2	
03	323129	10-AUG-2001	215.9	HUGHE	BD445HA	M333	15.9		794	3667.0	495.5	19.0 26.090 5.	5 180	276 1600	84.40	1.5 2.34	1 1 WI	XA X	IBTI	D 14.	0 1.90	8324.90	
R1 03	323129	12-AUG-2001	215.9	HUGHE	BD445HA	M333	15.9 0.0 0.0 0.0	0.0	794	3667.0	0.0	0.0 0.000 5.	5 180	276 1600	84.40	1.5 2.34	1 1 WI	XA X	I BT T	'n 14.	0 1.90	0.00	
																		+ + +					
													-										
																		+ + +					
																		+ + +					
																	+	+++		-			
																		+ + +					
													+				+	+ + +					
																	+	++					
													1					++					
_													-				+	++					
							+ + + + -						+				+	+++		-			
													1					++					
						-							AFE No: KWENO-650631-001 Well ID: UB5908 Project No:					ct No:	_	70: 1 05 -			
rilling Rep: MOORE/BJORHEIM/MH Field: PL259 Lease									AFE No: KWENO-650631-001   Well ID: UB5908   Project No:     Well Number: 6506/3-1				CC 1W.	<u> </u>	ge: 1 Of 1 te: 30-AUG-2001								

# Attachment 4.3.11 Casing Details

Onty Description	Size(O.D.) Weigh	nt Grade	Threads	Length	IMILITORION STAVARGER TORMAL											
1 30" SHOE	762.0 312.			0.50		First Stage					on Time & cementing		.00 Hrs @	1.90M3PM Return	n(Full/Par	tial): <sub>FULL</sub>
1 30" SHOE JOINT	762.0 312.		SL-60	12.13		Cement Type		No.	Pump Time	Yield	Weight	(KG/M3)	Mix Water	Comp. Streng	h WL	Free
1 30" INTERMEDIATE JOINT	762.0 312.	00	SL-60	12.18				Tonnes	time @ temp	cu.m./ton	est.	actual	m3/tonne		hrs cc	water %
1 30" INTERMEDIATE JOINT	762.0 312.	00	SL-60	12.21			SLURRY SLURRY	26.40 24.50	7.7 Hrs @ 8 3.9 Hrs @ 80	1.29 0.78	1560 1920	1570 1920	0.98		5.03	0 0.00
1 30" INTERMEDIATE JOINT	762.0 312.	00	SL-60	12.19				1	NOLITE, 0.1 LT/100				1			0.00
1 30" INTERMEDIATE JOINT	762.0 312.	00	SL-60	12.21				/ TOUKG ECC	NOLITE, U.I LITTU	UKG HF-6, 95.	0 / 11/100	KG SEAWAT	EK.	Additives liquid/blende		
1 30" X/OVER JOINT - 1.5" WI	762.0 456.	00	HD-90	12.31		Tail Cement Ad	ditives: 4.35 L	T/100KG C	CL2, 0.1 LT/100KG	HF-6, 42.07	LT/100KG	SEAWATER.		Additives liquid/blende	d: YES /	NO
1 30" LP HSG JOINT - 1.5" WI	762.0 456.	00	HD-90	13.12		Spacer Type:SE				90.0 Weigh			0 YP: (	Compatibility	Test Run?	:
						*	ement Rate: 1.4			d With (Cemer			1	Estimated TOC	366.	00
Liner Hanger(If Applicable):						Cement Returns	?(Y/N): <sub>YES</sub> Ear	ly Returns	?(Y/N): NO Est.	Tonnes Circu	ılated: 50	. 90 Numb	er of Plugs		Bumped?(	
Total Pipe Installed:				86.85		Second Stage	DV Tool Locate	d @:	MD		on Time & cementing		Hrs @	M3PM Return	(Full/Par	cial):
Less Cutoff Piece(s) and Landing J	oints:			0.00		Cement Type		No.	Pump Time	Yield		(KG/M3)	Mix Water	Camp. Strengt	h WL	Free
DP To land Liner(If Applicable) TO	L @:			364.15				Tonnes	time @ temp	cu. m./ton	est.	actual	m3/tonne		hrs cc	water %
Plus KBE (One Ft. Above Rotary To	last CHF):					Lead			Hrs. @							
						Tail			Hrs. @							
Casing Set @: 451.00 TVD MD Total: 451.00 Lead Cement Additives:  Additives / liquid/blended:																
Last Casing Size: @	MD Hole Siz	ze: 91	4.4 @	454.00	MD	Tail Cement Additives:  Additives   Additives   liquid/blended:										
Hole Volume From Caliper Log:	м3					Spacer Type:			Volume:	Weigh	ıt.:	PV:	YP:	Compatibility		:
Mud Properties Prior To Cementing:	WT: 1031 Type:	SEAWATER				Cement Displac	Cement Displacement Rate: Displaced With (Cement Unit/Pump): Estimated TOC:									
FV: 0 PV: 0 Y	YP: 0.0	Gels: 0.0	/0.0 WL	ı <b>:</b>	0.0	Cement Returns	?(Y/N): Ear	ly Returns	??(Y/N): Est.	Tonnes Circu	ılated:	Numb	er of Plugs	Used: Plug	Bumped?(	7/N):
HTHP WL: 0.0 Solids: %	≷ Oil: 0.00 S	Sand:	Hq	[:		Remarks: CIRC	97M3 OF SEAWAT	ER W/ RIG	PUMPS @ 1955 LPM E	PRIOR TO CEME	NT JOB. B	REAK CIRC	W/ CEMENT U	NIT & P/TEST L	NES 200 B	R / 5 MIN.
PM: 0 CL: 0	Ca: >	KLime:	El	ec Stab:		MIX	& PUMP 34.1M3 O	F 1.56SG I	EAD SLURRY USING 2	26.4MT OF CLA	SS 'G' CE	MENT & 25	.9M3 OF MIXW	ATER.		
Casing Reciprocation?: NO I	Length of Stroke:		Time:	Hrs		LEAI	MIXWATER - 3.2	LT/100KG	ECONOLITE, 0.1 LT/	/100KG NF-6 &	95.07 LT	/100KG OF	SEAWATER. P	UMP @ 1.3M3/MI	, 36 BAR.	
Casing Rotated?: NO						MIX	& PUMP 19.0M3 O	F 1.93SG T	AIL SLURRY USING 2	24.5MT OF CLA	SS 'G' CE	MENT & 11	.4M3 OF MIXW	ATER.		
Number of O / 0 Tentralizers/Wipers:	Гуре:		/			TAII	MIXWATER - 4.3	5 LT/100KG	CACL2, 0.1 LT/100	OKG NF-6,& 42	.07 LT/10	OKG OF SEA	AWATER. PUMP	@ 0.8M3/MIN, 2	7 BAR.	
Spacing:						CLEA	AR LINES W/ 0.2M	3 OF SEAWA	TER FROM CEMENT UN	NIT, DROP DP	WIPER DAR	r & Follo	w w/ 0.5m3 s	EAWATER FROM RI	G PUMPS. 1	DISPLACE
_						REMA	AINDER OF CEMENT	TO LEAVE	5M ABOVE SHOE W/ 9	9.0M3 SEAWATE	R FROM CE	MENT UNIT	@ 1.4M3/MIN	, 29 BAR.		
						FINA	AL DISPLACEMENT	PRESS @ 0.	2M3/MIN = 10 BAR.							
						CEME	ENT IN PLACE @ 1	9:33 HRS.								
						WAIT	ON CEMENT FOR	5 HRS BEFC	RE SLACKING OFF &	BACKING OUT	RUNNING TO	OOL.				
						TIH	WITH 26" CLEAN-	OUT ASSY A	ND TAGGED CEMENT A	AT 446M (AS E	STIMATED)					
								п			11					
								Rig Nar	ne:		AFE N	o: KWENO	-650631-001		Page:	
	Field															-JUL-2001

Onty Description Size(O.D.) Weight Grade Threads Length Ref# Cement Company: UNITED TON Yard Location:																	
Onty Description	Size(O.D.	Weight Grade	Threads	Length	Ref‡	TALLIBORION AND THE PROPERTY OF THE PROPERTY O											
1 13 3/8" SUPER SEAL FLOAT SHOE	339.7	107.15 L80	BIC	0.53	1	First Stag	е				ion Time & cementing		.00 Hrs @	3.00M3PM Return	(Full/Part	ial):	
1   13   3/8" CSG JNT W/ CENTRALISER	339.7	107.15 L80	BIC	12.13		Cement Ty	pe	No.	Pump Time	Yield	Weight	(KG/M3)	Mix Water	Comp. Strengt		Free	
1 13 3/8" SUPER SEAL II F/C	339.7	107.15 L80	BTC	0.37		T 3 T		Tonnes	time @ temp		est.	actual	m3/tonne	kPa @	hrs cc	water %	
1 13 3/8" CSG JNT	339.7	107.15 L80	BTC	12.34			JEAD - CLASS G CMT TAIL - CLASS G CMT	100.00	5.3 Hrs @ 8	86 1.30 86 0.75	1560 1920	1560 1920	0.99	630 1	2.00	0 0.00	
5 13 3/8" CSG JNT W/ CENTRALISER	339.7	107.15 L80	BTC	60.10			t Additives: ALL IN						0.11	Additives liquid/blended			
75   13   3/8"   CSG JNT	339.7	107.15 L80 107.15 L80	BIC	895.60 12.30			t Additives: 0.1 LT										
1 13 3/8" CSG PUP JNT	339.7	107.15 L80	BTC	3.10				R/ TOOKG N				D11.		Additives liquid/blende	1: 115 / 1		
1 13 3/8 CSG PUP UNI	339.7	107.13 1.80	ыс	3.10		Spacer Type	e: placement Rate: 3.2		Volume	e: Weight aced With (Ceme:		DA:	YP:	Compatibility Estimated TOC			
Time The way (TE Per li mala ) 10 0 0 4 m	15		·	10.00											366.0		
Liner Hanger(If Applicable):18 3/4",	15K DRIL	QUIP TYPE SS-15	HPWH	13.07		Cement Ret	urns?(Y/N):YES Ear							Used: 1 Plug		1.0	
Total Pipe Installed:				1009.54		Second Sta	ge DV Tool Locate	d @:	MD		ion Time & cementing		Hrs @	M3PM Return	Return(Full/Partial):		
Less Cutoff Piece(s) and Landing Joi						Cement Ty	pe	No.	Pump Time	Yield		t(KG/M3)	Mix Water	Comp. Strengt	h WL	Free	
DP To land Liner(If Applicable) TOL	@:			364.77		_ ,		Tonnes	time @ temp	cu.m./ton	est.	actual	m3/tonne	kPa @	hrs cc	water %	
Plus KBE (One Ft. Above Rotary To la	st CHF):					Lead			Hrs. @							+	
					1	Tail			Hrs. @								
	.30 MD		Total:	1,374.31		Lead Cemen	t Additives:							Additives liquid/blended	: /		
Last Casing Size: 762.0 @ 45	1.0 MD HO	ole Size: 44	4.5 @	1379.00	MD	Tail Cemen	t Additives:							Additives liquid/blended	. /		
Hole Volume From Caliper Log:	М3					Spacer Typ	e:		Volume	e: Weigh	nt:	PV:	YP:	Compatibility			
Mud Properties Prior To Cementing: W	T: 0	Type:				Cement Disp	placement Rate:		Displa	aced With (Ceme	nt Unit/Pu	ump):		Estimated TOC			
FV: 0 PV: 0 YP	: 0.	0 Gels: 0.0	/0.0 WI	<b>.:</b>	0.0	Cement Ret	urns?(Y/N): Ear	ly Return	s?(Y/N): Es	st. Tonnes Circ	ulated:	Numb	er of Plugs	Used: Plug	Bumped?(Y/	N):	
HTHP WL: 0.0 Solids: % (	Oil:	0.00 Sand:	pН	ı:		Remarks:	8 1/2" PILOT HOLE W	AS DRILLEI	FROM 456 TO 13	882M USING SEAWA	ATER AND H	II-VIS SWEE	EPS; THEN, I	HE HOLE WAS OPE	NED USING A	. 2-STAGE	
PM: 0 CL: Ca	:	XLime:	El	ec Stab:			12 1/4" X 17 1/2" H	OLE OPENER	R ASSY (TD 17 1/	/2" HOLE 1379M)	HOLE WAS	DISPLACE	D TO 1.2 SG	MUD; POOH W/ +/	- 10MT DRAG	; F/	
Casing Reciprocation?: NO Ler	ngth of St	troke:	Time:	Hrs			1382 TO 780M - NO W	IPER TRIP	WAS PERFORMED;	BOTH THE 12 1/4	4" AND 17	1/2" HOLE	OPENER WERE	COMPLETELY WOR	N		
Casing Rotated?: NO							RAN 13 3/8" CASING	TO 727M WE	HEN 15MT DRAG WA	AS NOTICED; CONT	TO RUN C	SG TO 810N	M				
Number of Centralizers/Wipers: 6 / 1 Type	pe: 17 1/2	" BOWSPRING	/ SS REL	EASABLE			AT 810M, ROV OBSERV	ED CASING	BEING BUCKLED A	AT 2 PLACES (FIR	RST ONE AT	WELLHEAD)	) WITH CASIN	G LAYING ON THE	SEABED		
Spacing: IN CENTRE OF SHOEJNT & 1ST I	FIVE JNTS	ABOVE SHOETRAC	K				POOH & L/D CASING -	10 JOINTS	REJECTED OF WH	HICH 2 JNTS CRIM	MPED; MOVE	D RIG OFF	WELL CENTRE	ONCE SHOE CLEA	R OF WELLHE	AD	
							TIH W/ 17 1/2" HOLE	OPENER AS	SSY; AT 535M, HO	LE TOOK WEIGHT	; WASH & R	EAM F/ 535	5 TO 1382M W	/ 150 RPM, 3234	LPM, 152 B	AR	
							DISPLACED HOLE TO 1	.4 SG KCL	MUD								
							· • •									-	
							RAN 996M OF 13 3/8"	339.7MM T	180 BTC CASING (	NOT SUFFICIENT	SEALS ON	LOCATION F	FOR REPLACEM	ENT) — REMOVED	DAMAGED CEN	TRALISERS	
							MONITORED CASING EN		,					· · · · · · · · · · · · · · · · · · ·			
							M/U 18 3/4" HPWH ANI	D RAN CASI	ING ON 5" DP; WA	ASHED DOWN CASIN	NG F/ 1335	TO 1379M	W/ 3000 LPM				
							CIRCULATED CASING V				·						
					Rig Name: AFE No: KWENO-650631-001					Page:	1 Of 2						
Drilling Rep: ELKINS/MOORE/DEJONGE		Field: PL259								Well No: 650		- KWENO-		): UB5908 -0	Date: 28-		
FIIIIII REP. ELKINS/MOORE/DEJONGE PL259							PL259			METT 110 . 020	U/3-I		MCTT II	. 0R2A08 -0	28-	JOT-SOUT	

Onty Des	cription	Size(O.D.) We	eight Grade	Thread	s Length	Ref# Cement Company: HAILIBURTON Yard Location:														
							Third Stage						on Time & cementing		Hrs @	МЗР	Return(Fu	ll/Part:	al):	
							Cement Type		No. Tonnes	Pump Time time @ tem		_	Weight	(KG/M3) actual	Mix Water m3/tonne	Comp. kPa	Strength @ hrs	WL CC	Free water %	
							Lead			Hrs @										
							Tail			Hrs @										
							Lead Cement Add	ditives:								Additi liquid	lves l/blended:	/		
							Tail Cement Add	ditives:								Additi liquid	.ves l/blended:	/		
							Spacer Type:			Volu	ume:	Weigh	t:	PV:	YP:	Compat	ibility Tes	t Run?:		
							Cement Displace	ement Rate:		Disp	placed With	Cemen	ıt Unit/Pı	:(qmu		Estima	ted TOC:			
Liner Ha	nger(If Applicable):18 3/	/4", 15K DRILQUI	IP TYPE SS-1	5 HPWH	13.07	,	Cement Returns	?(Y/N): Ea	arly Return	s?(Y/N):	Est. Tonnes	Circu	lated:	Numb	er of Plugs	Used:	Plug Bur			
Total Pi	pe Installed:				1009.54	ł		DV Tool Locat	ted @:	MD			on Time 8		Hrs @	мзр	PM Return(Full/Partial):			
	off Piece(s) and Landing						Cement Type	ı	No.	Pump Time				t(KG/M3)	Mix Water		Strength	WL	Free	
DP To lai	nd Liner(If Applicable) T	rol @:			364.77	,	_		Tonnes	time @ tem		'ton	est.	actual	m3/tonne	kPa	@ hrs	CC	water %	
Plus KBE	(One Ft. Above Rotary To	o last CHF):					Lead			Hrs. @										
							Tail			Hrs. @										
Casing S	et @: 1372.10 TVD 1	1374.30 MD		Total	1,374.31		Lead Cement Add	ditives:								Additi liquid	ves /blended:	/		
Last Cas:	ing Size: 762.0 @	451.0 MD Hole	Size: 4	44.5 @	1379.00	MD	Tail Cement Add	ditives:								Additi	ves /blended:	/		
Hole Vol	ume From Caliper Log:	м3					Spacer Type:			Volu	ime:	Weight	t:	PV:	YP:		ibility Tes	t Run?:		
Mud Prope	erties Prior To Cementing	g: WI: 0 Ty	pe:				Cement Displace	ement Rate:			placed With					Estima	ted TOC:			
FV:	0 PV: 0	YP: 0.0	Gels: 0.	0.0 0	vL:	0.0	Cement Returns	ement Returns?(Y/N): Early Returns?(Y/N): Est. Tonnes Circulated: Number of Plugs Used: Plug Bumped?(Y/N)									и):			
HTHP WL:	0.0 Solids:	% Oil: 0.0	00 Sand:	1	рН:		Remarks:	emarks:												
PM:	0 CL:	Ca:	XLime:	Ι	Elec Stab:		MIX	AND PUMP 128M3	3 OF 1.56 <i>S</i> G	LEAD SLURRY U	ISING 100MT C	F CLAS	SS 'G' CM	TT W/ 3.2L	TR/100KG ECO	LONITE,	1LTR/100KG	HR-4L,		
Casing R	eciprocation?: NO	Length of Stro	ke:	Time:	Hrs		0.11	TR/100KG NF-6,	, 94.36LTR/	100kg seawater	AND PUMP AT	1.2M	3/MIN, 25	BAR						
Casing R	otated?: NO						MIX 17M3 OF 1.92SG TAIL SLURRY USING 21MT CLASS 'G' CMT W/ 0.1LTR/100KG NF-6 AND							AND 43.78LTR	/100KG	FRESH WATER	AND			
Number c Centrali	of zers/Wipers: 6/1	Type: 17 1/2" H	BOWSPRING	/ SS RE	LEASABLE		PUMP AT 0.8M3/MIN, 20 BAR; PUMP 3 BBLS SEAWATER AND SHEAR DART W/ 154 BAR													
Spacing:	IN CENTRE OF SHOEJNT & 1	ST FIVE JNTS AB	OVE SHOETRA	CK			DISP	LACE CEMENT W/	/ 76M3 SEAW	ATER AT 3200 L	PM, 161 BAR;	SLOW	PUMPS TO	580 LPM,	61 BAR					
							CEME	ENT RETURNS SEE	IN AT SEABE	D; WHEN SHUT D	OWN PUMPS, F	LOAT I	HAD NOT E	SUMPED - FO	CP 55BAR (TH	EORETIC.	AL TOC=SEABI	ED);		
							BLED	DOWN PRESSURE	E - FLOAT H	OLDING; BACK C	OUT RUNNING T	OOL W	/ 5 RH TU	IRNS						
		<del>- a</del>				Rig Name:				1	AFE No: KWENO-650631-001					Page: 2 Of 2				
Drilling	rilling Rep: ELKINS/MOORE/DEJONGE Field: PL259						Lea	ase: <sub>PL259</sub>			Well No:	6506	5/3-1		Well ID	: UB5908	3 -0 Da	te: <sub>28-</sub> ,	TUL-2001	

## 5. Lessons Learned

#### This section contains:

5.1	Deviations from Original Program and Procedures	
	NPD's Drilling Regulations	
	Deviations from Drilling Program	
	Summary and Conclusions – Ton Ten Lessons Learned	•

#### 5.1 Deviations from Original Program and Procedures

#### 5.1.1 Deviations from NPD's Drilling Regulations

The following deviations from the requirements in NPD's Drilling Regulations occurred:

Deviation No.	Reference to Rules and Regulations	Description	Consequence	Compensating Measures	Deadline
Chevron 004	NPD's guidelines to the drilling regulations, re. Sect. 50	The guidelines to the regulations states that: "If the time interval since the last pressure test exceeds 14 days, the BOP, with the exception of the shear/blind ram, shall be pressure tested even if no new casing string has been installed."  The BOP was tested at 11:00 hrs, 31/07/01 and a new test is due the14/08/01. We are requesting that an extension to the BOP test through 21/08/01 based on the following information:  1. The well TD has been reached 3667m MD and no further drilling is required.  2. The mud weight of 1.60 sg has proven to be adequate to maintain well control based on conditioning trips and verification of pore pressure via the MDT tool. Maximum 1.53 sg in Brygge formation.  3. The logging program is on-going at the present time and should be completed within the next 24 hours.  4. The well P & A program will be completed before the extension date requested 21/08/01.  5. Should any deviations to this planned P & A program occur then NPD will be notified immediately to discuss any complications which may require a BOP test to be completed.	None.	1. The Annular or appropriate Pipe ram will be used to test the cement plug set across the 13 3/8" shoe and inside 13 3/8" casing during P & A operations.  2. The Blind / Shear rams will be used to pressure test the top cement plug during P & A operations.	The standpipe manifold and choke manifold will be pressure tested by 14/08/01 as per normal procedures.

### **5.1.2 Deviations from Drilling Program**

The following amendments to the Drilling Program were issued:

- Brygge Coring Strategy, issued 30.7.2001 (limited distribution)
- Plug and Abandonment Program, issued 9.8.2001

#### 5.2 Summary and Conclusions – Key Lessons Learned

#	Title	Summary	Conclusion					
1	Establish	Many of the contracts were assigned from	Ensure that, the information is					
	Chevron	Shell and Statoil, which may have contained	captured by Graham Duthie and					
	Norway	T&C's Chevron would not normally agree	the Aberdeen contracts group.					
	Contracts	to. However, more research was needed to	when operating in Norway, more					
		identify those T&C's. We were not allowed	upfront time on T&C's is					
		to see a lot of the T&C's until the contract	required, legal support will be					
		had been signed due to the confidentiality of	required as well as good					
		the information contained within. The	communications with San Ramo					
		remaining contracts took time to put in place	to ensure that contracts are					
		and were unsuitable for Norway.	acceptable to Chevron. Review the end result with San Ramon to					
			ensure lessons learnt are captured					
			for the future. Review					
			commercial terms with contractor					
			before signing contract. Each					
			contract should have a sponsor.					
2	Recognise the	Rig contract when all drill options on the	We drilled primary and					
_	consequences	table. Decision on well and rig should be	secondary targets in alignment					
	of strategic	driven by economic and technical analysis.	with our business drivers and					
	well decisions	We decided to drill our primary and	license commitments. The					
	vs technical	secondary targets and later matured a deeper	subsequent data evaluation to					
	maturity of	prospect which had an offset discovery	date (4 Sep 01) would not have					
	total	subsequent to decision to drill.	changed the decision to drill or					
	prospectivity		well placement but likely would					
			have increased the geologic risk.					
			Weigh up the risks. If strategy is					
			the driver, do the same thing.					
3	Use risk	Used good teamwork to develop risk	A risk analysis using					
	analysis to	justification for Oil Based Mud use in gas	probabilistic model showed Oil					
	give direction	condensate exploration well. Without	Based Mud to be best choice for					
		analysis may have been tempted to go for	well. Resulted in significant					
		Water Based Mud based on driver of need	Capex savings. Apply					
		to get good fluid sample (Condensate Gas	risk/decision analysis when need to make critical decisions					
		Ratio, etc.). Oil Based Mud proved to be the best option for this well based on	because it focused the discussion					
		probabilistic analysis.	and the decision. Get team to					
		probabilistic analysis.	provide inputs/probabilities to					
			gain buy-in to results.					
	I		gam ouy-m to results.					

Norsk Chevron AS

#	Title	Summary	Conclusion
4	Don't underestimate the need for adequate IT structure in a satellite office	The link between Stavanger and Oslo was inadequate and valuable time was lost during the planning phase until this was corrected. Getting the necessary computer hardware in place was an issue. Two computers offshore were not enough, we needed three computers.	Ensure that office communications are specified according to the level of data and email traffic expected. Consider that there may be a need for spare computers on occasion (i.e. people from GAPA). Plan for growth in the initial assessment of required office space, computer, phones.
5	Define and communicate goals, well objectives and key operational issues with team and partners	Clearly defining well objectives in terms of prospects and license made data acquisition plans value focused. Had a number of partner meetings which gained agreement on a number of technical areas. However, a few weeks prior to spud one technical area (coring and sidetracking Brygge) was found to be ambiguous with regard to partner agreement. This could have resulted in operational inefficiency if this had not been picked up prior to reaching target.	Soon after well location was chosen, we did focused the entire team through meetings to define well objectives and reach consensus on associated data needs to meet objectives. Make sure all goals, well objectives and key operational issues are formally agreed with partners prior to spud and clearly documented. Continue to document well objectives with Value of Information (VOI) matrix to ensure remembering how and why decisions are made and clear communication of value. Conduct a pre-spud type meeting with partners to finalise operational decisions.
6	Early initiation of interaction with NPD added value	Chevron took a proactive approach when dealing with the NPD. Using a proactive approach, meeting with and speaking to the NPD regularly was seen as beneficial for our first operation	Meeting with the NPD throughout the planning process helped with ensuring that the consent to drill and the drilling program were understood and obligations had been met. The same is true for communications with the SFT. Ensure a proactive approach is taken on future operations.

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#	Title	Summary	Conclusion
7	Establishment	Built both systems (application for consent	We developed the Management
	and	and management system) in parallel which	System for Chevron Norway, in
	maintenance	resulted in delayed deliveries of processes	parallel to the consent
	of	and procedures as expected (although	application. We had
	"Management	consent application was delivered on	communicated this approach to
	System" (In-	schedule).	the NPD so they were aware we
	country safety		were developing in parallel
	management		(understood because of our
	system)		"newness" to Norway.) Maintain
			the "safety culture" - especially
			after merger. Be aware that new
			2002 regulations are focused on
			"continuous improvement".
			Make sure licensee requirements
			are met even if we are not the
			operator.
8	Consider	When picking key rig/operations for first	Continue to apply a selection
	contracter	well in high HSE awareness areas, consider	process that looks at reputation,
	decision	weighing HSE record and systems higher	availability, cost, risks, safety
	criteria	than other factors.	record and the business drivers
	weighting		with the appropriate criteria
	carefully in		weighting for new country
	new		expectations - particularly in a
	operations		new country/environment where
			HS&E is heavily weighted.
9	Staff early	Virtual support was provided from	When entering into a new
	with right	Aberdeen to get the well planning process	country, clearly define
	disciplines, on	started in 2000. By early 2001, . In early	vision/mission/objectives and set
	first well in	2001, new project manager was assigned to	high level boundaries to
	new country;	the project	accomplish mission. Build
			appropriate resources to
			guarantee success. Make sure
			people are identified and located
			in the working location office by
1			CPDEP phase 2 start.

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## **Enclosure 1**

## **Daily Activity Reports**

- 1.0 Daily Drilling Activity Reports
  - 2.0 Wellsite Geological Reports





# **Daily Drilling Activity Reports**



Measur	Measured Depth: TVD: PBTD: Proposed MD: 11,893 Proposed TVD: 11,893 OCL: Daily Footage: Daily Rot Hrs: Total Rot Hrs:																		
DOL:		D	FS:	S	pud Date:				Г	aily	Footage	e:	D				Total	Rot Hr	· · · · · · · · · · · · · · · · · · ·
Torq:		Drag	1:	Rot	Wgt:	P/U Wgt:	:	Sla	.ck Of	f Wgt	:	Wind	l: 8	Seas	: 3	/	Bar:	30,12	POB: 78
Last C	asing	g Size:			Set	At:			MI	)			TVD	Shoe '		/	EMW	Leako	
Cum Ro	t Hr	s On Ca	sing:		Cum Rot	Hrs On C	Casing	Since			per:			Worst	Wear:			Remainir	ng:
Liner	Size				Set At:		MD			T	<i>T</i> D	Li	iner To	p At:		ME	`		TVD
Mud Co	) <b>:</b>			Т	'ype:		MID				Le From	· ET ON	Wt:	FV:	PV:		YP:	Gel:	/
WL					FC (1/32) A			Sc	lids:		% O:		Wat		% Sa:		MB		Ph:
Pm:	API:	Pf/Mf:	HTHP:	,	Carb:	C1: F	TTHP:	a:		Bent	:	Solid	s %HG/1	LG:		%	DS/Ben	t:	/
		<u> </u>	/												/				/
D1 C	· •		Max Gas		Conn Gas		T 0			Troi	ip Cl:	Г	emarks						
Drlg G	as:			1			Trip G			11.1				•					-1
Bit Nu	ımber	IADC	Size	Ма	nufacturer	Seria	1 numb	er		Jets /	(Quar	ntity -	Size)	/	TFA	M	D In	MD Out	TVD Out
									_	<u>/ -</u>		<u>     /                               </u>	- /	/ <u>-</u> /	0				
										/ -	<u> </u>	- / 	- <i>/</i>	/ - 	<del> </del>		1		<u> </u>
Т	ype	Fee	t F	lours	WOB	R	PM	Mo	otor F	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/Ft
					/		/						1						
					/		/												
Total	Lengt	th of B	HA:		BHA Desc	ription	:												
												1							
							_					Hrs O	n Jars	: <del></del>	Hours	Since	e Last	Inspect	tion:
Bit Nu	m	Line	er		Stroke		5	SPM	Pr	ess.	G₽M	Jet Ve	el DP	Av D	C Av	Bit H	HP BHH	P/SQIN	Pump HHP
			/		/	/	/												
		/	/_		/	/	/	/											
Survey	MD.	Angle	Azimu	th	Direction	Т	<b>V</b> D	N/	S Coc	ordina	ites	E/W	Coordin	ates	Verti	cal S	ection		DLS
Hours	urs From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 1,0														rted: 1.0				
				NCHOF	R BOLSTERED		-							NORSK	CHEVROI				
					2001. COMME														
		08 - 41		011 2	EUUI. COMM	IVCE TOW	TO DOIN	EAST AND	DI LIC	CAIIO	IN OINDER	CAEOSE	L PAC	POSINA	•				
				rr c	ROM GARN WE	מידי ידים דים	NATINTA TATE	CT IO		νNT _ Ω	1 6 NINI	TTT C'N T	MTTEC						
				CE FF	COM GARIN WE	31 10 00	INING WE	DI IU	CAIIO	- J	I.O NAC	)IICALI	ишпео.						
		08 - 41									2525				010				
				ON BO	OARD @ HAND	OVER: FU	EL - 3	33 M3	, LUB	OIL	- 3725	LTRS,	POT WAS	rer – 2	291 M3,	DRILI	L WATER	225	мз,
		08 – 41				BE	TINOTIN	E - 6	3 MT,	BARI	TE - 19	96 MT,	CLASS	'G' CEM	IENT - I	146 M	Γ, BASE	OIL -	85 M3.
-		08 - 41	-																
		08 - 41	WORK C	NGOIN	NG DURING T	OW: CLEA	N ALL	SUCTI	ON &	DISCH	ARGE SI	TRAINER	S.						
		08 - 41	1			SERV	ICE TO	P DRI	VE &	DOLLY	, RIG I	DOWN PI	PE HAN	OLER FO	R SERV	ICE.			
		08 - 41				SLIP	& CUI	78 F	T OF	DRILL	LINE.								
		08 - 41				INST	'ALL PE	RMANE	NT GU	IDE B	ASE IN	MOONPO	OL.						
		08 - 41				INST	'ALL GU	IDE F	RAME	ONTO	LMRP.								
		-																	
		-																	
Safety	r: PRI	E-TOW M	JSTER HI	ELD O	N SUNDAY 1	TH JULY	2001.												
					OF RIG FRO			WEST	LOCA'	TION 8	& COMME	NCE TO	W TO CH	IEVRON I	DONNA W	VEST I	OCATIO	N.	
Projec	ted (	peration	ons: coi	MPLET	E TOW TO DO	NNA WES	T_LOCA	TION,	BALL	AST DO	OWN RIG	& RUN	ANCHOR	S.					
Remark	s:																		
					PORTED IN (								C . 1.47**	, Tampi	VC /10				
					TED IN MET						SOUKE I	TA TATAL'H	T OK MUL	MT TW	r.c./№.				
					WILL BE RE					-	N. # ~ = =			DOT - :	00377		04-00	037.7.7.7	107 /03
-				_	A WEST. 66		L MILE	S TO 1						1					
		Cost: KI		_	ily Tangibl						l Cost:			-				T REPOR	RTED
		st: KR4			m Tangible				cum	wett					Appr:				
		r: 1415	Pot	able	Water: 183	1		095					t: 3726	N∈	eat Cem	ent:	3424	Blende	
Countr	y: N	ORWAY				Rig: BYI		OLPHI	V		Rig Ph		2 88 03	35	Drill	ıng Re	ep: ELK	INS/HOL	LINSHEAD
Field:	PL25	59			Le	ase: PL2	59					We	ll No:	6506/3-	-1		₩e		UB5908 -0
					API N	o: 6506/	3-1		AFE	E No:	KWENO-	650631	-001		Date:	16-JU	L-2001	Page	: 1 Of 1

Measur	Measured Depth: 0 TVD: 0 PBTD: 0 Proposed MD: 11,893 Proposed TVD: 11,893																	
DOL:	1	Di	FS:	S	pud Date:				Daily	Footage	e:	D	aily Ro			Total	Rot Hr	-
Torq:		Drag	ŋ:	Rot	Wgt: P	/U Wgt:	6	Slack	Off Wg	t:	Wind	: 17	Seas	: 7	/ 13	Bar:	30,08	POB: 78
Last C	asin	g Size:			Set .	At:	<u> </u>		MD			TVD	Shoe 7			EMW	Leako	
-		s On Ca			Cum Rot H	rs On Cas	ing Si	nce La		iper:			Worst	Wear:	, 0		emainir	na:
Liner	Size	<u> </u>			Set At:					TVD	Liı	ner To						TVD
Mud Co	);			т	'ype:		MD			ole From	: T/	r+ •	FV:	PV:	MI	YP:	Gel:	100
WL					FC (1/32) AP			Solid		% O:		Wate		% Sai		MB'		Ph:
Pm:	API:	Pf/Mf:	HTHP:	/		I: HTH Cl:	P: Ca:	50110	Ben		Solids			,		DS/Bent		,
FIII.		FI/MI	/		CAID.	ш·	la.		Den		501108	9 9110/1	<u> </u>			DS/ Belli		/
									-									
Drlg G	as:		Max Gas	:	Conn Gas:	Tri	ip Gas		Tr	rip Cl:	Re	marks	:					
Bit Nu	ımber	IADC	Size	Ма	nufacturer	Serial:	number		Jet	s (Quan	ntity -	Size)		TFA	М	D In	MD Out	TVD Out
								_	/	_ / -	- /	- /	/ _	0				
						-		_	/	_ / -	- /	- /	_	0				
Т	ype	Fee	et F	lours	WOB	RPM		Moto	r RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/Ft
					/	/												
					/	/												
Total	Leng	th of B	HA:		BHA Descr	ription:	•											
											Hrs Or	Jars:		Hours	Sinc	e Last	Inspect	tion:
Bit Nu	m	Line	er		Stroke		SPM		Press.	G₽M	Jet Vel	L DP	Av D	C Av 1	Bit H	нь Внн	P/SOIN	Pump HHP
			/		/	/	/	/							- 11		, = 2	
					/	/		/										
Survey	, MD	Angle	Azimu	th	Direction	TVD		N/S (	Coordin	ates	E/W C	oordir	ates	Verti	cal S	ection		DLS
Bul vey		raigic	1221110	<u> </u>	DIFCCCION	142		14/15	2001411	acas	E/ W C	OOLGII	aceb	VCICI	car c			DEG
			1															
		Act-Cat				ions Cove									Tota	al Hour	s Repoi	rted: 24,0
					TOW TO CHE													
3,00T	2030	08 - 42	WIND S	PEED	INCREASING	13 – 17 M	/SEC &	FORE	CAST UN	FAVORABL	E FOR I	NIMUUS	G ANCHO	RS. DEC	CISIO	I TAKEN	TO BAI	LLAST DOWN
		08 - 42	TO SUR	VIVAI	L DRAFT - 60	FT.												
0,50T	2330	08 - 42	RIG @	SURV	IVAL DRAFT.	WAIT ON W	EATHER	@ CUI	RENT L	OCATION	5 NAUT	ICAL M	ILES F/	CHEVRO	ON DOI	NNA WES	T LOCAT	TION.
		08 - 42																
		08 - 42	WEATHE	R LO	G: WIND (M/S	) DIR	WAV	ЕН (М	(I) P	RES (MM.	HG)	PITCH	(DEG)	ROLI	L (DE	G) H	EAVE (N	1)
		08 - 42	20:30	HRS	16	040		3.0		764		0	. 3	(	0.3		0.2	
		08 - 42	22:00	HRS	16	040		3.5		764		0	. 3	(	0.4		0.2	
		08 - 42	00:00	HRS	17	035		4.0		764		0	. 2	(	0.4		0.2	
		08 - 42	02:00	HRS	17	035		4.0		764		0	. 3	(	0.4		0.2	
		08 - 42	04:00	HRS	17	035		4.0		764		0	.5	(	0.4		0.2	
		08 - 42	06:00	HRS	18	035		4.0		764		0	. 5	(	0.4		0.2	
		08 - 42																
		08 - 42	RIG WO	RK DI	JRING TOW &	WOW: WOW	MUD PIT	MPS. F	E-INST	ALL PIPE	HANDI.	IR, ST.	[P & CTI	T RUCKI	ER WT	RES.		
		08 - 42		- 2						VE TORQU								
Safety	7: DAY			ı ad	-SPUD MEETIN													
24 Hr	Summe	ary:	י שוואדיים	יי שטין	O CHEVRON DO		ויייע דייי	ON P	ΔΤ,Τ,Δ <b>Ο</b> Ͳ	בייייייייייייייייייייייייייייייייייייי	יידויקווף	AT. DOM	ייות ייק	דמיייי	בר כ	י באדדעם	WEDTHER	. WOW
					WEATHER. BY												, <u>, , , , , , , , , , , , , , , , , , </u>	
Remark	s:		WA.		· ····································		WINT.	_,UE 1	J., 10 (	VALUE VALUE		<u> </u>	VIV 1 16 10	r 1011	LEVUTI	~ · · ·		
<u> </u>																		
				_	NAUTICAL MII		INA WES						1					
			R15,262		ily Tangible					ll Cost:			Incide			T AID	Г	
		st: KR6			m Tangible C			Cı	m Well	Cost:								
		r: 1384	Pot	able	Water: 1824		ZU1.				Weight		Ne	at Ceme	ent:	3424	Blende	
Countr	y: N	ORWAY				Rig: BYFOR	D DOLE	HIN		Rig Pł	none: <sub>52</sub>		35	Drill:	ing R	ep: ELK	INS/HOL	LINSHEAD
Field:	PL25	59			Lea	se: <sub>PL259</sub>					Wel	l No:	6506/3-	1				UB5908 -0
						: 6506/3-1		i	AFE No:	KWENO-	650631-	001		Date:	17-JU	L-2001	Page	: 1 Of 1

Measur	red D	epth:		0		TVD:		0		PBT	D:		0	Prop	osed MC	·: 1	1,893	, Pr	oposed	l TVD:	11,89	93 '
DOL:	2	DI	īs:	5	Spud Da	ate:					Daily	r Foot	age	:	Da	aily Ro			Tota	l Rot Hi		_
Torq:		Drag	ı:	Rot	Wgt:	P	/U Wgt	:	Sl	Lack	Off Wo	t:		Wind	: 15	Seas	: 7	/ 13	Bar:	30,04	POB:	81
Last C	asin	g Size:				Set i	At:				MD			<u> </u>	TVD	Shoe T			EMW	Leako		-
Cum Ro	t Hr	s On Ca	sing:		Cun	n Rot H	rs On (	Casing	g Sin	ce L	ast Cal	iper			Depth	Worst	Wear:			Remaini	ng:	
Liner	Size	:			Set i	At:		MD				IVD		Li	ner Tor	At:		ME	<u> </u>			TVD
Mud Co	:			ŗ	Type:						Sam	ole F	ram:	FLOW V	Wt:	FV:	PV		YP:	Gel:		/
WL	API:		HTHP:		FC (1/	/32) <sub>AP</sub>	r. ·	HTHP:	S	Solid			% Oi∶		₩ate	r:	% Sa	and:	ME	 BT:	Ph:	
Pm:	API.	Pf/Mf:		/	Carb:		cl:	птиь.	Ca:		Ber	ıt:		Solid	s %HG/L	G:		9	DS/Ber	ıt:		
				/	<u> </u>																	
Drlg G	lag:		Max G	as:	Co	nn Gas:		Trip	Gag:		Т	rip C	1:	R	emarks:							
																		.		1m 0 1	I	
Bit Nu	mber	IADC	Size	e Ma	anufac	turer	Seria	al num	ıber		Jet /	.s (Ç	uant /	/ /	Size)	,	TFA	A M	D In	MD Out	TVI	Out
										-	/_	<del>- '</del>	/ - / -	/	- / - /	 '	0					
			.			op	Τ.			Moto	, DDM		<u>,                                    </u>		7				al.	20.11		<b>/</b> TI
T	ype	Fee	t	Hours	3	WOB	F	2PM	•	MOTO	r RPM	T-F	ROW	0-Row	Œ	Loc	В	G	Chai	?Pull	Cost	t/Ft
		$\dashv$						/				+	$\dashv$					+				
moto 1	T.C~ -	th of D			חם	/ A Descr	intion	/ :							<u> </u>				<u> </u>			
iotal	reng.	th of B	nA•		Dfl	DCSUL	C C C C C C C C C															
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Bit Nu	m	Line	er	1	Str	roke /	,		SPM		Press.	GP.	M C	Jet Ve	1 DP 2	Av Do	C Av	Bit H	IP BH	HP/SQIN	Pump	HHP
						<u>/</u>	<u>/</u>	/	<u>/</u>										_			
	<u> </u>					<u>/</u>	<u>/</u>	/	<u> </u>													
Survey	MD	Angle	Azim	nuth	Dire	ction	7	TVD	]	N/S (	C∞rdir	ates		E/W C	Coordin	ates	Vert	ical S	ection	ı	DLS	
Hours	From	Act-Cat	_			Operat	ions C	bveri	ng 24	Hou	ırs End	ing a	t Mi	dnight	:			Tota	al Hou	rs Repo	rted:	24,0
24,00 <sub>T</sub>	0000	08 - 42	RIG @	9 SURV	IVAL D	RAFT. I	O TIAW	VEAT	HER @	@ CUI	RRENT I	OCAT]	ON 5	5 NAUT	ICAL MI	LES F/	CHEVE	RON DOI	JNA WE	ST LOCA	TION.	
		08 - 42																				
		08 - 42	WEATH	HER LC	G: WIN	ID (M/S	) DI	[R	WAVE	Н (1	M) E	RES (	MM.F	IG)	PITCH	(DEG)	ROI	LL (DEC	3)	HEAVE (I	M)	
		08 - 42	00:00	) HRS		17	03	35	4	.0		76	54		0.	2		0.4		0.2		
		08 - 42	04:00	HRS		17	03	35	4	.0		76	54		0.	5		0.4		0.2		
		08 - 42	08:00	HRS		15	02	25	4	.0		76	54		0.	5		0.5		0.2		
		08 - 42	1			12		25		.0		76			0.			0.4		0.2		
		08 - 42				13		30		.0		76			0.			0.4		0.2		
		08 - 42				13		30		.0 -4		76			0.			0.4		0.2		
		08 - 42			(7\N/\	15 17		30 20		-4 0		76			0.			0.4		0.1		
		08 - 42		מאח	( MIAI )	Τ/	02	-0	ь	.0		76	, т		0.	J		0.6		∪.∠		
		08 - 42								_							- · -					
				VORK W	HILE W	IOW: TES	ST LOWE	ER ANN	IULAR	TO !	500/750	0 PS1	J & T	JPPER .	ANNULAR	TO 50	U/3500	) PSI I	FOR 5/	10 MINS	- OK.	
		08 - 42				TES	ST IBO	P'S TO	500,	/5000	O PSI F	OR 5/	′10 N	MINS -	OK. RE	PLACE	WASH E	PIPE, C	CONT W	/ ASSY (	OF BOP	'S.
Qafa	<u> </u>	08 - 42													INSTALL	WEPCO	ANCHO	ORS ON	GUIDE	WIRES.		
sarety	· MUS	STER DR	ILL &	FIRE '	TEAM E	XERCISE	HELD.	DAY	SHIFT	'SAF	ETY ME	ETING	HEL	D.								
		ary: WA																				
Projec	ted (	peratio	ons: W	AIT O	N WEAT	HER. CC	NTINUE	TOW '	TO CH	EVRC	IN DONN	A WES	T LO	CATION	N & RUN	ANCHOR	s.					
Remark	۵٠																					
06:00	OPS:	WAIT O	N WEAT	HER A	PPROX	5 NAUTI	CAL MI	LES F	/ DON	INA W	EST LO	CATIO	N -	17 M/S	S WIND,	6 METE	E SEA	s.	_			
Daily	Mud (	Cost: K	215,26	ia Da	aily Ta	angible	Cost:			Da	aily We	11 Cc	st: <sub>k</sub>	r3,096	6,008	Incide	ents:	NO I	NCIDEI	VI REPOR	TED	
		st: KR8		_	ım Tang	gible C	lost:				um Well				87,350							
		r: 1321		otable	e Wate	r: 1667	, Fu	æl:	1956			В			3726			ment:		Blende	ed:	
Countr							Rig: <sub>BY</sub>			TN					2 88 03	35	Dril	ling Re	p:	KINS/HOL		באה
Field:	N	UKWAY							WILH	ITIN .					11 No:	33 506 / 3	1			CINS/HOL ell ID:		
	PL2	9			1		se: <sub>PL2</sub>			1	AFE No	7,7	NTO C			-		10 -			: 1 (	
						API No	· 05U6/	5-1		4	טאו הייני	KWE	MO-6	-1≿0∪c	-UUT			18-JU	∟-2001	rage	· T (	<i>)</i> ⊥ ⊥

Measure	ed De	epth:		0.0		TVD:		0.0		PBTI	):	0.0	Propo	osed M	):	3625	m Pro	posed	TVD:	3635 m
DOL:	3	D	FS:		Spud	Date:					Daily	Footag	e:	D	aily R	ot Hrs:		Total	Rot Hr	s:
Torq:		Drag	J:	Rot	Wgt:	P	/U Wgt	:	S	lack	Off Wgt	; <b>:</b>	Wind	: 18	Seas	: 3.0	/ 6.0	Bar:	757	POB: 81
Last Ca	asing	g Size:				Set 1	At:				MD		-	TVD	Shoe '			EMW	Leako	
Cum Rot	t Hrs	s On Ca	sing:		С	um Rot Hi	rs On	Casing	g Sin	.ce La		iper:		1	Worst		0		emainin	ıq:
Liner S	Size:	<u> </u>			Set	At:						- -	Li	ner To						
Mud Co:				ĺ				MD			_	VD			<u> </u>	PV:	MD	YP:	G-1.	TVD
	•				Type:					Solid		% O	FLOW	wate	FV:			MB.	Gel:	Ph:
	API:	1	HTHP:	:	FC (1	API		HTHP:	1	SOLIC	-		1			% Sa				PII.
Pm:		Pf/Mf:		/	Car	b:	Cl:		Ca:		Bent	:	Solids	8 %HG/I	LG:	/	%I	)S/Bent	:	/
Drlg G	as:		Max (	às:	C	Conn Gas:		Trip	Gas:		Tr	ip Cl:	Re	emarks	•					
Bit Nu	mber	IADC	Siz	ze M	lanufa	acturer	Seria	al nur	nber		Jets	s (Quai	ntity -	Size)		TFA	MI	) In	MD Out	TVD Out
										-	/ -	- /	- /	- /	/ _	0				
										-	/ -	- /	- /	- /	/ _	0				
Tv	<i>r</i> pe	Met	ers	Hour	s	WOB	F	RPM		Motor	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
						/		/												
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Total 1	[enat	h of B	ΗΔ:		E	3HA Descr	iption	<u>'</u> 1:					<u> </u>		<u> </u>					
10001																				
													IIma Or	Towa		Hoursa	Cinac	Tagt	Tnancat	ion:
	1				İ			1		-		İ	Hrs Of	ı Jars:		Hours	БШСЕ	Last	Inspect	TOI1•
Bit Nur	n	Line	er		S	troke	,		SPM	:	Press.	M3/Min	Jet Ve	l DP	Av D	C Av	Bit kW	BHHI	P/SQIN	Pump kW
			/			/	<u>/</u>	/	/ /											
			/			/ ,	<u>/                                      </u>	/	<u>/                                    </u>											
Survey	MD	Angle	Azi	muth	Dir	rection	5	TVD		N/S C	!∞rdin	ates	E/W C	oordir.	ates	Verti	.cal Se	ection		DLS
Hours 1	-Trom	Nat -Ca	_			Oporat	iona (	buori	ng 2/	l Hous	ca Endi	na at N	  idniqht			<u> </u>	Tota	l Hour	g Popor	ted: 24,0
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		08 - 42	04:0	00 HRS		16	0:	30	4	.0		762		0	. 4	-	0.5		0.2	
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16.50T 0000 08 - 42 RES	Survey	MD.	Angle	Azimuth	n	Direction	TVD		N/S Co	ordina	ites	E/W C	oordir	ates	Verti	cal S	ection		DLS
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16.50T 0000 08 - 42 RES																			
16.50T 0000 08 - 42 RES																			
16.50T 0000 08 - 42 RES @ SURVIVAL DRAFT. WAIT ON MEATHER @ CURRENT LOCATION APPROX 5 NATICAL MILES F/ DOWNA WEST LOCATION.    08 - 42																			
08 - 42   WENTHER LOS: WIND (M/S)   DIR   WAVE H (M)   PRES (NM.HS)   PITCH (DBS)   ROLL (DBS)   HEAVE (M)	Hours	From	Act-Cat	t		Operat	ions Coveri	ng 24	Hour	s Endir	ng at M	Iidnight				Tota	al Hour	s Repoi	rted: 24.0
08 - 42   WEATHER LOG: WIND (M/S)   DIR   WEVE H (M)   PRES (MM.HG)   PITCH (DBI)   RGLL (DEG)   HEAVE (M)	16.50T	0000	08 - 42	RIG @ S	URVIV	/AL DRAFT. V	WAIT ON WEAT	THER (	@ CURR	ENT LO	CATION	APPROX	5 NAU	rical M	ILES F	/ DON	NA WEST	LOCATI	EON.
08 - 42   00:00 HRS			08 - 42	2															
08 - 42   04:00 HES			08 - 42	WEATHER	LOG:	WIND (M/S	) DIR	WAVE	H (M)	PR	ES (MM.	.HG)	PITCH	(DEG)	ROLI	L (DEC	G) H	EAVE (1	1)
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08-42   16:00 HRS   16   000   6.0   761   1.5   2.0   0.8																			
5.00T 1630 08 - 42 WEATHER FORECASTS PREDICT AN IMPROVING SEA STATE. DECISION TAKEN TO DE-BALLAST RIG TO TOWING DRAFT.  1.50T 2130 08 - 42 RIG AT TOWING DRAFT - CONTINUE TO WAIT ON SEA STATE TO ALLOW ANCHOR HANDLING TO COMMENCE.  1.00 2300 08 - 41 COMMENCE 'RUN IN ON LINE' TO DEPLOY ANCHOR #5.  08 - 42 RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /  08 - 42 STRENNSHHENING WORK TO CATWALK. CONTINUE W/ BM & GENERAL RIG MAINTENANCE WORK.  Safety: PRE-SPID MEETING HELD FOR NEW DRILL CREW.  24 Hr Summary: WAIT ON IMPROVEMENT IN WEATHER. DE-BALLAST TO TOWING DRAFT & COMMENCE DEPLOYMENT OF ANCHORS.  Projected Operations: RUN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" x 26" x 36" BHA & RIH TO SPUD Remarks:  POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8  DAYS SINCE LAST LIT - 55  DAYS SINCE LAST LIT - 55  DAYS SINCE LAST LIT - 55  Cum Mud Cost: RR137,762 Daily Tangible Cost: Daily Well Cost: RR37,822,904 Total Appr: RR134,000,000 Drill Water: 200.0 Potable Water: 180.0 Fuel: 293.0 Bulk Weight: 196.0 Neat Cement: 146.0 Blended:  Country: NORWAY RES PLASS PREDICT OF THE PROPERTY OF THE P																			
5.00T 1630 08 - 42 WEATHER FORECASTS PREDICT AN IMPROVING SEA STATE. DECISION TAKEN TO DE-BALLAST RIG TO TOWING DRAFT.  1.50T 2130 08 - 41 RIG AT TOWING DRAFT - CONTINUE TO WAIT ON SEA STATE TO ALLOW ANCHOR HANDLING TO COMMENCE.  1.00 2300 08 - 41 COMMENCE 'RUN IN ON LINE' TO DEPLOY ANCHOR #5.  08 - 42 RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /  08 - 42 RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /  Safety: PRE-SPUD MEETING HELD FOR NEW DRILL CREW.  24 Hr Summary: WAIT ON IMPROVEMENT IN WEATHER. DE-BALLAST TO TOWING DRAFT & COMMENCE DEPLOYMENT OF ANCHORS.  Projected Operations: RUN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" X 26" X 36" BHA & RIH TO SPUD REMAINS:  POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8  DAYS SINCE LAST LIT - 55  DAYS SINCE LAST LIT - 55  DAYS SINCE LAST LIT - 55  DAYS SINCE LAST LIT - 55  Cum Mad Cost: KR33,762 Daily Tangible Cost: Daily Well Cost: KR31,127,627 Incidents: NO INCIDENT REPORTED  Cum Mad Cost: KR129,086 Cum Tangible Cost: Daily Well Cost: KR37,892,904 Total Appr: KR134,000,000 Drill Water: 200.0 Potable Water: 180.0 Fuel: 293.0 Bulk Weight: 196.0 Neat Cement: 146.0 Blended:  Country: NORWAY RIGHER FORECASTOR SET ON THE TOWN OF THE PROPRIED WELL INSTRUMENT OF THE PROPRIED WELL INSTRU					KS	10	000	0	.0		761			. 5		2.0		0.0	
1.507 2130 88 - 42 RIG AT TOWING DRAFT - CONTINUE TO WAIT ON SEA STATE TO ALLOW ANCHOR HANDLING TO COMMENCE.  1.00 2300 88 - 41 COMMENCE 'RUN IN ON LINE' TO DEPLOY ANCHOR #5.    08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELLOWS AND TO		1.620			=====	IGIGEG PRES		O	GER 6		DEG = G = G							D	
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08 - 41   08 - 42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08 - 42   STRENGTHENING WORK TO CATWAIK. CONTINUE W/ PM & GENERAL RIG MAINTENANCE WORK.   Safety: PRE-SPUD MEETING HELD FOR NEW DRILL CREW.   24 Hr Summary: WAIT ON IMPROVEMENT IN WEATHER. DE-BALLAST TO TOWING BRAFT & COMMENCE DEPLOYMENT OF ANCHORS.   Projected Operations: RIN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" X 26" X 36" BHA & RIH TO SPUD											ь тО Al	TIOM AIN(	JOK H	-MTTT/NG	, 10 WI	· II · II · II · II · II · II · II · I	٠.		
08-42   RIG WORK WHILE WOW: REPAIR & TEST KELLY HOSE CONNECTION TO 500/5000 PSI - OK. CARRY OUT WELDING REPAIR /   08-42   STRENGTHENING WORK TO CATWALK. CONTINUE W/ PM & GENERAL RIG MAINTENANCE WORK.   Safety: PRE-SPUD MEETING HELD FOR NEW DRILL CREW.   24 Hr Summary: Walt ON IMPROVEMENT IN WEATHER. DE-BALLAST TO TOWING DRAFT & COMMENCE DEPLOYMENT OF ANCHORS.   Projected Operations: RIN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" X 26" X 36" BHA & RIH TO SPUD REmarks:   POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8   DAYS SINCE LAST LTI - 55	1.00	2300			ь 'RU	N TN ON LI	ME. IO DEBT(	JY AN	UHUR #	5.									
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Safety: PRE-SPUD MEETING HELD FOR NEW DRILL CREW.  24 Hr Summary: WAIT ON IMPROVEMENT IN WEATHER. DE-BALLAST TO TOWING DRAFT & COMMENCE DEPLOYMENT OF ANCHORS.  Projected Operations: RUN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" X 26" X 36" BHA & RIH TO SPUD Remarks: POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8  DAYS SINCE LAST LTI - 55  DAYS SINCE LAST LTI - 55  DAILY MUD Cost: KR33,762  Daily Mud Cost: KR33,762  Daily Tangible Cost:  Daily Well Cost: KR33,127,627  Daily Well Cost: KR37,892,904  Drill Water: 200.0  Potable Water: 180.0  Fuel: 293.0  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0			08 - 42	RIG WOR	K WHI	LE WOW: REI	PAIR & TEST	KELL	Y HOSE	CONNE	CTION T	ro 500/5	5000 P	SI - OK	. CARRY	Z OUT	WELDIN	G REPAI	IR /
24 Hr Summary: WAIT ON IMPROVEMENT IN WEATHER. DE-BALLAST TO TOWING DRAFT & COMMENCE DEPLOYMENT OF ANCHORS.  Projected Operations: RIN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" X 26" X 36" BHA & RIH TO SPUD  Remarks: POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8  DAYS SINCE LAST LTI - 55  DAILY MUD Cost: RR33,762  Daily Tangible Cost: Daily Well Cost: RR31,127,627  Daily Well Cost: RR37,892,904  Drill Water: 200.0  Potable Water: 180.0  Fuel: 293.0  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0	Co.F.							WORK	TO CA	TWALK.	CONTIN	NUE W/ E	PM & G1	ENERAL	RIG MAI	INTENA	ANCE WO	RK.	
Projected Operations: RIN & PRE-TENSION ANCHORS, BALLAST DOWN TO OPERATIONAL DRAFT, M/U 17.1/2" X 26" X 36" BHA & RIH TO SPUD  Remarks: POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8  06:00 OPS: CONTINUE TO RUN ANCHORS @ DONNA WEST LOCATION. ANCHORS #2, #5, #6, #8, #10 & #11 SET.  Daily Mud Cost: RR33,762  Cum Mud Cost: RR129,086  Cum Tangible Cost:  Cum Well Cost: RR37,892,904  Drill Water: 200.0  Potable Water: 180.0  Fuel: 293.0  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259  Well No: 6506/3-1  Well ID: WB5908 -0																			
Remarks:  POB: CHEVRON - 2, SERVICE - 18, DOLPHIN - 53, DOLPHIN SERVICE - 8  DAYS SINCE LAST LTI - 55  DAYS SINCE LAST LTI	24 Hr	Summe	ary: WA	IT ON IM	PROVE	MENT IN WEA	THER. DE-BA	LLASI	TO TO	OWING 1	DRAFT &	COMMEN	CE DEF	LOYMEN	r of an	CHORS	S.		
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Daily Mud Cost: KR33,762 Daily Tangible Cost: Daily Well Cost: Cum Well Cost: KR3,127,627 Incidents: NO INCIDENT REPORTED  Cum Mud Cost: KR129,086 Cum Tangible Cost: Cum Well Cost: KR37,892,904 Total Appr: KR134,000,000 Drill Water: 200.0 Potable Water: 180.0 Fuel: 293.0 Bulk Weight: 196.0 Neat Cement: 146.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0			<u> 2</u> ,	SERVIC	E - 1	8, DOLPHIN	r - 53, DOI	PHIN	SERVI	CE - 8							AYS SI	NCE LAS	T LTI - 55
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Drill Water: 200.0       Potable Water: 180.0       Fuel: 293.0       Bulk Weight: 196.0       New Cement: 146.0       Blended: 146.0         Country: NORWAY       Rig: BYFORD DOLPHIN       Rig Phone: 52 88 03 35       Drilling Rep: ELKINS/HOLLINSHEAD         Field: PL259       Lease: PL259       Well No: 6506/3-1       Well ID: UB5908 -0				-	Cum	Tangible C	ost:							Total	Appr:	KR134	1,000.0	00	
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Field: PL259 Well No:6506/3-1 Well ID:UB5908 -0				<u>-  </u>										- <u>I</u> 35	Drill:	ing Re	= 20.0 ≘p: ⊟n.v.	TNIS / HOT	TINKHEAD
FLED - 1000/0 1	Field:	יר זת	20					1						5506/3-	·1				
API No: 6506/3-1		ruZ;	رر						AF	E No:	KWENO-					20- <sub>-</sub> πτ			

Measured	Depth:	0	.0	TVD:	0.0		PBTD	:	0.0	Prop	osed MI	): 3	3625.0 n	n Pro	posed	TVD:	3625.0 m
DOL: 5	]	OFS:	Spu	d Date:				Daily	Footage	e: 0.	.0 D	aily Ro	ot Hrs:		Total	Rot Hr	s:
Torq:	Dra	ıg:	Rot Wg	t: P	/U Wgt:	S	lack 0	ff Wgt	:	Wind	•	Seas	: 5.0 /	0.0	Bar:	764	POB: 81
Last Casi	ng Size	:		Set A	At:		1	MD.			TVD	Shoe 5			EMW	Leako	
Cum Rot H	rs On C	asing:		Cum Rot H	rs On Casin	g Sin			iper:		T	Worst	Wear:	U		emainin	q:
Liner Size	e:		S	et At:					-	Li	ner To						
			_		MD			_	VD	<del></del>			PV:	MD	YP:	a 1.	TVD
Mud Co: <sub>M-</sub>	I NORŒ	A.S.		e: SEAWATER	2		Solids		le From		Wate				MB'	Gel:	Ph:
WL API	1	HTHP:		(mm) API			SOTIUS	-		1			% San				PII.
Pm:	Pf/Mf	·	Ca	arb:	cl:	Ca:		Bent	::	Solida	s %HG/I	.G:	/	%L	S/Bent	:: 	/
Drlg Gas:		Max Gas	:	Conn Gas:	Trip	Gas:		Tr	ip Cl:	R	emarks:						
Bit Numbe	r IADC	Size	Manu	facturer	Serial nu	mber		Jets	s (Quar	ntity -	Size)		TFA	MI	) In	MD Out	TVD Out
1	1-3-1	17.5	5	SMITHS	49335		3 - 22	2.2/ -	. / .	- /	- /	/ _	1163.9	366	5.0 m		
2		36.0		IPE	39252		6-14	1.3/ -	. /	- /	- /	/ _	963.9	366	5.0 m		
Туре	Me	ters H	ours	WOB	RPM		Motor	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
DGJ			0.0	0.0/0.0					1 100	O Itow	200	100			CHAI		0.00
26" X 36"					/												
-			0.0	/ Doggr	intion:												0.00
Total Leng		2,72	2.87 m		iption: 17												
ANDERDRI	FT - 3	X 9.1/2"	DC - 2	X/OVER - 3	X 8" DC -	X/OVE	IR - 3	X 5" I	HWDP -	6.1/2"	WEIR H	OUSTON	JARS -	14 X	5" HWI	)P	
					<del></del>				i -	Hrs O	n Jars:		Hours	Since	Last	Inspect	ion:
Bit Num	Lir	ier		Stroke		SPM	P	ress.	M3/Min	Jet Ve	l dp.	Av D	C Av E	sit kW	ВНН	P/SQIN	Pump kW
1	152 /	152 / 15	30	4.8/304.8	/ 304.8	/ /		0	0.00	0.00	0.0	00 0	0.00	0.00	(	0.0	0.00
2	152 /	152 / 1!	52 304	4.8/304.8	/ 304.8	/ /			0.00	0.00	0.0	00 0	0.00	0.00		0.0	0.00
Survey MD	Angle	Azimut	h D	irection	TVD		N/S Co	ordina	ates	E/W C	cordin	ates	Vertic	cal Se	ection		DLS
	3 -						,			,							
		+															
		<u> </u>											<u> </u>				
Hours Fra	n Act-Ca	at		0perat	ions Coveri	ng 24	Hour	s Endi:	ng at M	idnight	:			Tota	l Hour	s Repor	ted: 24.0
1.00 000	0 08 – 4	1 CONT 'I	RUN IN	ON LINE' U	INDER THE T	OW OF	"FAR	FOSNA"	TO DEE	PLOY AN	CHOR #5	5.					
3.00 010	0 08 - 4	0 COMMEN	CE ANCH	HOR HANDLII	G OPERATIO	NS W/	PENNA	NT #5	TO "NOF	RMAND P	ROGRESS	S". DEP	LOY AND	HORS	#5, #1	1 & #2.	
9.50 040	0 08 - 4	0 RELEAS	ED FROM	TOW OF "I	FAR FOSNA".	CONT	TO RU	N ANCH	IORS #8,	#10,	#6, #9,	#7, #	3, #4 &	#12	WORKIN	G 3 AHV	. COMMENCE
	08 - 4	0 BALLAS	ring Ri	IG TO OPERA	ATIONAL DRA	FT @ :	12:40	HRS. A	NCHOR I	HANDLIN	G COMPI	ETED B	Y 13:30	HRS.			
6.00 133	0 08 – 4	0 CONTIN	JE TO E	BALLAST RIC	G DOWN TO O	PERAT:	ING DR	AFT OF	7 21.3 N	(AIR	GAP OF	25 M).					
														1 #6	s. #12	ΔT.T. TΩ	150 MT FOR
1.30 133										по с п	J, πΙ α	π10,	#2 0c #1	Ι, πο	α π12	ALL TO	150 111 101
			3 - OK.	. CROSS TEI	NSIONING CO	MPLET.	E BY 2	4:00 F	IRS.								
	08 - 4																
	08 – 4	0 FINAL I	RIG POS	SITION OF B	BYFORD DOLP	HIN: I	N 65 D	EG 48	MIN 20.	.8 SEC	- UTN	1 73003	02.5 M	N.			
	08 - 4	0				]	E 06 D	EG 44	MIN 32.	6 SEC	- UTN	1 3967	65.5 M	E.			
	08 - 4	0															
	08 - 4	0 DURING	TENSIC	ONING - TAI	Œ ON DRILL	WATER	& COM	MENCE	MIXING	SPUD,	KILL &	DISPLA	CEMENT	MUD A	S PER	PROGRAM	
	08 - 4	0		M/T	J 17.1/2" B	IT & :	26" X	36" H/	OPENER	ASSY.	SURFACE	TEST	ANDERDR	IFT W	/ 1940	LPM, 5	0 BAR - OK.
	08 - 4	0	_	·π.	P ROV. TIH	W/ H	/OPENF	R ASSV	TO MIT	LINE	_	_	_		_		
	_			0.01	+	., 11				,							
Safety:	1																
24 Hr Sum	mary:	TAT 3350550	00 577	T A CM D T C =	OWN TO OPER	ολ m τ ~··	TAT	7 E.E. C	anoac =		7,77777	C 34/T-	C [[]]	26 "	T7\		
															ıA.		
Remarks:	oF	DR1	.LL 36"	HOLE TO 4	56 м. РООН	, R/U	& RUN	30" C	ONDUCTO	R & PGE	3. CEME	N:I: 30"	CONDUC	IOR.			
	RON - 2	, SERVIC	E - 18	, DOLPHIN	- 53, DOI	PHIN	SERVI	CE - 8						D/	AYS SI	NCE LAST	r LTI - 55
06:00 OPS	DRILL	36" TO 4	56 M.	DISPLACE H	OLE TO 1.2	SG DI	ISPLAC	EMENT	MUD.					_			
Daily Mud	Cost:	TR 26, 262	Dail	y Tangible	Cost:		Dai	ly Wel	.l Cost:	KR3,18	5,250	Incid	ents:	NO II	NCIDEN	T REPORT	TED
Cum Mud Co			Cum '	Tangible C	ost:								Appr:				
Drill Wate			able W	ater: 180.	O Fuel:	202.2				Weight			at Ceme				d:
Country:		.0 [-30	•		•					none: 52			Drilli	ng Re	0.0±0.U		LINSHEAD
Field:	NORWAY				Rig: BYFORD	MTbH	1LIN		J 21								
Field: PL	259				se: PL259		I_					5506/3-			_		JB5908 -0
				API No	6506/3-1		AF	F NO:	KWENO-	650631-	-001		Date: /	21-JUI	-2001	Page:	1 of 1

