PL 046
Well 15/9-19A

Final Well Report

May 1998

Esso elf TOTAL HYDRO STATOIL

STATOIL

FINAL WELL REPORT

PL 046
WELL 15/9-19A

Statoil
Esso Norge a.s.
Norsk Hydro Produksjon a.s.
Elf Petroleum Norge AS
Total Norge A.S.

STATOIL

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- **General Well information**
- **Geological Report**
- **Engineering Report**
- **Drilling Report**
- **Wellsite sample and core Descriptions**

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15/9-19A

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Appraisal well

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Theta Vest, Sleipner

1.1.4 Well Location

(see also Figure 1.1)

Country	Norway	
Area	North Sea	
Licence	PL 046	
	Statoil (Operator)	20.0 %
	SDØE	29.6 %
	Esso Norge a.s.	30.4 %
	Norsk Hydro Produksjon AS	10.0 %
	Elf Petroleum Norge AS	9.0 %
	Total Norge A.S.	1.0 %
Geographic co-ordinates	Datum ED-1950, Spheroid Int. 1924	
Surface, Loke Template slot 3	Latitude N 58° 26' 09.25"	
	Longitude E 01° 55' 47.05"	
UTM co-ordinates	UTM zone 31, CM 3° E	
	N 6 477 887.6 m	
	E 437 506.7 m	
Seismic location	3D ST9407r96: inline 1646, crossline 1711	
Water depth	85 m	
Total depth of the well	4131.0 m MD RT	
	3318.5 m TVD RT (Driller's depth)	
Formation at TD	Smith Bank Formation	

1.2 Rig Data

Rig name	Byford Dolphin
Type	Semi - submersible
Rig contractor	Dolphin DOC AS
RT - MSL	25 m

PL046 Blocks 15/8 and 15/9
Location of Fields and Discoveries

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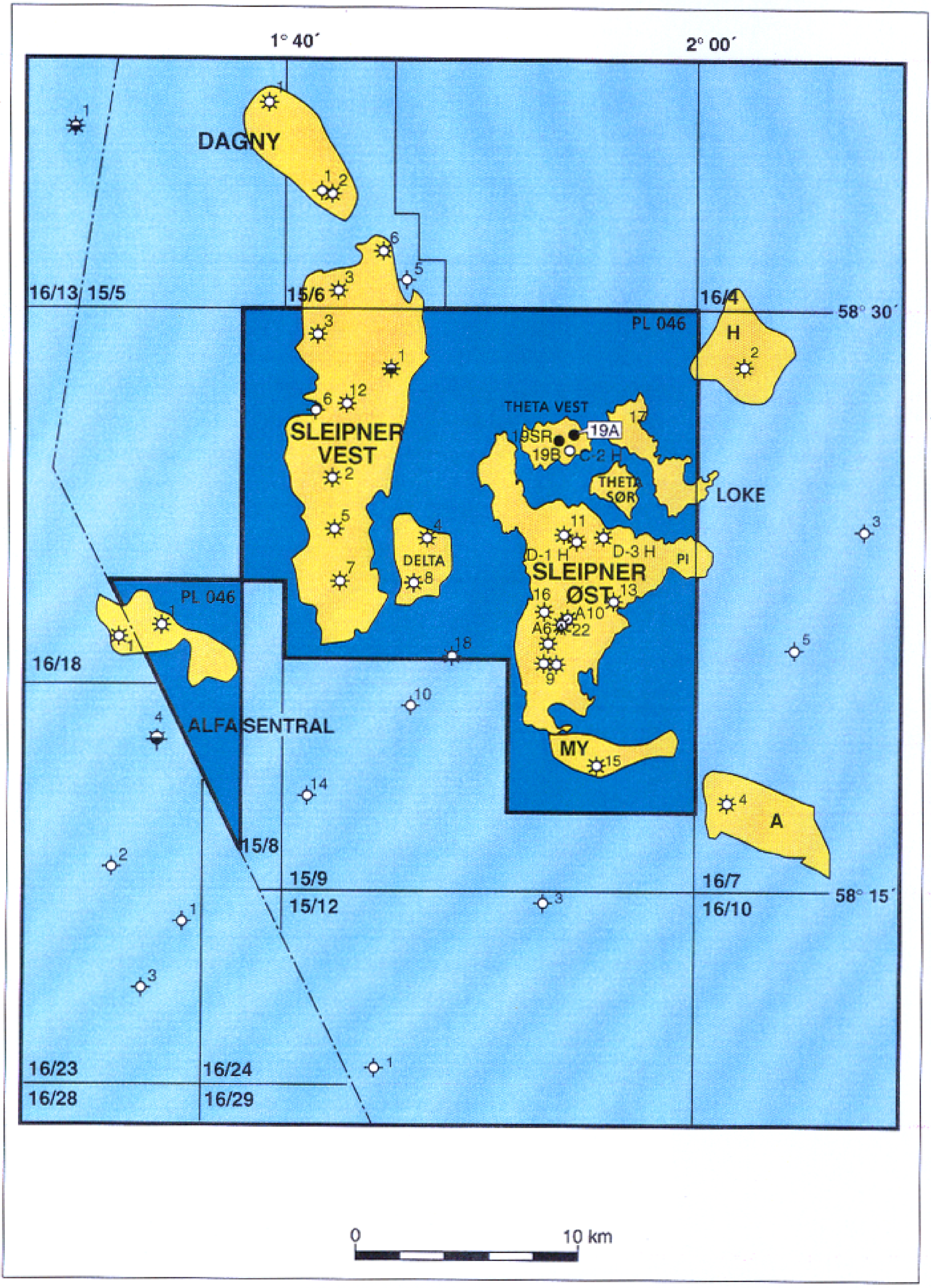

LTEK/A95/1728-2 08.06.98 JMØ

Figure1.1

1.3 Purpose of the Well

The well 15/9-19SR, on the Theta Vest structure, proved oil in the Hugin Formation. The objective for the well 15/9-19A, by side-tracking from the former well, was to confirm a minimum economic hydrocarbon volume in the Hugin Formation and map the extension of the oil-bearing formation.

1.4 Results of the Well

The top of the Vestland Group was penetrated approximately 60 m TVD deeper than prognosed. Both the Hugin and the Sleipner Formations were present with a total thickness of 153 m, of which Hugin Formation made up 111m. The Hugin Formation was oil-bearing and proved to be about 4 times thicker than expected. The total oil column in the well is 80 m, but no clear oil-water contact is observed in the well since the oil is present down to the Sleipner Formation. The base of the reservoir is at 3919 m MD (-3101 m TVD MSL).

The well was drilled through the Skagerrak Formation and terminated approximately 30 m TVD into the Smith Bank Formation.

Three tests were performed in order to evaluate the well. The first test, 3952 - 3958 m MD, was in the water zone. The second, 3885.5 - 3888.5 m MD, and third, 3826 - 3865 m MD, tests were in the oil zone. Maximum production rate during the tests was 560 Sm^3/day of oil.

The final acquisition programme immediately after reaching the total depth of the well was strongly affected by a labour conflict. The originally planned open hole electric logging program had to be terminated and the 7" casing run to TD in order to secure the well. The later cased hole logging failed due to tool problems.

1.5 Well History

Figure 1.2 summarizes the data acquisition that was performed in well 15/9-19A.

1.5.1 General

On licence	16th of July 1997 at 15:30 hrs
On location	16th of July 1997 at 23:00 hrs
Spud date (1st wipstock)	25th of June 1997 at 00:30 hrs
Finished drilling	21st of August 1997 at 11:00 hrs
Testing	30th of August 1997 at 02:00 hrs
Rig release	7th November 1997 at 22:00 hrs
Status	Permanently plugged and abandoned.

The well 15/9-19SR was re-entered (as 15/9-19SR2) and plugged before the operations started on the well 15/9-19A. All rig operations were suspended for 32 1/2 days mainly between September the 4th and October the 5th due to labour conflict.

1.5.2 Contractors

Drilling contractor	Dolphin DOC AS
Cementing	Halliburton Oilfield Services (Norge) Inc.
Casing	Weatherford Norge AS
Coring	Security DBS
Diving	Oceaneering A/S
Electric logging	Western Atlas Logging Services
VSP	Western Atlas Logging Services
MDT	Schlumberger
Helicopters	Helicopter Service A/S
MWD	Baker Hughes Inteq
Mud logging	Geoservices
Mud	Dowell Schlumberger
Rig positioning	Racal Survey Norge A/S
Supply boats	Statoil Boatpool
Production Testing	Halliburton Oilfield Services (Norge) Inc.
Sampling , surface&downhole	Maritime Well Services a.s.
Data Aquisition	Maritime Well Services a.s.
MTU (mobile test unit)	Petroteck a.s.

1.5.3 Casing

CASING SIZE	SHOE DEPTH		LEAK OFF TESTS (EQUIV. MW)
	(m MD RT)	(m TVD RT)	
9 5/8" (Milled window)	2 178	1 627	
7"	4 044	3 238.5	

1.5.4 Conventional Cores

Core depths are corrected from Driller's depths to electric log depths by correlating core gamma log and recorded core porosity to electric wireline gamma, density and neutron logs. The difference varies from -0.2m to +1.8m to the core depths.

CORE no.	CORED INTERVAL (m MD)	RECOVERED INTERVAL (m MD)	RECOV. m	RECOV. %	LOG CORRECTED INTERVAL (m MD)	COMMENTS
1	3838.0-3854.0	3838.0-3853.2	15.2	95.0	3839.6-3853.4	Core jammed
2	3854.0-3881.5	3854.0-3881.65	27.65	100.5	3854.2-3881.65	Full core barrel
3	3881.5-3908.5	3881.5-3908.4	26.9	99.6	3882.1-3909.0	Full core barrel
4	3908.5-3935.5	3908.5-3934.5	26	96.3	3909.1-3935.3	Full core barrel
5	3935.5-3963.0	3935.5-3963.0	27.5	100	3936.3-3963.0	Full core barrel
6	3963.0-3990.0	3963.0-3990.64	27.64	102.4	3963.0-3990.84	Full core barrel
7	3990.0-4017.0	3990.0-4016.71	26.71	98.9	3990.84-4016.71	Full core barrel

Severe reaming was needed when running in for the first core. The core barrel was redressed before running in hole for the second core and the rest of the coring continued smoothly. Any indication of full barrel immediately stopped the coring operation to avoid crushing of the core. The Core Descriptions are attached in Appendix II. Details about the coring performance are given in Appendix III. The cored interval is also illustrated in Figure 2.3.

1.5.5 Sidewall Cores

The planned sidewall core programme had to be cancelled due to the labour conflict.

1.5.6 Mud Logging

A standard North Sea Mud logging unit with Geoservices ALS2 Level 5 software, was used for this well.

For details, see separate report, Geoservices' End of Well Report.

1.5.7 Logging

1.5.7.1 Electric Logging : Western Atlas Logging Services

Type of log	Run no	Interval (m RT) from	Interval (m RT) to	Comments
				Openhole logging before labour conflict
HDIL-MAC-DGR-CHT	1A	2754	2178	Tight hole. Tool stood up at 2754m MD RT. Had failure o MAC tool, dT values not reliable.
VSP-GR	1A	2670	980	Tool stood up at 2762m MD RT. Shot a total of 22 levels using 4 stations.
VSP-GR (PCL)	1B	4080	2760	Shot a total of 95 levels w/ one station, had 1 overlay with previous log run.
HDIL-MAC-ZDL-CND-SP-CAL-CHT (PCL)	1B	4126	3487	First logged down ahead of VSP-GR logging, w/ dT only and no caliper. Logging out after some problems w/ loss of communication due to poor cable. Logging out stopped at 3487m MD RT due to total loss of communication w/ logging tools.
FMT-MAC-ZDL-HDIP-GR CHT (PCL)	1A/1C			RIH to shoe, the operation suspended for some hours due t labour conflict. Continue RIH after latched on and checked communication Lost contact with tools at approx. 3750 m . No data
				Cased hole logging after labour conflict
SBT-GR-CCL	2A	3 986	2 592	To verify good cement in the sections were the MDT and the test were going to be performed.
MAC-GR	2C	3 510	2 490	Logged in casing after end of labour conflict. To cover missing section from the previous runs
Atlas select perforation guns	2A-D	3 416	3 964	7 perf guns 2 3/4" with length of 0.20 m were run in hole Due to misfire 3 runs with each 2 perforations had to be performed. Run 2C was a misrun due to a too light gun combination. Experienced severe correlation problems due to metal collected on the CCL. Approximately 45 hours total .
MDT (Schlumberger)	2A-C	-	-	Inside 7" casing. The tool failed within ½ hr after electric contact was established. Approximately 118 hours down time.
Atlas 3 3/8" perforation gun	2A	3 952	3 958	Perforate for water test in the Sleipner Formation

The planned logging programme had to be terminated earlier than planned due to the labour conflict and the 7" casing ran to secure the well.
Logging after labour conflict in 7" casing failed and resulted in missing data compared to the well programme.
Data collected : Resistivity-, acoustic-, density-, neutron-, gammaray-, VSP data
Data not collected: Formation pressures and fluid samples using wireline formation sampler. Dipmeter data.

1.5.7.2 MWD Logging : Baker Hughes Inteq.

RUN no.	LOG DEPTH INTERVAL m MD RT	COLLAR (inches)	TOOL	COMMENTS
1	2202 - 2213	6 3/4	DPR-TF5A	1st whipstock / milling assembly
2	2213 - 2213	6 3/4	DPR-TF5A	Steerable assembly attempting to drill out of 1st window in the 9 5/8" casing
3	2178 - 2202	6 3/4	DPR-TF5A	2nd whipstock / milling assembly
4	2202 - 2768	6 3/4	DPR-TF5A	Steerable assembly drilled out of the second window and 8 1/2" hole to 2768m
5	2768 - 2784	6 3/4	DPR-TF5A	POOH due to low ROP
6	2784 - 3057	6 3/4	DPR-TF5A	POOH due to bit change
7	3057 - 3632	6 3/4	DPR-TF5A	POOH due to out of course
8	3632 - 3653	6 3/4	DPR-TF5A	POOH due to tool failure
9	3653 - 3823	6 3/4	DPR-TF5A	POOH due to no drilling progress
10	3823 - 3838	6 3/4	DPR-TF5A	POOH due to core point
11	4017 - 4131	6 3/4	DPR-TF5A	POOH at TD. Also reamed and logged the cored section.

1.5.8 Velocity Survey

The normal incident VSP was run by Western Atlas Logging Services having the source located on a stationary boat . The first VSP run was performed on wireline using 4 stations due to poor signals from the 5th station. A check shot was done at 2000 m MD while running in hole. The tool stood up at 2677 m MD. The first shot was made at 2670 m MD and the last one at 980 m MD. Totally 22 levels were recorded with level spacing 60 m with average 5 shots at each level.

The second log run was performed pipe-conveyed using 1 station. The level spacing was 15 m starting at 4080 m MD and ending at 2670 m MD, equivalent to the starting level of the first run. Totally 95 levels were recorded with average 5 shots at each level. Two-way traveltime for some formation tops is given in Figure 2.2.

Type of log	Run no	Interval (mRT)	Comments
VSP	1A	2670 - 980	Tool stood up at 2677 m MD. 22 levels with 60 m spacing. Check shot at 2000 m MD
VSP	1B	4080 - 2670	Logged with tool on drillpipe. 95 levels with 15 m spacing. Overlap on one level with the first log run.

1.6 List of additional available Reports from the Well

Baker Hughes Inteq	- End of Well Report Measurement While Drilling
	- Definitive Survey. Well 15/9-19A, 15/9-19B, 15/9-19BT2
ResLab	- Conventional Core Analysis, well 15/9-19A
ResLab	- Statoil, well: 15/9-19A, core no.1 - 7, Core Photographs
ResLab	- Statoil, well: 15/9-19A, Core Photographs Thin Sections
Geoservices	- End of well report, 15/9-19A, Byford Dolphin
GeoStrat	- Statoil Well 15/9-19A, Biostratigraphy of the interval 4131 - 3500 m MD
Read Well Services	- Normal Incidence VSP, Statoil 15/9-19A
	- Positioning Report for Western Atlas Positioning of Seismic Source during Vertical Seismic Profile on Well 15/9-19A
Dowell Schlumberger	- Statoil "Byford Dolphin", well 15/9-19A, Drilling Fluids Summary
Statoil	- Well Programme PL 046, Well 15/9-19A Geological Prognosis, Pressure Prognosis, Drilling Programme
Statoil	- Well Test Programme, Well 15/9-19A - Well Test Report, Well 15/9-19A
Halliburton	- Post Well Cementing Report - Downhole Pressure and Temperature Report
Maritime Well Services	- Bottom Hole and Surface Sampling, Downhole Pressure and Temperature report

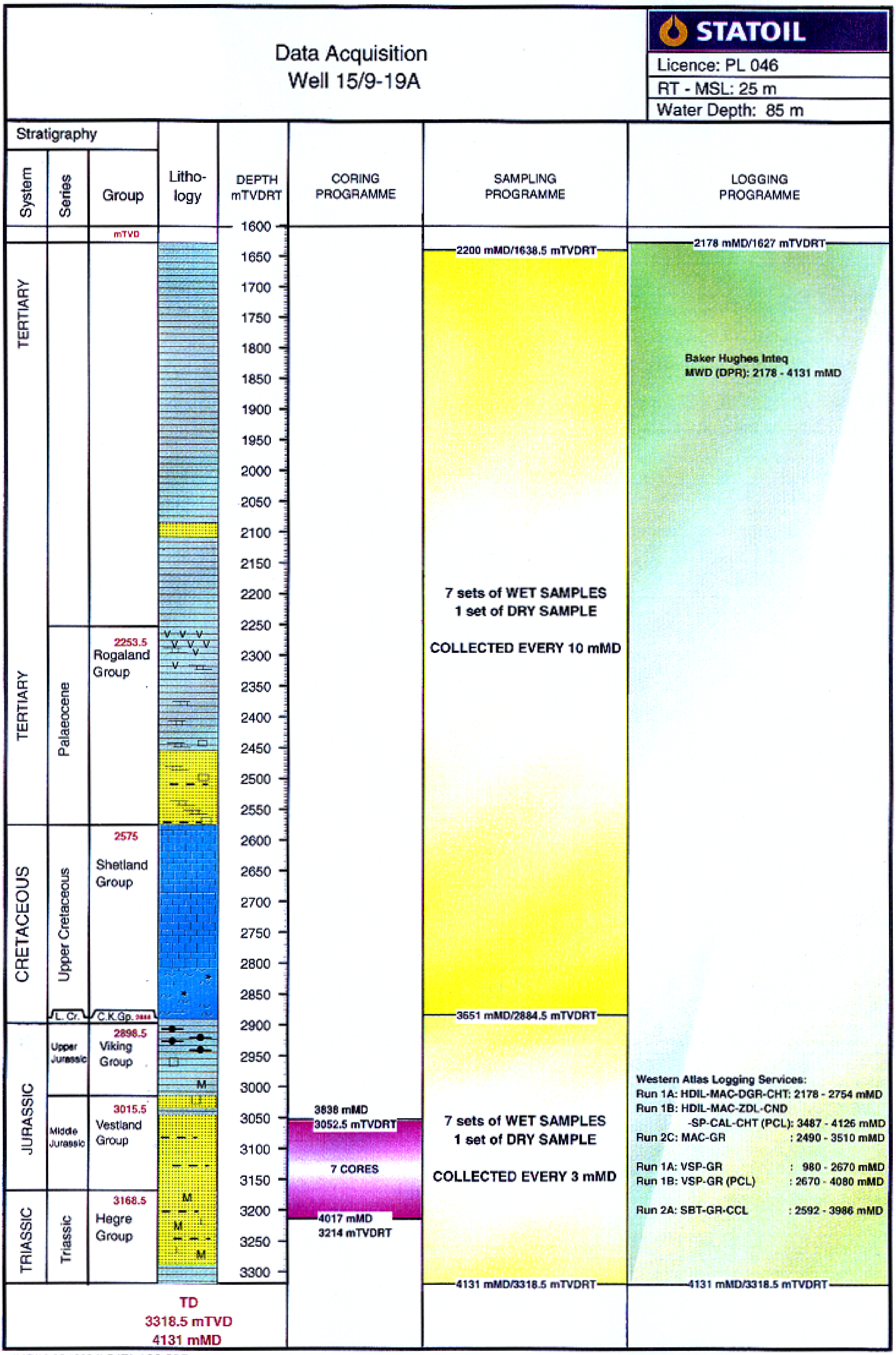

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Figure 1.2

2 Geological Report

2.1 Geological Setting

Well 15/9-19A was sidetracked from well 15/9-19SR and drilled as an appraisal well on the Theta Vest oil discovery, the reservoir consisting of shallow marine sandstone belonging to the Hugin Formation. A structural depth map for the Theta Vest, which includes the data from well 15/9-19A, is shown in Figure 2.1.