Measured	Den	th:			TVD:			PBTD:		D				Dr	posed	шл.	
	Щ		456.			456.0 m			0.0	_	sed MD		3625.0	m			3625.0 m
DOL: 6	5	DE	rs: 1	Spud :	Date: 22	-JUL-2001		Daily	Footag	e: 90.			ot Hrs:	5.5	Total	Rot Hr	rs: 5.5
Torq: 1	L1	Drag	: 0.0 R	ot Wgt:	160.0 P	/U Wgt: 160.	.o sl	ack Off Wgt	: 160.	0 Wind:	11	Seas	: 4.0	/ 0.0	Bar:	758	POB: 81
Last Casi	ing :	Size:		62.0 mm	Set A	\t:	451.0	Om MD	4	51.0m	TVD	Shoe	Test:	0	EMW	Leako	off?
Cum Rot H	Hrs (	On Cas				rs On Casing					Depth	Worst	Wear:		% R	emaini	ng:
Liner Siz	ze:			Set	At:				VD		er Top						
				<u> </u>		MD							DII	MD			TVD
Mud Co: <sub>M-</sub>					SEAWATER					PIT W			-	-		Gel:	0 / 0
WL API						: 0.0 HTHP:	0.0	Solids:	8 0	il: 0.00	*Wate	r: 0.0	0    Sa	nd:	MB'	I.:	Ph:
Pm: 0.00	)	ef/Mf:	0.00 /0	.00 Carb	o: (	<b>:</b>	Ca:	Bent	:	Solids	%HG/L	G:	/	윙	OS/Bent	:	/
85 1N	MT I	BARITE	]	100	1KG SOD	A ASH	24	1mt bent	CONITE A	API 50	1 <sub>K</sub> (	G CMC	HV TEC	Н			
Drlq Gas:	:	]	Max Gas:	C	onn Gas:	Trip	Gas:	Tr	ip Cl:	Re	marks:						
		7.00	Q÷	M							a; )		mea.			MD 0	- FT D O - +
Bit Numbe		ADC	Size	Manufa		Serial num	iber.	,		ntity - /	Size)	,	TFA		O In	MD Out	
1	1	-3-1	444.5	-	ITHS	49335		3-22.2/ -		- /	- /		1163		6.0 m	456.0	
2		1	914.4		PE	39252		6-14.3/	· /	- / 	- /	_	961.	9 36	6.0 m	454.0	m 454.0 m
Type	<u> </u>	Met	ers Ho	ırs	WOB	RPM	I	Motor RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
DGJ		90	.0 5	.5	2.3/4.5	50 / 80			0	0	NO	A7	E	I	NO	TD	К 9747.64
26" X 36	5" HC	0	.0 0	. 0	2.3/4.5	50 / 80			0	0	NO	A7	E	I	NO	TD	0.00
Total Len	ngth	of BI	HA: 232.	87 m B	HA Descr	iption: 17	.1/2"	SMITH DGJ	ROCK BI	т - 26"	X 36"	H/OPEI	VER - E	BIT SU	B C/W F	LOAT -	•
ANDERDR:	IFT	- 3 X	9.1/2"	OC - X/0	OVER - 3	X 8" DC - X	K/OVEF	R - 3 X 5"	HWDP -	6.1/2" V	ŒIR HO	DUSTON	JARS -	- 14 X	5" HWD	)P	
										Hrs On	Jars:	5.5	Hours	Since	e Last	Inspec	tion: 5.5
Dit Non		T 2		G.	1		CIDM.	D	242 /241				1				3.3
Bit Num		Line /		-	roke	1	SPM			Jet Vel			C Av				Pump kW
<b>l</b>	152	/ 15	52 / 152	_	· .	/ 304.8 104/		-	5.02	72.27	7.8		5.90	0.00	(	0.0	11.60
2	152	/ 1	52 / 15:	304.	8/304.8,	304.8 104	104/1	L04 140	5.01	87.08	7.8	0 8	3.20	0.00	(	0.0	11.60
Survey MD	) A	ngle	Azimuth	Dir	ection	TVD	N	N/S Coordina	ates	E/W Co	oordin	ates	Verti	ical S	ection		DLS
		. ~ .											<u>.                                    </u>				
															7 **	-	1 1. 04 0
Hours Fro								Hours Endi			/ 105		26				rted: 24.0
				JINE @ 3		ions Coveri					W/ 195	O LPM,	36 BA				rted: 24.0
0.50 000	00 0	1 - 06	TAG MUDI		366M (AD		'IDES)	. TAKE AND	ERDRIFT	SURVEY				R = 0	DEG IN	c.	
0.50 000	00 0	1 - 06 1 - 02	TAG MUDI	" HOLE	866M (AD	JUSTED FOR I	DES)	. TAKE ANDI PM, 142 BAI	ERDRIFT	SURVEY 80 RPM,	8 - 1	4 KN.N	TORQ.	R = 0 PUMP	DEG IN	C.	SWEEPS EACH
0.50 000	00 0 30 0	1 - 06 1 - 02 1 - 02	TAG MUDI DRILL 30 HALF STA	" HOLE	366M (ADD F/ 366M ATIC TORG	JUSTED FOR T - 456M W/ 5	DES)	. TAKE ANDI PM, 142 BAI	ERDRIFT	SURVEY 80 RPM,	8 - 1	4 KN.N	TORQ.	R = 0 PUMP	DEG IN	C.	SWEEPS EACH
0.50 000	00 0	1 - 06 1 - 02 1 - 02 1 - 02	TAG MUDI DRILL 30 HALF STA 456M (30	HOLE ND. ERA	F/ 366M F/ 366M ATIC TORG	USTED FOR T - 456M W/ 5 Q @ 390M, WC	OOO I	. TAKE ANDI PM, 142 BAI RU SAME. WO	ERDRIFT R, 50 - DRK STAI	SURVEY  80 RPM,  ND F/ 40	8 - 1 5M - 3	4 KN.N	I TORQ.	R = 0 PUMP RILLIN	DEG IN 10M3 H IG AHEA	C. I-VIS S	SWEEPS EACH
0.50 000 5.50 003	00 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDR	" HOLE  ND. ERF " CUTTE	F/ 366M ATIC TORGER DEPTH	USTED FOR T - 456M W/ 5 0 @ 390M, WC = 454M).	CIDES) 0000 I	. TAKE ANDI PM, 142 BAI RU SAME. WO	ERDRIFT R, 50 - DRK STAI , 385M :	SURVEY 80 RPM, ND F/ 40	8 - 1 5M - 3 397M	4 KN.M	TORQ.  FORE D	R = 0  PUMP  RILLIN  M = 2.	DEG IN  10M3 H  IG AHEA  5 DEG	C. I-VIS S D TO SI	SWEEPS EACH ECTION TD @ = 3.5 DEG.
0.50 000 5.50 003 0.50 060	00 0 30 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01	TAG MUDI DRILL 30 HALF SIZ 456M (30 ANDERDRI	" HOLE  ND. ERF  " CUTTE  FT SURV	F/ 366M (AD.) F/ 366M ATIC TORG CR DEPTH VEYS: MUI	JUSTED FOR T  - 456M W/ 5  @ 390M, WC  = 454M).  DLINE = 0 DE  G DISPLACEME	CIDES)  0000 I  ORK TH	. TAKE ANDI PM, 142 BAI RU SAME. WO VAM = 0 DEG ID @ 4625 LI	ERDRIFT R, 50 - DRK STAI , 385M :	SURVEY  80 RPM,  ND F/ 40  = 1 DEG,  BAR. PU	8 - 1 5M - 3 397M MP A T	4 KN.N 73M BE = 2 DE	TORQ.  FORE D  G, 427	R = 0 PUMP RILLIN M = 2. (1.5	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE	C. I-VIS S D TO SI	SWEEPS EACH ECTION TD @ = 3.5 DEG.
0.50 000 5.50 003 0.50 060 1.50 063	00 0 30 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDRI DISPLACE POOH TO	" HOLE  ND. ERA  " CUTTE  FT SURV  HOLE T	F/ 366M (ADATIC TORGER DEPTH VEYS: MUI	USTED FOR T  - 456M W/ 5  @ 390M, WC  = 454M).  DLINE = 0 DE  G DISPLACEME  H/OPENER AS	CIDES)  OOO I  ORK TH	. TAKE ANDI PM, 142 BAI RU SAME. WO 74M = 0 DEG ID @ 4625 LI HOLE SLICK	ERDRIFT  R, 50 -  DRK STAI  , 385M =	SURVEY  80 RPM,  ND F/ 40  = 1 DEG,  BAR. PU  POOH & R	8 - 1 5M - 3 397M MP A T	4 KN.N 73M BE = 2 DE	TORQ.  FORE D  G, 427	R = 0 PUMP RILLIN M = 2. (1.5	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE	C. I-VIS S D TO SI	SWEEPS EACH ECTION TD @ = 3.5 DEG.
0.50 000 5.50 003 0.50 060 1.50 060 1.50 080	00 0 30 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08	TAG MUDI DRILL 36 HALF STA 456M (36 ANDERDRI DISPLACE POOH TO R/U TO 1	" HOLE I CUTTE HOLE I MUDLINE	F/ 366M (ADATIC TORGER DEPTH VEYS: MUI CO 1.2 SC W/ 36" CONDUCTO	USTED FOR T  - 456M W/ 5  2@ 390M, WC  = 454M).  CLINE = 0 DE  G DISPLACEME  H/OPENER AS  OR USING FAL	COOO LOOK THE	. TAKE ANDI PM, 142 BAI RU SAME. WO 74M = 0 DEG ID @ 4625 LI HOLE SLICK	ERRIFT  R, 50 -  DRK STAN  , 385M =  PM, 166  . CONT 1  D SLIPS	SURVEY 80 RPM, ND F/ 40 = 1 DEG, BAR. PU POOH & R	8 - 1 5M - 3 397M MP A T /BACK	4 KN.M 73M BE = 2 DE OTAL C	TORQ.  CFORE D  CG, 427.  DF 80M3	PUMP RILLIN M = 2. (1.5	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE	C. II-VIS S D TO SI & 449M VOLUME	SWEEPS EACH ECTION TD @ = 3.5 DEG. E).
0.50 000 5.50 003 0.50 060 1.50 060 1.50 080	00 0 30 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08	TAG MUDI DRILL 36 HALF STA 456M (36 ANDERDRI DISPLACE POOH TO R/U TO 1	" HOLE I CUTTE HOLE I MUDLINE	F/ 366M (ADATIC TORGER DEPTH VEYS: MUI CO 1.2 SC W/ 36" CONDUCTO	USTED FOR T  - 456M W/ 5  @ 390M, WC  = 454M).  DLINE = 0 DE  G DISPLACEME  H/OPENER AS	COOO LOOK THE	. TAKE ANDI PM, 142 BAI RU SAME. WO 74M = 0 DEG ID @ 4625 LI HOLE SLICK	ERRIFT  R, 50 -  DRK STAN  , 385M =  PM, 166  . CONT 1  D SLIPS	SURVEY 80 RPM, ND F/ 40 = 1 DEG, BAR. PU POOH & R	8 - 1 5M - 3 397M MP A T /BACK	4 KN.M 73M BE = 2 DE OTAL C	TORQ.  CFORE D  CG, 427.  DF 80M3	PUMP RILLIN M = 2. (1.5	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE	C. II-VIS S D TO SI & 449M VOLUME	SWEEPS EACH ECTION TD @ = 3.5 DEG. E).
0.50 000 5.50 003 0.50 060 1.50 060 1.50 080	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08	TAG MUDI DRILL 30 HALF SIZ 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 1 P/U & RI	" HOLE "ND. ERA " CUTTE "FT SURV. " HOLE T MUDLINE "YUN 30"	F/ 366M (ADATIC TORGER DEPTH VEYS: MUI CO 1.2 SC W/ 36" CONDUCTO JNT & 4	USTED FOR T  - 456M W/ 5  2@ 390M, WC  = 454M).  CLINE = 0 DE  G DISPLACEME  H/OPENER AS  OR USING FAL	CIDES)  OOO I  ORK THE  CG, 37  CNT MU  SSY -  SSE RC  X 1"	TAKE ANDI PM, 142 BAI RU SAME. WO  VAM = 0 DEG  ID @ 4625 LI HOLE SLICK DIARY & HANI WIT COND W,	ERRIFT  R, 50 -  ORK STAI  , 385M:  , 385M:  CONT 1  O SLIPS  / SL-60	SURVEY  80 RPM,  ND F/ 40  = 1 DEG,  BAR. PU  POOH & R  CONNECT	8 - 1 5M - 3 397M MP A T /BACK ORS AS	4 KN.M 73M BE = 2 DE OTAL C	TORQ.  CFORE D  CG, 427.  DF 80M3	PUMP RILLIN M = 2. (1.5	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE	C. II-VIS S D TO SI & 449M VOLUME	SWEEPS EACH ECTION TD @ = 3.5 DEG. E).
0.50 000 5.50 003 0.50 060 1.50 063 1.50 080 2.50 093	00 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1 - 08	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDR: DISPLACI POOH TO R/U TO 1 P/U & RI F/ SL-60	" HOLE " CUTTE " CUTTE " CUTTE " CHOLE 1 " MUDLINE " MUD	F/ 366M (ADA F/ 366M ATIC TORG CR DEPTH ZEYS: MUII TO 1.2 SC C W/ 36" CONDUCTO JNT & 4	USTED FOR T  - 456M W/ 5  @ 390M, WC  = 454M).  DLINE = 0 DE  G DISPLACEME  H/OPENER AS  OR USING FAL  JNTS OF 30"	CIDES)  OOO I  ORK THE  OG, 37  ONT MU  OSY -  SE RO  X 1"	TAKE ANDI PM, 142 BAI RU SAME. WO  AM = 0 DEG D @ 4625 LI HOLE SLICK DTARY & HANI WT COND W, I 30" X 1.5"	ERRIFT  R, 50 -  ORK STAI  , 385M :  PM, 166  CONT    O SLIPS  / SL-60	SURVEY  80 RPM,  ND F/ 40  = 1 DEG,  BAR. PU  POOH & R  CONNECT  HSG JOI	8 - 1 5M - 3 397M MP A T /BACK ORS AS	4 KN.N. 73M BE = 2 DE OTAL ( 36" H/	TORQ.  FORE D  GG, 427.  OF 80M3  OPENER	PUMP RILLIN M = 2. (1.5 ASSY.	DEG IN 10M3 H IG AHEA 5 DEG X HOLE RUN 1.	C. II-VIS S D TO SI & 449M VOLUMI	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).
0.50 000 5.50 003 0.50 060 1.50 063 1.50 093 1.00 120	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1 - 08 1 - 08	TAG MUDI DRILL 30 HALF SIZ 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 1 P/U & RI F/ SL-60 R/U FALS	" HOLE "ND. ERA " CUTTE " CUTTE " HOLE T " HOLE T " HOLE T " HOLE T " HOLE T " HOLE T " HOLE T " HOLE T	F/ 366M (ADC) F/ 366M ATIC TORG CR DEPTH VEYS: MUI CO 1.2 SC W/ 36" CONDUCTO JNT & 4 -90 CONNE	USTED FOR T  - 456M W/ 5  @ 390M, WC  = 454M).  CLINE = 0 DE  G DISPLACEME  H/OPENER AS  OR USING FAL  JNTS OF 30"  OCTORS. P/U	CIDES)  OOO I  ORK THE  CG, 37  ENT MU  CSY -  SE RO  X 1"  & RUN  INER S	TAKE ANDOUGH, 142 BAI PM, 142 BAI PM, 142 BAI PM PM PM PM PM PM PM PM PM PM PM PM PM	ERRIFT  R, 50 -  ORK STAI  , 385M:  , 385M:  O SLIPS  / SL-60  ' WI LP  ED OUT:	SURVEY  80 RPM,  80 RPM,  10 F/ 40  11 DEG,  BAR. PU  12 POOH & R  13 CONNECT  14 HSG JOIL  15 L9M ABOV	8 - 1 5M - 3 397M MP A T /BACK ORS AS NT. E FLOA	4 KN.N. 73M BE = 2 DE OTAL ( 36" H/	TORQ.  CFORE D  CG, 427  OF 80M3  OPENER  CALLY.	PUMP RILLIN M = 2. (1.5 ASSY. P/U & ALL 28	DEG IN 10M3 H IG AHEA 5 DEG X HOLE RUN 1.	C.  I-VIS S D TO SI & 449M  VOLUMI  5" WI 2	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).  K/OVER JNT  CN BIM JNT.
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0.50 000 5.50 003  0.50 060 1.50 063 1.50 080 2.50 093  1.00 120 0.50 133 1.00 153 0.50 163 Safety: H 24 Hr Sum Projected Remarks: POB: CHEV	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 1 P/U & RI F/ SL-60 R/U FAL P/U & M TIH & LO CONT TO OBSERVE PRIOR TO TIL 36" H OBSERVICE SERVICE 26" CLEA	"HOLE "CUTTE "CUTTE "FT SURV. "HOLE 1 "MUDLINE "UN 30" "N SHOE "ULP HE "CCK 30" "TIH W/ FORWARI 30" CEM OUT 30 - 18, "N OUT A	EACH (ADC)  F/ 366M (ADC)  F/ 366M (ADC)  F/ 366M (ADC)  F/ 366M (ADC)  CR DEPTH  CONDUCTO  JNT & 4  P90 CONNE  RY & TIH  GG R/TOOI  LP HSG I  30" CONI  DOLPHIN  SSY. STA  Tangible	USTED FOR T  - 456M W/ 5  2 390M, WC  = 454M).  LINE = 0 DE  DISPLACEME  H/OPENER AS  R USING FAL  JNTS OF 30"  CTORS. P/U  W/ 5" DP IN  TO INNER S  INTO PGB IN  UCTOR TO PR  E ON PGB -  N & CEMENT:  & POOH. M/I  - 53, DOLL  B 26" BIT II  COSt:	EDES)  OOO I  OK THE  CG, 37  CNT MU  CSY -  SE RO  X 1"  & RUN  INER S  TRING  MOONF  COVIDE  1.5 D  30" CO  L 26"  PHIN S	TAKE ANDI  PM, 142 BAI  RU SAME. WO  VAM = 0 DEG  D @ 4625 LI  HOLE SLICK  DTARY & HANI  WT COND W,  J 30" X 1.5  STRING SPACE  COOL. CONT :  LIP HSG W/  DEG TO STARE  ONDUCTOR. W  CLEAN OUT  SERVICE - 8  P HSG.  Daily Wel	ERRIFT  R, 50 -  ORK STAN  , 385M:  , 385M:  , 385M:  , 385M:  OSLIPS	SURVEY  80 RPM,  80 RPM,  10 F/ 40	8 - 1 5M - 3 397M MP A T /BACK ORS AS NT. E FLOA PLACE USE R AT MUD UIDEWI	4 KN.N. 73M BE = 2 DE OTAL ( 36" H/ 3 PER 1 T SHOE W/ 5 COV VIS LINE. T CEME	TORQ.  GFORE D  GG, 427.  GF 80M3  GOPENER  CALLY.  LH TUR  GUAL TO  30 " SH  MINCHOR	R = 0 PUMP RILLIN M = 2. (1.5 ASSY. P/U & ALL 28 NS. IN GUIDE TENSIC	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE  RUN 1.  8" BOW  ISTALL  2 30" S  PTH = 4  DN TO R  AYS SIN	C.  I-VIS S D TO SI  & 449M  VOLUMI  5" WT 2  SPRING FILL UI HOE IN: 51M.  EDUCE T	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).  K/OVER JNT  ON BIM JNT. P VALVES.  TO 36" HOLE.  TO 1.25 DEG.
0.50 000 5.50 003 0.50 060 1.50 063 1.50 080 2.50 093 1.00 120 0.50 133 1.00 153 0.50 163 Safety: H 24 Hr Sum Projected Remarks: POB: CHEV 06:00 OPS Daily Mud Cum Mud C	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 10 P/U & RI F/ SL-60 R/U FALS P/U & M. TIH & LO CONT TO OBSERVE PRIOR TO LL 36" F ONS: BACK SERVICE 26, 262 21, 610	"HOLE IND. ERF	EACH (ADC)  F/ 366M (ADC)  F/ 366M (ADC)  F/ 366M (ADC)  F/ 366M (ADC)  CR DEPTH  CO 1.2 SC  W/ 36"  CONDUCTO  JNT & 4  P90 CONNE  EY & TIH  GG R/TOOI  LP HSG 1  30" CONI  " R/TOOL  DOLPHIN  SSY. STA  Tangible Co	JUSTED FOR TO 456M W/ 5  2 @ 390M, WC  = 454M).  DLINE = 0 DE  G DISPLACEME  H/OPENER AS  OR USING FAL  JUSTS OF 30"  OCTORS. P/U  W/ 5" DP IN  L TO INNER S  INTO PGB IN  CUCTOR TO PR  E ON PGB -  N & CEMENT:  & POOH. M/I  - 53, DOLL  B 26" BIT II  Cost:	CIDES)  OOO I  ORK THE  CIG, 37  CINT MU  CISY -  SEE RO  X 1"  & RUN  INER S  CITRING  MOONE  COVIDE  1.5 D  30" CO  J 26"  PHIN S	TAKE ANDI  PM, 142 BAI  RU SAME. WO  PM = 0 DEG  D @ 4625 LI  HOLE SLICK  TARY & HANI  WT COND W.  STRING SPACE  E. ENGAGE R.  COOL. CONT TO  E. LP HSG W/  DEG TO STARE  ONDUCTOR. W  CLEAN OUT  SERVICE - 8  P HSG.  Daily Well  Cum Well	ERRIFT  R, 50 -  ORK STAN  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 385M:  , 166  O SLIPS  O SLI	SURVEY  80 RPM,  80 RPM,  10 F/ 40	8 - 1 5M - 3 397M MP A T /BACK ORS AS NT. E FLOA I PLACE USE R AT MUD UIDEWI	4 KN.N. 73M BE  = 2 DE  OTAL (  36" H/  T SHOE  W/ 5  OV VIS  LINE.  RE & A  T CEME  Incid  Total	I TORQ.  GOVERNMENT  CALLY.  C. INST.  IH TUR  SUAL TO  30" SH  NOT & SI  CALLY.  C. Appr:	R = 0  PUMP  RILLIN  M = 2.  (1.5  ASSY.  P/U &  ALL 28  NS. IN  GUIDE  OE DEE  TENSIO  NO I  KR134	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE  RUN 1.  3" BOW  ISTALL  30" S  PTH = 4  PTH	C.  I-VIS S D TO SI  & 449M  VOLUME  5" WI 2  SPRING  FILL UI  HOE INT.  51M.  M/U PIL  M/U PIL  M/U PIL  M/CE LAS	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).  K/OVER JNT  ON BIM JNT. P VALVES. FO 36" HOLE. FO 1.25 DEG.
0.50 000 5.50 003  0.50 060 1.50 063 1.50 080 2.50 093  1.00 120 0.50 133 1.00 153 0.50 163 Safety: H 24 Hr Sum Projected Remarks: POB: CHEV  06:00 OPS Daily Mud Cum Mud C	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 10 P/U & RI F/ SL-60 R/U FALS P/U & M. TIH & LO CONT TO OBSERVE PRIOR TO LL 36" F ONS: BACK SERVICE 26, 262 21, 610	"HOLE IND. ERF	F/ 366M (ADC F/ 366M (ADC F/ 366M (ATIC TOR) CR DEPTH TEYS: MUI TO 1.2 SC W/ 36" CONDUCTO JNT & 4 -90 CONNE RY & TIH TO BULLSEY ENT JOB. 454M, RU " R/TOOL DOLPHIN  SSY. STA Tangible Congible C	JUSTED FOR TO 456M W/ 5  2 390M, WC  = 454M).  JUINE = 0 DE  G DISPLACEME  H/OPENER AS  R USING FAL  JUSTS OF 30"  CTORS. P/U  W/ 5" DP IN  TO INNER S  INTO PGB IN  JUCTOR TO PR  E ON PGB -  N & CEMENT:  & POOH. M/I  - 53, DOLL  B 26" BIT II  Cost:  DST:  DST:  O Fuel:	GREATH  GREATH	TAKE ANDI PM, 142 BAI RU SAME. WO  V4M = 0 DEG  D @ 4625 LI HOLE SLICK DTARY & HANI WT COND W, J 30" X 1.5  STRING SPACE COL. CONT : CLP HSG W/ DEG TO STARE  ONDUCTOR. W  CLEAN OUT  SERVICE - 8  P HSG.  Daily Well Cum Well	ERRIFT  R, 50 -  ORK STAN  , 385M:  PM, 166  CONT 1  O SLIPS  / SL-60  ' WI LP  ED OUT :  //TOOL &  FIH TO I  1.5M S  300ARD. ;  ASSY, T  1.1 Cost  Cost:  Bulk	SURVEY  80 RPM,  ND F/ 40  = 1 DEG,  BAR. PU  POOH & R  CONNECT  HSG JOI  LOCK IN  MUDLINE.  TICK UP  ADJUST G  CEMENT.  TH & DR:  KR3,285  KR44,36  Weight:	8 - 1 5M - 3 397M MP A T /BACK ORS ASS NT. E FLOA I PLACE USE R AT MUD UIDEWI ILL OU  ,372 3,526 166.0	4 KN.N. 73M BE  = 2 DE  OTAL (  36" H/  S PER 1  T SHOE  W/ 5  LINE.  RE & A  T CEME  Incid  Total  Ne	TORQ.  GOPENER  CALLY.  C. INST.  LH TUR  SUAL TO  30" SH  INCHOR  TALLY.  EAT & SI  EAT & SI  EAT & SI  EAT & CALLY.	R = 0 PUMP RILLIN M = 2. (1.5 ASSY. P/U & ALL 28 NS. IN GUIDE OE DEF TENSIO	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE  RUN 1.  3" BOW  ISTALL  30" S  PTH = 4  OOH & N  AYS SIN  NCIDEN.	C.  I-VIS S D TO SI  & 449M  VOLUMI  5" WT 2  SPRING FILL UI  HOE IN: 51M.  M/U PII  NCE LAS  F REPOR  00  Blende	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).  K/OVER JNT  ON BIM JNT. P VALVES. FO 36" HOLE.  FO 1.25 DEG.
0.50 000 5.50 000 6.50 060 1.50 060 1.50 060 1.50 093 1.00 120 0.50 130 2.00 133 1.00 153 0.50 163 Safety: H 24 Hr Sum Projected Remarks: POB: CHEV 06:00 OPS Daily Mud Cum Mud C Drill Wat Country:	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 10 P/U & RI F/ SL-60 R/U FALS P/U & M. TIH & LO CONT TO OBSERVE PRIOR TO LL 36" F ONS: BACK SERVICE 26, 262 21, 610	"HOLE IND. ERF	F/ 366M (ADC F/ 366M (ADC F/ 366M (ATIC TOR) CR DEPTH TEYS: MUI TO 1.2 SC W/ 36" CONDUCTO JNT & 4 P90 CONNE RY & TIH TO BULLSEY ENT JOB. 454M, RU " R/TOOL DOLPHIN  SSY. STA Tangible Congible C	JUSTED FOR TO 456M W/ 5  2 @ 390M, WC  = 454M).  DLINE = 0 DE  G DISPLACEME  H/OPENER AS  OR USING FAL  JUSTS OF 30"  OCTORS. P/U  W/ 5" DP IN  L TO INNER S  INTO PGB IN  CUCTOR TO PR  E ON PGB -  N & CEMENT:  & POOH. M/I  - 53, DOLL  B 26" BIT II  Cost:	GREATH  GREATH	TAKE ANDI PM, 142 BAI RU SAME. WO  V4M = 0 DEG  D @ 4625 LI HOLE SLICK DTARY & HANI WT COND W, J 30" X 1.5  STRING SPACE COL. CONT : CLP HSG W/ DEG TO STARE  ONDUCTOR. W  CLEAN OUT  SERVICE - 8  P HSG.  Daily Well Cum Well	ERRIFT  R, 50 -  ORK STAN  , 385M:  PM, 166  CONT 1  O SLIPS  / SL-60  ' WI LP  ED OUT :  //TOOL &  FIH TO I  1.5M S  300ARD. ;  ASSY, T  1.1 Cost  Cost:  Bulk	SURVEY  80 RPM,  80 RPM,  10 F/ 40	8 - 1 5M - 3 397M MP A T /BACK ORS ASS NT. E FLOA I PLACE USE R AT MUD UIDEWI ILL OU  ,372 3,526 166.0	4 KN.N. 73M BE  = 2 DE  OTAL (  36" H/  S PER 1  T SHOE  W/ 5  LINE.  RE & A  T CEME  Incid  Total  Ne	TORQ.  GOPENER  CALLY.  C. INST.  LH TUR  SUAL TO  30" SH  INCHOR  TALLY.  EAT & SI  EAT & SI  EAT & SI  EAT & CALLY.	R = 0 PUMP RILLIN M = 2. (1.5 ASSY. P/U & ALL 28 NS. IN GUIDE OE DEF TENSIO	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE  RUN 1.  3" BOW  ISTALL  30" S  PTH = 4  OOH & N  AYS SIN  NCIDEN.	C.  I-VIS S D TO SI  & 449M  VOLUMI  5" WT 2  SPRING FILL UI  HOE IN: 51M.  M/U PII  NCE LAS  F REPOR  00  Blende	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).  K/OVER JNT  ON BIM JNT. P VALVES. FO 36" HOLE.  FO 1.25 DEG.
0.50 000 5.50 003  0.50 060 1.50 063 1.50 080 2.50 093  1.00 120 0.50 133 1.00 153 0.50 163 Safety: H 24 Hr Sum Projected Remarks: POB: CHEV  06:00 OPS Daily Mud Cum Mud C	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 - 06 1 - 02 1 - 02 1 - 02 1 - 02 1 - 01 1 - 05 1 - 08 1	TAG MUDI DRILL 30 HALF STA 456M (30 ANDERDRI DISPLACE POOH TO R/U TO 10 P/U & RI F/ SL-60 R/U FALS P/U & M. TIH & LO CONT TO OBSERVE PRIOR TO LL 36" F ONS: BACK SERVICE 26, 262 21, 610	"HOLE "CUTTE "CUTTE "FT SURV "HOLE 1 "HOLE 1 "MUDLINE "UN 30" "IN SHOE "U LP HE "CCK 30" "TIH W/ "FORWARI "30" CEM "OLE TO "OUT 30 "- 18, "N OUT A "Daily" "Cum Ta:	AGEN (ADC) F/ 366M ATIC TORG R DEPTH TEYS: MUI TO 1.2 SC W/ 36" CONDUCTC JNT & 4 P90 CONNE RY & TIH AGG R/TOOL LP HSG 1 30" CONI ENT JOB. 454M, RU " R/TOOL DOLPHIN  SSY. STA Tangible ngible Co	JUSTED FOR TO 456M W/ 5  2 390M, WC  = 454M).  JUINE = 0 DE  G DISPLACEME  H/OPENER AS  R USING FAL  JUSTS OF 30"  CTORS. P/U  W/ 5" DP IN  TO INNER S  INTO PGB IN  JUCTOR TO PR  E ON PGB -  N & CEMENT:  & POOH. M/I  - 53, DOLL  B 26" BIT II  Cost:  DST:  DST:  O Fuel:	GREATH  GREATH	TAKE ANDI PM, 142 BAI RU SAME. WO  V4M = 0 DEG  D @ 4625 LI HOLE SLICK DTARY & HANI WT COND W, J 30" X 1.5  STRING SPACE COL. CONT : CLP HSG W/ DEG TO STARE  ONDUCTOR. W  CLEAN OUT  SERVICE - 8  P HSG.  Daily Well Cum Well	ERRIFT  R, 50 -  ORK STAN  , 385M:  PM, 166  CONT 1  O SLIPS  / SL-60  ' WI LP  ED OUT :  //TOOL &  FIH TO I  1.5M S  300ARD. ;  ASSY, T  1.1 Cost  Cost:  Bulk	SURVEY  80 RPM,  80 RPM,  F 1 DEG,  BAR. PU  POOH & R  CONNECT  HSG JOI  19M ABOV  LOCK IN  MUDLINE.  FICK UP  ADJUST G  CEMENT.  TH & DR:  KR3,285  KR44,36  Weight:  hone: 52	8 - 1 5M - 3 397M MP A T /BACK ORS AS NT. E FLOA I PLACE USE R AT MUE UIDEWI  ILL OU  ,372 3,526 166.0 88 03	4 KN.N. 73M BE  = 2 DE  OTAL (  36" H/  S PER 1  T SHOE  W/ 5  LINE.  RE & A  T CEME  Incid  Total  Ne	TORQ.  GOPENER  CALLY.  C. INST.  LH TUR  SUAL TO  30" SH  INCHOR  CALLY.  C. INST.  Appr:  CALLY.  C. INST.  CALLY.  C. INST.  CALLY.  C. INST.  CALLY.  C. INST.  CALLY.  C. INST.  CALLY.   R = 0 PUMP RILLIN M = 2. (1.5 ASSY. P/U & ALL 28 NS. IN GUIDE OE DEF TENSIO	DEG IN  10M3 H  IG AHEA  5 DEG  X HOLE  RUN 1.  3" BOW  ISTALL  30" S  PTH = 4  DN TO R  AYS SIN  NCIDEN  1,000,00  185.0	C.  I-VIS S D TO SI  & 449M  VOLUMI  5" WT 2  SPRING  FILL UI  HOE IN:  51M.  M/U PII  NICE LAS  I REPOR  00  Blende  INS/HOL	SWEEPS EACH ECTION TD @  = 3.5 DEG. E).  K/OVER JNT  ON BIM JNT. P VALVES. FO 36" HOLE. FO 1.25 DEG.	

Measu	red D	epth:	456.	0 m	TVD:	456.0	) m	PB'	TD:	0.0	Prop	posed M	): 3	625.0	m Pro	posed	TVD:	3625.0	) m
DOL:	6	Di	FS: 1	Spu	nd Date: 22	-JUL-2001	L		Daily	Footage			aily Ro					s: 5.5	,
Torq:	11	Drag	g: 0.0 F	ot Wo	gt: 160.0 P	/U Wgt: 1	.60.0	lack	Off Wgt	160.			Seas:	4.0	/ 0.0	Bar:	758	POB:	81
Last 0	asin	g Size:	-	762.0	Set :				MD		51.0m		Shoe T			EMW	Leako	•	
Cum Ro	t Hr	s On Ca		702.0	Cum Rot H	rs On Cas					31. OIII	1	Worst	Wear:			emainir	ng:	
Liner	Size	:		S	! Get At:		MD		Т		L	iner To	o At:		MD			т	ľVD
Mud Co	): <sub>M_T</sub>	NORGE .	7. C	Тур	e: SEAWATER		110				: <sub>DTT</sub>	Wt: 103	1 FV:	o PV			n Gel:		
TATE.				F(	7 ()			Soli	.ds:			00 *Wate		-		MB	l.	Ph:	0
Dm:			0.00 /	_		1:0.0 HTH Cl:	Ca:		Bent			ds %HG/I		/		S/Bent			
0	.00		0.00 / 0	7.00														/	
Drlg G	lag:		Max Gas:		Conn Gas:	Tr	ip Gas:		Tr	ip Cl:	Ī	Remarks							
				1											T		1D 0 1		0 -
Bit Nu	ımber	IADC	Size	Manu	ıfacturer	Serial	number			s (Quar	reity -	- Size)	/	TFA	ME	) In	MD Out	TVD	Out
								<del>  -</del>	· / -		- / - /	- / - /		0		-			
		3.5			1100	DDM		Moto	/ DDM	7	/	7		_		<i>a</i> 1	20.11		,
Т	ype	Met	ers Ho	urs	WOB	RPM		MOCC	or RPM	I-Row	O-Rov	w DC	Loc	В	G	Char	?Pull	Cost	/m
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mat- 1	T 0	-h	117		RHA Decay	intion:	10 1 11	. ~		D0077	<u> </u>		11/0-		TE ~		T 63=	<u> </u>	
			HA: 232.		BHA Descr														
ANDE	KURIF	.Τ. – 3 Σ	9.1/2"	DC -	X/OVER - 3	X 8" DC	- X/OV	ER -	3 X 5" :	HWDP -								-1 :	
	1			1							-	On Jars:		hours	since	⊥ast	TUSDEC.	_10n: 5	5.5
Bit Nu	m	Line	er ,		Stroke /		SPM	,	Press.	M3/Min	Jet Ve	el DP	Av DO	C Av	Bit kW	BHHI	P/SQIN	Pump k	₫W
						/	<u>/</u> /	,								+			
						<u>/</u>	<u>/ /</u>	′											
Survey	MD	Angle	Azimuth	ı I	Direction	TVD		N/S	Coordina	ates	E/W	Coordin	ates	Vert	ical Se	ction		DLS	
Hours	From	Act-Ca	t		Operat	ions Cove	ering 2	4 Hot	urs Endi	ng at M	idnigh	ıt			Tota	l Hour	s Repoi	rted: 2	24.0
1.00	1700	01 - 09	BREAK C	IRC W	/ RIG PUMPS	S. PUMP 9	7M3 SEA	WATE	R @ 1955	5 LPM, 5	0 BAR	. HOLD 7	BT PRI	OR TO	CEMENT	ING CO	NDUCTOF	۲.	
1.00	1800	01 - 09	BREAK C	IRC W	/ CMT UNIT	. PRESS T	EST LIN	ies t	O 200 B	AR / 5 N	MINS -	OK. MIX	& PUM	P 34.1	M3 OF	1.56 <i>S</i> G	LEAD (	JSING	
		01 - 09	26.4MT	CLASS	'G' CEMEN	r W/ 3.2	LT/100F	G EC	CONOLITE	& 95.07	/ LTR/	100KG SI	CAWATER	. PUMP	@ 1.3	M3/MIN	, 36 BA	AR.	
0.50	1900	01 - 09	MIX & P	UMP 1	9.0M3 OF 1	.92SG TAI	L USING	3 24.	5MT CLAS	SS 'G' (	CEMENT	W/ 4.35	LT/10	OKG CA	CL2 &	42.07	LT/100F	KG SEAW	ATER.
		01 - 09	PUMP @	0.8M3	/MIN, 27 B	AR. CLEAR	LINES	W/ 0	.2M3 SEA	AWATER,	DROP I	DP WIPER	DART (	& DISP	LACE W	/ 0.5M	3 F/ R	IG PUMPS	S &
		01 - 09	9M3 F/	CMT U	NIT @ 1.4M	3/MIN. FI	NAL DIS	SPLAC	EMENT PR	RESSURE	@ 0.21	M3/MIN =	= 10 BA	R. CEM	ENT IN	PLACE	@ 19:3	33 HRS.	
		01 - 09	NOTE: C	EMENT	RETURNS AT	r MUDLINE	OBSERV	ED W	/ ROV.										
4.50	1930	01 - 43	WAIT ON	CEME	NT.														
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Safety	r: 1101			30" (	CEMENT JOB.														
					TO 454M, RU		ייי אַרייי		TICTTOD T∙	ז∧דיד ריידעז	<i>С</i> ЕМЕУПТ	P							
					30" R/TOOL								LL CLEMEN	וחי כו	TOP TO		W/II DTI		7
Remark	s:		BACI	001	30" R/100L	& POOH.	M/U 26	CT	LAN CUI	ASSY, I	IH & L	KILL OU	I CEMEN	11 & 51	HUE. PC	OH & I	M/U PIL	OI HOLE	5
<u> </u>										-									
			26,262		y Tangible			_	aily Wel		KR3,28	35,372	Incide				repor	TED	
		st: KR1			Tangible C			С	tum Well			363,526	Total	Appr:	KR134	,000,0	00		
		r: 350.	0 Pota	ble W	Water: 325.		2/1.					nt: 166.	ne Ne	at Cem	ent: 1	85.0	Blende		
Countr	y: N	ORWAY				Rig: <sub>BYFOF</sub>	D DOLP	HIN		Rig Pl		2 88 03	35	Drill	ing Re	P: ELK	INS/HOL	LINSHEA	AD
Field:	PL2	59			Leas	se: <sub>PL259</sub>					W∈	ell No:	5506/3-	1		We	ell ID:		
					API No	: 6506/3-1	L		AFE No:	KWENO-	650631	-001		Date:	22-JUL	-2001	Page	: 2 Of	E 2

Measured 1	Depth:	456	. 0 m	TVD:	456.0 m		PBTI	D:	0.0	Propo	osed MD	): 3	625.0	m Proj	posed	TVD:	3625.0 m
DOL: 7	:	OFS: 2		d Date: 22				Daily	Footage	e: 0.	. 0 Da						s: 5.5
Torq: 720	0 Dra	ıg: 0.0	Rot Wg	t: 66.0 P	/U Wgt: 66.	sl	Lack	Off Wgt	: 66.0			Seas	3.0	/ 0.0	Bar:	761	POB: 79
Last Casin		<u> </u>	762.0	Set I			0m			51.0m		Shoe T			EMW	Leako	
Cum Rot Hi	rs On C	asing:		I	rs On Casing					) <b>1.</b> UIII	1	Worst	Wear:			emainir	ng:
Liner Size	<b>:</b>		S	! et At:	MD			ידי	VD	Li	ner Top	At:		MD			TVD
Mud Co: <sub>M-</sub>			Tyr	œ: SEAWATER					le From	: To	īt: 100	E77 •	o PV:	MD	/P: 0	O Gel:	
TATT.			Fr	7 ()			Solid			il: 0.00			-		MB'	l l	0 / 0 Ph:
Pm: API:		HTHP: 0	.0	API	: 0.0 HTHP:	0.0 Ca:		Bent			HG/L	er: 0.00	)   ° 5α		S/Bent		,
0.00	F L/ MI	0.00 /	0.00	alb.	·L.	a.		Benc	••	501108	5 6110/1			الله	5/ Deric	<u> </u>	/
75 1K	G SODA	ASH	10	1MT BEN	TONITE API												
		Т		1													
Drlg Gas:		Max Gas:	: 	Conn Gas:	Trip	Gas:		Tr	ip Cl:	Re	emarks:				<u>.</u>		
Bit Numbe	r IADC	Size	Manu	ıfacturer	Serial num	iber		Jets	(Quar	ntity -	Size)		TFA	MD	In	MD Out	TVD Out
3	1-1-5	660.4	1	HUGHES	D92DM53	3	1-1	L9.1/3-	15.9/	- /	- /	<u>-</u>	878.7	7 456	.0 m	456.0	m 456.0
					+		-	/ -	. / .	- /	- /	_	0				
Type	Me	ters H	ours	WOB	RPM		Motor	RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
GTXCMG	L	0.0	0.0	10.0/11.0	50 /				1	1	WT	A7	E	I	NO	TD	0.00
				/	/												
Total Leng	gth of	BHA: 229	.68 m	BHA Descr	iption: 26	" HUG	HES C	GTXCMG1	ROCK B	IT - BI	T SUB (	C/W FLC	AT - A	NDERDR	IFT -	3 X 9.	1/2" DC
					HWDP - 6.1/												
										Hrs Or	ı Jars:	7.0	Hours	Since	Last	Inspect	ion: 7.0
Bit Num	Lir	ıer		Stroke		SPM		Press.	M3/Min	Jet Ve	l np:	AV D	C Av 1	Bit kW	ВНП	P/SOTN	Pump kW
		152 / 15	52 30	4.8/304.8	/ 304.8 76/	96/		122	4.58				5.45	0.00		0.0	9.50
	/	/	30	/	/	/ /			1130	07,121			3.13			-	2.30
Survey MD	/ Angle	Azimut	ьг	oirection	TVD	Τ,	NT/C C	Coordina	at or	E/W C	coordin	atog	Vorti	cal Se	ation		DLS
Survey MD	Aigre	AZIIIUU	11 1	)Hection	TVD	1	N/S C	.оогаша	aces	E/W C	JOHAIII	aces	verci	car se	CCIOII		рцз
		1															
Hours Fra	n Act-C	at		Operat	ions Coveri	ng 24	Hou	rs Endi	ng at M	idnight				Tota]	l Hour	s Repor	rted: 24.0
0.50 000	01 - 4	3 CONT TO	TIAW (	ON CEMENT.	SURFACE SA	MPLES	S FIR	M AFTER	5 HRS	F/ CEM	ENT IN	PLACE.					
1.00 003	01 - 0	9 OBSERVE	E FORWA	ARD BULLSEY	Æ W/ ROV -	1.25	DEG.	SLACK	OFF L/S	TRING I	WT - NC	MOVEM	ENT OF	PGB SE	EN. P	ICK BAC	CK UP &
	01 - 0	9 BACK OU	JT R/TO	OOL W/ 5 RE	H TURNS. POO	)H TO	MUDL	INE & F	FLUSH 30	" LP H	SG W/S	EAWATE:	R @ 490	00 LPM,	, 41 B	AR.	
2.00 013	01 - 0	9 POOH W/	/ 30" I	RUNNING STE	RING. L/O 30	" R/:	IOOL	& R/BAC	CK 5" DE	INNER	STRING	÷.					
0.50 033	01 - 0	7 B/O & I	L/O 17	.1/2" BIT 8	26" X 36"	H/OPI	ENER.										
2.00 040	01 - 0	5 M/U & 7	TIH W/	26" CLEAN	OUT ASSY. A	TTACI	H BRE	AK OFF	LINES T	O FIRS	T JNT C	F 9.1/	2" DC.				
1.50 060	01 - 1	5 Wash Da	J W/ 20	000 LPM, 33	BAR & TAG		a 446	M. DRIL	L OUT C	MT & SI	HOE W/	4600 L	PM, 122	BAR,	50 RP	м, 7.2	KN.M TORQ
	01 - 1	5 10 - 11	MT W	OB. PUMP 10	M3 HI-VIS S	WEEPS	SAS	REQ'D.	CLEAN C	UT RATI	HOLE TO	456M.					
2.00 073	0 01 - 0	5 POOH &	R/BACE	K 26" CLEAN	OUT ASSY.	B/O 8	& L/O	) 26" BI	т.								
13.00 093	0 01 - 0	7 P/U, M	′U & R.	/BACK 47 ST	IDS OF 5" DE	). A :	IOTAL	OF 276	50M 5" I	P R/BAG	OK IN D	ERRICK	. ALL I	OP DRIE	TED T	0 2.3/4	1".
				ILOT HOLE A													
	-																
	_																
	† -																
	<del>                                     </del>	+															
Safety:	_																
	mrv:													. der =			
					, M/U 26" C									P/U 5" :	DP.		
Remarks:	o <sub>r</sub> cial.	DRI	LL 8.1	L/2" PILOT	HOLE TO APP	ROX 1	.375M	. POOH,	M/U 17	.1/2" H	I/OPENE	R ASSY	& TIH.				
	RON - 2	, SERVIC	E - 16	5, DOLPHIN	- 53, DOL	PHIN	SERV	ICE - 8						DA	YS SII	NCE LAS	T LTI - 58
06:00 OPS:	DRILL	AHEAD 8.	1/2" F	PILOT HOLE	AT 591M. LA	ST SU	RVEY	- 542.	45M, 3.	07 INC,	203.9	AZ.					
Daily Mud	Cost:	æ91,613	Dail	y Tangible	Cost:		Da	ily Wel	.l Cost:	KR3,234	1,555	Incide	ents:	NO IN	CIDEN	I REPOR	TED
Cum Mud Co	st: KR	273,223	Cum	Tangible C	ost:		_	m Well	Chat:	KR47,59		Total	Appr:	KR134.	0,000	00	
Drill Wate			able W	Mater: 300.	O Fuel:	252.0	)			Weight		Ne	at Ceme	ent: 15	35 . N	Blende	ed:
Country:		· <del>-</del>			Rig: BYFORD					one: 52		35	Drill	ing Rep	): 	TNIS /HOT	LINSHEAD
Field: PL2	)EO				se: PL259						ll No:	506/3-	1				UB5908 -(
PL2	.J				6506/3-1		P	AFE No:	KWENO-				Date:	23-,тт		1	: 1 of 1
									0						_ JU T		

Measur	ed D	epth:	1382.	0 m	TVD:	1382.0 m		PBTD	):	0.0	Propo	sed MI	): 3	625.0	m Pro	posed	TVD:	3625.0 m
DOL:	8	DI	FS: 3	Spu	nd Date: 22				Daily	Footage	926	.0 D						s: 20.5
Torq:	6100	Drag	₁: 4.5 F	Rot Wo	gt: 78.0 P/	″U Wgt: 82.5	s sl						Seas	: 3.0	/ 0.0	Bar:	759	POB: 85
Last C	asing	g Size:		762.0	Set 1		-		MD		51.0m	TVD	Shoe 7			EMW	Leako	•
Cum Ro	t Hr:	s On Ca	sina:	16.5		s On Casing		· · · ·		imer:	6.5		Worst	Wear:			emainir	ng:
Liner	Size				↓ }et At:	MD			П	VD T		ner Toj	o At:		MD			TVI
Mud Co	·	NORŒ .		Tvz	e: <sub>SEAWATER</sub>				_		: <sub>PIT</sub> W	+ 100	1 577.	DV/:		VD: 0 /	Gel:	
TATT.				म	7 ()		9	Solida		8 0	il: 0.00	*Wate				MBT		0 / 0 Ph:
Pm:	API:	1	HTHP: 0	. 0	API	: 0.0 HTHP:	0.0 ` Ca:		Bent		0.00 Solids		er: 0.00	)   • 50		S/Bent		
0	.00	FI/MI.	0.00 /	0.00	aib.	л. ·	G.		Deric		501105	6 11G/1		/	راه.	5/ Belle	•	
29	1MT	BARITI	<u> </u>	375	1KG SOD.	A ASH	28	1м	T BENT	CONITE A	PI 425	1 <sub>K</sub> (	G CMC I	IV TECH	I			
									_									
Drlg G	as:		Max Gas:		Conn Gas:	Trip	Gas:		Tr	ip Cl:	Re	marks:						
Bit Nu	mber	IADC	Size	Manu	ıfacturer	Serial num	ber		Jets	s (Quar	ntity -	Size)		TFA	MD	In	MD Out	TVD Ou
4		1-1-7	215.9		HUGHES	W97ZS		2-1	1.1/2-	12.7/	- /	- /	<u> </u>	447.	1 456	.0 m	1382.0	m 1380.0
						+		-	/ -	- / -	- /	- /	_	0				
T	ype	Met	ers Ho	urs	WOB	RPM	1	Motor	RPM	I-Row	O-Row	$\mathbb{C}$	Lœ	В	G	Char	?Pull	Cost/m
MX	C-1	92	5.0 1	5.0	0.0/7.0	60 / 150				8	5	WT	A7	E	1/8	ER	TD	к 78.28
					/	/												
Total	Leng	th of B	HA: 245	.36 m	BHA Descr	iption: 8.1	L/2" :	HUGHE	S MXC-1	1 ROCK I	BIT - 8	.1/2" 1	NB STAE	B C/W F	LOAT -	2.6M	X 6.1	/2" PONY
						IN LINE STAR												
WEIR	HOUS	TON JAF	S - 14 X	5" H	IWDP						Hrs On	Jars:	23.5	Hours	Since	Last	Inspec	tion: 23.5
Bit Nu		Line			Stroke		SPM	Т	Press.	M3/Min	Jet Vel	. NP	Av D	C Av	Bit kW	ринг	/SOTN	Pump kW
4		52 / 1		2 30	4.8/304.8/	/ 304.8 86/	72/		197		117.99			7.69	0.00		.0	10.50
		/	/	2 30	/ /	/ / /	' /	50	107	3.13	117.00	131.	20	.,	0.00			10.30
G	1/0	77	7	.   .	/ /	/	Τ,	NT / C. C.			E/H G			77	1 a-			DT C
Survey		Angle	Azimut		Direction	TVD	1	N/S C	ordina		E/W C				cal Se			DLS
1289.		4.16	168.61		S11.39E	1286.8			56.0			9.5			-56.08			0.17
1317		4.15	167.23		S12.77E	1315.0	-		58.0	9 S		9.1	4 W		-58.09	1		0.11
1346		4.19	163.74		S16.26E	1343.7	+		60.1	2 S		8.6	1 W		-60.12	!		0.27
1362	. 4	4.11	157.77		S22.23E	1360.0			61.2	3 S		8.2	2 W	<u> </u>	-61.23			0.81
Hours	From	Act-Cat	=		Operat:	ions Coveri	ng 24	Hour	s Endi	ng at M	idnight				Tota	l Hour	s Repoi	rted: 24.
3.00	0000	01 - 07	CONT TO	M/U	& TIH 8.1/2	" PILOT HOL	E ASS	SY TO	245.5M	1. SURF	CE TEST	MWD V	7/ 2100	LPM,	57 BAR	- OK.		
1.00	0300	01 - 05	TIH W/	5" DP	F/ 245.5 -	443M. WASH	DN V	W/ 315	50 LPM,	, 176 B	R & TAG	BTM @	456M.					
15.00	0400	01 - 02	DRILL 8	.1/2"	PILOT HOLE	F/ 456M -	SECT:	ION TI	0 @ 138	32M W/ 3	150 LPM	1, 176	- 197	BAR, 0	- 7 T	WOB,	50 - 1	50 RPM,
		01 - 02	2300 -	6100	N.M TQ. VAR	Y PARAMS IN	ATTI	EMPT 1	ro conti	TROL INC	LINATIC	N. PUN	1P 5 -	10М3 Н	I-VIS S	SWEEPS	AS REQ	Q'D.
1.50	1900	01 - 01	PUMP 20	м3 ні	-VIS SWEEP	& DISPLACE	W/ 75	5M3 OE	F SEAWA	ATER @ 3	150 LPM	1, 200	BAR. D	ISPLACI	E HOLE	TO 1.	2SG DIS	SPLACEMENT
		01 - 01	MUD @ 3	300 L	PM, 275 BAR	a. PUMP A TO	TAL (	OF 981	43. SLU	JG PIPE	W/ 4M3	OF 1.6	SG KIL	L MUD.				
1.00	2030	01 - 05	POOH W/	5" D	P F/ TD @ 1	.382M - 30"	SHOE	@ 451	LM. NO	EXCESS	DRAG -	HOLE S	SLICK.					
0.50	2130	01 - 01	M/U TOP	DRIV	E & CIRC 30	" CONDUCTOR	CLE	AN W/	80M3 C	OF SEAW	TER @ 4	500 LI	м, 295	BAR.				
0.50						MUDLINE @									F SEAW	ATER @	4000 1	LPM, 221 1
						E @ 366M -							· ·					
1.00						A. L/O MWD,				BE RE-PF	OGRAMME	ID FOR	ISONIC	TOOL)	. B/O 8	£ L/O 8	8.1/2"	ROCK BIT
		-			, 3									/				
		_																
		_																
		_																
Safety	:	-																
		277.																
						RILL 8.1/2"												
Remark	s:	rcrati(	M/U	& RII	H W/ 17.1/2	" HOLE OPEN	ER AS	SY. O	PEN HO	LE TO 1	7.1/2",	POOH	& R/U 7	O RUN	13.3/8	" CASI	NG.	
		DN - 2,	SERVIC	E - 23	3, DOLPHIN	- 51, DOL	PHIN	SERVI	CE - 9	1					DA	YS SIN	ICE LAS	T LTI - 5
FINAL	SURVI	EY PROJI	ECTED TO	SECT	ION TD @ 13	82M - 1379.	8M TV	7D, 62	2.52M S	OUTH, 7	.68M WE	ST.						
				_				_										
06:00	OPS:	OPENIN	G 8.1/2"	PILO	r hole to 1	7.1/2" @ 61	5M.											
Daily	Mud (	Cost: K	26,262	Dail	y Tangible	Cost:		Dai	ily Wel	l Cost:	KR2,911	,624	Incide	ents:	NO IN	CIDENI	REPOR	TED
		st: KR2		Cum	Tangible Co	ost: KR442,	845			Chat:	KR50,50		Total	Appr:				
		r: 40.0			Water: 40.0		494.0	)			Weight		ne Ne	at Cem	ent: 1	85 N	Blende	ed:
Countr			l			Rig: <sub>BYFORD I</sub>					one: 52			Drill	ing Rep	); 	Mc /tiot	LINSHEAD
Field:	DT 0-	OUMAI				se: PL259	лигп	<u></u> 1					5506/3-	1				UB5908 -
	ьг5	פפ				6506/3-1		Δ	FE No:	KIMIE NIO	650631-0			Date:	24 77#		1	: 1 Of :
<u> </u>					1 T T TAO.	2200/2-T		- 1		±44171140—		~ U T			<u>∠+</u> -∪ UL	-700T	- uge	- OI -

Measur	red D	epth:	1382.	0 m	TVD:	1382.0	m	PBTD	):	0.0	Prop	osed MD	): 3	625.0 t	m Proj	posed	TVD:	3625.	. 0 m
DOL:	9	D	FS: 4		d Date: 22				Daily	Footage	e: 0	.0 Da	aily Ro			Total	Rot H		-
Torq:	1200	0 Drag	g: 0.0 R	ot Wgt	e: <sub>93.0</sub> P.	/U Wgt: 93	.0 S	lack (	Off Wgt	93.0			Seas	3.0	/ 0.0	Bar:	761	POB:	85
-		g Size:	<del></del>	762.0 r	Set 7			. 0m			51.0m		Shoe T			EMW	Leako		
Cum Ro	ot Hr	s On Ca	ging:	35.0	Cum Rot Hi	rs On Casi:	ng Sin	ice Las	st Cali	iper:	F 0		Worst	Wear:			emaini	ng:	
Liner	Size	:			et At:	M				VD		iner Top	At:		MD				TVD
Mud Co	): <sub>14</sub> -	NORGE	7. C	Type	⊇: SEAWATER				_	le From	: DTM	Wt: 102	: V7	o PV:		7P: n	O Gel:		,
					(mm) API			Solida		% O:	il: 0.0	. Wate	r: 0.00	-		MB'		0 / Ph:	0
Dm:						: 0.0 HTHP Cl:	:0.0 Ca:		Bent			s %HG/I		/		S/Bent	-:		
0	0.00	/	0.00 /0	0.00							50114				0.21				
21	1MT	BENTO	NITE API	5575	1KG CMC	HV TECH	1225	1 <sub>K</sub>	G SODA	ASH									
		Г			1														
Drlg (	Gas:		Max Gas:	T	Conn Gas:	Trip	Gas:		Tr	ip Cl:	R	emarks:		1					
Bit Nu	umber	IADC	Size	Manu	facturer	Serial n	ımber			(Quar		Size)	,	TFA	MD	In	MD Out	TVI	Out
5	5		444.5		IPE	17520	12	1-2	2.2/3-	9.5/6	-14.3/	- /	<u>-</u>	1563.	2 1382	2.0 m			
			<del></del>	<u> </u>		+	_	-	/ -	. / .	- /	- /	_	0					
Т	ype	Met	ers Ho	urs	WOB	RPM		Motor	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost	c/m
17.1/	/2" н	/0 0	.0 0	.0	3.0/5.0	120 / 1	10											0	.00
					/	/													
Total	Leng	th of B	HA: 233.	50 m	BHA Descr	iption: B	ULLNOS	SE - 1	2.1/4"	HOLE O	PENER -	- 17.1/2	2" HOLE	OPENE	R - BI'	T SUB	C/W FL	OAT -	
ANDE	RDRIF	T - 3 2	ر 9.1/2	DC - X	K/OVER - 3	X 8" DC -	X/OVE	IR - 3	X 5" I	HWDP - (	5.1/2"	WEIR HO	OUSTON	JARS -	14 X	5" HWI	OP		
											Hrs O	n Jars:	42.0	Hours	Since	Last	Inspec	tion:	42.0
Bit Nu	ım	Line	er		Stroke		SPM	I	Press.	M3/Min	Jet Ve	1 DP 2	Av Do	C Av I	Bit kW	ВНН	P/SQIN	Pump	kW
5	1	52 / 1	52 / 152	2 304	1.8/304.8	/ 304.8 96	5/ 94/	72	151		45.05			3.53	0.00		0.0	10.	
			/		/	/	/ /	'											
Survey	z MD	Angle	Azimuth	ı D	irection	TVD	<u> </u>	N/S C	ordina (	ates	E/W (	Coordin	ates	Verti	cal Se	ction		DLS	
		5																	
							+												
	L	Ì	Ī																
		Act-Ca				ions Cover					idnight	t			Tota]	l Hour	s Repo	rted:	24.0
2.00	0000	01 - 07	7 M/U & T	IH W/	12.1/4" X	17.1/2" H	OLE OP	ENER A	ASSY TO	233M.									
1.00	0200	01 - 05	TIH W/!	5" DP	F/ 233 - N	AUDLINE 36	5M. ST	AB IN	ro well	HEAD &	TEST A	NDERDRI	FT T00	Ĺ <b>.</b>					
0.50	0300	01 - 05	TIH & W	ASH DO	WAN W/ 2000	) LPM, 47 1	BAR TO	TAG 8	3.1/2"	PILOT H	IOLE AT	456M.							
16.00	0330	01 - 03	OPEN 8.3	1/2" P	PILOT HOLE	TO 17.1/2	' F/ 4	56 – 1	1379M (	17.1/2	CUTTE	R DEPTH	I) W/ 3	200 – 4	1200 LE	PM, 66	- 150	BAR,	
		01 - 03	120 - 1	50 RPM	1, 5000 - 1	L4300 N.M	rorq,	1 - 8	MT WOE	B. PUMP	10M3 H	II-VIS S	WEEPS	EVERY S	STAND 8	TAKE	ANDER	DRIFT	SURVEY
		01 - 03	EVERY O	THER S	TAND TO CO	NFIRM HOLD	E INCL	INATIO	ON - OK	C. ERRAI	CIC TOR	QUE & C	CCASIO	NAL STE	RING ST	TALLS.			
2.00	1930	01 - 01	PUMP 201	M3 HI-	VIS SWEEP	& DISPLAC	E W/ 3	05м3 С	OF SEAW	VATER @	4500 L	PM, 176	BAR.	WORK ST	TRING 8	cont	TO PUI	MP SEA	WATER
		01 - 01	WHILE C	JT BAC	K 1.6SG KI	LL MUD TO	1.2SG	DISPI	LACEMEN	T MUD.									
0.50	2130	01 - 01	PUMP REI	MIMIAN	IG 25M3 HI-	-VIS & DIS	PLACE	HOLE 7	ro 1.2s	G DISPI	ACEMEN	T MUD W	/ 4500	LPM,	L90 BAF	R. PUM	IP 157M	3 IN T	OTAL.
	<u> </u>	01 - 01	P/U, S/0	 O & RO	T WT = 93	MT. DISPL	ACE DR		TRING W	7/ 14M3	SEAWAT	ER.				_			
2.00	2200	01 - 05	POOH W/	5" DP	F/ 1382M	- MIDNIGH	r Dept	н 635м	и. 9 -	13 MT I	RAG F/	1320 -	780M.	HOLE S	SLICK E	780	- 6351	м.	
		-		_			_	_	_	_	_	_	_	_	_		_	_	
		-																	
		_																	
		_																	
Safety	7: <sub>MTT</sub>		III. & WFE	KI'A 6	AFETY MEET	ING HEID													
					OPENER AS		ס דיודים ס	3 1/2"	pπ∴πq	י אַרו די ייי	∩ 1270°	יזיידםים N	DUUT	TO 625	M				
Projec	ted (	peration	ons:	1 & D /	BACK HOLE		V D/r	יום גן ד	INI 13 3	/8 II (7) C			. 1 0011	10 000	- 1 •				
Remark			FOOR	1 & K/I	BACK HOLLE	OPENER ASS	)1. K/(	0 & RU	II 13.3	/0 CAS	1103.								
POB: C	HEVR(	M - 2,	SERVICE	23	, DOLPHIN	- 51, DC	LPHIN	SERVI	CE - 9						DA	YS SI	NCE LAS	T LTI	- 60
			RUN 13.3/	1				-					1						
			R 26 , 262		7 Tangible					.l Cost:	KR2,66	5,050	Incide				repof	RTED	
		st: <sub>KR</sub> 3			Tangible C		2,845	Cun	m Well			69,755	Total	Appr:	KR134,	000,0	00		
		r: 95.0	Pota	ble Wa	ater: 75.0	Fuel:	475.0	0		Bulk	Weight	t: 166.0	) Ne	at Ceme	ent: 1	78.0	Blend		
Countr	y: N	ORWAY				Rig: <sub>BYFORD</sub>	DOLPI	IIN		Rig Ph	none: 52	2 88 03	35	Drill	ing Rep	ELK	INS/HOL	LINSHE	EAD
Field:	PL25	59				se: <sub>PL259</sub>					We	ll No:	5506/3-	1			ell ID:		
						6506/3-1		A	FE No:	KWENO-	650631	-001		Date:	25-JUL	-2001	Page	: 1 (	of 1

Measured 1	Depth:	1382.	0 m	TVD:	1379.8 m		PBTD	):	0.0	Propo	sed MI	):	3625.0	m Pro	posed	TVD:	3625.0 m
DOL: 10	) I	DFS: 5		Date: 22	-JUL-2001			Daily	Footage	e: 0.	n D		ot Hrs:		Total	. Rot Hr	as: 36.5
Torq: 0	Dra	g: oo F			/U Wgt: 0.0	Sl	.ack (	off Wgt	.: 0.0			Seas	: 3.0	/ 0 0			POB: 85
Last Casir	_			Set I			^	MD			TVD	1	Test:		EMW	Leako	
Cum Rot Hi		asina:	762.0 mm		rs On Casing		0m ce Las		imer:	51.0m			Wear:	0	- 1	emainir	
Liner Size			35.0	At:	- D GI GGDIII	5 02110			3	5.0 T.ir	ner To		wear		0 1	CIIIGIIIII	
					MD				VD	-				MD			TVD
Mud Co: <sub>M-1</sub>	I NORŒ	A.S.		SEAWATER	2	- 1 -	~ 7.1	!	le From	: PIT W	t: 103					0 Gel:	0 / 0
WL API:		HTHP: 0		mm) API	: 0.0 HTHP:	0.0	Solid	s:	80	il: 0.00	Wate	er: 0.0	0 % Sai	nd:	MB'	Т:	Ph:
Pm: 0.00	Pf/Mf	: 0.00 /0	0.00 Cark	): 	cl:	Ca:		Bent	;;	Solids	%HG/I	LG:	/	윎	OS/Bent	t:	/
Drlg Gas:		Max Gas:	C	onn Gas:	Trip	Gas:		Tr	ip Cl:	Re	marks	:					
Bit Number	r IADC	Size	Manufa	cturer	Serial num	nber		Jets	s (Ouar	ntity -	Size)		TFA	М	) In	MD Out	TVD Out
5		444.5		PE	1752012		1 – 2		9.5/6		- /	/ _	1563.		-	1382.0	
							_	/ -	. /	- /	- <i>,</i>	/ _	0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	Mo	ters Ho	urs	WOB	RPM	,	Motor	DDM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
Type					+		MOCOL	KEM									
17.1/2" F	1/0	0.0 10	5.0	0.0/0.0	/				8	8	WT	A7	4	3/4	ER	TD	0.00
			-	/	/												
Total Leng	gth of 1	BHA: 233.	50 m	HA DESCI	iption: BU	LLNOS	E - 1	2.1/4"	HOLE O	PENER -	17.1/	2" HOLI	E OPENE	R – I	BIT SUE	B C/W F	LOAT -
ANDERDRI	FT - 3	X 9.1/2"	DC - X/0	OVER - 3	X 8" DC - 3	X/OVEI	R - 3	X 5" I	HWDP -								
					<del></del>		-			Hrs On	Jars:	42.0	Hours	Since	Last	Inspect	tion: 42.0
Bit Num	Lin	er	St	roke		SPM	Ι	Press.	M3/Min	Jet Vel	DP .	Av D	C Av	Bit kW	BHH	P/SQIN	Pump kW
5 1	L52 /	152 / 15:	304.8	8/304.8	/304.8	/ /		0	0.00	0.00	0.0	00 (	0.00	0.00		0.0	0.00
	/	/		/ ,	/ /	/ /											
Survey MD	Angle	Azimuth	n Dir	ection	TVD	1	N/S C	∞rdina	ates	E/W C	oordin	ates	Verti	.cal Se	ection		DLS
							,			,							
	1	1											<u> </u>				
Hours Fra	n Act-Ca	at		Operat	ions Coveri	ng 24	Hour	s Endi	ng at M	Iidnight				Tota	1 Hour	rs Repor	rted: 24.0
0.50 0000	01 - 0	5 CONT PO	OH W/ 5"	DP F/ 6	635M - MUDLI	INE @	366M	W/OUT	PROBLE	4.							
1.50 0030	01 - 0	5 JET WEL	LHEAD W/	30M3 SI	EAWATER @ 45	500 LE	PM, 12	24 BAR.	POOH 8	k R/BACK	BHA.	B/O &	L/O 17	.1/2"	HOLE C	PENER.	
2.00 020	01 - 0	8 R/U TO	RUN 13.3	3/8", 72‡	♯, L-80, MOI	BUTT	CASI	ING.									
0.50 040	0 01 - 0	8 HOLD SA	FETY MTG	. P/U 13	3.3/8" SHOE	JNT 8	ins	rall 2	X BOW S	SPRING (	ENT. I	PUMP TH	IRU TO :	TEST F	LOAT -	OK. P	/U 13.3/8"
	01 - 0	8 FLOAT C	OLLAR &	BAKERLO	OK TO SHOE J	NT. I	INSTAI	LL 1 X	BOW SPE	RING CEN	IT & GU	JIDEROF	PES. PUI	MP THR	U TO I	EST FLO	DATS - OK.
8.00 0430	0 01 - 0	8 P/II & R	IN 13.3/	8". 72#	, L-80, MOD	влтт	CASI	NG AS E	PER TALI	Y. INST	ALL 1	X BOW	SPRING	CENT	ON EAC	H OF FI	IRST 9 JNT
0. 508100					ETELY FILL									D 6 TN	T TOTAL	13 MPD 0. 0.7	NAT
2.5011123					7M. CONT TO												AME.
					KLED IN TWO												
9.00T 150	+				k L/O 13.3/8												INTS &
	01 - 0	8 TAKE FU	LL STRIN	IG WI. CO	ONT POOH & I	L/O OT	Л 13.	.3/8" 0	CSG F/73	34 - 270	M. REJ	JECT BU	JCKLED (	JNIS #	53 TO	#62.	
	01 - 0	8 JNTS #5	7 & #62	CRIMPED.	. JUMP ROV V	VHEN S	SHOE (	CLEAR C	F WELL	HEAD & C	BSERVI	FORWA	ARD BULI	LSEYS	- 1.25	DEG.	
	01 - 0	8 MOVE RI	G OFF WE	LL CENTE	RE ONCE SHOE	E CLEA	R OF	WELLHE	EAD.								
	-																
	_																
Safety: TF	BT PRIOF	R TO COMMI	INCING C	ASING PU	LLING OPERA	TIONS											
					JET W/HEAD.			1 13 2/	8" C7CT	NG CVC	TNG DI	ריב. דאר	a W/נוני	7D CC	VIMI∓NT∕'E'	DW⊓ ™	I/ SIMF
					3/8" CASING											I WII W	, orth.
Remarks:		CON'.	. ruuh &	⊔/∪ 13.	J/O" CASING	. к/В.	ACK S	noe TR	ALR. M/	∪ & TIH	w/ 17	. 1/ 4"	MTREK (I	KTL V	.160		
POB: CHEVE	RON - 2	SERVICE	23,	DOLPHIN	- 51, DOL	PHIN	SERVI	CE - 9						Di	AYS SI	NCE LAS	T LTI - 61
06:00 OPS:	M/U &	RIH W/ 1	7.1/2" W	IPER TRI	P ASSY TO 4	OM.											
Daily Mud	Cost: H	TR 26, 262	_	Tangible			Dai	ily Wel	l Cost	KR2,389	, 451	Incid	ents:	NO I	NCIDEN	T REPOR	TED
Cum Mud Co	st: KR	352,009	Cum Tai	ngible C	ost: KR442	,845		n Well	Chat:	KR55,55		Total	Appr:	KR134	,000.0	000	
Drill Wate				er: 250.		465.0	<del></del>			Weight		n Ne	eat Cem	ent: ,	)52 N	Blende	ed:
Country:				1	o   Rig: <sub>BYFORD</sub> :					none: 52			Drill	ing Re	p:	TMC /TTOT	LINSHEAD
Field: PL2	NEC YMAI				se: PL259	-VIEU			1			5506/3-	_1				UB5908 -0
PL2	159						7.	EE NO.	TAT-TITE-C					06 -			
L				PLT INO	6506/3-1		A	- T TAO.	VMFINO-	650631-0	νUΤ		Date:	∠o-JŪĪ	J-2001	rage	: 1 Of 1

Measured	De	pth:	1382	0 m	TVD:	1379	9.8 m		PBTI	D:	0.0	Pro	posed M	D: :	3625.0	m Pro	posed	TVD:	3625	.0 m
DOL: 1	11	DE	rs: 6	_	nd Date: 22					Daily	Footage	e: (	0.0	aily R			Total	Rot Hr		-
Torq:	0	Drag	· 0.0	Rot Wo	gt: 0.0 P	/U Wgt:	0.0	Sl	.ack	Off Wgt	;: <sub>0.0</sub>		d: 4	Seas	: 2.0	/ 0.0	Bar:	766	POB:	88
Last Casi	ing			762.0	Set I			451.	Ωm	MD	4	51.0m		Shoe '			EMW	Leako	ff?	
Cum Rot H	Hrs	On Cas	sing:	41.0	Cum Rot Hr	s On C			····		imer:	1.0	1	n Worst	Wear:			emainir	ng:	
Liner Siz	ze:				! Get At:		MD			т	VD		iner To	p At:		MD				TVD
Mud Co: <sub>M</sub> -	T 1	VIODOTE I	۸	Tyr	œ: SEAWATER		מויז			_	le Fram	: DTT	Wt.: 103	1 FV:	o PV:	-	YP: n	O Gel:		,
WT.				F	7				Solid		% O	il: 0.0	Wat	er: 0.0	% Sa		MB'		0 , Ph:	/ 0
Dm:			HTHP: 0	.0	API	:0.0 H		.0  .a:		Bent			ds %HG/I		0		S/Bent	::		
0.00	)		0.00 /	0.00		<u></u>				2011		0011	3107		/		D, 2011			
		1.				1_					' 01.	1.	n 1							
Drlg Gas	:	,	Max Gas:		Conn Gas:	]	Trip G	as:		Tr	ip Cl:	-	Remarks	•		_				
Bit Numbe	er	IADC	Size	Manu	ıfacturer	Seria	l numb	per			s (Quar	ntity	- Size)	,	TFA	MD	In	MD Out	TV	D Out
6			444.5		IPE				1-2	22.2/3-	-14.3/	/	<u> </u>	<u>/ - </u>	869.	0 138	2.0 m	1382.0	m 13	80.0 m
			<del></del>			<del>                                     </del>		<u> </u>	-	/ -	- / T	- /	- /	/ - 	0			1		
Type	<u> </u>	Met	ers H	ours	WOB	RE	PM	ľ	Motor	RPM	I-Row	0-Ro	w DC	Loc	В	G	Char	?Pull	Cos	t/m
17.1/2"	H/	0 0.	. 0	0.0	0.0/5.0	150 ,	/				1	1	WT	A7	E	IN	NO	TD	(	0.00
					/	,	/													
Total Ler	ngt	h of BI	HA: 234	.36 m	BHA Descr	iption:	BULI	NOSI	E – E	BIT SUB	- PIN	X PIN	SUB - X	/OVER	- 17.1/	2" HOL	E OPEN	IER -	BIT S	JB
(C/W FL	CAO	7) – AN	DERDRIF"	г – 3	X 9.1/2" D	C - X/O	VER -	3 X	8" [	c - x/	OVER -	3 X 5"	HWDP -	6.1/2	" WEIR	HOUSTO	N JARS	3 - 14	X 5"	
HWDP												Hrs (	On Jars	48.0	Hours	Since	Last	Inspec	tion:	48.0
Bit Num		Line	r		Stroke			SPM		Press.	M3/Min	Jet V	el DP	Av D	C Av	Bit kW	BHHI	P/SQIN	Pump	kW
6	15	2 / 1	52 / 15	2 30	4.8/304.8	/ 304.8	100/1	100/		152	3.22	61.9	4 22.	62 2	9.44	0.00	(	0.0	8.	10
		/	/		/	/	/													
Survey M	D i	Angle	Azimut	h I	Direction	Т	VD	ı	1/S C	Coordin	ates	E/W	Coordin	nates	Verti	.cal Se	ction		DLS	
									-,											
	t																			
	+																			
	4																			
Hours Fro	<del>-  </del>				-		-				ng at M							s Repoi	rted:	24.0
2.50 <sub>T</sub> 000	00	01 – 08	CONT PO	. 4OO	L/O OUT 13.	.3/8" C	SG F/	270M	1 – R	IG FLO	OR. M/U	SWEDG	E & 5" 1	DP PUP	TO SHO	ETRACK	& R/B	ACK.		
		01 - 08	SOME OF	IPPIN	G DAMAGE TO	CEMEN	T ON N	OSE	OF S	HOE; 2	CENTRA	ISERS	MISSIN	G ON SH	IOEJO IN	Т				
1.50T 023	30	01 - 08	CLEAR 1	3.3/8	" CASING HA	NDLING	EQUIF	MENT	F/:	DRILL I	FLOOR &	R/U T	O RUN W	IPER TF	RIP ASS	Υ.				
5.50T 040	00	01 - 08	M/U 17.	1/2"	WIPER TRIP	ASSY.	STRAP	WELD	CON	NECTION	NS BELO	17.1	/2" HOL	E OPENE	R.					
Т		01 - 08	TIH TO	364.5	M & WASH WE	LLHEAD	- PUM	1P HI	VIS	PILL; (	CONT TH	I TO 5	35M							
6.50T 093	30	01 - 08	HOLE TO	OK WE	IGHT AT 535	M; WAS	H & RE	AM F	7/ 53	5 TO 83	38M W/ 3	.50 RP	м, 3234	LPM, 1	.52 BAR	& SWE	EP HOL	E W/ H	I-VIS	PILL
Т		01 - 08	CONT TO	WASH	& REAM F/	838 TO	1382M	ı (TI	17	1/2" H	OLE @ 13	379M)								
2.50T160	00	01 - 08	CIRC 50	м3 ні	-VIS PILL 8	DISPL	ACE W/	SEA	WATE	R; DISI	PLACE H	LE TO	1.4 SG	KCL M	ID					
3.50T183	30	01 - 08	POOH F/	1382	M TO SURFAC	E - NO	HOLE	PROE	BLEMS	L/D I	HOLE OP	NER								
2.00T 220	00	01 - 08	R/U TO	RUN 1	3 3/8" CASI	NG;														
		_																		
		_																		
	$\neg$																			
	$\dashv$																			
		_																		
Safety: _	שמח		TO DIMI	TN7 1	3 3/8" CASI	NC														
							TEXT C = -	T37~	TID = -	W / 1 -	1/0"	0 50 5	120055	20011: -	/11	OTBT ~~	,			
Projected	l Or	eratio	ла L/D ns:	13 3,	/8" CSG; MA MENT 13 3/8	NE CONT	71 1 TON	TING ,	1 ZZ	W/ 1/	1/2" H/	0 10 1	L30∠Mi b	roumi R	/ U 10 F	CIN CSC	ī			
Remarks:	1		RUN	& CEI	MEN'I' 13 3/8	" CASIN	NG; PR.	EPAR.	E TO	RUN BC	DP & RIS	ER								
POB: CHEV	/ROI	1 - 3,	SERVIC	E - 22	2, DOLPHIN	- 55,	DOLP	HIN :	SERV	ICE - 8	3					DA	YS SII	NCE LAS	T LTI	- 62
06:00 OPS	S: (	CONT T	IH W/ 13	3/8"	CASING @ 4	55M														
Daily Mud	d C	ost: KR	262,462		y Tangible				Da	ily Wel	ll Cost	KR2,5	54,232		ents:	NO IN	CIDEN	repor	TED	
Cum Mud (	Cos.	t: KR41	.4,471	Cum	Tangible C	ost: K	R442,8	345	Cu	m Well	Cost:	KR58,1	L23,438	Total	Appr:	KR134	,000,0	00		
Drill Wat					Water: 220.		-1.	57.0			Bulk	Weigh	nt: 384.	0 Ne	eat Cem	ent: 2	53.0	Blende	ed:	
Country:			I I			Rig: <sub>BYF</sub>							2 88 03		Drill	ing Rej	p: FILK	INS/MOO	RE/DE	JONGE
Field: <sub>PL</sub>	.250	)				se: <sub>PL25</sub>					<del></del>		ell No:		-1			11 ID:		
FI	ر به د	-			API No:				A	AFE No:	KWENO-			-,-	Date:	27–ரா			: 1	
																- 01	,			

Measured I	epth:	1:	382.0 m	l	TVD:	137	79.8 m		PBT	D:	0.0	Prop	osed M	): <u>;</u>	3625.0	m Pro	posed	TVD:	3625.0 m
DOL: 12		DFS: 7			ate: 22					Daily	Footag	e:	D	aily Ro	ot Hrs:		Total	Rot Hr	s: 36.5
Torq:	Dra	ıg:		Wgt:	- 1	/U Wgt		S	lack	Off Wg	::	Wind	l: <sub>1</sub>	Seas	: 2.0	/ 3.0	Bar:	756	POB: 88
Last Casin	ıg Size	:	220	9.7 mm	Set 1	At:		1374.	2m	MD	12	72.1m		Shoe '			EMW	Leako	
Cum Rot Hr	s On C	asing:		Cur	m Rot Hi	rs On	Casing	13/4. g Sin	ice L	ast Cal	iper: ,	72.1111	1	1 Worst				emainin	a:
Liner Size	<u> </u>			0 Set									iner To						_
		0.0				0.0	) MD			0.0		+		-		0 MD	YP:	a 1.	0.0 TVD
Mud Co: <sub>M-I</sub>	NORŒ	A.S.		Type:					Solid		le From	i FLOW	wt: Wat	FV:	PV:		MB.	Gel:	Ph:
WL API:		HTHP	:	FC (mr	APJ		HTHP:		POTT	1		1			₹ Sa				PII•
Pm:	Pf/Mi	:	/	Carb	:	cl:		Ca:		Ben	t:	Solid	s %HG/1	LG:	/	%I	)S/Bent	::	/
Drlg Gas:		Max (	Gas:	Co	nn Gas:		Trip	Gas:		Tr	ip Cl:	F	emarks	:					
Bit Number	IADC	Si	ze M	anufac	turer	Seri	al nun	ıber		Jet	s (Qua:	ntity -	Size)		TFA	MI	) In	MD Out	TVD Out
									-	/ .	- /	- /	- ,	/ _	0				
									-	/ .	- /	- /	- ,	/ -	0				
Type	Me	ters	Hour	s	WOB		RPM		Moto	r RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
1790					/		/				1								
							,												
Total Lenc	th of	DII7 •		BH	/ IA Descr	intion	/ n:						<u> </u>						
Total leng	JCII OI	опи•				-F-01-01													
												1			1				
							1		1		1	Hrs O	n Jars:	: 	Hours	Since	Last	Inspect	ion:
Bit Num	Lir	ner		Sti	roke			SPM		Press.	M3/Min	Jet Ve	:1 DP	Av D	C Av	Bit 🙀	BHHI	P/SQIN	Pump kw
		/	,		<u>/</u>	<u>/</u>	/	<u> </u>											
	/	/	,		/ .	/	/	/ /	'										
Survey MD	Angle	Azi	muth	Dire	ction		TVD		N/S	Coordin	ates	E/W	Coordin	ates	Verti	cal Se	ection		DLS
		+																	
		+																	
	1	4																	
Hours From	Act-C	at			Operat	ions (	Coveri:	ng 24	1 Hou	ırs Endi	.ng at 1	Midnigh	t			Tota	l Hour	s Repor	ted: 24.0
0.50 <sub>T</sub> 0000	01 - 0	8 CONT	r to R	U TO F	RUN 13 3	3/8" C	SG; HE	ELD T	BT										
7.50T 0030	01 - 0	8 RE-I	RUN 13	3/8" 5	SHOETRAG	OK & I	NSTALI	GUI	DELII	NES; RU	N 13 3/	8" 72#	L-80 M	OD BTC	CASING	AS PE	R TALL	Y TO 72	7M
Т	01 - 0	8 REMO	OVE ALI	L DAMAC	GED CEN	TRALIS	ERS -	CENT	RALI	SERS IN	STALLED	ON SHO	E JOIN	r, and	FIRST	5 JOIN	TS ABO	VE SHOE	TRACK
4.00 0800	01 - 0	8 CONT	TO T	H W/ 1	13 3/8"	CSG -	MONIT	TOR C	ASIN	G MOVEM	ENT W/	ROV AT	WELLHE	AD -FIL	L CSG	EVERY	5 JNTS	W/ 1.4	SG KCL MUE
	01 - 0	8 FROM	м 450м	то 137	79 <b>M; M</b> /T	J 18 3	/4" HE	WEL:	LHEAI	D									
2.50 1200	01 - 0	8 RUN	13 3/8	3" CSG	ON 5" I	DP; WA	SH DOW	N CS	G AT	1074,	1190 AN	D F/ 13	35 TO :	1379M W	/ 3000	LPM			
					VELLHEAI														
1.00 1430											ш								
											DITMED 10	OM2 OE	1 5600	T E A D	TIMDI	IICTNO	1000	OT A CC. I	CI CEMENT
4.00 1530																			
										-									25 BAR
	01 - 0	9 MIX	& PUMI	2 17M3	OF 1.92	2SG TA	IL SLU	JRRY 1	USIN	G 21MT	CLASS '	G'OMT	W/ 0.1	LTR/10	UKG NF	-6 AND	43.78	LTR/100	KG DRILL
	01 - 0	9 WATI	ER AND	PUMP A	1 8.0 TA	M3/MIN	W/ 20	) BAR	; DIS	SPLACE	CMT W/	3M3 SEA	WATER 8	SHEAR	DART	W/ 154	BAR		
	01 - 0	9 DISI	PLACE V	VIPER V	v/ 76M3	SEAWA'	TER AT	320	0 LPI	м, 161	BAR USI	NG RIG	PUMPS;	SLOW F	UMPS T	0 580	LPM, 6	1 BAR	
	01 - 0	9 MON	ITORED	RETURI	NS @ SEA	ABED D	URING	ENTI	RE CI	EMENT O	PERATIO	N; S/D	PUMPS -	- PLUG	DID NO	T BUMP	;		
					55 BAR														
Safety: TB	T PRIO	R TO R	RUNNING	13 3/	8" CASI	NG ANI	O CEME	NT JC	)B										
24 Hr Summ										ASING W	1.5690	E CEMEN	r; Rete	RIEVE R	/TOOL A	k R/∏⊓	O RIN	BOP'S	
Projected	Operat:	ions:	RIM DO	מג פים	Π Ι.ΔΜΩ	Same			. ω	11/					(	, 0			
Remarks:			TON DO	r D AIV	שאבו שו	DAME													
POB: CHEVR	.ON - 3	, SER	RVICE -	22,	DOLPHIN	r – 55,	, DOL	PHIN	SERV	/ICE - 8	3					D/	AYS SII	NCE LAST	LTI - 62
STARBOARD	BULLSE	YE 1 1	./2 DEG	ļ															
06:30 OPS:	FUNCT	ION TE	ST BOP	'S BEL	OW ROTA	RY TAI	BLE PR	IOR 7	IO LA	ATCHING	UP TO T	THE DOU	BLE						
Daily Mud	Cost:	KR118,								aily We	ll Cost	: <sub>KR4,31</sub>	0,584	Incid	ents:	NO II	NCIDEN	report	ED
Cum Mud Co	st: KR	533,33	33 C	um Tan	gible C	ost:	KR1,74	47,95	ı Cı	um Well	Cost:	KR62.4	34,022	Total	Appr:	KR134	,000.0	00	
Drill Wate			Potabl	e Wate	r: 195.		uel:					Weigh			at Cem			Blende	d:
Country:						Rig: <sub>BY</sub>						hone: 52						TNIC! /N#^~	RE/DEJONGE
Field: PL2	EQ.					se: PL2		-VILET.	14					6506/3-	.1		ᄺᄯ	ll ID:	DEOUG -0
PL2	59								1	AFF Ma.	T/T-777-0					00 =			
					API No	- 05Ub/	, 2-⊥			AFE No:	VMEINO-	.T500co	-001		Date:	∠8-JŪĪ	ZUU1	rage:	1 Of 2

Description   Part	Measur	red D	epth:	138	2.0 m	TVD:	1379.	8 m	PB'	TD:		0.0	Prop	osed M	): <sub>3</sub>	625.0	m Pr	oposed	TVD:	3625.0 m
Trace	DOL:	12	DI							Da	ily		e:	D				Total	Rot Hr	
Control   Cont	Torq:		Drag	η:					Slack	Off	Wgt:	:	Wind	: 1	Seas	: 20	/ 3 0	+		DOD:
Description   Communication		asin	g Size:		222	_ Set	At:						_		+ -			-		
March   Carlot   Ca	-			sina:		. / mm		1374 sing Si	nce T		Cali	137 per:	/2.1m	1			0			
Max   Color				<u> </u>	0.0	•								_		wear.		. 1	ешантн	
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STORT		M-I	NORGE 2	A.S.					0-14		Sampl									
Date   Coast   More Class   Cover Class   Cover Class   Total Coast   Cover Class		API:				111							1			% Sa				Pn:
### Right   TATE   Since   Montantarer   Serial number   John   (Quantity - Since )   TATE   183 in   Mile Did   TATE   TATE   Mile Did   M	Pm:		Pf/Mf:		/	Carb:	Cl:	Ca:		E	Bent:	:	Solids	s %HG/I	LG:	/	%	DS/Bent	:	/
### No.   Process   Proces																				
### Right   TATE   Since   Montantarer   Serial number   John   (Quantity - Since )   TATE   183 in   Mile Did   TATE   TATE   Mile Did   M																				
Type	Drlg G	las:		Max Ga	s:	Conn Gas	Tr	ip Gas	:		Tri	p Cl:	R	marks	•					
Type	Bit Nu	ımber	IADC	Size	e Ma	nufacturer	Serial	number		į	Jets	(Quan	ntity -	Size)		TFA	М	D In	MD Out	TVD Out
Type									_	. ,	/ -	/ -	- /	- /	/ _	0				
									_	. ,	/ -	/ .	- /	- /	/ _	0				
	т	vne	Met	ers	Hours	WOB	RPM		Moto	or RP	PM	I-Row	O-Row	DC.	Loc	В	G	Char	?Pull	Cost/m
Total Longth of Mean   SMA Pearington:		710					/													
Res On James   Rouse Sibne Last Inspection   Purp   167						,	,													
Res On James   Rouse Sibne Last Inspection   Purp   167	Total	Tena:	th of B	HA:		BHA Desci	ription:						<u> </u>		<u> </u>				<u> </u>	
Bit Num Liner Stroke SRM Press. M37Min Jet Vel DP AV DC AV Bit 100 BHBP/SUN Pump 301  Survey NO Angle Azimuth Direction TWD B/S Coordinates E/W Coordinates Vertical Section DEG  Survey NO Angle Azimuth Direction TWD B/S Coordinates E/W Coordinates Vertical Section DEG  Survey NO Angle Azimuth Direction TWD B/S Coordinates D/W Coordinates Vertical Section DEG  10-09 BEED DAMP FRES. FLOAT HODDING  01-09 BEED DAMP FRES. FLOAT HODDING  10-09 BEED DAMP FRES. FLOAT HODING  10-09 BEED DAMP FRES. FLOAT HODDING  10-09 BEED DAMP FRES	Tour		<u> </u>																	
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House From Act-Cat	Bit Nu	m	Line	er		Stroke	,	SPM	1	Pres	ss. I	M3/Min	Jet Ve	l de	Av D	C Av	Bit k	J BHH	P/SQIN	Pump kW
House From Act-Cat							/		/											
House From Act-Cat			/_	/_		/	/	/	/											
Discrete   Discrete	Survey	MD	Angle	Azim	uth	Direction	TVD	)	N/S	Coor	dina	tes	E/W C	oordir.	ates	Verti	cal S	ection		DLS
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1.50 2230 01 - 13 R/U TO RUN BOP'S; MEANWHILE OFFLOAD RISER F/ HIGHLAND STAR & BACKLOAD EQUIPMENT																	N; ISC	)LATE T	HE Z CA	ALLPERS
-   -   -   -   -   -   -   -   -   -																				
Country:   Norway   Field:   PL259   Well No:6506/3-1   Well ID:UB5908 -0	1.50	2230	01 - 13	R/U T	O RUN	BOP'S; MEAN	WHILE OFF	LOAD R	ISER	F/ H	IGHL	AND STA	AR & BA	CKLOAD	EQUIPM	ENT				
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Country:   NORMAY   NORMAY   NORMAY   Norman			_																	
Safety: TBT PRIOR TO RUNNING 13 3/8" CASING AND CEMENT JOB  24 Hr Summary: RUN 13 3/8" CASING AND SET AT 1379M; CEMENT CASING W/ 1.56SG CEMENT; RETRIEVE R/TOOL & R/U TO RUN BOP'S  Projected Operations: RUN BOP'S AND LAND SAME  Remarks:  Daily Mud Cost: KR118,862 Daily Tangible Cost: KR1,305,106 Daily Well Cost: KR4,310,584 Incidents: ND INCIDENT REPORTED  Cum Mud Cost: KR533,333 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR62,434,022 Total Appr: KR134,000,000 Drill Water: 700.0 Potable Water: 195.0 Fuel: 441.0 Bulk Weight: 180.0 Neat Cement: 141.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/MOORE/DEJONGE  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0	L	L	 L -	<u> </u>					_	_	_						_			
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Drill Water: 700.0 Potable Water: 195.0 Fuel: 441.0 Bulk Weight: 180.0 Neat Cement: 141.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/MOORE/DEJONGE  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0	Cum Mu	d Cos	st: KR5	33,333	Cu	m Tangible (	Cost: KR1	 L,747,9	<sub>51</sub> C	um We	ell	Cost:	KR62,43	84,022	Total	Appr:	KR134	1,000,0	00	
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Measure	ed De	epth:	138	32.0 m	TVD:	1	379.8 m		PBTD:		0.0	Prop	osed M	): <u>;</u>	3625.0	m Pro	posed	TVD:	3625.0 m
DOL:	13	Di	FS: 8		pud Date:				Ι	Daily	Footage	e:	Γ	aily R	ot Hrs	:	Total		as: 36.5
Torq:		Drag	J:	Rot	Wgt:	P/U W	gt:	Sla	ack Of	f Wgt	:	Wind	l: <sub>22</sub>	Seas	: 2.0	/ 0.0	Bar:	743	POB: 97
Last Ca	sing	g Size:		220	.7 mm Se	At:	1	27/ 2	m M	D	12'	72.1m		Shoe '			EMW	Leako	•
Cum Rot	Hrs	s On Ca	sing:		Cim Rot	Hrs Or	n Casing	Since	e Last	. Cali	iper:	72.1111	-	Worst				emainir	na:
Liner S	Size:	:		0.0	Set At:								iner To						
			0.0	Īт			.0 MD		0	.0 T						.0 MD	ZD:	- G-1.	0.0 TVD
Mud Co:					ype: MINER			Sc	olids:								MB		7 / 9 Ph:
	API:				FC (mm)			0	JII GB	1			00 ***********************************	er:	00 , 20				1111
Pm: 0.	. 00	PI/MI.	0.00	/ 0.00	Carb:	CI:	20,000	Ca:		Bent	,• 	50110	IS 6HG/.	_G•		(AL)	S/Bent	· ·	/
50	1LT	ROTHER		480	00 1KG (	CMC HV	TECH	186	1 <sub>MT</sub>	ASP-	700	200	) 1 <sub>K</sub>	G SODA	ASH	16	1	MT BEN	TONITE API
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Drlg Ga	as:		Max Ga	ıs:	Conn Ga	s:	Trip (	Bas:		Tr	ip Cl:	F	Remarks	:					
Bit Nur	nber	IADC	Size	e Ma	nufacture	Ser	rial numi	ber		Jets	(Quar	ntity -	Size)		TFA	A MD	In	MD Out	TVD Out
									-	/ -	/	- /	- ,	<u> </u>	0				
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Ту	pe	Met	ers	Hours	WOB		RPM	М	lotor I	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
					/		/												
					/		/												
Total I	engt	th of B	HA:		BHA Des	cripti	on:												
												Hrs C	n Jars		Hours	Since	Last	Inspect	tion:
Bit Num	n	Line	er		Stroke			SPM	Pr	ess.	M3/Min	Jet Ve	el DP	Av	C Av	Bit w	Ынп	P/SOTN	Pump kW
			/		/	/		/								17//		7-2	
							<del>                                     </del>												
Survey	MD	Angle	Azim	uth	Direction	<del>,                                    </del>	TVD		/S Coo	ordina	at oc	E/W	Coordir	ates	Vert	ical Se	ation		DLS
bur vey	IND	Aigie	AZIII	iddi	Direction		TVD	111	/B CC	JIGHIE	1000	E/W	COOLGII	iaces	VELC	icai se	CCIOII		DLIS
								+											
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Hours F	rom	Act-Cat	t		Oper	ations	Coverin	ıg 24	Hours	Endi	ng at M	idnigh	t			Tota	l Hour	s Repor	rted: 24.0
0.50	0000	01 - 13	CONT	TO R/T	J TO RUN B	OP'S													
6.50	0030	01 - 13	P/U A	J/M CINA	J DOUBLE O	FF RISE	R; SKID	BOP 7	TO CEN	TRE I	N MOON	POOL; I	NSTALL	LMRP A	ND GUI	DELINE	S; FUN	CTION 7	TEST BOP'S
3.50T(	0700	01 - 20	DISCO	OVER IN	MPROPER IN	STALLAT	TION OF	[ARGE]	r slee	EVE IN	UPPER	INNER	CHOKE :	LINE CA	USING	RESTRI	CTION	IN FLOV	V AREA
		01 - 13	CHANG	ED OVE	ER TARGET	SLEEVE	AND PRE	SSURE	TESTE	ED CHC	KE LIN	E TO 35	BAR/51	MIN, 69	0 BAR/	10MIN			
2.50	1030	01 - 13	CONNE	ECT RIS	SER DOUBLE	TO BOI	; MOUNT	BULLS	SEYE A	AND BE	CACON A	ID RUN	BOP TH	RU SPLA	SH ZON	E; TES	Г С&К	LINE TO	35/414 BAF
11.00	1300	01 - 13	CONT	RUNNII	NG BOP ON	RISER T	10 +/- 2	50м, т	restin	IG C&K	LINES	TO 35/	'414 BAI	R EVERY	5 JNT	'S			
		01 - 13																	
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					o'S; M/U BO														
Remarks	.u. c	, <sub>r</sub> a(	M	OT WO	HOOK UP C	K LINE	S TO SLI	PJNT;	LAND	& LA'	TCH BOF	& P/T	EST CON	NECTIO	1 & CA	SING; M	I/U 8 :	1/2" BH	<u>A</u>
II		M - 4,	SERV	ICE -	30, DOLPI	<u>IIN - 5</u>	5, DOLE	HIN S	ERVIC	E - 8						DA	YS SII	NCE LAS	T LTI - 64
06:00 C	PS:	WOW TO	P/U S	LIP JN	TT SINCE 05	30 HRS	- 35 KI	OTS W	IIND,	6M SE	AS								
Daily M	Mud (	Cost: K	R1,066	, 8 Da	ily Tangik	le Cos	t:		Dail	y Wel	1 Cost	KR4,12	7,850	Incid	ents:	NO IN	CIDEN	repor	TED
Cum Mud	d Cos	st: KR1	,600,1	57 Cu	m Tangible	Cost:	KR1,74	7,951			Cost:			Total	Appr:	KR134	,000,0	00	
Drill W					Water: 36		Fuel:						t: <sub>180</sub> .			nent: 1			ed:
Country			<u>-  </u>		30		BYFORD I		N				2 88 03	35	Drill	ing Re	v	TNIS /M	RE/DEJONGE
Field:	דע	50			I	ease: P					<u> </u>			6506/3-	·1		We	11 ID:	UB5908 -0
	- 114					No: 650			AFI	E No:	KWENO-					29-JUL		1	: 1 Of 1

Measur	red D	epth:	138	2.0 m	TVD:	137	9.8 m		PBTD:		0.0	Pro	posec	dM E	: 3	625.0	m Pro	posed	TVD:	3625	. 0 m
DOL:	14	D	FS: 9		oud Date: 22				I	Daily	Footage	e:		Da	ily Ro			Total	Rot Hi		
Torq:		Drag	<del></del>	Rot V		/U Wgt		Sl	ack Of	f Wgt	:	Win	ıd:	12	Seas:	4.0	/ 0.0			POB:	
Last. C	asin	g Size:		222	_ Set i	At:									Shoe T			EMW	Leako	*	90
-		s On Ca			Om Rot H		Tasing	3/4.3 Sinc	3m M ne Last	ບ - Cali	13' mer:	72.1m			Worst				emaini		
Liner			5119	0.0	Set At:			01110					Liner	_		wear.		0 10	Спант		
			0.0				MD		0	.0 T							.0 MD			0.0	
1	M-I	NORŒ	A.S.		/pe:MINERAL	OIL BA	SED	1_										-	.5 Gel:	<del>,                                    </del>	/ 9
WL	API:	0.0		2.0			HTHP: 1	.0 S	olids	;	% O.	70	.00	Water	r: 30.0	)0 % Sa	and:	MB	Т:	Ph:	
Pm: 0	.00	Pf/Mf	0.00	/0.00	Carb:	Cl: 20	,000	à:		Bent	:	Soli	ds %H	HG/LO	<b>3</b> :	/	%D	S/Bent	t:	/	
5	1KG	BENTO	NE 34																		
Drlg G	Gas:		Max Ga	s:	Conn Gas:		Trip G	as:		Tr	ip Cl:		Remar	rks:							
Bit Nu	ımber	IADC	Size	Mar	ufacturer	Seria	al numb	er		Jets	(Quar	ntity	- Siz	ze)		TFA	A MD	In	MD Out	TVI	D Out
									_	/ -	/	- /	/ _	/	_	0					
									-	/ -	/	- /	/ _	/	-	0					
т	ype	Met	ers	Hours	WOB	F	RPM	N	Motor I	RPM	I-Row	0-Ro	w D	c	Loc	В	G	Char	?Pull	Cos	t/m
	урс	1100		110 01 10	/	1	/				1 10"	0 110			200			CIICI		002	0,
					,		/														
T∩tal	Lenc	th of B	HA:		BHA Descr	iption	<u>′</u> 1:	<u> </u>			<u> </u>	<u> </u>					<u> </u>		1	<del></del>	
1001		OL D																			
												Unc ·	Or To	arc.		Нолга	g Cinac	T a a t	Tnone	tion:	
	i			1			1		<del>-  </del>		1		On Ja	ars:	<u> </u>	nours	o pruce	Last	Inspec	LIOU:	
Bit Nu	ım	Line	er ,		Stroke	,	5	SPM .	Pr	ess.	M3/Min	Jet V	el :	DP A	v DO	C Av	Bit kW	BHH	P/SQIN	Pump	kW
			/_			<u>/</u>	/														
		/	/_		/	/	/	/_											_		
Survey	/ MD	Angle	Azim	uth	Direction	7	IVD	N	I/S Coo	ordina	ites	E/W	Coon	dina	ites	Vert	ical Se	ction		DLS	
Hours	Fram	Act-Ca	+		Operat	ions C	hverin	7 24	Hours	Endir	ng at M	idnid	nt.				Tota	l Hour	s Repo	rted:	24 0
				DI TATAT TAT	G BOP ON RIS									ידיואד.	2		100a	1 HOUL	ъ керо	· ca.	24.0
						JEIC, 11	BIING	care .	LINES	10 33	7 11 11	at DVD	11(1 )	OIVIL							
					SLIP JOINT	614 GET				0.0000	DIMON	4 05		27.7							
Т		-			6KNOT WIND,																
Т	1	01 - 42	0600	HRS: 4	4KNOT WIND,	6M SEA	AS, 2.0	M HE	AVE, 1	L.5DEG	PITCH,	3.0D	EG RO	OLL							
Т		01 - 42	0800	HRS: 3	6KNOT WIND,	5-8M S	SEAS, 2	2.0M	HEAVE,	1.50	EG PIT	н, 3.	0DEG	ROLI	<u> </u>						
Т		01 - 42	1000	HRS: 4	OKNOT WIND,	5-8M S	SEAS, 2	2.0M	HEAVE,	1.50	EG PITO	сн, 3-	4DEG	ROLI	Ĺ						
Т	1	01 - 42	1200	HRS: 3	6KNOT WIND,	5-8M S	SEAS, 1	.8M	HEAVE,	1.60	EG PITO	н, 2.	7DEG	ROLI	L						
Т	1	01 - 42	1400	HRS: 3	6KNOT WIND,	5-8M S	SEAS, 1	.5M	HEAVE,	1.70	EG PIT	н, 2.	5DEG	ROLI	L						
Т		01 - 42	1600	HRS: 3	2KNOT WIND,	4-7M S	SEAS, 1	. <u>5</u> M	HEAVE,	1.60	EG PITC	т, 2.	3DEG	ROLI							
Т		01 - 42	1800	HRS: 2	8KNOT WIND,	4-7M S	SEAS, 1	.2M	HEAVE,	1.50	EG PITO	H, 2.	0DEG	ROLI							
3.00	1900	01 - 13	P/U S	LIPJOI	NT AND LAND	ING JOI	INT; IN	STAL	L CHOK	Œ, KI	LL & BO	OSTER	LINE	ES; I	HOOK UI	P TENS	SION RI	NG			
2.00	2200	01 - 13	MOVE	RIG TO	WELL CENTRI	E - CHE	ECK BUL	LSEY	ES BOE	P=1/2D	EG, LMF	RP=1/2	DEG,	FLEX	XJNT=3	/4DEG					
					TCH BOP'S 2:							<u> </u>									
												/07-5		. ~	TD:== ~	. 1 ^	/ADEC C	m			
			BULLS	LIES:	BOP 2DEG STI	5-rWD,	LIMRY 2	JEG .	otR-F.M	νυ, ۴'L	irvini, j	. / ZUE'G	sib;	, GU	LDEBASI	<u>в 1 3/</u>	4UEG S	TR-F.MD	)		
Safety	/: /: .	-																			
24 15-	WH	LE WAS	HING DO	NI NWC	SACKSTORE,	MAN GO	T CHEM	ICALS	S IN H	IS EY	ES; EYE	S WERI	E FLU	JSHED	AND M	IAN CO	ULD REI	URN T	O WORK		
					ON RISER; W												OVE RIG	; LAN	D & LAT	CH BOI	P'S
Projec Remark	rea (	reratio	TI · Silv	EST CAS	SING TO 200	BAR; M	I/U 8 1	/2" E	BHA &	P/U 5	" DP; D	ISPLA	CE TO	1.4	15SG LI	'-OBM					
		DN - 3,	SERVI	ICE - 3	30, DOLPHIN	r - 54,	DOLP	HIN S	SERVIC	E - 9							D#	YS SI	NCE LAS	T LTI	- 65
DAILY	FE CO	OST: NO	K 1,120	0,693			TO	ral i	FE COS	TS: N	OK 5,79	8,991									
		M/U BH																			
		Cost: KI		52 Dai	ly Tangible	Cost:			Dail	y Wel	l Cost:	KD4 4	70 00	95	Incide	ents:	FIRST	' ATD			
		st: KR1			Tangible C			. 0.51			a	KR4,4 KR71,0					KR134		100		
		r: 280.			Water: 315.				·			KR71,0 Weigh				at Cen	KR134 ment: 1	,000,0	000   Blenda	ed:	
			0	-cmtc			4	22.0								Dri 11	Lina Re	41.0 o:			
Countr	N	ORWAY					FORD DO	OLPHI	IN		Rig Pl				35				RE/DEJC		
Field:	PL2	59				se: <sub>PL2</sub>			1.						506/3-				ell ID:		
					API No	: 6506/	3-1		AF	E No:	KWENO-	650631	1-001		]	Date:	30-JUL	-2001	Page	: 1 (	of 1

Measured D	epth:	1386	.0 m	TVD:	1384.0	m	PBTD:		0.0	Prop	osed MI	): <u>3</u>	3625.0	m Prop	posed	TVD:	3625	.0 m
DOL: 15	Г	FS: 10		nd Date: 22			]	Daily	Footage	e: 4	.0 D			0.5				-
Torq: 10	Dra	g: " "		gt: <sub>180.0</sub> P/		0 0 S	lack Of	ff Wgt	180			Seas	: 4 0	/ 0 0	Bar:	755	POB:	93
Last Casin		•		Set I		*				•		Shoe 7		1841		Leak	•	
Cum Rot Hr	_		339.7	Cum Rot Hr	s On Casi	13/4. ng Sin	3m M ce Last	t Cali	iper: _	72.1m	1	Worst				emaini:		Y
Liner Size				Set At:							iner To				0 10			
		0.0	_		0.0 MI	)	0	.0 T						.0 MD	<b>.</b>		0.0	TVD
Mud Co: <sub>M-I</sub>	NORGE	A.S.		œ:MINERAL	OIL BASED	1.	2 1'1		le From	PIT	Wt: 144						<del>,                                     </del>	/ 11
		HTHP: 3	5.0		: 0.0 HTHP	:1.0	Solids	-		il: 70.0		er: 30.	00 <sup>%</sup> Sa		MBT		Ph:	
Pm: 0.00	Pf/Mf	:0.00 /	0.00 <sup>C</sup>	arb:	Cl: 26,000	Ca:		Bent	: <b>:</b>	Solid	s %HG/I	LG:		%DS	S/Bent	; <b>:</b>	/	
Drlg Gas:		Max Gas	:	Conn Gas:	Trip	Gas:		Tr	ip Cl:	R	emarks:	:						
Bit Number	IADC	Size	Manu	ıfacturer	Serial n	ımber		Jets	s (Quar	ntity -	Size)		TFA	MD A	In	MD Out	TVI	D Out
7		215.9		HUGHES	12137	67	4-14	.3/ -	_ / .	- /	- /	/ _	641.	3 1382	.0 m			
							_	/ -		- /	- /	/ _	0					
Туре	Me:	ters H	ours	WOB	RPM		Motor :	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cos	t /m
ABD536PF			0.5	0.0/2.0	120 /				1 10W	O Itow	200	100			CIIGI	1	к 309	
ABD330FF	1 -		0.5	0.0/2.0	120 /												K 30:	3313.
Motol Tong	+b of T	1177 •		RHA Descr	intion: o	1 (0 !!	3DDF 36	DII DD	a pre	1m cm	D G (11.		6 1/6	) DOITE	D.G. 0	1 (0 "	114 600	-
Total Leng				BHA Descr										Z" PONY	DC, 8	1/2"	NM-STA	JR
- CDR - 8	3 3/8"	ILS - IO	SONIC	MWD SUB - N	MWD - 7* 6	1/2"	DC - 9	X 5" I	HWIDP -				1					
					-					Hrs O	n Jars:	55.0	Hours	Since	Last	Inspec	tion:	55.0
Bit Num	Lin	er		Stroke		SPM	Pr	ress.	M3/Min	Jet Ve	l DP	Av D	C Av	Bit kW	BHHI	P/SQIN	Pump	kW
7	6 /	6 / 6	5 30	4.8/304.8	/ 304.8 45	5/ 45/	40	168	0.00	0.09	0.0	00 (	0.27	0.00	C	0.0	0.	00
	/	/		/ /	/	/ /												
Survey MD	Angle	Azimut	h I	Direction	TVD		N/S Co	ordina	ates	E/W (	Coordin	ates	Vert	ical Sed	ction		DLS	
1383.1	3.95	149.0	2	S30.98E	1380.6	5		62.5	3 S		7.5	57 W		-62.53			0.92	
1411.4	4.29	149.0		S30.98E	1408.8			64.2				52 W		-64.27			0.36	
1441.8																		
	4.41	149.0		S30.99E	1439.1			66.2				33 W		-66.25		1	0.12	
1469.6	4.46	150.4	6	S29.54E	1466.8			68.1	1 S		4.2	25 W	<u> </u>	-68.11			0.13	
Hours From	Act-Ca	it		Operat	ions Cover	ing 24	Hours	Endi:	ng at M	idnight	t			Total	Hour	s Repo	rted:	24.0
1.50 0000	01 - 1	STROKE	OUT S	LIP JNT; CI	OSE BSR US	SING A	COUSTIC	C SYST	TEM; P/I	EST WE	LLHEAD	CONN &	: 13 3/	8" CSG	TO			
0000	01 - 1	3 30 BAR	/5 MIN	, 200 BAR/1	.5MIN - OK	P/TE	ST C&K	LINES	S TO 30/	400 BA	IR - OK							
3.00 0130	01 - 1	3 L/D LA	NDING (	JNT; INSTAL	L DIVERTE	R HOUS	ING ANI	D TEST	DIVER	ER SYS	STEM - C	OK; R/D	RISER	HANDLI	NG EQ	•		
4.00 0430	01 - 0	7 R/U ANI	D P/U	8 1/2" DRII	LING BHA 8	k TIH '	TO 2621	M; SUR	RFACE TE	ST LWD	/MWD W/	2000	LPM, 5	5 BAR -	OK			
2.00 0830	01 - 0	7 P/U 21	JNTS (	OF 5" DP FF	OM DECK AI	D TIH	TO 463	3M										
0.50 1030	01 - 0	5 CONT T	IH W/	5" DP FROM	DERRICK FI	ROM 46	3M TO 8	838M										
2.00 1100	01 – 14	1 D/TFST	T.MRD (	CONNECTOR T	n 30 Bab/i	SMTN	200 BZI	P /1 ∩MT	IN - OK:	FINCT	ידרי מרוי	ים אם י	S IISTN	C BLIE	DUD E	/ MATN	DANIET	
2.00 1100				MULATOR DRI										о шон	I OD I	/ I-IFALIN	TANDL	•
1 00 1300										E PANE	л оэтис	- 1EULO	W POD					
				Y DP HANG C														
				5" DP F/ 83											ம் & S∶	HUT IN	WELL	
1.00 1600	01 - 15	5 DRILL (	CMT/PL	UG F/ 1341	TO 1371M V	1/ 200	U LPM,	70 RF	PM, 0-21	WOB;	CIRC W/	/ S/W &	HELD	TBT				
2.50 1700	01 - 01	L PUMP 1	5M3 HI	VIS LT-OBM	PILL & DIS	SPLACE	HOLE V	WITH 1	L.44 SG	LT-OBM	I; DISPI	LACE C&	K LINE	S AND C	HOKE	MANIFO:	LD TO	LT-OBM
1.00 1930	01 - 15	DRILL S	SHOE @	1374M & CI	EAN RATHOI	LE TO	1382M V	W/ 215	50 LPM,	176 BA	R, 70 F	RPM, 0-	3MT WO	B;WORK	THRU	SHOE S	EVERAL	TIMES
0.50 2030	01 - 02	2 DRILL I	NEW FO	RMATION F/	1382 TO 13	386M W	/ 2100	LPM,	168 BAF	R, 120	RPM, 4-	-10K NM	I, 0-1M	T WOB				
1.50 2100	01 - 03	L CIRCUL	ATE BO	TTOMS UP AN	D CONDITIO	ON MUD												
h				IOWN (MEDIE				LINESS	BEING	UNRELA	red to	WORK)						
24 Hr Summ	ary: TT	ST CSC T	0 200	BAR; M/U BH	д & ТТН: Г	RIT.T.	. τ. τ. τ. τ. τ. τ. τ. τ. τ. τ. τ. τ. τ.		341™∩ 1	374M: 0	CLEAN P	ATH∩⊺.F	; DRTI	L TO 129	86м; т		1.8490	G
Projected (	Operati	ons:	T.T. 0 1	1/2" ברוד די	~ 1111 L	(	.JI UII	/ <u>-</u>	1	J. 11.11	X		. 201111	_ 10 10	_ U111 I		- • O EO	,
Remarks:		LK.I	יחדי 2	L/Z MULE.														
POB: CHEVRO	ON - 3,	SERVIC	CE - 30	), DOLPHIN	- 54, DC	LPHIN	SERVIC	CE - 9	1					DA	YS SI	ICE LAS	T LTI	- 66
HEAVE: 1.	2M, PII	CH 1.0DE	EG, ROI	LL 1.7DEG;	CUTTING SK	IPS ON	N BOARD	): 18	, OFU	LL	, 18EMP	TY						
DAILY FE C	OST: NO	K 410,84	10		TOTAL FE	COSTS	s: NOK	6,209	,831									
05:30 OPS:	CONT T	O DRILL	@ 1512	2M (+/- 25M	/HR INCL.	CONN.	)											
Daily Mud	Cost: K	R76,074	Dail	y Tangible	Cost:		Dail	ly Wel	.1 Cost:	KR2,81	2,192	Incid	ents:	NO IN	CIDEN	repor	RTED	
Cum Mud Co				Tangible Co	ost: <sub>KD1</sub>	747 . 95			Chat:		44,159	Total	Appr:	KR134,	000 0	00		
Drill Wate				Water: 280.0					_		t: 180.	) Ne	eat Cem	nent: 14	11 ^	Blend	ed:	
Country:		.0	- •		Rig: BYFORD	412.0					2 88 03		Drill	ing Rep	±.U			
Field:	UKWAY			1		WLPH:	1LIN		J 21					F				
Field: PL2	59				se: <sub>PL259</sub>		1.				ll No:					11 ID:		
				API No:	6506/3-1		AF:	т NO:	KWENO-	650631-	-001		vace:	31-JUL-	-2001	Page	: 1 (	of 2

Measur	red D	epth:	1386.	0 m	TVD:	1384.0	m	PBTD	:	0.0	Prop	osed MI	): 3	625.0	m Pro	posed	TVD:	3625	.0 m
DOL:	15	DI	7S: 10		nd Date: 22				Daily	Footage			aily Ro						
Torq:	10	Drag	r: 0.0 F	Rot Wg	at: 180.0 P	/U Wgt: 18	0.0 SI	lack C	off Wgt	: 180.0			Seas:	4.0	/ 0.0	Bar:	755	POB:	93
Last C	asin	g Size:		339.7	Set i		1374.				'2.1m		_		1841		Leako		Y
Cum Ro	t Hr	s On Ca		7.0	Cum Rot Hi	rs On Casi	ng Sin	ce Las	st Cali	per: 7	0		Worst				emainir	ng:	-
Liner	Size	:	0.0		Et At:	0.0 M			7T 0.0			iner Top	At:	0	.0 MD	<u> </u>		0.0	TVD
Mud Co	. <sub>M_T</sub>	NORGE 2		Тур	œ: <sub>MINERAL</sub>						. <sub>DTT</sub>	Wt: 144	FV:			/P:13	5 Gel:		,
WL	ADT:	0.0	HTHP: 3.			: 0.0 HTHP		Solids				00 Wate				MBT		Ph:	11
I Dm:	API:	Pf/Mf:	0.00 /	. U	arb:	Cl: 26,000			Bent			ls %HG/I		<u>/</u>		S/Bent	:		
0	.00		0.00 /	7.00		26,000													
Drlg G	lag:		Max Gas:		Conn Gas:	Trin	Gas:		Tr:	ip Cl:	F	Remarks:							
																_	1500	T	
Bit Nu	mber	TALC	Size	Manu	ıfacturer	Serial n	umber		Jets /	(Quan	tity - /	- Size)	, _	TFA	MD	In	MD Out	1771	O Out
								_	<u> </u>		- / - /	- / - /		0					
		3.5		<u> </u>	1100	DD14		Mohara	DDM.	7	,	7		+		al	20.11		. ,
T	ype	Met	ers Ho	urs	WOB	RPM		Motor	RPM	I-Row	0-Row	) DC	Loc	В	G	Char	?Pull	Cos	t/m
					/	/													
m-+-1	T	Ll F Di			RHA Desar	intion: o	1 (0 !!					~ /		- 1/0		0	1 (0 :: .		
			HA: 262.			iption: 8									Y" PONY	DC, 8	1/2"	nivi-STA	AR.
- CDI	.t – 8	3 3/8" I	LS - IOS	ONIC	MWD SUB - 1	MWD - 7* 6	1/2"	ιc - 9	9X 5" F	HWDP - 6					Q-1	T = -1 '	Tn == :		
	1			1		<u> </u>			1	Г		n Jars:		-		1	ì		
Bit Nu	m	Line	er ,	_	Stroke /	,	SPM	F	ress.	M3/Min	Jet Ve	el DP 2	Av DO	2 Av	Bit kW	BHHE	/SQIN	Pump	kW
	_			_		/	<u>/ /</u>						-			-			
						<u> </u>	<u>/                                    </u>												
Survey	MD	Angle	Azimuth	ı I	Direction	TVD	1	N/S C	cordina	ites	E/W	Coordin	ates	Vert	ical Se	ction		DLS	
Hours	From	Act-Cat			Operat	ions Cover	ring 24	Hour	s Endi:	ng at M	idnigh	t			Total	l Hour	s Repoi	rted:	24.0
1.50	2230	01 - 17	R/U CMT	LINE	S & P/TEST	TO 80BAR;	PERFO	RM LOI	USING	1.44 S	G LT-C	BM; LOI	PRES 3	1.84 S	G EMW				
		01 - 17	5MIN BL	EED D	OWN PRESSUE	RE 1.82 SG	EMW,	15MIN	BLEED	DOWN PR	ESSURE	1.80 S	SG EMW						
		_																	
		-																	
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		_																	
Safety	 ': ,	-	<u> </u>	n	TOTAL /	TTAC' ===	70	mc '-		DET:-		mps =-							
24 Hr	MAI Summ	N HAD TO	BE SENT	1 TO T	IOWN (MEDIE	VAC) DUE T	U ILIN	ies (I	LLNESS	BEING	UNRELA	TED TO	WORK)			0.5-			_
Projec	ted (	Deratio	ons:	) 200E	BAR; M/U BH 1/2" HOLE.	A & TIH; I	KILL C	U'I' CM	T F/ 1	341TO 1	3 /4M;	CLEAN R	A'IHOLE;	DRIL	∟ 'TO 13	86M; I	OT TO	1.84S	خ
Remark		peracre	DRII	LL 8 1	1/2" HOLE.														
				+															
Daily	Mud (	Cost: KF	276,074		y Tangible			Dai	ly Wel	l Cost:	KR2,81	2,192	Incide				REPOR	TED	
Cum Mu	d Cos	st: KR1	,803,393	Cum	Tangible C	ost: KR1,	747,95	1 Cun	n Well	Cost:	KR73,8	44,159	Total	Appr:	KR134,	000,00	00		
		r: 260.			Water: 280.		412.0			Bulk	Weigh	t: 180.0	) Ne	at Cen	ent: 1	41.0	Blende		
Countr						Rig: BYFORD						2 88 03	35	Drill	ing Rep	): MOOR	E/BJOR	HEIM/S	SMJ
Field:	PL2	59			1	se: <sub>PL259</sub>				•		ell No:	5506/3-	1		We	11 ID:	UB5908	3 -0
		-				: 6506/3-1		AI	FE No:	KWENO-					31-JUL		1	: 2 (	

Measured	Dep	oth:	1698.	0 m	TVD:	1695.	. 0 m	PB'	TD:	0.0	Prop	posed M	): <u>{</u>	3625.0	m Proj	posed	TVD:	3625	.0 m
DOL:	16	DF	s: 11	Spu	d Date: 22	-JUL-200	)1		Daily	Footag	e: 31	.2.0 D			: 11.5			rs: 48	3.5
Torq:	8	Drag	: <sub>0.0</sub> F	ot Wg	t: <sub>180.0</sub> P/	/U Wgt:	180.0	Slack	Off Wg	t: 180.			Seas	: 4.0	/ 0.0	Bar:	763	POB:	93
Last Cas:	ing		<del></del>	339.7	Set I		1374				72.1m		1	Test:	1841		Leako	off?	Y
Cum Rot I	Hrs	On Cas	sing:		Cum Rot Hr	s On Ca					7 <b>2 .</b> III		Worst	Wear:			emaini	ng:	-
Liner Si	ze:		0.0		et At:	0.0	MD		0.0		L	iner To	p At:	0	.0 MD			0.0	TVT
Mud Co: <sub>M</sub>	T 1			Typ	e: <sub>MINERAL</sub>				i		i: ET OM	Wt.: 150	5 FV:		: 53	TP: 16	n Gel:		,
TATT.				FC	٦, ١			Soli	ds:	8 0	il: 67.		er: 33.			MB <sup>r</sup>		9 / Ph:	14
Dm:			HTHP: 1.	. 0	API	: 0.0 HT			Ben			00 ls %HG/I		00		S/Bent	· :		
0.00	0	1 1/111	0.00 /0	0.00		Cl: 34,5	500		Den		BOIL	25 010/1		/	0.01	37 DCII1		/	
					1				<u> </u>										
Drlg Gas	:	35 I	/ax Gas:	153	Conn Gas:	Ti	rip Gas:		Tr	rip Cl:	I	Remarks	MAX G	AS 4.7	3% WHIL	E CIR	C BTM'S	UP @	1698M
Bit Numb	er :	IADC	Size	Manu	facturer	Serial	number		Jet.	s (Quai	ntity -	- Size)		TF	A MD	In	MD Out	TVI	Out
7			215.9	1	HUGHES	121	3767	4 -	-14.3/	<u>     /                               </u>	<u>     /</u>	- /	<u>/</u>	641	.3 1382	2.0 m			
		_, _		<u> </u>		+	-		- / -	- /	- /	- /	/ <sub>-</sub>	0			i		
Type	9	Mete	ers Ho	urs	WOB	RPI	M	Moto	or RPM	I-Row	0-Rov	v DC	Loc	В	G	Char	?Pull	Cos	t/m
ABD536	БРН	316	5.0 12	2.0	0.0/7.0	120 /	180											к 922	29.92
					/	/													
Total Le	ngtl	n of BI	HA: 262.	12 m	BHA Descr	iption:	8 1/2"	ABD!	536PH PD	C BIT -	NB ST	AB C/W	FLOAT	6 1/	2" PONY	DC, 8	3 1/2"	NM-STA	ΔB
					MWD SUB - N	1WD - 7*	6 1/2"	DC -	- 9X 5"	HWDP -	6 1/2"	JARS -	8X 5"	HWDP					
											Hrs (	n Jars:	69.7	Hours	s Since	Last	Inspec	tion:	69.7
Bit Num		Line	r		Stroke		SPM		Press.	M3/Min	Jet V	el DP	Av	C Av	Bit kW	БНН	P/SQIN	Pumo	kW
7	6		5 / 6	30	4.8/304.8	/ 304.8		,	248	0.00				0.24	0.00		0.0	0.	
		/	/		/	/		/											
Survey M	D 7	/ Angle	/ Azimuth	, ,	irection	TV	<u> </u>	NT /C	Coordin	atos	E' / TAT	Coordin	atog	Vort	ical Se	ation		DLS	
_								IN/S			E/W			vert					
1555.6		4.58	147.89		S32.11E	1552			73.9				85 W		-73.94			0.13	
1584.6		4.57	146.38		S33.62E	1581	L.4		75.8	88 S		0.4	11 E		-75.88			0.13	
1613.1		4.54	149.28		S30.72E	1609	8.6		77.7	19 S		1.6	52 E		-77.79			0.25	
1641.8	4	4.55	147.28		S32.72E	1638	8.4		79.7	72 S		2.8	32 E	<u> </u>	-79.72			0.17	
Hours Fr	om A	ct-Cat			Operat	ions Cov	ering 2	4 Ho	urs Endi	ng at N	Iidnigh	t			Total	Hour	s Repo	rted:	24.0
11.50 00	000	01 - 02	DRILL 8	1/2"	HOLE SECTI	ON F/ 1	386 TO 1	1698M	1 TAKING	A SURV	EY EVEI	RY CONNE	ECTION						
	(	01 - 02	F/ 1386	TO 15	30M, DRILI	W/ 120	-180 RPI	м,257	70 LPM,	0-3MT W	DB, 5-8	BK NM T	/Q;AT 1	.530M I	NCREASE	TO 2	750 LPI	M,5-7M	II' WOB
	(	01 - 02	CONTROL	ROP 7	ro 30m/hr <i>a</i>	WG F/ 1	615M; A	г 167	75M, COM	MENCED '	ro inci	REASE MU	JDWEIGH	IT F/ 1	1.45 TO	1.5 S	G		
1.00T11	.30 (	01 - 60	DURING (	CONNEC	CTION, WELL	FLOWED	- SHUT	IN W	VELL ON	UPPER A	NULAR	(1145HF	R);OBSE	RVE SI	CP=200	PSI,	TOTAL (	GAIN =	4M3
Т	(	01 - 60	BLED OF	F 0.55	5M3 TO T/T	THRU CH	OKE - SI	HUT I	IN CHOKE	, SICP=	200 PS	I; FILL	PIPE A	ND BUN	IP FLOAT	, SID	P=300 1	PSI	
3.50T12	30 (	)1 - 60	CIRC BI	M'S UI	BY DRILLE	RS METH	OD USIN	G 1.5	OSG MUD	; MAX G	AS WAS	4.6% AT	r bim's	UP; E	FINAL GA	AS = 2	.0%;		
1.00T16	500	01 - 60	FLOWCHE	CK WEI	LL ON TRIP	TANK -	SLIGHT I	FLOW,	0.15M3	RETURN	S; CLOS	SE CHOKE	E; SICF	=150 E	PSI, SII	)P= +/	- 200 1	PSI	
2.00T17	00'	01 - 60	BLED DO	WIN CSO	PRES. TO	0 PSI T	O TRIP '	TANK	WITH 0	PSI SIC	P AND S	SIDP REC	CORDED	OVER 4	15MINUTE	S			
Т	(	01 - 60	DISPLAC	E RISI	ER TO 1.5SG	MUD US	ING BOOK	STER	PUMP;CL	OSE LOW	ER ANN	JLAR; WI	HILE RE	LAXIN	UPPER	ANNUL	AR, GA	INED 2	.7 M3
Т					CLOSE LOWE												-		
<u> </u>					VELL BY CLO														
T					IRC ACROSS												HRII Ca-1	K T.TNF	AND
T					OPEN L-A; C														
T					IN 5MIN; C													L'ABLIS	H
T Safety:					NCREASE TO		, 5.5K 1	NM; P	A'IT'EMPT '	10 CIRC	W/ 260	JLPM, 34	1.5 BAR	e – Wei	LL BEGAI	N FLO	WING		
					OUT INFLUX														
					E F/ 1386								200 PS	I; CIR	C OUT I	NFLUX			
Projected Remarks:		eratic	us: CIRO	COUT	INFLUX; DI	SPLACE F	HOLE TO	KILL	MUD; DE	RILL 8 1	./2" HC	LE							
		1 - 3,	SERVICE	- 30	, DOLPHIN	- 54,	DOLPHIN	SER	VICE - 9	)					DA	YS SII	NCE LAS	T LTI	- 67
HEAVE: (	18.0	M, PITC	H 0.7DE	, ROL	L 1.6DEG;	CUTTING	SKIPS (	N BO	ARD: 37	, O FULI	, 37EM	IPTY	(ON HI	GHLAND	STAR -	6 FU	LL, 59	EMPTY	)
DAILY FE	COS	ST: NOK	416,405	5		TOTAL	FE COST	rs: N	OK 6,626	5,236									
Daily Mud	d Co	ost: KR	156,198	Dail	y Tangible	Cost:		D	aily We	ll Cost	KR2,79	97,881	Incid	ents:	NO IN	CIDEN	repor	RTED	
Cum Mud (					Tangible Co	ost: <sub>vp</sub>	1,747 9		Cum Well	Chat:		42,040	Total	Appr:	KR134,	000 0	00		
Drill Wat					ater: 230.0							t: <sub>285</sub> .	O Ne	eat Cer	ment: 14	11 n	Blende	ed:	
Country:			<u>,                                     </u>			Rig: BYFO	400.					285.		Dril	ling Rep	: 1.U			CMT
Field: PI	NO	YAWX						TIN				2 88 03 ell No:		1			RE/BJOR		
PI	ь259	1				se: <sub>PL259</sub>			AFE No:	TATA TATA			J D O O / 3-		01-AUG			: 1 (	
					PLT INO.	-5 / anco	Τ		110.	T/MFTMQ-	Tranco	-UUT			UT-AUG	-∠UU⊥	raye	- т (	JL 4

Measured	Depth:	1698.0	O m	: 1695.0	m	PBTD:		0.0	Proj	posed MI	): 3	625.0	m Proj	posed	TVD:	3625.	0 m
DOL: 16	5 [	FS: 11	Spud Date:	22-JUL-2001		Da	aily 1	Footage	e: 31	L2.0 D			: 11.5			s: 48	.5
Torq: 8	Dra	g: <sub>0.0</sub> R	ot Wgt: 180.0	P/U Wgt: 18	30.0 SI						Seas:	4.0	/ 0.0	Bar:	763	POB:	93
Last Casi				et At:		3m MD		137					1841		Leako		Y
Cum Rot H	rs On Ca	aina:		t Hrs On Casi					2.111		Worst				emainir	ıg:	
Liner Size	e:	0.0	Set At:	0.0 M	D.	0.0	) TV	TD	L	iner To	At:	0	.0 MD			0.0	TVD
Mud Co: <sub>M-</sub>	T MODOT		Type: MINIE	RAL OIL BASED					: ET OM	Wt: 150	5 FV: 1			P: 16	n Gel:		,
WL	I NORGE	A.S.			(	Solids:				.00 Wate				MBT		9 / Ph:	14
Dm:	Pf/Mf	HTHP: 1.		API: 0.0 HTHE	7:1.0		Bent:			ds %HG/I		00		S/Bent	:		
0.00		0.00 / 0	.00 Carb:	Cl: 34,500	)				0011				02,	9, 20110			
			la é				- ·	G1 -	1.								
Drlg Gas:	35	Max Gas:	153 Conn C	as: Tri	p Gas:		Tri	p Cl:		Remarks:	MAX GA	AS 4.7	3% WHIL	E CIRC	BTM'S	UP @1	L698M
Bit Numbe	r IADC	Size	Manufacture	r Serial n	umber		Jets ,	(Quar	ntity	- Size)	,	TFA	MD A	In	MD Out	TVI	Out
						-	<u>/ -</u>		- /	<i>- /</i>	<u> </u>	0					
					-	-	<u>/ -</u>	/ -	- /	- /	<u> </u>	0	<u> </u>		i		
Type	Me	ters Ho	urs WOB	RPM		Motor RI	PM	I-Row	O-Ro	w DC	Loc	В	G	Char	?Pull	Cost	c/m
			/	/													
			/	/					<u> </u>								
Total Leng	gth of I	BHA: 262.	12 m BHA De	scription: 8	3 1/2"	ABD536PI	H PDC	BIT -	NB ST	'AB C/W	FLOAT -	6 1/2	2" PONY	DC, 8	1/2" [	M-STA	В
- CDR -	8 3/8"	ILS - IOS	ONIC MWD SUB	- MWD - 7* 6	1/2"	DC - 9X	5" Н	WDP - 6	5 1/2"	JARS -	8X 5"	HWDP					
									Hrs (	On Jars:	69.7	Hours	Since	Last :	Inspect	ion:	59.7
Bit Num	Lin	er	Stroke		SPM	Pre	ss. I	M3/Min	Jet V	el DP.	Av DO	C Av	Bit kW	ВННР	/SQIN	Pump	kW
	/	/	/	/	/ /								- 41				
		/	/	/	///												
Survey MD	Angle	Azimuth	Direction	n TVD	<u>, , , , , , , , , , , , , , , , , , , </u>	N/S Coor	dina	t.es	E/W	Coordin	at.es	Vert:	ical Se	ction		DLS	
	5					., .											
	<del>                                     </del>	1															
Hours Fra				rations Cover				ng at M	idnigh	ıt			Total	Hour	s Repor	rted:	24.0
Т				: ISICP=250 P													
1.50T 223	0 01 - 6	MONITOR	WELL WHILE	BUILDING 1.52	MUD II	N PITS -	SIC	P INCRE	CASED 1	F/ 250 T	O 290 1	PSI					
Т	01 - 6	0															
Т	01 - 6	0															
Т	01 - 60	)															
Т	01 - 6	0															
Т	01 - 60	PRES. OF	PS: CIRC 1.5	2SG MUD; MAX	GAS 8.9	9% - MW	CUT :	го 1.32	SG (S	ALT WATE	R CONT	TANIMA	ION)				
Т	01 - 60	)															
Т	01 - 60	)															
Т	01 - 60	)															
Т	01 - 60	)															
	-	<u> </u>															]
	-				_		_	_			_		_		_	_	
	-				_			_	_		_	_	_	_	_	_	
	_																
Safety: Ti	BT PRIOR	TO CIRCU	LATE OUT INE	LUX													
				86 TO 1698M;	WEII. F	LOWF!	1698	M – 4M	3 GATN	1, STCP=	200 PST	; CTR	ב סנודי דו	NFLIX			
Projected	Operati	ons: CTRO	OUT INFILIX	DISPLACE HO	E TO K	TIJ. MID	: חפו	т.т. 8 1	/2" HC	T.F	200 101	., 0211	0 001 1				
Remarks:		GIII		210111011101	22 10 1	1100	, 2101		72 110	,							
D 13	~		D 13 - :	11 ~ :				1 ~									
Daily Mud			Daily Tangi					a		97,881	Incide				REPOR	TED	
Cum Mud C				e Cost: KR1,		1 Cum W	iett (			542,040	Total	Appr:	KR134,	000,00			
Drill Wate		.0 Pota	ble Water: 2		400.0					nt: 285.0	) Ne	at Cem	ent: 14	11.0	Blende		
Country:	NORWAY			Rig: BYFORI	DOLPH	ΠN		Rig Ph		2 88 03	35	Drill	ing Rep	MOOR	E/BJOR	HEIM/S	SMJ
Field: PL2	259			Lease: PL259					We	ell No:	5506/3-	1		We:	ll ID:	JB5908	-0
			API	No: 6506/3-1		AFE	No:	KWENO-	650631	-001		Date:	01-AUG	-2001	Page	: 2 (	of 2

Measured I	epth:	1698.	O m	1695.0 m	PBT	D:	0.0	Propo	osed MD	): 3	8625.0 i	m Prop	osed	TVD:	3625.0 m
DOL: 17	E	DFS: 12				Daily	Footage	: 0.	0 Da	aily Ro	ot Hrs:				rs: 48.5
Torq: 0	Dra	g: <sub>90.0</sub> R	Lot Wgt: 0.0	P/U Wgt: 90.0	Slack	Off Wgt	0.0			Seas	: 2.0	/ 0.0	Bar:	762	POB: 93
Last Casin			339.7 mm Set	<b>λ</b> ⊢•	4.3m			2.1m		Shoe 7		1841 <sup>I</sup>		Leako	
Cum Rot Hr	s On Ca	agina:	Om Pot F	trs On Casing S				Z. 1III	1	Worst	Wear:			emaini	
Liner Size	:		Set At:	0 0 MD		0.0 T	(AD	Li	ner Top	At:	0 (	) MD			0.0 TVD
Mud Co: <sub>M-I</sub>		0.0	Type: MINERAL	0.0 MD			le From:	TA	7+ · 1	- 577	_	) MD	D: c /	Col·	
MT W-T	NORGE	A.S.			Solid										5 / 7 Ph:
Pm: API:	0.0	HTHP: 3.		I: 0.0 HTHP: 1.0		23.0 Bent	% Oi	77.0	0 suc/t	23.0	00 00	0.25	5   S/Bent		,
0.00	PI/MI	: 0.00 /0	).00 Carb.	Cl: <sub>17,000</sub> Ca	•	Delic		BOTTUS	5 %NG/L	19.8	30/2.6	50	o/ Bellic	· ·	/
2115 1KG	G VERSA	VERT	83 1MT BA	RITE 60	11	m3 BASE	FLUID	1050	) 1K(	G CA CI	HLOR 88	<b>%</b> 650	1	KG VEF	RSATROL
1425 1KG	G LIME		T T	T											
Drlg Gas:	0	Max Gas:	0 Conn Gas	Trip Gas	3:	Tr	ip Cl:	Re	marks:	MAX. (	GAS 8.9	% W/ 1	.32SG	MUD AT	SHAKERS
Bit Number	IADC	Size	Manufacturer	Serial number	r	Jets	s (Quan				TFA			MD Out	
7		215.9	HUGHES	1213767	4 - 1	14.3/ -	. / -	. /	- /	<u> </u>	641.3	1382	.0 m		
					-	/ -	- / -	- /	- /		0				
Type	Me	ters Ho	urs WOB	RPM	Moto	r RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
ABD536PI	H 31	16.0 12	2.0 0.0/0.0	/											к 9229.92
			/	/											
Total Leng	th of E	3HA: 262	12 m BHA Desci	ription: 8 1/2	" ABD5	36PH PDO	C BIT -	NB STA	B C/W I	FLOAT -	6 1/2	" PONY	DC, 8	1/2"	NM-STAB
				MWD - 7* 6 1/2											
	, -							1			1	Since	Last	Inspec	tion: 69.7
Bit Num	T day		Charalta	SPI	M	Dunga	M3/Min								
	Lin	/	Stroke	, ,	/							Bit kW			Pump kW
7	6 /	6 / 6	304.8/304.8	/ / /	/	0	0.00	0.00	0.0	10 0	0.00	0.00	0	.0	0.00
	/_	/	/	<u>/   / </u>	/						1			1	
Survey MD	Angle	Azimuth	n Direction	TVD	N/S (	Coordina	ates	E/W C	oordin!	ates	Verti	cal Sec	ction		DLS
Hours From	Act-Ca	ıt	Operat	tions Covering	24 Hou	rs Endi:	ng at M	idnight				Total	Hour	s Repo	rted: 24.0
1.50T0000	01 - 6	0 MONITOR	WELL WHILE BUI	LDING 1.52SG M	JD IN E	PITS - S	SICP INC	REASED	F/ 250	TO 29	0 PSI				
6.00T0130	01 - 6	O CIRC BI	M'S UP BY DRILL	ERS METHOD USIN	NG 1.52	2SG MUD;	STAGED	UP FLO	W RATES	TO FI	NAL RAT	TE OF 3	0 SPM	/485 Li	PM, 600 PSI
Т	01 - 6	0 MAX. GAS	S OF 8.9% WITH	1.32SG MAX. MUI	O WEIGH	T REDUC	CTION -	SALT W	ATER CO	NTAMIN	ATION 1	DENTIF	IED II	N THE I	MUD
4.50T0730	01 - 6	n CONT TO	CIRC & COND MU	D WITH 530 LPM,	, 600 I	PSI; MAX	K. GAS 1	.6% WH	ILE CIR	CULATI	NG				
				DP=150 PSI; OPI								P=0 PS	I. DP:	=90 PS	Γ
Т	1	-		NOTED AT TRIP 1											
	<u> </u>												100-		
2.0011230				MUD W/ 520 LPN										I. OB M	EIGHT.
1				ON DRILLERS MET											_
				DRILLERS METHOI											
Т				, HELD DP PRES											
1.00T 1900	01 - 60	SHUT IN	WELL 1900HRS;	SICP=SIDP=120PS	SI; OPE	IN CHOKE	E & BLED	OFF 3	.4 BBLS	IN 5M	IN TO T	T/T - D	P PRES	S=CSG I	PRES=0 PSI
1.00T 2000	01 - 60	DISPLACI	E RISER TO 1.57	SG MUD WHILE MO	ONITORI	ING WELL	ON TRI	P TANK	- STAT	CIC					
2.50T 2100	01 - 60	CLOSE M	PR;CIRC 0.89SG	PRE-MIX DOWN KI	ILL & U	JP CHOKE	E; F/C -	STATIO	C; DISF	LACE C	&K TO 1	57SG	MUD;I	SOLATE	C&K F/ WELL
0.50T 2330	01 - 60	RELAX L	-A - NO SIGNS C	F GAS; CLOSE L-	-A, OPE	N CHOKE	E - NO P	RES.; (	OPEN ME	R, OPE	N L-A;	F/C ON	T/T	- STAT	IC
Safety: 1	AUG 01	- SAFETY	MEETING AND DR												
				JD (MAX. GAS 8.	9%)- S	SIDP=90P	SI, SIC	P=OPSI;	DISPL	ACE WEI	LL & RI	SER TO	1.575	SG - F/	C STATIC
				C & COND MUD; P										,	
Remarks:										_, 2				IOE	m
			·	N - 53, DOLPHI				46-	-			DAY.	rs SIN	ICE LAS	T LTI - 68
				CUTTING SKIPS				, 4UEME	'IY						
DAILY FE C		-		TOTAL FE COS	STS: NO	K 7,042	,641								
0600HRS:			Ť		ı										
Daily Mud			Daily Tangible				l Cost:	KR2,716	345	Incide				REPOR	RTED
Cum Mud Co				Cost: KR1,747,	951 Ct	ım Well		KR79,35		Total	Appr:	KR134,	000,00	00	
Drill Wate		.0 Pota	ble Water: 230	.0 Fuel: 400	0.0			Weight			at Ceme	ent: 14	1.0	Blend	
Country: 1	ORWAY			Rig: <sub>BYFORD DOL</sub>	PHIN		Rig Ph	one: <sub>52</sub>	88 03	35	Drill:	ing Rep	: MOOF	E/BJOR	HEIM/SMJ
Field: PL2	59			se: <sub>PL259</sub>				We]	ll No:	5506/3-	1				UB5908 -0
				: 6506/3-1	I	AFE No:	KWENO-6	550631-	001		Date:	02-AUG-	-2001	Page	: 1 Of 1

Measured D	epth:	1736.	0 m	TVD:	1733.0 m		PBTD:		0.0	Prop	osed MI	): <u>3</u>	3625.0	m Prop	posed	TVD:	3625.0	O m
DOL: 18	D	FS: 13	_	Date: 22	-JUL-2001		Da	ily	Footage	e: 38	.0 D			: 1.0				
Torq: 5	Drag	a: 0 0 E	Rot Wgt:	195 0 P/	/U Wgt: 195.	o Sl	ack Off	Wgt	: 195 (			Seas	: 20	/ 0.0	Bar:	754	POB:	92
Last Casin	_	<del></del>		Set Z	\+·	-						Shoe 7		1841		Leako	eff2	
Cum Rot Hr			339.7 mr		s On Casing		3m MD me Last	Cali		72.1m	1	Worst				emaini		Y
Liner Size			34.5	E At:						Li	ner To				0 10			
		0.0	_		0.0 MD		-	TV						.0 MD	<b>.</b>		0.0	IVD
Mud Co: <sub>M-I</sub>	NORŒ	A.S.			OIL BASED	1.		Samp1	Le From					: 40 Y		_	<del>,                                    </del>	10
WL API:	1	HTHP: 2		API	: 0.0 HTHP: 1		Solids:			74.0	00 *Wate	er: 26.	00 <sup>%</sup> Sa	ind: 0.20			Ph:	
Pm: 0.00	Pf/Mf	0.00 /	0.00 <sup>Car</sup>	rb:	Cl: 29,000	Ca:	]	Bent	:	Solid	s %HG/I	G: 19.	00/3.	20 %DS	S/Bent	. <b>:</b>	/	
5 1MT	BARIT	E	2100	1KG CA	CHLOR 88%													
Drlg Gas:	12	Max Gas:	0	Conn Gas:	Trip (	as:	20	Tri	ip Cl:	R	emarks:	:						
Bit Number		Size	Manufa	acturer	Serial numl	ber		Jets	(Quar	ntity -	Size)		TFA	MD A	In	MD Out	TVD	Out
7		215.9	HU	JCHES	1213767		4-14.3	<del>/</del> -	/ .	- /	- /	/ _	641.	3 1382	.0 m			
							-	/ -	/ .	- /	- /	/ _	0					
Ttmo	Met	ers Ho	ours	WOB	RPM	1	Motor RE	PΜ	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost	/m
Type						1	10001 111		1 10W	O ROW	1	ДОС		0	CHAL			
ABD536PH	35	4.0 1	3.0	0.0/1.0	180 /												K 8651	1.12
				/ Dogge	intion:	<u> </u>												
Total Leng					iption: 8 1									2" PONY	DC, 8	1/2"	NM-STAB	3
- CDR - 8	3/8"	ILS - IOS	SONIC MV	ND SUB - N	MWD - 7* 6 1	/2" I	C - 9X	5" H	WDP - 6	1			1					
			i				· · ·		1	Hrs O	n Jars:	82.5	Hours	Since	Last	Inspec	tion: 8	2.5
Bit Num	Lin	er	S	Stroke		SPM	Pre	ss. I	M3/Min	Jet Ve	1 DP.	Av D	C Av	Bit kW	BHHE	/SQIN	Pump k	κ₩
7	6 /	6 / 6	304.	.8/304.8	/ 304.8 76/	84/	25	55	0.00	0.09	0.0	00 0	0.27	0.00	0	.0	0.00	0
				/ /	/ /													
Survey MD	Angle	Azimutl	n Dii	rection	TVD	N	I/S Coor	dina	ites	E/W C	Coordin	ates	Verti	ical Sec	ction		DLS	
1728.4	4.38	140.28		39.72E	1724.7			35.08		·		95 E		-85.08			0.09	
1757.7		142.59																
1	4.22			37.41E	1753.9	+		86.8				32 E		-86.80			0.25	
1786.9	4.25	142.20		37.80E	1783.1			38.51				54 E		-88.51			0.04	
1815.4	4.13	142.39	S.	37.61E	1811.5		9	90.16	5 S		10.9	1 E		-90.16			0.13	
Hours From	Act-Ca	t		Operat.	ions Coverin	ıg 24	Hours E	Endir	ng at M	idnight	:			Total	Hour	s Repo	rted: 2	24.0
2.50 <sub>T</sub> 0000	01 - 60	) PIPE FR	EE (14M	TOP;RC	TATE-120 RPI	M,5.5	K NM;IN	C. P	UMP TO	1620 L	PM, 134	BAR &	CIRC	BTM'S U	P - M	AX GAS	3.3%	
0.50T 0230	01 - 60	FLOWCHE	CK - ST	ATIC; RAC	K BACK STND													
3.00T 0300	01 - 60	CIRC &	COND MU	ID W/ 2600	LPM, 150 R	PM -	1.2% GA	S AT	1ST BO	TTOMS	UP							
1.50T 0600	01 - 60	) F/C-STA	TIC; PO	ЮН; АТ 14	120M, TOOK 51	MT OV	ERPULL	- WO	RK 3X F	'/ 1410	TO 143	39M - O	K; CON	T POOH;	TOOK	10MT (	OVERPULI	L
Т	01 - 60	AT 1395	M; WASH	I & REAM F	7/ 1410-13801	M W/	100 RPM	, 32	3 LPM,	14 BAR	; ERRAT	TIC TOR	QUE F/	1385-1	381M;	POOH '	TO +/- 1	1326M
2.00т0730	01 - 60	) CTRC. W	/ 2580	T.PM. 265	BAR - OBSER	VF. CF	MENT PT	ECES	TN RET	TIRNS O	VER SHA	AKERS						
					2220 020220	·L 0L				01440 0	V210 011							
1.00 0930																		
					WORKS DISC													
2.50 1300	01 - 21	PERFORM	MAINTE	NANCE ON	COMPENSATOR	, TOP	DRIVE	AND 1	KEMS; C	ALIBRA	TE BOOS	STER LI	NE OUT	PUT USI	NG T/	Г		
1.00T1530	01 - 60	TIH TO	1371M;	BREAK CIR	C W/ 485 LPI	м, 22	BAR, 1	00 R	PM - CC	NT TIH	TO 152	25M						
2.00T1630	01 - 20	PROBLEM	WT IND	DICATOR; R	R/U CMT LINE	S & C	IRC W/	840	LPM, 55	BAR W	HILE RE	EPAIR M	D WEIG	HT INDI	CATOR			
1.50T1830	01 - 60	CONT TI	н то 16	11M; WASH	F/ 1611 TO	1698	M STAGI	NG U	P PUMP	TO 255	0 LPM							
1.50T 2000	01 - 60	CIRC BI	M'S UP	W/ 2580 I	PM - GAS AT	BTM'	S UP 0.	5%										
1.00 2130	01 - 02	DRILL 8	1/2" H	DLE F/ 16	598 TO 1736M	W/ 2	.580 LPM	, 25	5 BAR.	0-1MT	WOB, 18	30 RPM.	5.5K	NM T/O	- ADD	2SXS	CACO3/HI	R
					70M; RE-LOG 1									, <u>x</u>			- /	
Safety:	1		, /	10 107	100 1	, 10		, , , 51-1			~	- 1201						
24 Hr Summ	ary: 50	ОП <u>тиши</u> .	יים יים מוסים		G MAINTENANC	ים י	מדגמקם		. ama	Dun's C	11D 33.TC	ייירת	0 1/0	" [TOT " "	=/ 1CC	10 по 1	72614	
Projected (						.c & 1	KEPAIKS.	, 111	a, CIRC	DIM. 2	OP AND	י רעדדירי	0 1/2	TOTE 1	E / TOS	0 10 ]	./3014	
Remarks:		DRI	<u>ыь 8 1/2</u>	∠" HOLE S	ECTION													
	M - 5,	SERVIC	E - 27,	DOLPHIN	- 53, DOLE	HIN S	SERVICE	- 7						DA	YS SIN	ICE LAS	T LTI -	- 69
HEAVE: 1.3	BM, PIT	CH 0.5DEG	G, ROLL	0.8DEG;	CUTTING SKIE	S ON	BOARD:	40,	3 FULL	, 37EMI	PTY							
DAILY FE CO	OST: NO	K 416,40	5+150140	0	TOT	AL F	E COSTS	: NOF	x 7,609	,186								
0500HRS: I	DRILL 8	1/2" HO	LE @ 18	78M														
Daily Mud (	Cost: K	R76,962	Daily	Tangible	Cost:		Daily	Well	l Cost:	KR2.81	3,645	Incid	ents:	NO IN	CIDEN	REPOR	RTED	
Cum Mud Cos			Cum Ta	angible Co	ost: KR1,74	7 0.51			Met:					KR134,				
Drill Wate				ter: 380.0						KR82,1 Weight	288.	Ne	eat Cem	RRI34, nent: 14	11 6	Blend	ed:	
		U	vac			369.0					288.		Dri 11	ina Rer	±1.0			
Country: N	ORWAY			1	Rig: BYFORD D	OLPH	LN		9 FI					ing Rep				
Field: PL2	59				se: <sub>PL259</sub>		<u> </u>					5506/3-				1	UB5908	-
				API No:	6506/3-1		AFE	No:	KWENO-	650631-	-001		Date:	03-AUG-	-2001	Page	: 1 Of	f 1

Measur	red De	epth:	2561.0	O m	TVD:	2556.5 m		PBTD:	0.0	Prop	osed MI	): <u>3</u>	8625.0	m Prop	osed	TVD:	3625.0 m
DOL:	19	DI	FS: 14		te: 22	-JUL-2001		Dail	y Footag								rs: 72.0
Torq:	8	Drag	g: <sub>-10.0</sub> R	ot Wgt: 23	35.0 P/	/U Wgt: 225.0	Sla	ıck Off W	gt: 225.			Seas	: 1.0	/ 2.0	Bar:	756	POB: 92
Last C	asing	g Size:	<u> </u>	339.7 mm	Set A	+•		m MD		72.1m		Shoe 7		1841 <sup>I</sup>		Leako	
Cum Ro	t Hrs	on Ca	eina:		Rot Hr	rs On Casing					1	Worst				emaini	
Liner	Size:			Set A	t:	0 0 MD		0.0	תעידי	Li	ner Toj	p At:	0	0 MD			0.0 TVD
Mud Co	): <sub></sub> _	NORŒ .	0.0	Tyre: .m		0.0 MD OIL BASED			ple From	n: T	M+ · 1 - 7	C E77*		0 MD	D: 12	c Gel.	,
WL	M-T	NORGE .	A.S.				Sc										9 / 13 Ph:
Dm.	API:	0.0	HTHP: 2.	0 FC (mm	API	: 0.0 HTHP: 1		olids: 23.		73.0	00 suc/	27.0	00  00	1.00	S/Bent		,
Pm: 0	.00	PI/MI.	0.00 / 0	.00 Carb:	(	Cl: 29,000 C	à:	bei	.IL•	50110	S %NG/I	G: 18.5	50/3.	90	o/ Belli	•	/
1200	1KG	LIME		2100 1	KG CA	CHLOR 88% 5	j	1m3 BAS	SE FLUID	34	1м	r bari	ΓE	200	1	KG VEF	RSATROL
1135	1KG	VERSA	VERT					-									
Drlg G	as:	30	Max Gas:	80 Con	n Gas:	Trip G	as:	0 1	rip Cl:	R	emarks:	0.7%	GAS AT	BTM'S	UP AFT	ŒR 5 E	BBL GAIN
Bit Nu	ımber	IADC	Size	Manufact	urer	Serial numb	er	Jet	s (Qua				TFA			MD Out	
7			215.9	HUGH	ES	1213767		4-14.3	- /	- /	- /	/ _	641.	3 1382	.0 m		
								- /	- /	- /	- /		0				
Т	ype	Met	ers Ho	urs V	WOB	RPM	M	otor RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
ABD	536PH	117	79.0 35	5.5 0.	0/3.0	180 /											K 5380.61
					/	/											
Total	Lengt	h of B	HA: 262.	12 m BHA	A Descr	iption: 8 1,	/2" A	BD536PH P	DC BIT -	NB STA	B C/W	FLOAT -	6 1/2	" PONY	DC, 8	1/2"	NM-STAB
						1WD - 7* 6 1,											
		-				<u> </u>							1	Since	Last	Inspec	tion: <sub>104.2</sub>
Bit Nu	m	Line	ar	Str	oke		SPM	Press	M3 /M;	Jet Ve	i		<del>'</del>				
7			6 / 6			/304.8 76/	,							Bit kW			Pump kW
	,	· /	/	304.8/	304.87 /	/ 304.8 /6/	<sup>04</sup> /	286	0.00	0.09	0.0	00 0	0.24	0.00	0	.0	0.00
			/	/	<u> </u>	<u>′   /</u>	_/_									l I	
Survey	7 MD	Angle	Azimuth	Direc	ction	TVD	N,	/S Coordi	nates	E/W C	Coordin	ates	Verti	ical Sec	ction		DLS
2390	. 4	2.08	152.82	S27.	.18E	2385.3		117.	83 S		28.5	55 E		-117.83			0.18
2419	.2	1.92	146.45	S33.	.55E	2414.0		118	3.7 S		29.0	)5 E		-118.70	1		0.29
2447	.9	1.98	149.21	S30.	.79E	2442.7		119.	52 S		29.5	57 E		-119.52			0.12
2533	.5	1.60	161.93	S18.	.07E	2528.3		121.	93 S		30.	7 E		-121.93			0.19
Hours	From	Act-Cat	t		Operat:	ions Coverin	g 24	Hours End	ling at 1	Midnight				Total	Hour	s Repo	rted: 24.0
17.00	0000	01 - 02	DRILL 8	1/2" HOLE	E SECTI	ON F/ 1736 T	D 230	4M W/ 25	30 LPM,	286 BAR	, 180 F	RPM, 4-	8K NM	T/Q, 0-	3MT W	OB	
1.50T	1700	01 - 60	NOTICE 5	5 BBL GAII	N IN AC	TIVE; FLOWCH	ECK -	STATIC;	CIRC BT	M'S UP	W/ 2580	) PSI,	286 BA	R - MAX	GAS	0.7%	
5.50	1830	01 - 02	CONT TO	DRILL 8	1/2" HC	LE F/ 2304 T	D 256	1M									
		01 - 02	2														
				R'S AND BO	OOST RI	SER EVERY 20	0 MEI	ERS; FLU	SH C&K L	INES EV	ERY TOU	JR					
				2 SXS/HR (													
				2 DZID/IIC C	CACOS												
		01 - 02															
		01 - 02															
		01 - 02															
		01 - 02															
		01 - 02															
		01 - 02															
		01 - 02	BULLSEYE	ES: RISER	1DEG S	TBD-FWD, BOR	2DEC	STBD-FW	O, LMRP	2.5DEG	STBD-FV	VD; GUI	DEBASE	1.5 DE	G STBI	D-FWD	
		01 - 02															
		01 - 02															
Safety	CRA	NE OPEI	RATIONS M	OVING SKI	IPS - NO	O INJURIES R	EPORT	ED									
						TO 2304M; 5			C - STAT	ric; cir	RC BTM'	S UP -	OK, DI	RILL 8	1/2" H	OLE TO	2561M
						ING CORING P											
Remark	s:					- 53, DOLP:								ז ערו	ZS STN	TCE TAC	T LTI - 70
						CUTTING SKIP				·, 21 гъмт	ЭΤΎ			LIA.	LU DIL	· CH LIPAC	, <u> </u>
			K 416,405		י ודייייייייייייייייייייייייייייייייייי					_, <u>حيناال</u>							
			-			TOTAL FE C	.01D:	11/UI\ 0,UZ	.J,JJL								
			1/2" HOL	i	naihl -	Cost:		Dailer M	all Co								
				Daily Ta				Daily We	l Coat:			Incide		NEAR 1			
			,409,553			ost: <sub>KR</sub> 1,747	,951	Cum Well		KK82'T		Total	Appr:	KR134,	000,00		7.
		320.	0 Pota	ble Water			59.0			Weight			at Cem	ent: 22	7.0	Blende	
Countr	y: N	ORWAY				Rig: BYFORD D	OLPHI	N	Rig P	hone: 52			Drill	ıng Rep	MOOF	RE/BJOR	HEIM/SMJ
Field:	PL25	i9			Leas	se: <sub>PL259</sub>				We:	ll No:	5506/3-	1		We		UB5908 -0
					API No:	6506/3-1		AFE No	: KWENO-	-650631-	-001		Date:	04-AUG-	-2001	Page	: 1 Of 1