2.2 Stratigraphy

The biostratigraphy is based on the GeoStrat biostratigraphic report and adjusted according to Statoil's zonation and interpretation. The analysis starts at 3500 m MD RT.

The lithostratigraphy is based on interpretations of electric logs, correlations with other wells, biostratigraphy and lithological informations.

Figure 2.2 summarizes the lithological column for the well 15/9-19A.

2.2.1 *Table of Chronostratigraphy*

STRATIGRAPHIC TOPS	DEPTH (m MD RT)	DEPTH (m TVD MSL)
Coniacian - Upper Turonian	3500 - 3590	2720.5 - 2803
Middle - Lower Turonian	3600 - 3663	2812 - 2870.5
-----------Hiatus-----------		
Lower Barremian	3665 - 3669	2872.5 - 2876
-----------Hiatus-----------		
Upper - ?Lower Ryazanian	3675,0	2 881.5
Upper Volgian	3681 - 3687	2887 - 2892.5
Upper - ?Middle Volgian	3693 - 3699	2898 - 2903.5
Lower Volgian - Kimmeridgian	3702 - 3720	2906 - 2922.5
"Lower" Kimmeridgian	3726 - 3738	2927.5 - 2938.5
Upper Oxfordian	3744 - 3771	2944 - 2968
Middle Oxfordian	3774,0	2 970.5
Middle - ?Lower Oxfordian	3780 - 3837	2976 - 3027
Upper Callovian	3837.15 - 3854.80	3027 - 3043
Middle Callovian	3859.70 - 3913.60	3047.5 - 3096
?Bathonian - ?Bajocian	3919.00 - 3964.37	3101 - 3141.5
-----------?Hiatus-----------		
?Triassic	3972.15 - 4131	3148.5 - 3293.5

PL 046 Block 15/9
Structural Contour Map, depth
Top Reservoir (Hugin)

STATOIL

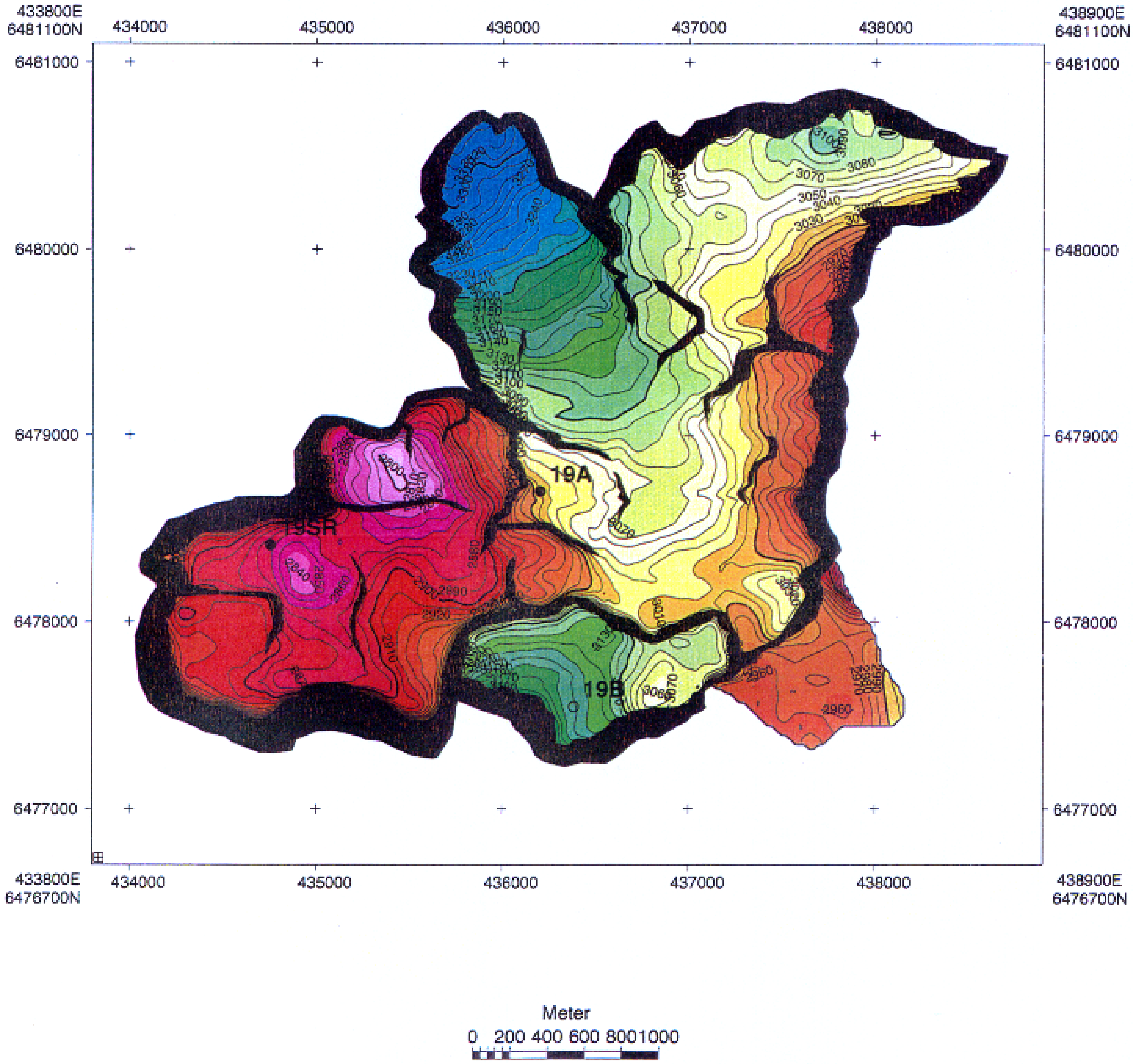


Figure 2.1

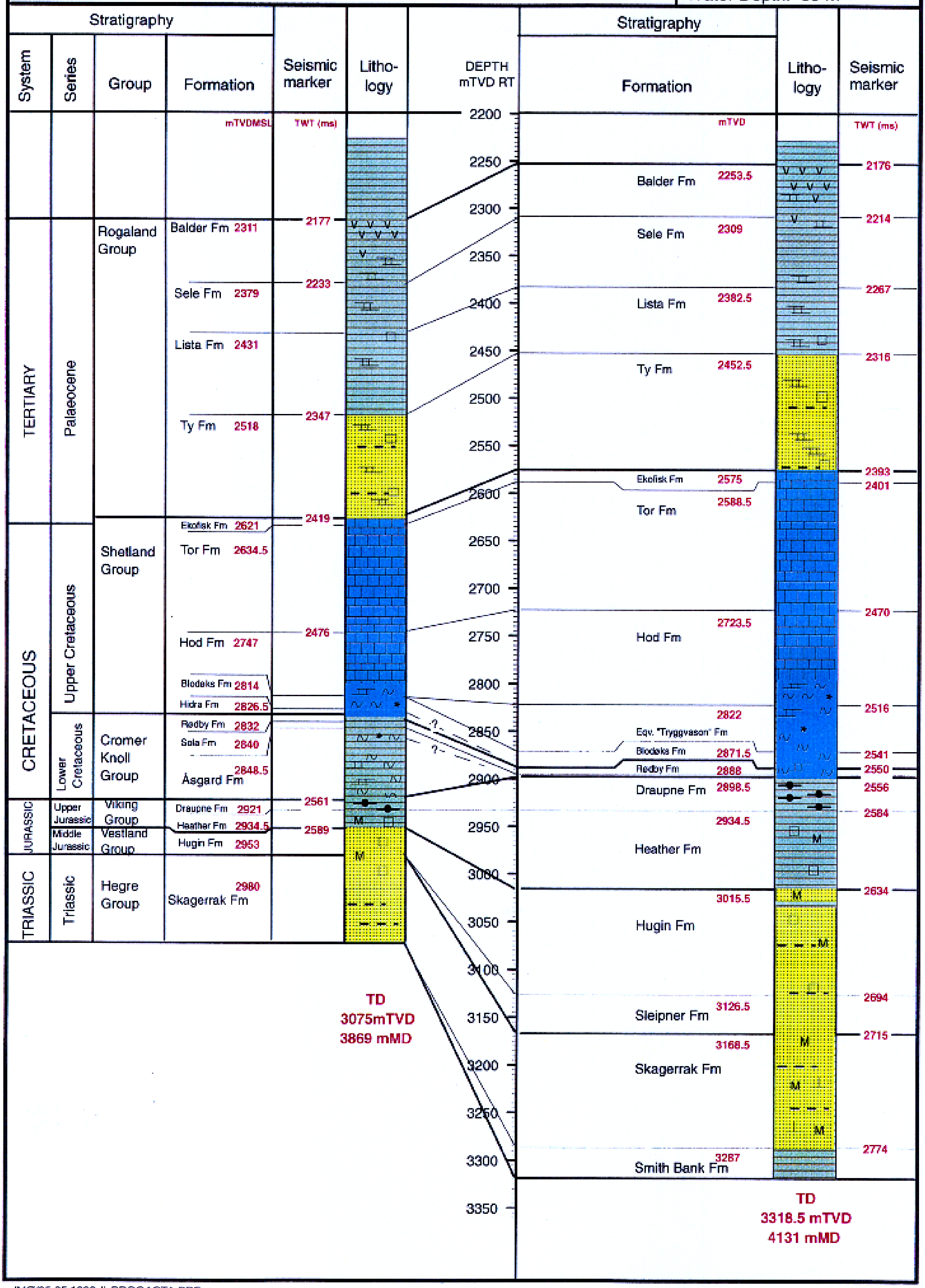
7-May-98

2.2.2 *Table of Lithostratigraphy*

LITHOSTRATIGRAPHIC TOPS	DEPTH MD (m RT)	DEPTH TVD (m RT)	(m MSL)	THICKNESS (m TVD)	DIFFERENCE PROGNOSIS (m)
NORDLAND GROUP	110.0	110.0	85.0	949.5	
Utsira Formation	851.0	842.5	817.5	217.0	
HORDALAND GROUP	1 111.0	1 059.5	1 034.5	1 194.0	
Skade Formation	1 316.5	1 181.5	1 156.5	74.0	
Base Skade Formation	1 453.5	1 255.5	1 230.5		
Grid Formation	2 777.5	2 084.5	2 059.5	21.5	19.5
Base Grid Formation	2 801.5	2 106.0	2 081.0		-88.5
ROGALAND GROUP	2 961.0	2 253.5	2 228.5	321.5	-57.5
Balder Formation	2 961.0	2 253.5	2 228.5	55.5	-57.5
Sele Formation	3 021.0	2 309.0	2 284.0	73.5	-70.0
Lista Formation	3 101.5	2 382.5	2 357.5	70.0	-48.5
Ty Formation	3 178.0	2 452.5	2 427.5	122.5	-65.5
SHETLAND GROUP	3 312.5	2 575.0	2 550.0	313.0	-46.0
Ekofisk Formation	3 312.5	2 575.0	2 550.0	13.5	-46.0
Tor Formation	3 327.5	2 588.5	2 563.5	135.0	-46.0
Hod Formation	3 476.0	2 723.5	2 698.5	98.5	-23.5
Equiv. "Tryggvason" Fm.	3 583.5	2 822.0	2 797.0	49.5	
Blodøks Formation	3 637.0	2 871.5	2 846.5	16.5	57.5
CROMER KNOLL GROUP	3 655.0	2 888.0	2 863.0	10.5	56.0
Rødby Formation	3 655.0	2 888.0	2 863.0	7.5	56.0
Base Rødby Formation	3 663.0	2 895.5	2 870.5		
VIKING GROUP	3 666.5	2 898.5	2 873.5	117.0	-22.5
Draupne Formation	3 666.5	2 898.5	2 873.5	36.0	-22.5
Heather Formation	3 706.0	2 934.5	2 909.5	81.0	0.0
VESTLAND GROUP	3 796.5	3 015.5	2 990.5	153.0	62.5
Hugin Formation	3 796.5	3 015.5	2 990.5	111.0	62.5
Sleipner Formation	3 919.6	3 126.5	3 101.5	42.0	
HEGRE GROUP	3 966.3	3 168.5	3 143.5	150.0	188.5
Skagerrak Formation	3 966.3	3 168.5	3 143.5	118.5	188.5
Smith Bank Formation	4 097.0	3 287.0	3 262.0	31.5	
TD	4 131.0	3 318.5	3 293.5		243.5

Well Prognosis & Results after drilling
Well 15/9-19A
(below top Rogaland Group)

STATOIL
Licence: PL 046
RT - MSL: 25 m
Water Depth: 85 m



JMØ/05.05.1998 \\ PROGACTA.PRE

Figure 2.2

2.3 Lithological Description

2.3.1 General Information

System, Series and Stage: Partly based on log interpretation and correlation and partly on biostratigraphic report

Lithology: The lithological description is based on the sample - and core descriptions, Appendix I and II.

Depositional environment: Based on regional and biostratigraphic reports and core analysis.

The depths are in meters with drill floor (RT) as datum unless otherwise stated.

2.3.2 Geological Summary

NORDLAND GROUP **110 - 1111 m MD, 110 - 1059.5 m TVD (85 - 1034.5 m TVD MSL)**

The whole group was drilled and cased off in the 15/9-19SR well.

HORDALAND GROUP **1111 - 2961 m MD, 1059.5 - 2253.5 m TVD (1034.5 - 2228.5 m TVD MSL)**

System: Tertiary
Series: Eocene to Miocene
Depositional environment: Open marine, Outer Shelf - Upper Bathyal

The upper part of the group, above 2178 m MD, was drilled and cased off in the 15/9-19SR well.

The Hordaland Group from the kick-off point and down is dominated by claystone with minor limestone/dolomite stringers with the exception of the sandy Grid Formation.

The claystone is brown grey to olive grey becoming medium dark grey to olive grey below 2450 m MD. It is firm to moderate hard, blocky, silty, micromicaceous, locally pyritic and predominated non calcareous.
Further down the colour turns greenish grey to dark green grey becoming predominantly medium grey to medium dark grey.

The limestone is light grey to pale brown, firm to moderate hard and micritic to argillaceous in parts. The dolomite is pale brown to grey orange pink, firm to moderate hard, micritic, locally microcrystalline, argillaceous in part and occasionally slightly calcareous.

Grid Formation **2777.5 - 2801.5 m MD, 2084.5 - 2106 m TVD (2059.5 - 2081 m TVD MSL)**

System: Tertiary
Series: Lower Oligocene to Middle Eocene
Depositional environment: Open Marine, Outer Shelf - Upper Bathyal

The Grid formation consists mainly of sandstone. Some anhydrite and gypsum were identified among the cuttings in the upper part of the formation. They are off-white to light brown, fine grained, soft to firm and blocky. The presents of these minerals are very uncommon at this level in a well.

The sandstone consists of clear quartz grains which are fine to very fine, subrounded to rounded and loose.

ROGALAND GROUP **2961 - 3312.5 m MD, 2253.5 - 2575 m TVD (2228.5 - 2550 m TVD MSL)**

System: Tertiary
Series: Lower Palaeocene to Lower Eocene
Depositional environment: Marine, Outer Shelf - Upper Bathyal to Restricted Shelf

The Rogaland Group comprises the Balder, Sele, Lista and Ty Formations in this well. The predominant lithology in the upper part is claystone with tuff and minor limestone stringers. The Ty Formation is dominated by sandstone with some interbedded claystone.

Balder Formation **2961 - 3021 m MD, 2253.5 - 2309 m TVD (2228.5 - 2284 m TVD MSL)**

System: Tertiary
Series: Upper Palaeocene to Lower Eocene
Depositional environment: Marine

The upper boundary for the Balder Formation is recognized by a decrease in the gamma-ray response. The formation consists of claystone, partly tuffaceous, with some limestone stringers.

The claystone is varicoloured, predominantly olive grey, medium light grey, brown grey and dark grey. It is firm, blocky, silty, non calcareous and tuffaceous in parts. The limestone is white to yellow grey, firm, dolomitic in parts and occasionally argillaceous.

Sele Formation 3021 - 3101.5 m MD, 2309 - 2382.5 m TVD (2284 - 2357.5 m TVD MSL)

System: Tertiary
Series: Upper Palaeocene
Depositional environment: Marine

The top of the Sele Formation is expressed by a reduced gamma-ray response and slightly lower, but uniform resistivity readings. The formation consists of claystone with minor traces of sandstone and rarely traces of limestone and tuff.