Measur	red De	epth:	3101.	5 m	TVD:	3096	.9 m	PB'	ID:	0.0	Propo	sed MD	): 3	8625.0	m Prop	osed	TVD:	3625	.0 m
DOL:	20	D	FS: 15		Date: 22				Daily	Footage					19.0				-
Torq:	12	Drag	g: 10.0 F	ot Wgt:	260.0 P/	/U Wgt:	270.0	Slack	Off Wgt	260.0			Seas	: 2.0	/ 0.0	Bar:	755	POB:	92
Last C		g Size:	•	339.7 mm	Set Z		*	. 3m			72.1m	TVD	Shoe 7		1841 <sup>I</sup>		Leako	ff?	Y
Cum Ro	t Hrs	s On Ca	ging:	C)	ım Rot Hr	s On Ca					/ Z . IIII	1	Worst	Wear:			emainir	ng:	1
Liner	Size:	:		76.7 Set	At:	0 0	MD		0.0 T	7 <i>T</i> D	Lir	ner Top						0.0	TT (T)
Mud Co	);		0.0	Tyme:		0.0				le From	: W	t · 150	- 577		0 MD	D: 14	o Col:		,
WL	M-T	NORGE	A.S.		MINERAL		ED	Soli	ds: 24.0	% O:							_	8 , Ph:	/ 11
Dm*	API:	0.0	HTHP: 2	2 Chrh	API		HP:1.0	5011	24.0 Bent		72.0	0 suc/t	28.0	00 00	nd: 1.25	5/Bent			
Pm: 0	.00	PI/IVIL	0.00 /	).00 Carr	,	Cl: 34,0	000 Ca:		Delit	- <b>·</b>	501108	o ong/L	.G: 17.	70/5.	00	o/ Bellic	•		
2450	1KG	CA CH	LOR 88%	28	1MT BAR	ITE	160	0 1	LKG LIME	]	12	1m3	BASE	FLUID	50	1:	KG OTH	ER	
400	1KG	VERSA	VERT	300	1KG CAL	CARB 0					-								
Drlg G	as:	30	Max Gas:	130 Cd	onn Gas:	T	rip Gas:	0	Tr	ip Cl:	Re	marks:	1.1% 2	AT BTM	'S UP F	/ TOP	LYSING	;	
Bit Nu	ımber	IADC	Size	Manufac	cturer	Serial	number		Jets	s (Quar				TFA			MD Out		D Out
7			215.9	HUG	HES	121	.3767	4 -	14.3/ -	. / .	- /	- /	<u> </u>	641.	3 1382	.0 m	3101.5	m 30	96.9 m
				<u> </u>				-	- / -	. / .	- /	- /	_	0					
T	ype	Met	ers Ho	urs	WOB	RP	M	Moto	or RPM	I-Row	O-Row	$\mathbb{C}$	Loc	В	G	Char	?Pull	Cos	t/m
ABD!	536PH	171	19.5 5	1.5	3.0/6.0	180 /				3	5	CT	A7	Х	IN	BT	CP	K 53	00.72
					/	/													
Total	Lengt	th of B	HA: 262	12 m BI	HA Descr	iption:	8 1/2"	ABD5	36PH PD	C BIT -	NB STA	B C/W I	FLOAT -	6 1/2	" PONY	DC, 8	1/2"	NM-STZ	AΒ
- CDI	- CDR - 8 3/8" ILS - IOSONIC MWD SUB - MWD - 7* 6 1/2" DC - 9X 5" HWDP - 6 1/2" JARS - 8X 5" HWDP  Hrs On Jars: 124.7 Hours Since Last Inspection: 124.7  Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW																		
	Hrs On Jars: 124.7 Hours Since Last Inspection: 124.7																		
Bit Mu	Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW EHHP/SQIN Pump kW																		
,	7 6 / 6 / 6 304.8/304.8/304.8 76/74/ 286 0.00 0.09 0.00 0.24 0.00 0.0 0.00 0.00 / / / / / / / / / /																		
G																			
	7 6 / 6 / 6 304.8/304.8/304.8 76/74/ 286 0.00 0.09 0.00 0.24 0.00 0.0 0.00 0.00 / / / / / / / / / /																		
	7 6 / 6 / 6 304.8/304.8/304.8 76/74/ 286 0.00 0.09 0.00 0.24 0.00 0.0 0.00 0.00 / / / / / / / / / /																		
	Angle   Azimuth   Direction   TVD   N/S Coordinates   E/W Coordinates   Vertical Section   DLS																		
	2907.2 1.44 228.04 S48.04W 2902.0 128.73 S 28.62 E -128.73 0.23 2963.3 1.46 230.04 S50.04W 2958.1 129.66 S 27.55 E -129.66 0.03 2993.0 1.66 227.26 S47.26W 2987.8 130.2 S 26.94 E -130.20 0.22 3049.8 1.75 232.80 S52.80W 3044.6 131.28 S 25.65 E -131.28 0.10																		
3049	.8	1.75	232.80	S52	2.80W	304	4.6		131.2	8 S		25.6	5 E	<u> </u>	-131.28			0.10	
Hours	2907.2 1.44 228.04 S48.04W 2902.0 128.73 S 28.62 E -128.73 0.23 2963.3 1.46 230.04 S50.04W 2958.1 129.66 S 27.55 E -129.66 0.03 2993.0 1.66 227.26 S47.26W 2987.8 130.2 S 26.94 E -130.20 0.22 3049.8 1.75 232.80 S52.80W 3044.6 131.28 S 25.65 E -131.28 0.10  ours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0																		
12.00	2907.2 1.44 228.04 S48.04W 2902.0 128.73 S 28.62 E -128.73 0.23 2963.3 1.46 230.04 S50.04W 2958.1 129.66 S 27.55 E -129.66 0.03 2993.0 1.66 227.26 S47.26W 2987.8 130.2 S 26.94 E -130.20 0.22 3049.8 1.75 232.80 S52.80W 3044.6 131.28 S 25.65 E -131.28 0.10 ours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0																		
	2907.2 1.44 228.04 S48.04W 2902.0 128.73 S 28.62 E -128.73 0.23  2963.3 1.46 230.04 S50.04W 2958.1 129.66 S 27.55 E -129.66 0.03  2993.0 1.66 227.26 S47.26W 2987.8 130.2 S 26.94 E -130.20 0.22  3049.8 1.75 232.80 S52.80W 3044.6 131.28 S 25.65 E -131.28 0.10  Cours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0  2.00 0000 01 - 02 DRILL 8 1/2" HOLE F/ 2561M TO 2915M W/ 2425 LPM, 286 BAR, 180 RPM, 3-6MT WOB, 4-12K NM T/Q																		
		01 - 05	AT 2839	M - GAI	N IN ACT	TVE - F	LOWCHEC	K - S	TATIC; (	CONT DRI	LL AHEA	AD							
0.50T	1200	01 - 20	AT 2915	M, LOST	400 PSI	- FLOWC	HECK, S'	TATIC	: CHECK	SURFACE	EQ	PUMP #	1 LEAK	ING, C	HANGE T	O PUMI	PS #2 8	k #3	
7.00	1230	01 - 02	DRILL 8	1/2" HO	LE F/ 29	15 TO 3	101.5M;	AT 3	011M - 0	SAIN IN	ACTIVE :	FLOWC	HECK -	STATI	C; CONT	DRILI	L AHEAI	)	
1.50	1930	02 - 01	CIRCULA	re btm's	UP W/ 2	2425 LPM	I, 286 B	AR, 1	.20 RPM,	4K NM -	MAX GA	\S 1.1%	- ANA	LYSE C	UTTING	SAMPLE	ES - 30	)% SAN	D D
2.00	2100	01 - 01	CONT TO	CIRC HO	LE CLEAN	1 - BOOS	T RISER	; TAK	E SCR'S	AND FL	ISH C&K	LINES							
1.00			F/C - S																
		01 - 05																	
			0000-06	)() HRS:	POOH - 1	OLF: WAS	SI.TOK:	7мт	DRAG TO	р(п.т. тм	TO CASI	NG SHO	Œ						
		01 - 05		1110.		-J-L WAG	2114(1	.111		للد بيني	cruol	Ы							
		01 - 05																	
		01 - 05																	
		01 – 05																	
Safety	 r:	-																	
			IIL 8 1/2																
Projec Remark	red C	peration	ons: POOF	H W/ 8 1,	/2" BHA;	P/U 76	.4M CORE	BAR	RELS & T	'IH; COR	E LYSIN	G FORM	ATION						
		DN - 5,	SERVICE	E - 27,	DOLPHIN	- 53,	DOLPHIN	I SER	VICE - 7						DA:	S SIN	ICE LAS	T LTI	- 71
HEAVE:	0.3	BM, PIT	CH 0.3DEC	ROLL (	0.5DEG;	CUTTING	SKIPS (	N BO	ARD: 24,	0 FULL	, 24EMP	TY							
DAILY	FE CC	OST: NO	K 416,40	+ 15269	93		TOTA	L FE	COSTS:	NOK 8,5	94,689					_		_	
0600HR	s: N	1/U COR	E BIT & (	ORE BAR	RELS														
Daily	Mud (	Cost: K	R 225 , 559	Daily 7	[angible	Cost:		D	aily Wel	l Cost:	KR2,859	, 489	Incide	ents:	NO IN	CIDENI	REPOR	TED	
-			,635,112		ngible Co		1,747 9		tum Well	Chat:	KR87,97				KR134,				
		r: 405.			er: 360.0						Weight		Ne	at Cen	nent: 22	7 0	Blende	ed:	
Countr			·				372. ORD DOLF				one: 52			Drill	ing Rep	: MOOP			CMT
Field:	DT 0-	CRWAI				se: <sub>PL25</sub>		******					5506/3-	.1			11 ID:		
	гь25	פפ			API No:			Ī	AFE No:	רועיבוועא					05-AUG-		1	: 1	
<u> </u>					1NO.	0000/3			,	_ראידיגוארי	~~~~T-	∪ ∪ <b>⊥</b>			-£UA-cu	∠UU⊥	Luge		OT T

Measur	nd D	onth:			TVD:			DDIID:			1,	1.15			Dw	bood	шлу.	
DOL:	21		3130. FS: 16		oud Date: 22	3125.5 m		PBTD:		0.0	_	sed MI			m Pro			3625.0 m
Torq:					Wgt: 270.0 P/		o [S]								/ 2.0			DOR:
	10	g Size:	*		G	+•					*							96 eff2
-		s On Ca	aina:		/ mm	s On Casing		3m M			, <b>2.</b> IIII		Worst		1841		emaini	ĭ
Liner			<u> </u>	84.6	Set At:		DIII					ner Top					Спашп	_
			0.0			0.0 MD			0.0 T						.0 MD		~ 7	0.0 TVD
		NORGE .			ype: MINERAL						: <sub>PIT</sub> W							8 / 12 Ph:
	API:				FC (mm) API			301105			70.0	o wate	30.	00 8 56	1.2			P11.
Pm: 0	.00	PI/MI:	0.00 /	0.00	Carb: (	Cl: 32,000	Ca:		Bent		Solids	%HG/I	17.	20/5.	.60 %L	)S/Bent	:	/
3100	1KG	CAL C	ARB 0															
D 1 0			Marr Car		Come Cont	I			- Theor	in al.	l De							
Drlg G		35	Max Gas:		Conn Gas:			340		ip Cl:			6.8%			WHILE	CIRC E	BTM'S UP
Bit Nu		IADC	Size	Mai	nufacturer	Serial num	ber		Jets /	(Quar	ntity -	Size)	/	TFA	_	In	MD Out	TVD Out
8			215.9		S-DBS			_	<u>/ -</u>		<u>      /                              </u>	<u>- /</u>	' - /	0	310	1.5 m		
		1.6			1100	DD14			DDM -	/	/	- /	_	+ -		a1.	2D-11	G /
	ype	Met		ours	WOB	RPM	+	Motor	RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	,
FC	274	28	3.5	3.0	2.0/4.0	100 /	+											K 65792.2
Total	Tena	th of R	HΔ:		BHA Descr	iption: 0 1	/2"-	/! ECO	71 DD	CODE	מבאט – י	76M OTT			PT C /72	M DEC	TEDADI	E CODE)
					n - 6 1/2" JARS			. r\2	ייי אסט	CORE		, O.P. OU.	LIN CUP	~17/14/K	-LLO (/3	IVEU	باط⇔بت ۵۰	- COINE/
- 0"6	J 1/2	, DC -	HI د مر	יטף -	U I/Z" UAR	O O O HW	שב				Hrs On	Jars:	130 6	Hours	Since	Last	Inspec	tion: <sub>132.6</sub>
Bit Nu	m	Line			Stroke		SPM	-	x022	M2 /M*!	Jet Vel	1	I	-			1	
					304.8/304.8		SPM /	Pi										Pump kW
8		6 /	6 / 6		304.8/ 304.8 <sub>/</sub>	/ 304.8 65/ / /			129	0.00	0.00	0.0	00 (	0.00	0.00	(	0.0	0.00
	1		/   .	_	//	<u> </u>	$\top'$									<u> </u>	<u> </u>	
Survey	MD	Angle	Azimut	h	Direction	TVD	]	N/S Co	ordina	ates	E/W C	oordin	ates	Vert	ical Se	ection		DLS
																	1	
	i	İ												<u> </u>				
		Act-Cat				ions Coverin									Tota	1 Hour	s Repo	rted: 24.0
3.50	0000	02 - 05	CONT PO	OH F	'/ 2934M; FLC	W CHECK AT 1	13711	M & AT	BOP'S	S - STA	ric							
2.00					.; L/D MWD AS													
3.50	0530	02 - 07	P/U COF	E BI	T & TIH W/ C	ORE BARRELS	TO '	76M; R	UN INN	IER CORI	E BARREI	S & M/	'U HEAD	(73M	RECOVE	RABLE	CORE LI	ENGTH)
3.50					& 5" DP; AT													
2.00	1230	02 - 05	CONT TI	H W/	CORE BHA ON	15" DP F/ 1:	303 7	TO 140	5M; AT	1405M	, SAT DO	WN W/	7MT WT	' – WAS	SH AND	REAM W	/ 485 1	LPM, 27.5BAR
		02 - 05	40 RPM,	бК	NM F/1405 TC	) 1417M; CON	r TII	H F/ 1	417 TC	2140M	AT 214	ЮМ, SA	AT DOWN	W/ 4.	5MT WT			
0.50	1430	02 - 05	AT 2140	M, S	TAGE UP PUME	S TO 1130 L	PM, '	72 BAR	, 30 R	PM, 6K	NM AND	WASH 8	WORK	F/ 215	0 TO 2	125M		
2.50					W/ 1130 LPM													
1.50	1730	02 - 05	BREAK C	IRC	W/ 1535 LPM;	WASH AND RI	EAM I	F/ 304	0 TO 3	3101M W	/ 1294 I	PM, 10	)3 BAR,	50 RE	РМ, 6К	NM T/Q		
1.50					UP W/ 1294 I													
0.50					BALL & PUME													
3.00	2100	02 - 22	CORE 8	1/2"	HOLE F/ 310	1 TO 3130M T	W/ 10	050 LP	М, 129	BAR,	LOO RPM,	5-10K	NM -	ADD 2	SXS CA	003/HR		
		02 - 05																
		02 - 05	BULLSEY	ES:	RISER ODEG,	BOP 2DEG STI	BD-FV	WD, LM	RP 2.5	DEG ST	BD-FWD;	GUIDEE	BASE 1.	5 DEG	STBD-F	WD		
Safety	<u>                                       </u>	_	1															
		2277																
					BHA; M/U & '													
Projec	s:	peration	MIR. CON	T TO	CORE 8 1/2"	HOLE; CIRC	BTM'	S UP;	POOH	& L/D C	ORE; M/1	U & TI	HW/B	HA				
II.		ON - 6,	SERVIC	E - :	29, DOLPHIN	- 55, DOLP	HIN	SERVI	CE - 6						D#	AYS SII	NCE LAS	ST LTI - 72
HEAVE:	0.3	3M, PIT	CH 0.4DE	G, R	OLL 0.5DEG;	CUTTING SKIE	S ON	I BOARI	o: 30,	6 FULL	, 24EMP	TY						
DAILY	FE CO	OST: NO	2,986,	554 -	+ (305386 LE	FT F/ 5AUG01	L)			TOT	AL FE C	OSTS:	NOK 11	,886,6	29			
				SER (	@ 3070M (CUT	CORE F/ 310	1.5						1					
-			277,524		ily Tangible						KR2,986				NO II			RTED
			,712,636		n Tangible Co	_			Well		KR90,95		Total	Appr:	KR134	,000,0	00	
		r: 300.		able	Water: 350.0						Weight		N∈	at Cer	ment: 2	27.0	Blende	
Countr	y: N	ORWAY				Rig: <sub>BYFORD D</sub>	OLPH	IIN		Rig Pl	none: 52		35	Drill	Ling Re	p: MOOH	RE/BJOR	HEIM/SMJ
Field:	PL2	59			Leas	se: <sub>PL259</sub>							5506/3-	·1		We	11 ID:	UB5908 -0
					API No:	6506/3-1		AF	E No:	KWENO-	650631-0	001		Date:	06-AUG	-2001	Page	: 1 Of 1

Measured D	epth:	3171.5	m TVD:	3167.0 m	1	PBTD:		0.0	Propo	sed MI	):	3625.0	m Pro	posed	TVD:	3625.0 m
DOL: 22	D		Spud Date: 22			Da	aily	Footage	e: 41.	5 D				Total	Rot Hr	rs: 98.5
Torq: 0	Drag		t Wgt: 0.0		Sla	ıck Off	Wgt	: 0.0	*** 1.	J	<del> </del>	: 1.0		+		POB:
Last Casin			Set	λ+ •		MD			-	TVD		Test:		1	Leako	ff2
Cum Rot Hr		sina:	39.7 mm	rs On Casing	374.3	m MD : Last		per:			Worst				emaini	<u> </u>
Liner Size		91	Set At:		DIIIC					er To		wear.			Спанти	
		0.0	1	0.0 MD			T C						0 MD			0.0 TVD
Mud Co: <sub>M-I</sub>	NORŒ	A.S.	Type: MINERAL	OIL BASED	1-		Samp.	le From	: PIT W							U / ±2
WL API:		HTHP: 2.0		I: 0.0 HTHP: 1	.0 Sc	olids:	24.0	0 8 0	il: 70.00	) Wate	er: 30.	00 % Sa:	nd: 1.2	25 MB	Γ:	Ph:
Pm: 0.00	Pf/Mf	: 0.00 /0.	00 Carb:	Cl: 32,500	Ca:		Bent	:	Solids	%HG/I	LG: 17.	50/5.:	30 SE	OS/Bent	:	/
Drlg Gas:	35	Max Gas:	85 Conn Gas	Trip G	as:	340	Tr	ip Cl:	Re	marks	:					
Bit Number		Size	Manufacturer	Serial numb			Jets	(Ouar	ntity -	Size)		TFA	МГ	) In	MD Out	TVD Out
8		215.9	S-DBS			_	/ -	/	- /	- /	/ _	0				m 3167.0 m
9 RR - 9	)	215.9	HUGHES			4-15.9	<del>/</del> 9/ -	/ /	- /		/ _	794.		1.5 m		
	<del> </del>	ers Hou		RPM	$T^{\perp}$	otor RI		I-Row	0-Row	DC /	Loc	В	G	Char	?Pull	Cost/m
Type					1-10	OCOL IG	E 1*1									
FC274		0.0 7.		0 100 /				7	3	LT	XN	Х	IN	JD	PR	K 34821.2
BD445HA	·	0.		/												0.00
Total Leng	th of E	SHA: 254.6	5 m BHA Desci	11pt10n 8 1	/2"BI	0445HA	PDC	BIT - I	NB STAB	C/W F	LOAT -	6 1/2"	PONY	DC, 8	1/2" N	M-STAB -
CDR - 8 3	3/8" IL	S - MWD -	7* 6 1/2" DC -	9X 5" HWDP -	- 6 1,	/2" JAI	RS -	8X 5" I	1			1				
	8 6 / 6 / 6 304.8/304.8 65/ / 129 0.00 0.00 0.00 0.00 0.00 0.00 0.00															
Bit Num	Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP AV DC AV Bit kW BHHP/SQIN Pump kW  8 6 / 6 / 6 304.8/304.8/304.8 65/ / 129 0.00 0.00 0.00 0.00 0.00 0.00 0.00  9 RR-9 6 / 6 / 6 304.8/304.8/304.8 / / 0.00 0.00 0.00 0.00 0.00 0.00 0.0															
8	6 /	6 / 6	304.8/304.8	/304.8 65/	/	1:	29	0.00	0.00	0.0	00 (	0.00	0.00	(	0.0	0.00
9 RR-9	6 /	6 / 6	304.8/304.8	/304.8 /				0.00	0.00	0.0	00 0	0.00	0.00	(	0.0	0.00
Survey MD	Angle	Azimuth	Direction	TVD	N	/S Coor	rdina	ates	E/W Co	ordin	ates	Verti	.cal Se	ection		DLS
	Stroke   SPM   Press. M3/Min   Jet Vel   DP AV   DC AV   Bit   BHHP/SQIN   Pump   kW															
	it Num         Liner         Stroke         SPM         Press.         M3/Min         Jet Vel         DP Av         DC Av         Bit kW         EHHP/SQIN         Pump kW           8         6 / 6 / 6         304.8/304.8/304.8         65/         129         0.00															
	Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW  8 6 / 6 / 6 304.8/304.8/304.8 65/ / 129 0.00 0.00 0.00 0.00 0.00 0.00 0.00  9 RR-9 6 / 6 / 6 304.8/304.8/304.8 / / 0.00 0.00 0.00 0.00 0.00 0.00 0.0															
	8 6 / 6 / 6 304.8/304.8/304.8 65/ 129 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.															
	İ	1														
Hours From	9 RR-9 6 / 6 / 6   304.8 / 304.8 / 304.8   /   0.00 0.00 0.00 0.00 0.00 0.00 0.0															
4.50 0000	8 6 / 6 / 6 304.8/304.8/304.8 65/ 129 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.															
	8 6 / 6 / 6 304.8/304.8/304.8 65/ / 129 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.															
1.00 0430	02 - 05	PUMP COH	TO 3069M													
0.50 0530	02 - 03	CIRCULATI	E WHILE BOOSTI	NG RISER												
3.50 0600	02 - 05	F/C - ST	ATIC; POOH 5 S	TDS WET TO 29	926M;	F/C -	STAT	'IC; PUM	IP SLUG	& CONT	г роон	TO 158:	3M - H	OLE SL	ICK	
1.00 0930	0 02 - 05	5 AT 1583M	, TOOK 10MT PU	LL; WORK PIPE	E F/ 1	.583 TO	143	OM W/N	MAX. OF	7-9MT	OVERPU	T.L.				
													DADIT C			
4.50 1030			POOH TO SHOE;													
0 50 1500			3 MIN/STD FROM								LUUM BE	TOM KV	3 10 5	URFACE		
0.50 1500	02 - 62	HELD PRE-	-JOB SAFETY ME	ETING ABOUT I	-OTTTN	IG INNE	SR &	OUTER C	CORE BAR	RELS						
3.50 1530	02 - 07	POOH & L.	/D INNER CORE	BARRELS - 67.	.7M CC	RE REC	COVER	ED (96.	.7%); PO	OH & I	L/D OUT	ER CORI	E BARR	ELS		
	02 - 21	CORE BIT	GRADING 7-3-L	T-XN-X-IN-JD-	-PR (1	.4 CUTI	TERS	MISSING	FROM N	OSE AF	REA)					
0.50 1900	02 - 21	SERVICE T	TDS AND CLEAR	RIG FLOOR												
1.50T1930	02 - 07	PREPARE (	CDR/MWD - LOST	COMMUNICATIO	ONS FR	OM UNI	T TO	TOOL	N DECK	- TROU	JBLE SH	IOOT SAI	ME			
2.00 2100	02 - 07	M/U 8 1/:	2" BHA & TIH T	O 255M; TEST	MWD W	7/ 2100	) LPM	I, 83 BA	AR - OK							
			PF/DECK & TI													
H			MEETING PRIOR		TNNER	CORE	BARR1	ET.S								
			F/ 3130 TO 31						1 - 96 79	2 CODE	PECOM	: (תשפי	M/II s.	יידע ש	/ 9 1/2	ווי בעדע
Projected (	Operati	ons:	/ 8 1/2" BHA;	DDTII 0 1/0"	HOLE	<u>« п/р</u>	CORE	(07.714	1 - 50.7	6 COLLE	i NECOVI	ERED) 1	14/ U &	1 1111 W	/ 0 1/2	LILA
Remarks:		TIH V	u, o 1/∠" BHA;	א דידיאת 2 1/2	UULE											
POB: CHEVR	ON - 5,	SERVICE	- 30, DOLPHI	1 - 55, DOLP	HIN S	ERVICE	- 9						DF	YS SI	NCE LAS	ST LTI - 73
HEAVE: 0.	3M, PIT	CH 0.5DEG,	ROLL 0.7DEG;	CUTTING SKIP	SON	BOARD:	23,	1 FULL	, 22EMP	ΙΎ						
DAILY FE C	OST: NO	к 3,114,30	)4 TO:	TAL FE COSTS:	NOK	15,000	,933									
0530HRS:	CONT TI	H W/ 8 1/2	2" BHA @ 2700M													
Daily Mud	Cost: K		Daily Tangible			Daily	Wel	1 Cost:	KR3,114	,304	Incid	ents:	NO II	NCIDEN	repor	RTED
Cum Mud Co	st: KR2	,793,635	Cum Tangible (	lost: KR1.74	7,951				KR94,07		Total	Appr:	KR134	,000,0	00	
Drill Wate			le Water: 345		342.0	1		_	Weight:			eat Cem		27.0	Blende	ed:
Country: N		-		Rig: <sub>BYFORD D</sub>		N			none: 52			Drill			Ş₩/D T∕∇	HEIM/SMJ
Field: PL2	CV MAI			se: PL259	ANE LIT			1			5506/3-	.1				UB5908 -0
PL2	59			: 6506/3-1		Λυυ	No:	IN TOTAL O	650631-0			Date:	07			: 1 Of 1
L			API INC	- L-5/00co		ישר, דר	-vo·	VMFINO-	)-1800cu	νUΤ		- 200.	u/-AUG	J-2001	rage	- T OI T

Measured	Der	th:			TVD:			DE	TD:		Drone	sed MD	١.		m Pro	nosed		-
DOT .	_		343 S: 18	37.0 m			2.0 m			0.0	_							3625.0 m
	23				pud Date: 22			~1 1										rs: 108.5
Torq: 1	L6	Drag	0.0	) Rot	Wgt: 280.0 P/	'U Wgt:	280.0	Slad	c Off Wg	t: 275.	0 Wind:	6	1		/ 2.0		752	POB. 99
Last Cas:	ing	Size:		339.	.7 mm Set A	t:	137	74.3m	MD	13	72.1m	TVD	Shoe '	Test:	1841	EMW	Leako	off? Y
Cum Rot I	Hrs	On Cas	sing:	108.	Cum Rot Hr	s On C	asing S	ince	Last Cal	iper:		Depth	Worst	Wear:		% R	Remaini	ng:
Liner Siz	ze:		0.0		Set At:	0.0	MD		0.0	TVD	Lir	ner Top	At:	0	.0 MD			0.0 TVD
Mud Co: <sub>M</sub>	-I N	ORGE /	A.S.	Т	ype: <sub>MINERAL</sub>	OIL BAS	SED		Samp	ole Fran	: FLOW W	t: 1600	) FV:	92 PV	: 41	YP: 12.	.0 Gel:	8 / 11
					FC(mm) API			Sol			il: 72.00							Ph:
Dm:				/0.00					Ben		Solids	1 %HG/L		00		ou   OS/Bent		/
0.00			0.00		<u> </u>	Cl: 40,												/
		LIME		11	1MT BAR	ITE	25		1m3 BAS	E FLUID	175	1K0	GOTHE	R	15	00 1	LKG VEF	SAVERT
-			LOR 88			ı			<u> </u>									
Drlg Gas	: :	38	Max Ga	as: 4	Conn Gas:	7	Trip Gas	s: 15	10 Ti	rip Cl:	Re	marks:	MAX G	AS AT	BTM'S T	UP W/	1.57 50	S MUD 3%
Bit Numb	er 1	IADC	Size	e Ma	nufacturer	Seria	l numbe	r	Jet	s (Quai	ntity -	Size)		TFA	A ME	) In	MD Out	TVD Out
9			215.	.9	HUGHES			4	-15.9/	- /	- /	- /	<u> </u>	792.	.3 317	1.5 m		
									- /	- /	- /	- /	′ -	0				
Туре	<u> </u>	Met	ers	Hours	WOB	RI	PM	Mot	or RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
BD4451		265	5.5	10.0	1.0/5.0	180	/											к 11299.4
					/		,											
Total Le	na+h	l Of P	HA:	F4	BHA Descr	iption:	Q 1/2	/ חמן ווי	45HZ DD	י דקי –	NB CTVD	C /[JJ E <sup>1</sup> ]	.∩∆Tr –	6 1 /2	יי דארע יי	m o	1/2" זא	M-STAR -
	Total Length of BHA: 254.65 m BHA Description: 8 1/2" BD445HA PDC BIT - NB STAB C/W FLOAT - 6 1/2" PONY DC, 8 1/2" NM-STAB - CDR - 8 3/8" ILS - MWD - 7* 6 1/2" DC - 9X 5" HWDP - 6 1/2" JARS - 8X 5" HWDP Hrs On Jars: 148.2 Hours Since Last Inspection: 148.2																	
CDR - 8	Hrs On Jars: 148.2 Hours Since Last Inspection: 148.2																	
<del>                                     </del>	Hrs On Jars: 148.2 Hours Since Last Inspection: 148.2																	
Bit Num	it Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW 9 6 / 6 / 6 304.8/304.8/304.8 75/75/ 285 0.00 0.09 0.15 0.27 0.00 0.0 0.00																	
9	9 6 / 6 / 6 304.8/304.8/304.8 75/75/ 285 0.00 0.09 0.15 0.27 0.00 0.0 0.00																	
	9 6 / 6 / 6 304.8/304.8/304.8 75/75/ 285 0.00 0.09 0.15 0.27 0.00 0.0 0.00  / / / / / / / / / / / / / / / / / /																	
Survey M	9 6 / 6 / 6 304.8/304.8 75/75/ 285 0.00 0.09 0.15 0.27 0.00 0.0 0.00																	
3281.1	urvey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS 3281.1 2.04 238.38 S58.38W 3275.9 135.08 S 19.45 E -135.08 0.17																	
3337.4	3281.1 2.04 238.38 S58.38W 3275.9 135.08 S 19.45 E -135.08 0.17																	
	urvey MD         Angle         Azimuth         Direction         TVD         N/S Coordinates         E/W Coordinates         Vertical Section         DLS           3281.1         2.04         238.38         S58.38W         3275.9         135.08 S         19.45 E         -135.08         0.17           3337.4         2.12         243.07         S63.07W         3332.2         136.08 S         17.67 E         -136.08         0.10																	
	3281.1 2.04 238.38 S58.38W 3275.9 135.08 S 19.45 E -135.08 0.17 3337.4 2.12 243.07 S63.07W 3332.2 136.08 S 17.67 E -136.08 0.10 3394.8 1.82 240.73 S60.73W 3389.6 137.01 S 15.93 E -137.01 0.16																	
3451.1	┱	1.76	239	.93	S59.93W	344	15.9		137.8	38 S		14.	4 E	<u> </u>	-137.8	8		0.04
Hours Fr	om A	ct-Cat			Operat:	ions Co	vering	24 Hc	urs End	ing at N	Midnight				Tota	l Hour	rs Repo	rted: 24.0
1.00 00	00 0	2 - 07	CONT	P/U 5"	DP & TIH -	TOTAL	OF 51JN	TS										
2.00 01	00 0	2 - 05	TIH V	W/ 5" I	OP F/ DERRICK	TO 19	20M - F	ILL P	IPE EVER	Y 20 ST	DS; AT 1	350M,	BREAK	CIRC &	FLUSH	C&K I	INES	
0.50T03	00 0	2 - 20	CIRC	W/ 550	) LPM, 33 BAR	2, 10 R	PM WHIL	EST T	ROUBLESH	OOT PRO	BLEM WIT	H TRIP	TANK E	PUMP				
1.50 03	30 C	2 - 05	CONT	TIH F/	/ 1920 TO 264	MO												
0.50 05	00 0	2 - 01	BREAK	K CIRC	W/ 400 LPM,	69 BAR	; CIRC	& STA	GE UP PU	MPS TO	1000 LPM	I, 82 E	BAR, 10	00 RPM				
					/ 2640 TO 304													
	+						10011 ==				4	<u> </u>			~		~ ~ ~ ~	
2.50 06					WASH F/ 304						4 LPM, 2	65 BAR	c - CIF	KC BIM	S UP;	MAX GA	S 3.0%	
	C	02 - 01	OBSER	KARD TY	ARGE AMOUNT C	F. COLT.	INGS/CA	VINGS	AT SURF	ACE								
3.00 08	30 0	2 – 25	WASH-	-REAM A	AND LOG F/ 31	OT 00.	3169M W	HILST	INCREAS	ING MW	F/ 1.57	TO 1.6	0 SG					
1.50 11	30 0	2 - 01	POOH	TO 315	57M; CIRC & C	OND MU	D TO 1.	60SG	- BOOST	RISER;	BACKGROU	ND GAS	3 = 0.2	28				
0.50 13	00 0	2 - 01	FLUSH	H C&K I	LINES AND TAK	E SOR'	S											
0.50 13	30 0	<u> 2 -</u> 04	WASH	& REAM	/ F/ 3157 TO	3171M	- FANN	OFF B	IM & BED	IN BIT								
10.00 14	00 0	1 - 02	DRILI	8 1/2	2" HOLE F/ 31	.71.5 T	0 3437M	W/ 2	425 LPM,	285 BA	R, 1-5MT	WOB,	8-16K	NM TOF	QUE	-		
					AND BOOST RI													
		01 - 02		SOLL D		11 V			0110/	CF3CU	-							
Safety: .			<u> </u>	DIGT		DATE	· 1/10/18/17	7 03	11TK7 N 41-7-1-	דיי רואי	DDTTT							
24 Hr Sur	עטיי	V: — □OG4EH	CUT	KTGHT.	FOREARM WITH	VINTER	MERYT)	L SAFE	TI MEET.	TING ENIT	חצדדידי	7 / 5* -	1 = :	2.45-				
					CIRC & INC. I								1.5 TO	3437M				
Remarks:	, op	ULALLO	wrs. D	RILL 8	1/2" HOLE TO	O TD; (	CIRC HOI	LE CLE	CAN - PO	OH; R/U	TO RUN I	WL						
	/RON	- 5,	SERV	TCE -	30, DOLPHIN	- 55,	DOLPHI	IN SEF	RVICE -	9					D	AYS SI	NCE LAS	T LTI - 74
HEAVE: (	 ).2M	, PITO	 СН 0.5	DEG, R	OLL 0.5DEG;	CUTTING	SKIPS	ON BO	DARD: 23	, 17 FUI	L, 6EMP	TY						
DAILY FE	COS	T: NOF	7615	344 + 1	621413	TO	CAL FE (	COSTS	NOK 17	, 383 , 890	)							
0600HRS:																		
-				-	ily Tangible	Cost:		ī	Dailv We	ll Cost	KR3,541	1.00	Tnaid	lonta:	בידיים	חדוג יון		
															FIRS			
					m Tangible Co				11011									-d.
Drill Wat				otable	Water: 325.0		el: 33				Weight		)	ac Cer	ment: 2	27.0	Blend	
Country:	NOF	RWAY					FORD DOI	PHIN		Rig P	hone: 52				ing Re	P: MOO	RE/BJOR	HEIM/SMJ
Field: PI	<u> 259</u>				Leas	se: <sub>PL25</sub>	59				Wel	1 No:6	5506/3-	-1		W∈	ell ID:	UB5908 -0
<u> </u>					API No:	6506/3	3-1		AFE No:	KWENO-	650631-0	001		Date:	08-AUG		Page	: 1 Of 1

Measure	ed Da	epth:			TVD:			DR	TD:		Dropo	sed MD			Pro	posed	TVD:	_
DOL:			3667 S: 19				2.4 m			0.0	_				m Pro			3625.0 m
	24				oud Date: 22				_				_					rs: 117.5
Torq:	1600	0 Drag	: 0.0	Rot W	igt: 127.0 P/	/U Wgt:	127.0	Slack	Off Wgt	: 125.0	0 Wind:				/ 2.0			POB: 93
Last Ca	asing	g Size:		339.	7 mm Set A	At:	137	4.3m	MD	137	72.1m	TVD	Shoe 7	Test:	1841	EMW	Leako	off? Y
Cum Rot	t Hrs	s On Cas	sing:	125.6	Cum Rot Hr	s On C	asing S	ince I	Last Cali	iper:		Depth	Worst	Wear:		% R	emaini	ng:
Liner S	Size:	:	0.0		Set At:	0.0	MD		0.0 T	VD	Lin	er Top	At:	0.	0 MD	·		0.0 TVD
Mud Co:	:	MODGE 7		Тζ	/pe:MINERAL	OTI, BAS	SED				: PIT W	t: 1600	FV:		-	YP: 8	n Gel:	
				-	FC (mm) API			Soli	lds: 24.0									7 / 9 Ph:
	API:								24.0 Bent		74.00	one /⊤	26.0	00 ,	1.5	S/Bent		
Pm: 0.	. 00	PI/MI.	0.00 /	0.00	Carp.	Cl: 29,	000 Ca	•	belli	.•	Solids	%NG/L	19.0	00/4.	40	S/Bell	· ·	/
1275	1KG	CA CAF	B CRSE	800	1KG CA	CARB MI	Ð											
Drlg Ga	as:	50	/ax Gas	11	9 Conn Gas:	7	Trip Gas	s: 0	Tr	ip Cl:	Re	marks:	MAX G	AS WHT	IF DRII	JJING	@ 347 <i>2</i> №	I - 2.37%
Bit Nur	mber	IADC	Size		ufacturer		l number	Ť		: (Ouar	ntity -			TFA		) In	MD Out	
9		M333	215.9	1 1012	HUCHES		23129		-15.9/ -	,	_ /	_ /		794.		1.5 m	12 040	172 040
9		PDSS	213.5		HOGHED	0.5	23127	1	<del>''</del>	. / .	_ /	/	_	0	2 317	1.5 111		
											<del> </del>				1	<u>_</u>	11	
Ту	/pe	Met	ers H	ours	WOB	RI	PM	Moto	or RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
BD44	45HA	495	5.5 1	9.0	4.0/5.5	180	/											K 8324.90
					/		/			<u> </u>	<u> </u>							
Total I	Lengt	th of BI	HA: 254	.65 m	BHA Descr	iption:	8.1/2	" BD4	45HA PDC	BIT - I	NB STAB	C/W FI	OAT -	6.1/2	PONY	DC - 8	3.1/2"	NM STAB
- CDR	- CDR - 8.3/8" ILS - MWD - 7 X 6.1/2" DC - 9 X 5" HWDP - 6.1/2" JARS - 8 X 5" HWDP  Hrs On Jars: 148.2 Hours Since Last Inspection: 148.2																	
	Hrs On Jars: 148.2 Hours Since Last Inspection: 148.2 Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW																	
D:+ :-	Hrs On Jars: 148.2 Hours Since Last Inspection: 148.2																	
	Sit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW EHHP/SQIN Pump kW 9 152 / 152 / 152 304.8 / 304.8 / 304.8 74 / 75 / 285 2.39 50.38 100.10 157.64 0.00 0.0 11.30																	
9	Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW  9 152 / 152 / 152 304.8 / 304.8 / 304.8 74 / 75 / 285 2.39 50.38 100.10 157.64 0.00 0.0 11.30  / / / / / / / / / / / / / / / / / / /																	
	9 152 / 152 / 152 304.8 / 304.8 / 304.8 74 / 75 / 285 2.39 50.38 100.10 157.64 0.00 0.0 11.30 / / / / / / / / / / / / / / / / / / /																	
Survey	9 152 / 152 / 152 304.8 / 304.8 / 304.8 74 / 75 / 285 2.39 50.38 100.10 157.64 0.00 0.0 11.30  / / / / / / / / / / / / / / / / / / /																	
3566.	9   152 / 152   152   304.8   304.8   304.8   74   75   285   2.39   50.38   100.10   157.64   0.00   0.0   11.30																	
3596.																		
-																		
i				ł	S52.64W	363	37.3		135.4	6 S		10.98	3 E	<u> </u>	-135.4	6		0.25
Hours E	From	Act-Cat			Operat:	ions Co	vering	24 Ho	urs Endi:	ng at M	idnight				Tota	l Hour	s Repo	rted: 24.0
0.50	0000	01 - 01	CIRC &	BOOS'	T RISER; TAK	E SOR'	S.											
5.50	0030	01 - 02	DRILL 8	3.1/2	" HOLE F/ 34	137 – 3	587M W/	2345	LPM, 276	BAR, 1	180 RPM,	8 - 1	6K NM	TQ, 4	- 5.5M	T WOB.		
0.50	0600	01 - 01	CIRC &	BOOS'	T RISER; TAK	E SOR'	S & FLUS	SH C 8	K LINES	S.								
0.50	0630	01 - 02	DRILL S	1/2	" HOLE F/ 35	587 – 3	600M											
								= DND	MAY CA	.c 1 2&								
					OLE CLEAN W/		-											
2.00	0900	01 - 01	SIMULAT	E CO	NN. F/CHECK	- STAT	IC; CIR	CULATE	E BTM'S U	JP - MAX	C. GAS 0	.33%.						
0.50	1100	01 - 01	CIRC &	BOOS'	T RISER; TAK	E SCR'	S @ 3600	OM.										
3.00	1130	01 - 02	DRILL 8	3.1/2	" HOLE F/ 36	OT 00	3667M (V	VELL 1	TD) W/ 23	881 LPM,	283 BA	R, 180	RPM,	7 - 10	K NM T	Q, 4 -	5.5MT	WOB.
1.50	1430	01 - 01	CIRCUL	ATE B'	TM'S UP & CC	NDITIO	N MUD. (	GAS DE	ROPPED TO	LESS T	THAN 0.2	% AFTE	R BTM'	S UP.				
1.50	1600	01 - 01	SIMULAT	E CO	NN. TAKE SUR	WEY -	3641.9M	, 1.90	DEG, 232	2.64 AZ	CIRC P	TMS (IP	& B00	ST RIS	ER - M	AX GAS	0.2%.	HOLE CLEAN
1					L - STATIC.				-									
													V = C**	OF ~	mam=~	CONTE	DOOTT	
5.50	±03U	OT - 02	r/CHEC	C WELL.	L - STATIC.	FOME	. , کا۱۱ک, د	1.0050	א יא א	rwh I	onuE.	r / CHEC	r @ SH	OE - S	TAITC.	CONT	POOH.	
		-																
		-																
		_																
0-5								-				-		-				
Safety:	:																	
		ary: <sub>Dp</sub> 1	II. 8 1 /	2" #C	)_E TO WELL '	TD @ 34	567м ст	RC HO	LE CIEAN	.% bWπ								
24 Hr S	Summe				DLE TO WELL '					& POOH								
24 Hr S	Summa ced C				DIE TO WELL '					& POOH	i.							
24 Hr S Project Remarks	Summa ced C	peratio	ns: R/U	& RI		LOGS AS	S PER PR	OGRAM							D#	AYS SI	NCE LAS	T LTI - 75
24 Hr S Project Remarks POB: CH	Summa ed C s: HEVRC	peration – 5,	ns: R/U	<u>&amp; RU</u> E - 2	JN WIRELINE I	LOGS AS	DOLPHI	OGRAM N SER	vice - 9			MPTY)			D#	AYS SI	NCE LAS	T LTI - 75
24 Hr S Project Remarks POB: CH	Summe ced C s: HEVRC	operation ON - 5, OM, PITO	ns: R/U SERVIC CH 0.4DE	& RU E - 2 G, RO	ON WIRELINE :	LOGS AS - 54, CUTTING	DOLPHI	OGRAM IN SER	VICE - 9 ARD: 17			MPTY)			DA	AYS SI	NCE LAS	T LTI - 75
24 Hr S Project Remarks POB: CH HEAVE: DAILY F	Summa ced C s: HEVRC 0.2	Operation ON - 5, ON, PITO OST: 583	SERVIC CH 0.4DE	& RU E - 2 G, RO K	ON WIRELINE :	LOGS AS - 54, CUTTING L FE CO	DOLPHI G SKIPS DSTS: NO	OGRAM IN SER ON BO OK 17,	VICE - 9 ARD: 17 966,895	(3 FULL	. & 14 E	MPTY)			DP	AYS SI	NCE LAS	T LTI - 75
24 Hr S Project Remarks POB: CH HEAVE: DAILY F	Summe ced C s: HEVRC 0.2 TE CC	Operation ON - 5, OM, PITO OST: 583	SERVICE O. 4DE O. REPEAT	& RU E - 2 G, RO K	ON WIRELINE :  25, DOLPHIN  DLL 0.4DEG;  TOTA  FION W/ SCHL	LOGS AS  - 54,  CUTTING  L FE CO  UMBERGE	DOLPHI G SKIPS DSTS: NO	OGRAM ON SER ON BO OK 17,	VICE - 9 ARD: 17 966,895 G STRING	(3 FULL	. & 14 El		Incid	ent c'				
24 Hr S Project Remarks POB: CH HEAVE: DAILY F 05:30 H	Summer ced Constitution Constit	Operation ON - 5, OM, PITO OST: 583 RECORI	SERVICE SERVICE OF A CONTROL OF	& RUE - 2 G, ROK SECT	ON WIRELINE TOTAL  TOTAL  TION W/ SCHL  Lly Tangible	- 54, CUTTING L FE CO UMBERGE Cost:	DOLPHI G SKIPS OSTS: NO	OGRAM ON SER ON BO OK 17,	VICE - 9 ARD: 17 966,895 G STRING	(3 FUIL @ 3140 1 Cost:	& 14 E	,002			NO II	NCIDEN	I REPOR	
24 Hr S Project Remarks POB: CH HEAVE: DAILY F 05:30 H Daily M	Summa ced C s: HEVRO 0.2 FE CC HRS: Mud C	Deration  N - 5,  MM, PITO  OST: 583  RECORL  Cost: KR  St: KR3,	SERVICE O. 4DE CONTROL O REPEAT 133,402	E - 2 G, RC  K  SECT  Dai	IN WIRELINE : 25, DOLPHIN DLL 0.4DEG; TOTA TION W/ SCHL Lly Tangible a Tangible Co	- 54, CUTTING L FE CO UMBERGH Cost:	DOLPHI  SKIPS  OSTS: NO  R PEX I	OGRAM ON SER ON BO OK 17, OGGIN C	VICE - 9 ARD: 17 966,895 G STRING	(3 FULL @ 3140 1 Cost: Cost:	% 14 E M. KR3,045 KR100,6	,002 59,526	Total	Appr:	NO IN	NCIDEN	T REPOR	TED
24 Hr S Project Remarks POB: CH HEAVE: DAILY F 05:30 E Daily M Cum Mud	Summa  ced C  s: HEVRC  0.2  FE CC  HRS: Mud C  d Cos Water	Deratic DN - 5, DN - 5, DN - 5, DN - 5, RECORL RECORL Cost: KR3, RECORL Cost: KR3, RECORL Cost: KR3,	SERVICE SERVICE SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SERVI	E - 2 G, RC  K  SECT  Dai	N WIRELINE :  25, DOLPHIN DLL 0.4DEG;  TOTA FION W/ SCHL ly Tangible n Tangible Co  Water: 298.	LOGS AS  - 54,  CUTTING  L FE CO  UMBERGH  Cost:  Cost:  Fue  Fue	DOLPHI G SKIPS OSTS: NO R PEX I R1,747,	OGRAM ON SER ON BO OK 17, OGGIN C 951	VICE - 9  ARD: 17  966,895  G STRING  Paily Well	(3 FULL @ 3140 l Cost: Cost: Bulk	M. KR3,045 KR100,6	,002 59,526	Total	Appr:	NO IN KR134 ment: 2	NCIDEN ,000,0	r REPOR	TED
24 Hr S Project Remarks POB: CH HEAVE: DAILY F 05:30 E Daily M Cum Muco Drill V Country	Summa  Led C  S:  0.2  0.2  ERS:  Mud C  Water  '': N	Deratic N - 5, MM, PITC DET: 583 RECORL Clost: KR St: KR3, r: 330.0	SERVICE SERVICE SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SERVI	E - 2 G, RC  K  SECT  Dai	N WIRELINE :  25, DOLPHIN DLL 0.4DEG;  TOTA FION W/ SCHL ly Tangible n Tangible Co  Water: 298.	LOGS AS  - 54,  CUTTING  L FE CO  UMBERGH  Cost:  Cost:  Fue  Fue	DOLPHI  SKIPS  OSTS: NO  R PEX I	OGRAM ON SER ON BO OK 17, OGGIN C 951	VICE - 9  ARD: 17  966,895  G STRING  Paily Well	(3 FULL @ 3140 l Cost: Cost: Bulk	% 14 E M. KR3,045 KR100,6	,002 59,526	Total	Appr:	NO IN KR134 ment: 2	NCIDEN ,000,0	r REPOR	TED
24 Hr S Project Remarks POB: CH HEAVE: DAILY F 05:30 H Daily M	Summa  Led C  S:  0.2  0.2  ERS:  Mud C  Water  '': N	Deratic N - 5, MM, PITC DET: 583 RECORL Clost: KR St: KR3, r: 330.0	SERVICE SERVICE SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SOLUTION SERVICE SERVI	E - 2 G, RC  K  SECT  Dai	IN WIRELINE : 25, DOLPHIN DLL 0.4DEG; TOTA TION W/ SCHL ly Tangible Tangible Co Water: 298.	LOGS AS  - 54,  CUTTING  L FE CO  UMBERGH  Cost:  Cost:  Fue  Fue	DOLPHI G SKIPS OSTS: NO R PEX I R1,747,	OGRAM ON SER ON BO OK 17, OGGIN C 951	VICE - 9  ARD: 17  966,895  G STRING  Paily Well	(3 FULL @ 3140 l Cost: Cost: Bulk	M.  KR3,045  KR100,6  Weight:	,002 59,526	Total Ne	Appr: eat Cen	NO IN KR134 ment: 2	NCIDEN ,000,0 27.0 p: MDO	T REPOR	TED

Measured I	onth:			TVD:			DDIID:	_		1-	1.15			Dw	posed	шл.	1
		3667.			3662.4 m		PBTD:		0.0		sed MI		3625.0	m			3625.0 m
DOL: 25		FS: 20		d Date: 22		-	1		Footage	<u> </u>	U		ot Hrs:				rs: 117.5
Torq: 0	Drag	g: 0.0 F	Rot Wg1	t: 0.0 P/	/U Wgt: 0.0	Sl	.ack 0f	f Wgt	: 0.0	Wind:	12	Seas	: 1.0	/ 2.0	Bar:	757	POB: 92
Last Casir	ng Size:		339.7 ı	mm Set A	At: 1	374.	3m MI	)	13'	72.1m	TVD	Shoe 5	Test:	1841	EMW	Leako	off? Y
Cum Rot Hr	s On Ca	sing:	L25.6	Cum Rot Hr	s On Casing	Sinc	ce Last	Cali	per:		Depth	Worst	Wear:		% R	Remaini	ng:
Liner Size	<b>:</b>	0.0	Se	et At:	0.0 MD		0.	.0 T	VD	Lir	ner Top	o At:	0.	0 MD			0.0 TVD
Mud Co: <sub>M-I</sub>	MODGE		Тур	e: MINERAL	OTI, BASED					: <sub>PIT</sub> W	t: 160	) FV:		-	YP: 8	n Gel:	,
					: 0.0 HTHP:1	5	Solids:			il: 74.0							7 / 9 Ph:
API:						.0 <u> </u>		24.5 Bent		74.0	0 원년(7	26.	00	1.5	50   S/Bent		
0.00	I I/ I·II	0.00 /	0.00	ilb.	Cl: 29,000	æ.		Derre		DOTION	0110/1	19.	00/4.4	40	D/ DCIT		/
56 1M	r barit	E															
Drlg Gas:	0	Max Gas:	0	Conn Gas:	Trip G	as:	0	Tr	ip Cl:	Re	marks:						
Bit Number	IADC	Size	Manu	facturer	Serial numl	oer		Jets	(Quar	ntity -	Size)		TFA	ME	) In	MD Out	TVD Out
9	M333	215.9	I	HUCHES	0323129		4-15.	.9/ -	/	- /	- /	/ _	794.2	2 317	1.5 m	3667.0	m 3662.4 m
							-	/ -		- /	- /	/ _	0				
	Mod	ione II.		I-IOD	DDM		Motor F	, DM	, T Dov.	0.0	, 	T 0.0	D		Char	?Pull	Coat /m
Type			ours	WOB	RPM	1	MOCOL P	CPM	I-Row	O-Row	DC	Loc	В	G			Cost/m
BD445HZ	49	5.5 1	9.0	0.0/0.0	/				1	1	WT	XA	X	I	BT	TD	K 8324.90
				/	/												
Total Leng	gth of E	HA: 254	.65 m	BHA Descr	iption: 8.1	/2" I	BD445HZ	A PDC	BIT - I	NB STAB	C/W F	LOAT -	6.1/2"	PONY	DC - 8	3.1/2"	NM STAB
- CDR -	8.3/8"	ILS - MWI	) - 7 I	X 6.1/2" D	С – 9 Х 5" Н	WDP -	- 6.1/2	2" JAF	RS - 8	X 5" HWI	DP						
										Hrs On	Jars:	165.7	Hours	Since	Last	Inspec	tion: 165.7
Bit Num	Line	er		Stroke		SPM	Pr	ess.	M3/Min	Jet Vel	DD	717 D	C Av 1	Ri+ 1-7	מעם	D/SOTM	Pump kw
		52 / 15	2 20/	4.8/304.8	, ,	/		0	0.00		0.0		0.00	0.00		0.0	0.00
9 1	.52 / 1	/ 15	Z 30°	/	/ 304.0 /			U	0.00	0.00	0.0	00 (	0.00	0.00		0.0	0.00
	/_	/	1	/ /	<u>'   /</u>	/							1				
Survey MD	Angle	Azimut	n D	irection	TVD	N	N/S Coc	rdina	ites	E/W C	oordin	ates	Verti	cal Se	ection		DLS
Hours From	3 7 at Co			Oncomb	i am a. Carrani m	- 24	TTours	Do di s		عامله المالة ا			<u> </u>	mat a	1 110	- Dome-	at ad: 24 0
			077 77/		ions Coverin								MATTER				rted: 24.0
1.00 0000	01 - 05	CONT PO	OH W/	8.1/2" BHA	A. L/O MWD &	CDR	TOOLS.	В/О	HUGHES	BIT (NC	ME: PI	ECE OF	MATRIZ	X BROK	EN FRO	M ONE (	OF BLADES).
1.00 0100	02 - 25	CLEAR R	IG FLC	OOR & R/U I	O RUN SCHLUI	M WIR	ELINE	LOGS.									
1.50 0200	02 - 25	HOLD TB	T. P/U	J & M/U SCH	LUM AIT-PEX	-HNGS	TOOLS	TRING	- RUN	#1.							
2.00 0330	02 - 25	RIH W/	SCHLUM	AIT-PEX-H	NGS TOOLSTR	ING -	- RUN #	1 TO	3180M.								
0.50 0530	02 - 25	RECORD	REPEAT	r section i	HRU LYSING I	FORMA	TION F	/ 318	0 - 306	50M. RIH	TO TI	).					
1.00 0600	0 02 - 25	TAG TD	@ 3665	5.7M (WIREI	INE DEPTH -	TIDE	CORRE	CTED)	& REC	ORD MAIN	I LOG E	7/ 3663	- 3100	OM.			
				<u> </u>											ME DE	mo 3:	1.70%
					O, SUSPEND MA												L /UM.
1.00 0730	02 - 25	RE-RECO	RD MAI	LN LOG F/ 3	3150 - 2690M	. SHA	ALLOW R	ESTIT	VITY RE	SADING E	∐GH &	NOT RE	PEA.I.TM	J OVER	SECTI	.ON.	
0.50T 0830	02 - 25	SHALLOW	RESIS	STIVITY REA	DING CORRECT	ILY.	DECISI	ON TA	KEN TO	RE-LOG	SECTIO	N. RIH	F/ 269	90 – 3	150M.		
1.00T 0900	02 - 25	RE-LOG	SECTIO	ON W/ BAD S	HALLOW RESIS	STIVI	TY F/	3150	- 26901	1.							
2.00 1000	02 - 25	CONTINU	E TO R	RECORD MAIN	I LOG F/ 269	OM -	CSG SH	OE @	1374M	W/LINE	DEPTH)	. NO E	XCESS I	DRAG O	R O/PU	ILLS WH	HE LOGGING.
2.00 1200	02 - 25	POOH &	L/O SC	CHLUM AIT-F	EX-HNGS TOO	LSTRI	NG - R	 UN #1									
2.50 1400	0 02 - 25	P/U & M	/U SCF	HLUM DSI-GR	R-AMS-OBDT TO	OLST	RING -	RUN	#2. RT	1 TO 318	88M.						
												`					
					HRU LYSING I											T C ===	
Safety:					MAIN LOG F												
HC					TOOLSTRING.										DLING	SOURCE	S.
					RELINE & MAK												
Projected	Operati	ons: RE-1	RUN PE	X TOOLSTRII	NG. RUN VSP,	MDT	& SID	EWALL	CORES.	P/U CM	T STIN	GER & S	SET CMI	PLUGS	S TO A	BANDON	WELL.
Remarks:					- 53, DOLP												T LTI - 76
									/6 mm.	c 11 =	MDrrx r \			IJł-	110 OT	THE	, TIT - \Q
					CUTTING SKIE					· ∝ ⊤⊤ ₽.	™T, T, T, )						
DAILY FE C	OST: 2,	754,760 1	NOK	'OT	TAL FE COSTS	3: 20	,721,6	54 NO	K								
05:30 HRS:			LEVEL	DELTA TOOL	•							1					
Daily Mud	Cost: K	R 58 , 462	_	y Tangible				y Wel	1 Cost	KR2,854	,334	Incid	ents:	NO II	NCIDEN	T REPOR	TED
Cum Mud Co	st: KR3	,128,770	Cum '	Tangible Co	ost: <sub>KR</sub> 1,74	7,951	Cum	Well	Cost:	KR103,5	13,860	Total	Appr:	KR134	,000,0	000	
Drill Wate				ater: 475.0		0.0				Weight			at Cem			Blende	ed:
Country: I							TNI			none: <sub>52</sub>		25	Drill	ing Re	27.U p:		HEIM/MH
Field:	NUKWAY				Rig: BYFORD D	OTTAR	TIN		1 3			35					
Field: PL2	159				se: <sub>PL259</sub>		1_					5506/3-					UB5908 -0
				API No:	6506/3-1		AFE	: No:	KWENO-	650631-	001		Date:	10-AUG	-2001	Page	: 1 Of 2

Measure	d De	nth:			TVD:				PBTE	):		Drope	sed MI	١.		Pn	ന്നാട്ടെ	TVD:	
DOL:				567.0 m			3662.4 m				0.0	_			3625.0	III			3625.0 m
	25		FS: 2		Spud Date:							0.		-			_		rs: 117.5
Torq:	0	Drag	g: O.	0 Rot	Wgt: 0.0	P/U V	Wgt: 0.0	Sl	.ack (	Off Wgt	: 0.0	Wind:	12	Sea	3: 1.0	/ 2.0	Bar:	757	POB: 92
Last Cas	sing	g Size:		339	.7 mm Se	t At:	1	374.	3m	MD	13'	72.1m	TVD	Shoe	Test:	1841	EMW	Leako	off? Y
Cum Rot	Hrs	on Ca	sing:	125.	6 Cum Rot	Hrs (	On Casing	Sino	ce La	st Cali	per:		Depth	Worst	Wear:		% I	Remainir	ng:
Liner Si	ize:		0.0		Set At:		0.0 MD			0.0 T	/D	Lir	ner Top	At:	0	.0 ME	)		0.0 TVD
Mud Co:					Type: <sub>MINER</sub>							: PIT W	t: 160	E.//•			i	o Gel:	,
									iolid:										7 / 9 Ph:
					FC (mm)				JOIIU			il: 74.0	0 ****	26	.00	1.			F11.
Pm: 0.0	00	Pt/Mt:	0.00	/ 0.00	Carb:	cl:	29,000	Ca:		Bent	:	Solids	%HG/I	.G: 19	.00/4	. 40	DS/Ben	t:	/
Drlg Gas	g:	_	Max G	as:	Conn Ga	as:	Trip (	Gas:	_	Tr	ip Cl:	Re	marks:						
		0	~ '		0		_		0		- / -		~! \			. 1			
Bit Num	ıber	IADC	Siz	ze Ma	anufacturer	Se	erial numl	ber		Jets /	(Quar	ntity -	Size)	/	TF	A M	D In	MD Out	TVD Out
									-			<del>- /</del>	/		0				
					<u> </u>	4		_	-	/ -		- /	- /	_	0	+	1		
Tyr	ре	Met	ers	Hours	s WOB		RPM	1	Motor	RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
					/		/												
					/		/												
Total Le	engt	h of B	HA:	254 65	BHA Des	cript	ion: 8.1	/2" 1	BD445	HA PDC	BIT -	NB STAR	C/W F	LOAT -	6.1/2	" PONY	DC -	8.1/2"	NM STAB
- CDR	- 8	.3/8" _	LLS -	MMD =	7 X 6.1/2"	ш -	9 Х 5" Н	WDP -	- 0.1	/Z" UAI	(5 - 8.				1	a.		_	
<del>                                     </del>	i			-								_	1		/ Hours	s Since	e Last	TURDEC.	tion: <sub>165.7</sub>
Bit Num		Line	er		Stroke			SPM	I	Press.	M3/Min	Jet Vel	DP.	Av :	DC Av	Bit k	W BHI	IP/SQIN	Pump kW
		/	/		/	/	/	/											
		/	/		/	/	/												
Survey I	MD	Angle	Δzi	muth	Direction	<u>,                                    </u>	TVD	, 	J/S C	∞rdina	tea	E/W C	oordin	ateg	Vert	ical S	Section		DLS
Barvey I	1.10	Aigic	721	maar	DIFECTION		110		<b>1</b> /D C	OCIUMIC		11/ W C	0014111	ассь	VCIC	ICAI D	CCCIOI		DED
Hours F	ram	ActCa	t.		Oper	ation	s Coverin	na 24	Hour	s Endi	ng at. M	Iidni <i>a</i> ht.				Tota	al Hou	rs Repoi	rted: 24.0
				1 & T./O	SCHLUM DI														
1												D.T. TO		0770 D			1.000	1.60.474)	
1.0012	300	02 - 25	P/U	& M/U I	BACK UP SC	HLUM E	PEX TOOLS	IRING	- R	JN #3 (	RE-RUN	DOE TO	ANOMAL	.00S D	ENSTTY	DATA .	1828 -	1624M)	•
		-																	
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Safety:	HOL	D TBT	PRIOR	TO M/U	J SCHLUM PE	X TOO	LSTRING.	ALL :	BARRI	ERS IN	PLACE	& DRILL	FLOOR	CLEA	RED BEF	ORE HA	NDLING	SOURCE	s.
24 Hr St	umma	ry: PO	OH W/	8.1/2"	BHA. R/U	WIREL	INE & MAK	E TW	0 LOG	GING R	JNS (AI	T-PEX-H	NGS &	DSI-G	R-AMS-C	BDT).			
Projecte	ed 0	peration	ons:	RE-RIN	PEX TOOLS	RING	RIIN VSP	MDT	& ST	DEWALL.	CORES	P/II ∩M	T STIN	CER &	SET CV	T DIJIC	S TO Z	RANDON	WET.T.
Remarks	:			IGH ICOLV	TEN TOOLS	idivo.	KON VBI,	ППСТ	0. 01	LIVWALLE	cords.	1/0 41	I DIIIN	OHIC &	DEI CI	11 11100	<u> </u>	DAIDOIV	WHITE.
			_																
Daily Mu	ud (	!ost:	DEO 4	co Da	ily Tangik	ole Co	st:		Da:	ily Wel	l Cost:	KR2,854	224	Tnai	denta.	ד רעו	אינו די די או	יירויםם יוד	רופידי
				02					C1*										יזהיה
Cum Mud				770	m Tangible			7,951	- Cu	/VCLL		KR103,5							
Drill Wa				Potable	Water: 47			0.0				Weight						Blende	
Country	: N	DRWAY				Rig	: BYFORD D	OLPH	IN		Rig Pl	none: <sub>52</sub>	88 03	35	Dril:	ling Re	ep: MOC	RE/BJOR	HEIM/MH
m: -1 -1 .					L		PL259						l No:		•				UB5908 -0
Field: F	PL25	9			1														