The claystone is mainly brownish black to dark grey, firm, blocky, silty in parts, non calcareous and occasionally tuffaceous.
The sandstone is light brown. It consists of transparent quartz grains. They are fine grained, subrounded, loose and well sorted.

Lista Formation 3101.5 - 3178 m MD, 2382.5 - 2452.5 m TVD (2357.5 - 2427.5 m TVD MSL)

System: Tertiary
Series: Late Palaeocene
Depositional environment: Marine

The top of the Lista Formation is defined by a gradual decrease in gamma-ray readings and a slightly more erratic log.

The Lista Formation is dominated by claystone. Few siltstone stringers are described at the base of the formation.

The claystone is generally greenish grey, but olive grey to dark red brown colours are seen. It is firm, blocky, silty and non calcareous.
The siltstone is off-white to light brown, argillaceous in parts, firm, non to slightly calcareous and occasionally slightly tuffaceous.

Ty Formation 3178 - 3312.5 m MD, 2452.5 - 2575 m TVD (2427.5 - 2550 m TVD MSL)

System: Tertiary
Series: Palaeocene
Depositional environment: Marine

The top of Ty Formation is recognised by the log characteristics as moving from the claystone into the sandstone. The formation consists mainly of sandstone with some interbedded claystone and siltstone and few limestone stringers.

The sandstone consist of clear to translucent to milky white quartz grains, which are fine to medium and occasionally coarse. They are moderately sorted, subangular to subrounded and generally loose to friable. Kaolin matrix occurs in parts. The sandstone is occasionally pyritic cemented.

The claystone and siltstone are generally as described for the Lista Formation. The limestone is dominantly off-white, firm to moderate hard, micritic and silty or sandy in part.

SHETLAND GROUP **3312.5 - 3655 m MD, 2575 - 2888 m TVD (2550 - 2863 m TVD MSL)**

System: Cretaceous
Series: Upper Cretaceous
Depositional environment: Open Marine

The top of the Shetland Group is recognized by a drop in the gamma ray and an increase in the resistivity readings, marking the onset of the calcareous sediments. Typical rocks are chalk in the upper part, changing to limestone and marl with limestone beds/stringers in the lower part.

The Shetland Group comprises the Ekofisk, Tor, Hod and Blodøks Formations. A section, consisting of marl with some limestone beds, separates the Hod and the Blodøks Formations. The section is not typical for this part of the North Sea, but very alike the description of the Tryggvason Formation and therefore named according to that as "Equivalent Tryggvason Formation"

Ekofisk Formation **3312.5 - 3327.5 m MD, 2575 - 2588.5 m TVD (2550 - 2563.5 m TVD MSL)**

System: Cretaceous
Series: Upper Cretaceous
Stage: Danian
Depositional environment: Open Marine

The top of the Ekofisk Formation is recognized by a drop in the gamma ray and an increase in the resistivity readings. The formation consists of chalky limestone.

The limestone is off-white, light grey, moderate hard, micritic, chalky, argillaceous and grading marly in some minor sections.

Tor Formation **3327.5 - 3476 m MD, 2588.5 - 2723.5 m TVD (2563.5 - 2698.5 m TVD MSL)**

System: Cretaceous
Series: Upper Cretaceous
Stage: Upper Campanian - Maastrichtian
Depositional environment: Open Marine

The top of the Tor Formation is marked by a further drop of the gamma ray log.

The formation comprises of chalky limestone which is off-white to white, moderate hard, blocky, chalky, occasionally micritic and slightly argillaceous in part

Hod Formation **3476 - 3583.5 m MD, 2723.5 - 2822 m TVD (2698.5 - 2797 m TVD MSL)**

System: Cretaceous
Series: Upper Cretaceous
Stage: Upper Turonian - Campanian
Depositional environment: Open Marine, Outer Shelf - Upper Bathyal

The top of the Hod Formation is recognized by a very slight change in the gamma-ray together with a distinct drop in the resistivity log.

The lithology is dominated by limestone which is off-white to white, occasionally light grey and reddish grey and moderate hard. The limestone is blocky, micritic, argillaceous and marly in part particularly toward the base of the formation.

Eqv. "Tryggvason" Formation **3583.5 - 3637 m MD, 2822 - 2871.5 m TVD (2797 - 2846.5 m TVD MSL)**

System: Cretaceous
Series: Upper Cretaceous
Stage: Lower - Middle Turonian
Depositional environment: Open Marine, Outer Shelf - Upper Bathyal

The top of the formation is marked by an increase in the gamma-ray and simultaneously drop in both the resistivity and the sonic logs. The formation consists mainly of marl with interbedded limestone. The thickness of this type of formation is unlikely for the both the Hod and Blodøks Formations and therefore separated from those.

The marl is medium to dark grey, occasionally brown orange, firm to moderately hard, blocky and with lamination of very calcareous claystone.
The limestone is off-white, occasionally brown orange, firm, silty and blocky to micritic. Glauconite occurs both within the marl and the limestone.

Blodøks Formation **3637 - 3655 m MD, 2871.5 - 2888 m TVD (2846.5 - 2863 m TVD MSL)**

System: Cretaceous
Series: Upper Cretaceous
Stage: Lower Turonian
Depositional environment: Open Marine, Outer Shelf - Upper Bathyal

The top of the Blodøks formation is defined by an increase in the gamma-ray log simultaneously with a drop in both the resistivity and the sonic logs. The formation consists of interbedded marl and limestone with traces of glauconite.

The marl is generally as described above.
The limestone is predominantly off-white, also medium grey in parts, moderate hard, brittle in parts, blocky and occasionally with argillaceous lamina.

CROMER KNOLL GROUP **3655 - 3666.5 m MD, 2888 - 2898.5 m TVD (2863 - 2873.5 m TVD MSL)**

System: Cretaceous
Series: Lower Cretaceous
Stage: Lower Barremian
Depositional environment: Marine, Outer Shelf

The top of the group is defined by a step in the gamma ray to higher readings combined with decreasing resistivity and sonic readings. Only a minor part of the group is present in this well. The Rødby Formation is the only identified formation. The chronostratigraphic interpretation suggests two hiatus' in the sedimentation, the first one defining the base of Rødby Formation, the second defining the top Viking Group

The Cromer Knoll Group consists of marl with limestone stringers, both as described for the Blodøks Formation..

Rødby Formation **3655 - 3663 m MD, 2888 - 2895.5 m TVD (2863 - 2870.5 m TVD MSL)**

System: Cretaceous
Series: Lower Cretaceous
Stage: Lower Barremian
Depositional environment: Marine, Outer Shelf

The marl in the Rødby Formation is medium to dark grey, occasionally brown orange, firm to moderate hard, blocky and with argillaceous laminations. Occasionally the marl grades to a calcareous claystone which is medium dark grey.
The limestone is predominantly off-white, also medium grey, moderate hard, brittle and blocky.

VIKING GROUP **3666.5 - 3796.5 m MD, 2898.5 - 3015.5 m TVD (2873.5 - 2990.5 m TVD MSL)**

System: Jurassic
Series: Upper Jurassic
Stage: Ryazanian - Volgian - Kimmeridgian - Oxfordian
Depositional environment: Marine, Inner - Mid Shelf

The top of the Viking Group is recognized by a very sharp increase in gamma ray readings marking the onset of organic rich claystone. The group comprises the Draupne and the Heather Formations.

Draupne Formation **3666.5 - 3706 m MD, 2898.5 - 2934.5 m TVD (2873.5 - 2909.5 m TVD MSL)**

System: Jurassic
Series: Upper Jurassic
Stage: Upper Ryazanian - ?Middle Volgian
Depositional environment: Marine, Mid Shelf

The Draupne Formation consists of very organic rich claystone which is predominantly dark brown to brownish black and locally dusky yellowish brown. The claystone is firm, blocky to subfissile, non calcareous, micromicaceous, carbonaceous and occasionally silty.

Heather Formation **3706 - 3796.5 m MD, 2934.5 - 3015.5 m TVD (2909.5 - 2990.5 m TVD MSL)**

System: Jurassic
Series: Upper Jurassic
Stage: Lower Volgian - Middle Oxfordian
Depositional environment: Marginal Marine - Inner Shelf

The top of the Heather Formation is marked by a drop in the gamma ray from the extremely high readings in the overlying Draupne Formation. The formation consist of claystone with limestone stringers.

The claystone is olive black, firm to moderate hard, blocky, silty, carbonaceous, micromicaceous, non calcareous and rarely medium grey to dark green grey. In the lowermost part, the colour changes to medium dark to dark grey and occasionally greenish grey.
The limestone is medium grey to off-white, firm, blocky, generally micritic, silty and sandy in parts, but occasionally also comprising clear, crystalline calcite.

VESTLAND GROUP **3796.5 - 3966.3 m MD, 3015.5 - 3168.5 m TVD (2990.5 - 3143.5 m TVD MSL)**

System: Jurassic
Series: Upper Jurassic
Stage: ?Bathonian - Callovian - Middle Oxfordian
Depositional environment: Marine, Inner to Mid Shelf

The top of the Vestland Group is recognized by a marked drop in the gammaray and slight increase in resistivity log marking the onset of arenaceous deposits. The group is subdivided into the Hugin and Sleipner Formations. A summary of log- and some drilling data together with core informations across the reservoir, is illustrated in Figure 2.3.

Hugin Formation **3796.5 - 3919.6 m MD, 3015.5 - 3126.5 m TVD (2990.5 - 3101.5 m TVD MSL)**

System: Jurassic
Series: Upper Jurassic
Stage: Middle Callovian - Middle Oxfordian
Depositional environment: Marginal Marine - Inner Shelf

The uppermost part of the Hugin Formation consists of interbedded claystone, sandstone and siltstone. The oil bearing reservoir sandstone starts at 3821 m MD.

The claystone is dark olive grey, medium brown, medium dark grey, occasionally medium grey to green grey, rarely dark red brown, firm, blocky, silty, sometimes grading to siltstone, slightly carbonaceous in parts and non calcareous.
The sandstone has abundant light brown to medium brown kaolin matrix and dark grey argillaceous laminae. It is silty to very silty and occasionally grading to siltstone. The sand consists of predominantly clear to translucent quartz grains. They are very fine to fine, moderate sorted, subrounded to subangular and rarely rounded. The sandstone is firm to friable, locally micromicaceous, has some sections with slightly calcareous cement and exhibits poor to fair visible porosity.
The siltstone is light to moderate brown, locally sandy or grading to very fine sandstone and it is firm and tight. Brown kaolinitic matrix is abundant.

Generally no hydrocarbon shows is recorded in this upper part. More details in chapter 2.4 "Hydrocarbon Shows"

The major part of the Hugin Formation consists of massive sandstone with some carbonaceous/coaly layers.

The sandstone is brown grey and consists of clear to translucent quartz grains. They are mainly fine to coarse, but ranges from very fine to very coarse, are predominantly moderate to well sorted and mostly subangular to subrounded. The sandstone is generally massive and clean, with only small amounts of kaolinitic matrix and calcareous and/or silica cement. It is furthermore friable to firm, occasionally moderate carbonate cemented and moderate hard, and exhibits predominantly good visual porosity. Mica lamina, carbonaceous/coaly material and micropyrite is common in various amounts.

Details about shows in chapter 2.4 "Hydrocarbon Shows".

Sleipner Formation **3919.6 - 3966.3 m MD, 3126.5 - 3168.5 m TVD (3101.5 - 3143.5 m TVD MSL)**

System: Jurassic
Series: Middle Jurassic
Stage: ?Bajocean - ?Bathonian
Depositional environment: Marginal Marine.

The top of the Sleipner Formation is defined at the uppermost massive coal bed. The formation consists of sandstone with beds of siltstone, claystone and layers of coal.

The sandstone is medium light grey to occasionally brownish grey and consists of quartz grains which are predominantly very fine to medium, moderate sorted and subangular to subrounded. The sandstone has slight to moderate amounts of light grey to off-white argillaceous (kaolinitic) matrix, is slight to moderate silica cemented and is predominantly firm to moderate hard. Coaly or carbonaceous layers and lamina are common, occasionally with micropyrite. The visual porosity is generally poor to fair and only occasionally good.
The siltstone is predominantly very sandy, grading to very fine sandstone, light grey to brownish grey, and with abundant off-white to light grey argillaceous (kaolinitic) matrix. It is furthermore firm to moderate hard, carbonaceous, micropyritic and has trace amounts of mica.
The claystone is medium grey, moderate hard, subfissile, silty to very fine sandy, non calcareous, slightly carbonaceous and contains disseminated pyrite.
The coal is black to brown black, moderate hard to brittle and in parts argillaceous.

HEGRE GROUP **3966.3 - 4131 m MD, 3168.5 - 3318.5 m TVD (3143.5 - 3293.5 m TVD MSL)**

System: Triassic
Series: Upper Triassic
Depositional environment: Terrestrial.

The top of the triassic Hegre Group is marked by a slight increase in the gamma ray values combined with slightly higher resistivity readings with a more erratic pattern. The group comprises, in this well, both the Skagerrak and the Smith Bank Formations.

Skagerrak Formation **3966.3 - 4097 m MD, 3168.5 - 3287 m TVD (3143.5 - 3262 m TVD MSL)**

System: Triassic
Series: Upper Triassic
Depositional environment: Terrestrial.

The Skagerrak Formation comprises sandstone with minor stringers of claystone and dolomite.

The sandstone is light grey to off-white and consist mainly of clear to translucent quartz. Also orange, rose, smoky and greenish grey quartz grains are very common together with dark grey to black mafic (?) mineral grains. The size quartz grains varies from very fine to fine, fine to coarse to occasionally very coarse. They are poor to well sorted and predominantly subrounded to rounded and spherical. The content of argillaceous matrix varies, but is mostly moderate to occasional abundant with off-white to greenish grey kaolinitic and chloritic? matrix. The sandstone is furthermore slightly to moderately silica cemented, loose to friable and occasionally moderate hard. Lamina, patches and clasts of greenish grey, chloritic? and micropyritic claystone is common, together with lamina of dark green mica. The visual porosity is predominantly fair to good, but occasionally poor, as well as excellent in some layers.
The claystone is pale green to greenish grey, firm to moderate hard, subfissile, non calcareous, micropyritic, chloritic? and has a waxy lustre.
The dolomite is pale yellowish grey, hard to very hard, angular, argillaceous, massive and tight.

Smith Bank Formation **4097 - 4131 m MD, 3287 - 3318.5 m TVD (3262 - 3293.5 m TVD MSL)**

System: Triassic
Series: Upper Triassic
Depositional environment: Terrestrial.

The Smith Bank Formation consists of claystone grading to a very silty sandstone with occasional sandstone stringers.

The claystone is dark reddish brown to greyish red, firm to moderate hard, subfissile to blocky, but occasionally fissile. It grades into a very silty, fine grained sandstone and is micromicaceous and non calcareous.
The sandstone stringers are as described for the Skagerrak Formation.

Licence : PL 046	Well 15/9-19A RESERVOIR SECTION	STATOIL
RT - MSL: 25 m		Made by: JMØ
Water Depth: 85 m		Date:10.05.98

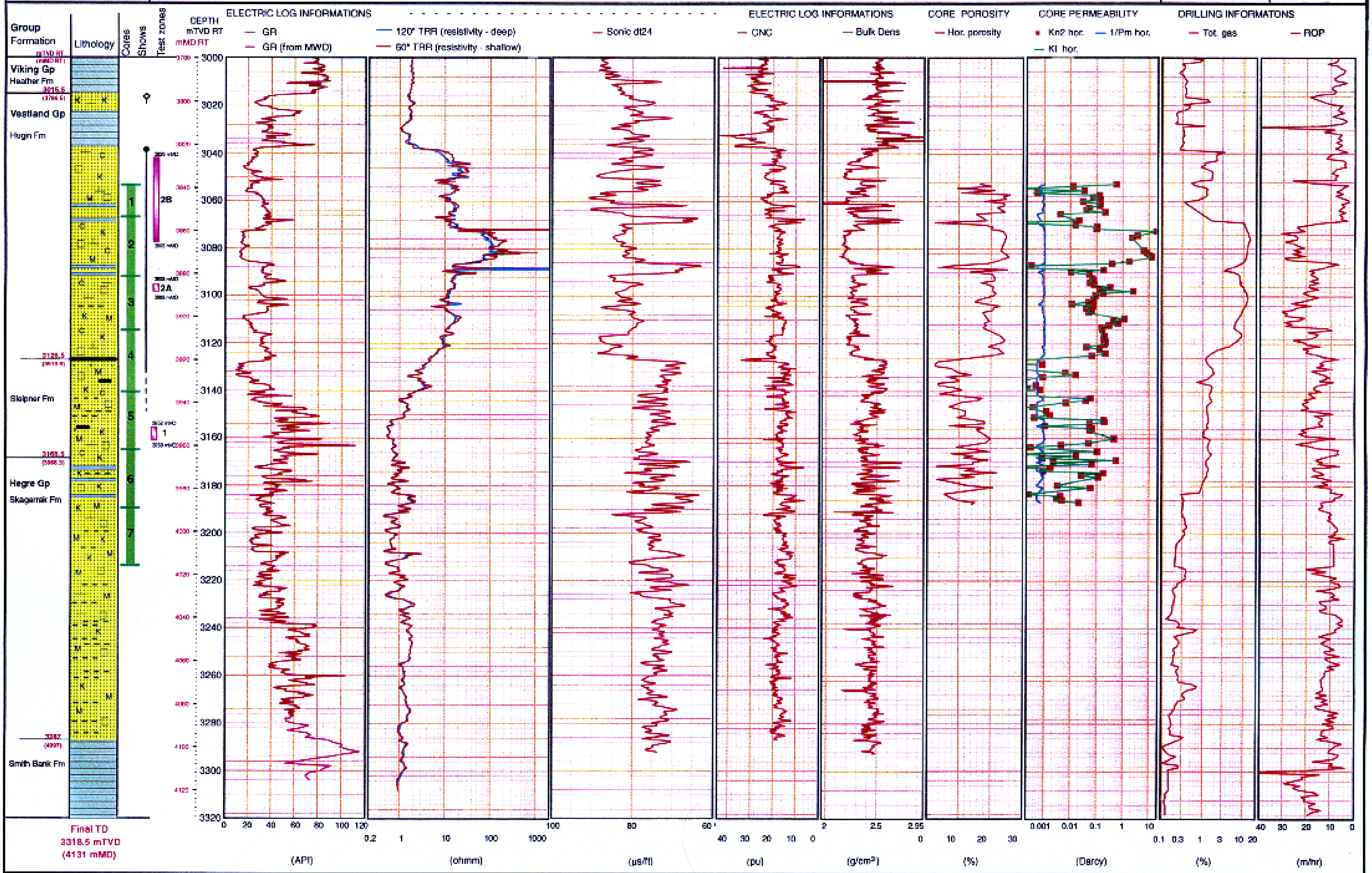


Figure 2.3

2.4 Hydrocarbon Shows

The interval with shows through the Vestland Group, is illustrated in Figure 2.3.

Rogaland Group/Ty Formation:
Weak visual shows, yellow grey fluorescence and poor, milky white cut fluorescence, were seen in siltstone at 3230m MD.

Viking Group:
No fluorescence, but slow, streaming yellow - white cut fluorescence was observed from the claystone. The visual shows were combined with increase in drill gas and presence of heavier components (i.e. C_5)

Vestland Group/Hugin Formation:
Visual shows were observed in a sandstone at 3796 - 3804 m MD. Traces of moderate bright yellow, direct fluorescence with strong and fast bluish white cut fluorescence is observed. This was combined with general increasing drillgases and presence of C_5 gas. Interpretation of the chromatographic composition of the gas suggested slightly producable hydrocarbons in the gas/oil window. Log resistivity remained relatively low suggesting only low saturation of hydrocarbons.

However, from 3821 m MD good shows were observed in the sandstone. The visual shows were described as even to laminated, strong to moderate strong, yellow fluorescence with strong, white, flash to fast streaming cut fluorescence. This was combined with a sharp increase in the log resistivity readings and also increased drillgases with C_1-C_5. The gas ratio plot of the chromatographic break down of the gas, confirmed the oil/gas window.

Cores number 1 - 4 had good oil shows with strong hydrocarbon odour, excellent, even light brown to brown black oil stain and even yellow fluorescence with flash to fast streaming, white cut fluorescence. Towards the base of the reservoir at 3919 m MD, the stain became dark brown to brown black and the fluorescence became dull to moderate bright, dark yellow to orange brown which are indicating heavier oil.

Below 3919 m MD, the shows were described as poor, with no to occasionally weak hydrocarbon odour, no stain, predominantly no direct fluorescence and with non to weak, bluish white crush cut fluorescence which occasionally improved to weak, slow streaming to cloudy white cut fluorescence mostly when associated with coaly layers.

2.5 Geophysical Results

Prognosed and actual stratigraphy with formation tops and corresponding time (TWT) values for well 15/9-19A, are given in Figure 2.2.

In general the formations came in quite well according to the prognoses down to the Hugin Formation. The inaccuracy in the velocity model produced incorrect depths in the prognosis. A wrong seismic pick had been used for the Hugin Formation. The formation came in 62.5 m TVD deeper than prognosed which corresponds to one cycle deeper on the seismic. The Hugin Formation was also thicker than prognosed (+84 m TVD) which means that a thick Jurassic basin had been overlooked in the first evaluation of the area.

3 Engineering Report

3.1 Pore Pressure

Figure 3.1 shows the pore pressure gradient, leak-off test values and overburden gradient from well 15/9-19A.

The well is sidetracked from well 15/9-19SR at 2178 m MD/1627 m TVD RT and drilled in one 8 1/2" section to the total depth of 4131 m MD/ 3318.5 m TVD RT. The use of PDC bits and motor in steering assembly together with a large overbalance have masked every indications of abnormal pore pressure. A gas leakage from the former well made it imposible to use gas recordings as pore pressure indicator. No pressure recordings were made due to the failure of the FMT equipment and the influence the labour conflict had on the security of the well. The 7" casing was run without any new options for FMT logging.

The pore pressure interpretation is therefore based on interpretation of the Dxc-exponent, resistivity- and sonic logs together with experiences from nearby wells. The log interpretation gives slightly higher pore pressure at top Viking Group than originally prognosed. The maximum pore pressure gradient is estimated to 1.30 g/cc equivalent mud weight. The pore pressure gradient at the top of the main reservoir is approximately 1.14 g/cc equiv. mud weight calculated from the production test 2B.

3.2 Temperature Analysis

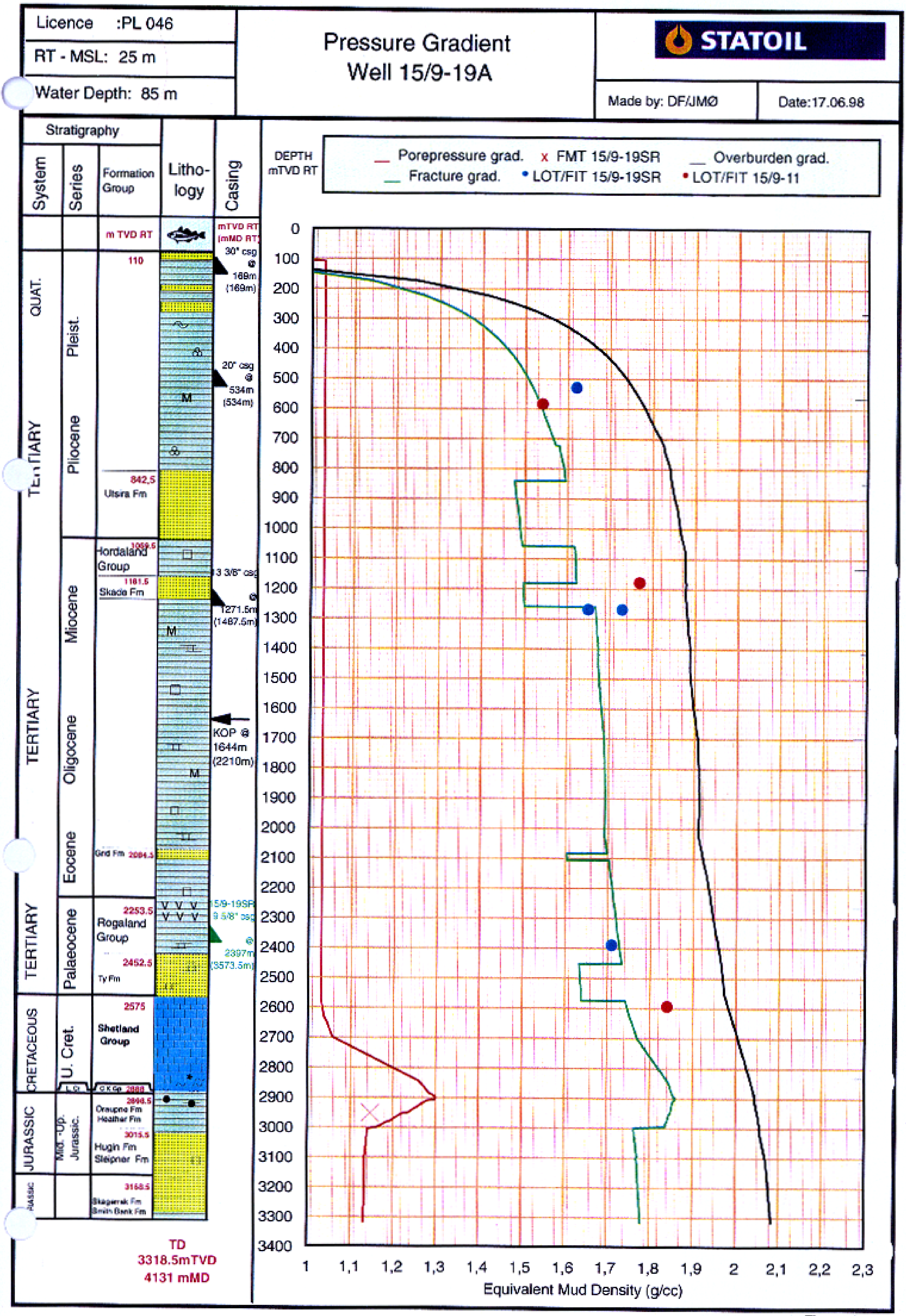
The recorded temperatures from electric logs are shown in Table 3.1.

Due to hole problems and friction between cable and casing the logs had to be run on PCL. All log runs have different bottom logged interval and consequently no good values for extrapolating temperatures. For these reasons, extrapolation of log measured temperatures has not been done and the temperature in the reservoir of approximately 112.3 °C has been collected from the flowing temperature during the test 2.
The log temperatures have been plotted as information and the MWD temperatures to give an indication of temperature trend.

Figure 3.2 presents some of the measured temperatures in the well and the estimated average temperature gradient based on the test flowing temperature.

Log	Run no	Log depth m TVD RT	Recorded temp. °C	Time since end of circ. hrs.	
HDIL-MAC-ZDL-CND -DSL-CAL-VSP-TTRM	1B	3260	116.5	Circ. while logging	PCL
MAC-GR-TTRM	2C	2730	99	32	wireline
Test no. 1		Gauge depth 3137 m	113		
Test no. 2A&2B		Gauge depth 3011.7 m	112.3		

Table 3.1 *Measured temperatures from wireline logs*



Licence :PL 046
RT - MSL: 25 m
Water Depth: 85 m
Pressure Gradient
Well 15/9-19A
STATOIL
Made by: DF/JMØ
Date:17.06.98
Stratigraphy
System
Series
Formation Group
Litho-logy
Casing
DEPTH mTVD RT
Porepressure grad.
x FMT 15/9-19SR
Overburden grad.
Fracture grad.
• LOT/FIT 15/9-19SR
• LOT/FIT 15/9-11
m TVD RT
mTVD RT (mMD RT)
30" csg @ 169m (169m)
20" csg @ 534m (534m)
13 3/8" csg @ 1271.5m (1487.5m)
KOP @ 1644m (2210m)
15/9-19SR 9 5/8" csg @ 2397m (3573.5m)
QUAT.
Pleist.
Pliocene
TERTIARY
Miocene
Oligocene
Eocene
Palaeocene
CRETACEOUS
U. Cret.
JURASSIC
Mid.-Up. Jurassic
110
842,5
Utsira Fm
1059.5
Hordaland Group
1181.5
Skade Fm
Grid Fm 2084.5
2253.5
Rogaland Group
2452.5
Ty Fm
2575
Shetland Group
2848.5
Draupne Fm
Heather Fm
3015.5
Hugin Fm
Sleipner Fm
3168.5
Skagerrak Fm
Smith Bank Fm
TD
3318.5mTVD
4131 mMD
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
3400
1
1,1
1,2
1,3
1,4
1,5
1,6
1,7
1,8
1,9
2
2,1
2,2
2,3
Equivalent Mud Density (g/cc)

Figure 3.1

Licence :PL 046	Temperature Gradient Well 15/9-19A	STATOIL
RT - MSL: 25 m		
Water Depth: 85 m		Made by: DF / Date:17.06.98

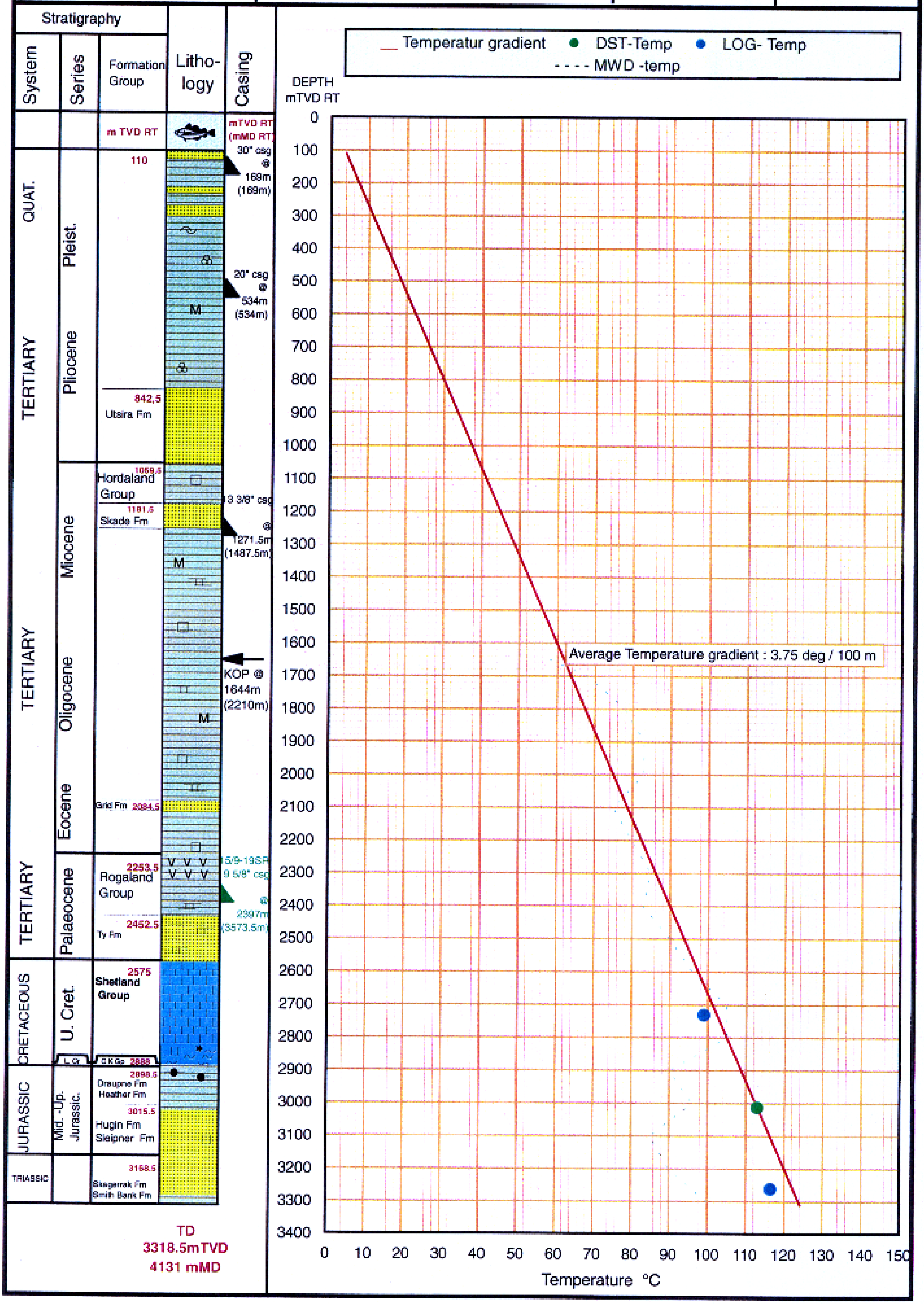


Figure 3.2

3.3 Formation Pressure Summary/FMT Sampling

One attempt was made to run FMT on PCL for pressure points and fluid sampling. The wet connector failed and the connection with the tool was broken before any pressure readings was achieved. The ongoing labour conflict prevented further attempts and the 7" casing had to be run and cemented. When the strike was called off, the intention was to get the pressure points by punching holes in the casing and run Schlumberger MDT tool. Three unsuccesful attempts were made. The tool failed within ½ hr after electric contact was established. Further logging was then cancelled and preparations made for testing.

3.3.1 Log data quality

The log data acquired before the labour conflict are of generally good quality. The acoustic data obtained through casing has some parts of poorer quality. Through the reservoir zone and down to TD the data are good. but important data as dipmeter and pressure has not been collected due to the labour conflict and the MDT tool failure.

3.4 Well Testing

Figure 3.3 and 3.4 presents the pressures and temperatures recorded during the tests. Figure 3.5 presents the pressures recorded at the end of shut in periods extrapolated to initial reservoir pressure. for test 1 and 2A&B.
Figure 3.6 presents the time used during the test compared with planned time.

3.4.1 Test 1

Perforated interval: 3159.8-3165.5 m TVD RT, SLEIPNER FORMATION

Summary
This test was initiated due to the MDT failure during wireline logging, and was a planned backup solution.
The objective was primarily to get water samples. Due to the weight of the formation water (1.09 sg.) the well ceased to flow before the water reached the surface.
Two bottom hole sampler run were performed, the first too deep reaching a mud column (a weight check on a very tiny sample from the first run showed mud weight of approx. 1.69 s.g.) The last run aquired 4 good water samples indicating formation water in this well with properties very similar to other Sleipner Formation water samples in the Sleiper area.
An attempt to perform a minifrac was performed without successes. Not able to establish injection rate possibly due to mud blocking the perforations.

3.4.2 Test 2A and 2B

Perforated intervals:
Test 2A , 3100 - 3102.5 m TVD RT, HUGIN FORMATION
Test 2B , Test 2A + 3046.2-3081.3 m TVD RT, HUGIN FORMATION

Summary

Both tests were performed according to the program. Total time for all tree tests were approximately 17 days compared to 13 days planned time.
All objectives for the tests were achieved.
Objectives was to:
- Obtain representative fluid samples in volumes sufficient to perform the necessary analysis.
- Obtain information about sand strength and minimum formation stress.
- Obtain separation experience regarding water/oil emulsions. (MTU)
- Obtain data for determination of reservoir heterogeneties or boundaries.

During the test 2A all bottomhole sampling were performed and 2 PVT sets were sampled. The main PVT sampling was performed in the end of the test 2B.
During the main flow in test 2B the MTU (Mobile Test Unit, a small test separator spesially built to handle, mix and measure water/oil emulsions) was run to investigate possible water/oil emulsion problems in the fluid separation. Brine was mixed with the well stream in different ratios from 0 to 80% and directed through the MTU and separated and measured.
A special report will be issued regarding the MTU test.

The minifrac planned at the end of the test 2A had to be aborted due to plugging of the perforated interval witch resulted in back pressure at surface to high to handle.
The minifrac was performed as part of the killing procedure at the end of test 2B.

The test vessel "Crystal Sea" was not available at the time and all fluids from the test had to be burnt, using Halliburton high performance burners. No spill has been reported.
All equipment mobilised for the test and used during the test performed well.