Name	Magazand I	onth:			ידיק:	m·				DIIID:		<del></del>	1.15			Dr	bpoard	шл.	
Note   Carl   State   Carl   State   Carl   State   Carl					l.				P							m			
March   Control   March   Ma	DOL: 26	I	DFS: 2	21	Spud Date	22-J	JUL-20	01		Dail	/ Foota	ge: 0	.0 D	aily R	ot Hrs	:	Total	Rot Hr	rs: 117.5
Mart   Series   Ser	Torq: 0	Dra	g: 0.	. O Rot	Wgt: 0.0	O P/U	Wgt:	0.0	Slac	k Off W	t: 0.	0 Wind	: 4	Seas	: 1.0	/ 2.0	Bar:	758	POB: 92
Martin   File   Martin   Mar	Last Casin	g Size		220	. 7	Set At	:	1 2	74 2	MD	1	270 1	תעוד				_		off? ,,
Property   Company   Com					Cim B	nt Hra	On Ca					3/2.1m	_						Y
Section   Property			лошід.	126	.1		OII CC	ering t	<u></u>	парс са	LIPCI ·	T -			wear.		7 6	.с.пашш	19.
Fig.	Liner Size	:: 	0.0	0	Set At:		0.0	MD		0.0	TVD		ner To	p At:	0.	0 MI	)		0.0 TVD
Part	Mud Co:			ŗ	Type:					Sam	ple Fro	m: <sub>FLOW</sub>	Wt:	FV:	PV	:	YP:	Gel:	
Print	WL 3.DT.		THE		FC (mm)	ADT.	7.77	TID.	So	lids:	%	Oil:	₩ate	er:	% Sa	nd:	MB'	Γ:	Ph:
End   Class   0   Mov   Class   0   Description   2   Descriptio				· /					<u></u>	Rei	h+•	Solid	e SHC/I	·C·		9	DS /Bont	. •	
March   Marc	FIII.	FI/ MI	<u> </u>	/	Carb.	CI	. •	کا	1.	Бел	10.	50110	5 0110/1	<u></u>			DS/ Belli		/
March   Marc																			
March   Marc																			
March   Marc	Drla Gas:		Max (	as:	Conn	Gas:	т	rin Ga	g:	Т	rip Cl:	R	emarks:	:					
PRIL   1833   215.9	Diry Gab	0			0			rip ca		U				MAX G	AS WHI	LE CIF	RC @ SH	OE - 0.	2%.
Type   Mattern   Most   Most   Sale   Sale   Most	Bit Number	IADC	Si	ze M	anufactui	rer S	Serial	numbe	er	Jet	s (Qu	antity -	Size)		TFA	M	D In	MD Out	TVD Out
Second   S	9 RR-1	M333	215	5.9	HUGHES	3	032	3129	4	-15.9/	-0.0/	- 0.0/	- 0.0/	/ <sub>- 0.0</sub>	792.	3 36	67.0 m		
Section   Sect										- /	- /	- /	- /	/ _	0				
Section   Sect	Trmo	Ma	tora	Hours	- WO	R	DD	M	Mo	tor RPM	T_P0	w O-Pow	m	Ιω	В	G	Char	2Di1]]	Cost /m
Total Length of Real 253.66 m SHA Percentions 8.1/2* MAMSHA MX RET NA STAR (C/M PICAT) - 6.1/2* NOW 1C - 8.1/2* STRINGS - 8 × 8 MAND - 6.1/2* NOW 1C - 8.1/2* STRINGS - 8 × 8 MAND - 6.1/2* NOW 1C - 8.1/2* STRINGS - 8 × 8 MAND - 6.1/2* NOW 1C - 8.1/2* STRINGS - 8 × 8 MAND - 6.1/2* NOW 1C - 8.1/2* STRINGS - 8 × 8 MAND -									1-10		1-10	w O-ROW	I.C.	шс	ь	G	Cliat	···	00.007
STATE   State   Stat	BD445HA	7 (	0.0	0.0	/		120 /												0.00
STATE   State   Stat					/	,	/												
STATE   State   Stat	Total Leng	th of I	BHA:	253.66	m BHA I	Descrip	otion:	8.1/2	2" BD	445HA PD	C BIT -	NB STAE	3 (C/W	FLOAT)	- 6.1/	'2" PO	NY DC -	8.1/2	" STRING
Richard   Rich																			
Stroke	<b></b>			10 Z	- 11110	0.1	, _ 01			-4,121		Hrc C	n "Tawa"	100	Horma	Gin-	e Tact	Tnence	tion:
Series   152   152   152   152   304.8   304.8   304.8   20		Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW EHHP/SQIN Pump kW																	
Survey Mo	Bit Num	Lin	er		Strok	e		SI	PM	Press	M3/Mi	n Jet Ve	l de	Av D	C Av	Bit k	W BHH	P/SQIN	Pump kW
Hours From Act-Cat	9 RR-1 1	.52 / :	152 /	152	304.8/3	304.8/	304.8	20/	/	21	0.3	2 6.80	13.	44 2	1.18	0.00	) (	0.0	0.10
Hours From Act-Cat		/	/	,	/	/			1										
Hours From Act-Cat			Τ.,			<del>. ′</del>			,									<u> </u>	
2.00 0000 02 - 25 RH W/ BACK UP SCHLUM PEK TOOLSTRING - RUN #3 & RECORD WAIN LOG F/ 2000 - 1590M. RESTONSE AS PER REVIOUS RUN.  1.00 0200 02 - 25 POU & MUU READ S-LEVEL DELITA VSP TOOLSTRING & CHANGE CABLE HEAD FOR READ VSP RUN.  3.00 0430 02 - 25 PUW & MUU READ S-LEVEL DELITA VSP TOOLSTRING - 2400M & 3200M. TOOL STOOD UP @ 2060M - FREED W/ 2000LB O/PULL.  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUN LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUN LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  1.50 074 075 075 075 075 075 075 075 075 075 075	Survey MD																		
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2.00 0000 02 - 25 RH W/ BACK UP SCHLUM PEK TOOLSTRING - RUN #3 & RECORD WAIN LOG F/ 2000 - 1590M. RESTONSE AS PER REVIOUS RUN.  1.00 0200 02 - 25 POU & MUU READ S-LEVEL DELITA VSP TOOLSTRING & CHANGE CABLE HEAD FOR READ VSP RUN.  3.00 0430 02 - 25 PUW & MUU READ S-LEVEL DELITA VSP TOOLSTRING - 2400M & 3200M. TOOL STOOD UP @ 2060M - FREED W/ 2000LB O/PULL.  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUN LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUN LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  0.50 0730 02 - 25 TOOLSTRING STOCK @ 3400M. WORK STRING W/ MUX LINE PULL OF TOOLSE (NUMBAL LOGSING TENSION - 3400LB).  1.50 074 075 075 075 075 075 075 075 075 075 075																			
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1.00   020   02 - 25   FOCH & L/O BACK UP SCHLIM FEX TOOLSTRING & CHANGE CABLE HEAD FOR READ VSP RUN.  1.50   0300   02 - 25   FVU & M/U READ 8-LEVEL DELTA VSP TOOLSTRING.  3.00   0430   02 - 25   RI W/ READ VSP TOOLSTRING TAKING CHECKSHOTS @ 2400M & 3200M. TOOL STOOD UP @ 2060M - FREED W/ 2000LB O/PULL.  0.50   0730   02 - 25   TOOLSTRING FIRE. CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  0.501   0800   02 - 25   TOOLSTRING FREE. CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  1.501   0300   02 - 25   TOOLSTRING FREE. CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  1.501   0300   02 - 25   TOOLSTRING FREE. CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  2.501   1300   02 - 25   TOOLSTRING FREE CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  2.501   1300   02 - 25   TOOLSTRING FREE CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  2.501   1300   02 - 25   TOOLSTRING FREE CONT TO FOCH @ 4000 FIVER. TOOK 2000LB & 2600LB O/PULLS @ 3346M & 3107M RESPECTIVELY.  2.501   1300   02 - 25   TOOLSTRING FREE MILE HOLDING 7000LBS ILINE FULL. COMMUNICATION W/ ITOOLSTRING CONFIRMED, FOCH TO SURFACE.  1.501   1300   02 - 25   TOOLSTRING FREED WHILE HOLDING 7000LBS LINE FULL. COMMUNICATION W/ TOOLSTRING CONFIRMED, FOCH TO SURFACE.  1.501   1300   02 - 25   TOOLSTRING FREED WHILE HOLDING 7000LBS LINE FULL. COMMUNICATION W/ TOOLSTRING CONFIRMED, FOCH TO SURFACE.  1.501   1300   02 - 25   TOOLSTRING FREED WHILE HOLDING 7000LBS LINE FULL COMMUNICATION W/ TOOLSTRING CONFIRMED, FOCH TO SURFACE.  1.501   1300   02 - 25   TOOLSTRING FREED WHILE HOLDING 7000LBS LINE FULL COMMUNICATION W/ TOOLSTRING CONFIRMED, FOCH TO SURFACE.  1.501   1300   02 - 25   TOOLSTRING FREED WHILE HOLDING 7000LBS LINE FULL FULL FULL FULL FULL FULL LINE.  2.501   1300   02 - 25   TOOLSTRING FREED WHILE HOLDING 7000LBS LINE FULL FU	Hours From																		
1.50 0300 02-25 F/U & M/U READ 8-LEVEL DELTA VSP TOOLSTRING. 3.00 0430 02-25 F/H W/ READ VSP TOOLSTRING TAKING CHECKSHOTS @ 2400M & 3200M. TOOL STOCKING W 1500 - 3000LB O/PULLS TO FREE. 1.007 0800 02-25 TOOLSTRING STUCK @ 3403M. NORK STRING W MX LINE PULL OF 7000LBS (NORMAL LOGSING TERSION - 3400LBS). 0.507 0800 02-25 TOOLSTRING STUCK @ 3403M. NORK STRING W MX LINE PULL OF 7000LBS (NORMAL LOGSING TERSION - 3400LBS). 0.507 0800 02-25 TOOLSTRING FREE. CONT TO FOOD @ 4000 FT/HR. TOOK 2000LB & 2600LB O/FULLS @ 3446M & 3107M RESPECTIVELY.  3.507 0800 02-25 TOOLSTRING SABLEHEAD STUCK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEPTHS). NORK STRING W/ MXA LINE PULL DEPTHS (ABLEHEAD STUCK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEPTHS). NORK STRING W/ MXA LINE PULL DEPTHS (ABLEHEAD STUCK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEPTHS). NORK STRING W/ MXA LINE PULL DEPTHS (ABLEHEAD STUCK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEPTHS). NORK STRING W/ MXA LINE PULL DEPTHS (ABLEHEAD STUCK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEPTHS). NORK STRING W/ MXA LINE PULL DEPTHS (ABLEHEAD STRING CONFIRMED, POCH TO SURFACE.  2.507 1300 02-25 TOOLSTRING FREED WILLE HOLDING 7000LBS LINE PULL COMMUNICATION W/ TOOLSTRING CONFIRMED, POCH TO SURFACE.  1.507 1500 02-25 L/O READ 8-LEVEL LELTA VSP TOOLSTRING, NO GEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.507 1700 02-05 M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M, FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  1.007 12300 02-05 TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M, FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  24 Hr Summary: P/U & RH VSP TOOLSTRING. TOOL SUCK WHILE ATTEMPTING TO CORRELATE. FOOH W/ VSP STRING & TIH W/ NIPER TRIP ASSY.  PROJECTED OPERATIONS: THE TOT TO TO. CIRC & COND MID & FOOH. R/U & RUN VSP & REMAINING WIRELINE LOSS.  ROBARCE: ROBARCE: P/U & P/U & RUN VSP & REMAINING WIRELINE LOSS.  PROJECTED OPERATIONS: THE TOT TO CIRC & COND MID & FOOH. R/U & RUN VSP & REMAINING WIRELINE LOSS.  PROJECTED OPERATIONS: T	2.00 0000	02 - 2	5 RIH	W/ BAC	K UP SCH	LUM PEZ	X TOOL	STRING	3 - RU	I & C# I/I	RECORD	MAIN LOG	F/ 200	00 - 15	90M.R	ESPON	SE AS P	ER PREV	JIOUS RUN.
3.00 0430 02 -25 RIH WY READ VSP TOOLSTRING TAKING CHECKSHOTS @ 2400M & 3200M. TOOL STOOD UP @ 2060M - FREED W/ 2000LB O/PULL.  0.50 0730 02 -25 ATTEMET TO RECORD GR CORRELATION X 2 F/ 3450 - 3390M - NO GO. TOOL STICKING W/ 1500 - 3000LB O/PULLS TO FREE.  1.007 0800 02 -25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NDRMAL LOGGING TERSION - 3400LBS).  0.507 0900 02 -25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NDRMAL LOGGING TERSION - 3400LBS).  3.507 0930 02 -25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NDRMAL LOGGING TERSION - 3400LBS).  0.507 1300 02 -25 TOOLSTRING STEEL DELTA VSD TOOLSTRING STOOLS (NDRMAL LOGGING TERSION - 3400LBS).  2.507 1300 02 -25 TOOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.  1.507 1500 02 -25 LO READ 8-LEVEL DELTA VSD TOOLSTRING. NO GEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.507 1700 02 -05 M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  1.0012300 02 -21 SLEP & CUT DRILL LINE.  0.507 2300 02 -05 TIH W 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  3.6645Y: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 His Summary: P/U & RIH VSD TOOLSTRING, TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP BASY.  POSSICIOUS OPERATIONS: TOOL STEEK WIND A FROM RSH DOWN GUN.  24 FIR Summary: P/U & RIH VSD TOOLSTRING, TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP BASY.  POSSICIOUS OPERATIONS: TOOL STEEK WIND A FROM RSH DOWN GUN.  24 FIR Summary: P/U & RIH VSD TOOLSTRING, TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP BASY.  POSSICIOUS OPERATIONS: TOOL STEEK & COND MUD & ROOM. RIU & RIN VSP & REMAINING WIRELINE LOGS.  25 AND AND A ROOM RSH CIRC & COND MUD & 3660M.  25 AND A ROOM RSH CIRC & COND MUD & 3660M.  25 AND A ROOM RSH CIRC & COND MUD & 3660M.	1.00 0200	02 - 2	5 POOH	H & L/C	BACK UP	SCHLUI	M PEX	TOOLSI	RING	& CHANG	CABLE	HEAD FO	R READ	VSP RU	IN.				
3.00 0430 02 -25 RIH WY READ VSP TOOLSTRING TAKING CHECKSHOTS @ 2400M & 3200M. TOOL STOOD UP @ 2060M - FREED W/ 2000LB O/PULL.  0.50 0730 02 -25 ATTEMET TO RECORD GR CORRELATION X 2 F/ 3450 - 3390M - NO GO. TOOL STICKING W/ 1500 - 3000LB O/PULLS TO FREE.  1.007 0800 02 -25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NDRMAL LOGGING TERSION - 3400LBS).  0.507 0900 02 -25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NDRMAL LOGGING TERSION - 3400LBS).  3.507 0930 02 -25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NDRMAL LOGGING TERSION - 3400LBS).  0.507 1300 02 -25 TOOLSTRING STEEL DELTA VSD TOOLSTRING STOOLS (NDRMAL LOGGING TERSION - 3400LBS).  2.507 1300 02 -25 TOOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.  1.507 1500 02 -25 LO READ 8-LEVEL DELTA VSD TOOLSTRING. NO GEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.507 1700 02 -05 M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  1.0012300 02 -21 SLEP & CUT DRILL LINE.  0.507 2300 02 -05 TIH W 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  3.6645Y: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 His Summary: P/U & RIH VSD TOOLSTRING, TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP BASY.  POSSICIOUS OPERATIONS: TOOL STEEK WIND A FROM RSH DOWN GUN.  24 FIR Summary: P/U & RIH VSD TOOLSTRING, TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP BASY.  POSSICIOUS OPERATIONS: TOOL STEEK WIND A FROM RSH DOWN GUN.  24 FIR Summary: P/U & RIH VSD TOOLSTRING, TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP BASY.  POSSICIOUS OPERATIONS: TOOL STEEK & COND MUD & ROOM. RIU & RIN VSP & REMAINING WIRELINE LOGS.  25 AND AND A ROOM RSH CIRC & COND MUD & 3660M.  25 AND A ROOM RSH CIRC & COND MUD & 3660M.  25 AND A ROOM RSH CIRC & COND MUD & 3660M.	1 50 0300	02 - 2	E D/II	& M/II	READ 8-I	FVFT. DI	רד.πα τ	TOD TOO	ו פרדיים. זו	NG									
0.90 0730 02 - 25 ATTEMPT TO RECORD GR CORRELATION X 2 F/ 3450 - 3390M - NO GO. TOOL STICKING W/ 1500 - 3000LB 0/FULLS TO FREE.  1.007 0800 02 - 25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE PULL OF 7000LBS (NORMAL LOGGING TENSION - 3400LBS).  0.507 0900 02 - 25 TOOLSTRING FREE. CONT TO POOH @ 4000 FT/HR. TOOK 2000LB & 2600LB 0/FULLS @ 3346M & 3107M RESPECTIVELY.  3.507 0930 02 - 25 TOOLSTRING CABLEHEAD STUCK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEPTHS). WORK STRING W/ MAX LINE PULL  0.2 - 25 F 7000LBS. FIRE AIR GIN & MONITOR SIGNAL IN ATTEMPT TO DETERMINE STUCK POINT.  2.507 1300 02 - 25 TOOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL. COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.  1.507 1500 02 - 25 L/O READ 8-LEVEL DELTA VSP TOOLSTRING. NO CEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.507 1700 02 - 05 M/U & TIH W/ 8.1/2" WIFER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RFM, 323 LPM EVERY 20 STD.  1.00 2130 02 - 21 SIJP & CUT DRILL LINE.  0.507 2230 02 - 01 CIRC & COND MID @ SHOE W/ UP TO 2010 LEM, 151 BAR, 112 RFM, 8000 N.M TORQ.  1.007 2300 02 - 05 TIH W/ 8.1/2" WIFER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RFM, 323 LPM EVERY 20 STD.  SAfety: PAINTER RECEIVED HOT MATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSECTED OPERATIONS: THE TOTAL CIRC & COND MID & FOOH. R/U & RUN VSP & REMAINING WIRELINE LOSS.  REMAINS: PGS: GHOVEON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LIT - 77  HEAVE: 0.2M, PITCH 0.4BEG, ROLL 0.5BEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COST: 2,717,083 NOK  TOTAL FE COST: 2,717,083 NOK  TOTAL FE COST: 280,00 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 280.0 Fuel: 28																			
1.0070800 02-25 TOOLSTRING STUCK @ 3403M. WORK STRING W/ MAX LINE FULL OF 7000LBS (NORMAL LOGSING TENSION - 3400LBS).  0.5070900 02-25 TOOLSTRING FREE. CONT TO POOH @ 4000 FT/HR. TOOK 2000LB & 2600LB O/FULLS @ 3346M & 3107M RESPECTIVELY.  3.5070930 02-25 TOOLSTRING CARLEHEAD STUCK @ +/-3077M, TOP GEOPHENE +/-3090M (BOTH W/LINE DEPTHS). WORK STRING W/ MAX LINE PULL 02-25 OF 7000LBS. FIRE AIR GUN & MONITOR SIGNAL IN ATTEMPT TO DETERMINE STUCK POINT.  2.5071300 02-25 TOOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL. COMMUNICATION W/ TOOLSTRING COMPINATED. POOH TO SURFACE.  1.5071530 02-25 L/O READ 8-LEVEL DELTA VSP TOOLSTRING. NO CEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.5071700 02-05 M/U & TIH W/ 8.1/2* WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RFM, 323 LFM EVERY 20 STD.  1.0012300 02-05 TIH W/ 8.1/2* WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RFM, 323 LFM EVERY 20 STD.  Safety: PAINTER RECEIVED HOT WATER HERN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSCIENT OF TOOLSTRING TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSCIENT OF TOOLSTRING TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSCIENT OF TOOLSTRING TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSCIENT OF TOOLSTRING TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  DAYS SINCE LAST LIT - 77  HERVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FUIL & 9 EMPTY).  DAILY FE COST: 2.717,083 NOK TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  DAILY FE COST: 2.717,083 NOK TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  PRINT NORMAL COST: RESP, 462  DAYS SINCE LAST LIT - 77  READER: PL259  Read Cement: 2.7.0 Blended:  PL259  Read Cement: 2.7.0 Blended:  PL259  Read Cement: 2.7.0 Blend	3.00 0430	02 - 2	5 RIH	W/ REA	D VSP TO	OLSTRII	NG TAK	ING CH	IECKSI	HOTS @ 2	& M004	3200M. T	OOL STO	OOD UP	@ 2060	M – FI	REED W/	2000LE	3 O/PULL.
0.50T1990   02-25   TOOLSTRING FREE. CONT TO POOH @ 4000 FT/HR. TOOK 2000LB & 2600LB O/FULLS @ 3346M & 3107M RESPECTIVELY.  3.50T1930   02-25   TOOLSTRING CARLEHEAD STICK @ +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEFTHS). WORK STRING W/ MAX LINE PULL   02-25   OF 7000LBS. FIRE AIR GUN & MONITOR SIGNAL IN ATTEMPT TO DETERMINE STUCK POINT.  2.50T1300   02-25   TOOLSTRING FREE WHILE HOLDING 7000LBS LINE FULL. COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.   1.50T1530   02-25   L/O READ 8-LEVEL LELITA VSP TOOLSTRING. NO GEVICUS SIGNS OF DAMAGE. R/D W/LINE.  4.50T1700   02-05   M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00   2130   02-25   SLIP & CUT DRILL LINE.  0.50T1230   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.00T12300   02-05   TIH W/ 8.1/	0.50 0730	02 - 2	5 ATTI	EMPT TO	RECORD	GR CORI	RELATI	ON X 2	2 F/ 3	3450 - 3	390M -	NO GO. T	OOL ST	ICKING	W/ 150	0 - 30	000LB 0	/PULLS	TO FREE.
3.501 0930 02 - 25 TOOLSTRING CABLEHEAD STUCK © +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEFTHS). WORK SIRING W/ MAX LINE PULL  02 - 25 OF 7000LBS. FIRE AIR GUN & MONITOR SIGNAL IN ATTEMPT TO DETERMINE STUCK POINT.  2.501 1300 02 - 25 TOOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL. COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.  1.501 1530 02 - 25 L/O READ 8-LEVEL DELTA VSP TOOLSTRING. NO GEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.501 1700 02 - 05 M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE © 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  1.00 2130 02 - 21 SLIP & CUT DRILL LINE.  0.501 2230 02 - 05 TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  Safety: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSE-CHEVRON - 5, SERVICE - 25, DCLPHIN - 53, DOLPHIN SERVICE - 9  PAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NCK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR5,187,232	1.00T 0800	02 - 2	5 T00I	LSTRING	STUCK @	3403M	. WORK	STRIN	IG W/	MAX LIN	PULL	OF 7000L	BS (NOF	RMAL LO	OGING	TENSI	ON - 34	00LBS)	
3.501 0930 02 - 25 TOOLSTRING CABLEHEAD STUCK © +/-3077M, TOP GEOPHONE +/-3090M (BOTH W/LINE DEFTHS). WORK SIRING W/ MAX LINE PULL  02 - 25 OF 7000LBS. FIRE AIR GUN & MONITOR SIGNAL IN ATTEMPT TO DETERMINE STUCK POINT.  2.501 1300 02 - 25 TOOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL. COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.  1.501 1530 02 - 25 L/O READ 8-LEVEL DELTA VSP TOOLSTRING. NO GEVIOUS SIGNS OF DAMAGE. R/D W/LINE.  4.501 1700 02 - 05 M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE © 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  1.00 2130 02 - 21 SLIP & CUT DRILL LINE.  0.501 2230 02 - 05 TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  Safety: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROSE-CHEVRON - 5, SERVICE - 25, DCLPHIN - 53, DOLPHIN SERVICE - 9  PAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NCK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR5,187,232	0 50770000	02 - 2	5 17001	CUIDING	, anda a		DOGI	e 4000	) היהי/ T	ID TOOK	2000T D	26001	D O/DIT	.10 @ 3	DAGM C	2107	M DECDE		· · · · · · · · · · · · · · · · · · ·
02 - 25    05 7000LBS. FIRE AIR GIN & MONITOR SIGNAL IN ATTEMPT TO DETERMINE STUCK FOINT.   2.50T 1300    02 - 25    TOLSTRING FREED WHILE HOLDING 7000LBS LINE PULL. COMMUNICATION W/ TOOLSTRING CONFIRMED. POOH TO SURFACE.   1.50T 1530    02 - 25    L/O READ 8-LEVEL DELTA VSP TOOLSTRING. NO CEVIOUS SIGNS OF DAMAGE. R/D W/LINE.   4.50T 1700    02 - 05    M/U & TIH W/ 8.1/2" WIFER TRIP BHA TO CSG SHOE @ 1343M. FILL PIFE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   1.007 2330    02 - 01    SLIP & CUT DRILL LINE.   1.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.   3.007 2300    02 - 05    TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FIL																			
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1.50T 1530   02 - 25		02 - 2	5 OF 7	7000LBS	S. FIRE A	IR GUN	MON &	IITOR S	GIGNAI	IN ATT	MPT TO	DETERMI	NE STUC	CK POIN	IT.				
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4.50T 1700 02 - 05 M/U & TIH W/ 8.1/2" WIPER TRIP BHA TO CSG SHOE @ 1343M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  1.00 2130 02 - 21 SLIP & CUT DRILL LINE.  0.50T 2230 02 - 01 CIRC & COND MUD @ SHOE W/ UP TO 2010 LEM, 151 BAR, 112 RPM, 8000 N.M TORQ.  1.00T 2300 02 - 05 TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  Safety: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  PROJECTED OPERATIONS: TIH TO TD. CIRC & COND MUD & POOH. R/U & RUN VSP & REMAINING WIRELINE LOGS.  Remarks: POOB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LIT - 77  HEAVE: 0.2M, PITCH 0.4LEG, ROLL 0.5DEG; CUTTING SKIRS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Wald Cost: KR58,462 Daily Tangible Cost: KR1,747,951 Cum Well Cost: KR2,717,083 Incidents: FIRST AID  Cum Mud Cost: KR58,187,232 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR106,30,943 Total Appr: KR134,000,000 Drill Water: 210.0 Potable Water: 450.0 Fuel: 280.0 Bulk Weight: 159.0 Next Cement: 227.0 Blended:  Country: NORWAY Rig: Byford DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: MOORE/BJORHEIM/MH  Field: PL259 Well NO:6506/3-1 Well ID:UB5908 -0	1.50T1530	02 - 2	5 L/O	READ 8	B-LEVEL D	ELTA V	SP TOC	LSTRIN	IG. NO	OBVIOU	SIGNS	OF DAMA	GE. R/I	O W/LIN	Œ.	_			
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0.50T 2230 02-01 CIRC & COND MID @ SHOE W/ UP TO 2010 LFM, 151 BAR, 112 RPM, 8000 N.M TORQ.  1.00T 2300 02-05 TIH W/ 8.1/2" WIPER TRIP BHA F/ 1343 - 1900M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.  Safety: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  Projected Operations: TIH TO TD. CIRC & COND MUD & POOH. R/U & RUN VSP & REMAINING WIRELINE LOGS.  Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: RR3,187,232 Cum Tangible Cost: Pali y Englished Cost: RR1,747,951 Cum Well Cost: RR106,230,943 Total Appr: RR134,000,000  Drill Water: 210.0 Potable Water: 450.0 Fuel: 280.0 Bulk Weight: 159.0 Potable Water: 227.0 Blended:  Country: Norway  Field: PL259  Well No: 6506/3-1 Well ID: UB5908 -0	4.5011700	02 - 0	5 M/U	α 11π	W/ 0.1/2	WIPEI	K IKIF	DIA I	.0 630	F SHOE @	1343M.	LIDD BI	PE & DI	KEAK CI	.RC W/	120 K	PM, 343	LIPIN EV	/ERI ZU SID.
1.001 230 0 2-05 TH W / 8.1/2" WIPER TRIP BHA F / 1343 - 1900M. FILL PIPE & BREAK CIRC W / 120 RPM, 323 LPM EVERY 20 STD.  Safety:  PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VS TOLSTRING. TOLSTRUCK WHILE ATTEMPTING TO CORRELATE. POCH W / VSF STRING & THH W / NIPER TRIP ASSY.  Projected Operations: TH TO TD. CIRC & COND MUD & POCH. R/U & RUN VSF & REMAINING WIRELINE LOGS.  Remarks: POS: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LIT - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  103:30 HRS: CIRC & COND MUD & 3660M.  Paily Mud Cost: KR58,462  Daily Tangible Cost: KR1,747,951  Cum Muld Cost: KR3,187,232  Cum Tangible Cost: KR1,747,951  Cum Well Cost: KR106,230,943  Field: PL259  Rig Phone: 52 88 03 35  Drilling Rep: MOORE/BURNHIM/HH  Well No: 6506/3-1  Well ID: UB5908 -0	1.00 2130	02 - 2	1 SLII	e CUI	DRILL L	INE.													
Safety: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  Projected Operations: TIH TO TD. CIRC & COND MUD & POOH. R/U & RUN VSP & REMAINING WIRELINE LOGS.  Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462  Daily Tangible Cost: R1,747,951  Daily Well Cost: R2,0717,083  Drill Water: 210.0  Potable Water: 450.0  Fuel: 280.0  Rig Phone: 52 88 03 35  Drilling Rep: NOORE/BJORHEIM/MH  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0	0.50T2230	02 - 0	1 CIRO	C & CON	ID MUD @	SHOE W	/UPI	O 2010	LPM,	151 BA	2, 112	RPM, 800	0 N.M T	rorq.					
Safety: PAINTER RECEIVED HOT WATER BURN TO NECK FROM WASH DOWN GUN.  24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POOH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  Projected Operations: TIH TO TD. CIRC & COND MUD & POOH. R/U & RUN VSP & REMAINING WIRELINE LOGS.  Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462  Daily Tangible Cost: R1,747,951  Daily Well Cost: R2,0717,083  Drill Water: 210.0  Potable Water: 450.0  Fuel: 280.0  Rig Phone: 52 88 03 35  Drilling Rep: NOORE/BJORHEIM/MH  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0	1.00T2300	0 02 - 0	5 TIH	W/ 8.1	/2" WIPE	R TRIP	BHA F	'/ 1343	3 - 19	00M. FI	L PIPE	& BREAK	CIRC V	v/ 120	RPM, 3	23 LPI	M EVERY	20 STI	o.
24 Hr Summary: P/U & RIH VSP TOOLSTRING. TOOL STUCK WHILE ATTEMPTING TO CORRELATE. POCH W/ VSP STRING & TIH W/ WIPER TRIP ASSY.  Projected Operations: TIH TO TD. CIRC & COND MUD & POOH. R/U & RUN VSP & REMAINING WIRELINE LOGS.  Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462  Daily Tangible Cost: Daily Well Cost: KR2,717,083  Daily Well Cost: KR106,230,943  Total Appr: KR134,000,000  Drill Water: 210.0  Potable Water: 450.0  Fuel: 280.0  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: MOORE/BJORHEIM/MH  Field: PL259  Mell No: 6506/3-1  Well ID: UB5908 -0			_												, ,			.,	
Projected Operations: THE TO TD. CIRC & COND MUD & POOH. R/U & RUN VSP & REMAINING WIRELINE LOSS.  Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  Daily Mud Cost: KR58,462  Daily Tangible Cost: Daily Well Cost: RR2,717,083  Daily Mud Cost: RR3,187,232  Cum Tangible Cost: RR1,747,951  Cum Well Cost: RR106,230,943  Total Appr: RR134,000,000  Potal Water: 210.0  Potal Water: 210.0  Potal Water: 210.0  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: MOORE/BJCHEIM/MH  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 - 0	24 Un Cime	TATEK P	œŒ1V	파 HOI,	WAIER B	OLL NEW	INECK .	rkum W	дон D	UMIN GUIN.									
Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462  Daily Tangible Cost: KR1,747,951  Cum Mud Cost: KR3,187,232  Cum Tangible Cost: KR1,747,951  Daily Well Cost: KR106,230,943  Total Appr: KR134,000,000  Drill Water: 210.0  Potable Water: 450.0  Fuel: 280.0  Rig: Phone: 52 88 03 35  Drilling Rep: MOORE/BJORHEIM/MH  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0																G & TI	H W/W	IPER TR	IP ASSY.
Remarks: POB: CHEVRON - 5, SERVICE - 25, DOLPHIN - 53, DOLPHIN SERVICE - 9  DAYS SINCE LAST LTI - 77  HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK  TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462  Daily Tangible Cost: KR1,747,951  Cum Mud Cost: KR3,187,232  Cum Tangible Cost: KR1,747,951  Daily Well Cost: KR106,230,943  Total Appr: KR134,000,000  Drill Water: 210.0  Potable Water: 450.0  Fuel: 280.0  Rig: Phone: 52 88 03 35  Drilling Rep: MOORE/BJORHEIM/MH  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0	Projected	Operati	ons:	OT HIT	TD. CIRC	C & CON	ND MUD	& POO	H. R/	U & RUN	VSP & I	REMAININ	G WIREL	INE LO	GS.				
HEAVE: 0.2M, PITCH 0.4DEG, ROLL 0.5DEG; CUTTING SKIPS ON BOARD: 12 (3 FULL & 9 EMPTY).  DAILY FE COST: 2,717,083 NOK TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462 Daily Tangible Cost: Daily Well Cost: KR2,717,083 Incidents: FIRST AID  Cum Mud Cost: KR58,462 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR106,230,943 Total Appr: KR134,000,000 Poill Water: 210.0 Potable Water: 450.0 Fuel: 280.0 Bulk Weight: 159.0 Neat Cement: 227.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: MOORE/BJORHEIM/MH  Field: PL259 Well No:6506/3-1 Well ID: UB5908 -0	Remarks:															-	ידי אַעע	NCE TAC	ا 10 – 10 الله الله الله الله الله الله الله الل
DAILY FE COST: 2,717,083 NOK TOTAL FE COSTS: 22,537,269 NOK  05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58,462 Daily Tangible Cost: Daily Well Cost: KR2,717,083 Incidents: FIRST AID  Cum Mud Cost: KR3,187,232 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR106,230,943 Total Appr: KR134,000,000 Drill Water: 210.0 Potable Water: 450.0 Fuel: 280.0 Bulk Weight: 159.0 Neat Cement: 227.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: MOORE/BJCHEIM/MH  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0																L	TIC OTT	ACE LIAS	·* TIT - \/
05:30 HRS: CIRC & COND MUD @ 3660M.  Daily Mud Cost: KR58, 462   Daily Tangible Cost:   Daily Well Cost: KR2,717,083   Incidents: FIRST AID  Cum Mud Cost: KR3,187,232   Cum Tangible Cost: KR1,747,951   Cum Well Cost: KR106,230,943   Total Appr: KR134,000,000   Cum Vell Water: 210.0   Potale Water: 450.0   Fuel: 280.0   Bulk Weight: 159.0   Neat Cement: 227.0   Blended: Cuntry: NORWAY   Rig Phone: 52 88 03 35   Drilling Rep: MOORE/BJORNEIM/MH   Field: PL259   Well No:6506/3-1   Well ID: UB5908 -0	HEAVE: 0.	ZM, PI	CH 0.	4DEG, 1	KULL 0.51	DEG; CU	J'I"I'ING	SKIPS	ON B	UARD: 12	(3 FU	⊥ь & 9 Eĭ	MPIY).						
Daily Mud Cost: $_{KR58,462}$ Daily Tangible Cost: $_{KR1,747,951}$ Daily Well Cost: $_{KR2,717,083}$ Daily Tangible Cost: $_{KR106,230,943}$ Total Appr: $_{KR134,000,000}$ Drill Water: $_{210.0}$ Potale Water: $_{450.0}$ Fuel: $_{280.0}$ Bulk Weight: $_{159.0}$ Neat Cement: $_{227.0}$ Blended: Country: $_{NORWAY}$ Rig: $_{8YFORD}$ DOLPHIN Rig: $_{9L259}$ Rig: $_{9L259}$ Well No: $_{6506/3-1}$ Well ID: $_{UB5908}$ -0	DAILY FE C	OST: 2,	717,0	183 NOK		TOTA	AL FE	COSTS:	22,	537,269	NOK								
Cum Mud Cost: KR3,187,232       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR106,230,943       Total Appr: KR134,000,000       Drill Water: Logo W	05:30 HRS:	CIRC 8	CONE	MUD @	3660M.														
Cum Mud Cost: KR3,187,232       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR106,230,943       Total Appr: KR134,000,000       Drill Water: 210.0       Potal: 280.0       Bulk Weight: 159.0       Neat Cement: 227.0       Blended: NOORE/BJORHEIM/MH         Country: NORWAY       Rig: BYFORD DOLPHIN       Rig: BYFORD DOLPHIN       Well No: 6506/3-1       Well ID: UB5908 -0	Daily Mud	Cost: 1	TR 58 4	62 Da	aily Tang	gible C	Cost:			Daily We	ell Cos	t: <sub>KP2 71'</sub>	7 . 0.83	Incid	ents:	FTRS	T AID		
Drill Water: 210.0       Potable Water: 450.0       Fuel: 280.0       Bulk Weight: 159.0       Noat Cement: 227.0       Blended: 227.0         Country: NORWAY       Rig: BYFORD DOLPHIN       Rig Phone: 52 88 03 35       Drilling Rep: MOORE/BJORHEIM/MH         Field: PL259       Well No: 6506/3-1       Well ID: UB5908 -0					um Tangih	ole Cos		1 -:-											
Country:         NORWAY         Rig:         BYFORD DOLPHIN         Rig Phone:         52 88 03 35         Drilling Rep:         MOORE/BJORHEIM/MH           Field:         PL259         Well No:         6506/3-1         Well ID:         UB5908 -0							_			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		KRIU6,							1.
Field: PL259 Well No:6506/3-1 Well ID:UB5908 -0				rotable	e Water:										eat Cen	ent:	227.0		
Field: PL259 Well No:6506/3-1 Well ID:UB5908 -0	Country:	ORWAY				Ri	g: BYF	ORD DO:	LPHIN		Rig	Phone: 52	88 03	35	Drill	ing Re	ep: MOO	RE/BJOR	HEIM/MH
	Field: pr.2	59													-1				
					AP					AFE No	: KWF:NO				•	11 – ATI			

Measured	Denth:			TVD:			DD	BTD:		Dagge	and M	٠.		Drr	posed		_
			667.0 m			.4 m	PB		0.0		sed MD		3625.0	m			3625.0 m
DOL: 2		DFS: 2		Spud Date: 22						e: 0.		ally Ro	ot Hrs:		Total	Rot Hr	rs: 117.5
Torq: 800	00 Dra	ng: 4.	.o Rot	Wgt: 134.0 P/	/U Wgt:	138.0	Slad	k Off Wgt	: 134.	0 Wind:	4	Seas	: 1.0	/ 2.0	Bar:	748	POB: 92
Last Casi	ng Size	:	339	.7 mm Set A	<b>\t</b> :	1374	.3m	MD	13'	72.1m	TVD	Shoe '	Test:	1841	EMW	Leako	ff? Y
Cum Rot H	rs On C	asing:	134	Cum Rot Hr	s On C	asing Si	nce :				Depth		Wear:			emainir	ng:
Liner Siz	e:			Set At:	0.0				· TD	Lir	l ner Top	o At:					
		0.0			0.0			0.0 T						0 MD		1	0.0 TVD
Mud Co: <sub>M-</sub>				Type: MINERAL			~ 1										7 / 9
WL API				FC (mm) API			Sol:	ids: 23.8	0 8 0								Ph:
Pm: 0.00	Pf/Mi	0.00	/0.00	Carb:	cl: 32,	500 Ca:		Bent	:	Solids	%HG/I	G: 18.	40/5.	40 81	OS/Bent	:	/
50 1K	G OTHE	.R.	35					1KG CAC	ARB FIN				ARB MEI		.00 1	KG CA	CHLOR 88%
Drlg Gas:		Max (	ac:	Conn Gas:	7	rip Gas	,	ТΥ	ip Cl:	Re	marke:						
Ding Gas.	0	TELL (		0		TIP Gas	0					MAX G	AS DUR	ING B/1	U - 6.4		2100M.
Bit Numbe	r IADC	Si	ze Ma	anufacturer	Seria	l number				ntity -		,	TFA	_	) In	MD Out	TVD Out
9 RR-	1 M333	215	5.9	HUCHES	03	23129	4 -	-15.9/ -	0.0/	- 0.0/	- 0.0/	- 0.0	792.	3 366	7.0 m	3667.0	m 3662.4 m
								- / -	/_	- /	- /		0				
Type	Me	ters	Hours	s WOB	RE	PM	Mot	or RPM	I-Row	O-Row	$\mathbb{DC}$	Loc	В	G	Char	?Pull	Cost/m
BD445H	A	0.0	0.0	0.0/0.0	120	,			1	1	WT	XA	Х	I	BT	TD	0.00
				,		,											
Total Len	ath of	BHY.	0.5.5	BHA Descr	iption:	0 1/0"	י אם	AEUN DOC	מדייי י	VID CILIA	(0/17	5.1 ∪v.u.,	_ 6 1 /	211 120	_ 0 1	7) II CITTO	באוכן כידוא די
									<u>ы</u>	IND STAR	(C/W I	· LUAI )	- 0.1/	2 DC	- 0.1/	2 SIK	TAG STAD
- 5 X 6.	1/2" D	: - 12	х 5" Н	WDP - 6.1/2"	JARS -	8 X 5"	HWDP			T	_		T	~ ·			
	Hrs On Jars: 174.7 Hours Since Last Inspection: 174.7  Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW EHHP/SQIN Pump kW  9 RR-1 152 / 152 / 152 304.8 / 304.8 / 304.8 74 / 75 / 280 2.40 50.47 100.25 157.89 0.00 0.0 11.30																
Bit Num	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1																
9 RR-1	152 /	152 /	152	304.8/304.8	/304.8	74/75	/	280	2.40	50.47	100.	25 15	57.89	0.00	(	0.0	11.30
	/	/	'	/ /	/	/	/										
Survey MD																	
3000107 12																	
	rvey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																
	rvey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																
Hours Fra																	
3.00T000	3.00T 0000 02 - 05 CONT TIH W/ 8.1/2" WIPER TRIP BHA F/ 1900 - 3600M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.																
1 00T 030	3.00T 0000 02 - 05 CONT TIH W/ 8.1/2" WIPER TRIP BHA F/ 1900 - 3600M. FILL PIPE & BREAK CIRC W/ 120 RPM, 323 LPM EVERY 20 STD.																
2.001030																	
				LE W/ 650 LPM													
3.001040	0 02 - 0	1 CIRC	2.5 X	BTMS UP WHII	LE WORK	LNG S'IND	F'/ .	3665 - 36	48M W/	2400 LF	м, 280	BAR,	120 RP	М, 600	0 - 70	00 N.M	TORQ.
	02 - 0	1 MAX	GAS PE	AK OF 6.4% SE	EN FROI	M +/- 21	00M.	MAX GAS	PEAK @	BTMS UP	9 - 5%.	BOOST	RISER	AFTER	BTMS	UP.	
	02 - 0	1 TOT2	AL OF 1	.4MT OF CUTTI	NGS RE	COVERED :	F/ H	OLE DURIN	G CIRC	JLATING	PERIOD	).					
1.00T070	0 02 - 0	5 TAKE	E SCR'S	& FLUSH CHOK	Œ & KI	LL LINES	. F/0	CHECK - S	STATIC.	PULL 2	STDS W	ET TO	3616M	W/OUT	PROBLE	Μ.	
1.00T080	0 02 - 2	0 MAIN	N HYD H	OSE BURST ON	UPPER I	FINGERBO.	ARD I	RACKING A	RM. CII	RC W/ 23	50 LPM	1, 266	BAR, 1	20 RPM	1 WHILE	REPLAC	CE SAME.
1.50т090	0 02 - 0	1 TRII	P BACK	IN HOLE 2 STI	YS & TA	TD @ 3	667M	- NO FTI	J. CON	r TO CTR	C W/ 2	2350 T.E	M. 166	BAR.	120 RP	M WHTLE	. WORKING
1202,000				47 - 3666M. I									-	-			
0. 5051.03	1	_						TOTED WI		1110 1111	DER DO	21. 200	,61 1(16)			DERC BOX	1 HOLLIN OI
				STATIC. PULL													
1.50T 110	0 02 - 0	5 F/CI	HECK -	STATIC. PUMP	4.2M3,	1.85SG	SLUG	& POOH F	'/ 3530	- 2902M	I. NO E	XCESS	DRAG O	R OVER	PULLS.		
0.50T123	0 02 - 2	0 BOLT	r & WAS	HER F/ TOP DE	RIVE BE	LL GUIDE	WORL	KED LOOSE	& FELI	L. BOLT	LANDED	ON UP	PER AR	M & WA	SHER H	IT DOG	HOUSE ROOF
	02 - 2	0 WINI	OOW CAU	SING IT TO CF	RACK. SI	HUT DOWN	OPE	RATIONS &	INVES.	rigate s	AME.						
Safety: BO	OLT & W.	ASHER	FROM TO	OP DRIVE BELL	GUIDE	WORKED I	LOOSE	C & FELL.	BOLT I	ANDED O	N UPPE	R ARM,	WASHER	R HIT I	DOG ROO	OF WIND	OW.
24 Hr Sum	mary: T	ІН ТО	TD. CIF	RC HOLE CLEAN	& CONI	MUD. PO	OΗ,	R/U SCHL	UM W/LI	NE & RII	H W/ M	DT. CO	MMENCE	TAKIN	G PRE-	rest pr	ESSURES.
				OT FLUID SAMP													
Remarks:												~~~ 1 AAL					
				25, DOLPHIN										D	AYS SIN	NCE LAS	T LTI - 78
HEAVE: 0	.2M, PI	TCH 0.	5DEG, F	ROLL 0.6DEG;	CUTTING	SKIPS (	ON BC	DARD: 24	(4 FULL	& 20 E	MPTY).						
DAILY FE	COST: 2	,705,0	18 NOK	TO	TAL FE	COSTS:	25,2	242,287 N	OK								
05:30 HRS	: TAKIN	G MDT	FLUID S	SAMPLE @ 3091	.2M.												
Daily Mud	Cost:	KR 58 , 4	62 Da	ily Tangible	Cost:		Ι	Daily Wel	l Cost	KR2,705	,018	Incid	ents:	NEAR	MISS		
Cum Mud C				m Tangible Co	ost: "	21.747 0		Cum Well		KR108,9		Total	Appr:	KD13¼	.,000 0	00	
Drill Wat				Water: 435.0		el: 266.				Weight:			eat Cem			Blende	ed:
												) [···	Drill	ing Re	12/.U p:		
Country:	NORWAY					ORD DOLE	MIH			hone: 52		35		٠, ١٠٠			HEIM/MH
Field: PL	259				se: <sub>PL25</sub>			1				5506/3-					UB5908 -0
I				API No:	6506/3	3-1		AFE No:	KWENO-	650631-0	001		Date:	12-AU	7-2001	Page	: 1 Of 2

Measur	red D	epth:	3667.	0 m	TVD:	3662.4	1 m	PBT	TD:	0.0	Prop	osed MD	): 3	625.0	m Pro	posed	TVD:	3625.0	O m
DOL:	27	Di	FS: 22	Spu	d Date: 22	-JUL-2001	L		Daily	Footage	e: 0	.0 Da	aily Ro				Rot Hr	s: 117	7.5
Torq:	8000	Drag	g: 4.0 R	ot Wg	t: <sub>134.0</sub> P	/U Wgt: <sub>1</sub>	.38.0 S	lack	Off Wgt	: 134.0			Seas:	1.0	/ 2.0	Bar:	748	POB:	92
-		g Size:	<u> </u>	339.71	Set :		1374.				72.1m		Shoe T				Leako	ff?	Y
Cum Ro	t Hr	s On Ca	eina:		Cum Rot H	rs On Cas					2.1		Worst				emainir		_
Liner	Size	;	0.0		et At:	0.0	MD		0.0 T	VD	Li	iner Top	At:	0	0 MD			0.0	I.AD
Mud Co	): <sub>M T</sub>	NORŒ.		Typ	e: <sub>MINERAL</sub>					le From	: DTT	Wt.: 160	) FV: 1				5 Gel:		
WL	I <sub>N</sub> I-T	NORGE .	A.S.					Soli	ds:			00 Wate						Ph:	9
Dm:		0.0 Pf/Mf:	HTHP: 2.	.5 	arb:	[: 0.0 HTH 리:			23.8 Bent		Solid	s %HG/I	27.0	00	1.5	60   S/Bent	:		
0	.00	2 27 112	0.00 / 0	0.00		Cl: 32,50	00				50114		18.4	10/5.	40	<i>D</i> , <i>D</i> 0110		/	
						<u> </u>			-	' al.	1_								
Drlg G	as:	0	Max Gas:	0	Conn Gas:	Tr	ip Gas:	0	Tr	ip Cl:	R	emarks:	MAX GA	AS DUR	ING B/U	J - 6.	4% FROM	2100M	
Bit Nu	mber	IADC	Size	Manu	facturer	Serial	number		Jets	(Quar	tity -	Size)	,	TFA	ME.	In	MD Out	TVD	Out
-				-				-			<u>    /                                </u>	- /	<u> </u>	0					
		1		<u> </u>				_	/ -	· / ·	- /	- /	′ –	0			1	<u> </u>	
T	ype	Met	ers Ho	urs	WOB	RPM		Moto	or RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost	/m
					/	/													
					/	/													
Total	Leng	th of B	HA: 253.	66 m	BHA Descr	iption:	8.1/2"	BD44	SHA PDC	BIT - I	NB STAE	B (C/W I	FLOAT)	- 6.1/	'2" DC	- 8.1/	2" STR	ING STA	ΔB
- 5	x 6.1	/2" DC	- 12 X 5	" HWD	P - 6.1/2"	JARS - 8	Х 5" Н	WDP											
Hrs On Jars: 174.7 Hours Since Last Inspection: 174.7  Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW																			
Bit Nu																			
		/	/		/	/	/ /												
	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																		
Survey	MD	Angle	Azimuth	n D	irection	TVD		N/S	Coordina	ates	E/W (	Coordin	ates	Vert	ical Se	ction		DLS	
	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																		
	Hours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0																		
Нолж	Erom	7 orth Class	_	_	O-2	iona Gora		I IIo.	Dodi		مام المام ا	_			Mot o	1 110	a Dames	± ad • 1	24 0
	4.50T 1300 02 - 05 CONT TO POOH F/ 2902M TO SURFACE. F/CHECK @ SHOE & BOP - BOTH STATIC.																		
2.00						· · · · · · · · · · · · · · · · · · ·													STAR)
1.50					MDT TOOL														
2.50					TW/MDTF														
0.50	2330	02 - 25	RE-CORRI	ELATE	& ATTEMPT	TO TAKE	FLUID S.	AMPL:	E @ 1673	BM & 167	'3.5M (	W/LINE	DEPTH)	- NO	GO (SL	OW PRE	SS BUII	D UP).	
		02 - 25	-																
		02 - 25	NOTE: BI	LUE PO	DD PILOT HO	OSE CONTR	OLLING	CLOS	E FUNCTI	ON ON I	OWER I	NNER CH	OKE LEA	AKING.					
		02 - 25	F	UNCTIO	ON PLACED :	IN BLOCK	POSITIO	N.											
		-																	
		-																	
		-	1																
		-	1																
		-																	
		-	1																
		-																	
Safety	BOI	T & WA	SHER FROM	TOP	DRIVE BELL	GUIDE WO	ORKED LO	OSE	& FELL.	BOLT L	ANDED (	ON UPPE	R ARM,	WASHE	RHITI	OG ROO	OF WIND	. WC	]
24 Hr	Summe	ary: TI	H TO TD.	CIRC :	HOLE CLEAN	& COND N	MUD. POO	)H, F	R/U SCHL	UM W/LI	NE & R	IH W/ M	DT. COM	MENCE	TAKIN	PRE-T	TEST PR	ESSURES	S.
					FLUID SAME														
Remark	s:																		
Dailv	Mud (	Cost: ,,	R 58 , 462	Dail	y Tangible	Cost:		Da	aily Wel	.1 Cost:	7D) 70	5 N10	Incide	nte.	NEAR	MLGG			
					Tangible C														
			,245,694						um Well								00 Blende	.d:	
		r: 190.	0 Pola	mic M	ater: 435.		200.0					t: 159.0	) [100	Dri 11	ent: 2	27.0 o:			
Countr	<sup>1</sup> N	ORWAY				Rig: BYFOR	D DOLPH	IIN		Mag Pl		2 88 03	35				RE/BJOR		
Field:	PL25	59				se: <sub>PL259</sub>			3 DT			11 No:	-				11 ID: <sub>[</sub>		
					API No	: 6506/3-1	L		AFE No:	KWENO-	650631	-001		vale:	12-AUG	-2001	Page	2 Of	t 2

Measured	d De	epth:	366	7.0 m	TVD:	3662.4 m		PBTI	):	0.0	Propo	osed M	D: 3	8625.0	m Pro	oposed	TVD:	3625.0 m
DOL:	28	DE	rs: <sub>23</sub>		pud Date: 22				Daily	Footage	e:	Γ	aily Ro			Total	Rot Hi	rs: 117.5
Torq:		Drag	r:	Rot		/U Wgt:	Sl	.ack	Off Wgt	;:	Wind	: 6	Seas	1.0	/ 2 0	+		POB: 92
Last Cas	sino	Size:		220	, Set i	At:	1374.	2	MD	1 2 1	72.1m	TVD		Test:			Leako	ff2
Cum Rot			sing:		.7 mm Cum Rot H	rs On Casing					/2.1m	1	1 Worst				Remaini	Y
Liner Si				134.	6   Set At:				0.0 T		Liı	ner To						0.0 TVD
Mud Co:			0.0	т	ype: MINERAL	0.0 MD					ı: <sub>PIT</sub> W	I+ · 1.00	O E77: 1		0 MD		- Cel.	
TATT					EC /			Solid	s: 25.0	8 0	il: 73.0	_						7 / 9 Ph:
AF Dm:		0.0 :		4.5	Ar.	I: 0.0 HTHP:	1.0 Ca:		25.0 Bent		73.0	0    %HG/	27.0 LG: 18.4	00  00	1.	50 DS/Ben <sup>.</sup>		
0.0	00	Pf/Mf:	0.00 /	/ 0.00	arb.	Cl: 32,000	ca.		Deriv		DOTIGE	01107	18.	40/5.4	40			/
						<u> </u>			<u> </u>									
Drlg Gas	s:	0	Max Gas	3:	Conn Gas:	Trip	Gas:	0	Tr	ip Cl:	Re	marks	:	•				•
Bit Num	ber	IADC	Size	Ма	nufacturer	Serial num	iber		Jets	s (Quar	ntity -	Size)		TFA	M	D In	MD Out	TVD Out
								-		<u>    /                                </u>	- /	- ,	/ -	0				
							-	-	/ -	<u>    /                                </u>	- /	- ,	/ -	0				<u> </u>
Тур	æ	Met	ers 1	Hours	WOB	RPM	1	Motor	RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
					/	/												
					/	/												
Total Le	engt	h of B	HA:		BHA Descr	ription:												
	Hrs On Jars: Hours Since Last Inspection:  Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW																	
Bit Num																		
		/	/		/	/ /	//											
Survey N	MD	Angle	Azimu	ıth	Direction	TVD	1	N/S C	ordina!	ates	E/W C	oordir	nates	Verti	cal S	ection		DLS
	Bit Num         Liner         Stroke         SPM         Press.         M3/Min Jet Vel         DP Av         DC Av         Bit kW         BHHP/SQIN Pump kW																	
	/ / / / / / / / Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																	
	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																	
	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																	
Hours Er	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS  Hours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0																	
	Hours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0  0.50 0000 02 - 25 RESET MDT TOOL X 2 @ 1674M & 1674.5M IN ATTEMPT TO TAKE BRYGGE FLUID SAMPLE - NO GO (HIGH DRAWDOWN & PUMP STALL																	
2.00 00	030									-								
					PRE-TESTS								7 5 10	OL OPEI	NINGS	- NO 1	OST SEA	AL.
					ION PRESS IN													
1.00 02	230	02 - 25	SET MI	DT TOO	DL @ 3091.9M	(W/L) & ATT	EMPT	TO T	AKE LYS	SING FL	JID SAME	PLE - 1	70 GO (	HIGH DI	RAWDOV	VN & PC	MP STAI	LLING).
1.00 03	330	02 - 25	SET MI	DT TOO	DL @ 3091.4M	(W/L) & ATT	EMPT	TO T	AKE LYS	SING FL	JID SAME	PLE - 1	70 GO (	LOSS OF	F TELE	EMETRY	W/ MDT	TOOL).
5.50 04	430	02 – 25	SET MI	DT TO	OL @ 3091.2M	(W/L) & TAK	E LYS	SING	FLUID S	SAMPLE -	- OK. F	LL 3	X 450CC	SAMPLI	E BOTT	TLES W/	WATER	SAMPLES.
1.50 10	000	02 - 25	CLOSE	TOOL	& COMMENCE	POOH W/ SCHL	UM MI	OT TO	OSTRINO	G. NO O	/PULL SE	ŒN WH	EN PULL	ING FRI	EE FRO	M FORM	MATION.	
1.00 1	130	02 - 25	EXTRAC	CT SAN	MPLE BOTTLES	@ SURFACE &	R/D	SCHL	UM MDT	TOOLST	RING.							
1.50 12	230	02 - 25	CHANG	E CABI	LE HEAD FOR 1	READ VSP RUN	I. P/U	J & M	/U REAI	O 8-LEVI	EL DELTA	A VSP	TOOLSTR	ING.				
2.00 14	400	02 - 25	RIH W	/ REAI	VSP TOOLST	RING TAKING	CHECK	KSHOT	S @ 128	80M, 240	00M & 32	200M (1	W/L). N	O HOLE	PROBI	EMS EN	ICOUNTE	RED.
0.50 16	600	02 - 25	CORREI	LATE 7	COOLSTRING O	N DEPTH OVER	LYS1	ING F	ORMATIO	ON (REF	LOG IS	AIT-P	EX-HNGS	OF 10	TH AUC	3 2001)		
1.50 16	630	02 - 25	START	RECOF	RDING VSP SU	RVEY F/ 3523	BM (W/	/L) T	AKING S	SHOTS @	10M IN	ERVAL	S. NO H	OLE PRO	OBLEMS	ENCOU	NTERED	•
4.00 18	800	02 - 25	START	RECOF	RDING VSP WA	LKAWAY SURVE	Y @ 2	2898M	(W/L T	TOP GEO	PHONE DE	EPTH) I	JTILISI	NG THE	'HIGH	HAND S	STAR'.	
2.00 22	200	02 - 25	CONT I	RECORI	OING VSP SUR	VEY F/ 2898	- 224	10M (	W/L) TZ	AKING SI	HOTS @ 1	LOM IN	TERVALS	. NO HO	OLE PF	ROBLEMS	ENCOU	VIERED.
Safety:	TBT	PRIOR	TO EXI	RACTI	NG PVT SAMPL	E BOTTLES FI	ROM M	DT TO	DOL.									
					RE-TESTS & I					'U & RIH	VSP TO	OLSTR1	NG. PE	RFORM V	7SP SU	RVEY &	WALKAW	AY.
					E VSP SURVEY													
Remarks:	:				25, DOLPHIN												NCE TAS	T LTI - 79
					OLL 0.7DEG;	<u> </u>					. & 2∩ <b>=</b>	MPTY )				.110 DI	LICH LIM	13
DAILY FE						TAL FE COST					_ ~ 40 E							
05:30 HR						THE COST	υ· Δ	, U <del>11</del>	., N									
Daily Mu					ily Tangible	: Cost.:		Da	ilv Wel	ll Cost	: <sub>KR2</sub> ,802	000	Tm = 2.3	nt~:	NTO -	Maron	L DEDO	ריידיי
H					m Tangible C								+	ents: Appor:			T REPOR	יזהיה
Cum Mud											KR111,7			at Cem			000 Blende	ed:
Drill Wa			)	rante	Water: 410.		261.0				Weight				4	227.0		
Country:	N	ORWAY				Rig: BYFORD I	DOLPH	IN		1/19 F	hone: 52							RHEIM/MH
Field: P	PL25	9				se: <sub>PL259</sub>		<del></del>	<b></b>				6506/3-				I	UB5908 -0
					API No	: 6506/3-1		A	TE No:	KWENO-	650631-	001		Date:	13-AU	G-2001	Page	: 1 Of 1

Measur	red D	epth:	3667.0	) m	TVD:	366	2.4 m		PBT	D:	0.0	Pro	posed	d MD	: 30	525.0	m Pro	posed	TVD:	3625	.0 m
DOL:	29	DI	FS: <sub>24</sub>	Spu	d Date: 22	2-JUL-2	001			Daily	Footag	e:		Da	ily Ro				. Rot Hi	rs: 1	17.5
Torq:	0	Drag	f: 0.0 R	ot Wg	t: <sub>0.0</sub> P	/U Wgt	: 0.0	Sl	ack	Off Wgt	:: o.c	Win	d:	6	Seas:	1.0	/ 2.0	Bar:	756	POB:	89
Last C	asin	g Size:	*	39.7	Set :			.374.				72.1m					1841		Leako		Y
Cum Ro	t Hr	s On Ca	sing: 1	24.6	Cum Rot H	rs On (	Casing	Sinc	e L	ast Cal	iper:	/ Z . IIII			Worst				Remaini	ng:	1
Liner	Size				et At:		MD			0.0 T		I	iner	Top	At:	0	0 MD			0.0	TVD
Mud Co	:	NORŒ .	0.0	Тул	e: <sub>MINERAL</sub>						ole From	n:	TAT+ • -	1.600	E77.		.0 MD		- Col.		
WL	M-1	NORGE .	A.S.					S	olio	ds: 25.0										7 , Ph:	/ 9
Pm:	API:	0.0	HTHP: 2.	5 ~	arb:	: 0.0 I		0   ~ Ca:		25.0 Ben		73	.00 sr	IC /I	27.0	0 , 50	and: 1.5	S/Ben			
0	.00	PI/MI.	0.00 /0	۰00 ٠	ald.	Cl: 32	,000	ia.		DEII	· ·	2011	JS 701	IG/ Lic	∃: 18.4	0/5.	40	5/ Bell			
					T																
Drlg G	las:	0	Max Gas:	0	Conn Gas:	ı	Trip G	as:	0	Tr	ip Cl:		Remar	rks:							
Bit Nu	mber	IADC	Size	Manu	facturer	Seria	al numb	oer		Jet	s (Qua	ntity	- Siz	ze)		TF	A ME	In	MD Out	TV	D Out
									_	/ .	- /	- /	_	/	_	0					
									_	/ -	- /	- /	<u> </u>	/	-	0					
T	ype	Met	ers Ho	ırs	WOB	R	PΜ	I	Moto	r RPM	I-Row	O-Ro	w D	С	Loc	В	G	Char	?Pull	Cos	t/m
					/		/														
					/		/														
Total	Leng	th of B	HA: 444.	04 m	BHA Descr	iption	: MUL	E SHO	DE -	47 X J	NTS 3.1	./2" PH	I-6 TT	UBIN	G - X/0	OVER :	го 4.1/	2" IF	_	•	
												Hrs	On Ja	ırs:		Hours	Since	Last	Inspec	tion:	
Bit Niv	Hrs On Jars:   Hours Since Last Inspection:																				
DIC Na	Bit Num Liner Stroke SPM Press. M3/Min Jet Vel DP Av DC Av Bit kW BHHP/SQIN Pump kW  / / / / / / / BHHP/SQIN Pump kW  Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																				
	/ / / / / / / Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																				
_	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																				
Survey	Survey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																				
	Turvey MD Angle Azimuth Direction TVD N/S Coordinates E/W Coordinates Vertical Section DLS																				
	Hours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0																				
Hours	Hours From Act-Cat Operations Covering 24 Hours Ending at Midnight Total Hours Reported: 24.0 4.00 0000 02 - 25 CONT RECORDING VSP SURVEY F/ 2240 - 790M (W/L) TAKING SHOTS @ 10M INTERVALS. NO HOLE PROBLEMS ENCOUNTERED.																				
4.00	4.00 0000 02 - 25 CONT RECORDING VSP SURVEY F/ 2240 - 790M (W/L) TAKING SHOTS @ 10M INTERVALS. NO HOLE PROBLEMS ENCOUNTERED.																				
2.00	4.00 0000 02 - 25 CONT RECORDING VSP SURVEY F/ 2240 - 790M (W/L) TAKING SHOTS @ 10M INTERVALS. NO HOLE PROBLEMS ENCOUNTERED.  2.00 0400 02 - 25 POOH & L/O READ 8 LEVEL VSP TOOLSTRING.																				
0.50T	4.00 0000 02 - 25 CONT RECORDING VSP SURVEY F/ 2240 - 790M (W/L) TAKING SHOTS @ 10M INTERVALS. NO HOLE PROBLEMS ENCOUNTERED.  2.00 0400 02 - 25 POOH & L/O READ 8 LEVEL VSP TOOLSTRING.  0.50T 0600 02 - 26 POOR INSULATION ON SCHLUM CABLEHEAD. RE-BUILD SAME PRIOR TO P/U SIDEWALL COREGUNS.																				
1.50	4.00 0000 02 - 25 CONT RECORDING VSP SURVEY F/ 2240 - 790M (W/L) TAKING SHOTS @ 10M INTERVALS. NO HOLE PROBLEMS ENCOUNTERED.  2.00 0400 02 - 25 POOH & L/O READ 8 LEVEL VSP TOOLSTRING.  0.50T 0600 02 - 26 POOR INSULATION ON SCHLUM CABLEHEAD. RE-BUILD SAME PRIOR TO P/U SIDEWALL COREGUNS.																				
2.00	0800	02 - 26	RIG OUT	OF RA	ADIO SILENO	Œ. CON	T RIH	W/ C	ORE	GUNS. C	ORRELAT	E @ +/	-3450	)M T(	O REF I	OG AI	T-PEX-	HINGS C	F 10TH	AUG 2	2001.
5.50	1000	02 - 26	SHOOT SI	DFWAT	LL CORES &	CORRET	ΔTF: AS	S REC	ו חים	F/ 3659	- 1447	M. 53	SHOTS	TTT	RED IN	ТОТАТ	1.				
1.00													01010								
					VALL COREGI								т Оп	- מעם	TO CITE	NTOT:	T /O CO		1		
0.50	1030				MISFIRED :																
	1				EMPTED, 29									ο & .	14 LOST	BAKR	<u>ттгр – </u>	JJ& KE	COVERY	•	
1.00					/LINE & CLI										o= =	/6 ::	Dr		/	20 =	
5.00					GEAR TO RI									Slni	OF 3.1	./2",	₽Н-6 T	NRTNG	(AVE.	∠U JNT	L/HK).
1.00	2300	01 - 19	C/O HANI	LING	GEAR & TII	H W/ 5"	DP F	/ 444	M TO	O INSID	E SHOE	@ 1333	Μ.								
-		_																			
		-																			
		-																			
Safety	RAI	DIO SILI	ENCE IN P	LACE	& TBT HELD	PRIOR	TO AR	MING	& F	TIW HIS	I COREGI	JNS.									
					VEY. M/U &								CORE	S -	19 REC	OVERE	D. M/U	CEMEN	T STING	ER.	
					MENT STING																
Remark	s:				, DOLPHIN													YS ST	NCE LAS	ייין יוצ	- 80
					L 0.7DEG;							ر د 1ء ا	E.WD.	Υ)			L/F	DI	LICH LIM	, <u> </u>	30
			193,846 N							38,421 N		_ u 13	-11.1E, T	± / •							
							CO215	,• 3 <i>.</i>	u, 43	ν,∓Δ1 Γ	VAL										
				1	'/ 3190 - 3				ъ-	ailer me	11 Co~+	•									
			265,962		y Tangible					aily Wel									T REPOR	RTED	
			,370 ,118		Tangible C			7,951		um Well											
		r: 100.	0 Pota	ble W	ater: 385.			396.0				. Weigh			Nea	at Cen	ment: 2	27.0	Blend		
Countr	y: N	ORWAY				Rig: <sub>BY</sub>		OLPH	IN		Rig P	hone: 5			35	Drill	ling Re	p: ELK	INS/HOL	LINSH	EAD
Field:	Ountry: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  ield: PL259 Well No: 6506/3-1 Well ID: UB5908 -0																				
					API No	: 6506/	3-1			AFE No:	KWENO-	-650631	L-001		I	Date:	14-AUG	-2001	Page	: 1	of 1

Measur	red D	epth:	3667.0	m	TVD:	3662.4 1	n	PBT	TD: 1:	274.0 m	Propo	sed MI	): 3	625.0	m Pro	posed	TVD:	3625	.0 m
DOL:	30	Di			ate: 22	-JUL-2001					<u>:</u>				:				
Torq:	6000	Drag	g: 1.0 Ro	ot Wgt: <sub>1</sub>	13.0 P	/U Wgt: <sub>11</sub>	4.0 SI	lack	Off Wgt	: 113.0	Wind:	5	Seas:	1.0	/ 2.0	Bar:	758	POB:	89
-		g Size:	•	39.7 mm	Sat 7				MD				+ '		1841				Y
Cum Ro	ot Hr	s On Ca	sing: 1.	Cun	n Rot Hi	rs On Casi	ng Sin	œ L	ast Cali	iper:	Z. III	Depth	Worst	Wear:	1011		emainir	ng:	
Liner	Size			Set i		0.0 MI						ner Top				<u> </u>		0.0	רוגעדי
Mud Co	): <sub></sub> _	NORŒ .	0.0	Tyrne:		OIL BASED					: <sub>PIT</sub> W	+ . 1.61/	D E77: 4		.0 MD		- Col:		,
								Solid										7 / Ph:	/ 10
Pm:						: 0.0 HTHP	1.0		ds: 25.0 Bent		72.0	0 STC /T	28.0	00  00	1.5	S/Bent			
0	.00	PI/MI	0.00 /0	.00 Carb.	'	Cl: 29,000	Ca:		Belli	·	SOTIUS	ong/L	.G: 18.3	30/5.	60	3/ Bell	·		
26	1MT	BARIT	Ξ	500	1KG OTH	IER	2400	1	LTR OTHE	R	125	1 <sub>K</sub> (	G CA CA	ARB FI	NE				
						1			i										
Drlg G	Gas:	0	Max Gas:	0 Co:	nn Gas:	Trip	Gas:	0	Tr	ip Cl:	Re	marks:							
Bit Nu	ımber	IADC	Size	Manufac	turer	Serial n	mber		Jets	(Quar	itity -	Size)		TFA	A MD	In	MD Out	: TVI	D Out
								_	/ -	. / .	- /	- /	<b>'</b>	0					
								-	/ -	. / .	- /	- /		0					
Т	ype	Met	ers Hou	ırs	WOB	RPM		Moto	r RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cos	t/m
					/	/													
					/	/													
Total	Leng	th of B	HA: 444.0	)4 m BH	A Descr	iption: M	JLE SH	OE -	47 х л	NTS 3.1	/2" PH-	6 TUBII	NG - X/	OVER 1	го 4.1/	2" IF		•	
											Hrs On	Jars:		Hours	Since	Last	Inspect	tion:	
Bit Nu	ım	Line	ar	C+~	roke		SPM		Press.	M3/Min	Jet Vel	י ערו	V21 L	C Av	Bit kW	יייווכן	) /COTAT	D1 1m-	lat-7
DIC NO	uu		/	501	/	/	/ /		ricas.	MS/MIII	dec ver	- DP I	AV DO	_ AV	DIC KM	DODE	P/SQIN	Pulip	KW
		/_		<del>- '</del>	<u>/                                     </u>	/	<u>/ /</u>												
			/	<u> </u>	<i>/ /</i>	/ <u> </u>	<del>/ /</del>									<u> </u>			
Survey	/ MD	Angle	Azimuth	Dire	ction	TVD		N/S	Coordina	ates	E/W C	oordin	ates	Vert	ical Se	ction		DLS	
Hours	From	Act-Ca	t		Operat	ions Cover	ing 24	Hou	ırs Endi:	ng at M	idnight				Total	l Hour	s Repoi	rted:	24.0
0.50	0000	01 - 19	BREAK CI	RC INSID	E SHOE	@ 1333M &	STAGE	PUM	PS UP TO	1020 I	PM, 47	BAR.							
2.50	0030	01 - 19	CONT TO	TIH W/ 5	5" DP F/	/ 1333 - 32	200M.												
2.00	0300	01 - 19	BREAK CI	RC & STA	AGE PUME	PS TO 2280	LPM,	276 1	BAR, 150	RPM, 6	000 N.M	TORQ.	CIRC :	1 X B/	U. MAX	GAS 1	.58% SI	EEN @	B/U.
0.50	0500	01 - 19	M/U CMT	STAND &	BREAK (	CIRC THRU S	SAME W	/ CM	T UNIT.	PRESS I	EST LIN	ES TO	250 BAI	R / 5	MINS -	OK.			
0.50	0530	01 - 19	PUMP 5M3	TUNED S	SPACER @	0.8M3/MIN	IW/CI	MT III	NIT. MIX	C & PUME	6.64M3	3. 1.99	G SLURI	RY USI	NG 4.01	M3 MIX	WATER @	0.8M	ß/MIN.
0.30						O CLEAR LIN						, _,,							-,
0 50	0.500																0 5511		
0.50	0600					√/ 24.2M3 N	IUD US.	ING I	RIG PUME	PS @ 180	10 LPM,	200 BA	R. UND	ERDISF	LACE PI	LUG BY	0.75M	3.	
6 ==	0.55		PLUG #1																
2.50			POOH W/																
						WORKS PARKI													
1.00	1030	01 - 19	DROP DP	WIPER DA	ART, M/U	J CMT STANI	), DIS	PLAC	E DART &	CIRC E	B/U W/ 2	2725 LF	м, 284	BAR.					
1.00	1130	01 - 19	PRESS TE	ST LINES	TO 175	5 BAR / 5 N	MINS -	OK.	MIX & F	PUMP 10.	98M3, 1	.9SG S	SLURRY I	USING	6.55M3	MIXWA	TER @ 1	LM3/MI	N.
		01 - 19	PUMP 0.2	OM3 DRII	LWATER	TO CLEAR I	INES.	DIS	PLACE CM	TT W/ 11	.8M3 MT	D USIN	IG RIG I	PUMPS	@ 2325	LPM,	192 BAF	₹.	
		01 - 19	UNDERDIS	PLACE PL	JUG BY (	0.75M3.													
		01 - 19	PLUG #2	SET F/ 1	.791 <u>-</u> 1	1491M.													
Safety	WEI	KLY MU	STER DRIL	L & SAFE	TY MEET	ING HELD.		_											
						MUD. SET 3	X CMI	' PLU	JG, 3190	- 3025	м, 1791	- 149	- 1M & 14	91 -	1274M.	POOH 8	k L/O D	P.	
						T OMT PLUG													UG #4.
Remark	s:										<u> </u>								
						- 52, DO					c 10 -	MDrox * \			D	AIS S	INCE LA	от. ПП.	T - 8T
						CUTTING SK					& 12 E	MT-T.X ) •							
			189,024 N		OT	TAL FE COS	TS: 3	54,42	41,445 N	UK									
			W/ 5" DP '			<b>a</b> :		<del>- 1</del> .											
			(05,502	Daily Ta	_				aily Wel				Incide				repor	TED	
						ost: KR1,	747,95	1 C	um Well								00		
		r: 440.	0 Potal	ole Wate			386.0				Weight		) Ne	at Cen	ment: 1	87.0	Blende		
Countr	y: <u>N</u>	ORWAY			I	Rig: <sub>BYFORD</sub>	DOLPH	IIN		Rig Ph	none: 52	88 03	35	Drill	ling Rep	p: ELK	INS/HOL	LINSH	EAD
Field:	PL25	59			Leas	se: <sub>PL259</sub>					Wel	l No:	5506/3-	1			11 ID:		
						6506/3-1			AFE No:	KWENO-	650631-	001		Date:	15-AUG	-2001	Page	: 1 (	of 2

Secure   S	Measured	d De	epth:	3667.0	) m	TVD:	366	52.4 m	I	PBTD:	1	274.0 m	Pro	posec	d MD:	: 3	625.0	m Pro	posed	TVD:	3625.0 m
March   Carlo   Start   Star	DOL:	30	DI			Date: 22	-JUL-2	2001			Daily	Footage	e:		Da					. Rot Hr	s: 117.5
March   Carlo   Start   Star	Torq: 6	5000	Drag	j: 1.0 R	ot Wgt:	113.0 P	/U Wgt	: 114.0	Sla	.ck 0	ff Wgt	: 113.	0 Win	d:	5	Seas:	1.0	/ 2.0	Bar:	758	POB: 89
Case   Case						G															ffo
Marco   Size   2.0   Sept. 222   3.0   Mo   0.2   Ten   Te	Cum Rot	Hrs	on Ca	sing: 1	a ( a	um Rot Hi	rs On	Casing	Since	Las	t Cali	.per:	72.111		•						_
March   1	Liner Si	ize:											I	iner	Top	At:	0	0 MD			O O TVD
March   Col.	Mud Co:	M_T	NODCE		Type:	MINERAI.							: <sub>DTT</sub>	Wt:	1610	FV: 1				5 Gel:	
Delig Gast   0   Note Cast   0   Court Gast   City Gast   0   Total City   Description   Country   - Store   Description   City City   Description   Description   City City   Description   City City   Description   Description   City City   Description   Descr									So	lids	: 05 0	80	il: 72	00 W	Water	r:	% Sa	ınd:	MB	T:	1
Delty Class   C	Dm:																				/
Number   Prof.   Since   Mentandaturer   Serial number   Osta (Quencity   Sinc)   TWA   Son in   MO Cut   TWO Out	0.0	00		0.00 / 0	.00		29	,000								18.3	0/5.	60			/
Number   Prof.   Since   Mentandaturer   Serial number   Osta (Quencity   Sinc)   TWA   Son in   MO Cut   TWO Out																					
Number   Prof.   Since   Mentandaturer   Serial number   Osta (Quencity   Sinc)   TWA   Son in   MO Cut   TWO Out	Drla Cad	a ·		May Cag:	С	'onn Gag:		Trin C	oa:		ТΥ	in Cl:		R <i>e</i> mar	rka:						
1			0		0			_		0		_					1		I		
TOTAL LENGTH OF BEAL 444.04 m BEAL PRODUCTION: MINE SOCK - 47 X 1975 3.175 PH - 6 THORNEY - XCOVER TO 4.175 TO SHILL COUNTY MINE SOCK - 47 X 1975 3.175 PH - 6 THORNEY - XCOVER TO 4.175 TO SHILL COUNTY MINE SOCK - 47 X 1975 3.175 PH - 6 THORNEY - XCOVER TO 4.175 TO SHILL COUNTY TO SHILL	Bit Num	ber	IADC	Size	Manufa	cturer	Seria	al numb	er		Jets /	(Quar	ntity	- Siz	ze) /			ME.	) In	MD Out	. TVD Out
Type										_	/ -	/_	- / - /	<del>-</del>	_/	_					
Potal length of BAN: 644.04   SMA Description: MIES SEGS - 47 X JUNE 3.1/2* E64-6 TERMS - X/AVES TO 4.1/2* IF				<u> </u>			<del>                                     </del>				DDW.	<del>- /</del>	/ 				<u> </u>	<del> </del>		0D-11	
Total Length of BRA: 444,04 m	Typ	æ	Met	ers Ho	ırs		F		MC	otor	RPM	I-Row	O-Ro	w D	C	Loc	В	G	Char	?Pull	Cost/m
Rich Constraints						/		/													
Rich Constraints			1 5 -		D	/ Dogge	intion	/						<u> </u>							
Sir Num	Total Le	engt	n of B	HA: 444.	04 m	na Desci	1PC101	1. MULE	SHOE	C - 4	Г Х Л	VIS 3.1	/2" PE	I-6 T	UBIN	G - X/0	OVER 1	0 4.1/	2" IF		
Sir Num																					
Survey ND Angle Asimuth Direction TND N/S Coordinates E/N Coordinates Vertical Section TLS  Survey ND Angle Asimuth Direction TND N/S Coordinates E/N Coordinates Vertical Section TLS  Hours From Act Cat Operations Obvering 24 Hours Ending at Midnisht Total Hours Reported: 24.0  1.00 1230 01-19 ENDER TREAT LINES TO 175 ENDED, DISPLACE DART & CIRC B/U W/ 2940 LEN, 290 BAR.  1.00 140 01-19 ENDER TREAT LINES TO 175 ENDE / 5 MINS - OK. FIRMS SNS TIMES SEACER & MG/MIN W/ CMT UNIT.  01-19 MIN & FIRMS 13.8M3, 1.986 SILEREY USING - OK. FIRMS SNS TIMES SEACER & MG/MIN W/ CMT UNIT.  01-19 MIN & FIRMS 13.8M3, 1.986 SILEREY USING - OK. FIRMS SNS TIMES SEACER & MG/MIN W/ CMT UNIT.  01-19 MIN & FIRMS 13.8M3, 1.986 SILEREY USING - OK. FIRMS SNS TIMES SEACER & MG/MIN W/ CMT UNIT.  01-19 MIN & FIRMS 13.8M3, 1.986 SILEREY USING - OK. FIRMS SNS TIMES SEACER & MG/MIN W/ CMT UNIT.  01-19 MIN & FIRMS 13.8M3, 1.986 SILEREY USING - OK. FIRMS SNS TIMES SEACER & MG/MIN W/ CMT UNIT.  01-19 MIN & FIRMS SEACER & CMT W/ 9.2M3 MID USING RIG PIMES & 2816 LEW, 241 BAR. INDEXDISE ACE FILES OF TIMED  10-10 SOO 01-19 MINO ENSET F/ 1491 - 1274M.  10-10 SOO 01-19 MOP LE WERR MARK MU TOD DRIVE, DISPLACE DART & CIRC B/U W/ 3000 LEW, 280 BAR.  1.00 1500 01-19 MOP LE WERR MARK MU TOD DRIVE, DISPLACE DART & CIRC B/U W/ 3000 LEW, 280 BAR.  2.50 2300 01-19 CO INNELING GEAR & FOOL LAVING OUT 3.12'2 PH 6 CEMENT STINGER F/ 444M TO SUMFACE.  2.50 2300 01-19 CO INNELING GEAR & FOOL LAVING OUT 3.12'2 PH 6 CEMENT STINGER F/ 444M TO SUMFACE.  2.50 2300 01-19 CO INNELING GEAR & FOOL LAVING OUT 3.12'2 PH 6 CEMENT STINGER F/ 444M TO SUMFACE.  2.50 2300 01-19 CO INNELING GEAR & FOOL LAVING OUT FLOG R3. SET FLOG R4 F/ 661 - 411M. DISPLACE MELL TO SERVATER, FOOL & L/O LE.  2.50 2300 01-19 CO INNELING GEAR & FOOL LAVING OUT FLOG R3. SET FLOG R4 F/ 661 - 411M. DISPLACE MELL TO SERVATER, FOOL & L/O LE.  2.50 2300 01-19 CO INNELING GEAR & FOOL FROM MUN STANDER FROM MUN STANDER FROM MUN STANDER FROM MUN STANDER FROM MUN STANDER FROM MUN STANDER FROM MUN STANDER FROM MUN STAN								1		<del></del>						<del></del>	i		i		
Hours Prom Act Cat Operations Overling 24 Hours Ending at Midnight Total Hours Reported: 24.0 0.50 1230 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.00 1400 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.00 1400 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.00 1500 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.10 1500 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, SAME WINNERS OF TOWN OF THE SHADE O	Bit Num		Line	er /	St	troke /	,	5	SPM ,	P	ress.	M3/Min	Jet V	el	DP A	v DC	2 Av	Bit kW	BHH	P/SQIN	Pump kW
Hours Prom Act Cat Operations Overling 24 Hours Ending at Midnight Total Hours Reported: 24.0 0.50 1230 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.00 1400 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.00 1400 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.00 1500 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, DISPLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR. 1.10 1500 01 - 19 FOOR PT WIFEE DARK, MUT OFM SYMD, SAME WINNERS OF TOWN OF THE SHADE O							<u>/                                      </u>	/ /													
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0.50   1230   01 - 19   POOH W   5" DP   F   1791 - 1491M.  1.00   1300   01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PROSE SERGER. DISPLACE SPACER @ CMT W   9.2M3 MID USING RIG PUMPS @ 2816 LEM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1274M.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1095M.  1.00   1600   01 - 19   DROP DP WIPER DART, M/U TOP DRIVE, DISPLACE DART @ CIRC B/U W/ 3000 LEM, 280 BAR.  1.00   1600   01 - 19   PROSE # S POOH LAYING OUT 5" PD F / 1095 - 444M.  2.50   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  1.00   1600   1 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  SAFETY: WEEKLY MINTER BRILL & SAFETY MERTING HEID.  24   HT SUMMENLY MINTER BRILL & SAFETY MERTING HEID.  25   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  26   PROSE	Survey N	MD	Angle	Azimuth	Dir	rection		IVD	N/	S Cc	ordina	ites	E/W	Coor	dina	ites	Vert	ical Se	ection		DLS
0.50   1230   01 - 19   POOH W   5" DP   F   1791 - 1491M.  1.00   1300   01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PROSE SERGER. DISPLACE SPACER @ CMT W   9.2M3 MID USING RIG PUMPS @ 2816 LEM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1274M.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1095M.  1.00   1600   01 - 19   DROP DP WIPER DART, M/U TOP DRIVE, DISPLACE DART @ CIRC B/U W/ 3000 LEM, 280 BAR.  1.00   1600   01 - 19   PROSE # S POOH LAYING OUT 5" PD F / 1095 - 444M.  2.50   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  1.00   1600   1 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  SAFETY: WEEKLY MINTER BRILL & SAFETY MERTING HEID.  24   HT SUMMENLY MINTER BRILL & SAFETY MERTING HEID.  25   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  26   PROSE																					
0.50   1230   01 - 19   POOH W   5" DP   F   1791 - 1491M.  1.00   1300   01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PROSE SERGER. DISPLACE SPACER @ CMT W   9.2M3 MID USING RIG PUMPS @ 2816 LEM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1274M.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1095M.  1.00   1600   01 - 19   DROP DP WIPER DART, M/U TOP DRIVE, DISPLACE DART @ CIRC B/U W/ 3000 LEM, 280 BAR.  1.00   1600   01 - 19   PROSE # S POOH LAYING OUT 5" PD F / 1095 - 444M.  2.50   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  1.00   1600   1 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  SAFETY: WEEKLY MINTER BRILL & SAFETY MERTING HEID.  24   HT SUMMENLY MINTER BRILL & SAFETY MERTING HEID.  25   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  26   PROSE																					
0.50   1230   01 - 19   POOH W   5" DP   F   1791 - 1491M.  1.00   1300   01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PROSE SERGER. DISPLACE SPACER @ CMT W   9.2M3 MID USING RIG PUMPS @ 2816 LEM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1274M.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1095M.  1.00   1600   01 - 19   DROP DP WIPER DART, M/U TOP DRIVE, DISPLACE DART @ CIRC B/U W/ 3000 LEM, 280 BAR.  1.00   1600   01 - 19   PROSE # S POOH LAYING OUT 5" PD F / 1095 - 444M.  2.50   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  1.00   1600   1 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  SAFETY: WEEKLY MINTER BRILL & SAFETY MERTING HEID.  24   HT SUMMENLY MINTER BRILL & SAFETY MERTING HEID.  25   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  26   PROSE																					
0.50   1230   01 - 19   POOH W   5" DP   F   1791 - 1491M.  1.00   1300   01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - OK. POMP 5M3 TUNDO SERGER @ 1M3/MIN W/ CMT UNIT.  01 - 19   PROSE SERGER. DISPLACE SPACER @ CMT W   9.2M3 MID USING RIG PUMPS @ 2816 LEM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1274M.  1.00   1500   01 - 19   PROSE # S SET   1491 - 1095M.  1.00   1600   01 - 19   DROP DP WIPER DART, M/U TOP DRIVE, DISPLACE DART @ CIRC B/U W/ 3000 LEM, 280 BAR.  1.00   1600   01 - 19   PROSE # S POOH LAYING OUT 5" PD F / 1095 - 444M.  2.50   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  1.00   1600   1 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  SAFETY: WEEKLY MINTER BRILL & SAFETY MERTING HEID.  24   HT SUMMENLY MINTER BRILL & SAFETY MERTING HEID.  25   2030   01 - 19   C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  26   PROSE		<u> </u>															Т				
1.00   1300   01 - 19   DROP DP WIDER DART, M/U CMT STAND, DISFLACE DART & CIRC B/U W/ 2940 LPM, 290 BAR.  1.00   1400   01 - 19   PRESS TEST LINES TO 175 BAR / 5 MINS - CK. PUMP 5M3 TUNED SDACER & IM3/MIN W/ CMT UNIT.    01 - 19   MIX & PUMP 13.3M3, 1.993 SIURRY USING 7.9M3 MIXWATER & IM3/MIN. PUMP 0.27M3 (+0.20M3 TO CLEAR LINES) CF TUNED   01 - 19   STACER, DISFLACE SPACER & OTT W/ 9.2M3 MUD USING RIG PUMPS @ 2816 LPM, 241 BAR. UNDERDISFLACE PLUG BY 0.75M3.    10 - 19   PILWS #3 SET F/ 1491 - 1274M.   1.00   1500   01 - 19   PCOPH W/ 5° DP F/ 1491 - 1095M.   1.00   100   01 - 19   PCOPH W/ 5° DP F/ 1491 - 1095M.   3.59   1700   01 - 19   PILWS PLUG #4 POON LAYING OUT 5° DP F/ 1096 - 444M.   2.59   2030   01 - 19   C/O HANDLING GEAR & POOH LAYING OUT 3.1/2° PH-6 CEMENT STINCER F/ 444M TO SURFACE.   1.00   2300   01 - 19   C/O HANDLING GEAR. P/U & M/U 5° MULESHOE & TIH W/ 5° DP TO 374M.    3.56   1700   1	Hours Fr	ram	Act-Cat	-		Operat	ions (	bvering	g 24 I	Hours	s Endi	ng at M	Iidnigh	nt				Tota	l Hour	s Repor	rted: 24.0
1.00   400   01 - 19   DRESS TEST LINES TO 175 BAR / 5 MINS - OK. PIMP 5M3 TUNED SEACER @ IM3/MIN. W/ CMT UNIT.    01 - 19   MIX & PUMP 13.3M3, 1.9SG SLIRRY USING 7.9M3 MIXWATER @ IM3/MIN. PUMP 0.27M3 (+0.20M3 TO CLEAR LINES) OF TUNED   01 - 19   SEACER. DISPLACE SPACER & OAT W/ 9.2M3 MID USING RIG PUMPS @ 2816 LPM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.   01 - 19   PUDG 83 SET F/ 1491 - 1274M.   1.00   1500   01 - 19   PODH W/ 5° DP F/ 1491 - 1099M.   1.00   1600   01 - 19   PODH W/ 5° DP F/ 1491 - 1099M.   3.50   1700   1 - 19   PODP BUMER DART, M/U TOP DRIVE, DISPLACE DART & CIRC B/U W/ 3000 LPM, 280 BAR.   3.50   1700   1 - 19   PODP SLIG & POOH LAYING OUT 5° DP F/ 1096 - 444M.   2.50   2300   01 - 19   C/O HANDLING GEAR & POOH LAYING OUT 3.1/2° PH-6 CEMENT STINKER F/ 444M TO SUBFACE.   1.00   2300   01 - 19   C/O HANDLING GEAR. P/U & M/U 5° MULESHCE & TIH W/ 5° DP TO 374M.	0.50 1	230	01 - 19	POOH W/	5" DP F	7/ 1791 -	- 14911	М.													
01 - 19   MIX & PUMP 13.3M3, 1.9SG SLIRRY USING 7.9M3 MIXWATER @ 1M3/MIN. PUMP 0.27M3 (+0.20M3 TO CLEAR LINES) OF TUNED	1.00 1	300	01 - 19	DROP DP	WIPER D	DART, M/U	J CMT S	STAND,	DISPL	ACE :	DART &	CIRC I	3/U W/	2940	) LPN	м, 290	BAR.				
01 - 19   SENCER. DISPLACE SPACER & CMT W 9.2M3 MUD USING RIG PUMPS @ 2816 LEM, 241 BAR. UNDERDISPLACE PLUG BY 0.75M3.   01 - 19   PUMP #3 SET F/ 1491 - 1274M.   1.00   1500   01 - 19   POOH W 5" DP F/ 1491 - 1095M.   1.00   1600   01 - 19   POOH W 5" DP F/ 1491 - 1095M.   1.00   1600   01 - 19   PUMP SLUG & POOH LAYING OUT 5" DP F/ 1096 - 444M.   2.50   2030   01 - 19   C/O HANDLING GEAR & POOH LAYING OUT 3.1/2" PH-6 CEMENT STINGER F/ 444M TO SURFACE.   1.00   2300   01 - 19   C/O HANDLING GEAR & POOH LAYING OUT 3.1/2" PH-6 CEMENT STINGER F/ 444M TO SURFACE.   1.00   24 Hr Summary: RIH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.   Projected Operations: TH, WEIGHT & P/TEST ONT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, POOH & TEST PLUG #4.   Remarks:	1.00 1	400	01 - 19	PRESS TE	ST LINE	ES TO 175	BAR ,	/ 5 MIN	IS - 0	K. P	UMP 5M	3 TUNE	SPAC	ER @	1M3,	/MIN W/	/ CMT	UNIT.			
01-19 PILKS #3 SET F/ 1491 - 1274M.			01 - 19	MIX & PU	MP 13.3	3M3, 1.99	S SLUI	RRY USI	NG 7.	9м3 1	TAWXIM	ER @ 11	/13/MIN	. PUN	MP 0.	.27M3 (	(+0.20	мз то	CLEAR	LINES)	OF TUNED
1.00 1500 01-19 POOH W/ 5" DP F/ 1491 - 1095M.  1.00 1600 01-19 POOP DE WIPER DART, M/U TOP DRIVE, DISPLACE DART & CIRC B/U W/ 3000 LPM, 280 BAR.  3.50 1700 01-19 PUMP SLUG & POOH LAYING OUT 5" DP F/ 1096 - 444M.  2.50 2030 01-19 C/O HANDLING GEAR & POOH LAYING OUT 3.1/2" PH-6 CEMENT STINGER F/ 444M TO SURFACE.  1.00 2300 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  Safety: WEEKLY MUSTER DRILL & SAFETY MEETING HELD.  24 Hr Summary: RIH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.  Projected Operations: TIH, WEIGHT & P/TEST OMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEANATER, POOH & TRST PLUG #4. Remarks:  Daily Mud Cost: KR65,962 Daily Tangible Cost: Daily Well Cost: KR122,674,174  Drill Water: 440.0 Potable Water: 490.0 Puel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Cuntry: NDRWAY Rig SPYGOD DOLPHIN RIG PLOSE PL			01 - 19	SPACER.	DISPLAC	CE SPACE	R & CMT	г W/ 9.	2M3 M	UD U	SING F	IG PUM	PS @ 2	816 I	LPM,	241 BA	AR. UN	DERDIS	PLACE	PLUG BY	7 0.75M3.
1.00 1600 01-19 DROP DE WIPER DART, M/U TOP DRIVE, DISPLACE DART & CIRC B/U W/ 3000 LFM, 280 BAR.  3.50 1700 01-19 PUMP SLUG & POOH LAYING OUT 5" DP F/ 1096 - 444M.  2.50 2030 01-19 C/O HANDLING GEAR & POOH LAYING OUT 3.1/2" PH-6 CEMENT STINGER F/ 444M TO SURFACE.  1.00 2300 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.60 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.70 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U 8 M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U 8 M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING GEAR. P/U 8 M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  3.80 0 01-19 C/O HANDLING FOOD BART & CIRC BART & CIRC BART & CIRC BART & CIRC BART & CIRC BART & CIRC BART & CIRC BAR			01 - 19	PLUG #3	SET F/	1491 - 1	L274M.														
3.50 1700 01-19 PUMP SLUG & POOH LAYING OUT 5" DP F/ 1096 - 444M.  2.50 2030 01-19 C/O HANDLING GEAR & POOH LAYING OUT 3.1/2" PH-6 CEMENT STINGER F/ 444M TO SURFACE.  1.00 2300 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.  Safety:  Safety:  WEEKLY MUSTER DRILL & SAFETY MEETING HELD.  24 Hr Summary: RIH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.  Projected Operations: TIH, WEIGHT & P/TEST OMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, FOOH & TEST PLUG #4.  Remarks:  Daily Mud Cost:  KR3,436,080 Cum Tangible Cost:  Cum Mud Obst:  KR3,436,080 Cum Tangible Cost:  KR1,747,951 Cum Well Cost:  KR1,747,951 Cum Well Cost:  KR122,674,174 Total Appr:  KR19 Phone: 52 88 03 35 Drilling Rep:  ELENSEY HEALT DISEASES PLUS Blended:  Field:  PL259 Lease:  PL259 Well No: 6506/3-1 Well DISB508 -0	1.00 1	500	01 - 19	POOH W/	5" DP F	7/ 1491 -	- 10951	M.													
2.50 2030 01-19 C/O HANDLING GEAR & POOH LAYING OUT 3.1/2" PH-6 CEMENT STINGER F/ 444M TO SURFACE.  1.00 2300 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.	1.00 1	600	01 - 19	DROP DP	WIPER D	DART, M/U	J TOP I	DRIVE,	DISPL	ACE :	DART &	CIRC I	3/U W/	3000	O LPN	м, 280	BAR.				
1.00 2300 01-19 C/O HANDLING GEAR. P/U & M/U 5" MULESHOE & TIH W/ 5" DP TO 374M.    Column	3.50 1	700	01 - 19	PUMP SLU	IG & P00	OH LAYING	GOUT!	5" DP F	7/ 109	6 -	444M.										
Safety:   WEKLY MUSTER TRILL & SAFETY MEETING HEID.   24 Hr Summary: RiH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.	2.50 20	030	01 - 19	C/O HANI	LING GE	EAR & POO	OH LAY	ING OUT	3.1/	2" P	H-6 CE	MENT S	TINŒR	F/ 4	444M	TO SUF	RFACE.				
Safety: WEEKLY MUSTER DRILL & SAFETY MEETING HELD.  24 Hr Summary: RIH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.  Projected Operations: TIH, WEIGHT & P/TEST CMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, POOH & TEST PLUG #4.  Remarks:  Daily Mud Cost: KR65,962 Daily Tangible Cost: Daily Well Cost: KR4,505,305 Incidents: NO INCIDENT REPORTED  Cum Mud Cost: KR3,436,080 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR122,674,174 Total Appr: KR134,000,000 Drill Water: 440.0 Potable Water: 490.0 Fuel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Country: NORMAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0	1.00 2	300	01 – 19	C/O HAND	LING GE	EAR. P/U	& M/U	5" MUL	ESHOE	& T	IH W/	5" DP 7	го 374	М.							
Safety: WeekLY MUSTER DRILL & SAFETY MEETING HELD.  24 Hr Summary: RiH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.  Projected Operations: TIH, WEIGHT & P/TEST CMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, POOH & TEST PLUG #4.  Remarks:  Daily Mud Cost: KR65,962 Daily Tangible Cost: Daily Well Cost: KR4,505,305 Incidents: NO INCIDENT REPORTED  Cum Mud Cost: KR3,436,080 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR122,674,174 Total Appr: KR134,000,000 Drill Water: 440.0 Potable Water: 490.0 Fuel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Country: NDRWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0			_																		
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24 Hr Summary: RIH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.  Projected Operations: TIH, WEIGHT & P/TEST CMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, POOH & TEST PLUG #4.  Remarks:  Daily Mud Cost: KR65,962 Daily Tangible Cost: Daily Well Cost: KR4,505,305 Incidents: ND INCIDENT REPORTED  Cum Mud Cost: KR3,436,080 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR122,674,174 Total Appr: KR134,000,000 Drill Water: 440.0 Potable Water: 490.0 Fuel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Country: NDRWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0																					
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24 Hr Summary: RIH TO 3200M. CIRC & COND MUD. SET 3 X CMT PLUG, 3190 - 3025M, 1791 - 1491M & 1491 - 1274M. POOH & L/O DP.  Projected Operations: TIH, WEIGHT & P/TEST CMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, POOH & TEST PLUG #4.  Remarks:  Daily Mud Cost: KR65,962 Daily Tangible Cost: Daily Well Cost: KR4,505,305 Incidents: ND INCIDENT REPORTED  Cum Mud Cost: KR3,436,080 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR122,674,174 Total Appr: KR134,000,000 Drill Water: 440.0 Potable Water: 490.0 Fuel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Country: NDRWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0	Safety:	WEE	KLY MU:	STER DRIL	L & SAF	ETY MEET	ING HE	ELD.													
Projected Operations: TIH, WEIGHT & P/TEST OMT PLUG #3. SET PLUG #4 F/ 661 - 411M. DISPLACE WELL TO SEAWATER, POOH & TEST PLUG #4.  Remarks:  Daily Mud Cost: KR65,962 Daily Tangible Cost: Daily Well Cost: KR4,505,305 Incidents: NO INCIDENT REPORTED  Cum Mud Cost: KR3,436,080 Cum Tangible Cost: KR1,747,951 Cum Well Cost: KR122,674,174 Total Appr: KR134,000,000 Drill Water: 440.0 Potable Water: 490.0 Fuel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0									CMT I	PLUG	, 3190	- 3025	м, 179	91 -	1491	M & 14	91 - 3	1274M.	POOH	& L/O D	Ρ.
Paily Mud Cost: KR65,962       Daily Tangible Cost:       Daily Well Cost: KR4,505,305       Incidents: NO INCIDENT REPORTED         Cum Mud Cost: KR3,436,080       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR122,674,174       Total Appr: KR134,000,000         Drill Water: 440.0       Potable Water: 490.0       Fuel: 386.0       Bulk Weight: 133.0       Neat Cement: 187.0       Blended:         Country: NORWAY       Rig: BYFORD DOLPHIN       Rig Phone: 52 88 03 35       Drilling Rep: ELKINS/HOLLINSHEAD         Field: PL259       Well No: 6506/3-1       Well ID: UB5908 -0																					
Cum Mud Cost: KR3,436.0       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR122,674,174       Total Appr: KR134,000,000       Drill Water: 440.0       Potable Water: 490.0       Fuel: 386.0       Bulk Weight: 133.0       Neat Cement: 187.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: ByFGRD DOLPHIN       Rig: ByFGRD DOLPHIN       Well No: 6506/3-1       Well ID: UB5908 -0	Remarks:	:		<u>-</u>		· · · · · ·															
Cum Mud Cost: KR3,436.0       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR122,674,174       Total Appr: KR134,000,000       Drill Water: 440.0       Potable Water: 490.0       Fuel: 386.0       Bulk Weight: 133.0       Neat Cement: 187.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: ByFGRD DOLPHIN       Rig: ByFGRD DOLPHIN       Well No: 6506/3-1       Well ID: UB5908 -0																					
Cum Mud Cost: KR3,436.0       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR122,674,174       Total Appr: KR134,000,000       Drill Water: 440.0       Potable Water: 490.0       Fuel: 386.0       Bulk Weight: 133.0       Neat Cement: 187.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: ByFGRD DOLPHIN       Rig: ByFGRD DOLPHIN       Well No: 6506/3-1       Well ID: UB5908 -0																					
Cum Mud Cost: KR3,436.0       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR122,674,174       Total Appr: KR134,000,000       Drill Water: 440.0       Potable Water: 490.0       Fuel: 386.0       Bulk Weight: 133.0       Neat Cement: 187.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: ByFGRD DOLPHIN       Rig: ByFGRD DOLPHIN       Well No: 6506/3-1       Well ID: UB5908 -0																					
Cum Mud Cost: KR3,436.0       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR122,674,174       Total Appr: KR134,000,000       Drill Water: 440.0       Potable Water: 490.0       Fuel: 386.0       Bulk Weight: 133.0       Neat Cement: 187.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: ByFGRD DOLPHIN       Rig: ByFGRD DOLPHIN       Well No: 6506/3-1       Well ID: UB5908 -0	Daily Mu	ud (	lost: ,,,	065 060	Daily '	Tangible	Cost:			Dai	ly Wel	1 Cost	ND/ C	0E 30	15	Thaid	nte:	אד רוא	יאים רדי די	חרסים ח	TED
Drill Water: 440.0 Potable Water: 490.0 Fuel: 386.0 Bulk Weight: 133.0 Neat Cement: 187.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0	H				_	_			OF1												
Country: NORWAY  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0								7		<u> </u>											ed:
Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0				U   Joca				3		т.						35	Drill	ing Re	p: _ g/.0		
	Field:	N	JRWAY						)TRHTI	N		1 3				55	1				
TEM TIME TO DOUGH SET THE TABLE TO MINISTER DOUGH TO THE TRACE INTUITING THE TRACE IN THE TRACE	P	Т	9							дъ	Œ N∩:	KINIENT∕						1F >==			