DST No Formation Perforated interval m TVD RT	2A Hugin 3099.9 - 3102.5 *(3.0 m MD)*	2B Hugin 3099.2-3102.5 + 3046.2-3081.3 *(3.0 + 39 m MD)*
Production and fluid data		
Fluid flow rate *average rate*	300 Sm^3/d	560 Sm^3/d
Gas flow rate	27000 Sm^3/d	45000 Sm^3/d
GOR test GOR single flash	90 Sm^3/Sm^3 111.8 Sm^3/Sm^3	80 Sm^3/Sm^3 111.8 Sm^3/Sm^3
Bottom hole flowing pressure / temperature	210 bar / 112.3 °C	326.5 bar / 110.8 °C
Pressure drawdown over perforations	approx. 120 bar	approx. 8.2 bar
Estimated initial pressure	336.5 bar +/- 0.5 bar	
CO_2 / H_2S	2.5 ppm / 3.5 %	2.8 ppm / 3.5 %
Oil density	720 kg/m3	720 kg/m3
Gas gravity	0. 724 (air = 1)	0. 724 (air = 1)
Viscosity at Pb	0.790 mPa s	0.790 mPa s
Bubble point pressure	235.5 bar (BHS)	226.5 (surface PVT set)
BS&W	0	0

Table 3.2 *Summary of measured values from test 2A&2B*

See test report for more information

Pressures and Temperatures
Test 1

STATOIL

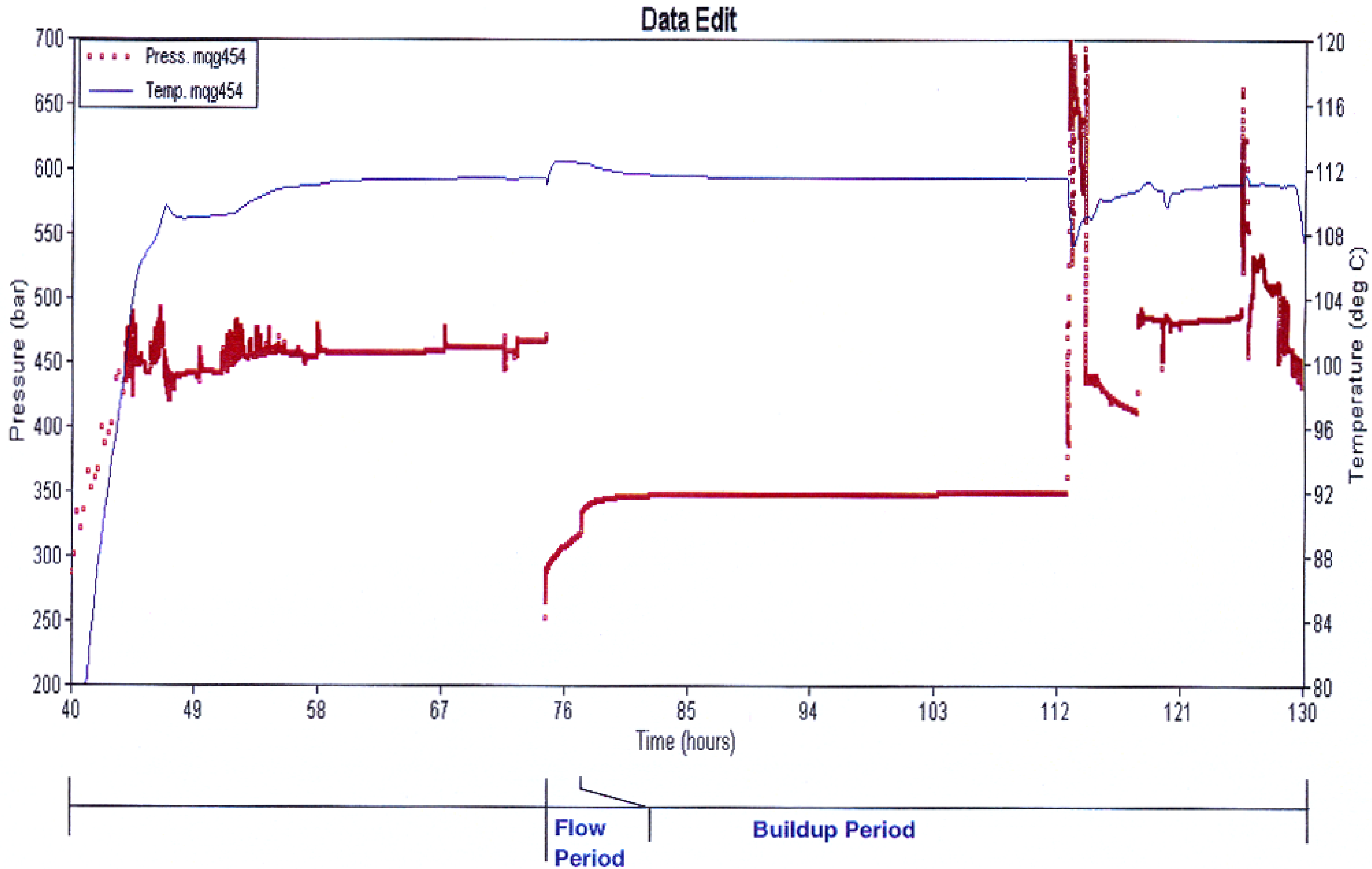


Figure 3.3

Pressures and Temperatures
Test 2A&2B

STATOIL

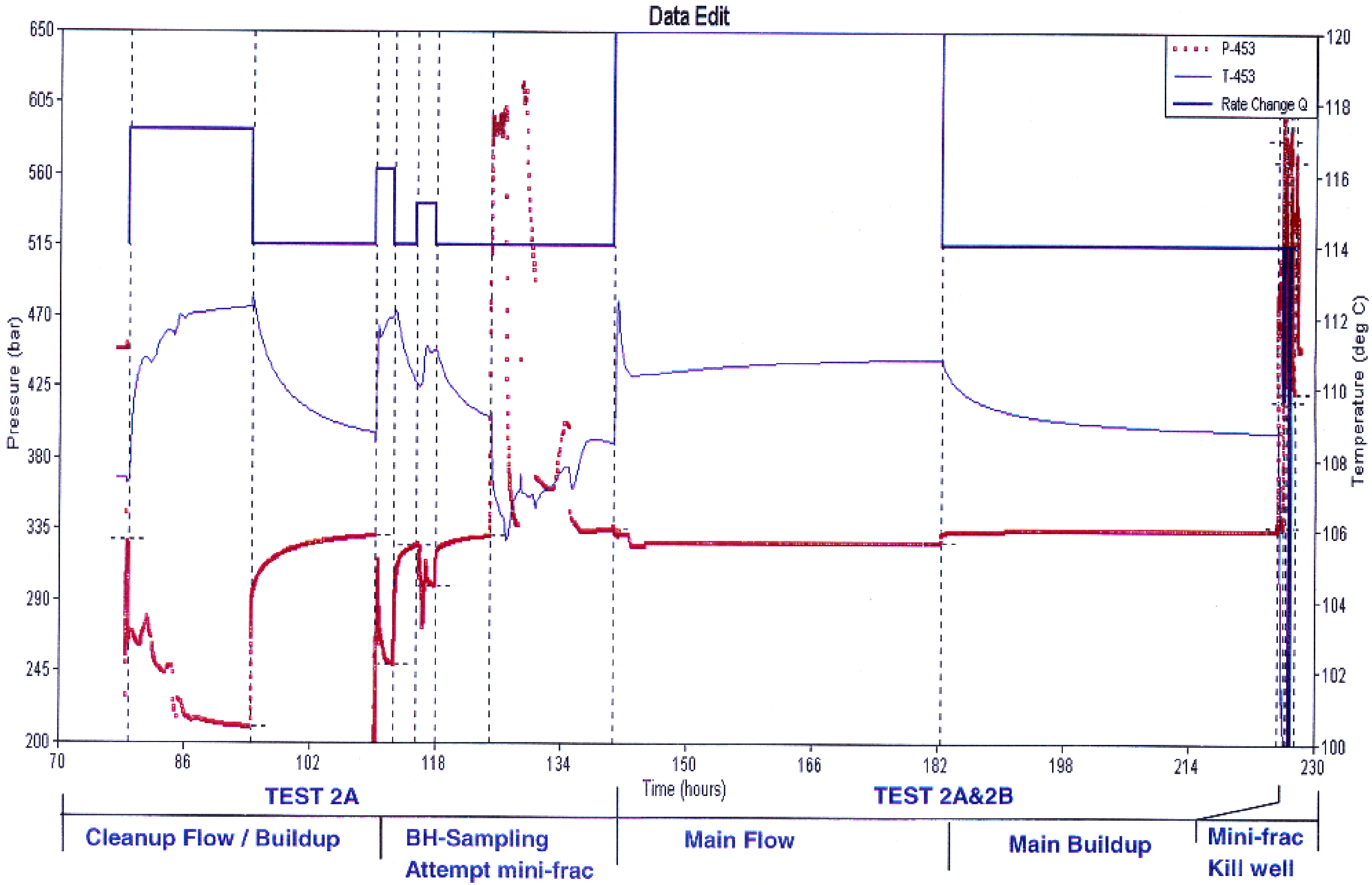


Figure 3.4

Licence :PL 046	Well 15/9-19A Reservoir section Pressure	STATOIL
RT - MSL: 25 m		Made by: DFr
Water Depth: 85 m		Date:20.06.98

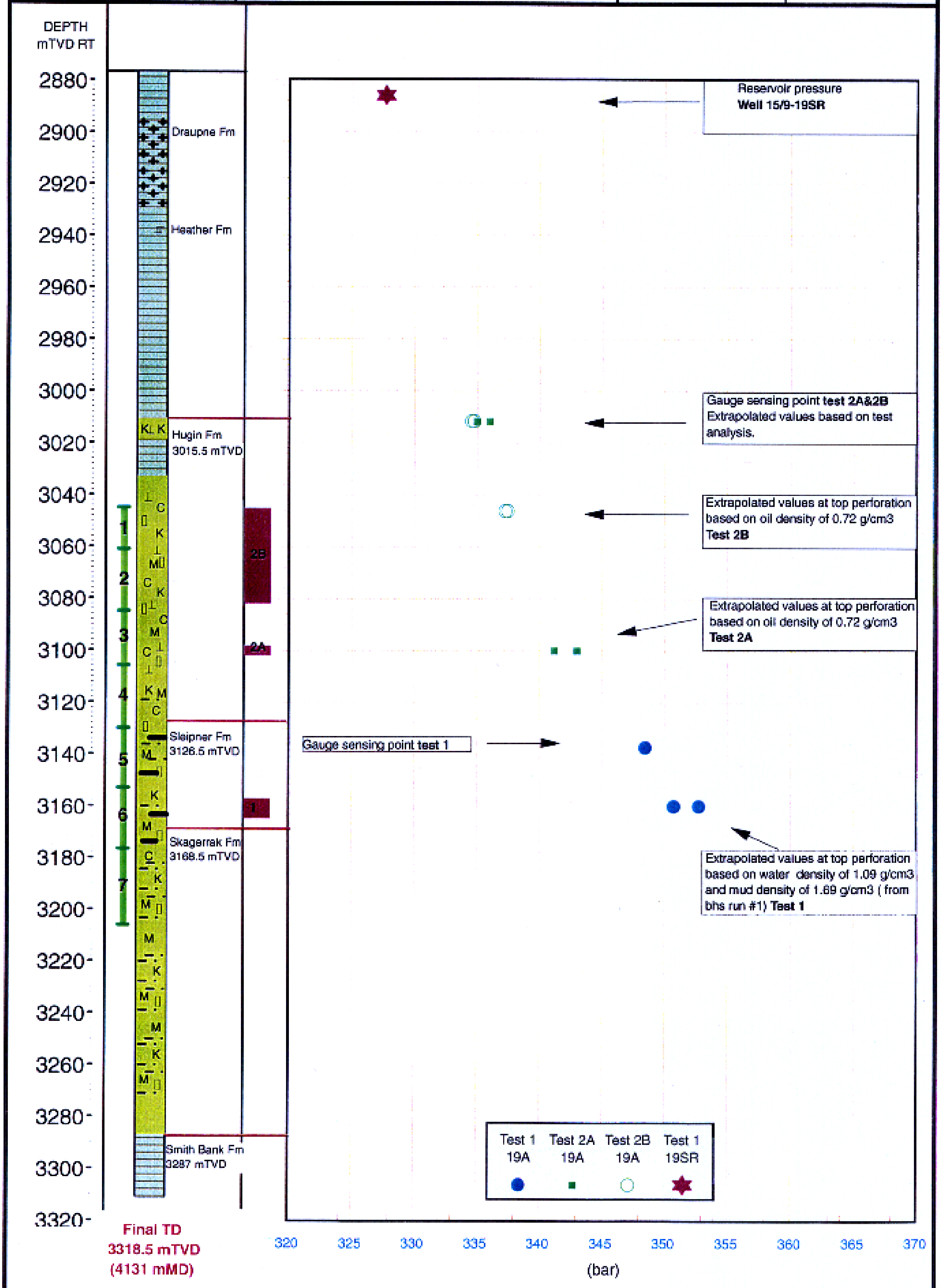


Figure 3.5

Well 15/9-19A, Test Phase

STATOIL

Updated Final version

Current Time

PLANNED VERSUS ACTUAL TIME

Well 15/9-19A, Byford Dolphin

Start date 18.10.97

Start time 06:00

TEST1 and 2A&2B

Date	Time	Hrs	Lost Time	Status	Activity	Act. cum Lost time	Plan Hrs	Plan Days	Act. Days
						0,0	0	0,0	0,0
18.10.97	06:00	8,0	2,0	U	Reperforate water zone (6.0 m)	0,1	6	0,3	0,3
18.10.97	14:00	6,0	0,0	U	BOP test	0,1	6	0,5	0,6
18.10.97	20:00	90,0	18,0	U	RIH test string , Perform water test, POOH	0,8	72	3,5	4,3
22.10.97	14:00	44,8	8,8	U	Run EZSV on DP and squeeze cement, cond mud and pox	1,2	36	5,0	6,2
24.10.97	10:45	7,3	(0,8)	U	Perforate for test 2A , Atlas 3.0 m	1,2	8	5,3	6,5
24.10.97	18:00	61,0	13,0	U	Run in hole test string	1,7	48	7,3	9,0
27.10.97	07:00	31,5	9,5	U	Cleanup flow and buildup	2,1	22	8,3	10,4
28.10.97	14:30	14,5	(1,5)	U	Conditioning and BHS flow	2,1	16	8,9	11,0
29.10.97	05:00	0,0	(10,0)	U	Sandstrength	2,1	10	9,3	11,0
29.10.97	05:00	6,0	0,0	U	Minifrac	2,1	6	9,6	11,2
29.10.97	11:00	10,0	6,0	U	Perforation of zone 2B	2,4	4	9,8	11,6
29.10.97	21:00	41,5	9,5	U	Main flow	2,8	32	11,1	13,4
31.10.97	14:30	42,0	10,0	U	Main build up	3,2	32	12,4	15,1
02.11.97	08:30	3,5	3,5	U	Minifrac	3,3	0	12,4	15,3
02.11.97	12:00	32,0	14,0	U	POOH	3,9	18	13,2	16,6
03.11.97	20:00	0,0	0,0	U	End of Test	3,9	0	13,2	16,6
Total		**398**	**82,0**			**4**	**316**	**13**	**17**

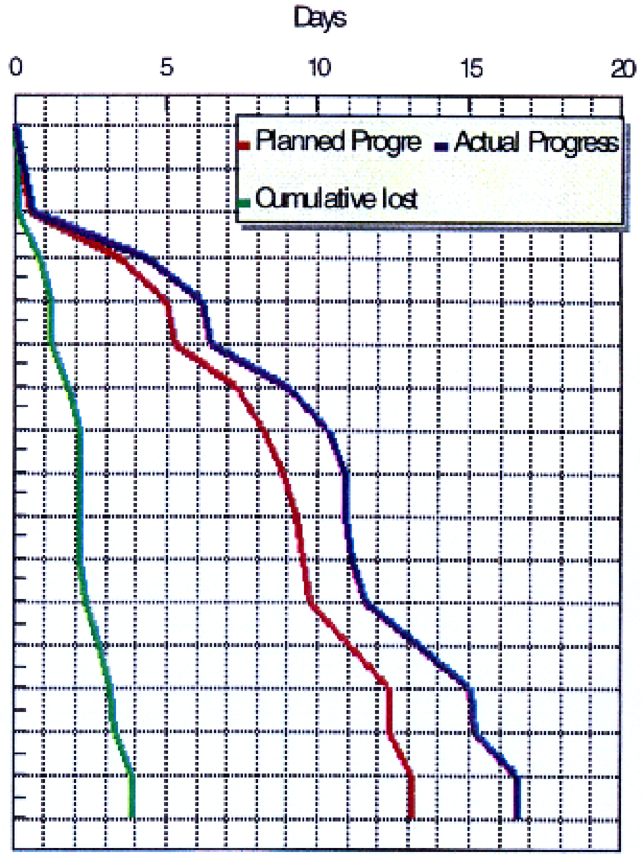


Fig 3.6 Planned vs. Actual Time

BLACK : Originally planned operations

GREEN: Not planned operations

RED: Originally planned but not performed operations

4 Drilling Report

4.1 Well Summary

Project start:	16.07.97 at 15:30 hrs
Project end:	07.11.97 at 22:00 hrs
Total:	114.3 days
Rig move:	1.4 days
Re-enter phase:	11.3 days
Drilling phase including coring and open hole logging:	31.8 days (including 1.33 days strike)
Test phase including 7" casing and cased hole logging:	65.7 days (including 31.17 days strike)
P & A:	4.1 days

The well was re-entered and drilled using the semi submersible drilling rig "Byford Dolphin. Well 15/9-19A was side-tracked through the 9 5/8" casing at 2178 m MD. The 8 1/2" section was drilled to TD of the well at 4131 m MD / 3318.5 m TVD.

A 7" casing was set at 4044 m MD / 3238.5 m TVD and the well was production tested.

A total of 114.3 days were used to drill and test the well, including 11.1 days problem time and 32.5 days strike.

Major operational achievements.

- The hole was drilled with relatively complexed well geometry, in one section without having to set an intermediate liner.
- Excellent core recoveries.
- Drill stem tests were performed effectively without major problems.

Major operational problems:

- Problems occurred during entering the first milled window in 9 /5" casing. A second window had to be made.
- Some directional problems and hole cleaning problems occured
- Logging problems. There were problems to get logs down on wireline. In addition several logging equipment problems were experienced. Due to the strike, the 7" casing had to be set to secure the well, before the full logging programme was completed. Subsequently, the rest of the required logging programme had to be done in cased hole, with associated complications and problems.

4.2 Rig move and anchor handling

Activity start:	16.07.97 at 15:30 hrs
Planned time:	36.0 hrs
Actual time:	33.5 hrs
Lost time:	0.0 hrs

4.2.1 Objectives

Move the rig from block 15/5 to the 15/9-19SR well location, position the rig and run 11 anchors.

4.2.2 Conclusion

The rig move and the anchor handling were performed without major problems. The operation took a total of 33,5 hrs. Planned time was 36 hrs. Supply vessel's involved were “Far Server”, “Norman Hunter” and “Red Rooster”.

All anchors were pre-tensioned to 140 tons, anchor no. 1 had to be re-set.

4.3 Re-enter & window milling

Activity start:	18.07.97 at 01:00 hrs
Planned time:	108.0 hrs
Actual time:	270.0 hrs
Lost time:	55.5 hrs

4.3.1 Objectives

Remove hatch from template and remove corrosion cap. Run BOP. Enter well 15/9-19SR, clean out temporary cement plugs and bridge plug in the 9 5/8” casing, and permanently plug the well. Set whip stock and mill a window in the 9 5/8” casing.

A total of 4.5 days were planned for the operation

4.3.2 Conclusions

The operation was completed in 11.3 days.

Drilling of the cement plugs from 190 to 402 m were time consuming (27.5 hrs), and there were problems getting into the liner after drilling the bridge plug at 402 m, probably due to debris from bridge plug falling down on top of liner.

A Baker Windowmaster was ran and a window was milled from 2202 to 2207 m MD. When entering the window with the drilling assembly the drill string was rotated and the string got stuck. The string was pulled free but it was not possible to enter the window after this incident.

A second Baker Window master was ran and a window was milled from 2178 to 2183 m MD. The well was then successfully side-tracked.

The main contributions to lost time were:

- Two misrun with CCL, and thus not able to set bridge plug (16,5 hrs)
- Problems entering first window (15 hrs)
- Set second whipstock and mill second window (14 hrs)

4.3.3 Recommendations

- When planning temporary P & A, the placement of bridge plugs should be carefully considered. It is recommended to set cement below the bridge plug as a "seat" for the plug to prevent debris falling down on top of the liner if it is planned to re-enter the liner.
- The Baker Window master - one trip system (whipstock + milling assembly) is recommended for similar sidetracks.
- A slick BHA without stabilisers should be used when entering the window the first time in case it is required to rotate the string with the BHA inside the window.

4.3.4 Summary /Discussion

Re-entry

The hatch was removed from slot S3 and parked on top of the template structure. The guide lines on posts 2 and 3 were connected assisted by the ROV, and the corrosion cap removed.

The old cement plug was drilled out from 190 to 402 m MD. When drilling through the bridge plug at 402 m MD, parts of it fell down on top of the liner, and there were problems getting into the liner. The mule shoe on the cement stinger was worked through the liner lap at 3200 m MD.

A balanced cement plug was set from 3259 to 3109 m MD, then a high viscosity pill (water based) was set from 2800 to 2300 m MD before displacing the well to 1.50 g/cm^3. Ultidrill mud.

Window milling

Two misrun were made on wireline (CCL failed twice) before it was possible to set a bridge plug at 2203 m MD.

A Baker Windowmaster whipstock with one anchor was set on top of the bridge plug and a window was milled in the 9 5/8" casing from 2202 to 2207 m MD, new formation was milled/drilled to 2213 m MD. The window was reamed approximately 20 times, but is was still not possible to go in and out of the window without rotating, based on using maximum 12 tons weight.

A drilling assembly was RIH, oriented and slacked off through window, and the hole reamed from 2208 to 2212 m MD. The string got stuck with torque trapped in the string. The string was freed with 32 tons, with torque still trapped in string. The string got stuck again at 2207 m MD when pulling out, and was freed with 55 tons overpull. Further, the string torque was released at 2202 m MD. After that it was impossible to go below the top of the window at 2202 m MD. After POOH it was found that the bit (Smith M16VX PDC bit) was damaged - 6 of 9 blades were broken / damaged. The problems were most likely caused by the drill string being rotated with the stabilisers inside the window. It is possible that one of the stabilisers have hung up on the whipstock and rotated it out of position.

A second bridge plug was set at 2187 m MD, and the second Windowmaster whipstock was set on top of the bridge plug. The window was milled from 2178 to 2183 m MD, and new formation was milled/drilled to 2202 m MD. The string was picked up and slacked off through the window 5 times without problems.

4.4 8 1/2" section

Activity start:	29.07.97 at 07:00 hrs
Planned time:	408.0 hrs
Actual time:	763.0 hrs
Lost time:	98.0 hrs (including 32 hrs due to strike)

4.4.1 Objectives

To drill to 3836 m MD (3075 m TVD), drop the angle from 59 degrees at 2200 m MD to 20 degrees at 2881 m MD, and to turn the azimuth from 282 degrees to 10 degrees in the same interval. Then maintain this angle and direction to TD of the well.

Drill maximum 3 m into the Hugin formation and core 54 m, i.e. approximately 24 m into the Skagerak formation, and finally log the well.

17 days were planned for the operation.

4.4.2 Conclusions

The 8 1/2" section was drilled to 4131 m MD (295 m more than planned).

The operation was completed in 31.8 days including 1.33 days strike. This refers to the time when the open hole logging program was aborted due to rig and service personnel going into strike. A 7" liner was then ran to secure the well and the logging programme was completed after the strike.

The 8 1/2" hole was drilled to coring point at 3837 m MD without major problems. Some hole cleaning problems and directional problems were experienced.

The initial mud weight was 1.50 g/cm³, which was maintained down to 2783 m MD. At this point, hole problems were experienced. The hole packed off and the string was stuck for a couple of minutes. Excessive amounts of cuttings / cavings started to return to surface. The mud weight was thus increased to 1.54 g/cm³, and no further major problems were experienced.

Several trips were made to change BHA due to directional problems, and once due to MWD failure.

7 cores were cut to 4017 m MD, using 90 ft core barrels. The coring operations were done without major problems.

After drilling to TD at 4131 m MD (3318.5 m TVD), the hole was logged.
It was not possible to get logs down on wireline, and 3 logging runs were done on drill pipe. Several logging equipment problems were experienced.

The main contributions to lost time were:

- Trip due to MWD failure (17,5 hrs)
- Repair on UIBOP (7 hrs)
- Repair on top drive (7 hrs)
- Problems related to logging operations / equipment (27.5 hrs)

4.4.3 *Recommendations*

- Used Ultidrill mud was taken onboard for this well. It is recommended to do more testing on the mud prior to starting the well to ensure the quality. A particle size distribution test, which would give an indication of the solids tolerance and associated gels strengths of the mud system, would be a useful guide for further treatments.
- Evaluate carefully the size of stabilisers to be used on coring assemblies. After drilling hole with mud motor and oil based or pseudo oil based mud, it is often experienced that the hole is in gauge. This will often cause problems when drilling (coring) in rotary mode with nearly full gauge stabilisers.
- The mud properties should be tested under simulated downhole conditions prior to logging to ensure / verify acceptable downhole viscosity. The best way is to test on a Fann 70 rheometer, which will give the viscosity at downhole temperature and pressure. The problem with getting logs down on wireline, even with the relatively high angle in this well, may have been a function of the downhole mud condition. However, this can not be concluded without any testing.

4.4.4 *Summary /Discussion*

Drilling to core point

BHA #1: 2202 - 2768 m MD.
The section was started with a Smith M16VX PDC bit on a motor assembly (AKO 1.2 degrees). It was no problems to enter the window. A trip was made at 2768 m MD due to directional problems - not enough turn to the right. The bit was graded 1-1, re-runable.

BHA #2: 2768 - 2783 m MD.
The AKO was now increased to 1.5 degrees and the BHA made up with an insert bit (Reed EHP44HDL). A gyro was run inside the string at 2768 m MD. This BHA was again pulled at 2783 m MD due to decrease in ROP (took approx. 2.5 hrs to drill the last meter). On the trip out, the hole packed off several times and the string was stuck for 2 minutes approx. 16 m below the window. The bit was graded 3-4 with a cored-out nose.

BHA #3:
A check trip was made, with a slick BHA and re-running the M16VX PDC bit, to clean out the window and check the hole condition. At TD, the mud weight was increased from 1.50 g/cm^3 to 1.54 g/cm^3

BHA #4: 2783 - 3057 m MD.
A new insert bit (Reed EHP43AFLDH) was made up on a slick BHA with motor and MWD. This drilled to 3057 m MD before pulling out due to rate of penetration slowing down. A short trip to 2707 m was made before pulling out. The bit was graded 3-4 with broken / missing buttons.

BHA #5: 3057 - 3632 m MD.
This BHA was stabilised with a new motor and PDC bit (Hughes G449DG3). The hole was drilled to 3632 m MD. Some hole cleaning problems were experienced, large cavings were seen. The BHA was again pulled due to directional problems (unable to steer due to hanging up on stabilisers and frequently stalling problems). The bit was graded 2-2 re-runable.

BHA #6: 3632 - 3653 m MD.
A new insert bit (Reed EHP43AFLDH) was made up, and the AKO set to 1.5 degrees. This BHA was pulled due to MWD failure at 3653 m MD. The bit was graded 1-2.

BHA #7: 3653 - 3823 m MD.
After changing the MWD tool and installing a new insert bit (Reed EHP51ADL), the hole was drilled to 3823 m. A drilling break was experienced from 3796 to 3799 m. The bit was pulled and found worn out, graded 8-8- with 1 loose cone.

BHA #8: 3823 - 3838 m MD. Finally, The Hughes G449DG3 PDC bit was re-run, the AKO changed to 0.6 degrees and the hole drilled to coring point at 3838 m MD.

Coring

3838 - 4017 m MD.
The coring was done with 7 core runs from 3838 to 4017 m MD, all 90 ft core barrels. The first core jammed after 16 m, the rest of the cores were cut without major problems.

The first coring BHA was run with 8 15/32" stabilisers. It took approximately 20 hrs to get to TD, a lot of reaming / washing was required through the Shetland Fm. When starting coring, it stalled out twice during the first 2 m, and it was necessary to pull off bottom and restart.

After the first coring run, the stabilisers were changed to 8 3/8", and no more major problems were seen on the following coring operations.

Drilling to well TD

BHA #8: 4017 - 4131 m MD.
The Hughes G449DG3 PDC bit was re-run, the AKO changed to 0.0 degrees and the hole drilled to well TD at 4131 m MD.

Logging

Two attempts were made on wireline logging. On the first run, the tool stood up at 2754 m MD, and on the second run (VSP), it was not possible to get below 2677 m MD.

3 logging runs were made on drill pipe. Several equipment failures were experienced. On the third run, the pipe got stuck at 4123 m MD. After pulling out of hole with the wireline through the side entry sub, the pipe was freed with rotation and reciprocation.

4.5 Test phase, including 7" casing and cased hole logging

Activity start:	30.08.97 at 02:00 hrs
Planned time:	0.0 hrs
Actual time:	1578.0 hrs
Lost time:	877.0 hrs (including 748 hrs due to strike)

4.5.1 Objectives

- Set and cement 7" casing, clean out casing and condition mud.
- Run logs: Cement bound, MAC-GR, perforate and take pressure measurement and fluid samples in water zone and HC-zone with MDT. Plug back perforations.
- Test of Hugin formation, sampling and sand strength test. Mini frac.
- Use of MTU for water-oil emulsion testing.
- Kill well and Pull test string

4.5.2 Conclusions

The operation was completed in 65.7 days including 31.37 days strike.

Due to the industrial action, the logging programme was not completed before the 7" casing had to be set, leading to more complicated logging operations in cased hole.

A lot of problems were experienced with the logging equipment, and no fluid samples were obtained with the MDT tool. Instead, a DST was done to obtain water samples.

The DST's were done without major problems.

The MTU unit performed as intended.

The main contributions to lost time, except time lost due to strike, were:
- Had to replace seal assembly with new elastomer type due to failed pressure test (11 hrs)
- Problems related to logging operations / equipment (108.5 hrs)

4.5.3 Recommendations

- The same recommendation w.r.t the mud system as mentioned for the 8 1/2" section applies. I.e. the mud should have been tested under simulated downhole conditions. After the first log on wireline stood up at 1440 m MD, the mud was conditioned and the density reduced from 1.55 to 1.47 g/cm³ This was done by adding freshly prepared premix. The next logging run on wireline was then done to 3500 m MD. This may indicate that the downhole viscosity was too high before the dilution / density reduction.
- With similar wellpath's the logging operation should be planned more detailed. Contingency procedures for reducing cable friction etc. should be prepared to make it possible to log the well on wireline instead of drill pipe.

4.5.4 Summary /Discussion

Run and set 7" casing

A wiper trip was made to condition the hole and mud before the 7" casing was run and cemented in place at 4044 m MD (3238.5 m TVD RT). The 7" was ran as casing, and not as liner, due to the 9 5/8" casing not being rated for H_2S

A total of 6 m³ mud of was lost downhole during running of the casing, another 26m³ was lost when circulating prior to the cement job and 81 m³ was lost during the cement job.

The seal assembly was set, but failed on the pressure test and had to be retrieved. An elastomer seal assembly was then set and successfully tested. The well was secured and the 7" casing was pressure tested to 345 bar.

Due to the industrial action, the riser was displaced to sea water (2 hrs), and the operation was suspended for another 746 hrs.

Logging

After the riser was displaced back to mud, and the BOP tested, a trip was made with a 5 7/8" bit and casing scraper to 4019 m MD (float collar).

An attempt was made to log on wireline (SBT-CCL-GR), but the tool stood up at 1440 m MD. More weights were added to the tool string and it was then possible to get the tool down to TD at 4036 m MD. The pick up weight at TD was however 10000 lbs and the cable was not rated for more than 9000 lbs. The SBT showed good cement bound.

A wiper trip with 5 7/8" bit and 7" casing scraper was made to condition the mud, and the mud weight was reduced from 1.55 g/cm³ to 1.47 g/cm³ to reduce cable tension. A MAC-GR log was then run to 3500 m MD on wireline. A maximum cable tension of 8900 lbs showed that reduction of the mud weight and the mud conditioning had reduced the cable friction.

Due to equipment problems and problems getting down, 3 run were made with perforating guns on wireline to perforate a total of 6 zones from 4015.5 to 3955 m MD.

It was also planned to run the Schlumberger MDT tool on wireline to take fluid samples and pressure points, but it was not possible to run it on wireline due to the high cable friction in combination with high tool weight (MDT tool). Three attempts were made to run the Schlumberger MDT tool on drill pipe, without success. All problems were related to MDT equipment malfunctioning.

The problems experienced with getting logging equipment down on wireline was not expected. The problems may have been related to the mud, in combination with high cable friction due to the well path and the surface inside the 7" casing.

DST #1

It was decided to run a separate DST to get water samples due to the problems with the MDT.

The water zone was perforated from 3952 to 3958 m MD on wireline prior to running the test string.

The test string was run in hole and the packer set at 3937 m MD to test the water zone. There were poor response, the well died before any water reached surface. A MWS sampling tool was RIH on wireline. Two attempts were performed, the first one sampled mud, the second one collected 4 water samples.

After circulating the tubing to sea water, a mini frac test was attempted, but no injection rate was established. After reverse circulating the tubing to kill mud, the test string was POOH. An EZSV retainer was then set at 3947 m MD to seal off the water zone perforations.

DST #2A and 2B

The test zone for DST #2A was perforated on wireline from 3885.5 to 3888.5 m MD before running the test string. TCP guns was ran on the test string for perforating for DST #2B. The test string was ran and tested without any major problems and the packer was set at 3799 m MD.

After the flow period, bottom hole sampling was done on wireline. An attempt was made to perform a mini frac at the end of DST #2A, but it was not possible to create any fracture with a maximum allowed surface pressure of 345 bar.

A wireline bar was used to detonate the TCP guns from 3826 to 3865 m MD. DST #2B was performed without any problems and a minifrac was successfully performed at the end. The well was killed and the test string pulled.

4.6 P & A

Activity start:	03.11.97 at 20:00 hrs
Planned time:	36.0 hrs
Actual time:	98.0 hrs
Lost time:	15.0 hrs

4.6.1 Objectives

Permanent plug and abandon the well, in order to side-track next well (15/9-19B) from existing window in the 9 5/8" casing.

1.5 days were planned for the operation

4.6.2 Conclusions

The operation was completed in 4.1 days. The planned operation time seems to be underestimated.

The hole was plugged as planned. Some problems were experienced when retrieving the seal assembly, and the spacer for the squeeze job had to be rebuilt because it was lost into the active mud system.

4.6.3 Recommendations

No changes to the procedures recommended.

4.6.4 Summary /Discussion

An EZSV retainer had already been set after DST #1 to seal off the water zone perforations.

A second EZSV retainer was set set at 3818 m MD, and the HC zone squeeze cemented. A total of 3 m^3 cement was squeezed into the perforations while 1 m^3 cement was left on top of the retainer.

After the squeeze job, the string was pulled out to 2325 m MD, and the well circulated while increasing the mud weight to 1.55 g/cm^3 before POOH.

A 7" casing cutting assembly was run in hole and the 7" casing was cut at 2275 m MD.

After retrieving the wear bushing, 4 runs were made to retrieve the seal assembly without success. After modifying the spring loaded retrieving tool by removing latch lugs and grinding off 4 mm, the seal assembly was retrieved.

The 7" casing was then pulled out of the hole.