Measured 1	Depth:	366	57.0 m	TVD:	3662.4 m		PBTD	:	411.0 m	Propo	osed M	D: 3	8625.0 i	m Pro	oposed	TVD:	3625.0 m
DOL: 31	L	DFS: 26		pud Date: 22					Footage		D	aily Ro			Total	Rot Hr	rs: 117.5
Torq:	Dra	ıg:			/U Wgt:	Sl	.ack 0	ff Wgt	:	Wind	: 15	Seas	: 1.0	/ 2 0	+		POB: 89
Last Casin	ng Size	:	220	.7 mm Set .	At:	1 27 4	3m 1	√D	1 2 7	72.1m	TVD		Test:			Leako	
Cum Rot Hi				Cum Rot H	rs On Casing					/2.1m		1 Worst				Remainir	
Liner Size			138.	Set At:				).0 T		Liı	ner To						
Mud Coi		0.0		Vme: on a reason	0.0 MD		(			: PIT W	i+: 100	- E77:		0 MD		o Col:	0.0 TVD
Mud Co: <sub>M-1</sub>				Type: SEAWATER		9	Solids	3: 0.00	% O							-	0 / 0 Ph:
Pm:		HTHP:	0.0	FC (mm) AP:		0.0 Ca:		0.00 Bent		il: 0.00	9UC /1	0.00	)   • 501	0.	00 DS/Ben		,
0.00	PL/MI	0.00	/ 0.00	Carb.	CI:	ca:		Бепс	·•	501108	3 7NG/1	LG: 0.00	0.0	00	DS/Bell	٠٠	/
400 1L	TR OTHE	R	8	1m3 BAS	SE FLUID												
Drlg Gas:	0	Max Ga	as:	Conn Gas:	Trip	Gas:	0	Tr	ip Cl:	Re	marks	:					
Bit Number	r IADC	Size	e Ma	nufacturer	Serial num	iber		Jets	(Quar	ntity -	Size)		TFA	M	D In	MD Out	TVD Out
							-	/ -	/	- /	- /	/ _	0				
		<u> </u>					-	/ -		- /	- ,	/ -	0				
Туре	Ме	eters	Hours	WOB	RPM	1	Motor	RPM	I-Row	O-Row	DC	Loc	В	G	Char	?Pull	Cost/m
				/	/												
				/	/												
Total Leng	gth of	вна:		BHA Descr	ription:												
										Hrs Or	Jars		Hours	Since	e Last	Inspect	tion:
Bit Num	Lir	ner		Stroke		SPM	P	ress.	M3/Min	Jet Vel	L DP	Av D	C Av 1	Bit 144	BHH	P/SOIN	Pump kW
				/	/ /	′ /								- 12/	•	, = 2	1 121
					<del>,</del>	<del>'                                    </del>											
Survey MD	Angle	Azim	nıth	Direction	TVD		VI/S CC	ordina	at eq	E/W C	oordir	nates	Verti	cal S	ection		DLS
Bur vey MD	Aigie	AZIII	laar	Direction	TVD	1	.V/D CC	DI GIII E	1000	E/W C	OOLGII	iaces	verti	car b	ección		DLIS
		+															
		_															
Hours Fra	n Act-C	at		Operat	ions Coveri	ng 24	Hour	s Endi	ng at M	Iidnight				Tota	al Hour	rs Repoi	rted: 24.0
1.50 000	0 01 - 1	.9 CONT	TIH W	/ 5" DP F/ 3	74 - 1267M.	WASH	DOWN	W/ 300	LPM, 3	BAR &	TAG TO	OP OF C	MT W/ 5	5 MT @	9 1281M	1.	
1.00 013	0 01 - 1	.9 PUMP	SLUG 8	© POOH W/ 5"	DP F/ 1281	- 661	LM.										
0.50 023	0 01 - 1	.9 L/O 2	2 X SII	NGLE & M/U T	OP DRIVE. PR	OVE (	JP FLO	W PATH	Ι.								
0.50T 030	0 01 - 1	.9 CLOSE	E UPPE	R ANNULAR & .	ATTEMPT TO P	RESS	TEST	CMT PI	JUG #3 (	JSING RI	IG PUMI	PS - NO	GO. Al	NULAF	R LEAKI	NG.	
0.50 033	0 01 - 1	9 CLOSE	E MPR 8	& PRESS TEST	CMT PLUG #3	USIN	NG SEA	WATER	F/ CMT	UNIT TO	110 1	BAR / 5	MINS -	- OK.	0.6M3	PUMPED	& RTND.
1.00 040	0 01 - 1	.9 M/U (	CMT ST	AND & BREAK	CIRC THRU SA	ME W/	/ CMT	UNIT.	PRESS T	TEST LI	ES TO	210 BA	R / 5 M	MINS -	- OK.		
	01 - 1	9 MIX 8	k PUMP	19.3M3, 1.9	5SG SLURRY U	SING	11.2M	3 MIXW	ATER @	0.8M3/N	⁄IN. P	JMP 0.2	OM3 DRI	ILLWAT	TER TO	CLEAR I	LINES.
	01 - 1	9 DISPI	LACE O	MT W/ 3.1M3	MUD USING RI	G PUN	ÆPS @	1200 I	PM, 46	BAR. UI	DERDI:	SPLACE	PLUG BY	Y 0.75	5M3.		
	01 - 1	9 PLUG	#4 SE	Г F/ 661 - 4	11M.												
0.50 050	0 01 - 1	9 POOH	W/ 5"	DP F/ 661 -	411M.												
0.50 053	0 01 - 1	9 CIRC	B/U W	/ 4500 LPM,	102 BAR.												
1.00 060	0 01 - 1	9 DISPI	LACE C	HOKE, KILL &	RISER BOOST	ER LI	NES T	O SEAW	IATER W	CMT UI	WIT.						
2.50 070	0 01 – 1	9 PTMP	CT.F.AN	UP PILLS -	8M3 BASE OTT	. 301	/IS WET	CHTED	HT-VTS	DTII. 3	зомз н.	T-VTS W	ASH DTI	.T. 30	MS SOT	WENT D	III. &
2.30 070																	
2 50 003				S CLEAN UP P				SPLACE	ıW/SELA	AWAIER (	2 2205	LPM, I	Z BAR,	170 F	KMM. 14	EZM3 SLIC	DES KIN'D.
2.50 093 Safety:	0 01 - 1	9 PWH	TATTIV	G OUT 5" DP :	F/ 411M 10 S	URFAC	.E.,										
24 Hr Sumr	mrv: _																
				CMT PLUG #3.													ER.
Remarks:	орегие	P	ULL &	L/O RISER. T	TIH WITH MOS	г тоо	L. CU	ľ & RE	TRIEVE	WELLHEA	D. L/C	DRILL	PIPE.	PULL .	ANCHOR	S.	
	RON - 4	, SERV	ICE -	24, DOLPHIN	1 - 52, DOL	PHIN	SERVI	CE - 9						D	AYS SI	NCE LAS	T LTI - 82
HEAVE: 0.	.3M, PI	TCH 0.3	DEG, F	ROLL 0.5DEG;	CUTTING SKI	PS ON	BOAR	D: 19	(10 FUL	L & 9 E	MPTY).						
DAILY FE (	COST: 3	86,144	NOK	TOTA	AL FE COSTS:	34,	813,5	89 NOK									
05:30 HRS:	POOH	& L/O R	ISER J	NT 10 OF 23.													
Daily Mud	Cost:	KR2,057		ily Tangible				ly Wel	l Cost:	KR5,018	,845	Incide	ents:	NO I	NCIDEN	T REPOR	TED
Cum Mud Co	ost: KR	5,493,6	40 Cu	m Tangible C	lost: <sub>KR</sub> 1,74	17 <b>,</b> 951	Cum	Well	Cost:	KR127,6	83,019	Total	Appr:	KR134	,000,0	000	
Drill Wate				Water: 470.	_ ,	369.0				Weight		0 Ne	at Ceme	ent:	168.0	Blende	
Country:		I			Rig: BYFORD 1					none: 52		35	Drill:			INS/HOL	LINSHEAD
Field: PL2	259				se: <sub>PL259</sub>				•			6506/3-	1				UB5908 -0
					: 6506/3-1		AF	E No:	KWENO-	650631-			Date:	16-AU			: 1 Of 2

Description   Description	Measur	red D	epth:	36	67.0 m		IVD:	366	2.4 m		PBT	D:	411.0 m	Pro	pose	ed MD	: 3	625.0	m Pro	posed	TVD:	3625	.0 m
The control of the	DOL:	31	D	FS: 26	6	Spud Da	te: <sub>22</sub>	-JUL-2	2001			Daily	Footag	je:		Da	ily Ro	t Hrs				rs: 1	17.5
The content is a content of content or con	Torq:		Drag	g:	Rot	Wgt:	P	/U Wgt	:	Sl	Lack	Off Wg	:	Win	ıd:	15	Seas:	1.0	/ 2.0	Bar:	752	POB:	89
Control   Cont	Last C	asin	g Size:		330	9.7 mm	Set 1	At:	7	1374.	3m	MD	13				-					off?	Y
March 1968   1,0   See 187   1,0   No.   No.   1,0   No.	Cum Ro	t Hr	s On Ca	sing:		Cim	Rot H	rs On (						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		epth	Worst	Wear:			emaini	ng:	-
March   Section   Sectio	Liner	Size	:	0.0			t:	0.0	MD			0 0 7	"VD	I	Liner	r Top	At:	0	0 MD	<u> </u>		0 0	TVD
Mart   Mart	Mud Co	): <sub>M_T</sub>	MODOE			Type: cr	קיקידים <i>עו</i> מי							n: DIT	Wt:	1 0 0 1	FV:			YP: O	n Gel:		,
Service   1,000   Service	TATT										Solid	ds:	8 (									<del> /</del>	/ 0
Ending Coast 0 Now Coast 0 Now Coast 0 Now Coast 1 Prip Coast 0 Now Coast 1 Now Now Coast 1 Now Coast	Dm*						API							Soli	ds %	HG/L	0.00 3: 0.00	. / .	0.0 20				
No.	0	.00		0.00	7 0.0	Ч											0.00	7 0.	. 00				
No.																							
No.	Drla G	lag:		Max G	as:	Con	n Gas:		Trin (	lag:		Tr	ip Cl:		Rema	rks:							
Cype			0			0					0								.	_	150	T	
Section   Sect	BIT N	ımber	TALC	Siz	ie M	anuract	urer	Seria	al num	ber		Jet:	s (Qua	ntity	- S1 /	.ze) /		+	A MD	In	MD Out	TV.	D Out
Notice   Motors   M											_	/	<u>     /                               </u>	<u> </u>		/							
Total tength of SHAL			1,,			Τ.	700	Τ.		Τ,	Mata	DDM	1	/	Τ.	7		_		al.	20.11		. ,
Total Length of 2004: BEAN Description:    Stroke	Т	ype	Met	ers	Hours	S V		Ь		1	MOCO	r RPM	1-Row	7 O-Ro	W .	IC.	Loc	В	G	Char	Pull	Cos	t/m
Site Name									/														
Site Name	Total	T.077 -	th of D	U7·		БПУ	/ Desar	iption	/ n:					<u> </u>							<u> </u>		
Sirvey Mo	TOCAL	цеng	CII OI B	пА•		ПА	LUCUL	-F-CT()11															
Sirvey Mo														T T	O~ ~	`a~~:		Lie	. ci	T a a +	Tnæ:-:	+i	
Survey NO		1												1					э эшсе				
Hours   Proc   Act-Cat	Bit Nu	m	Line	er /		Str	oke '	1	٠,	SPM		Press.	M3/Min	Jet V	7el	DP A	v DO	C Av	Bit kW	BHH	P/SQIN	Pump	kW
Hours   Proc   Act-Cat						/	· /	<u>/</u>	<del>                                     </del>														
Hours   Proc   Act-Cat						/	<u> </u>	<del>/</del>	/	/								l					
0.50   1.00   01 - 19   5/U & M/U UNIVERSAL TOCL C/M W/BUSHING RETRIEVAL ADAPTER. TH, WASH DOWN, ENANGE & PULL W/BUSH W/ 30K O/PULL.  2.00   1230   01 - 19   001   125 BAR / 5 MINS - (K. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   17   17   17   17   18   18   18   18	Survey	MD	Angle	Azir	muth	Direc	tion	7	IVD	1	N/S (	Ccordin	ates	E/W	Coo	rdina	ates	Vert	ical Se	ction		DLS	
0.50   1.00   01 - 19   5/U & M/U UNIVERSAL TOCL C/M W/BUSHING RETRIEVAL ADAPTER. TH, WASH DOWN, ENANGE & PULL W/BUSH W/ 30K O/PULL.  2.00   1230   01 - 19   001   125 BAR / 5 MINS - (K. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   17   17   17   17   18   18   18   18																							
0.50   1.00   01 - 19   5/U & M/U UNIVERSAL TOCL C/M W/BUSHING RETRIEVAL ADAPTER. TH, WASH DOWN, ENANGE & PULL W/BUSH W/ 30K O/PULL.  2.00   1230   01 - 19   001   125 BAR / 5 MINS - (K. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   17   17   17   17   18   18   18   18																							
0.50   1.00   01 - 19   5/U & M/U UNIVERSAL TOCL C/M W/BUSHING RETRIEVAL ADAPTER. TH, WASH DOWN, ENANGE & PULL W/BUSH W/ 30K O/PULL.  2.00   1230   01 - 19   001   125 BAR / 5 MINS - (K. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   17   17   17   17   18   18   18   18																							
0.50   1.00   01 - 19   5/U & M/U UNIVERSAL TOCL C/M W/BUSHING RETRIEVAL ADAPTER. TH, WASH DOWN, ENANGE & PULL W/BUSH W/ 30K O/PULL.  2.00   1230   01 - 19   001   125 BAR / 5 MINS - (K. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   17   17   17   17   18   18   18   18				<u> </u>																			
2.00   130   01 - 19   TO 125 BAR / 5 MINS - CK. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   TO 125 BAR / 5 MINS - CK. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   TO 125 BAR / 5 MINS - CK. 0.3M3 PUMPED & RIND.  0.50   1430   01 - 19   TH W / 5 DP TO 36M. FOOH LAYING OUT 5 DP F/ 364M TO SURFACE.  1.90   1700   01 - 19   CEAN ALL ORN F/ IRILL FLOCK & HANKLING EQUIPMENT.  2.00   1850   01 - 53   RUIN TO DULL DIVERTER, RISER & BOP.  2.00   2030   01 - 53   RUIN TO DULL DIVERTER, RUIN & BOP.  2.00   2030   01 - 53   RUIN TH MOST TOOL F/ SAME. PARK RUCKER RING.  0.90   2330   01 - 53   RUIN TH MOST TOOL F/ SAME. PARK RUCKER RING.  3.01   3.	Hours	From	Act-Ca	t			Operat	ions C	bverir	ng 24	Hou	ırs Endi	.ng at 1	Midnig	ht				Tota	l Hour	s Repo	rted:	24.0
0.1 - 19	0.50	1200	01 - 19	P/U	& M/U	UNIVERS	SAL TOO	OL C/W	W/BUS	HING	RETI	RIEVAL .	ADAPTER	. TIH,	WAS	SH DOI	WN, EN	GAGE 8	PULL I	W/BUSH	W/ 301	K O/PU	LL.
0.0 1430 01-19 170 DEFENSIVE HANG OFF TOOL F/ DEFRICK.  2.00 1500 01-19 18 TH W/ 5" DP TO 364M. POOH LAYING CUT 5" DP F/ 364M TO SURFACE.  2.00 1630 01-19 18 TH W/ 5" DP TO 364M. POOH LAYING CUT 5" DP F/ 364M TO SURFACE.  2.00 1630 01-19 18 TH W/ 5" DP TO 364M. POOH LAYING CUT 5" DP F/ 364M TO SURFACE.  2.00 1630 01-53 RU TO PULL DIVERTER, RISER & BOP.  2.00 2030 01-53 PULL & L/O DIVERTER. P/U & M/U RISER HANDLING JOINT. COLLAPSE INNER BARREL & PREPARE SLIP JNT FOR PULLING.  3.0 1-53 PULL W HANDLING JOINT & L/O SAME. PARK RUCKER RING.  3.0 1-53 PULL W HANDLING JOINT & L/O SAME. PARK RUCKER RING.  3.0 1-53 PULL W HANDLING JOINT & L/O SAME. PARK RUCKER RING.  3.0 1-50 PULL RISER.  3.0 1-50 PULL RI	2.00	1230	01 - 19	РООН	LAYIN	G OUT 5	5" DP E	F/ 342N	OT N	URFAC	Œ. I	MEANWHI	LE CLOS	E BSR	& PR	ESS T	TEST C	MT PLL	JG #4 W.	/ SEAW	ATER F	/ CMT	UNIT
2.00 1500 01 - 19 Th W/ 5" DP TO 364M. FOOH LAYING GUT 5" DP F/ 364M TO SURFACE.  1.50 1700 01 - 19 Th W/ 5" DP TO 364M. FOOH LAYING GUT 5" DP F/ 364M TO SURFACE.  2.00 1830 01 - 53 R/U TO PULL DIVERTER, RISER & BOP.  2.00 2030 01 - 53 R/U TO PULL DIVERTER, P/U & M/U RISER HANDLING JOINT. COLLARSE INNER BARREL & PREPARE SLIP JNT FOR PULLING.  1.00 2230 01 - 53 R/U TO PULL DIVERTER. P/U & M/U RISER HANDLING JOINT. COLLARSE INNER BARREL & PREPARE SLIP JNT FOR PULLING.  0.50 2330 01 - 53 PULL W HANDLING JOINT & L/O SAME. PARK RUCKER RING.  1.00 24			01 - 19	TO 1	25 BAF	R / 5 MI	INS - (	OK. 0.3	3M3 PU	MPED	& R.	IND.											
1700 1700 1701 1701 1701 1701 1701 1701	0.50	1430	01 - 19	L/O	EMERGE	NCY HAI	NG OFF	TOOL E	F/ DER	RICK.	•												
2.00   1830   01 - 53   R/U TO FULL DIVERTER, RISER & BOP.  2.00   2030   01 - 53   PULL & L/O DIVERTER, P/U & M/U RISER HANDLING JOINT. COLLAPSE INNER BARREL & PREPARE SLIP JNT FOR PULLING.  1.00   2230   01 - 53   UNLATCH BOP & PULL CLEAR OF GUIDE POSTS. SKID RIG 20M TO STARBOARD.  0.50   2330   01 - 53   PULL W   HANDLING JOINT & L/O SAME. PARK RUCKER RING.  1.00	2.00	1500	01 - 19	TIH	W/ 5"	DP TO 3	364M. I	POOH LA	AYING	OUT 5	5" DI	P F/ 36	4M TO S	URFACE	:.								
200 2030 01-55 PULL & L/O DIVERTER. P/U & M/U RISER HANDLING JOINT. COLLARSE INNER BARREL & PREPARE SLIP JNT FOR PULLING.  1.00 2230 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING JOINT & L/O SAME. PARK RUCKER RING.  5.00 2330 01-55 PULL W/ HANDLING	1.50	1700	01 - 19	CLEA	N ALL	OBM F/	DRILL	FLOOR	& HAN	DLING	G EQU	UIPMENT											
1.00 2230 01 -53 UNLATCH BOP & PULL CLEAR OF GUIDE POSTS. SKID RIG 20M TO STARBOARD.  0.50 2330 01 -53 PULL W HANDLING JOINT & L/O SAME. PARK RUCKER RING.  1.	2.00	1830	01 - 53	R/U '	TO PUI	L DIVER	RTER, I	RISER 8	E BOP.														
0.50   230   01 - 53   PILL W   HANDLING JOINT & L/O SAME. PARK RUCKER RING.	2.00	2030	01 - 53	PULL	& L/C	DIVERT	TER. P	/U & M/	/U RIS	ER HA	ANDL:	ING JOI	NT. COI	LAPSE	INNE	R BAI	RREL &	PREPA	ARE SLII	P JNT	FOR PU	LLING.	
	1.00	2230	01 - 53	UNLA	TCH BO	DP & PUI	LL CLEA	AR OF C	GUIDE	POSTS	s. si	KID RIG	20M TC	STARE	BOARD	).							
A	0.50	2330	01 - 53	PULL	W/ HA	NDL ING	JOINT	& L/O	SAME.	PARI	K RUG	KER RI	NG.										
A			_																				
Safety:  24 Hr Summary: TAG & P/TEST CMT PLUG #3. POOH & SET CMT PLUG #4. CLEAN UP & DISPLACE RISER TO SEAWATER. R/U TO PULL RISER.  Projected Operations: PULL & L/O RISER. TIH WITH MOST TOOL. CUT & RETRIEVE WELLHEAD. L/O DRILL PIPE. PULL ANCHORS.  Remarks:  Daily Mud Cost: KR2,057,5 Daily Tangible Cost: Daily Well Cost: KR5,018,845 Drilling Reported  Cum Mud Cost: KR5,493,640 Cum Tangible Cost: KR1,747,951 Cum Well Ost: KR127,683,019 Total Appr: KR134,000,000 Drill Water: 420.0 Potal Water: 470.0 Fuel: 369.0 Bulk Weight: 133.0 Neat Cement: 168.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Well No: 6506/3-1 Well ID: UB5908 -0			_																				
Safety:  24 Hr Summary: TAG & P/TEST CMT PLUG #3. POOH & SET CMT PLUG #4. CLEAN UP & DISPLACE RISER TO SEAWATER. R/U TO PULL RISER.  Projected Operations: PULL & L/O RISER. TIH WITH MOST TOOL. CUT & RETRIEVE WELLHEAD. L/O DRILL PIPE. PULL ANCHORS.  Remarks:  Daily Mud Cost: KR2,057,5 Daily Tangible Cost: Daily Well Cost: KR5,018,845 Drilling Reported  Cum Mud Cost: KR5,493,640 Cum Tangible Cost: KR1,747,951 Cum Well Ost: KR127,683,019 Total Appr: KR134,000,000 Drill Water: 420.0 Potal Water: 470.0 Fuel: 369.0 Bulk Weight: 133.0 Neat Cement: 168.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52 88 03 35 Drilling Rep: ELKINS/HOLLINSHEAD  Well No: 6506/3-1 Well ID: UB5908 -0			_																				
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Remarks:    Remarks:	Projec	ted (																					
Cum Mud Cost: KR5,493,640       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR127,683,019       Total Appr: KR134,000,000       Drill Water: 420.0         Drill Water: 420.0       Potal: 470.0       Fuel: 369.0       Bulk Weight: 133.0       Neat Cement: 168.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: BYFORD DOLPHIN       Rig: Phone: 52.88.03.35       Drilling Rep: ELKINS/HOLLINSHEAD         Field: PL259       Well No: 6506/3-1       Well ID: UB5908 -0	Remark	s:																					
Cum Mud Cost: KR5,493,640       Cum Tangible Cost: KR1,747,951       Cum Well Cost: KR127,683,019       Total Appr: KR134,000,000       Drill Water: 420.0         Drill Water: 420.0       Potal: 470.0       Fuel: 369.0       Bulk Weight: 133.0       Neat Cement: 168.0       Blended: ELKINS/HOLLINSHEAD         Country: NORWAY       Rig: BYFORD DOLPHIN       Rig: Phone: 52.88.03.35       Drilling Rep: ELKINS/HOLLINSHEAD         Field: PL259       Well No: 6506/3-1       Well ID: UB5908 -0																							
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Drill Water: 420.0 Potable Water: 470.0 Fuel: 369.0 Bulk Weight: 133.0 Neat Cement: 168.0 Blended:  Country: NORWAY Rig: BYFORD DOLPHIN Rig Phone: 52.88.03.35 Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259 Well No: 6506/3-1 Well ID: UB5908 -0						_	_			7 051													
Country: NORWAY  Rig: BYFORD DOLPHIN  Rig Phone: 52 88 03 35  Drilling Rep: ELKINS/HOLLINSHEAD  Field: PL259  Well No: 6506/3-1  Well ID: UB5908 -0									101.													ed:	
Field: PL259 Well No:6506/3-1 Well ID:UB5908 -0				U -													35	Dril	ling Rep	p:			ביאר
	Field:	DT C	OKWAY							WILH	TIN						506/2	1					
100 000000 0 0 0 0 0 0 0 0 0 0 0 0 0		PL2	פכ			1						AFE No:	KM±M√						16- atm		1		

Measur	red D	epth:	3667.0	m	TVD:	3662.4 m		PBTD	:	411.0 m	Propo	osed M	D: 3	8625.0	m Pro	oposed	TVD:	3625	5.0 m
DOL:	32	D		1	te: <sub>22</sub> -	-JUL-2001				Footage	- 1	D	aily Ro			Total	Rot Hi		
Torq:	0	Drag		1		<sup>'U Wgt:</sup> 68.0		Lack C	)ff Wgt	: 68.0	Wind:	: 9	Seas	: 1.0	/ 2 0	Bar:	755	POB:	86
Last C		g Size:	1		Set A	+ •								Test:			Leako	off?	
-		s On Ca	sina:	39.7 mm	Rot Hr	s On Casing		3m l			72.1m		1 Worst				Remaini		Y
Liner			13	Set A							T.ir		p At:	WCGI		0 1	CIIIAIIII		
			0.0	1		0.0 MD		(	7.0 T						) MD				TVD
		NORŒ .		Type: SE				2 7 1 7	Samp.	le From	: PIT W								<u>/ o </u>
	API:					: 0.0 HTHP:		solias	0.00		il: 0.00	*Wat	er: 0.0	) % Sai	nd: 0.			Ph:	
Pm: 0	.00	Pf/Mf:	0.00 /0.	00 Carb:	C	1:	Ca:		Bent	; <b>:</b>	Solids	%HG/1	LG: 0.0	o / o.d	)O   81	DS/Bent	t:	/	
Drlg G	as:	0	Max Gas:	0 Con	n Gas:	Trip	Gas:	0	Tr	ip Cl:	Re	marks	:						
Bit Nu	ımber	T T	Size	Manufact	urer	Serial num	nber		Jets	(Quar	ntity -	Size)		TFA	М	D In	MD Out	t TV	D Out
								_	/ -	/ /	- /	- ,	/ -	0					
								_	/ -		- /	- ,	/ -	0					
т	уре	Met	ers Hou	ırs V	70B	RPM	1	Motor	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cos	st/m
	7 PC				/	/					0 110								
					/	,													
Total	Tena	th of R	HA: 262.4	_ BHA	/ Descr	iption: BU	T NOC	E C	ACTNO (	TI TUTUR I	A CICNZ	חדדדה	V MOTOT	, MOC	T TOO	T ACCV	2 V	0 II DD	
i																L ASSI	- 3 A	o" DR	
COLL	ARS -	- X/OVEF	₹ - 6.1/2"	DRILL CO	JLLAR -	- 8.1/2" STI	RING	STAB -	- 5 X (	5.1/2" 1							_		
	_					<del>-  </del>				I	Hrs On	1	ı	Hours	БШС	e Last	Inspec	CIOII.	
Bit Nu	m	Line	er	Stro	ke	,	SPM	F	ress.	M3/Min	Jet Vel	L DP	Av D	C Av 1	Bit ky	√ BHH	P/SQIN	Pump	kW
		/	/	/	. /	/ /													
		/	/	/	/	<u>/                                    </u>	<u>/ /</u>												
Survey	MD	Angle	Azimuth	Direc	tion	TVD	1	N/S C	ordina 🗆	ates	E/W C	oordir	nates	Verti	cal S	ection		DLS	
Hours	From	Act-Ca	+	-	Onerat:	ions Coveri	ng 24	Hour	e Endi	na at M	idni <i>d</i> ht				Tota	al Hour	rs Repo	rt ed:	24 0
						YING OUT 23					iidiiigiic				1000	ai noui	. Б. Керо.	rt <del>ai</del> .	24.0
		-																	
1.50						ONE & LAND													RISER.
3.00	1330	01 - 53	L/O RISE	R HANDLIN	IG EQUI	P F/ DRILL	FLOOF	R. SPL	JIT LMR	P & BOE	PS IN CE	ILLAR I	DECK. S	ECURE I	EACH 1	IN SET	BACK A	REA.	
1.00	1630	01 - 19	P/U & M/	U WEATHER	REFORD M	OST TOOL (V	VELLHE	EAD RE	TRIEVA	L TOOL)	. INSPE	ECT KN	IVES &	TIGHTEN	1 STOE	COLLA	ıR.		
2.00	1730	01 - 19	TIH W/ M	OST TOOL.	INSTA	LL LOCKING	ASSEN	/BLIES	ETA & E	ACH GUI	DE ROPE	ES TO	GUIDE W	IRES #1	L & #3	3 IN MC	ONPOOL	•	
2.00	1930	01 - 19	ENGAGE W	ELLHEAD W	/ MOST	TOOL & S/C	) 6 M	г WT.	MAKE C	UT @ 37	71M BY E	PUMPIN	G SEAWA	TER @ 3	3240 I	LPM, 10	04 BAR.		
		01 - 19	NOTE: R	KB - MUD	LINE =	: 366M, 30"	' CUT	@ 371	.M (5M	BELOW M	MUD LINE	Ξ).							
0.50	2130	01 - 19	LATCH WE	LLHEAD &	LOCK M	DST TOOL IN	I PLAC	Œ W/	ROV. A	TTEMPT	TO PULI	WELLI	HEAD &	PGB W/	140 N	/T O/PU	JLL - N	o go.	
1.00	2200	01 - 19	S/O, UNL	OCK MOST	TOOL W	/ ROV. FUNC	CTION	TOOL	W/ 324	0 LPM,	145 BAF	R. MOTO	OR STAL	LING. I	P/U &	INSPEC	T KNIV	ES - (	OK.
1.001	2300	01 - 19	S/O & AT	TEMPT TO	FUNCTI	ON TOOL AGA	AIN W	/ 3240	LPM,	145 BAF	R. MOTOF	R STAL	LING. A	TTEMPT	TO P	/U - TC	OL STU	CK.	
		01 - 19	TOOL FRE	E W/ 45 M	T O/PU	LL. KNIFE E	BLADES	S BENI	BUT W	ORN TO	TOP OF	TRAVE	L INDIC	ATING E	TULL (	CUT. UN	IABLE T	0 S/0	DUE TO
						2/O BLADES &													
						T TOOL "HAV										יא ∩ דידי	AMCLIOD	Q #1	£ #12
									, NOR	TITELIN (	-CINCUNA"	oz 1101	rannaran B	OI DIA	v LUCE	ZITOIN.	AIVCHUK!	υ #± (	× #14
<b> </b>		01 - 19	1	•		ORTENED & F													
Safety	 r:	01 – 19	NOTE: H	LGHLAND S	IAR RE	LEASED FROM	1 LOCA	MOITA	@ 10:5	U HRS.									
		2377 - *																	
						IH W/ WEATH													
		peratio	ons: COMPI	ETE P &	A OF W	ELLHEAD, DE	-BALL	AST R	IG TO	SURVIVA	L DRAFT	. WORK	ANCHO!	RS WHIL	E L/O	DRILL	PIPE.		
Remark POB: C		<u> 2N -</u> 3,	SERVICE	- <u>20</u> DO	LPHIN -	- 54, DOLP	HIN S	ERVIC	<u>E -</u> 9						DA	YS SIN	CE LAST	r <u>L</u> TI	- 83
HEAVE:	0.3	3M, PIT	CH 0.3DEG	, ROLL 0.	4DEG;	CUTTING SKI	PS ON	BOAR	D: 3 E	MPTY.									_
DAILY	FE C	OST: 18	3,734 NOK	_	TOTAL	L FE COSTS:	34,	997,3	23 NOK	_		_	_	_		_	_		
05:30	HRS:	POOH W	/ WELLHEAI	0 & MOST															
-				Daily Ta		Cost:		Dai	ly Wel	l Cost:	KR3,754	. 521	Incid	ents:	NO T	NCTDEN	T REPOR	S.T.E.D	
<b>-</b>				_	_	ost: KR1,74	47 05-				KR3, 754 KR131, 4		_					⁄ىنىد.	
		r: 420.							· -		KR131,4 Weight			at Ceme			000 Blend	ed:	
			0 Folds	ole Water			356.0								-	168.0			
Countr	, N	ORWAY				Rig: BYFORD :	DOLPH	IN		via h	none: <sub>52</sub>				UC		INS/HOL		
Field:	PL2	59		<del></del>		se: PL259		<u> </u>					6506/3-				ell ID:		
				I	PI No:	6506/3-1		AI	FE No:	KWENO-	650631-	001		Date:	17-AU	G-2001	Page	: 1	Of 1

Measured 1	Depth:	3667	7.0 m	TVD:	366	2.4 m	PB'	TD:	411.0 m	Prop	osed M	): <u>3</u>	625.0	m Pro	posed	TVD:	3625.0 m
DOL: 33	3	DFS: 28	Spud	Date: 22				Daily	Footag	e:	D	aily Ro	t Hrs:		Total	. Rot Hr	s: 117.5
Torq: 0	Dra	ag: 0.0	Rot Wgt	: 68.0 P	/U Wgt	: 68.0	Slack	Off Wg	t: 68.0	Wind	:	Seas	0.0	/ 0.0	Bar:	0	POB:
Last Casir			339.7 m	Set i			4.3m			72.1m	TVD	1	l'est:		-	Leako	Ef? Y
Cum Rot Hi	rs On C	asing:	(	iii Cum Rot Hi	rs On (					/ Z . IIII		Worst		1041		Remainin	
Liner Size	e:		138.1	t At:						Li	ner To						_
		0.0				MD		0.0						0 MD		a 1.	0.0 TVD
Mud Co: <sub>M-1</sub>				: SEAWATER			Coli									O Gel:	0 / 0 Ph:
				(mm) API						0.00	) wat	0.00	)   * Sai	na: 0.0			PII•
Pm: 0.00	Pi/Mi	0.00 /	0.00 Car	nb:	cl:	Ca	:	Ben	t:	Solid	s %HG/1	LG: 0.00	0.0	00   %I	OS/Ben	t:	/
Drlg Gas:	0	Max Gas	s: 0	Conn Gas:		Trip Gas	g: 0	Tì	rip Cl:	R	emarks	:					
Bit Number	r IADC	Size	Manuf	acturer	Seria	al number	r	Jet	s (Qua:	ntity -	Size)		TFA	MI	) In	MD Out	TVD Out
							_	. /	- /	- /	- ,	/ _	0				
							_	. /	- /	- /	- ,	/ _	0				
Туре	Me	ters I	Hours	WOB	F	PM	Mot.o	or RPM	T-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost/m
1712	110	1	iourb		1				1 100	O Itow	1	100		)	CHAI		COD C / III
						/											
m . 1 .	.1. 6	D.113 -		PUA Doggr	intion	·					<u> </u>						
Total Leng															ASSY	- 3 X 8	3" DRILL
COLLARS	- X/OVI	ER - 6.1,	/2" DRIL	L COLLAR	- 8.1/	2" STRIN	G STAI	3 - 5 X	6.1/2"								_
			1			1				Hrs O	n Jars:	: 	Hours	Since	Last	Inspect	ion:
Bit Num	Lir	ner	5	Stroke		SPI	М	Press.	M3/Min	Jet Ve	l de	Av D	C Av	Bit 🙀	BHH	P/SQIN	Pump kW
	/	/		/	/	/	/										
	/	/		/ .	/	/	/										
Survey MD	Angle	Azimu	th Di	rection	7	ľVD	N/S	Coordin	ates	E/W (	Coordin	ates	Verti	.cal Se	ection		DLS
						+										+	
Hours Fra	n Act-C	at		Operat	ions C	bvering	24 Ho	urs End	ing at M	Midnight				Tota	l Hour	rs Repor	ted: 24.0
1.50 <sub>T</sub> 0000	0 01 - 1	.9 POOH W	V/ MOST 7	TOOL ASSY	F/ 342	2M TO SUI	RFACE.										
0.50T 013	0 01 - 1	.9 C/O KN	NIFE BLAI	DES & CLEA	AN SWAF	RF PORTS	ON MC	ST TOOL	. RE-AT	TACH GU	IDE LII	NES TO	GUIDE 1	WIRE #	1 & #3	IN MOO	NPOOL.
1.50T 020	0 01 - 1	.9 TIH W/	MOST TO	OL ASSY 8	& RE-LA	ATCH WELI	LHEAD.										
0.50T 033	0 01 - 1	9 ATTEME	TO PUI	T METTHEY	AD FREE	E W/ 158	MT O/	PULL -	NO GO.								
1.50T 040	0 01 - 1	9 S/O &	SET DOWN	17 MT. II	NITIATE	E SECOND	CUT 0	.5M HIG	HER THA	N FIRST	BY PUI	MPING S	EAWATE	R @ 32	40 LPM	I, 145 B	AR.
	01 - 1	.9 DEPTH	OF SEABI	ID - 366M	(BRT).	. DEPTH (	OF SEC	OND CUT	- 370.	5M (BRT	).						
0.50 0530	01 – 1	9 г.дтсн	WET.THEAT	) & DITT.T. I	w arde	/ 158 MT	∩ /DIπ	.T. COMM	FNCE DE	_BATI.AS	חדוום פי	ra mos	ΠΡ1/Τ1/Δ1	r. DRAF	T		
				OOL ASSY												& DC ST	DEMAYS
										1110 W I	<u> </u>	712111 1	, 0 5 2	31 , 3	IIIIDI	<u>u be bi</u>	DEWITE.
				HEAD ASS													
				OOL F/ WI							**		0	26::		D = ' =	n
	-	-										T 19MET	O PULL	30" ₩	r:LLHE2	ש F'/ PG	B - NO GO.
2.00T 120	0 01 - 1	9 CUT "I	OCK RING	B" W/ WELI	DING TO	ORCH. PUI	LL & L	/O WELL	HEAD HO	USING A	SSY.						
10.00 140	0 01 - 4	0 COMMEN	CE L/O F	REMAING DE	RILL PI	IPE, DRII	LL COL	LARS &	JARS F/	DERRIC	K WHILI	E CONTI	NUE TO	WORK	ANCHOR	S.	
	_																
	_																
Safety:	_						-						-				
24 Hr Summ	mary: C	UT & PUL	L WELLHE	AD, L/O S	SAME. C	OMMENCE	LAYIN	G OUT D	RILL PI	PE FROM	DERRIC	K WHILE	WORKI	NG AN	CHORS.		
Projected																	
Remarks:															~	·	
POB: CHEVE														DA	AYS SI	NCE LAS	r LTI – 84
HEAVE: 0.																	
DAILY FE C	COST: 1	83,734 N	OK	TOTA	L FE C	OSTS: 3	181, 28	,057 NOI	ζ								
06:00 HRS:	LAST.	ANCHOR B	OLSTERD	& RIG HAN	DED OV	ER TO SI	_					01.					
Daily Mud	Cost:	KR 37, 472	Daily	Tangible	Cost:			aily We				+				T REPOR	ŒD
Cum Mud Co	ost: KR	5,568,58	4 Cum T	angible C	ost: F	R1,747,	951 C	um Well	Cost:	KR135,	123,393	Total	Appr:	KR134	,000,0	000	
Drill Wate	er: 420	.0 Pot	table Wa	ter: 0.0	Fu	uel: 0.0		-		Weight			at Cem			Blende	
Country:					Rig: <sub>BY</sub>	FORD DOL				hone: 52			Drill		n:	INS/HOLI	LINSHEAD
Field: PL2	50				se: <sub>PL2</sub>							6506/3-	1				B5908 -0
PLIZ	زد			API No			ĺ	AFE No:	KWENO-			-	Date:	18-21r			1 of 1

Measured 1	Depth:	36	67.0 r	n	TVD:	366	2.4 m		PBTI	):	411.0 m	Prop	osed M	): <u>3</u>	3625.0	m Pro	posed	TVD:	3625.0	) m
DOL: 34	<u>l</u>	DFS: 2	9	Spud I	Date: 22	-JUL-2	2001			Daily	Footage	e:	D	aily R			Total	. Rot Hr	s: 117	.5
Torq:	Dra	ıg:	Rot	. Wgt:	P	/U Wgt	:	Sl	ack (	Off Wgt	:	Wind	l:	Seas	: 0.0	/ 0.0	Bar:	0	POB:	
Last Casir	ng Size	:	22	9.7 mm	Set i	At:	1	.374.	2m	MD	12	72.1m	TVD	Shoe '		1841	•	Leako	ff? .	Y
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		0.0					MD			0.0 T						.0 MD	ZD: -	O Gel:	0.0 T	
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Pm: 0.00	PI/MI	0.00	/ 0.0	00 Carr	)•	cl:		Ca:		Bent	,• 	SOLIO	S 6HG/1	LG: 0.0	0 / 0.	راة 00 .	S/Ben	L•		
Drlg Gas:	0	Max G	as:	0 Co	onn Gas:		Trip (	as:	0	Tr	ip Cl:	R	emarks	:						
Bit Number	r IADC	Siz	ze M	/Janufa	cturer	Seria	al numl	oer		Jets	(Quar	ntity -	Size)		TFA	A MD	In	MD Out	TVD	Out
									-	/ -	/	- /	- /	/ _	0					
									_	/ -	/	- /	- ,	/ -	0					
Туре	Me	eters	Hour	îs	WOB	I	RPM	N	Motor	RPM	I-Row	0-Row	DC	Loc	В	G	Char	?Pull	Cost	/m
					/		/													
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Total Leng	gth of	BHA:		Bl	HA Descr	iptior	1:	•				•	•	•		•		*		
												Hrs O	n Jars	:	Hours	s Since	Last	Inspect	ion:	
Bit Num	Lir	ner		Q+	roke			SPM	1	Dress	M3/Min	Jet Vo	el DP	λτ. Γ	_			P/SQIN		-TaT
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# **Wellsite Geological Reports**





Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 31.07.01 Days since spud: 10 Depth (mTVD): 1383.6 Depth (mMD): 1386 Current Operation: Washing to bottom. ROP(m/hr): 30 Progress (m): 4 MWD offset: CDR GR: 11.52m, RES: 8.17m, SONIC: 19.27m, MWD GR: 25.81m, D&I: 26.42m. **Last Survey:** 1362.4 mMD 1360.0 mTVD Inc: 4.11° Azim. 157.77° Csg Size (ins): 13 3/8" | Csg Depth(m): 1374.3 MW (sg): 1.43 PP (sg): 1.03 LOT (sg): 1.84 Operations last 24 hours (midnight to midnight): Pressure tested casing. Installed diverter and function tested. Started picking up 8 1/2" BHA Continue to pickup BHA. Function test LWD. Start to pick up 22 joints of drillpipe, when drillpipe below BOP's function test pods and pressure test annular preventer. Continue to RIH. Tag cement and displace to OB mud. Drillout shoe track and clean rathole. Drill 4m new formation and perform LOT (1.84 sg EMW). Rigged down. 6 o'clock update: Washed to bottom. Continued to drill ahead from 1386m MD to 1529m MD, through the Naust formation (Claystone with minor Sandstone intervals). Operations next 24 hours: Continued to drill ahead looking for first core point and either POOH to pick up core barrel or continue to drill on to the Lysing formation GEOLOGICAL DESCRIPTION Interval (m) Description 1382-1386m CLAYSTONE: greyish green, occasionally dark yellowish green, occasionally medium to dark grey, firm, subblocky, non calcareous, good trace carbonaceous material, micromicaceous in playes, occasionally silty. **SHOWS DATA** Interval (m) Description No Shows GAS DATA Gas Type iC4 ppm nC4ppm iC5 ppm Int. (m) Total(%) C1 ppm C2 ppm C3 ppm nC5 pm Drill Gas 0.22 1382-1386 2000 tr tr tr Gas Peaks Conn. Gas Trip Gas Wiper Trip Gas PORE PRESSURE Interval: 1382-1386 Max. (sg): 1.03 Min. (sg): 1.03 Comments: FORMATION PICKS LAST 24 HOURS Formation Difference Basis of Pick Depth Depth Prognosed mTVDBRT mTVDBRT mMDBRT m +/-



Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 01.08.01 Days since spud: 11 Depth (mMD): 1698 Depth (mTVD): 1695.6 Current Operation: Weight up mud in pits to 1.52sg ROP(m/hr): 36.7 Progress (m): 312 MWD offset: CDR GR: 11.52m, RES: 8.17m, SONIC: 19.27m, MWD GR: 25.81m, D&I: 26.42m. **Last Survey:** 1641.84 mMD 1638.89 mTVD Inc: 4.55° Azim. 147.28° MW (sg): 1.50 Csg Size (ins): 13 3/8" | Csg Depth(m): 1374.3 | LOT (sg): 1.84 PP (sg): >1.50 Operations last 24 hours (midnight to midnight): Washed to bottom. Continued to drill ahead from 1386m MD to 1698m MD. At +/- 1660m MD began weighting mud up to 1.55sg while drilling. After beginning to circulate 1.5sg mud round hole. Observed a gain in the active while making a connection at 1698m MD. Shut well in. Suspected "U" tubing with uneven mud, but after bleeding off 3.5bbls, the casing pressure returned to 200psi. Circulated 1.5sg mud using driller's method. Shut well in. Opened well and monitored on trip tank 2 bbls bleed back over 45mins, meanwhile circulating riser volume with 1.5sg mud. Problem with choke line (plugged), reverse circulated choke line to clear. Open choke to trip tank - static, Open lower annular, no flow. Start circulating bottoms up - pit gain 45bbls, shut well in. Weight up pits to 1.52sg. 6 o'clock update: Continued to wieght up pits to 1.52sg. Circulated 1.52sg mud into hole using driller's method. **Operations next 24 hours:** Continue to circulate out gas/water influx. Monitor well. Continue to weight up to 1.55sg, make short trip to shoe. Drill ahead from 1698m MD to next target, the Lysing Formation. GEOLOGICAL DESCRIPTION Interval (m) Description 1386-1552m Naust Formation - Predominantly Claystone with occasional Sandy intervals CLAYSTONE: medium to medium dark grey to greyish green, occasionally dark yellowish green, soft to moderately firm, subblocky to amorphous, sticky in places, trace carbonaceous material, occasionally micromicaceous, rare trace pyrite, non to occasionally moderately calcareous. SANDSTONE: colourless, pale yellow brown, rare pale pink, transluscent to clear, fine to silt grained, predominantly very fine grained, subangular to subrounded, moderately sorted, trace carbonaceous material. **Kal Formation - Predominantly Claystone with occasional Sandstone stringers** CLAYSTONE: greenish black to olive black, firm, subblocky, brittle, silty in places, non calcareous. 1552-1604m SANDSTONE: colourless, off white, pale yellow brown, opaque to transluscent, very fine grained to silty, grading to SILTSTONE in places, subangular to sunrounded, moderately sorted. Brygge Formation - Massive Claystone giving way to interbedded Sandstone and Claystone below CLAYSTONE: medium grey to greyish green, commonly pale blue green, occasionally moderate green, soft 1604-1654m to firm, subblocky to amorphous, non to slightly calcareous, silty in places, occasionally tuffaceous, trace carbonaceous specks. SANDSTONE: colourless to pale yellow brown, very fine to silt grained, grading to SILTSTONE in places, subangular to subrounded, moderately sorted. Top Flooding Surface (Brygge Sandstone) - Massive Sandstone with occasional Claystone beds and Limestone stringers. CLAYSTONE: a/a 1654-1698m SANDSTONE: colourless, pale yellow brown, rare pale pink, clear to transluscent, commonly opaque, predominantly very fine grained, occasionally fine to medium grained, subangular to subrounded, moderately sorted, loose, trace glauconite, abundant ?carbonaceous material.. LIMESTONE: pale yellow brown to pale orange brown, occasionally pale pink, soft to moderately hard, subblocky to crumbly, cryptocrystalline to microcrystalline. **SHOWS DATA** Description Interval (m) No Shows. **GAS DATA** Gas Type Total(%) Int. (m) C1 ppm C2 ppm C3 ppm iC4 ppm nC4ppm iC5 ppm nC5 pm Drill Gas 1386-1552 0.26 3176 2 5 2 Drill Gas 1552-1604 0.42 4642 4 9 2 1 1 1 Drill Gas 1604-1654 0.61 6170 3 10 Drill Gas 1654-1698 0.67 6784 3 11 1 Gas Peak 1629 7166 0.7 2 10 1 1 ? Conn. Gas Peak 1671 3.06 30791 1 3 11 1 1 Circ thru Choke 1689 4.73 46623 10 2 3

**PORE PRESSURE** 

1



Wellsite Geologist: Mike Donovan\Ed Linaker

Interval: 1386-1698 Min. (sg): 1.03 Max. (sg): >1.50

Comments: Probable connection gas at 1671m MD.

		FORMATIO	ON PICKS LAS	T 24 HOURS	
Formation	Depth	Depth	Prognosed	Difference	Basis of Pick
	mMDBRT	mTVDSS	mTVDSS	m +/-	
Kai	1552	1524.3	1515	+9.3	LWD Resistivity
Brygge	1604	1576.2	1552	+24.2	LWD Sonic
Tp Flooding	1654	1626	1606	+20	LWD Resistivity/Sonic
Surface					, and the second



Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 02.08.01 Days since spud: 12 Depth (mMD): 1698 Depth (mTVD): 1695.6 Current Operation: Opening up well ROP(m/hr): -Progress (m): -MWD offset: CDR GR: 11.52m, RES: 8.17m, SONIC: 19.27m, MWD GR: 25.81m, D&I: 26.42m. **Last Survey:** 1641.84 mMD 1638.89 mTVD Inc: 4.55° Azim. 147.28° PP (sg): >1.52 Csg Size (ins): 13 3/8" | Csg Depth(m): 1374.3 | LOT (sg): 1.84 MW (sg): 1.57 Operations last 24 hours (midnight to midnight): Continued to wieght up pits to 1.52sg. Circulated 1.52sg mud into hole using driller's method. Open up well still flowing. Kill well and displace to 1.57sg mud. Open up well 6 o'clock update:. Well static. Circulated and conditioned mud Operations next 24 hours: Continue to circulate and condition mud. Wiper trip to shoe. Drill ahead to next target in the Lysing formation. GEOLOGICAL DESCRIPTION Interval (m) Description **SHOWS DATA** Interval (m) Description No Shows. **GAS DATA** Gas Type Int. (m) Total(%) C1 ppm C2 ppm C3 ppm iC4 ppm nC4ppm iC5 ppm nC5 pm **PORE PRESSURE** Interval: 1698 Min. (sg): >1.52 Max. (sg): >1.52 Comments: **FORMATION PICKS LAST 24 HOURS** Formation Depth Depth Prognosed Difference Basis of Pick mMDBRT mTVDSS mTVDSS m +/-1524.3 +9.3 LWD Resistivity Kai 1552 1515 Brygge 1604 1576.2 1552 +24.2LWD Sonic Top Flooding 1626 1606 LWD Resistivity/Sonic 1654 +20Surface



Tp Flooding

Surface

#### WELLSITE GEOLOGICAL REPORT

Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 03.08.01 Days since spud: 13 Depth (mMD): 1736 Depth (mTVD): 1732.9 **Current Operation: RIH** ROP(m/hr): 30 MWD offset: CDR GR: 11.52m, RES: 8.17m, SONIC: 19.27m, Progress (m): 38 MWD GR: 25.81m, D&I: 26.42m. **Last Survey:** 1699.28 mMD 1696.15 mTVD Inc: 4.46° Azim. 140.09° MW (sg): 1.57 Csg Size (ins): 13 3/8" | Csg Depth(m): 1374.3 | LOT (sg): 1.84 PP (sg): 1.54 Operations last 24 hours (midnight to midnight): Well static. Circulated and conditioned mud. POOH to shoe. Perform rig maintenance. RIH and tag bottom Circulate bottoms up. Take SCR's and drill ahead from 1698m MD to 1736m MD. POOH to do repeat section with LWD due to suspected problem with resistivity - tool OK RIH 6 o'clock update: Continued to RIH. Drilled ahead from 1736m MD to 1905m MD - Provisional Tare Formation 1741m MD, Provisional Top Springar Formation 1797m MD **Operations next 24 hours:** Drill ahead to next target in the Lysing formation. **GEOLOGICAL DESCRIPTION** Interval (m) Description (Brygge Formation) - Dominantly Sandstone with minor Claystone interbeds and rare Limestone 1698-1736 CLAYSTONE: medium to dark grey, occasionally dark greyish blue, occasionally pale greyish green, mottled, firm, subblocky, micromicaceous in places, occasionally tuffaceous, trace micropyrite, occasional carbonaceous material. SANDSTONE: colourless, pale vellow brown, rare pale pink, clear to transluscent, commonly opaque. predominantly very fine grained, occasionally fine to medium grained, predominatly subangular to angular, occasionally subrounded, moderately sorted, loose, trace pyrite, trace glauconite, abundant ?carbonaceous LIMESTONE: white to off white, firm to moderately hard, subblocky to splintery, microcrystalline. **SHOWS DATA** Interval (m) Description No Shows. GAS DATA Total(%) iC4 ppm Gas Type Int. (m) C1 ppm C2 ppm C3 ppm nC4ppm iC5 ppm nC5 pm Drill Gas 1698-1736 0.2 1993 14 1 PORE PRESSURE Interval: 1698-1736 Min. (sg): 1.54 Max. (sg): 1.54 Comments: Gas levels stable/slightly declining, no connection gas. **FORMATION PICKS LAST 24 HOURS** Formation Basis of Pick Depth Depth Prognosed Difference mMDBRT mTVDSS mTVDSS m +/-1524.3 +9.31515 LWD Resistivity Kai 1552 1604 1576.2 1552 +24.2LWD Sonic Brygge

1606

+20

LWD Resistivity/Sonic

1626

1654



			Wellsite G	eologist: N	Iike Donovan\E	Ed Lina	ker
Rig: Byford Dolphin		Well: 6506/3-	1	Date: 04.0	8.01	Days s	since spud: 14
Depth (mMD): 2560		Depth (mTV)	D): 2555.5	Current C	peration: Drilling	ahead 8	8 1/2" hole.
ROP(m/hr): 54.2	Progress	s (m): 824			: 11.52m, RES : 8		
			MWD GR:	25.81m, D&	&I : 26.42m.		
Last Survey:		2533.5 mMI	D 2528.	.97 mTVD	Inc: 1.60°		Azim. 161.93°
MW (sg): 1.57	PP (sg):		Csg Size (ins)				LOT (sg): 1.84
Operations last 24 h	ours (mi	dnight to mid	l <b>night):</b> Conti	nued to RII	H. Drilled ahead f	rom 173	36m MD to 2304m
MD. 5bbl gain detecte 2304m MD to 2560m		ve. Flow check	ed - static. Circ	culated Bot	toms up. Drilled a	head 8	1/2" hole from
6 o'clock update: Co	ontinued t	to drill ahead fi	om 2560m M	D to 2764n	MD in the Nise	Formati	ion.
Operations next 24							
Drill ahead to next tar	rget in the	Lysing format	tion. POOH to	o pick up co	oring assembly.		
		GEC	LOGICAL I	DESCRIPT	TION		
Interval (m)			Descriptio				
						imeston	e stringers becoming
		ominated below F : pale to media			<b>mastone beas.</b> greyish blue green, μ	redomin	antly firm soft in
					omicaceous, occasio		
							prown, predominantly
					oangular, occasional		
					nica, trace fine mica		
	rocrystalli		wnite, moderate	iy nara, sudd	locky to splintery, s	ngntiy ar	gmaceous,
			ssive Claystone	sequence v	vith Siltstone inter	beds to	wards the base and
		imestone string		sequeries .	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
							ccasionally olive grey,
					aces, micromicaceo		
			ding to SILTST	ONE in plac	ces, occasional carbo	naceous	material, slightly
	careous in		to medium grev	brown firm	subblocky to block	v slightl	y crumbly, grading to
							es with weak calcite
		glauconite, trace				1	
							d, subblocky to blocky
				grading to D	OLOMITE, slightl	y argillac	eous in places,
		ine to microcryst		manca with	Siltstone interhed	c in nlac	ces and occasional
		nd Dolomite st		quence with	Show merbed	3 III piac	ces and occasional
				y, olive grey,	medium dark brow	n, firm,	occasionally soft,
			ticky in places, 1	micromicace	ous, silty in places, g	rading S	ILTSTONE, non to
		alcareous.					
	TSTONE MESTON						
			to dark vellowi	ish orange v	ery hard, blocky to s	uhlocky	microcrystalline
	)LOMITE	i. greyish orange	to dark jenowi	on orange, v	ery nard, blocky to	иогоску,	, interocrystannie.
			SHOWS	DATA			
Interval (m)				Descript	ion		
No	Shows.						

			G	AS DATA	1				
Gas Type	Int. (m)	Total(%)	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4ppm	iC5 ppm	nC5 pm
Drill Gas	1736-1797	0.3	3022	-	1	15	3	1	-
Drill Gas	1797-2420	0.5	5889	28	5	22	2	1	1
Drill Gas	2420-2560	0.7	7102	51	9	23	1	1	-
Gas Peak	2180	0.6	6136	37	4	15	1	1	-
Conn. Gas Peak?	2216	1.1	11800	40	6	17	1	1	1



Wellsite Geologist: Mike Donovan\Ed Linaker

					0				
Gas Peak	2245	0.7	7681	36	5	19	4	11	1
Gas Peak	2322	1.3	13489	65	9	21	1	1	-
Gas Peak	2354	1.5	11366	69	10	22	1	1	-
Gas Peak	2400	1.6	13515	78	12	22	1	1	-
Gas Peak	2435	1.2	11313	79	13	23	1	1	-

#### PORE PRESSURE

Interval: 1736-2560 Min. (sg): 1.4 Max. (sg): 1.54

Comments: One possible connection gas at 2216m, but this peak was also coincident with some faster drilling no other connection gas peaks where observed. The Gas in readings taken from the active pit show 50 to 60% of gas is being recycle in the system. The resistivity trend in the Springar and Nise Claystones suggests a stable or decreasing pore pressure. The Isonic is giving erratic values and is currently of no use for pore pressure evaluation.