4.7 List of operations data

IDA AFP Subsystem print

JOB ID	FI 4642
JOB NAME	RSCS4642
USERID	M56305
CLASS	A
TITLE	
DEST	HACR705
NAME	M56305
ROOM	M563
BUILDING	
DEPARTMENT	
ADDRESS	
PRINT DATE	19 April 1998
PRINT TIME	14:46:11
PRINTER	HACR705
SYSTEM ID	MVSC

START

Well: 0015/09-019SR2

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
970716	1530	2300	7,50		MNMU	OK	OK	RIG MOVEMENT TO LOKE TEMPLATE 15/9
	2300	2400	1,00		MARU	OK	OK	ON LOCATION. STARTED ANCHOR HANDLING. DROPPED ANCHOR #3
970717	0000	0530	5,50		MARU	OK	OK	CONTINUED WITH ANCHOR HANDLING. ANCHOR #1 ON BOTTOM AT 0030 HRS - FAR SERVER. ANCHOR #10 ON BOTTOM 0040 HRS - NORMAN HUNTER. ANCHOR #7 ON BOTTOM 0220 HRS - FAR SERVER. ANCHOR #8 ON BOTTOM 0330 HRS - FAR SERVER. ANCHOR #4 ON BOTTOM 0500 HRS - NORMAN HUNTER. ANCHOR #11 ON BOTTOM 0530 HRS - RED ROOSTER
	0530	0600	,50		MARU	OK	OK	ANCHOR # 2 ON BOTTOM 0545 HRS - FAR SERVER ANCHOR # 11 ON BOTTOM 0600 HRS - RED ROOSTER
	0600	0800	2,00		MARU	OK	OK	COMPLETED ANCHOR-HANDLING: NO. 5 ON BOTTOM 0615 HRS.
	0800	1530	7,50		MNBU	OK	OK	BALLASTED RIG DOWN TO DRILLING DRAFT.
	1530	2130	6,00		MARU	OK	OK	PRE-TENSIONED ALL ANCHORS TO 140 T. HAD TO RE-SET ANCHOR NO. 1.
	2130	2300	1,50		DEOU	OK	OK	P/U THORT, R/U BOP TO TEST SPOOL AND RE-PERFORMED DUMMY RUN TO SET ORIENTATION.
	2300	2400	1,00		MNPU	OK	OK	MOVED RIG 20 M TO STB AND RIGGED DOWN BOP SET UP.
970718	0000	0100	1,00		MNPU	OK	OK	RIGGED DOWN BOP SET UP.
	0100	0600	5,00		DEOU	OK	OK	PREPARED FOR REMOVING HATCH FROM SLOT S3. LOWERED RETR. FRAME DOWN ONTO TEMPLATE BY USING CRANE. RE-POSITIONED RIG WHILE REMOVING TWO LOCKING BOLTS FROM HATCH BY USING ROV. RAN ROV-HOOK/SLINGS ON DP. CONN. TO RETR. FRAME. WORKED TO ENGAUGE RETR. FRAME INTO HATCH.
	0600	0900	3,00		DEOU	OK	OK	RETRIEVED PROTECION HATCH FROM SLOT S3. PARKED SAME ON TOP OF TEMPLATE STRUCTURE.
	0900	1100	2,00		DEOU	OK	OK	CONNECTED GUIDE-LINES ON POSTS NO. 2 AND NO. 3, ASSISTED BY ROV. POOH W/ DP AND SLINGS. MOVED RIG OFF LOCATION.
	1100	1200	1,00		DEOU	OK	OK	M/U CORROSION CAP RT ON DP.
	1200	1430	2,50		DEOU	OK	OK	MOVED RIG OVER LOCATION.
	1430	1830	4,00		DEOU	OK	OK	ATTEMPTED TO RETR. CORR. CAP ON DP. NEG. RAN RETR. TOOL ON TUGGER. RETRIEVED CORR. CAP ASSISTED BY ROV.
	1830	2030	2,00		DEOU	OK	OK	MOVED RIG OFF LOCATION.
	2030	2130	1,00		DTPU	OK	OK	P/U AND M/U FMC EMERGENCY HANGOFF TOOL. RACKED SAME IN DERRICK.
	2130	2400	2,50		DTPU	OK	OK	P/U 5" DP WHILE PREPARING BOP.
970719	0000	0600	6,00		DTPU	OK	OK	P/U 5" DP AND RACKED SAME IN DERRICK WHILE PREPARING/WORKING ON BOP: INSTALLED LATCH/UNLATCH INDICATOR ON BOP WH CONN. (FOR ROV VERIFIC.). PULLED YELLOW POD FROM LMRP RECEPTICLE AND INSTALLED PILOT LINES FOR ORIENTATION PIN OPERATION.
	0600	1400	8,00		DTPU	OK	OK	P/U 5" DP WHILE PREPARING/WORKING ON BOP.
	1400	1530	1,50		BBRU	OK	OK	R/U TO RUN BOP AND RISER.
	1530	1630	1,00		BBRU	OK	OK	P/U AND M/U 2 X 50 FT RISER JOINTS.
	1630	2400	7,50		BBRU	OK	OK	R/U TO RUN BOP: MOVED BOP FROM AFT POS. TO BELOW RT. MOVED LMRP FROM FWD POS. AND CONNECTED SAME TO BOP. DRESSED BOP W/GUIDE-LINES NO. 2 AND NO.3. FUNCTION TESTED BOP ON BOUTH PODS. CHECKED CONN. LATCH/UNLATCH. CHECKED FUNCT. OF ORIENTATION PIN (YELLOW POD). INST. BACON/SLOPE IND.
970720	0000	0330	3,50		BBRU	OK	OK	HELD SAFETY MEETING PRIOR RUNNING BOP. RAN BOP AND RISER.
	0330	0500	1,50		BBRU	OK	OK	P/U SLIP JOINT. M/U LANDING JOINT.
	0500	0600	1,00		BBRU	OK	OK	INSTALLED KILL-/CHOKE-LINES.
	0600	0700	1,00		BBRU	OK	OK	INSTALLED RUCKER RING ON RISER.
	0700	0800	1,00		BBRU	OK	OK	POSITIONED RIG OVER LOCATION.
	0800	0930	1,50		BBRU	OK	OK	ORIENTED BOP/TEMPLATE. LANDED/LATCHED BOP ONTO 18-3/4" WH AT 0930 HRS. TOOK 25 T OP.
	0930	1430	5,00		BBRU	OK	OK	CONN. HOSE SADLES AND POD REELS. RELEASED INNER BARREL. L/D LANDING JNT. INSTALLED DIVERTER. L/D RISER HANDLING TOOL. CHANGED BAILS AND ELEVATORS.
	1430	1630	2,00		BBDU	OK	OK	M/U WB TO R/T. RIH. LANDED IN WH. PRESS. TESTED KILL-/CHOKE LINES AND BOP CONN. TO 345 BAR.

	1630	1830	2,00		BHRD	FAIL	O FAIL	ATTEMPTED TO SET WB. NEGATIVE. POOH.
	1830	2000	1,50		BHRD	FAIL	O FAIL	M/U AND RIH W/ JET SUB. WASHED AND CLEANED WH AREA. POOH.
	2000	2100	1,00		BHRU	OK	OK	M/U BACK-UP WB TO R/T. RIH AND SET WB.
	2100	2400	3,00		DTPU	OK	OK	P/U AND M/U 8-1/2" ROTARY DRILLING BHA. P/U DC'S AS RIH.
970721	0000	0100	1,00		DTPU	OK	OK	CONT. M/U 8-1/2" BHA. TAGGED TOP CMT. AT 190 M (WASHED DOWN LAST STD).
	0100	0200	1,00	190,0	DCAU	OK	OK	DISPLACED WELL TO 1,38 SG BENTONITE MUD. FLUSHED KILL-/CHOKE LINES. RECORDED SCR. PERFORMED CHOKE-DRILL.
	0200	0600	4,00	215,0	DDOU	OK	OK	DRILLED HARD CMT INSIDE 9-5/8" CSG FROM 190 M TO 215 M.
	0600	2400	18,00	356,0	DDOU	OK	OK	DRILLED HARD CMT INSIDE 9-5/8" CSG FROM 215 M TO 356 M.
970722	0000	0530	5,50	402,0	DDOU	OK	OK	DRILLED HARD CMT INSIDE 9-5/8" CSG FROM 356 M TO 402 M. HIT 9-5/8"

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
970722	0000	0530	5,50	402,0	DDOU	OK	OK	BRIDGE-PLUG AT 402 M.
	0530	0600	,50	402,0	DDOU	OK	OK	DRILLED ON 9-5/8" BRIDGE-PLUG AT 402 M.
	0600	0800	2,00	403,0	DDOU	OK	OK	DRILLED OUT 9-5/8" BRIDGE-PLUG FROM 402 M TO 403 M.
	0800	0900	1,00	403,0	DCAU	OK	OK	BROKE THROUGH 9-5/8" BRIDGE-PLUG. CLOSED UAP. CIRC. B/U THROUGH CHOKE-LINE. NO GAS.
	0900	1730	8,50	3199,0	DTPU	OK	OK	RIH W/ 8-1/2" BIT FROM 403 M. P/U 81 JNTS 5" DP AS RIH. TOOK WT AT 3199 M (20 T).
	1730	1830	1,00	3200,0	DDOU	OK	OK	MILLED 1 M W/ 20 T WOB. NO PROGRESS BELOW 3200 M, INDIC. TOP OF LINER AT 3200 M.
	1830	1930	1,00	3200,0	DCAU	OK	OK	CIRC. BU.
	1930	2030	1,00	3000,0	PTTU	OK	OK	POOH W/ 8-1/2" BIT TO 3000 M.
	2030	2130	1,00		DERD	FAIL	E FAIL	REPAIRED ON DP ELEVATOR.
	2130	2400	2,50	1500,0	PTTU	OK	OK	POOH W/ 8-1/2" BIT FROM 3000 M TO 1500 M. SCRAPED INTERV. 2190-2210 M SEVERAL TIMES (PLANNED BRIDGE-PLUG SETTING DEPTH).
970723	0000	0300	3,00		PTTU	OK	OK	CONT. POOH W/ 8-1/2" BIT FROM 1500 M. RACKED BHA IN DERRICK.
	0300	0600	3,00	1000,0	PTTU	OK	OK	P/U AND M/U 6 STD 3-1/2" CMT STINGER. RIH W/ SAME TO 1000 M.
	0600	0830	2,50	3208,0	PTTU	OK	OK	RIH W/ 3-1/2" CMT STINGER FROM 1000 M TO 3208 M. TOOK WT.
	0830	0930	1,00	3208,0	PTTU	OK	OK	WORKED MULE-SHOW THROUGH RESTRICTION IN 7" LINER LAP.
	0930	1000	,50	3309,0	PTTU	OK	OK	CONT. RIH W/ 3-1/2" CMT STINGER FROM 3208 M TO 3309 M.
	1000	1200	2,00	3309,0	PCCU	OK	OK	CIRC. TO CONDITION MUD. DISPLACED HI-VIS PILL (1,38 SG) FROM 3309 M - 3259 M.
	1200	1230	,50	3259,0	PTTU	OK	OK	POOH W/ 3-1/2" CMT STINGER FROM 3309 M TO 3259 M. R/U TO CMT UNIT.
	1230	1300	,50	3259,0	PSSU	OK	OK	SET A BALANCED CMT PLUG FROM 3259 M - 3109 M AS FOLLOWS: PUMPED 5 M3 FW SPACER, MIXED AND PUMPED 4,63 M3 1,92 SG CMT SLURRY. PUMPED 1,7 M3 FW SPACER BEHIND. DISPLACED PLUG W/ 26 M3 BENT. MUD.
	1300	1430	1,50	3050,0	PTTU	OK	OK	POOH W/ CMT STINGER FROM 3259 M TO 3050 M.
	1430	1500	,50	3050,0	PCCU	OK	OK	REV. CIRCULATED STINGER VOLUM.
	1500	1600	1,00	2800,0	PTTU	OK	OK	POOH W/ 3-1/2" CMT STINGER FROM 3050 M TO 2800 M.
	1600	1630	,50	2800,0	PCCU	OK	OK	PLACED HI-VIS PILL FROM 2800 M TO 2300 M.
	1630	1730	1,00	2300,0	PTTU	OK	OK	POOH W/ 3-1/2" CMT STINGER FROM 2800 M TO 2300 M.
	1730	1830	1,00		PCCU	OK	OK	PREPARED TO DISPL. WELL TO 1,50 SG ULTIDRILL MUD, CLEANED RIG-FLOOR.
	1830	2200	3,50	2300,0	PCCU	OK	OK	DISPLACED WELL TO 1,50 SG ULTIDRILL MUD FROM 2300 M.
	2200	2400	2,00	750,0	PTTU	OK	OK	POOH W/ 3-1/2" CMT STINGER FROM 2300 M TO 750 M.
970724	0000	0130	1,50		PTTU	OK	OK	CONT. POOH W/ 3-1/2" CMT STINGER FROM 750 M. RACKED SAME IN DERRICK.
	0130	0300	1,50		PWUU	OK	OK	R/U ATLAS WIRELINE.
	0300	0500	2,00		DEOD	FAIL	E FAIL	RIH W/ 9-5/8" BRIDGE-PLUG ON ATLAS WIRELINE. CCL QUIT WORKING. POOH. CHANGED OUT CCL.
	0500	0600	1,00		PWUU	OK	OK	RIH W/ 9-5/8" BRIDGE-PLUG ON ATLAS WIRELINE.
	0600	0800	2,00	750,0	DEOD	FAIL	E FAIL	ATLAS WIRELINE RIH WITH 9 5/8" BRIDGE-PLUG. CCL FAILED AGAIN AT 750M. POOH WITH BRIDGE-PLUG; OUT OF HOLE AT 0715 HRS. ATLAS REPAIRED CCL PROBLEM.
	0800	1200	4,00	2200,0	DEOD	FAIL	E FAIL	RIH WITH BRIDGE-PLUG ON ATLAS E/LINE TO 2200 M. ELECTRICAL PROBLEM PREVENTED BAKER SETTING TOOL FROM SETTING BRIDGE-PLUG. POOH WITH BRIDGE-PLUG; OUT OF HOLE AT 1140 HRS.
	1200	2030	8,50		DEOD	FAIL	E FAIL	ATLAS WORKED ON TROUBLESHOOTING PROBLEM WITH SETTING TOOL.RETERMINATED CABLE HEAD. FLEW SETTING TOOL FIRING HEAD OUT TO RIG; REPLACED SAME. ATLAS CHECKED TOOL & MU 9 5/8" BRIDGE-PLUG.
	2030	2400	3,50	2203,0	PWUU	OK	OK	RIH WITH BRIDGE-PLUG ON E/LINE. LOCATED CASING COLLAR & SET TOP OF BRIDGE-PLUG 1,5 M BELOW COLLAR - AT 2203 M. POOH WITH E/LINE & SETTING TOOL. WITH B/S RAMS CLOSED, STARTED PRESSURING-UP ON 9 5/8" X 10 3/4" STRING WHILE RD ATLAS E/LINE.
970725	0000	0030	,50		PWUU	OK	OK	PRESSURE TESTED 9 5/8" CASING + BRIDGE-PLUG TO 345 BAR FOR 10 MINUTES.

DBR

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Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
970725	0030	0600	5,50	500,0	DTAK	OK	OK	MU BAKER WINDOWMASTER WHIPSTOCK + MILLING ASSEMBLY & ASSOCIATED BHA. CONTINUE TIH WITH DP.
	0600	1000	4,00	2211,0	DTAK	OK	OK	CONTINUED TIH WITH WINDOWMASTER WHIPSTOCK & MILLING ASSEMBLY. TAGGED 9 5/8" BRIDGE-PLUG AT 2211 M DPM.
	1000	1200	2,00	2211,0	DDSU	OK	OK	ORIENTED WHIPSTOCK USING MWD. SET ANCHOR ON WHIPSTOCK.
	1200	1800	6,00	2207,0	DDSU	OK	OK	CUT WINDOW IN 9 5/8" CASING USING WHIPSTOCK. TOP OF WINDOW = 2202 M MD - BOTTOM OF WINDOW = 2207 M MD. PUMPED 5 M3 HI-VIS PILL WHILE MILLING AT 2205 M.
	1800	2100	3,00	2213,0	DDSU	OK	OK	DRILLED/MILLED NEW FORMATION FROM 2207 - 2213 M. PUMPED 5 M3 HI-VIS PILL WHILE DRILLING AT 2208 M.
	2100	2300	2,00	2213,0	DDSU	OK	OK	REAMED WINDOW. AFTER APPROXIMATELY 20 TIMES, STILL UNABLE TO GO DOWN THROUGH WINDOW WITHOUT ROTATING - BASED ON USING MAXIMUM OF 12 MT WEIGHT. REAMED 5 ADDITIONAL TIMES - NOW ABLE TO SLACK-OFF & PICK-UP THROUGH WINDOW WITHOUT HAVING TO ROTATE STRING.
	2300	2400	1,00	2196,0	DCAU	OK	OK	PUMPED 10 M3 HI-VIS PILL & CIRCULATED HOLE CLEAN AT 2000 LPM.
970726	0000	0030	,50	2196,0	DCAU	OK	OK	COMPLETED CIRCULATING HOLE CLEAN. FLUSHED CHOKE & KILL LINES.
	0030	0300	2,50	1110,0	DTAK	OK	OK	FLOW CHECKED, PUMPED SLUG & POOH TO PU DRILLING BHA.
	0300	0400	1,00	1110,0	DERD	FAIL	E FAIL	BURST HYDRAULIC HOSE ON UPPER RACKING ARM - REPAIRED SAME.
	0400	0600	2,00		DTAK	OK	OK	CONTINUED TO POOH WITH MILLING ASSEMBLY.
	0600	0630	,50		DTAK	OK	OK	COMPLETED LD MILLING ASSEMBLY.
	0630	0900	2,50	173,0	DTAK	OK	OK	MU DRILLING BHA; MOTOR TESTED OK.
	0900	1000	1,00	800,0	DTAK	OK	OK	TIH WITH BHA TO 800 M.
	1000	1030	,50	800,0	DERD	FAIL	E FAIL	ATTEMPTED TO PERFORM WEEKLY BOP FUNCTION TEST USING YELLOW POD. NO FUNCTION OF EITHER ANNULAR POSSIBLE.
	1030	1300	2,50	2193,0	DTAK	OK	OK	CONTINUED TO TIH TO 2193 M WHILE PULLING YELLOW POD.
	1300	1700	4,00	2193,0	DERD	FAIL	E FAIL	FOUND CRIMPED PILOT LINE IN POD HOSE. CHANGED PILOT LINE FOR ANNULARS' REGULATOR. RERAN YELLOW POD & LATCHED-UP.
	1700	1730	,50	2193,0	BBDU	OK	OK	FUNCTION TESTED BOPS USING YELLOW POD - FROM RIG FLOOR PANEL.
	1730	1830	1,00	2213,0	DDJD	FAIL	O FAIL	ORIENTED BIT/MOTOR & SLACKED-OFF THROUGH WINDOW.REAMED F/2208-2212M. STARTED DRILLING-SPP INCREASED 35BAR&TDS STALLED @16300NM.FREED STUCK STRING USING 32 MT O/PULL-TORQUE STILL TRAPPED IN STRING.WHILE PULLING PAST 2207M W/BIT,SPP INCREASED AGAIN.FREED BIT PAST 2207M USING 55 MT O/PULL.THEN ABLE TO RELEASE TORQUE IN STRING ONCE ABOVE 2202M.
	1830	1930	1,00	2202,0	DDOD	FAIL	O FAIL	ATTEMPTED SEVERAL TIMES TO PASS THROUGH WINDOW - UNABLE TO GO BELOW 2202 M - TOP OF WINDOW IN 9 5/8" CASING.
	1930	2400	4,50		DTAK	FAIL	O FAIL	FLOW CHECKED, PUMPED SLUG & POOH WITH DRILLING BHA. BIT WAS DAMAGED - 6 OUT OF 9 BLADES ON BIT WERE DAMAGED/BROKEN. NO OTHER DAMAGE TO BHA COMPONENTS NOTED.
970727	0000	0600	6,00	2202,0	DTAK	OK	OK	MU MILLING BHA & TIH TO WHIPSTOCK.
	0600	0900	3,00	2205,0	DDOD	FAIL	O FAIL	MILLED FROM 2202-2205 M. DECREASE IN ROP - NOT MAKING ANY PROGRESS IN MILLING THROUGH WINDOW.
	0900	1330	4,50		DTAK	FAIL	O FAIL	FLOWCHECKED, PUMPED SLUG & POOH WITH MILLING BHA.
	1330	1830	5,00	2187,0	DTAK	OK	OK	TIH TO 2187 M WITH 9 5/8" BRIDGE PLUG ON DP.
	1830	1930	1,00	2187,0	DEOU	OK	OK	SET BRIDGE PLUG AT 2187 M L.A.T. CONFIRMED SETTING BY SLACKING-OFF 10 MT DOWN ON PLUG.
	1930	2030	1,00	2187,0	DCAU	OK	OK	PUMPED 10 M3 HI-VIS PILL & CIRCULATED OUT.
	2030	2400	3,50		DTAK	OK	OK	FLOWCHECKED, PUMPED SLUG & POOH WITH EZSV M.S.T.
970728	0000	0600	6,00	600,0	DTAK	OK	OK	MU BAKER WINDOWMASTER WHIPSTOCK ASSEMBLY. TIH WITH BHA ON DP.
	0600	1000	4,00	2170,0	DTAK	OK	OK	COMPLETED TIH WITH WHIPSTOCK TO 2170 M.
	1000	1100	1,00	2170,0	SCAD	FAIL	M LOSS	ATTEMPTED TO CIRCULATE; STRING PLUGGED. RU & REVERSE CIRCULATED 1 DRILLSTRING VOLUME & UNPLUGGED STRING.
	1100	1230	1,50	2187,0	SDSD	OK	OK	ORIENTED WHIPSTOCK USING MWD. SET ANCHOR ON WHIPSTOCK.
	1230	2100	8,50	2183,0	SDSD	OK	OK	CUT WINDOW IN 9 5/8" CASING USING WHIPSTOCK. TOP OF WINDOW = 2178 M; BOTTOM OF WINDOW = 2183 M. FLOW RATE = APPROX. 1000 LPM AT 74 BAR.
	2100	2400	3,00	2198,0	SDSD	OK	OK	DRILLED/MILLED NEW FORMATION FROM 2183 - 2198M. FLOW RATE = 1500 LPM AT 125 BAR.