		FORMATIC	N PICKS LAS	T 24 HOURS	
Formation	Depth	Depth	Prognosed	Difference	Basis of Pick
	mMDBRT	mTVDSS	mTVDSS	m +/-	
Kai	1552	1524.3	1515	+9.3	LWD Resistivity
Brygge	1604	1576.2	1552	+24.2	LWD Sonic
Tp Flooding	1654	1626	1606	+20	LWD Resistivity/Sonic
Surface					-
Tare	1741	1712.8	1690	+22.8	LWD Resistivity/Cuttings
Springar	1797	1768.6	1756	+12.6	LWD GR/Sonic/Cuttings
Nise	2420	2390.2	2342	+47.8	LWD GR



Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 05.08.01 Days since spud: 15 Depth (mMD): 3101 Current Operation: POOH to pick up Coring assembly Depth (mTVD): 3096.9 ROP(m/hr): 39.4 Progress (m): 541 MWD offset: CDR GR: 11.52m, RES: 8.17m, SONIC: 19.27m, MWD GR: 25.81m, D&I: 26.42m. **Last Survey:** 3049.8 mMD 3045.2 mTVD Inc: 1.75° Azim. 232.8° MW (sg): 1.57 PP (sg): 1.54 Operations last 24 hours (midnight to midnight): Continued to drill ahead from 2560m MD to 3101m MD. Circulate bottoms and circulate hole clean. POOH. 6 o'clock update: Continued to POOH. Lay down bit and LWD tools. Start picking up 76m core barrel and corehead. (73m maximum length cut) **Operations next 24 hours:** Continue picking up coring assembly. RIH and cut core no.1 **GEOLOGICAL DESCRIPTION** Interval (m) Description 2560-3088 (Nise Formation) - Massive Claystone sequence with Siltstone interbeds in places and occasional **Limestone and Dolomite stringers** CLAYSTONE: medium to medium dark grey, olive grey, medium dark brown, firm, occasionally soft, subblocky to blocky, slightly sticky in places, micromicaceous, silty in places, grading SILTSTONE, non to locally very calcareous. SILTŠTONE: medium grev to medium grev brown, firm, subblocky to blocky, slightly crumbly, grading to CLAYSTONE in places, trace sand, rarely grading to very fine SANDSTONE in places with weak calcite cement. trace glauconite, trace carbonaceous material. LIMESTONE: very pale orange brown to dark yellow orange, firm to moderately hard, subblocky to blocky occasionally splintery, dolomitic, occasionally grading to DOLOMITE, slightly argillaceous in places, cryptocrystalline to microcrystaline. DOLOMITE: greyish orange to dark yellowish orange, very hard, blocky to sublocky, microcrystalline. 3088-3101 (Lysing Formation) - A Sandstone dominated interbedded Sandstone Claystone sequence, the upper 3m of which well cement with calcite. CLAYSTONE: medium to medium dark grey, medium grey brown, olive grey, subblocky to blocky, crumbly in places, silty, commonly grading to SILTSTONE, trace glauconite, micromicaceous in places, trace carbonaceous material, non to slightly calcareous. SANDSTONE: predominantly loose, colourless to off white, very pale yellow brown, clear to transluscent, predominantly fine to medium grained, rare coarse grained, rounded to subrounded, occasionally angular, subspherical, poor to moderately sorted, occasionally consolidated with moderate to strong calcite cement, occasional light to medium grey argillaceous matrix, trace very fine disseminated micropyrite, trace glauconite, no to poor visible porosity, NO SHOWS **SHOWS DATA** Interval (m) Description No Shows **GAS DATA** Gas Type Int. (m) Total(%) C1 ppm C2 ppm C3 ppm iC4 ppm nC4ppm iC5 ppm nC5 pm Drill Gas 2560-3088 0.5 4659 59 33 15 Drill Gas 3088-3101 0.7 6450 118 28 26 3 2 Gas Peak 2638 1.7 13232 115 23 22 2 Gas Peak 2730 11748 20 23 2 1.2 106 22 Gas Peak 2759 1.3 13471 106 20 2 1 Gas Peak 2.6 23725 317 70 29 2 2828 6 Gas Peak 3062 1.6 11119 189 43 21 2 4 Gas Peak 3095 1.1 10316 29 92 24 9 **PORE PRESSURE** Interval: 1736-2560 Min. (sg): 1.4 Max. (sg): 1.54 Comments:

**FORMATION PICKS LAST 24 HOURS** 



Formation	Depth	Depth	Prognosed	Difference	Basis of Pick						
	mMDBRT	mTVDSS	mTVDSS	m +/-							
Kai	1552	1524.3	1515	+9.3	LWD Resistivity						
Brygge	1604	1576.2	1552	+24.2	LWD Sonic						
Tp Flooding	1654	1626	1606	+20	LWD Resistivity/Sonic						
Surface					-						
Tare	1741	1712.8	1690	+22.8	LWD Resistivity/Cuttings						
Springar	1797	1768.6	1756	+12.6	LWD GR/Sonic/Cuttings						
Nise	2420	2390.2	2342	+47.8	LWD GR						
Lysing	3088	3058.3	3043	+15.3	LWD GR/Resistivity/Cuttings						



Wellsite Geologist: Mike Donovan\Ed Linaker

			Wells	site Geolo	gist: Mike	<b>Donovan</b>	<b>\Ed Lina</b>	ker			
Rig: Byford Dol <sub>l</sub>	ohin	Well: 6506	/3-1	Dat	te: 06.08.01	ince spud:	16				
D 4 ( MD) 0	100	D 4 ( T	T/D) 0100	4				1			
Depth (mMD): 3		Depth (mT			rrent Oper	ation: Cutti	ng core #1				
ROP(m/hr): 13	Progress			offset: -		1 ~ 5		1 1 00	2.00		
Last Survey:	[== ( )	3049.8 m			TVD Inc			Azim. 23			
MW (sg): 1.57	PP (sg): 1		Csg Siz	e (ins):13 3	3/8"   Cs	g Depth(m)	: 1374.3	LOT (sg)			
<b>Operations last</b>											
coring assembly.											
6 o'clock update			1 from 312	28 m MD 1	to 3171.5m	MD (70m	Cut). Pum	p out of re	servoir,		
continue to circul		ne riser									
Operations next			_								
POOH with and	recover core #						TD.				
		Gl	EOLOGIC		CRIPTIO	N					
Interval (m)											
3101-3128	(Lysing Form		interbedde	ed Sandsto	ne, Claysto	ne sequenc	e, the uppe	r 3m of wh	ich well		
	cement with				-		-				
	80-90% CLAY	STONE: m	edium to m	edium dark	grey, mediu	m grey brow	n, olive gre	y, subblocky	to blocky,		
	crumbly in place				SIONE, tr	ace glauconi	te, micromi	caceous in p	iaces, trace		
	10-20% SANI				ourloss to of	ff white wor	nala vallav	, brown clos	r to		
	transluscent, p	redominanth	i fine to med	ly 100se, cor dium graine	d rare coars	n wille, very	nale yellov	ibrounded	11 10		
	occasionally an								rate to		
	strong calcite										
İ	micropyrite, tr						J				
	(Cuttings descri	riptions)	•	•	v						
	<b>Detailed Core</b>	e description	n report to i	follow.							
			CTT	OHIG DAI	П 4						
T ( 1 ( )			SH	OWS DAT							
Interval (m)	N. Gl			D	escription						
	No Shows.										
		T =		AS DATA		T		T			
Gas Type	Int. (m)	Total(%)	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4ppm	iC5 ppm	nC5 pm		
Drill Gas	3101-3128	0.9	8610	59	20	30	3	1	-		
Gas Peak	3107.5	1.5	15646	84	48	12	5	1	-		

#### PORE PRESSURE

Interval: 1382-3128 Min. (sg): 1.11 Max. (sg): 1.54

#### Comments:

		FORMATIC	N PICKS LAS	T 24 HOURS								
Formation	Depth	Depth	Prognosed	Difference	Basis of Pick							
	mMDBRT	mTVDSS	mTVDSS	m +/-								
Naust	502	477	464	+13	LWD GR/Resistivity							
Kai	1552	1524.3	1515	+9.3	LWD Resistivity							
Brygge	1604	1576.2	1552	+24.2	LWD Sonic							
Tp Flooding	1654	1626	1606	+20	LWD Resistivity/Sonic							
Surface					-							
Tare	1741	1712.8	1690	+22.8	LWD Resistivity/Cuttings							
Springar	1797	1768.6	1756	+12.6	LWD GR/Sonic/Cuttings							
Nise	2420	2390.2	2342	+47.8	LWD GR							
Lysing	3088	3058.3	3043	+15.3	LWD GR/Resistivity/Cuttings							



	Wellsite Geologist: Mike Donovan\Ed Linaker											
Rig: Byford Dolp	ohin	Well: 6506/	′3-1		Date	: 07.08	3.01		D	ays s	ince spud:	17
Depth (mMD): 31		Depth (mT						tion: Cut				
ROP(m/hr): 9.2	Progress	s (m): 43.5		VD offset					m , D8	&I - 1	8.95m	
Last Survey:		3049.8 ml	MD	3045	.2 m	ΓVD	Inc	: 1.75°			Azim. 23	2.8°
MW (sg): 1.57	PP (sg):			g Size (ins)				g Depth(r			LOT (sg)	
Operations last												
(70m Cut). Pump												
core #1 (67.69m)					ore ba	rrel. Pi	icke	d up new	bit and	l LW	D tools, su	ırface
tested same and F												
6 o'clock update		o RIH pickiı	ng up s	singles fro	m dec	k. Cor	ıtinı	<u>ied RIH.</u>				
	Operations next 24 hours:											
Continue to RIH ream cored section for LWD data. Drill ahead to TD.												
GEOLOGICAL DESCRIPTION												
Interval (m)				Descriptio								
3128-3171.5	(Lysing Form				ated ir	terbed	lded	Sandsto	ne Clays	stone	sequence,	the upper
	3m of which well cement with calcite.											
	80-90% CLAYSTONE: medium to medium dark grey, medium grey brown, olive grey, subblocky to blocky, crumbly in places, silty, commonly grading to SILTSTONE, trace glauconite, micromicaceous in places, trace											
	carbonaceous	material, non	to sligh	itly calcared	ous.							
carbonaceous material, non to slightly calcareous. 10-20% SANDSTONE : predominantly loose, colourless to off white, very pale yellow brown, clear to												
	transluscent, predominantly fine to medium grained, rare coarse grained, rounded to subrounded,											
occasionally angular, subspherical, poor to moderately sorted, occasionally consolidated with moderate to												
strong calcite cement,, occasional light to medium grey argillaceous matrix, trace very fine disseminated												
	micropyrite, trace glauconite, no to poor visible porosity, NO SHOWS. (Cuttings descriptions)											
(Cutungs descriptions)												
	<b>Detailed Cor</b>	e Descriptio	n repoi	rt to follow	7.							
				SHOWS	DAT	Λ						
Interval (m)				SHOWS		scriptic	n n					
Interval (III)	No Shows.				DC	scriptio	<i>J</i> 11					
	110 bilows.			GAS D	ΔΤΔ							
Gas Type	Int. (m)	Total(%)	C1 pp			C3 pp	m	iC4 ppm	nC4p	nm	iC5 ppm	nC5 pm
Drill Gas	3128-3171.5	0.9	8610			20 20	111	30	3		1 1	-
		1		ORE PR		RE						1
Interval: 1382-317	71			Min. (sg				I	Max. (sg	g): 1.5	54	
Comments:				1 (-8	5/			1 -		5/		
		FORM	IATIO	N PICK	S LAS	T 24	HO	URS				
Formation	Depth	Dept		Progno				ence		Ba	sis of Pick	
	mMDBRT	mTVI		mTVE			n +			_u		
Naust	502	477		464		<u> </u>	+13		LI	WD (	GR/Resisti	vitv
Kai	1552	1524		1513			+9.				O Resistivit	
Brygge	1604	1576		1552			+24				ND Sonic	J
Tp Flooding	1654	1620		1606			+20		I.W		esistivity/S	Sonic
Surface	1001	1020	-	1000	-		. ~ .	-				
Tare	1741	1712.8 169			)	+22.8		.8	LWD Resistivity/Cuttings			ıttings
Springar	1797	1768		1756					LWD GR/Sonic/Cuttings			
Nise	2420	2390		2342		+12.6 +47.8			LWD GR/Sonic/Cuttings LWD GR			
Lysing	3088	3058		3043			+15		LWD		Resistivity/	Cuttings
ப்ரவாத	3000	3030	.0	JU40	,		1 J	.0	LVVD (	GIV/ I	ccoistivity/	Cuttings



Nise

Lysing

Lange

2420

3088

3137.5

2390.2

3058.3

3107.8

#### WELLSITE GEOLOGICAL REPORT

Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 08.08.01 Days since spud: 18 Depth (mMD): 3437 Current Operation: Drilling ahead 8 1/2" hole. Depth (mTVD): 3432.1 ROP(m/hr): MWD offset: GR - 11.56m, Res - 8.21m, D&I - 18.95m Progress (m): 3394.8 mMD **Last Survey:** 3390 mTVD Inc: 1.8° Azim. 240.7° Csg Size (ins): 13 3/8" | Csg Depth(m): 1374.3 | LOT (sg): 1.84 MW (sg): 1.60 Max PP (sg): 1.54 Operations last 24 hours (midnight to midnight): Continued to RIH picking up singles from deck. Continued RÎH. Reamed cored section for LWD data. Drill ahead from 3171.5m MD to 3437m MD. 6 o'clock update: Continued to drill ahead from 3437m MD tp 3587m MD **Operations next 24 hours:** Continue to Drill ahead to TD. Circulate bottoms up, pull out of hole. Rig up to run Schlumberger wireline. GEOLOGICAL DESCRIPTION Interval (m) Description (Lange Formation) - Predominantly Claystone with occasional Limestone and Sandstone stingers, 3171.5-3437 and rare Dolomite strinnger **CLAYSTONE**: medium to medium dark grey, olive grey, firm, blocky, micromicaceous, occasional very fine carbonaceous material, occasionally silty, occasionally grading to SILTSTONE, non calcareous. SANDSTONE: (often present as rock flour) very pale grey to white, firm, friable in places, blocky, very fine grained, clear to transluscent, colourless to very pale grey, subrounded, subangular, subspherical, moderately sorted, good trace glauconite, trace calcite cement, silty, grading to SILTSTONE, no visible porosity, NO **LIMESTONE**: pale yellowish orange to dark yellowish orange, firm to moderately hard, blocky, crumbly in places, argillaceous, locally very argillaceous, dolomitic, grading to DOLOMITE in places, cryptocrystalline to occasionally microcrystalline. **DOLOMITE**: light brown to moderate yellowish brown, very hard, blocky to angular, microcrystalline. **SHOWS DATA** Interval (m) Description No Shows. **GAS DATA** Gas Type Int. (m) Total(%) C1 ppm C2 ppm C3 ppm iC4 ppm nC4ppm iC5 ppm nC5 pm Drill Gas 3171-3220 1.0 9500 130 20 10 5 Drill Gas 3220-3437 0.75 7000 13 100 5 15 Gas Peak 3258 1.35 10853 141 32 3 Gas Peak 3400 1.37 11323 218 48 15 5 1 **PORE PRESSURE** Interval: 3171-3437 Min. (sg): 1.3 Max. (sg): 1.3 -The completed core description report for core one is with this report. Comments: -Top Lange based on correlation with 6506/6-1. **FORMATION PICKS LAST 24 HOURS** Basis of Pick Formation Depth Depth Prognosed Difference mMDBRT mTVDSS mTVDSS m + / -Naust 502 477 464 +13LWD GR/Resistivity 1524.3 +9.3LWD Resistivity Kai 1552 1515 Brygge 1604 1576.2 1552 +24.2LWD Sonic Tp Flooding 1626 +20 LWD Resistivity/Sonic 1654 1606 Surface LWD Resistivity/Cuttings Tare 1741 1712.8 1690 +22.81797 LWD GR/Sonic/Cuttings Springar 1768.6 1756 +12.6

2342

3043

3117

+47.8

+15.3

-9.2

LWD GR

LWD GR/Resistivity/Cuttings

LWD GR/Resistivity



					_	me Donovan					
Rig: Byford Dol	phin	Well: 6506/	/3-1	D	Date: 09.08	.01	Days s	ince spud:	19		
Depth (mMD): 3	667	Depth (mT	VD): 3662.	.0 C	Current Op	eration: POC	)H				
ROP(m/hr): 25.6	Progress	s (m): 230	MWD (	offset: G	R - 11.56	m, Res - 8.21r	n , D&I - 1	8.95m			
Last Survey:	1	3641.9 ml	MD	3636.9	mTVD	Inc: 1.9°		Azim. 23	2.6°		
MW (sg): 1.60	Max PP	(sg): 1.54	Csg Siz	e (ins): 1	3 3/8"	Csg Depth(m	): 1374.3	LOT (sg)	: 1.84		
<b>Operations last</b>	24 hours (mi	dnight to m	idnight):	Continu	ed to drill	ahead from 3	437m MD				
Circulated while	waiting on boa	nt for more c	uttings skip	os. Conti	inued drill	at 11:30 from	3600m M	D to 36671	n MD		
TD for well 6506	3/3-1. (approx	14:30). Circ	ulateď botto	oms up a	and contin	ued circulatin	g until hole	e clean. flov	wcheck		
and POOH.				-							
6 o'clock update	e: Continued t	o POOH. L	aid down b	it and L	WD, clear	rigfloor. Rig	up Schlum	berger wire	line. Pick		
up first toolstring		ı run 1 PEX	•								
Operations next 24 hours:											
POOH with Run 1 PEX. Rig down Run 1. Rig up Run 2 OBT/DSI and RIH.											
GEOLOGICAL DESCRIPTION											
Interval (m) Description											
3437-3667 (Lange Formation) - Predominantly Claystone with occasional Limestone and Sandstone stingers,											
and rare Dolomite stringers											
CLAYSTONE: medium to medium dark grey, olive grey, firm, blocky, micromicaceous, occasional very											
	fine carbonaceous material, occasionally silty, occasionally grading to SILTSTONE, non calcareous. <b>SANDSTONE</b> : (often present as rock flour) very pale grey to white, firm, friable in places, blocky, very fine										
	grained, clear	to transluscer	it. colourless	s to verv r	oale grev. si	ıbrounded, sub	angular, sub	snherical m	oderately		
	sorted,good to	race glauconit	e, trace calci	te cemen	t, silty, grad	ing to SILTST	ONE, no vi	sible porosit	y, NO		
	SHOWS.	Ü				J		-	•		
	LIMESTON	$\mathbf{E}$ : pale yello	wish orange	to dark y	ellowish or	ange, firm to m	oderately h	ard, blocky,	crumbly in		
				eous, dolo	omitic, grad	ing to DOLON	AITE in plac	ces, cryptocr	ystalline to		
	occasionally n			د دراامین	lah huarrum i	war hand blad	to anoula		allin a		
	DOLUMITI	1 : light brown		OWS D		very hard, block	ky to angula	r, microcrysi	alline.		
Interval (m)			эп			n					
Interval (III)	No Shows.			-	Descriptio	)11					
	NO SHOWS.		C	AS DAT	ГА						
Gas Type	Int. (m)	Total(%)	C1 ppm	C2 ppn		n iC4 ppm	nC4ppm	iC5 ppm	nC5 pm		
Drill Gas	3437-3502	1.5	14000	200	35	15	5	2	-		
Drill Gas	3502-3667	0.8	7000	150	30	12	5	3	1		
Gas Peak	3440	2.19	20530	338	71	17	7	1	-		
Gas Peak	3472	2.37	22865	380	72	17	6	2	-		
Gas Peak	3526	1.36	10816	241	51	19	6	1	-		
Gas Peak	3596	1.27	9003	210	49	20	7	2	1		
Gas Peak	3618	1.65	13101	240	52	17	6	1	1		
				E PRES							
Interval: 3437-36				(in. (sg):		M	ax. (sg): 1.4	1			
Comments:	-Top Lange	based on co	rrelation wi	th 6506/	/6-1.						

FORMA	TION	DICKS	TACT	24 HOURS
I. O IVIVIA		11010		

	FORMATION PICKS LAST 24 HOURS												
Formation	Depth	Depth	Prognosed	Difference	Basis of Pick								
	mMDBRT	mTVDSS	mTVDSS	m +/-									
Naust	502	477	464	+13	LWD GR/Resistivity								
Kai	1552	1524.3	1515	+9.3	LWD Resistivity								
Brygge	1604	1576.2	1552	+24.2	LWD Sonic								
Tp Flooding	1654	1626	1606	+20	LWD Resistivity/Sonic								
Surface					-								
Tare	1741	1712.8	1690	+22.8	LWD Resistivity/Cuttings								
Springar	1797	1768.6	1756	+12.6	LWD GR/Sonic/Cuttings								
Nise	2420	2390.2	2342	+47.8	LWD GR								
Lysing	3088	3058.3	3043	+15.3	LWD GR/Resistivity/Cuttings								
Lange	3137.5	3107.8	3117	-9.2	LWD GR/Resistivity								



Rig: Byford Dolp	ord Dolphin   Well: 65			6506/3-1			Date: 10.08.01				Days since spud: 20		
Depth (mMD): 36	667	Depth (mT	VD): 3	662.0	Curr	ent Opera	ation: R	IH w	ith Wireli	ne Run 3 -	PEX		
ROP(m/hr): -	Progress			VD offset:		•							
Last Survey:		3641.9 m	MD	3636	3.9 m <sup>-</sup>	TVD Inc	:: 1.9°			Azim. 23	2.6°		
MW (sg): 1.60	Max PP	(sg): 1.54	Csg	g Size (ins)	: 13 3	/8"   Css	g Depth	(m):	1374.3	LOT (sg)			
Operations last 2	24 hours (mic	lnight to n	nidnigl	ht): Conti	nued t	o POOH	. Laid d	own	bit and L	WD, clear	rigfloor.		
Rig up Schlumber	ger wireline. I	Pick up first	toolstr	ing and R	IH wi	th Run 1	AIT-PE	X-H	NGS. Do	repeat sec	tion at		
3180-3060m on w	ay in tag bott	om and PO	OH wi	th and Rig	dowi	n Run 1. F	Rig up R	un 2	DSI-GR	-AMS-OB	DT and		
RIH. Do repeat se			on the	way in, tag	g botte	om and Po	OOH. F	Rig do	own Run	2 DSI-GR	-AMS-		
OBDT. Rig up Run 3 PEX and RIH.													
6 o'clock update: Continued to RIH with Run 3 and relog anomalous density data in Brygge formation. POOH and													
rig down Run 3. Rig up Run 4 VSP-GR and RIH													
Operations next 24 hours:													
Continue to RIH with Run 4 and shoot VSP survey and walk away survey, POOH and rig down run 4 VSP-GR. Rig													
up Run 5 MDT-GR and RIH to take pressures and samples.													
GEOLOGICAL DESCRIPTION													
Interval (m) Description													
SHOWS DATA													
Interval (m) Description													
No Shows.													
GAS DATA													
Gas Type	Int. (m)	Total(%)	C1 pp			C3 ppm	iC4 pp	m	nC4ppm	iC5 ppm	nC5 pm		
Drill Gas	11111 (111)	10441(70)	01 PF	/   U. p	P	оо ррии	10.1 PP		e .pp	100 pp.ii	neo pin		
Gas Peak													
		1	P	ORE PRI	ESSU	RE			<u> </u>				
Interval: -				Min. (sg	g): 1.	4		Max	x. (sg): 1.4				
Comments:	-Top Lange l	pased on co	rrelatio						· 0				
	1 0												
		FORM	<b>IATIC</b>	N PICK	S LAS	T 24 HC	URS						
Formation	Depth	Dep	th	Progno	sed	Differ	ence		Bas	sis of Pick			
	mMDBRT	mTVl		mTVD		m +							
Naust	502	477	7	464		+13	3		LWD (	GR/Resisti	vity		
Kai	1552	1524	1.3	1515	j	+9.	3		LWI	Resistivit	у		
Brygge	1604	1576	5.2	1552	2	+24	.2		LV	VD Sonic	v		
Tp Flooding	1654	162	6	1606	3	+20	0		LWD R	esistivity/S	onic		
Surface										J			
Tare	1741	1712	2.8	1690	)	+22	.8	]	LWD Res	sistivity/Cu	ıttings		
Springar	1797	1768	3.6	1756	3	+12	.6			/Sonic/Cu			
Nise	2420	2390	).2	2342	2	+47	.8			WD GR			
Lysing	3088	3058	3.3	3043	3	+15	.3	LW	VD GR/F	Resistivity/	Cuttings		
Lange	3137.5	3107	7.8	3117	7	-9.2	2			GR/Resisti			



D. D.C. 1D.1	1. 7	17 11 0500		rensite d				_ 0110 (41				0.1
Rig: Byford Dolp	ohin \\	Well: 6506/	/3-1		Date	e: 11.08.0	01		Day	S S	ince spud:	21
Depth (mMD): 30	667 I	Depth (mT	VD): 3	3662.0	Cur	rent Ope	era	tion: RIH	with cle	and	out assemb	oly
ROP(m/hr): -	Progress (	(m): -	MV	VD offset:	-	-						V
Last Survey:		3641.9 m				TVD I					Azim. 23	2.6°
MW (sg): 1.60	Max PP (s	sg): 1.54	Csg	g Size (ins)	: 13 3	3/8" (	Csg	Depth(n	n): 1374.3	}	LOT (sg)	: 1.84
Operations last	24 hours (mid	night to m	nidnigl	ht): Contii	nued	to RIH v	wit	h Run 3 a	ınd relog	an	omalous d	ensity
data in Brygge foi	rmation. POOF	I and rig d	own R	un 3. Rig ı	ıp Ru	n 4 VSP	P-G	R and R	H taking	; cł	ieckshots a	ıt 2400m
and 3200m. RIH												
GR correlation no												
overpull. Then 3500lbs overpull at 3402m - tool stuck for about an hour before it came free. POOH, Overpull at 346m (2000lbs) and 3107m (2500lbs). Overpull of 3500lbs at 3086m and tool stuck came free after nearly 4 hours												
3346m (2000lbs) and 3107m (2500lbs). Overpull of 3500lbs at 3086m and tool stuck came free after nearly 4 hours.												
POOH and rigged down VSP-GR and Schlumberger wireline. Picked up cleanout assembly and RIH. Cut and												
slipped drilling line at the shoe. Circulate and conditioned mud at shoe.												
<b>6 o'clock update:</b> Continued to circulate and condition mud at the shoe. Continued to RIH breaking circulation every 20 stands. Tag bottom and circulated bottoms up. Circulated hole clean and boosted riser.												
Operations next 24 hours: Continue to circulate and condition mud and boost riser. POOH with conditioning												
assembly. Clear rigfloor. Rig up Schlumberger wireline, pick up wireline Run 5 VSP-GR and RIH.												
GEOLOGICAL DESCRIPTION												
Interval (m) Description												
SHOWS DATA												
Interval (m) Description												
No Shows.												
No Shows.  GAS DATA												
Gas Type	Int. (m)	Total(%)	C1 pp			C3 ppm	n T	iC4 ppm	nC4pp	m	iC5 ppm	nC5 pm
Gas Peak Circ.	2100	6.6	6439			42		10	5			-
Trip Gas	3667	5.0	4628		3	53		9	5		1	-
			P	ORE PRI	ESSU	IRE			•			
Interval: -				Min. (sg				N	1ax. (sg):	1.4	1	
Comments:	-Top Lange ba	ased on co	rrelatio	n with 650	06/6-	1.						
		FORM	/ATIC	N PICK	C T A	CT 94 L	10	HDC				
Formation	Depth	Dep		Progno		Diffe				Ra	sis of Pick	
1 Offiliation	mMDBRT	mTVI		mTVD			+/			Du	ois of 1 ick	
Naust	502	477		464			<u>-13</u>		LW	D (	GR/Resisti	ivitv
Kai	1552	1524		1515			-9.3				O Resistivit	
Brygge	1604	1576		1552			24.				ND Sonic	J
Tp Flooding	1654	162		1606			+20		LWD		esistivity/S	Sonic
Surface							-			-	- J · -	
Tare	1741	1712	2.8	1690	)	+2	22.	8	LWD	Res	sistivity/Cu	uttings
Springar	1797	1768	3.6	1756	3	+	12.	6	LWD	GR	2/Sonic/C	uttings
Nise	2420	2390	).2	2342	2	+4	47.	8		L	WD GR	-
Lysing	3088	3058	3.3	3043	3	+	15.	3	LWD G	R/1	Resistivity/	Cuttings
Lange	3137.5	3107	'.8	3117	7	-!	9.2		LW	D (	GR/Resisti	ivity
	0.20110	0101		0111	•	<u> </u>	٠.~		2,11			· - • J



Rig: Byford Dolp	lphin   Well: 6506/3-1				Date:	: 12.08.01		Days s	Days since spud: 22			
Depth (mMD): 36	667	Depth (mT	VD): 36	62.0	Curre	ent Opera	tion: Att	empting to s	ample with	MDT		
ROP(m/hr): -	Progress			D offset: -		p		<u></u>				
Last Survey:	1 -8	3641.9 ml				VD Inc	: 1.9°		Azim. 23	2.6°		
MW (sg): 1.60	Max PP	(sg): 1.53	Csg S	Size (ins):	13 3/	/8" Css	Depth(1	n): 1374.3	LOT (sg)			
Operations last 2			idnight	): Continu	ued to	o circulate	e and cor	dition mud				
Continued to RIH												
and boosted riser.												
bottom and circul												
decided due to we												
up Run 5 - MDT-GR and RIH. Took pretests (10 prior to sample 6 good, 2 supercharged, 2 tight, further 4 while												
attempting to sample) in the Brygge.												
6 o'clock update: Continued to attempt a sample in the Brygge - no go. RIH to Lysing take 6 pretests and attempt												
sample  Operations next 24 hours: Continue sampling in the Lysing Formation. POOH attempt sample in th Brygge.												
							OOH att	empt sample	e in th Bryg	ge.		
POOH and rig do	wn Run 5 M	DI-GR. Rig	up Kun	6 VSP-G	K and	d KIH.						
GEOLOGICAL DESCRIPTION												
Interval (m) Description												
SHOWS DATA												
Interval (m) Description												
No Shows.												
GAS DATA												
Gas Type	Int. (m)	Total(%)	C1 ppm	1 C2 ppi	m	C3 ppm	iC4 ppm	nC4ppm	iC5 ppm	nC5 pm		
				RE PRE								
Interval: -				Min. (sg):			]	Max. (sg): 1.4	4			
Comments:	-Top Lange	based on cor	relation	with 6506	6/6-1							
		EODI	LATITOR	I DICKO	TAG	T 04 TTO	TIDO					
Г	D. 4			N PICKS				n	· CD: I			
Formation	Depth mMDBRT	Dept		Prognose		Differe		Ва	sis of Pick			
Naust	502	mTVI 477		mTVDS 464	) S	m + +13		LWD	CD/Dogisti	· ·i+··		
Kai	1552	1524		1515		+9.			GR/Resisti D Resistivit			
	1604	1576		1513		+9.			WD Sonic	y		
Brygge Tp Flooding	1654	1620		1606		+24				onic		
Surface	1034	1020	0	1000		+20	'	LWDK	esistivity/S	OHIC		
Tare	1741	1712	8	1690		+22	8	I W/D Pa	sistivity/Cu	ıttings		
Springar	y c								U			
Nise	2420	2390		2342		+12		LWD GR/Sonic/Cuttings				
Lysing	3088	3058		3043		+47		LWD GR LWD GR/Resistivity/Cuttings				
Lange	3137.5	3107		3117		-9.2			GR/Resisti			
Lange	0101.0	3107	.0	3117		-3.2	·	יעיים	an nesisti	vily		



# WELLSITE GEOLOGICAL REPORT

Wellsite Geologist: Mike Donovan\Ed Linaker

Rig: Byford Dolp	l Dolphin   Well: 6506/3-1   Date: 13.08.01				Days since spud: 23					
Depth (mMD): 36	667	Depth (mT	VD): 3	662.0	Cun	ent Opera	ation: Co	ntinuing witl	ı VSP surv	ey
ROP(m/hr): -	Progress			VD offset		•				V
Last Survey:		3641.9 m	MD	363	6.9 m	ΓVD Inc	:: 1.9°		Azim. 23	2.6°
MW (sg): 1.60	Max PP	(sg): 1.53	Csg	g Size (ins	): 13 3	/8" Cs	g Depth(1	n): 1374.3	LOT (sg)	
Operations last 2	24 hours (mic	lnight to n	nidnigl	<b>ht):</b> Conti	nued t	to attempt	a sample	in the Bryg	ge - no go.	RIH to
Lysing take 8 pret										
VSP-GR and RIH										
Begin shooting VS		0m levels P	ull up t	o 2898m	and st	art (18:10-	·22:45) W	alkaway VS.	P survey. C	ontinued
with VSP survey a	t 10m levels.	CD	. 10	1 1 DC	2011	. 1 1	1 D	0 VCD C	ו וית ח	D 7
6 o'clock update CST-GR Problem				ieveis, PC	JUH	ına rıggea	down Ki	In 6 VSP-G	K. Pickea u	ip Kun 7
Operations next				blehead. 1	RIH w	ith Run 6	CST-GR	to TD and	shot sidewa	all cores.
POOH with Run										
		GI	EOLO	GICAL I	FSC	RIPTIO	V			
Interval (m)				Descriptio			· •			
,										
				SHOWS	DAT	A				
Interval (m)					De	scription				
	No Shows.									
a m	T . ( )	I III + 1/0/)	01	GAS D		<u> </u>	104		Lor	Or.
Gas Type	Int. (m)	Total(%)	C1 pp	om C2 p	opm	C3 ppm iC4 ppn		nC4ppm	iC5 ppm	nC5 pm
		1	P	ORE PR	ESSU	RE			I	
Interval: -				Min. (s			]	Max. (sg): 1.	45	
Comments:	-Top Lange l	pased on co	rrelatio				•			
						ST 24 HC				
Formation	Depth mMDBRT	Dep mTVI		Progno				Basis of Pick		
Naust	502	47		mTVI 464		m + +1		LWD	GR/Resisti	vity
Kai	1552	1524		151		+9.			D Resistivit	
Brygge	1604	1576		155		+24			WD Sonic	· <i>J</i>
Tp Flooding	1654	162		160		+2			esistivity/S	Sonic
Surface									J	
Tare	1741		1712.8		0	+22		LWD Resistivity/Cuttings		
Springar	1797	1768		175		+12			R/Sonic/Ci	uttings
Nise	2420	2390		234		+47			WD GR	
Lysing	3088	3058		304		+15		LWD GR/		
Lange	3137.5	3107	′.8	311	7	-9.5	2	LWD	GR/Resisti	vity



Tare

**Springar** 

Nise

Lysing

Lange

1741

1797

2420

3088

3137.5

1712.8

1768.6

2390.2

3058.3

3107.8

#### WELLSITE GEOLOGICAL REPORT

Wellsite Geologist: Mike Donovan\Ed Linaker Rig: Byford Dolphin Well: 6506/3-1 Date: 14.08.01 Days since spud: 24 Depth (mMD): 3667 Depth (mTVD): 3662.0 Current Operation: Continuing with P&A Progamme. ROP(m/hr): -Progress (m): -MWD offset: -Last Survey: 3641.9 mMD 3636.9 mTVD Inc: 1.9° Azim. 232.6° Csg Size (ins): 13 3/8" | Csg Depth(m): 1374.3 | LOT (sg): 1.84 MW (sg): 1.60 Max PP (sg): 1.53 Operations last 24 hours (midnight to midnight): Continued VSP survey at 10m levels, POOH and rigged down Run 6 VSP-GR. Picked up Run 7 CST-GR Problem with cablehead troubleshoot. Continue to repair cablehead. RIH with Run 6 CST-GR to TD and shot sidewall cores. (Shot 53, Recovered 29, Empty 2, Misfire 8, Lost 14, Recovery 55%) POOH with Run 7 and rigdown Schlumberger wireline. Commence P&A programme. 6 o'clock update: Continued P&A programme. Operations next 24 hours: Continue P&A programme. GEOLOGICAL DESCRIPTION Interval (m) Description **SHOWS DATA** Interval (m) Description No Shows **GAS DATA** C2 ppm Gas Type Int. (m) Total(%) C1 ppm C3 ppm iC4 ppm nC4ppm iC5 ppm nC5 pm PORE PRESSURE Interval: -Min. (sg): 1.45 Max. (sg): 1.45 -Top Lange based on correlation with 6506/6-1. Comments: **FORMATION PICKS LAST 24 HOURS** Formation Depth Depth **Prognosed** Difference Basis of Pick mTVDSS mMDBRT **mTVDSS** m +/-Naust 502 477 464 +13 LWD GR/Resistivity Kai 1552 1524.3 +9.3 LWD Resistivity 1515 +24.21604 1576.2 1552 LWD Sonic Brygge LWD Resistivity/Sonic Tp Flooding 1654 1626 1606 +20Surface

1690

1756

2342

3043

3117

+22.8

+12.6

+47.8

+15.3

-9.2

LWD Resistivity/Cuttings

LWD GR/Sonic/Cuttings

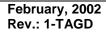
LWD GR

LWD GR/Resistivity/Cuttings

LWD GR/Resistivity

# **Enclosure 2**

# Contractors' End of Well Summaries and Reports





# MI Norge AS Drilling Fluids Summary







# **CHEVRON**

# **Drilling Fluids Summary**

Well: 6506/3-1

Prepared by: Tom Rapp	Verified by:	Approved by: Henning Balzer
Date:	Date:	Date:
Revision: 0	Date:	

# **CONTENT**

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#### **GENERAL**

Well: 6506/3-1

**OPERATOR:** Chevron

WELL: 6506 / 3-1

AREA: Haltenbanken

CHEVRON SUPERVISORS: M. Elkins, R. Moore

DRILLING CONTRACTOR: Dolphin

RIG: Byford Dolphin

M-I NORGE ENGINEERS: K. Low, R. Campbell,

K. Low, R. Campbell, D. Fraser-Wilson, P. Hammond

Hole section	Mud system	Drilled to, mMD/TVD	Casing, in. / Shoe depth
36"	SW/Bentonite	456/456	30/451
17 ½"	SW/Bentonite	1382/1382	$13\frac{3}{8}/1374$
8 1/2"	Versavert OBM	3667/3662	N/A

## Summary of objectives

Three sections were drilled, where two were riserless. Two sections were drilled with water-based mud and one with oil based mud.

Well: 6506/3-1

The well was successfully drilled to a total depth of 3667 meters.

A suite of logs successfully completed.

The well was abandoned by setting cement plugs from 3109 - 3025m, from 1791 - 1491m and from 1491 - 1274m across the 13 3/8" casing shoe. The final top plug was set from 661 - 451m.

The wellhead was then cut and retrieved after displacing to seawater above the top plug.

#### Details of 36" hole section

36" hole drilled from: 366 m 36" hole drilled to: 456 m Hole length: 90 m

Well: 6506/3-1

Drilling fluid: Seawater/Bentonite

Total Cost for section: 176,442.28 NOK
Cost per meter: 1,960.47 NOK
Cost per cubic meter: 1,208.51 NOK

Max. Inclination: 4.0°

#### Summary of drilling events

The well was spudded at 0030 hrs on 22<sup>nd</sup> of July. After running the BHA and testing the Anderdrift tool, the seabed was tagged at 366 metres. Drilling was rapid, the open hole being cleaned with seawater and pumping 8 m³ pre-hydrated sweeps as required. At TD 15 m³ of hi-viscosity sweep was pumped to finally clean the hole. A check revealed no gas present and the well was displaced to 1.2 sg Gel mud. The casing was run and cemented without problems.

#### **Drilling fluid performance**

Prehydrated gel mud at 70 kg/m³ was mixed, with a yielded viscosity in excess of 150 sec/qt, this was used to sweep the hole while drilling. The hole was displaced to 1.20 sg Gel mud (concentration of 55kg/m³ bentonite) at TD. Kill mud at 1.60 sg was prepared as a contingency.

#### Hole problems

There were no hole problems experienced in this section.

#### Cost comments

Third party costs for CMC were justified because the time schedule for drilling was inadequate to allow sufficient period for full hydration, thus the requirement for CMC. Additional costs were also incurred because an extra volume of spud mud had to be built using CMC, this was due to the drill water supply becoming exhausted. Further costs were incurred after additional mud had to be made up to ream and fill the hole and casing.

Well: 6506/3-1

Estimated cost: 79,096.00 NOK
Actual cost: 176,442.28 NOK
Difference: +123.1 %

#### Other problems

None.

#### Recommendations

The mud system used and the properties achieved were satisfactory for this section. They are to be recommended for future intervals of this type. However problems with logistics could be significantly simplified through the use of Guar Gum to make sweep volumes.

# 36" Section Volumes Breakdown

Breakdown Category	Volume m <sup>3</sup>	Cost/m <sup>3</sup> Mud	Cost NOK
Mud volume built	432		
Mud transferred to 8.5" pilot hole	301		
Total Utilised	146	1,208.51	176,442.28

Well: 6506/3-1

# 36" Section Mud Loss Summary

Loss Category	Volume m <sup>3</sup>
Shakers	N/A
Dumped	146
Total Utilised	146

#### Details of 17 1/2" hole section

30" conductor set at:
451 m
17 ½" hole drilled from:
456 m
17 ½" hole drilled to:
1382 m
Hole length:
926 m

Well: 6506/3-1

Drilling fluid: Seawater/Bentonite/CMC

Total Cost for section: 796,670.56 NOK
Cost per meter: 860.33 NOK
Cost per cubic meter: 623.37 NOK

Max. Inclination: 4.5°

#### Summary of drilling events

The 30" casing, shoe and 3 metres of new formation were cleaned out, by pumping seawater and a hi-viscosity sweep with a 26" bit. An 8 ½" pilot hole was drilled to 1382 metres to enable easier handling of any shallow gas in this riserless section. No gas was observed, and the hole was cleaned, by pumping seawater and hi-viscosity sweeps on each half stand drilled. The hole was swept with 30 m³ of hi-viscosity sweep at TD and then displaced to 1.20 sg Gel mud. The trip out showed the hole to be in good condition and at the 30" shoe the hole was circulated clean.

A 12  $\frac{1}{4}$ " x 17  $\frac{1}{2}$ " hole opener assembly was picked up and the hole was reamed out to a depth of 1379 metres without problems. Remaining hi-viscosity mud left on surface was swept round at TD and the open hole displaced to 1.20 sg Gel/CMC mud. On the trip out slight over pull was experienced but easily worked through. The kill mud density was reduced from 1.60 sg to 1.20 sg and used to displace the hole prior to running casing.

A restriction that was encountered while running the 13 3/8" casing caused the string to fold over at seabed, and buckled in two places. The string was then retrieved and any tight spots were reamed using conventional gel sweeps. The hole was displaced using 200 m³ of KCl mud at 1.40 sg. The concentration of KCl at 93 kg/m³ provided adequate inhibition with respect to the active clay formation. The casing string was then re-run and cemented without problems.

#### **Drilling fluid performance**

The 8 ½" pilot hole section was drilled with prehydrated gel mud at 70 kg/m³ with the addition of 1 kg/m³ of CMC to allow rapid mixing and to keep up with the drilling rate. The displacement mud for the pilot hole was also built from prehydrated gel using a concentration of 55 kg/m³ bentonite.

Well: 6506/3-1

For the 17 ½" hole opening assembly the mud system required a change from pre-hydrated gel / CMC to seawater / CMC used due to lack of drill water for the pre-hydration of the bentonite. The seawater CMC was mixed at 15 kg/m³ to allow the mixing to keep pace with the rate at which it was being pumped. The displacement mud for the section was built by reducing the density of the kill mud from1.60 to1.20 sg. The gel mud had been retained from the start of the section to give the displacement mud additional rheology.

During the wiper trip, after the problematic casing run, the sweep mud used was pre-hydrated gel. The displacement mud was built from 1.13 sg KCl brine cut back with seawater and CMC and then weighted to 1.40 sg. A total of 90 m³ brine was used, less would have resulted in a volume being lost to dead volume in the brine tank. Programmed concentration was 50 kg/m³ but this was increased to 93 kg/m³ when the mud was built.

#### Solid control equipment performance

Not used.

#### Hole problems

There was no evidence of boulders or fill after tripping, however an in hole restriction was experienced when the first string of 13 3/8" casing run, the string was later found to be bent on bottom. Due to the damaged sustained, the damage part of the string was laid out, and the same string was re-run.

There <u>may</u> have been some partial hydration of clay stone in the interval between 700 – 900 metres as a result of displacing to uninhibited Gel mud. This <u>may</u> have resulted in hydration and subsequent swelling of the clays, which could have caused the casing to stand up. The wiper trip showed very little, if any, signs of tight hole. After the wiper trip had been made with the KCl mud in the hole no signs of hydration were observed. The casing was run and cemented without further problem.

#### Cost comments

The plan was to drill the section with pre-hydrated gel mud but due to problems with delivery of drill water from the supply vessel it was necessary to use seawater and CMC. To give as much volume as possible the gel mud was prehydrated to 1.5 time's normal and cut back with seawater. This however was only done with the last of the drill water since the extent of the shortfall was not known until the vessel arrived on location. Further costs were then incurred after additional mud had to be made up to ream the hole with. A further volume had to then be made up in order to fill the casing.

Well: 6506/3-1

The costs do not include the price of the 90m<sup>3</sup> of KCl brine since this was purchased directly from another Mud Company.

Estimated cost: 427,790.00 NOK
Actual cost: 796,670.56 NOK
Difference: +86.2 %

## Other problems

None.

#### Recommendations

Ensure adequate supply of drill water to allow for the use of the cheaper pre-hydrated gel for sweep during the section.

(Note: The short fall in drill water was a result of using a shared vessel during the early stages of the well. For the latter stages a dedicated vessel was sourced).

The use of KCl for the displacement mud provided an enhanced level of inhibition and although it is not certain that this alone was responsible for the smooth running of the 13.3/8" casing, it can only have helped.

# 17 1/2" Section Volumes Breakdown

Volume Category	Volume M <sup>3</sup>	Cost/m <sup>3</sup> Mud	Cost NOK
Mud volume imported	301		
Mud volume built	977		
Mud volume exported	0		
Total Utilised	1278	623.37	796,670.56

Well: 6506/3-1

# 17 1/2" Section Mud Loss Summary

Loss Category	Volume m <sup>3</sup>
Dumped	1278
Total Utilised	1278

#### Details of 8 1/2" Hole Section

 8 ½ " hole drilled from:
 1382 m

 8 ½ " hole drilled to:
 3667 m

 13 3/8" casing set at
 1374 m

 Hole length:
 2285 m

Drilling fluid VERSAVERT OBM

Total Cost for section: 1,918,333.17 NOK
Cost per meter drilled: 839.33 NOK
Cost per cubic meter utilised: 8,060.22 NOK

Max. Inclination: 4.5 °

#### Summary of drilling events

It was evident that the initial load out of oil based mud was contaminated with 18 m<sup>3</sup> (a figure derived from calculating the volume of water addition required to change the Oil/Water ratio from that notified to the rig) of water from the boat's tanks. Consequently the Oil/Water ratio started of at 68/32. It was therefore necessary to make up 50 m<sup>3</sup> of base oil premix to correct this, in addition it was also necessary to substantially increase the water phase salinity with powdered calcium chloride.

While drilling at a depth of 1675 metres the mud weight was being increased from 1.45 sg to 1.50 sg (with a plan to later raise it to 1.55 sg). At 1698 metres with the active and half of the annulus at a density of 1.50 sg an influx of 4 m3 into the well bore was experienced. The equivalent mud weight required to circulate out the influx was also 1.50 sg.

The system was maintained at this weight for a full circulation. Influx returns at surface were routed to an empty pit and the system weight was maintained at 1.50 sg. At this time additional mud volume was weighted up to 1.50 sg to replace the diverted volume and to provide a buffer against any losses. It was then observed that there still remained 80 to 90 psi on the drill pipe. The mud weight was raised to 1.57 sg, which was deemed sufficient to kill the well.

The 13 3/8" casing contents were treated with an enhanced premix plus calcium chloride whilst weighting up. A total of 10 –12 m³ formation brine was incorporated into the mud. The riser was displaced using the booster pump to mud that had been previously treated with emulsifiers, calcium chloride and then weighted up. This created mud, which was in good enough condition to run back into the hole. The hole was circulated bottoms-up and a problem-free wiper trip was conducted to the shoe.

Static seepage losses of 1 m3 per hour were observed on running back to bottom. These losses were attributed to the Brygge sand. Similar dynamic losses were observed whilst drilling ahead but they were cured using an initial treatment of 0.6kg/m³ of Coarse and Medium Calcium Carbonate. The concentration was

thereafter maintained by mixing 25 kg of each material over a 30 minutes period. Later the rate of addition was reduced to one sack of medium and coarse over each hour.

Well: 6506/3-1

The well was then drilled to coring point at 3101metres, during this time the hole remained in good condition and the mud properties were run at optimum specification. A core was cut from 3101 metres to 3171.5 metres through the Lysing sand. Over-pulls were experienced at 2400 metres and 1520 metres. Approximately 67 metres of core, which represented a 97% recovery were recovered to surface. The hole appeared to be in good condition.

On running back in the hole to drill it was necessary to wash and ream from 3050 metres to 3171 metres. Substantial quantities of cavings and a quantity of old cuttings were seen at the shakers. In response the mud weight was raised to 1.60 sg. This tactic was partially successful. Drilling continued to 3667 metres TD and on circulating bottoms-up more cavings were again seen but not in such large quantities as before increasing the weight to 1.60 sg. The hole was circulated clean and the string pulled to surface without problems.

The logging programme comprised 5 runs. During the 4<sup>th</sup> run (VSP), the tool became stuck at the top of the Lysing sands but was eventually pulled free. A wiper trip was made. The bottoms up sample of mud that was tested showed virtually no deviation in its properties from the programmed values. The MDT run was then successfully completed. Following that the VSP and SWC runs were also successfully completed. The Logging equipment was rigged down and the hole was plugged back by setting 4 balanced cement plugs.

A clean-up programme was run as per M-I recommended procedure and the hole and riser were successfully displaced to seawater. The mud, base oil and slops were back-loaded to the boat.

#### **Drilling fluid performance**

The mud delivered on the boat for this section was undoubtedly contaminated by water. However the precise source of this water could not be ascertained. The pit volume available on the rig was not sufficient to make any substantial treatment prior to displacing the hole, so this treatment was done during drilling out the shoe and new formation.

Well: 6506/3-1

The Oil/Water ratio was the first property to be addressed and this was increased gradually to 72/28 with adequate additions of other chemicals being made to raise and maintain the programmed Chloride and Alkalinity levels. For the most part treatment was made by premix additions but some direct additions were necessary as well. Just prior to reaching TD, the O/W ratio was raised to 74/26 with premix and this had the effect of reducing the rheology to a more compatible value for Logging and cementing operations.

Reference to the table below will provide information about the average properties maintained but particular notice is drawn to the weight increases at 1698 metres and

3171 metres in response to hole conditions. The first to a water influx, and the second to cavings seen after washing through the cored section. In the latter case the Oil/Water ratio was gradually increased to counter the viscosity increase (mainly PV) from barite additions.

Care was taken to ensure that adequate concentrations of emulsifiers were run to offset any tendency towards solids water-wetting due to cuttings and barite incorporation into the mud.

The Rheology was deliberately maintained on the high side of the programmed range to promote good hole cleaning at relatively low pump rates. However there were minor problems associated with these higher viscosities due to the long riser the mud returning from the well was quite cool and particularly cold after tripping. Therefore it was necessary to run coarse screens on the shakers until the mud had warmed and the viscosity had dropped sufficiently to re-fit 165 or finer screens.

Despite this the Low Gravity Solids (LGS) content was maintained (< 200 kg/m³) with relatively light premix additions. Similarly there was little or no tendency towards progressiveness of the Gels indicating no fines accumulation in the mud. Just prior to reaching TD the rheology was reduced with premix for logging and cementing operations.

The HTHP value remained steady throughout the section ranging from 1.8 - 2.2 cc. The Electrical stability climbed steadily with increasing shear to a value of 800+volts.

The mud weight ranged from the planned 1.45 sg, at the start of the section to, 1.57 sg following the kick and finally to 1.60 sg in response to the tight hole and cavings seen at the shakers. The kick was taken while the mud weight was being raised from 1.45 sg to the programmed 1.55 sg.

The solids removal efficiency was calculated to be approximately 75%.

The cuttings were firm and discrete throughout, their quality increasing as the WPS reached and exceeded 130 k mg/l.

Well: 6506/3-1

Minor seepage losses were observed at different depths during this section and so Calcium Carbonate of coarse and medium grade was added more or less continually at very light concentrations to mitigate these losses.

#### Typical drilling properties

Properties	Planned	Actual
MW (sg)	1.45 – 1.58	1.45- 1.60
YP (lbs/100ft <sup>2</sup> )	NA	8.0 - 16.0
PV (cP)	NA	36 - 53
Gel 10 sec (lbs/100ft <sup>2</sup> )	7 – 12	7 – 10
Gel 10 min (lbs/100ft <sup>2</sup> )	< 25	9 - 14
3 rpm (lbs/100ft <sup>2</sup> )	8 – 13	7 - 14
Excess lime (kg/m <sup>3</sup> )	8 – 10	1.8 - 7.2
HTHP fluid loss (cc/30min)	< 2	2 - 3.1
Chlorides (mg/l)	150,000	83K – 142K
Activity of water	0.85 - 0.89	0.78 - 0.91
O/W ratio	75/25-85/15	68/32-75/25
Electric stability (Volts)	> 600	531 - 876
LGS (kg/m <sup>3</sup> )	< 200	68 - 146

#### Cost comments

Estimated cost: 1,614,268.00 NOK
Actual cost: 1,595,117.55 NOK
Difference: -1.2 %

#### Solid control equipment performance

The solids control equipment comprised 3 Thule VSM 100 shakers and one Swaco variable high-speed centrifuge. The latter was tried but did not work. In addition, if run alone it would have stripped too much Barite from the mud.

The shakers performed well but with the high rheologies run to ensure good hole cleaning and the low surface temperature due to the long riser, it was not possible to run finer than 180 mesh screens for most of the section. Consequently the sand content rose to over 1% and for the most part ran around 1.5% peaking at 2% for a short time in the Brygge section.

Generally however, despite the paucity of equipment, the removal efficiency over the section was calculated to be 75%.

The addition of a fourth and possible a fifth shaker would substantially improve the efficiency of solids removal and allow finer screens to be run which in turn would result in lower sand content, reduced pump parts' wear and lower mud cost through reduced dilution.

Well: 6506/3-1

#### Hole problems

There were no significant hole problems. An influx of water was taken at 1698 metres. The well was successfully killed. There were a few tight spots observed on tripping but these were easily washed. Some cavings were encountered after 1700 metres but these all but disappeared when the weight was raised. Finally there were minor seepage losses from 1700 metres but these were eliminated by light additions of Calcium Carbonate (coarse and medium) whilst drilling ahead. A subsequent wireline caliper log indicated a large washed out section from 2117 metres to 2400 metres and it was from here that the cavings were generated.

#### Other problems

Due to the water influx, the stock of Calcium Chloride was low at one point but a new shipment was received before drilling ahead.

#### Recommendations

On locations where the riser length is such that it causes significant cooling of the mud, close consideration should be given to the ability of the solids removal equipment. In particular the shale shakers, to handle the relatively high pump rates required for hole cleaning alongside the high funnel viscosity's induced by this cooling effect.

One solution to this problem is to increase the Oil/Water ratio but this passes the cost onto the Client when it ought to be the Contractor who provides adequate equipment to handle these depth associated mud flow handling problems.

# 8 1/2" Section Volumes Breakdown

Volume Category	Volume M <sup>3</sup>	Cost/m <sup>3</sup> Mud	Cost NOK
Mud volume imported	300		
Mud volume built	260		
Mud volume back loaded	322		
Total Utilised	238	6,702.18	1,595,117.55

Well: 6506/3-1

# 8 1/2" Section Mud Loss Summary

Loss Category	Volume m <sup>3</sup>
Lost To Skips	10
Lost On Cuttings	90
Left In Hole	82
Lost In Hole	10
Evaporation	0
Lost to Slop	35
Lost as fluid transfers to boat	11
Total Utilised	238

#### Riser and Surface Cleanup

A clean-up programme was run as per M-I recommended procedure and the riser was successfully displaced to seawater. The mud, base oil and slops were backloaded to the boat.

Well: 6506/3-1

The following Clean Up Pills were pumped -

8 m<sup>3</sup> Base Oil.

30 m<sup>3</sup> Water Based hi-viscosity Pill weighted to 1.30 sg.

30 m<sup>3</sup> Hi-viscosity Safesurf OE Wash Pill.

30 m<sup>3</sup> Safesolve OE Solvent Pill. 10 m<sup>3</sup> Hi-viscosity Safesurf OE Clean Up Pill.

Pills were pumped at a rate to give a minimum of 10 minutes contact time and excellent results were achieved.

After flushing the choke and kill lines with a solvent pill the returned pills used for the riser clean up were utilised to clean surface lines, pits and equipment.

#### Cost comments

Estimated cost: n/a NOK 323,215.62 NOK Actual cost: Difference: n/a %

#### Recommendations

For a future clean up it is recommended that 5 kg/m<sup>3</sup> Nutplug course be added to the initial weighted pill to give a scouring effect, not only will this aid removal of mud adhering to the riser bore but will increase the efficiency of the remaining pills.

Need to look carefully at the logistics of the riser clean up and in particular interface and slops generation issues.



OPERATOR: WELL:

AREA : DRILLING FLUID:

RIG: Byford Dolphin
SECTION: 36 "
OPERATION: Drilling

Norsk Chevron AS

6506/3-1

Spud mud

START VOLUME: 0 m3 SECTION FACTOR: 0.5 SF START DEPTH: 367 m ACT. DAYS - SECTION: 2.0 days SECTION LENGTH: 89 m EST. DAYS - SECTION: 3.0 days 1.268 SG SECTION RATE: 5 310.63 Nok AVER. DENSITY -D1: 165 848.20 Nok SECTION FLUID COST: UNWT. DENSITY -D0: 1.05 SG METERS/DAY 44.50 m/day FLUID SPEC. No.: 1 # MUD USAGE/M: FLUID RATE- \$FR: 161.28 Nok/m3 1.640 m3/m

 MUD USAGE/M3 DRILLED:
 2.50 m3/m3
 WT. FLUID RATE-\$FRW:
 371.03 Nok/m3

 RECAP COST/M
 668.32 Nok/m
 RECAP COST:
 59 480.29 Nok

DATE	2001	21.jul	22.jul	23.jul	24.jul	25.jul	26.jul	27.jul	28.jul	29.jul	30.jul	31.jul	01.aug	TOTAL	1
FSR	No:	5	6	7	8	9	10	11	12	13	14	15	16		1
DEPTH	m	367	456												Cost/un
VOLUME BUILT	m3	162	285											447	-
VOLUME RECEIVED FROM SHORE	m3													0	1
VOLUME RECEIVED FROM FIELD	m3													0	į –
VOLUME LOST ON BOAT	m3													0	4
CENTRIFUGE	m3													0	1
SHAKERS	m3													0	d.
EVAPORATION	m3													0	d .
DOWN HOLE LOSS	m3													0	d
LOST TO SLOP	m3													0	d
LEFT IN HOLE	m3													0	4
LOST TO SEA	m3		146											146	.]
BACK LOADED	m3													0	d
TRANSFERRED	m3		301											301	
FINAL VOLUME	m3	162	0	0	0	0	0	0	0	0	0	0	0	0	d and
Daily section length	m	0	89	0	0	0	0	0	0	0	0	0	0	89	4
HOLE VOL. MADE	m3	0.0	58.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.4	
DAILY DILUTION FAC.	m3/m3	N/A	2.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.5	

CHEMICALS:	Unit	Price/unit														Third party	Total consumption
Barite	mt	862.00	45	85											130		130.0
Bentonite Wyoming	mt	1797.00	9	24											33		33.0
Bentonite Wyoming Soda Ash	kg	2.34	100	100											200		200.0
CMC EHV	kg	10.00													0	12	125.0
Lime	kg	1.85													0		0.0
Daily fluid costs			60 106 06	105 742 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	165 040 20		

Sign M-I Norge	Sign Chevron:
	<del>-</del>



OPERATOR: WELL: AREA:

DRILLING FLUID:

OPERATION:

RIG: SECTION: Norske Chevron AS

6506/3-1

0300/3-1

Spud mud Byford Dolphin 17 1/2 " Drilling

START VOLUME:	301 m3	SECTION FACTOR:	0.5 SF
START DEPTH:	456 m	ACT. DAYS - SECTION:	6.0 days
SECTION LENGTH:	926 m	EST. DAYS - SECTION:	4.0 days
SECTION RATE:	38 253.06 Nok	AVER. DENSITY -D1:	1.180 SG
SECTION FLUID COST:	279 771.11 Nok	UNWT. DENSITY -D0:	1.05 SG
METERS/DAY	154.33 m/day	FLUID SPEC. No.:	1 #
MUD USAGE/M:	1.380 m3/m	FLUID RATE- \$FR:	161.28 Nok/m3
MUD USAGE/M3 DRILLED:	8.89 m3/m3	WT. FLUID RATE-\$FRW:	286.36 Nok/m3
RECAP COST/M	436,52 Nok/m	RECAP COST:	404 217.73 Nok

DATE	2001	23.jul	24.jul	25.jul	26.jul	27.jul	28.jul	29.jul	30.jul	31.jul	01.aug	02.aug	03.aug	TOTAL	1
FSR	No:	7	8	9	10	11	12	13	14	15	16	17	18		1
DEPTH	m	459	1382	1382	1382	1382	1382								Cost/ur
															1
VOLUME BUILT	m3	88	383	136		205	165							977	ř.
VOLUME RECEIVED FROM SHORE	m3													0	i
VOLUME RECEIVED FROM FIELD	m3													0	Ī
VOLUME LOST ON BOAT	m3													0	i
CENTRIFUGE	m3													0	Ī
SHAKERS	m3													0	i
EVAPORATION	m3													0	Ī
DOWN HOLE LOSS	m3													0	j
LOST TO SLOP	m3													0	Ī
LEFT IN HOLE	m3													0	Ī
LOST TO SEA	m3	81	505	322		205	165							1278	5
BACK LOADED	m3													0	Ī
TRANSFERRED	m3													0	j
FINAL VOLUME	m3	308	186	0	0	0	0	0	0	0	0	0	0	0	j
Daily section length	m	3	923	0	0	0	0	0	0	0	0	0	0	926	i i
HOLE VOL. MADE	m3	0.5	143.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	143.7	7
DAILY DILUTION FAC.	m3/m3	174.0	3.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.9	, T

CHEMICALS:	Unit	Price/unit														Third party	Total consumption
CHEWICALS.	Offic	FIICE/UIII														Tilliu party	Total Collsumption
Barite	mt	862.00		29				186							113	102	215.0
Bentonite Wyoming	mt	1797.00	10	28	21		2	14							75		75.0
Soda Ash	kg	2.34	75	375	1225		200								650	1225	1875.0
CMC EHV	kg			425	5575		2550								0	8550	8550.0
Lime	kg	1.85													0		0.0
Defoam NS	kg						50								0	50	50.0
KCI	kg														0	20070	20070.0
Daily fluid cost:			25 199.45	109 674.86	38 944.60	0.00	58 703.25	47 248.96	0.00	0.00	0.00	0.00	0.00	0.00	279 771.11		

KCI from Baker Hughes Inteq
Sign M-1 Norge Sign Chevron:



OPERATOR: WELL: AREA: DRILLING FLUID: RIG: SECTION: OPERATION:

Versavert Byford Dolphin 8 1/2 '' Drilling

Norsk Chevron AS 6506/3-1

SECTION FACTOR:
ACT. DAYS - SECTION:
EST. DAYS - SECTION:
AVER. DENSITY - D1:
UNWT. DENSITY - D0:
FLUID SPEC. No.:
FLUID RATE- SFR:
WT. FLUID RATE-SFRW:
BEFAB POST: 1.1 SF 15.6 days 18.2 days 1.563 SG 0.92 SG 41 # 4 346.02 Nok/m3 4 119.93 Nok/m3 START VOLUME: START DEPTH: 0 m3 1382 m 1382 m 2285 m 269 388.52 Nok 1 242 002.24 Nok 146.57 m/day 0.099 m3/m 2.71 m3/m3 661.43 Nok/m START DEPTH:
SECTION LENGTH:
SECTION RATE:
SECTION FLUID COST:
METERS/DAY
MUD USAGEM:
MUD USAGEMS DRILLED:
BECAP COSTM

						RECAP COST.	M	661.43	3 Nok/m	RECAP COS	T:	1 511 370.77	Nok								
DATE	2001	29.jul	30.jul	31.jul	01.aug	02.aug	03.aug	04.aug	05.aug	06.aug	07.aug	08.aug	09.aug	10.aug	11.aug	12.aug	13.aug	14.aug	15.aug	16.aug	TOTAL
FSR	No:	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
DEPTH	m	1382	1382	1409	1698	1698	1736	2560	3101	3131	3171	3437	3667	3667	3667	3667	3667	3667	3667	3667	Cos
VOLUME BUILT	m3			18	68	84	7	15	21	1		31	1	13		1					260
VOLUME RECEIVED FROM SHORE	m3	164		136																	300
VOLUME RECEIVED FROM FIELD	m3																				0
VOLUME LOST ON BOAT	m3																			11	11
CENTRIFUGE	m3																				0
SHAKERS	m3			5		3		8	13	4	9	8	12	13		15					90
EVAPORATION	m3																				0
DOWN HOLE LOSS	m3								9				1								10
LOST TO SLOP	m3													40						5	45
LEFT IN HOLE	m3																			82	82
LOST TO SEA	m3																				0
BACK LOADED	m3													96				38	50	138	322
TRANSFERRED	m3																				0
FINAL VOLUME	m3	164	164	313	381	462	469	476	475	472	463	486	474	338	338	324	324	286	236	0	0
Daily section length	m	0	0	27	289	0	38	824	541	30	40	266	230	0	0	0	0	0	0	0	2285
HOLE VOL. MADE	m3	0.0	0.0	1.0	10.6	0.0	1.4	30.2	19.8	1.1	1.5	9.7	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.7
DAILY DILUTION FAC.	m3/m3	N/A	N/A	5.1	0.0	N/A	0.0	0.3	1.1	3.6	6.1	0.8	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.7

CHEMICALS:	Unit	Price/unit																			т	hird party Tota	I consumption
Barite	mt	862.00					83	5	34	28			11		56						217	26	243.0
EDC 95/11 base oil	m3	3688.80				50	60		5	12			25								152	8	160.0
Versavert PE	kg	11.32				1300	1440		260	200			1000								4200		4200.0
Versavert SE	kg	11.08				600	600		200	100			300								1800		1800.0
Lime	kg	1.85				1375	1425		1200	1600			1700								7300		7300.0
VG-Plus	kg	14.98				850				50			175				50				1125		1125.0
Calcium Chloride	kg	2.30				4200	1050	2100	2100	2450			700				2100				14700		14700.0
Versatrol	kg	5.18				750	650		200												1600		1600.0
Versavert F	kg	18.00				400	75		675	100			200								1450		1450.0
Water	m3																				0		0.0
Bentone 128	kg	24.28		125																	125		125.0
CaCo3 Coarse	kg	1.36																			0	3325	3325.0
CaCo3 Medium	kg	1.24																			0	2800	2800.0
CaCo3 Fine	kg	1.43																			0	125	125.0
SafeSolve OE	kg	25.54																			0	2200	2200.0
SafeSurfe OE	kg	16.94																			0	1600	1600.0
Duptec NS	kg	57.01																			0	500	500.0
Daily fluid cost:			675 666.80	0.00	634 467.60	280 154.52	346 073.24	28 839.44	61 798.79	86 518.31	4 119.92	0.00	127 717.50	4 119.92	-264 002.09	0.00	4 119.92	0.00	-125 701.25	-165 396.38 -456 494.00	1 242 002.24		

Sign Anchor/MI:	Sign Chevron:	



Section date to/from:

Dischause and allegation of an extension

# **ENVIRONMENTALINFORMATION**



Platform: Byford Dolphin
Month: July
Year: 2001
Well: 6506/3-1
Section: 36

21.07-22.07-2001

-(1)- Mixed total = Rcvd as Mixed in fluid + Added on rig - To-shore as Mixed in fluid. -(2)- Descrepancy = Mixed total (total usage) - Total discharge = 0 (as control on massbalance) Demands in dischargepermit shall be covered by the mudprogram. If the real discharge overrides planned discharge, then this should be documented and explained.

				Planned				-(1)-							-(2)-
Group	Product	Unit	Parcom	usage	Rcvd	To-shore	Added	Mixed	Discharge	Retention	Left	Injection	То	Transferred	Discrep-
	name	(kg/l)	class	according	as	as	on	total	in whole	on	in well		destruc-	to next	ancy
				to mud-	mixed in	mixed	rig	in	mud	cuttings			tion	well/	
				programe	fluid	in fluid		section						section	
	Spud mud mud:						447 m3	447 m3	146 m3	3				301 m3	
	Barite	mt					130	130	42	2				88	
	<b>Bentonite Wyoming</b>	mt					33	33	11					22	
	Soda Ash	kg					200	200	65	5				135	
	CMC EHV	kg													
	Lime	kg													

Signatur MI Norge A/S	Signatur Chevron drilling supervisor
For more documentation and explenations, refer to Chevron og MI reports.	
Discharge exceeding planned discharge:	



# **MUD VOLUME DISTRIBUTION**



PLATFORM	Byford Dolphin
MONTH:	July
YEAR:	2001
WELL:	6506/3-1
SECTION:	36

HOLE	HOLE	HOLE	CUTTINGS	CUTTINGS	MUD	MUD	MUD FROM	MUD	MUD	SURFACE	MUD	MUD TO	MUD	EVAPOR-	TRANSFE-	MUD TYPE
SIZE	TO	LENGTH	VOLUME	MASS	MIXED	RECEIVED	LAST	RETUR-	LEFT IN	LOSS	TO SEA	DEST-	INJE-	ATED	RRED TO	USED IN
						FROM SHORE/	SECTION	NED	WELL	(by cuttings	•	RUCTION	CTED	WATER	NEXT	INTERVAL
						FIELD				retention)				PHASE	SECTION	
	m	m	m3	kg	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	
36	456	89	58.4		447						146				301	Spud mud
TOTALT:		89	58.4		447						146				301	

#### TOTAL

MUD FROM LAST WELL/SECTION	
MUD TRANSFERRED TO NEXT WELL/SECTION	301 m3

#### **RETENTION ON OILY CUTTINGS - RETORTE ANALYSIS**

Gravity baseoil:	sg
Cuttings gravity:	sg
Average for section :	g/kg







Platform: Byford Dolphin
Month: July
Year: 2001
Well: 6506/3-1

Section: 17.5" pilot hole
Section date to/from: 23.07-28.07-2001

-(1)- Mixed total = Rcvd as Mixed in fluid + Added on rig - To-shore as Mixed in fluid. -(2)- Descrepancy = Mixed total (total usage) - Total discharge = 0 (as control on massbalance) Demands in dischargepermit shall be covered by the mudprogram. If the real discharge overrides planned discharge, then this should be documented and explained.

Group	Product	Unit	Parcom	Planned usage	Rcvd	To-shore	Added	-(1)- Mixed	Discharge	Retention	Left	Injection	То	Transferre	-(2)- Discrep-
	name	(kg/l)	class	according to mud-	mixed in	as mixed	rig	total in	in whole	on cuttings	in well		destruc- tion	well/	ancy
				programe	fluid	in fluid		section						section	
	Spud mud mud:				301 m3		977 m3								
	Barite	mt			88		215								
	Bentonite Wyoming	mt			22		75								
	Soda Ash	kg			135		1 875								
	CMC EHV	kg			84		8 550	8 634	8 634						
	Lime	kg													
	Defoam NS	kg					50	50	50						
	KCI	kg					20 070	20 070	20 070						
							<b>†</b>								
			1		†	1	†								
							1								
			1				<del>                                     </del>					+			
			1				<del>                                     </del>					+			
			+				+			<b>†</b>		+	1		

Discharge	avcoading	hannad	diecharao.	The KCI	uead wae	hobdod	due to be	le problems.
Discharge (	exceeding	piailieu	uisciiai ye.	THE KOL	useu was	HEEGEU	aue to no	ie problems.

For more documentation and explenations, refer to Chevron og MI reports.

Signatur MI Norge A/S	Signatur Chevron drilling supervisor



# **MUD VOLUME DISTRIBUTION**



PLATFORM	Byford Dolphin
MONTH:	July
YEAR:	2001
WELL:	6506/3-1
SECTION:	17.5" pilot hole

HOLE	HOLE	HOLE	CUTTINGS	CUTTINGS	MUD	MUD	MUD FROM	MUD	MUD	SURFACE	MUD	MUD TO	MUD	EVAPOR-	TRANSFE-	MUD TYPE
SIZE	TO	LENGTH	VOLUME	MASS		RECEIVED		RETUR-	LEFT IN	LOSS		_	-	ATED	RRED TO	USED IN
						FROM SHOP	SECTION	NED	WELL	(by cuttings	; •	RUCTION		WATER		INTERVAL
						FIELD				retention)				PHASE	SECTION	
	1	m	m3	kg	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	
17.5" pilot ho	1382	926	143.7		977		301				1278					Spud mud
TOTALT:		926	143.7		977		301				1278					

#### **TOTAL**

MUD FROM LAST WELL/SECTION	301 m3
MUD TRANSFERRED TO NEXT WELL/SECTION	

#### **RETENTION ON OILY CUTTINGS - RETORTE ANALYSIS**

Gravity baseoil:	sg
Cuttings gravity:	sg
Average for section :	g/kg







 Platform:
 Byford Dolphin

 Month:
 July/August

 Year:
 2001

 Well:
 6506/3-1

 Section:
 8.5

Section date to/from: 29/07 - 16/08-2001

-(1)- Mixed total = Rcvd as Mixed in fluid + Added on rig - To-shore as Mixed in fluid. -(2)- Descrepancy = Mixed total (total usage) - Total discharge = 0 (as control on massbalance) Demands in dischargepermit shall be covered by the mudprogram. If the real discharge overrides planned discharge, then this should be documented and explained.

Group	Product	Unit	Parcom	Planned usage	Rcvd	To-shore	Added	-(1)- Mixed	Discharge	Retention	Left	Injection	То	Transferre	-(2)- Discrep-
	name	(kg/l)	class	according			on	total		on	in well		destruc-		ancy
				to mud- programe	mixed in fluid	mixed in fluid	rig	in section	mud	cuttings			tion	well/ section	İ
	Versavert mud:			pr v grunne	300 m3	322 m3	260 m3			90 m3	92 m3		56 m3		
	Barite	mt			293	293	217	217		82	84		51		
	EDC 95/11 base oil	m3			155	176	152	130		49	50		31		
	Versavert PE	kg			6 000	5 865	4 200	4 335		1 639	1 676		1 020		
	Versavert SE	kg			2 400	2 415	1 800	1 785		675	690		420		
	Lime	kg			4 500	6 785	7 300	5 015		1 896	1 939		1 180		
	VG-Plus	kg			3 900	2 889	1 125	2 136		808	826		503		
	Calcium Chloride	kg			12 900	15 870	14 700	11 730		4 436	4 534		2 760		
	Versatrol	kg			3 000	2 645	1 600	1 955		739	756		460		
	Versavert F	kg			1 800	1 869	1 450	1 381		522	534		325		
	Water	kg			69	40		29		11	11		7		
	Bentone 128	kg				72	125	53		20	21		13		
	CaCo3 Coarse	kg				1 912	3 325	1 413		534	546		333		
	CaCo3 Medium	kg				1 610	2 800	1 190		450	460		280		
	CaCo3 Fine	kg				144	250	106		40	41		25		
	SafeSolve OE	kg					2 200	2 200					2 200		
•	SafeSurfe OE	kg					1 600	1 600					1 600		
	Duptec NS	kg					500	500					500		

Discharge exceeding planned discharge:

For more documentation and explenations, refer to Chevron og MI reports.	
Signatur MI Norge A/S	Signatur Chevron drilling supervisor







PLATFORM	Byford Dolphin
MONTH:	July/August
YEAR:	2001
WELL:	6506/3-1
SECTION:	8.5

HOLE SIZE			CUTTINGS VOLUME			MUD RECEIVED	MUD FROM		-	SURFACE LOSS	MUD TO SEA	MUD TO DEST-	MUD INJE-	_	_	MUD TYPE USED IN
OIZL	LENGIII		VOLOIVIL	WI NOO		FROM SHOR				(by cuttings retention)		RUCTION	CTED	WATER	_	INTERVAL
	m	m m3 kg m3		m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3		
8.5	3667.0	2285	83.7	250958	260	300		322	92	90		56				Versavert
TOTALT:		2285	83.7	250958	260	300		322	92	90		56				

#### TOTALT

MUD FROM LAST WELL/SECTION	
MUD TRANSFERRED TO NEXT WELL/SECTION	

#### **RETENTION ON OILY CUTTINGS - RETORTE ANALYSIS**

Gravity baseoil:	0.814	sg
Cuttings gravity:	3	sg
Average for section :		g/kg

# Rig Name

# **BYFORD DOLPHIN**

## Operator

CHEVRON



Well Number: Start date : Finish date : 6506/3-1 21.07.2001 18.08.2001

Waste Handling: Slurrification:

Manufacturer	Model	Age	Interval Size	36	17.5	8.5		
			Mud Type	WBM	WBM	OBM		
			Lost at Shakers	0	0	90		
THULE	VSM 100		No. Shakers used	0	0	3		
THULE	VSM 100		Lost at C/F	0	0	0		
THULE	VSM 100		Lost to Slops	0	0	45		
į			Avge section ROP	32.6	102	38		
			Avge Max ROP	195	240	104		
			Avge Flow Lt/Min	3950	3200	2400		
			Start Depth	353	456	1382		
			End Depth	456	1382	3667		
			Metres Drilled	103	926	2285	   	
			Interval Days	2	8	15.6		
Туре	Supplier	Ir	terval S	creen L	Itilisatio	n		
				n/a	n/a			
				n/a	n/a		}  	
<u>-</u>				n/a	n/a	   	[ ] !	
				n/a	n/a		 	
i				n/a	n/a		;i	
<u>-</u>				n/a	n/a	   	   	
square	Thule		4	n/a	n/a	4	 !	
				n/a	n/a		}	
							 !	
square	Thule		10			10	<del></del>	
<u>-</u>								
							}  	
i								
square	Thule		6	n/a		6	 	<b></b>
							}  	
square	Baroid		4			4	; !	
	Baroid		6	n/a	n/a		 !	
			7	n/a	n/a	7	}  	
! !				n/a	n/a			
!				n/a	n/a		<u> </u>	
				n/a	n/a	   	   	
<u> </u>				n/a	n/a	<u> </u>		
						   	}	
			!					
						L		
	THULE	THULE VSM 100 THULE VSM 100  THULE VSM 100  Type Supplier  Square Thule  Square Thule  square Thule  square Baroid square Baroid	THULE VSM 100 THULE VSM 100 THULE VSM 100  THULE VSM 100  THULE VSM 100  THULE VSM 100  Thule Square Thule  Square Thule  Square Thule  Square Baroid Square Baroid	THULE VSM 100	Lost at Shakers   0	THULE	Lost at Shakers   0   0   90   90	Lost at Shakers   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   No. Shakers used   Lost at C/F   No. Shakers used   Lo

06-03-2001 Revision 03

(	)pe	erate	or:	CHE	VRO	N										Well: 6506/3-1						Rig: Byford Dolphin						
	<b>SR</b> 10.	Date 2001	Depth	MW	Т	FV	<b>VG-meter readings @ 50C</b> 600 300 200 100 60 30 6 3	AV	PV	ΥP	Gel 10 se	<b>Gel</b> ec 10 min	НТНР	рН	Pf	Mf	CI- x 1000	тн	Ca++	KCI	Solids	MBT	HGS	LGS	Sand	Glycol 208	K+	
	•	•	m	sg	°C	s/qt.	rpm rpm rpm rpm rpm rpm rpm	cР	cР	Pa	Pa	Pa	ml	•	ml	ml	kg/m3	mg/l	mg/l	kg/m3	%	kg/m3	kg/m3	kg/m3	%	%	kg/m3	
		36" Se	ection: S	Seawate	er / Ber	ntonite																						
	1	21-07	367	1.03		100+																						
	2	22-07		1.03		100+																						
		17 1/3	2" Secti	on: Sea	awater /	/ Bentor	nite																					
	3	23-07	459	1.03		100+																						
	4	24-07	1382	1.05		100+																						
	5	25-07	1382	1.05		100+																						
	6	26-07	1382	1.05		100+																						
	7	27-07	1382	1.40		100+																						
	8	28-07	1382	1.40		100+																						
	9	29-07	1382	1.44		100+																						
																											_	
			Minimur	1.03	0.00	0.00																						
			Maximur	1.44	0.00	0.00																						
						#DIV/0!																						
					Daily <u>dri</u>	lling prop	perties FSR 1-9																					

## Mud Properties, daily record

Operator: Chevron Well: 6506/3-1 Rig: Byford Dolphin

F	SR	Date	Depth	MW	Т	F.Vis			VG-	meter	readings	@ 50 C			AV	PV	ΥP	Gel	Gel	ES	Мр	Excess	HTHP	CaCI2	WPS	Solids	Oil	Water	O/W	Sand	HGS	LGS
r	0.	2001			Temp		600	300	200	100	60	30	6	3				10 sec	10 min			Lime	250°	(	Chloride	s			RATIO			
	∀	$\forall$	m	sg		s/qt.					rpm	rpm	rpm	rpm	cР	cР	Pa	Pa	Pa	volts	ml	kg/m3	ml	kg/m3	k Cl	vol %	vol %	vol %	vol %	vol %	kg/m3	kg/m3
	8	1/2"	Section	: Ver	save	rt - 0	il bas	sed s	syste	m																						
-	3	29-07	1382	1.44	n/a	100+	119	71	55	37	n/a	n/a	14	12	60	48	11.5	7	9	531	2.1	7.6	2.6	129	83	20	56	24.0	70/30	Trace	609	125
-	4	30-07	1382	1.44	n/a	100+	119	71	55	37	n/a	n/a	14	12	60	48	11.5	7	9	531	2.1	7.6	2.6	129	83	20	56	24.0	70/30	Trace	609	125
-	5	31-07	1409	1.44	n/a	100+	123	75	57	39	n/a	n/a	15	12	62	48	13.5	8	1	629	2.8	10.4	3.0	168	108	20	56	24.0	70/30	0.75	574	140
		01-08	1699							45	n/a	n/a	18	16		53	16.0	10	14	672	2.0	7.2	2.0	207	133	20	56	24.0	70/30	Trace		140
		02-08	1695		22	92		44	33	21	n/a	n/a	8	7	38	32	6.0	5	7	672	2.0	7.2	3.0	147	94	23	59	18.0	77/23	0.25	830	68
		03-08	1736		20	100+			50	34	n/a	n/a		11		40	13.5	7	10	704	2.5	9.3	2.2	172	110	23	57	20.0	74/26	0.20	798	82.4
		04-08	2560		35	95	111			37	n/a	n/a		14	56	42	13.5	9	13	808	0.7	2.6	2.0	215	138	22.6	55.5	21.0	73/27	1.00	776	102
		05-08	3101		33	95	104			33	n/a	n/a	13	12	52	38	14.0		11	854	3.4	12.6	2.2	253	162	24	55	21.0	72/28	1.25	744	129
		06-08	3131		23	100+				38	n/a	n/a			58	45	13.0		12	746	3.2	11.8	3.1	217	139	24.0	53.0	23.0	70/30	1.25	721	146
		07-08	3171		23	100+				37	n/a	n/a			59	46	12.5	8	12	790	3.2	11.8	2.0	220	141	22.8	53.0	23.0	70/30	1.25	733	137
		08-08		1.60	34	92		65		34	n/a	n/a	14	12	53	41	12.0	8	11	770	3.2	11.8	2.0	296	190	24.0	55.0	21.0	72/28	1.50	763	110
		09-08		1.60	35	80	90	53		27	n/a	n/a	10	9	45	37	8.0	7	9	876	3.2	11.8	2.0	226	145	25.5	55.5	20.0	74/26	1.50	797	114
		10-08		1.60		80	90			27	n/a	n/a	10	9	45	37	8.0	7	9	876	3.2	11.8	2.0	226	145	25.5	55.5	20.0	74/26	1.50	797	114
		11-08		1.60	n/a	83	90	53		27	n/a	n/a	10	9	45	37	8.0	7	9	815	3.5	13.0	2.0	234	150	24.5	55.5	20.0	74/26	1.50	796	114
		12-08		1.60		100+		55			n/a	n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
		13-08		1.60	23	100+		55		27	n/a	n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
		14-08		1.60	23	100+		55		27	n/a	n/a	10	9	46	36	9.5	7	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
		15-08		1.60	23	100+		55			n/a	n/a	10	9	46	36	9.5	/	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
- 2	11	16-08	3667	1.60	23	100+	91	55	42	27	n/a	n/a	10	9	46	36	9.5	/	9	830	3.2	11.8	2.5	253	162	25.0	55.0	20.0	73/27	1.50	769	140
			Minimun	1 44	20	80	7/	44	33	21	0	0	8	7	20	22	,	-	1	531	1	3	2	129	83	20	F2	18	70/30	0	574	40
			Maximur			95	138			21	0	0	-	16	38 69	32	6	5 10	1.4	876	1	_	2			26	53		74/26	0 2		68 146
			Average		35	95 88	103			45	#DIV/OI	0 #DIV/0!	18		52	53 41	16 11	7	14 10	876 759	3	13 10	3 2	296 216	190 138	26	59 55	24 21	72/28	1	830 735	123
			Average	1.30	26	00	103	03	48	32	#517/0!	#010/0!	12	11	52	41	- 11	,	10	139	3	10	2	210	138	23	35	21	12/28	'	/35	123
					Dail	v drilli	na pro	perti	ies FS	R 13-	31																					

# Halliburton Cementing Services End of Well Report





# **Cementing Services**

# **End of Well Report**

Customer: Chevron
Field: Exploration
Well: 6506/3-1

Rig : Byford Dolphin

Prepared by : Sølve Grude

Date : 02/13/02

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### **Introduction**

This report is based on information obtained from:

- Operation reports filled out by our offshore operators.
- Recommendations and procedures issued by Halliburton field engineer.

The job reports, simulation printouts etc. are all filed at the Halliburton office in Tananger and can be supplied if required.

### Summary cementing services, well 6506/3-1

Job description	+	- C	omments & future recommendations
30" conductor			The conductor was cemented using 1,56 SG lead cement
30 conductor		-	and 1,92 SG tail cement
			All indications are that cement was brought all the way
			back to sea floor
$13^{3}/_{8}$ " casing			The surface casing was cemented using 1,56 SG lead
13 /8 Casing		"	cement and 1,92 SG tail cement
			A single SSR 13 3/8" top plug was installed to minimise
		"	risk due to drilling shoe track with 8 ½" BHA
			The 13 3/8" SSR top plug was preinstalled onshore to
		"	minimise rig time. Due to a quite lengthy hanger assembly
			2 ea 5" x 28" centralisers were installed on the drill pipe
			joints to avoid transportation damages to the plug.
			Cement was observed on the shakers during drilling of the
		"	8 ½" open hole. Most likely this cement was left behind
			due to drilling the 13 3/8" shoe track with 8 ½" BHA
			The LOT was achieve and no remedial cement jobs were
		"	necessary
Plug & abandon, plug #1			Plug # 1 was cemented using a 1,90 SG slurry with
Trug & abandon, prug π1		"	moderately controlled fluid loss properties
			Spacer-500E+ with surfactants was pumped ahead and
		"	behind the cement slurry
Plug & abandon, plug #2			Plug # 2 was cemented using a 1,90 SG slurry with
Trug & abandon, prug π2		"	moderately controlled fluid loss properties
			A HIVIS-pill was not placed below this cement plug.
		"	Halliburton recommend that such pill is placed whenever
			a cement plug is spotted shallower than TD, nevertheless
			no problems were observed.
			Water based spacer was not pumped on this plug to
			minimise contaminated mud on the rig.
Plug & abandon, plug #3			Plug # 3 was cemented using a 1,90 SG slurry with
Trug & dodingon, prug #3			moderately controlled fluid loss properties
			Spacer-500E+ with surfactants was pumped ahead and
			behind the cement slurry
			The plug was load tested with 5 MT and pressure tested to
			110 bar 12 hours after the cement job.
Plug & abandon, plug #4			Plug # 4 was cemented using 1,95 SG cement.
1 135 & dodinon, prog " 1			The plug was pressure tested to 125 bar after 9 hours after
		-	the cement job.
			Water based spacer was not pumped on this plug to
			minimise contaminated mud on the rig.

<sup>+</sup> Experience exceeding expected service quality or other positive incidents.

<sup>-</sup> Indicate problems on job etc. (No mark indicates service provided as planned)

### **Job Summaries**

#### 30" conductor

#### Job execution, July 28th-2001

- 1. RIH with 30" conductor
- 2. Pump sea water
- 3. Pump lead 38 m<sup>3</sup> of 1,56 SG lead cement
- 4. Displace cement with rig pumps
- 5. WOC
- 6. POOH

#### 13 3/8" casing

#### Job execution, July 26th-2001

- 1. RIH with  $13^{3}/_{8}$ " casing
- 2. Circulated sea water
- 3. Pumped 128 m<sup>3</sup> of 1,56 SG lead cement
- 4. Pump 17 m<sup>3</sup> of 1,92 SG tail cement
- 5. Dropped dart and pumped with cmt unit to shear top plug.
- 6. Displaced cement with rig pumps
- 7. Checked for backflow; OK
- 8. Pressure tested the casing

#### Plug & abandon

#### Job execution, August 15th & 16th-2001

- 1. RIH with 3 ½" stinger to TD
- 2. Circulated mud
- 3. Pumped 5 m<sup>3</sup> Spacer 500E+
- 4. Spotted balanced plug # 1
- 5. Displaced with mud
- 6. Pull out of plug
- 7. Circulated mud
- 8. Pull out to plug # 2 setting depth
- 9. Spotted balanced plug # 2
- 10. Displaced with mud
- 11. Pull out of plug
- 12. Circulated mud
- 13. Pumped 5 m<sup>3</sup> Spacer 500E+
- 14. Spotted balanced plug # 3
- 15. Displaced with mud
- 16. Pull out of plug
- 17. Circulated mud
- 18. WOC
- 19. Load and pressure tested plug # 3
- 20. Pulled out of plug
- 21. Circulated mud
- 22. Spotted balanced plug # 4
- 23. Displaced with mud
- 24. Pull out of plug
- 25. Circulated mud
- 26. POOH
- 27. WOC
- 28. Pressure tested cement plug # 4

### **Slurry Designs**

30" conductor					
Total Depth, MD/TVD	[m]	$^{\pm}447/_{\pm}447$	BHST <sub>/BHCT</sub>	[°C]	± 8/ <sub>± 8</sub>
Casing size	["]	30	Mud Type		SW / Bent.
Cement volume-lead	$[m^3]$	± 24	Slurry contract ref, lead STL10 /		
Cement volume-tail*	$[m^3]$	± 24 + "shoe"	Slurry contract ref, tail		STT10/2
Hole Size	["]	36	Mud Weight	[SG]	± 1,20
OH excess	[%]	200	TOC, MD	[m]	ML @ 367

<sup>\*</sup> It is recommended that tail volume is equal to or higher than the lead volume.

	Cement slurry design & lab	oratory re	sults	
Slurry design	Norcem class "G" Cement	Lead	Tail	Units
-	CaCl <sub>2</sub> liquid		4,35	lhk
	Econolite	3,20		lhk
	NF-6	0,10	0,10	lhk
	Sea Water	95,07	42,07	lhk
	Density	1,56	1,92	$\mathbf{SG}$
	Total Mix Fluid	98,37	46,52	lhk
	Yield	129,42	77,58	lhk
Lab reference:	Thickening Time at BHCT			
NS07-Z-720-2	Time to 30 BC	7:43	3:56	hrs:min
NS00-Z-243-1	Time to 70 BC	12:52	4:40	hrs:min
	Time to 100 BC	12 +	5:02	hrs:min
	Rheology at BHCT			RPM
		40	92	300
		36	83	200
		31	71	100
		29	65	60
		26	58	30
		23	30	6
		17	22	3
	Plastic Viscosity	14	32	cР
	Yield point	26	60	$^{\mathrm{lb}}/_{\mathrm{100~ft^2}}$
	Compressive strength at BHST	± 50	± 200	psi [12 h]

**Spacer:** Minimum 20 m<sup>3</sup> of sea water

	13 3/8" surface casing					
Total Depth, MD/TVD	[m]	$^{\pm1375}/_{\pm1375}$	BHST <sub>/BHCT</sub>	[°C]	$^{31}/_{25}$	
Casing size	["]	20 x 13 3/8	Mud Type		SW / Bent.	
Cement volume-lead	$[m^3]$	± 128	Slurry contract re	f, lead	STL40 / 5	
Cement volume-tail*	$[m^3]$	min 15 +	Slurry contract ref, tail		STTNT / 4	
		"shoe"				
Hole Size	["]	17 ½	Mud Weight	[SG]	± 1,20	
OH excess	[%]	100	TOC, MD	[m]	ML @ 367	

Cement slurry design & laboratory results					
Slurry design	Norcem class "G" Cement	Lead	Tail	Units	
	HR-4L	1,00		lhk	
	Econolite	3,20		lhk	
	NF-6	0,10	0,10	lhk	
	Sea Water	94,36		lhk	
	Fresh Water		43,78	lhk	
	Density	1,56	1,92	SG	
	Total Mix Fluid	98,66	43,88	lhk	
	Yield	129,72	74,93	lhk	
Lab reference:	Thickening Time at BHCT				
NS01-Z-401	Time to 30 BC	5:19	3:40	hrs:min	
	Time to 70 BC	5:55	4:49	hrs:min	
	Time to 100 BC	6:13	5:04	hrs:min	
	Rheology at BHCT	typ	ical	RPM	
		40	92	300	
		36	83	200	
		31	71	100	
		29	65	60	
		26	58	30	
		23	30	6	
		17	22	3	
	Plastic Viscosity	14	32	cР	
	Yield point	26	60	$^{\mathrm{lb}}/_{\mathrm{100~ft^2}}$	
	Compressive strength at BHST	± 50	± 200	psi [12 h]	

**Spacer:** Minimum 20 m<sup>3</sup> of sea water

P&A 1					
Plug Depth, M D	[m]	3190	BHST	[°C]	100
Plug Depth, TVD	[m]	3190	ВНСТ	[°C]	90
Hole size	["]	8 1/2	OH Excess	[%]	25
Spacer 500E+	$[m^3]$	5 ahead	Spacer Weight	[SG]	1,75
TOC	[m]	2975	Slurry contract ref.	Slurry	28 / MPFL14

	Cement slurry design & lab	oratory results	
Slurry design	Norcem class "G" Cement	Main	Units
	HR-5L	1,30	lhk
	CFR-3L	0,75	lhk
	Halad-99LE+	6,00	lhk
	NF-6	0,10	lhk
	Fresh Water	37,90	lhk
	Density	1,90	SG
	Total Mix Fluid	46,05	lhk
	Yield	77,10	lhk
Lab reference:	Thickening Time at BHCT		
NS01-Z-448	Time to 30 BC	3:05	hrs:min
	Time to 70 BC	3:12	hrs:min
	Time to 100 BC	3:13	hrs:min
	Rheology		RPM
		32	300
		22	200
		12	100
		6	60
		4	30
		2	6
		1	3
	Plastic Viscosity	30	cР
	Yield Point	2	$\frac{\text{lb}}{100 \text{ ft}^2}$
	Density top/bottom	$\frac{1,90}{1,90}$	$^{\rm SG}/_{ m SG}$
	API gel strength	<sup>2</sup> / <sub>34</sub>	$cP, {}^{10}s/_{10 \text{ min}}$
	API Free Water	0	%
	API fluid loss	250	cm3/30 min
	Compressive strength at BHST	± 2000	psi [24 h]

P&A # 2+3					
Plug Depth, M D	[m]	1791 & 1491	BHST	[°C]	46
Plug Depth, TVD	[m]	1791 & 1491	BHCT	[°C]	37
Hole size	["]	8 1/2	OH Excess	[%]	25
Spacer 500E+	$[m^3]$	5 ahead **	Spacer Weight	[SG]	1,75
TOC, plug # 3	[m]	1274 *	Slurry contract ref.	Slurry	28 / MPFL14

<sup>\*</sup> It is not recommended to exceed 300 metres length on balanced plugs. \*\*Pump spacer ahead of plug # 3

	Cement slurry design & lab	oratory results	
Slurry design	Norcem class "G" Cement	Main	Units
	HR-5L	0,20	lhk
	CFR-3L	0,75	lhk
	Halad-99LE+	5,00	lhk
	NF-6	0,10	lhk
	Fresh Water	39,78	lhk
	Density	1,90	SG
	Total Mix Fluid	45,83	lhk
	Yield	76,88	lhk
Lab reference:	Thickening Time at BHCT		
NS01-Z-449	Time to 30 BC	4:00	hrs:min
	Time to 70 BC	4:34	hrs:min
	Time to 100 BC	4:42	hrs:min
	Rheology		RPM
		70	300
		49	200
		28	100
		20	60
		12	30
		9	6
		7	3
	Plastic Viscosity	63	cР
	Yield Point	7	$\frac{\text{lb}}{100 \text{ ft}^2}$
	Density top/bottom	1,90/1,90	$\frac{\mathrm{SG}}{\mathrm{SG}}$
	API gel strength	0/32	$cP$ , $^{10}$ $^{\circ}$ / $_{10 \text{ min}}$
	API Free Water	0	%
	API fluid loss	127	cm3/30 min
	Compressive strength at BHST	± 1000	psi [24 h]

P&A # 4					
Plug Depth, M D	[m]	661	BHST	[°C]	13
Plug Depth, TVD	[m]	661	ВНСТ	[°C]	13
Hole size	13 :	3/8" csg ID	OH Excess	[%]	na
Spacer 500E+	$[m^3]$	5 ahead	Spacer Weight	[SG]	1,75
TOC	[m]	411	Slurry contract ref.	Slurr	y 4 / STTNT

	Cement slurry design & laboratory results					
Slurry design	Norcem class "G" Cement	Main	Units			
	NF-6	0,10	lhk			
	Sea Water	42,53	lhk			
	Density	1,95	SG			
	Total Mix Fluid	42,63	lhk			
	Yield	73,69	lhk			
Lab reference:	Thickening Time at BHCT					
NS01-Z-315	Time to 30 BC	5:02	hrs:min			
	Time to 70 BC	5:03	hrs:min			
	Time to 100 BC	5:04	hrs:min			
	Compressive strength at BHST	± 900	psi [24 h]			

### Actual usage and discharge numbers, summary

 Field:
 Exploration
 Year:
 2001

 Rig:
 Byford Dolphin
 Well:
 6506/3-1

Product	SFT class	Unit	Density	Watercont	Usage		Dis	scharges		
			[SG]	[Vol-%]		Destruction	Left in well	Reinjected	To sea	Balance
Bayferrox130	1	kg	5,000							OK
Bentonite	2	kg	2,650							OK
CaCl2 liquid	1	ltr	1,318	78	1 100		1 050		50	OK
Cement cl. "G"	1	MT	3,220		239		239			OK
Cement , industrial	1	MT	3,100							OK
CFR-3L	13	ltr	1,178	78	302		302			OK
Econolite	2	ltr	1,363	74	4 020		4 004		16	OK
FDP-C-552	16	ltr	1,057							OK
Flexplug-OBM	3	kg	1,750							OK
Flexplug-W	3	kg	2,260							OK
Gascon469	1	ltr	1,100	85						OK
Halad-344	5	kg	1,600							OK
Halad-99LE+	5	ltr	1,018	96	2 097		2 097			OK
Halad-413L	5	ltr	1,067	89						OK
Halad-600LE+	5	ltr	1,097	80						OK
FDP-575	1	ltr	1,480	50						OK
HR-15	4	kg	1,940							OK
K-35	1	kg	2,530							OK
HR-15L	4	ltr	1,106	89						OK
HR-25L	2	ltr	1,040	95						OK
WG-17	5	kg	0,600							OK
HR-4L	4	ltr	1,182	71	1 330		1 200		130	OK
HR-5L	4	ltr	1,165	87	207		207			OK
Latex 2000	5	ltr	0,982	50						OK
Microblock	1	ltr	1,390	80						OK
Micromax	1	kg	4,800							OK
Musol E	16	ltr	0,950		360		288		72	OK
NF-6	7	ltr	0,940	8	278		278			OK
SCR-100L	2	ltr	1,078	86			ĺ			OK
Sem-7	16	ltr	1,000		180		144		36	OK
Spacer 500E+	5	kg	2,300		524		456		68	OK
SSA-1	1	kg	2,630				ĺ			OK
SSA-1, blend	1	мŤ	3,043				ĺ			OK
Stabiliser 434C	5	ltr	1,040	65			ĺ			OK
X-lite	1	MT	2,055				l			OK

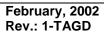
 Field:
 Exploration
 Year:
 2001

 Rig:
 Byford Dolphin
 Well:
 6506/3-1

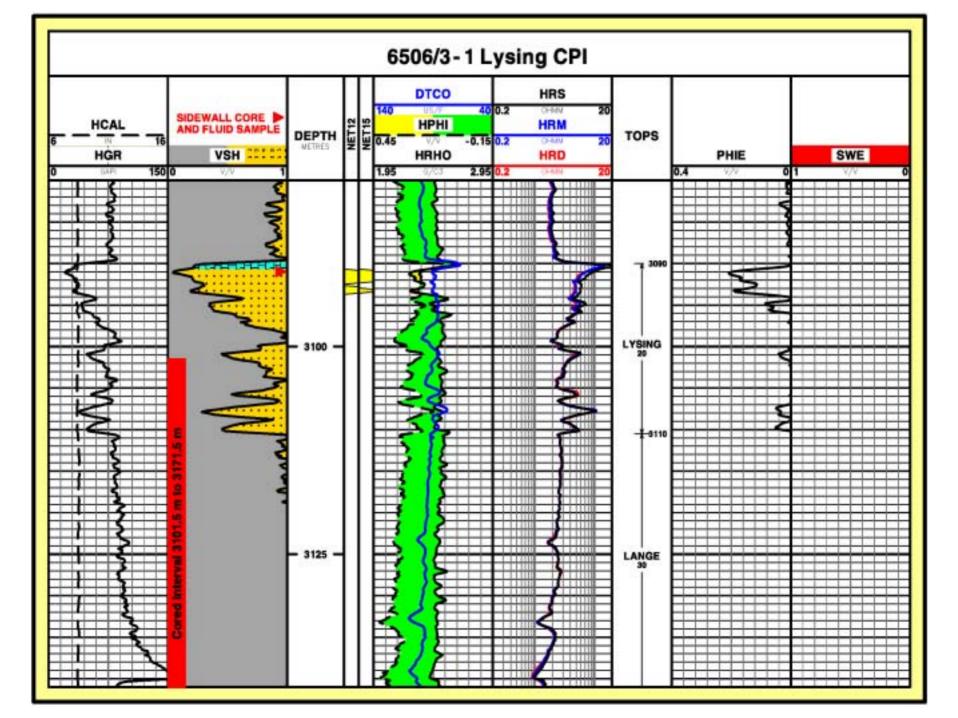
Product	SFT class	Unit	Density	Watercont	Usage		Discharg	ges		
			[SG]	[Vol-%]		Destruction	Left in well	Reinjected	To sea	Balance
Bayferrox130	1	MT	5,000							OK
Bentonite	2	MT	2,650							OK
CaCl2 liquid	1	MT	1,318	78	1,45		1,38		0,07	OK
Cement cl. "G"	1	MT	3,220		239		239			OK
Cement , industrial	1	MT	3,100							OK
CFR-3L	13	MT	1,178	78	0,36		0,36			OK
Econolite	2	MT	1,363	74	5,48		5,46		0,02	OK
FDP-C-552	16	MT	1,057							OK
Flexplug-OBM	3	MT	1,750							OK
Flexplug-W	3	MT	2,260							OK
Gascon469	1	MT	1,100	85						OK
Halad-344	5	MT	1,600							OK
Halad-99LE+	5	MT	1,018	96	2,13		2,13			OK
Halad-413L	5	MT	1,067	89	·		·			OK
Halad-600LE+	5	MT	1,097	80						OK
FDP-575	1	MT	1,480	50						OK
HR-15	4	MT	1,940							OK
K-35	1	MT	2,530							OK
HR-15L	4	MT	1,106	89						OK
HR-25L	2	MT	1,040	95						OK
WG-17	5	MT	0,600							OK
HR-4L	4	MT	1,182	71	1,57		1,42		0,15	OK
HR-5L	4	MT	1,165	87	0,24		0,24			OK
Latex 2000	5	MT	0,982	50						OK
Microblock	1	MT	1,390	80						OK
Micromax	1	MT	4,800							OK
Musol E	16	MT	0,950		0,34		0,27		0,07	OK
NF-6	7	MT	0,940	8	0,26		0,26			OK
SCR-100L	2	MT	1,078	86						OK
Sem-7	16	MT	1,000		0,18		0,14		0,04	OK
Spacer 500E+	5	MT	2,300		0,52		0,46		0,07	OK
SSA-1	1	MT	2,630		·		·			OK
SSA-1, blend	1	MT	3,043							OK
Stabiliser 434C	5	MT	1,040	65						OK
X-lite	1	MT	2,055							OK

## **Enclosure 3**

Composite Log & CPI







## **Appendix**

**Appendix A - Whole Core Descriptions** 

**Appendix B - Wireline Logging Events** 

**Appendix C - Dewpoint Report, Formation Water Samples** 



## **Appendix A**

**Whole Core Descriptions** 





Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"	,					
Logging Witness:	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	<b>5</b> "					
Recovered length	67.69m	Percentage recovery	_	5.7%					
Chip Depth		thology and shows	70	Ø			Sho	wc	
Cmp Depth		nology and shows	-				SIIC		
			P	F	G	T	P	F	G
3101.5	<b>DOLOMITE</b> : pale yellow	vish brown to greyish orange, very hard,							
		auconite, trace carbonaceous material,							
		o DOLOMITIC LIMESTONE in places,							
	no visible porosity, no sho								
3102	Siltstone with common 1-2mm bands of Sandstone.								
	<b>SILTSTONE</b> : medium dark grey, firm to moderately hard, blocky								
		ite, grading to CLAYSTONE.							
	<b>SANDSTONE</b> : light grey	, firm to moderately hard, blocky, very							
	fine grained, clear, colourle	ess, commonly pale grey, transluscent,							
	subangular to subrounded,	subspherical, moderately sorted,							
	moderate calcite cement, a	rgillaceous matrix in places, common to							
	locally abundant glauconit	e, no visible porosity, NO SHOWS (some							
	mineral fluorescence).								
3103	CLAYSTONE : medium g	grey, occasionally medium dark grey, firm							
		to splintery, occasionally subfissile,							
	_	ce carbonaceous material, slightly							
	calcareous.								
3104		1-3mm bands of Sandstone.							
		grey, occasionally medium dark grey, firm							
		to splintery, occasionally subfissile,							
		ce carbonaceous material, silty grading to							
	SILTSTONE in places, slig								
		, firm to moderately hard, blocky, very							
		ess, commonly pale grey, transluscent,							
		subspherical, moderately sorted,							
		rgillaceous matrix in places, common to							
		e, common to locally abundant coarse							
2105		NO SHOWS (some mineral fluorescence).							
3105	5mm Claystone bed with	grey, occasionally medium dark grey, firm							
		to splintery, occasionally subfissile,	X						
		ce carbonaceous material, silty grading to							
	SILTSTONE in places, slig								
		to colouless, firm to moderately hard,							
		e, very fine grained, clear, colourless,							
		luscent, subangular to subrounded,							
		erately sorted, moderate calcite cement,							
		atrix, common to locally abundant							
		ally abundant coarse mica, poor to no							
		WS (some mineral fluorescence).							



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"	,					
Logging Witness:	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	ź"					
Recovered length	67.69m	Percentage recovery	-	.7%					
Chip Depth		nology and shows		Ø			Sho	ws	
				$\tilde{}$					
			P	F	G	Т	P	F	G
3106	Claystone with common 1	mm Sandstone bands.							
0100		rey, occasionally medium dark grey, firm	X						
	to moderately hard, blocky	to splintery, occasionally subfissile,	<b>1</b>						
		minated carbonaceous material, silty							
	grading to SILTSTONE in	places, slight trace glauconite,							
	micaceous, non calcareous.								
	<b>SANDSTONE</b> : light grey	to colouless, firm to moderately hard,							
	blocky, occasionally friable	, very fine to fine grained, clear,							
	colourless, commonly pale	grey, transluscent, subangular to							
		poor to moderately sorted, moderate							
		argillaceous matrix, common to locally							
		to no visible porosity, NO SHOWS							
	(some mineral fluorescence								
3107		to very pale grey, firm to moderately							
		ocky, fine to medium grained, clear,	X	X			X		
		ite to very pale grey, transluscent,							
		subspherical, moderately sorted, common							
		, trace carbonaceous material, moderate							
		lerate visible porosity. SHOWS: bright							
		w white natural fluorescence, no cut, slow							
2100	blooming milky white crush								
3108	CLAYSTONE - madium a								
		rey, occasionally medium dark grey, firm	X						
		to splintery, occasionally subfissile, minated carbonaceous material, silty							
		places, common coarse micaceous, non							
	calcareous.	places, common coarse inicaccous, non							
	SANDSTONE : as 3106m.								
3109	Claystone with common <								
3107	CLAYSTONE: as 3108m	Timi panastone banas							
		to colouless, firm to moderately hard,							
		e, very fine to fine grained, clear,							
		grey, transluscent, subangular to							
	• -	poor to moderately sorted, moderate							
		argillaceous matrix, common to locally							
		isible porosity, NO SHOWS (some							
	mineral fluorescence).	• •							
3110		o medium dark grey, firm to moderately							
		splintery to subfissile, micromicaceous,							
		is 1/3mm wide, slight trace carbonaceous							
	material non calcareous.			L	L				



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"	)					
Logging Witness:	E. Linaker	Core diameter							
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	<b>5</b> "					
Recovered length	67.69m	Percentage recovery	_	.7%					
Chip Depth		nology and shows	70	Ø			Sho	ws	
Cmp Depth		iology and shows	_					1113	
			P	F	G	T	P	F	G
2111	CI 4 141	10 0 14 1							
3111	CLAYSTONE : madium to	o medium dark grey, firm to moderately							
		splintery to subfissile, micromicaceous,							
	slight trace carbonaceous m								
		to colouless, firm to moderately hard,							
		, predominantly very fine to occasionally							
	fine grained, clear, colourle								
	subangular to subrounded, s								
	moderate calcite cement, oc								
	locally abundant coarse mic								
	(some mineral fluorescence								
3112	Claystone with common <								
3112	<b>CLAYSTONE</b> : as 3111m.								
	SANDSTONE : light grey	to colouless, firm to moderately hard,							
		, predominantly very fine to occasionally							
	fine grained, clear, colourle	ss, commonly pale grey, transluscent,							
	subangular to subrounded, s	subspherical, poor to moderately sorted,							
		ecasional argillaceous matrix, common to							
		ca, rare glauconite, no visible porosity,							
	NO SHOWS (some mineral								
3113		1-2mm Sandstone bands, occasional							
	5mm by 3mm Sandstone l	enses.							
	CLAYSTONE: as 3111m								
2114	SANDSTONE : as 3112m	4 2							
3114		1-2mm Sandstone bands, occasional							
	5mm by 3mm Sandstone l	o medium dark grey, firm to moderately							
		splintery to subfissile, micromicaceous,							
		naterial, occasional trace micropyrite, non							
	calcareous.	atteriar, occusionar trace interopyrite, non							
	SANDSTONE : as 3112m								
3115		one and Sandstone (1mm bands).							
3113		medium dark grey, firm to moderately							
		splintery to subfissile, micromicaceous,							
	slight trace carbonaceous m	aterial, occasional trace micropyrite,							
		JE in places, non calcareous.							
		to colouless, firm to moderately hard,							
		, predominantly very fine to occasionally							
		ilty, grading to SILTSTONE in places,							
	-	pale grey, transluscent, subangular to							
		poor to moderately sorted, moderate							
		argillaceous matrix, common to locally							
		glauconite, no visible porosity, NO							
	SHOWS (some mineral fluo	orescence).							



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"						
<b>Logging Witness:</b>	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	ź"					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth	Lith	nology and shows		Ø			Sho	ws	
			P	F	G	T	P	F	G
3116	Claystone with occasional	<1-1mm Sandstone bands.							
	<b>CLAYSTONE</b> : medium to	o medium dark grey, firm to moderately							
	hard, subblocky to blocky,	splintery to subfissile, micromicaceous,							
	slight trace carbonaceous m	naterial, silty, occasionally grading to							
	SILTSTONE, non calcareo	us.							
	SANDSTONE : as 3115m								
3117		laystone with common <1-2mm Sandstone bands.  LAYSTONE: medium grey to medium dark grey, occasionally							
	_ ·	rownish grey, firm to moderately hard, subblocky to blocky,							
		casionally subfissile, micromicaceous, silty in places, grading to LTSTONE, non calcareous.							
		o pale grey, firm, friable in places,							
		ccasionally fine grained, clear,							
		ransluscent, subangular, to subrounded,							
		conite, moderate calcite cement, no							
2110	visible porosity, NO SHOW Claystone with common <								
3118		rey to medium dark grey, occasionally							
		erately hard, subblocky to blocky,							
		romicaceous, non calcareous.							
	SANDSTONE : as 3117m	Tomicaccous, non carcarcous.							
3119	Claystone with common <	1-2mm Sandstone bands.							
311)	CLAYSTONE: as 3118m								
		o pale grey, firm, friable in places,							
		ccasionally fine grained, clear,							
	colourless, very pale grey, t	ransluscent, subangular, to subrounded,							
		iconite, moderate calcite cement, no							
	visible porosity, NO SHOW	VS.							
3120	Claystone with occasional								
		o medium dark grey, firm to hard, blocky							
		us, occasional coarse mica, non to							
	slightly calcareous.								
		o pale grey, firm, friable in places,							
		ccasionally fine grained, clear,							
		ransluscent, subangular, to subrounded,							
	SHOWS.	ite cement, no visible porosity, NO							
2121		1mm 1mm Sandstone hands	1						
3121	occasional Sandstone lens	1mm-1mm Sandstone bands,							
	CLAYSTONE : as 3120m.								
	SANDSTONE: as 3120m.		1						
	Diffibbione . as 3120III.		1						



Well Number:	6506/3-1 Core Number: 1								
Date:	07/08/01	Core diameter	4"	,					
Logging Witness:	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	ź"					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth	Lit	hology and shows		Ø			Sho	ws	
		-	P	F	G	Т	P	F	G
			Г	Г	G	1	Г	Г	G
3122		l Claystone and Sandstone.							
		to pale grey, firm, friable in places,							
		occasionally fine grained, clear,							
		transluscent, subangular, to subrounded,							
		ace glauconite, moderate calcite cement,							
	no visible porosity, NO SH								
		o medium dark grey, firm to hard, blocky							
		us, occasional coarse mica, common							
		ceous material, slightly to non							
		alcareous.  T.A.VSTONE: medium to medium dark grey firm to moderately							
3123		LAYSTONE: medium to medium dark grey, firm to moderately							
		rd, blocky to subfissile, micromicaceous, rare very fine rbonaceous material, common micropyrite veins 1/4 to 1/3mm							
	wide, upto 1cm long (? foss								
3124		l Claystone and Sandstone.							
		o medium dark grey, firm to moderately							
		nicromicaceous, rare very fine							
	carbonaceous material, non								
		to pale grey, firm, friable in places,							
		occasionally fine grained, clear,							
		transluscent, subangular, to subrounded,							
		to SILTSTONE, common glauconite,							
	porosity, NO SHOWS.	ccasional coarse biotite mica, no visible							
3125	Claystone with common <	1-1mm Sandstone bands, occasional							
	Sandstone lenses 2mm by								
	CLAYSTONE : as 3124m								
		to pale grey, firm, friable in places,							
		ained, rare medium grained, clear,							
		transluscent, subangular, to subrounded,							
		to SILTSTONE, common glauconite,							
		ccasional coarse biotite mica, no visible							
2126	porosity, NO SHOWS.	d 2 Candatana handa							
3126		<1-2mm Sandstone bands.							
		o medium dark grey, firm to hard,							
	specks, non calcareous.	, occasional very fine carbonaceous							
		aray firm friehla in rlassa blaslav							
		grey, firm, friable in places, blocky, very							
		ess, very pale grey, transluscent,							
		subspherical, moderately sorted,							
	SHOWS.	ace glauconite, no visible porosity, NO							
	BIIOWB.		Ц		<u> </u>				



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"						
<b>Logging Witness:</b>	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	ź"					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth	Litl	hology and shows		Ø			Sho	ws	
						<b>T</b>			~
			P	F	G	T	P	F	G
3127		one and Sandstone in 1-2mm bands.							
	<b>CLAYSTONE</b> : as 3126m								
		grey, firm, friable in places, blocky, very							
		ss, very pale grey, transluscent,							
	_	subspherical, moderately sorted,							
		ace glauconite, common coarse mica, no							
	visible porosity, NO SHOW								
3128		<b>LOMITE</b> : dark yellowish orange to pale yellowish brown, ved, blocky, trace mica, trace glauconite, microcrystalline to							
		ard, blocky, trace mica, trace glauconite, microcrystalline to							
		ryptocrystalline.							
3129		AYSTONE: medium to medium dark grey, firm to moderately							
		d, subfissile to fissile, micromicaceous, rare very fine							
		nmon micropyrite veins 1/4 to 1/3mm							
		sil burrows), non calcareous.							
3130	CLAYSTONE: as 3129m.	•							
3131	Claystone with occasional	<1mm Sandstone bands.							
	<b>CLAYSTONE</b> : as 3129m.								
		grey, firm, fiable in places, blocky, very							
		ss, very pale grey, transluscent,							
		subspherical, moderate to poorly sorted,							
		ommon coarse mica, no visible porosity,							
	NO SHOWS.								
3132		ark grey, firm to moderately hard,							
	-	lty, grading to SILTSTONE, non							
	calcareous.								
3133	Claystone with occasional								
	CLAYSTONE : as 3132m.								
2121	SANDSTONE : as 3131m.								
3134	Claystone with occasional								
	CLAYSTONE : as 3132m.								
2125	SANDSTONE : as 3131m.	4 6 14 1 1							
3135	Claystone with common < CLAYSTONE : as 3132m.								
		grey, firm, fiable in places, blocky, very							
		ess, very pale grey, transluscent,							
		subspherical, moderate to poorly sorted,							
		ommon coarse mica, silty commonly							
		o visible porosity, NO SHOWS.							
3136	Claystone with common <	· ·							
	CLAYSTONE : as 3132m.								
	SANDSTONE : as 3135m.								
					•				



Well Number:	506/3-1 Core Number: 1								
Date:	07/08/01	Core diameter	4"	,					
<b>Logging Witness:</b>	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	ź"					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth	Lit	chology and shows		Ø			Sho	ws	
			P	F	G	Т	P	F	G
3137	Sandstone lenses 3mm by CLAYSTONE: medium to splintery to subfissile, mice SANDSTONE: pale grey grained to silt, clear, colou subangular to subrounded, moderate calcite cement, g	to medium dark grey, firm to hard, romicaceous, non calcareous. , firm, friable in places, blocky, very fine rless, very pale grey, transluscent, subspherical, moderate to poorly sorted, good trace glauconite, common coarse							
3138	claystone: medium to splintery to subfissile, microcalcareous.  SANDSTONE: pale grey grained to silt, clear, colou subangular to subrounded, moderate calcite cement, g	Claystone with common <1mm Sandstone/Siltstone bands. CLAYSTONE: medium to medium dark grey, firm to hard, splintery to subfissile, micromicaceous, silty in places, non							
3139	CLAYSTONE : medium thard, blocky to splintery, o	to medium dark grey, firm to moderately occasionally subfissile, micrmicaceous, oceous specks, silty, occasionally grading reous.							
3140	hard, blocky to splintery, o common very fine carbona	to medium dark grey, firm to moderately occasionally subfissile, micrmicaceous, aceous specks, micropyrite veins 1/4mm rrows?), silty, occasionally grading to ous.							
3141	CLAYSTONE: medium thard, blocky to splintery, of common very fine carbona wide, 5mm long (fossil but	to medium dark grey, firm to moderately occasionally subfissile, micrmicaceous, oceous specks, micropyrite veins 1/4mm crows?), silty, occasionally grading to nm bands, trace glauconite, non							
3142	hard, blocky to splintery, of common very fine carbonal wide, 5mm long (fossil but SILTSTONE rarely in <1n calcareous. SILTSTONE: light to light	to medium dark grey, firm to moderately occasionally subfissile, micrmicaceous, oceous specks, micropyrite veins 1/4mm rrows?), silty, occasionally grading to nm bands, trace glauconite, non tht medium grey, firm, blocky, occasionally grading to very fine							



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"	,					
Logging Witness:	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	2"					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth	Liti	hology and shows		Ø			Sho	ws	
			P	F	G	Т	P	F	G
3143		o medium dark grey, firm to moderately							
		, micromicaceous, occasional very fine							
	carbonaceous material, non								
3144	Claystone with occasional								
	CLAYSTONE : As 3143n	1.							
	SILTSTONE : As 3142m.								
3145	Claystone with occasional								
	CLAYSTONE : As 3143n	1.							
	SILTSTONE : As 3142m.		<u> </u>						
3146	Claystone with common <								
		o medium dark grey, firm to moderately							
		, micromicaceous, occasional very fine							
	carbonaceous material, non								
		firm, friable in places, blocky, very fine							
		eless, very pale grey, transluscent,							
		subspherical, moderate to poorly sorted, ood trace glauconite, common coarse							
		ing to SILTSTONE, no visible porosity,							
	NO SHOWS.	ing to SIL131 OIVE, no visible polosity,							
3147		tone and Siltstone, bands <1mm thick.							
	<b>CLAYSTONE</b> : as 3146m								
		medium grey, firm blocky, sandy, grading							
		, micromicaceous, trace glauconite, trace							
	coarse mica, slightly calcar		<u> </u>						
3148		tone and Siltstone, bands <1mm thick.							
	CLAYSTONE : as 3146m	•							
21.10	SILTSTONE : as 3147m.	1004	-						
3149	, .	tone and Siltstone, bands <1-1mm							
	thick.								
	CLAYSTONE : as 3146m	nedium grey, firm blocky, sandy,							
		fine SANDSTONE, micromicaceous,							
		se mica, slightly calcareous.							
3150		tone and Siltstone, bands <1mm thick.	1						
3130	, .	o medium dark grey, firm to moderately							
		, micromicaceous, locally abundant							
		fine carbonaceous material, non							
	calcareous.	the constraint in in in in in in in in in in in in in							
	SILTSTONE : as 3149m.								
3151		one and Siltstone, bands <1mm thick.							
	CLAYSTONE : as 3150m								
	<b>SILTSTONE</b> : as 3149m.								
	SILIBIUNE . as 3149III.		1						



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"	,					
<b>Logging Witness:</b>	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	<b>2</b> "					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth	Lit	hology and shows		Ø			Sho	ws	
			P	F	G	Т	P	F	G
3152		tone and Siltstone, bands <1mm thick.							
	CLAYSTONE : as 3150m								
		medium grey, firm blocky, sandy, rarely							
		STONE, micromicaceous, trace							
2152	glauconite, trace coarse mic							<u> </u>	
3153		Claystone with common <1mm Siltstone bands. CLAYSTONE : as 3150m.							
	SILTSTONE: as 3152m.	•							
3154		1mm Siltstano hands, accesional 1mm							
3134		laystone with common <1mm Siltstone bands, occasional 4m y 1cm Siltstone lenses.							
	CLAYSTONE : as 3150m.								
	SILTSTONE : pale grey, r								
	occasionally, grading to ver								
		se mica, slightly calcareous.							
3155		grey, firm to moderately hard, blocky to							
3133		occasionally coarse mica, silty in places,							
	1	ninated micropyrite, rare micropyrite							
	viens 1/4mm wide by 3mm long (fossil burrows?), non calcareous.								
3156	Siltstone with common <1	mm Claystone bands, occasional							
	Sandstone lenses upto 4m	m thick.							
		rey, firm to moderately hard, blocky to							
		occasionally coarse mica, silty in places,							
		ninated micropyrite, non calcareous.							
		nt medium grey, firm to moderately hard,							
		andy, occasionally grading to very fine							
	SANDSTONE, slightly calc								
		, firm, firable in places, blocky, clear							
		e grey, very fine grained, subrounded to ilty grading to SILTSTONE. moderately							
		glauconite, no visible porosity, NO							
	SHOWS.	gradeonite, no visible potosity, 140							İ
3157		nm Claystone and Siltstone, occasional							
3137	1-2mm Sandstone bands.	in Claystone and Shtstone, occasional							
	CLAYSTONE : as 3156m								
	<b>SILTSTONE</b> : as 3156m.								
	<b>SANDSTONE</b> : as 3156m.								
3158	Finely interbedded <1-1m	m Claystone and Siltstone, occasional							
	1-2mm Sandstone bands.	- /							
	<b>CLAYSTONE</b> : as 3156m	•							
	SILTSTONE : as 3156m.								
	<b>SANDSTONE</b> : as 3156m.								
3159		tone/Siltstone/Sandstone <1-1mm thick.							
	CLAYSTONE : as 3156m								
	SILTSTONE: as 3156m.								
	<b>SANDSTONE</b> : as 3156m.								



Well Number:	6506/3-1	Core Number:	1						
Date:	07/08/01	Core diameter	4"	,					
Logging Witness:	E. Linaker								
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	ź"					
Recovered length	67.69m	Percentage recovery	96	.7%					
Chip Depth		hology and shows		Ø			Sho	ws	
r r				Ĩ					
			P	F	G	T	P	F	G
3160	Finely interbedded Clays	tone and Siltstone <1-2mm thick.							
	<b>CLAYSTONE</b> : as 3156m								1
	<b>SILTSTONE</b> : light to light	nt medium grey, firm to moderately hard,							l
		andy, commonly grading to very fine							1
	SANDSTONE, slightly calc							l	
3161	Finely interbedded Claystone and Siltstone <1-2mm thick.								1
	<b>CLAYSTONE</b> : as 3156m								l
	<b>SILTSTONE</b> : as 3160m.								
3162	Claystone with common <								
	<b>CLAYSTONE</b> : medium g							1	
	splintery, micromicaceous,							1	
		y in places, occasional very fine							1
	disseminated micropyrite, r								1
		nt medium grey, firm to moderately hard,							1
		race very fine carbonaceous material,							1
		to very fine SANDSTONE, slightly							1
	calcareous.	C C 11 ' 1 11 1 1							1
		, firm, firable in places, blocky, clear							1
		e grey, very fine grained, subrounded to							1
		ilty grading to SILTSTONE. moderately to locally abundant glauconite, no visible							1
	porosity, NO SHOWS.	to locally abundant glaucoline, no visible							1
3163		tone and Siltstone <1-2mm thick.							
3103	CLAYSTONE: as 3162m								1
		nt medium grey, firm to moderately hard,							1
		race very fine carbonaceous material,							1
		g to very fine SANDSTONE, trace							l
	glauconite, slightly calcared								1
3164	Finely interbedded Clayst	tone and Siltstone <1-1mm thick.							
	<b>CLAYSTONE</b> : as 3162m								1
	<b>SILTSTONE</b> : as 3163 m.								
3165		tone and Siltstone <1-1mm thick.							l
	<b>CLAYSTONE</b> : as 3162m								1
	<b>SILTSTONE</b> : as 3163 m.								ļ
3166		l <1-2mm Siltstone bands.							1
		o medium dark grey, firm to occasionally							1
		splintery, micromicaceous, rare trace							1
	very fine carbonaceous mat								
		nt medium grey, firm blocky,							
01.67	micromicaceous, slightly ca								
3167	Claystone with occasional								
	CLAYSTONE: as 3166m								l
		nt medium grey, firm blocky,							
	-	fine sand, trace glauconite, slightly							
	calcareous.		1						



		<u> </u>								
Well Number:	6506/3-1 Core Number:				1					
Date:	07/08/01 Core diameter 4"									
<b>Logging Witness:</b>	E. Linaker									
Cored interval:	3101.5m <b>to</b> 3171.5m	Hole size:	81/	<b>2</b> "						
Recovered length	67.69m	Percentage recovery	96	.7%						
Chip Depth	Lit	hology and shows		Ø			Sho	ws		
			P	F	G	T	P	F	G	
3168		tone and Siltstone, <1-2mm thick.								
	CLAYSTONE: as 3166m.									
	<b>SILTSTONE</b> : light to light medium grey, firm blocky,								İ	
	micromicaceous, trace very	y fine sand, occasionally grading to very							İ	
	fine SANDSTONE, trace g	glauconite, occasional coarse mica,							İ	
	slightly calcareous.									
3169	Claystone with common <	<1-1mm Siltstone bands.								
	CLAYSTONE: as 3166m.									
	SILTSTONE: as 3168m.								İ	
3169.19	Siltstone with fine Claysto	one bands.								
	<b>CLAYSTONE</b> : as 3166m	<b>.</b>								
	SILTSTONE: as 3168m.									

## Appendix B

**Wireline Logging Events** 

### **Wireline Logging - Sequence of Events**

Run	Time/Date	Comments/Activities
Number 1	10/08/01	AIT-PEX-HNGS (Weak point -ECRD - 8000lbs)
1	02:10	Tool box talk Prior to rigging up Schlumberger run 1.
	02:15	Start rigging up Run 1 - AIT-PEX-HNGS
	03:00	Check tools.
	03:15	Load radioactive sources.
	03:30	At 100m set compensator line.
	03:45	At BOP's
	04:15	At casing shoe (encountered at 1374m). Continue RIH. Noticed ACTS (head
		tension) was giving readings 800lbs too high.
	05:20	At 3180m begin uplog repeat section to 3060m. Through the Lysing formation.
	05:40	Finished uplog of repeat section (+2m depth correction on repeat log). Continued
	05.45	to RIH
	05:45	At 3100m hanging up slightly. Pull up - OK
	05:47	Continue to RIH - OK.
	06:10	Tagged bottom at 3665.5m and start main uplog.
	07:07 <b>RT</b>	Stop logging, but kept logging tool moving up slowly. While Dolphin slack off
		compensator line to replace broken compensator shear pin. Hole sticky again at 3100m.
	07:27 <b>RT</b>	Compensator shear pin OK. RIH to 3170m.
	07:33	Restart main uplog. After restart shallow resistivities were reading very high, and
	07.55	not repeating repeat log over this section. Suspected AIT failed. Continued with
		uplog of PEX-HNGS.
	08:35 <b>TT</b>	At 2690m Resistivity appears to start reading correctly/normal. Decide to RIH to
		3150m to relog for resistivty
	08:50 <b>TT</b>	Restart main uplog from 3150m.
	09:50 <b>TT</b>	Back past 2690m.
	12:05	At shoe, continue on up to 1300m to check caliper. Caliper reading 12.16", (Casing - 12347").
	12:10	Close caliper and POOH
	12:45	Tools at BOP's, announcement made about radioactive.
	13:05	Tools at surface.
	13:10	Radioactive sources handling complete.
	13:20	Start after calibration.
	13:30	Finished after calibrations start rigging down Run 1 AIT-PEX-HNGS
	14:05	Rig down Complete
		Total time run $1 = 11$ hours 55 minutes
		(Incl. 1:15 Tool Time and 0:20 Rig time)
2	10/08/01	DSI-GR-AMS-OBDT (Weak Point - ECRD - 8000lbs)
	14:05	Start rigging up Run 2 DSI-GR-AMS-OBDT.
	15:10	Finished checking tools and RIH.
	16:40	At 3188m pull up slowly opening caliper and begin repeat log up 2980m.
	17:05	At 2980m. RIH

Run	Time/Date	Comments/Activities
Number		
2	10/08/01	
	17:30	Tag bottom (3665.8m)gently pull up slowly and open caliper and start main
		uplog.
	21:45	Inside casing with Run 2 check caliper in casing and close. POOH with Run 2.
	22:20	Tools at surface. Lay cable down for crane operations.
	22:30	Rig down Run 2.
	22:50	Run 2 DSI-GR-AMS-OBDT rig down completed.
		Total time run $2 = 8$ hours 45 minutes
3	10/08/01	PEX (Weak Point - ECRD - 8000 lbs)
3	22:50	Rig up Run 3 PEX
	23:00	Check tools.
	23:15	Lift cable up after crane operations.
	23:45	Load radioactive sources.
	11/08/01	
	00:00	RIH
	00:05	At 100m engage compensator.
	00:40	Begin logging anomalous density readings from 2000m.
	01:35	Finished log at 1590m, anomalous readings repeated, POOH.
	02:20	Tools at surface.
	02:30	Rigged down Run 3 PEX
	02:45	Rig down complete.
		Total time run $3 = 3$ hours 55 minutes
4	11/00/01	NOD OD (NV. L.D. 4 N. H. 4000 4 F400H.)
4	11/08/01	VSP-GR (Weak Point -Yellow - 4800 to 5400lbs)
	02:45 03:00	Change head for VSP run.
	03:00	Rig up Run 4 READ VSP-GR (8 receiver).
	05:45	RIH taking checkshot at 1280m.  Took pick up weight at shoe Tension 2000lbs.
	06:30	At 2060m tool stood up, picked up, freed with 2000lbs overpull
	07:00	Continued to RIH. Checkshot at 2400m.
	07:00	Checkshot at 3200m and continued to RIH.
	07:40	At 3450m begin GR correlation pass. Sticky overpull up to 3000lbs at 3440m
	07.40	came free, 3000lbs overpull at 3425m came free, 3000lbs overpull at 3417m
		came free, still sticky up to 3410m again with 3000lbs overpull, came free.
	07:55	At 3390m, due to the sticky hole the GR data was no good RIH.
	08:00	At 3475m begin GR correlation pass. Again sticky upto 1500lbs overpull in
		places.
	08:06	Tool stuck at 3402m, with maximum pull 7200lbs (normal logging tension
		3400lbs). Worked toolstring alternately pulling up and slacking off.
	08:50	Tool free, POOH at 4000 ft/hr.
	08:55	At 3346m overpull of 800lbs.
	09:00	At 3106m overpull of 3000lbs.

Run Number	Time/Date	Comments/Activities
number	00.02	A4 2002 as assembly of 2000 2500Hz
	09:03	At 3082m overpull of 3000-3500lbs overpull, tools stuck. Worked toolstring but alternately pull up to maximum cable tension of 7000lbs and slacking off. Fired
		VSP guns to see if any of the receivers were in contact with the side of the hole,
		receiver 1 appeared to be, but working the tool at various speed and slacking
		cable to 3120m seem to have no effect.
	11:35	Pull up until cable tension at 7000lbs, and maintained until decided on forward
	11.55	plan.
	12:50	Tool suddenly came free while checking out fishing equipment, POOH gradually
		increasing pulling speed to 4000 ft/hr
	14:30	Slow down to 2000 ft/hr until all toolstring in shoe.
	14:50	All toolstring inside shoe, POOH.
	15:15	Tool at surface. No obvious case for tool sticking, check tools - OK. Rigged
		down Run 4 VSP-GR
	15:45	Rig down complete
	16:45	Rigged down sheaves and clear rig floor.
		Total time run 4 = 14 hours
	16:45	Pick up clean out assembly and RIH, breaking circulation every 20 stands.
		Cut and slipped drilling line at the shoe.
		Broke circulation and circulated and conditioned mud at the shoe
		Continued to RIH breaking circulation every 20 stands.
		Circulate bottoms up and circulate and condition mud.
		Started POOH, but a hydraulic hose on the upper pipe racking arm burst
		circulated while repairing same. Tagged bottom and circulated bottoms up.
		POOH with conditioning assembly, laid down and cleared rig floor.
		24 hours 45 minutes for conditioning trip.
		y
5	12/08/01	MDT-GR (Weak Point - ECRD - 8000lbs)
3	17:30	Rigged up sheaves
	18:00	Started Rigging up Run 5 MDT-GR
	19:10	Finished rigging up, checked tools.
	19:30	Finished checking tools RIH.
	19:45	At 100m engage compensator.
	20:15	RIH (Broke two weakpoints while engaging compensator.)
	20:30	Noticed Quartz gauge on PS2 wasn't giving a signal continue RIH.
	20:35	Check pick up tension a +/- 1250m 2900lbs (head tension 1590lbs).
	20:45	Start correlating down (-1m correction). Continued RIH checking correlation.
	21:05	Pretest 1 - 1655m - Dry test, very slow build up.
	21:14	Pretest 2 - 1662m - Slightly supercharged.
	21:26	Pretest 3 - 1673m - Good test, mobility - 119md.
	21:33	Pretest 4 - 1678.5m - Good test, mobility - 22.8md
	21:43	Pretest 5 - 1685m - Dry test, very slow build up.
	22:03	Pretest 6 - 1686.1m - Good test, mobility - 11.7md

Run	Time/Date	Comments/Activities
Number		
	22:10	Pretest 7 - 1690m - Good test, mobility - 91.2md
	22:21	Pretest 8 - 1710m - Good test, mobility - 3.7md
	22:35	Pretest 9 - 1724m - Good test, mobility - 6md
	22:45	Dropped below last point in the Brygge formation for correlation check
		(correction +0.5m)
	22:50	Weak point on compensator line broke, held by shackle, decided to go for last point and sample and replace weakpoint while RIH to the Lysing. Picked up and ran past 1732.5m to double check correlation, after loss of weak point, (-1.0m correction.)
	23:00	Picked up to 1710m and RIH
	23:10	Pretest 10 - 1732.5m - Supercharged.
	23:22	Pulled up above 1675m for correlation check (correction +0.7m). RIH and up to check correlation.
	23:35	At 1673m to attempt to sample, Pretest 11 - very slow build up, must be slightly
	23.33	off depth.
	23:45	Dropped down 0.5m to 1673.5m, Pretest 12 - still very slow build up.
	23:50	Dropped another 0.5m to 1674m Pretest 13 - Good test 13.8md
	23:55	Start sampling 1674m
	13/08/01	zunt einig 101 im
	00:00	Begin pumping out with MRPS #2 (300rpm, 90bar DD)
	00:04	Autoreset probe, restart pump (DD 46bar) back to mud on OFA
	00:10	Stopped pumping out, reset probe, started pumping out - still mud on OFA, leak
		around packer, but still getting DD
	00:20	Retracted probe and reset probe (DD 40bar initially dropped to 10-20bar) - still
		mud.
	00:33	Dropped another 0.5m and retry at 1674.5m Pretest 14 - good test.
	00:41	Started pumping - large drawdown, pump stalling.
	00:45	Abandon sampling in the Brygge for now and RIH to Lysing Formation. Took 3 Pretests in the Lysing, Attempted to sample at 3091.9m.
	02:25	Started pumping. (300rpm, DD 100bar). Drawdown reduced to zero, pump
	02.23	stalled, reinitialised pumpout, pump working again, some telemetry problems observed.
	02:50	Restarted Pumpout again. (300rpm, DD 60bar).
	03:05	Increased pump to 400rpm, DD 100bar.
	03:20	Plugging, flowline pressure 180bar.
	03:30	Decided to move from sampling point getting too tight.
	03:40	Set probe at 3091.4m, Pretest 21 - Good test - 30.6md mobilty.
	04:15	Changed to CTSM, telemetry keeps going down while initializing. High DD.
	04:15	Dropped down to correlate.
	04:23	Stopped at 3091.2m Took Pretest 22 - Good test
	04:45	Started pumping. (300rpm DD 22bar).
	05:12	Increased pump rate to 400rpm, DD 27bar.
	05:17	Increased pump rate to 500rpm, DD 30bar.
	05:35	Drawdown 40bar.
	05:45	Drawdown up to 70bar.
	05:50	Pumping at 400rpm, water moving.
	05.50	i amping at tootpin, water moving.

Run Number	Time/Date	Comments/Activities
	06:00	Reduced pump rate to 300rpm, DD 70bar.
	06:55	Drawdown up to 100bar, seeing more gas coming through.
	07:55	Opened bottle 5 MPSR#856. Closed lower seal valve.
	08:00	Closed bottle 5, temperature 101.1 deg C, shutin pressure $430 + 245 = 675$ bar.
	08:10	Pumping at 300rpm, DD 60bar.
	08:17	DD 65bar.
	08:38	Pump stalled. Restarted no problem (44lt pumped).
	08:39	Pump rate increased to 400rpm, DD 70bar.
	08:50	Pump rate reduced to 300rpm, DD 76bar.
	09:20	Opened bottle 4, MPSR #753. Closed lower seal valve.(pumped 6.4lt after pump stalled)
	09:26	Closed bottle 4, temperature 101.9 deg C, shutin pressure 430 +250 = 680bar. Continued pumping at 300rpm, DD 70bar.
	09:42	Opened bottle 3 MPSR #712, DD 65bar.
	09:49	Closed bottle 3, temperature $100.8 \text{ deg C}$ , shutin pressure $430 + 255 = 685 \text{bar}$ . Continued pumping at $300 \text{rpm}$ , DD $70 \text{bar}$ .
	09:55	Retracted probe and started POOH
	11:40	Tools on surface, start rigging down Run 5 MDT-GR.
	12:30	Rig down completed.
		Total time run 5 = 19 hours
		Total time run $S = 19$ nours
6	13/08/01	VSP-GR (Weak Point - Pink - 4500 to 6000lbs)
	12:30	Started rig up of Reed VSP- Run 6 VSP-GR and swapped logging heads.
	13:50	RIH
	13:57	At 100m, put compensator on.
	14:50	At 1280m, 1st checkshot, and continued to RIH.
	15:20	At 2400m, 2nd checkshot, picked up at 1800 ft/hr to check logging tension (3000lbs).
	15:50	At 3200m, last checkshot.
	15:55	POOH to correlate GR over Lysing Formation (+3m correction). Logging tension 3500-3600lbs.
	16:05	Continued to RIH.
	16:20	Tagged TD at 3524m tool zero.
	16:25	At 3524m. start shooting VSP survey, 10m levels. Bottom two receivers caliper not open properly picked up to 3523m, and continue with survey. (logging
1		not open properly premed up to be zern, and continue with our coll. (10881118
		tension 4000lbs).
	18:10	tension 4000lbs). At 2898m Start Walkaway VSP.
	22:45	tension 4000lbs).
	22:45 <b>14/08/01</b>	tension 4000lbs). At 2898m Start Walkaway VSP. Continued VSP at 10m intervals to 2240m.
	22:45 14/08/01 00:00	tension 4000lbs). At 2898m Start Walkaway VSP. Continued VSP at 10m intervals to 2240m.  Continued VSP at 10m intervals to 1270m and 20m intervals to 950m.
	22:45 14/08/01 00:00 04:05	tension 4000lbs). At 2898m Start Walkaway VSP. Continued VSP at 10m intervals to 2240m.  Continued VSP at 10m intervals to 1270m and 20m intervals to 950m. POOH with VSP-GR.
	22:45 14/08/01 00:00 04:05 04:15	tension 4000lbs). At 2898m Start Walkaway VSP. Continued VSP at 10m intervals to 2240m.  Continued VSP at 10m intervals to 1270m and 20m intervals to 950m. POOH with VSP-GR. Tools at surface, begin rigging down Run 6 VSP-GR
	22:45 14/08/01 00:00 04:05	tension 4000lbs). At 2898m Start Walkaway VSP. Continued VSP at 10m intervals to 2240m.  Continued VSP at 10m intervals to 1270m and 20m intervals to 950m. POOH with VSP-GR.

Run Number	Time/Date	Comments/Activities
7	14/08/01	CST-GR (Weak Point - Green - 5450 to 6900 lbs)
	06:00	Rebuild head.
	06:45	Rigged up Run 7 CST-GR.
	07:40	RIH
	08:10	Put compensator on.
	08:40	At shoe, continued to RIH.
	09:45	At 3450m. Correlate up with GR at 1800ft/hr (correction -0.2m) logging tension 3300-3400lbs.
	09:55	RIH
	10:00	Start shooting sidewall cores at 3650m.
	10:05	Overpull 3000lbs at +/- 3636m on bullet.
	10:25	Free, continued shooting sidewall cores.
	11:20	Pull up to Lysing Correlate GR (correction +0.9). Continued to shoot sidewall cores
	12:55	Stuck at 2987m (NB not a bullet last one shot at 3065m.) 3000lbs overpull.
	12:58	Free. Continued shooting sidewall cores.
	14:25	After last bullet fired from lower gun, waited while rigfloor tightened compensator line
	14:30	RIH to 1760m and Pulled up to correlate GR (+0.4 correction).
	14:40	Started shooting sidewall cores from the second gun.
	15:35	Finished sidewall cores (53 shot). POOH.
	15:38	At shoe.
	16:25	Rig into radio silence
	16:50	Tools at surface. (53 cores shot, 29 Recovered, 2 Empty, 8 Misfires, 14 Lost. Recovery 55%)
	17:30	Waiting for phones to come back up to phone regarding recovery - no further CST run required, started rigging down Schlumberger
	18:00	Rig down completed.
		Total time run 7 = 12 hours

## **Appendix C**

# Dewpoint Report, Formation Water Samples

### **DewPoint**

## Formation Water Samples Well 6506/3-1

Made for Chevron AS by DewPoint A/S

September 2001

#### **Summary**

Three MDT water samples was taken at 3091.2 m MD in well 6506/3-1. The well was drilled with oil based mud and the samples had 6-9 vol-% contamination. The water is very fresh with a total salinity of 11366 mg/l and with a low CaCO<sub>3</sub> saturation at initial conditions. The content of organic acids is 2370 mg/l and the water contains 2.8 mg/l of phenols. The fist is a high value and the second a typical value for North Sea oilfield waters.

From the composition of the flash gas, the content and concentration of organic acids and phenols it has been concluded that the water has been in contact with a hydrocarbon accumulation or with migrating hydrocarbons. The low solution gas content points to no contact with hydrocarbons today.

#### **Ions**

All three sample-chambers contained very fresh formation water with a total salinity of 11366 +- 216 mg/l. The samples are of good quality with excellent ion balances, Table 1. The measured density is consistent with the reported salinity. Except for Ca<sup>2+</sup> no other divalent cat-ions where found. The total aquifer salinity is among the lowest seen on the Norwegian shelf and similar to water system in Ormen Lange.

The density of the formation water in situ has been calculated to be 1.017 g/cc from the salinity<sup>1</sup>. The pH of the water can be calculated to be 5.2 at initial conditions (430 bar and 102 °C) from the carbonate equilibrium and the concentration of organic acids, Table 2. This equals a pH value of 6.5 at standard conditions due to change in the carbonate equilibrium. The formation water is undersaturated with regard to CaCO<sub>3</sub> both at initial and at atmospheric conditions.

#### **Solution gas**

The compositions of the flash gas from the water samples are given in Table 3. The component distribution in MPSR 712 is unusual. It is believed that this composition is inaccurate due to the large amount of air (76.3 %) that contaminated the flashed gas. The other two flash gas compositions are very consistent. The component distribution in the flash gas has been compared with calculated solution gas from assuming equilibrium between a hydrocarbon fluid and the water at initial conditions and doing a three phase flash calculation with an EOS¹, Table 4. A gas-condensate from the area has been taken to be the hydrocarbon fluid, Table 5. Except for the CO₂ partition, this calculation is not very sensitive to the composition of the hydrocarbon fluid. The measured and calculated component distribution has been compared in Figure 1.

The amount of gas dissolved in the water samples is low. The samples are far from saturation with the measured gas-water ratio of 1.0 Sm<sup>3</sup>/m<sup>3</sup>. Table 4 shows that a GWR of about 3 Sm<sup>3</sup>/m<sup>3</sup> should be expected at saturation at initial conditions.

#### **Organic Acids**

The total amount of organic acids in the three analysed water sample is 2370 +- 54 mg/l. Table 6. This is a high concentration compared with other formation waters.

2

Carboxylic acids with different number of carbon atoms are present in the samples, but about 75 mole-% is acetic acid. The source for the organic acids has been biological degradation of organic material.

#### **Phenols**

The water contained 2.81 +- 0.45 mg/l of phenols, Table 7. About w-50 % is phenol and the rest different isomers of methyl- and ethyl phenols. The value is quite typical for oilfield waters produced from the Norwegian shelf<sup>5</sup>.

The analysis was difficult due to interference with other dissolved organic components in the water. The source is probably the oil based mud contamination in the three samples.

#### **Discussion**

No hydrocarbons were found in the target zones of well 6506/3-1. One objective with the water sample analysis was to assess if hydrocarbons had been in contact with the sampled water phase.

The composition of the flash gas strongly indicates that the water has been in contact with hydrocarbons, Figure 1. A CO<sub>2</sub> rich gas-condensate from the Haltenbanken area was used to calculate the partitioning with the water phase. The partitioning is not very sensitive on the nature of the hydrocarbon system, except for CO<sub>2</sub>. CO<sub>2</sub> will also have source in bacterial activity before the temperature got too high. No attempt was made to tune the composition of the contacting hydrocarbon system to agree with the measured flash gas composition. The measured component distribution is similar to the predicted gas and proves that the water has been in contact with hydrocarbons at one point in time. However, it can not be in contact today due to the relative large undersaturation. The oil based mud contamination creates an uncertainty in this calculation. If this oil had dissolved some residual hydrocarbons during circulation a significant part of the released gas could derive from the OBM phase. The composition of the gas released from mud was also calculated and compared to the gas released from the water and to the measured composition, Figure 2. The compositions do not suggest that this OBM phase has significantly affected the released gas.

The high concentration of organic acids show that organic matter in contact with the water has been broken down by bacterial activity. Organic acids are important because these constituents are related to the origin and/or migration of an oil as well as to the degradation of an oil accumulation. The solubility of oragnic components in formation water decrease with increasing salinity.

Phenols are some of the natural occurring constituents in hydrocarbon fluids that have the highest solubility in water. It will therefore accumulate in the water phase when hydrocarbons migrate through or the water is in direct contact with an accumulation. The typical total phenol concentration in produced water from oil and gas fields on the Norwegian shelf is 1- 15 mg/l<sup>5</sup>. The three samples have a phenol content between 3.4 and 2.3 mg/l. One would normally conclude from this that the formation water has been in contact with a hydrocarbon fluid at some stage. But again the oil based mud

contamination may influence this conclusion. A sample of the mud filtrate returned from 3110 m MD has been send to analysis in order to rule out that the OBM could be the source for the phenols seen in the water samples.

#### **Conclusion**

- The composition of the solution gas, the organic acid content and the phenol concentration strongly indicates that the sampled water has been in contact with a hydrocarbon accumulation or that HC has been migrating through at a point in time.
- The water is strongly undersaturated with gas, which should rule out that the water is in close contact with a hydrocarbon accumulation today.
- An additional phenol analysis of the mud filtrate returned from the sampled depth is being undertaken. This may rule out that the 6-9 vol-% mud contamination could be the source for the phenols found in the water.

#### References

1) Calsep A/S: PVTsim v. 11.0

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2) Petrotech AS: Well 6506/3-1 Validity checks and analysis of

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3) UiB: Analyser av formasjonsvann – Organiske syrer

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4) UiB: Analyser av formasjonsvann – Fenoler

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5) SFT: Utslipp på norsk kontinentalsokkel 1998

(27-Dec-2000)

#### **Appendix**

(Editor: internal appendix to the DewPoint Report)

- Table 1. Composition and properties of water samples
- Table 2. Average water sample composition after correcting for the carbonate equilibrium at down hole and standard conditions
- Table 3. Composition and amount of solution gas in samples
- Table 4. Calculation of flash gas composition by assuming the water to be saturated with hydrocarbons from contact with a gas-condensate at initial conditions (430 bar and 102 °C)
- Table 5. Assumed composition of equilibrium hydrocarbon phase
- Table 6. Concentration of organic acids in water samples
- Table 7. Concentration of phenols in water samples<sup>4</sup>
- Figure 1. Component distribution of solution gas compared with the composition calculated from equilibrium between a condensate and formation water at intitial conditions (430 bar and 102 °C)
- Figure 2. Comparison between the composition of gas released from base oil, gas released from water phase and the measured flash gas composition.

Table 1. Composition and properties of water samples<sup>2</sup>

	MPSR 712	3091.2m	MPSR 753	3091.2m	MPSR 856	3091.2m
Ion	mg/l	meq/l	mg/l	meq/l	mg/l	meq/l
Li+	1	0.1	2	0.3	1	0.1
Na+	3747	162.9	3860	167.8	3994	173.7
K+	97	2.5	49	1.3	55	1.4
Ca++	131	3.3	111	2.8	167	4.2
Mg++		0.0		0.0		0.0
Sr++		0.0		0.0		0.0
Fe++		0.0		0.0		0.0
Sum	3975	168.8	4020	172.1	4216	179.4
Cl-	4355	122.7	4424	124.6	4754	133.9
SO4	43	0.4	31	0.3	23	0.2
CO3		0.0		0.0		0.0
Br-	50	0.6	37	0.5	42	0.5
HCO3-	2760	45.2	2733	44.8	2635	43.2
Sum	7208	169.0	7225	170.2	7454	177.9
Salinity						
NaCl (mg/l)	8102		8284		8748	
Total (mg/l)	11183		11245		11670	
pН	6.43@27.3°C		7.18@32.0°C		7.25@36.9°C	
Resistivity @ 20°C	0.673		0.574		0.627	
Density @ 15°C	1.0065		1.0064		1.0069	
Pi (bar)	430.7		430.7		430.7	
Ti (°C)	102		102		102	
Density @ Pi,Ti	1.017 <sup>1</sup>		1.017 <sup>1</sup>	1 1	1.0171	

<sup>1)</sup> Density calculated with PVTsim for bottom hole conditions

Table 2. Average water sample composition after correcting for the carbonate equilibrium at down hole and standard conditions<sup>1</sup>

	430bar/102°C	1 bar/15°C
	mg/l	mg/l
Na+	3867.0	3867.0
K+	67.0	67.0
Ca	136.3	136.3
Cl-	4511.0	4511.0
SO4	32.3	32.3
HAc	644.4	37.2
HCO3-	955.4	338.0
CO3	0.0	0.0
Ac-	1697.4	2294.5
CO2	7799.8	173.0
pН	5.2	6.5
CaCO3 precip.	0.0	0.0

Table 3. Composition and amount of solution gas in samples<sup>2</sup>

	MPSR 712	3091.2m	MPSR 753	3091.2m	MPSR 856	3091.2m
	weight -%	mole-%	weight -%	mole-%	weight -%	mole-%
N2	0.584	0.507	6.869	5.750	6.881	5.642
CO2	40.579	22.449	41.849	22.298	37.529	19.587
C1	47.711	72.405	47.917	70.038	50.119	71.758
C2	1.814	1.469	1.365	1.064	2.150	1.642
C3	1.946	1.074	1.037	0.552	1.694	0.883
iC4	0.486	0.204	0.213	0.086	0.344	0.136
nC4	1.031	0.432	0.225	0.091	0.379	0.150
iC5	0.358	0.121	0.080	0.026	0.123	0.039
nC5	0.465	0.157	0.057	0.019	0.095	0.030
C6	0.528	0.149	0.055	0.015	0.080	0.021
C7	2.845	0.709	0.066	0.017	0.169	0.040
C8	0.747	0.177	0.053	0.012	0.054	0.012
C9	0.097	0.020	0.029	0.006	0.044	0.009
C10+	0.810	0.126	0.186	0.028	0.337	0.050
Air in sample mole-%		76.334		6.431		10.749
GWR Sm3/m3		1.0		0.9		0.9
OBM in sample vol-%		8		6		9

Table 4. Calculation of flash gas composition by assuming the water to be saturated with hydrocarbons from contact with a gas-condensate at initial conditions (430 bar and  $102~^{\circ}\text{C}$ )

	Form. water	Flash gas	Flash gas
	430bar, 102°C	1 bar, 15°C	1 bar, 15°C
	mole-%	mole-%	mole-%
H2O	99.59490	1.22450	
N2	0.01062	2.69322	2.72661
CO2	0.09666	20.83101	21.08925
C1	0.28607	72.27794	73.17396
C2	0.00951	2.40731	2.43715
C3	0.00171	0.43135	0.43670
iC4	0.00013	0.03382	0.03424
nC4	0.00020	0.05025	0.05087
iC5	0.00005	0.01288	0.01304
nC5	0.00005	0.01163	0.01177
C6	0.00002	0.00489	0.00495
C7	0.00006	0.01493	0.01512
C8	0.00002	0.00572	0.00579
C9	0.00000	0.00047	0.00048
C10+	0.00000	0.00008	0.00008
GWR Sm3/m3		2.95	
Density @ Pi, Ti	1.017		
Density @ sc	1.007		

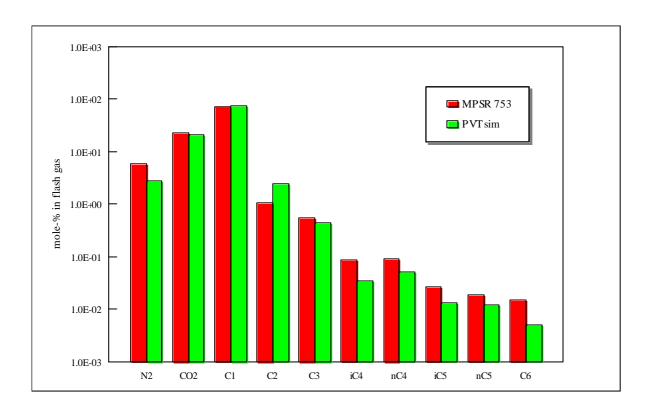


Figure 1. Component distribution of solution gas compared with the composition calculated from equilibrium between a condensate and formation water at intitial conditions (430 bar and  $102^{\circ}$ C)

Table 5. Assumed composition of equilibrium hydrocarbon phase

	mole-%
N2	2.042
CO2	11.437
C1	75.630
C2	4.901
C3	2.023
iC4	0.421
nC4	0.569
iC5	0.268
nC5	0.265
C6	0.413
C7	0.584
C8	0.496
C9	0.128
C10+	0.821

Table 6. Concentration of organic acids in water samples<sup>3</sup>

Sample	Conc C1	ConcC2-	Conc C2	Conc C3	Conc C4	Conc C5	Conc C6	Conc C6+	Tot conc.	Tot conc.
	formic acid	malone acid	acetic acid	propane acid	butane acid	pentane acid	hexane acid	higher acids	as C2	as C2
MPSR	mmole/l	mmole/l	mmole/l	mmole/l	mmole/l	mmole/l	mmole/l	mmole/l	mmole/l	mg/l
712	0.18	0.31	29.24	1.75	0.56	0.52	0.18	0.64	38.86	2332
753	0.45	0.24	28.99	1.06	0.97	1.55	-	0.89	40.80	2448
856	0.37	0.28	28.68	1.81	1.06	traces	-	0.35	38.87	2332

Table 7. Concentration of phenols in water samples<sup>4</sup>

Sample	Phenol	2-meth-	3-meth-	4-meth-	2,4 dimeth-	4-eth-	3,5 dimeth-	Total
		phenol	phenol	phenol	phenol	phenol	phenol	Phenols
MPSR	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
712	1.41	0.73	0.40	0.31	0.47	0.09	0.00	2.69
753	1.30	0.33	0.42	0.11	0.16	-	0.01	3.41
856	1.15	0.57	0.27	0.35	0.33	-	0.02	2.33

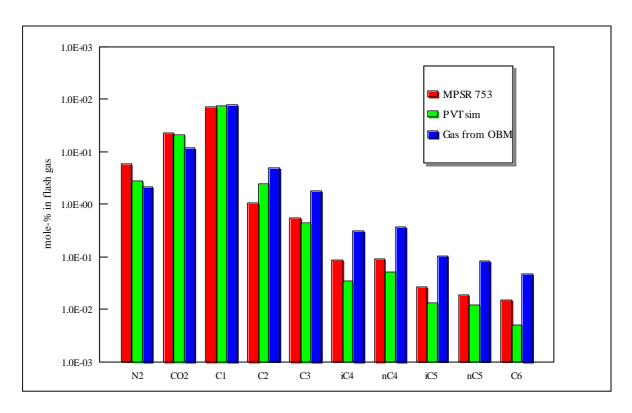


Figure 2. Comparison between the composition of gas released from base oil, gas released from water phase and the measured flash gas composition.