970729	0000	0100	1,00	2202,0	SDSD	OK	OK	FINISHED DRILLING TO 2202 M - TOTAL OF 19 M OF FORMATION DRILLED BEYOND WINDOW'S BOTTOM. PU & SO THROUGH WINDOW 5 TIMES - NO PROBLEMS.
	0100	0230	1,50	2175,0	DCAU	OK	OK	PU ABOVE TOP OF WINDOW & PUMPED 5 M3 HI-VIS PILL. CIRCULATED HOLE CLEAN AT 2000 LPM AT 195 BAR. FLUSHED CHOKE & KILL LINES & BOOSTED RISER.
	0230	0600	3,50	100,0	DTAK	OK	OK	POOH TO MU DRILLING BHA.
	0600	0700	1,00		DTAK	OK	OK	FINISHED HANDLING WHIPSTOCK/MILLING BHA.
	0700	1030	3,50	430,0	DTAK	OK	OK	MU DRILLING BHA & TIH TO 430 M WITH NEW 8 1/2" PDC BIT.
	1030	1130	1,00	430,0	DEOU	OK	OK	S/C DRILLINE.
	1130	1230	1,00	430,0	DERD	FAIL	E FAIL	ELECTRICAL PROBLEM WITH TOP DRIVE SYSTEM; REPAIRED SAME.

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
970729	1230	1630	4,00	2161,0	DTAK	OK	OK	CONTINUED TO TIH TO 2161 M.
	1630	1700	,50	2161,0	DTAK	OK	OK	ORIENTED TOOL-FACE.
	1700	1730	,50	2190,0	DTAK	OK	OK	RIH SLOWLY-NO ROTATION OR CIRCULATION-FROM 2161 - 2190 M. WINDOW IN CASING FROM 2178 - 2183 M. MADE CHECK TRIP TO 2175 M; NO PROBLEMS PASSING THROUGH WINDOW.
	1730	1800	,50	2202,0	DTAK	OK	OK	BROKE CIRCULATION. WASHED DOWN FROM 2190 - 2202 M / TD.
	1800	2400	6,00	2311,0	DDTU	OK	OK	DRILLED/ORIENTED 8 1/2" HOLE FROM 2202 - 2311 M.
970730	0000	0600	6,00	2405,0	DDTU	OK	OK	DRILLED/ORIENTED 8 1/2" HOLE FROM 2311 - 2405 M.
	0600	1900	13,00	2653,0	DDTU	OK	OK	DRILLED/ORIENTED 8 1/2" HOLE FROM 2405-2653 M.
	1900	2000	1,00	2653,0	DCAU	OK	OK	CIRCULATED TO CLEAN HOLE.
	2000	2400	4,00	2711,0	DDTU	OK	OK	DRILLED/ORIENTED 8 1/2" HOLE FROM 2653 - 2711 M.
970731	0000	0600	6,00	2768,0	DDTU	OK	OK	DRILLED/ORIENTED 8 1/2" HOLE FROM 2711 - 2768 M. HAD PROBLEMS TURNING WELLPATH TO THE RIGHT.
	0600	0700	1,00	2768,0	DCAU	OK	OK	CIRCULATED HOLE CLEAN IN PREPARATION FOR TRIP OUT.
	0700	1530	8,50		DTAK	OK	OK	POOH FOR BHA CHANGE DUE TO DIRECTIONAL PROBLEM - NOT ENOUGH TURN TO RIGHT IN AZIMUTH. NOTE-NO PROBLEM IN TOH THROUGH 9 5/8" CASING WINDOW. UNABLE TO DOWNLOAD MEMORY FROM MWD AFTER TRYING FOR 1 HOUR.
	1530	2130	6,00	2768,0	DTAK	OK	OK	INCREASED AKO MOTOR FROM 1,2 DEGREES TO 1,5 DEGREES & MU INSERT BIT FOR DIRECTIONAL REASON/CONTROL. TIH TO 2768 M -TD. NOTE-TOOK 5 MT WEIGHT TO PASS THROUGH WINDOW WITH MOTOR/BIT.
	2130	2300	1,50	2768,0	DCAU	OK	OK	CIRCULATED HOLE CLEAN IN PREPARATION FOR RUNNING GYRO SURVEY INSIDE OF DRILLSTRING. (CIRCULATION RATE = 2500 LPM AT 290 BAR.) NOTE: PREPARED/RU TO RUN GYRO WHILE CIRCULATING.
	2300	2400	1,00	2768,0	DUSU	OK	OK	CONTINUED CIRCULATING WHILE RU TO RUN GYRO.
970801	0000	0030	,50	2768,0	DUSU	OK	OK	CONTINUED CIRCULATING WHILE RU TO RUN GYRO.
	0030	0530	5,00	2768,0	DUSU	OK	OK	MU SIDE-ENTRY SUB INTO DRILLSTRING & RIH WITH GYRO ON ATLAS E/LINE. BIT 1 JOINT OFF BOTTOM DURING SURVEY. RAN GYRO FROM 1880 TO 2710 M. POOH WITH GYRO & RD SIDE-ENTRY SUB.
	0530	0600	,50	2771,0	DDTU	OK	OK	DRILLED FROM 2768 - 2771 M / SLIDING.
	0600	1330	7,50	2783,0	DDTU	OK	OK	DRILLED FROM 2771-2783 M. DECREASE IN ROP - TOOK APPROX. 2,5 HRS. TO DRILL LAST METER.
	1330	1500	1,50	2190,0	DTAK	OK	OK	FLOW CHECKED & PUMPED SLUG. POOH TO 2190 M WITH NO PROBLEMS.
	1500	1600	1,00	2190,0	DDOD	FAIL	C LOSS	CIRCULATED W/2500LPM & ORIENTED TOOLFACE PRIOR TO PULLING THROUGH CSG. WINDOW. HOLE PACKED-OFF & STRING TORQUED-UP & LOST CIRC-STRING STUCK 2 MIN. WORKED STRING FREE BY GOING DOWNWARDS;MAX WEIGHT SLACKED-OFF=40 MT. ESTABLISHED CIRCULATION AT 600 LPM.
	1600	1930	3,50	2199,0	DDOD	FAIL	C LOSS	WORKED STRING DOWN TO 2199 M BIT DEPTH - 16 M BELOW WINDOW'S BOTTOM. HOLE PACKED-OFF;LOST CIRCULATION SEVERAL TIMES. ATTEMPTED TO ESTABLISH CIRCULATION - IN STEPS - AT DIFFERENT FLOW RATES WHILE ROTATING AT 80-120 RPM / PROBLEMS =PACKING-OFF,LOST CIRCULATION, TORQUING-UP OF DRILLSTRING. TORQUE WOULD INCREASE & THEN RETURNS WOULD BE LOST.
	1930	2030	1,00	2167,0	DDOD	FAIL	C LOSS	FINALLY ESTABLISHED CIRCULATION WITH FULL RETURNS AT 1860 LPM/164 BAR. STARTED MOVING UPWARDS TOWARD WINDOW-STOPPED AT 2188 M. ORIENTED TOOL-FACE & THEN FLOW CHECKED. STARTED PULLING UP WHILE PUMPING AT 450 LPM-LOSING CIRCULATION AGAIN. STOPPED PUMPING & CONTINUED POOH-PULLED THROUGH WINDOW WITH NO ROTATING/PUMPING WITH MAXIMUM DRAG = 5 MT.
	2030	2400	3,50	540,0	DTAK	OK	OK	AT 2167 M - FLOW CHECKED FOR 15 MINUTES; HOLE STATIC. FLUSHED CHOKE & KILL LINES & BOOSTED RISER CLEAN. CONTINUED TO POOH WITH BHA.
970802	0000	0130	1,50		DTAK	OK	OK	COMPLETED POOH.INSERT BIT WAS CORED-OUT.
	0130	0600	4,50	106,0	BBDU	OK	OK	RAN BOP TEST TOOL TO WELLHEAD.TESTED PIPE RAMS & FAIL SAFE VALVES TO 20/345 BAR; TESTED BOTH ANNULARS TO 20/241 BAR. TESTED ON YELLOW POD. FUNCTION TESTED ON BLUE POD - FROM SUBSEA CONTROL ROOM.
	0600	0630	,50		BBDU	OK	OK	COMPLETED POOH WITH BOP TEST TOOL.
	0630	0900	2,50	752,0	DTAK	OK	OK	MU SLICK BHA FOR CHECK TRIP & TIH TO 752 M.

0900	1100	2,00	752,0	BBDU	OK	OK	TESTED 2-TDS SAFETY VALVES & 1-KELLY COCK TO 35/345 BAR -5/10 MINUTES.
1100	1400	3,00	2081,0	DTAK	OK	OK	CONTINUED TO TIH TO 2081 M.
1400	1530	1,50	2183,0	DTAK	OK	OK	ESTABLISHED CIRC AT 2500 LPM.WASHED DOWN TO CASING WINDOW. RAN THROUGH WINDOW & PU THROUGH WINDOW WITHOUT PUMPING - NO PROBLEMS. CIRCULATED AT 1500 LPM & ROTATED AT 50 RPM & RAN THROUGH WINDOW - NO PROBLEM.
1530	1630	1,00	2207,0	DCRK	OK	OK	CONTINUED TIH; TOOK WEIGHT AT 2207 M. REAMED FROM 2207 - 2245 M; TIGHT HOLE FROM 2207 - 2226 M. HAD TENDENCY OF PACKING-OFF. 16300 NM= MAXIMUM TORQUE EXPERIENCED.
1630	1830	2,00	2783,0	DTAK	OK	OK	CONTINUED TIH; WASHED DOWN LAST 38 M TO TD - 2783 M. 0,5 M OF FILL ON BOTTOM.

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970802	1830	2000	1,50	2783,0	DCAU	OK	OK	CIRCULATED AT 2500 LPM - 204 BAR - TO CLEAN HOLE. WORKED BIT ON BOTTOM BECAUSE OF PREVIOUS BIT'S CONDITION. EXCESSIVE AMOUNT OF CUTTINGS BACK DURING CIRCULATION; AFTER BOTTOMS UP, CAVINGS STARTED TO RETURN TO SURFACE.
	2000	2230	2,50	2783,0	DCAU	OK	OK	INCREASED MUD WEIGHT FROM 1,50 SG TO 1,54 SG WHILE CIRCULATING AT 2200 LPM. AFTER 1,54 MUD AROUND, INCREASED FLOW RATE TO 2500 LPM - 210 BAR - WITH NO LOSSES.
	2230	2400	1,50	2231,0	DTAK	OK	OK	FLOW CHECKED, PUMPED SLUG & POOH TO MU DRILLING BHA.
970803	0000	0100	1,00	2231,0	DCAU	OK	OK	WITH TOP OF DCS 10M BELOW WINDOW, CIRCULATED BOTTOMS UP AT 2231 M BIT DEPTH. 2000 LPM = 127 BAR. NO UNUSUAL AMOUNT OF CUTTINGS AT SHAKERS.
	0100	0430	3,50		DTAK	OK	OK	CONTINUED POOH - MAXIMUM DRAG THROUGH WINDOW = 2,25 MT.
	0430	0600	1,50	340,0	DTAK	OK	OK	MU NEW INSERT BIT - EHP43AFLDK - & MU SLICK DRILLING BHA WITH MOTOR & MWD.
	0600	1100	5,00	2783,0	DTAK	OK	OK	RIH TO 2160M. ESTABLISHED CIRC WITH 2500 LPM AND ORIENTED TOOLFACE. RUN THROUGH WINDOW WITH NO ROTATION OR CIRCULATION AND CONTINUED RIH WITH NO PROBLEMS. WASHED LAST STAND TO TD.
	1100	2400	13,00	2970,0	DDTU	OK	OK	DRILLED AND ORIENTED 8 1/2" HOLE FROM 2783 - 2970 M.
970804	0000	0600	6,00	3052,0	DDTU	OK	OK	DRILLED AND ORIENTED 8 1/2" HOLE FROM 2970 M - 3052 M.
	0600	0630	,50	3057,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3052 - 3057 M / ROTATING.
	0630	0930	3,00	3057,0	DCAU	OK	OK	CIRCULATED HOLE CLEAN & BOOSTED RISER. HAD EXCESSIVE AMOUNT OF CUTTINGS OVER THE SHAKERS.
	0930	1130	2,00	2707,0	DCWK	OK	OK	MADE SHORT TRIP TO 2707 M & RIH TO TD - WASHED DOWN LAST STAND TO TD - NO PROBLEMS.
	1130	1230	1,00	3057,0	DCWK	OK	OK	CIRCULATED HOLE CLEAN & BOOSTED RISER. SHORT TRIP GAS=4,38% CORRECTED.
	1230	1500	2,50	2253,0	DTAK	OK	OK	POOH TO 2253 FOR BIT & BHA CHANGE.
	1500	1630	1,50	2253,0	DCAU	OK	OK	WITH TOP OF DCS 10 M BELOW CASING WINDOW, CIRCULATED BOTTOMS UP AT 2000 LPM. ORIENTED TOOLFACE AT 55 DEGREES & PULLED THROUGH WINDOW WITH NO OVERPULL.
	1630	1930	3,00		DTAK	OK	OK	COMPLETED POOH.
	1930	2400	4,50	1270,0	DTAK	OK	OK	MU NEW PDC BIT WITH STABILIZED DRILLING BHA; PU NEW MOTOR DUE TO WEAR. TIH TO 1270 M.
970805	0000	0200	2,00	2135,0	DTAK	OK	OK	CONTINUED TO TIH TO 2135 M.
	0200	0300	1,00	2210,0	DDOU	OK	OK	FILLED DRILLSTRING. CIRCULATED AT 1985 LPM /196 BAR ; ORIENTED BIT TO 65 DEG. RIGHT & RIH THROUGH CASING WINDOW.
	0300	0430	1,50	3057,0	DTAK	OK	OK	COMPLETED TIH TO TD-3057 M. WASHED LAST STAND TO BOTTOM - NO FILL.
	0430	0600	1,50	3057,0	DCAU	OK	OK	TOOK SCRS. INCREASE IN GAS TO 6,9 % - CORRECTED. COMPLETED CIRCULATING BOTTOMS UP PRIOR TO DRILLING. GAS DECREASED TO 0,5 %. STARTED DRILLING 8 1/2" HOLE AT 0546 HRS.
	0600	2400	18,00	3369,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3057 - 3369 M.
970806	0000	0130	1,50	3379,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3369 - 3379 M. HAD INCREASING AMOUNT OF CAVINGS IN RETURNS.
	0130	0330	2,00	3379,0	DCAU	OK	OK	CIRCULATED UNTIL SHAKERS CLEANED-UP BECAUSE OF INCREASE IN HOLE DRAG. BOOSTED RISER & FLUSHED CHOKE/KILL LINES. FLOW RATE = 2500 LPM. NOTE: EXCESSIVE AMOUNT OF CUTTINGS TO SURFACE; TOOK 3 BOTTOMS UP FOR SHAKERS TO CLEAN-UP.
	0330	0600	2,50	3390,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3379 - 3390 M.
	0600	1700	11,00	3494,0	DDTU	OK	OK	DRILLED 8 1/2'' HOLE FROM 3390 - 3494 M.
	1700	1800	1,00	3494,0	DCAU	OK	OK	CIRCULATED UNTIL SHAKERS CLEANED UP BECAUSE OF INCREASE IN TORQUE + DRAG AND INCREASE OF PRESENCE OF CASINGS. BOOSTED RISER.
	1800	2400	6,00	3550,0	DDTU	OK	OK	DRILLED 8 1/2'' HOLE FROM 3494 - 3550 M.
970807	0000	0030	,50	3552,0	DDTU	OK	OK	DRILLED 8 1/2'' HOLE FROM 3550 - 3552 M.
	0030	0200	1,50	3552,0	DCAU	OK	OK	CIRCULATED UNTIL SHAKERS CLEANED UP BECAUSE OF INCREASE IN DRAG + IN PREPARATION TO ORIENT. BOOSTED RISER. NOTE: EXCESSIVE AMOUNT OF LARGE CASINGS TO SURFACE; TOOK 2.5 X

								BOTTOMS UP FOR SHAKERS TO CLEAN UP.
	0200	0600	4,00	3573,0	DDTU	OK	OK	DRILLED 8 1/2'' HOLE FROM 3552 - 3573 M. UNABLE TO STEER DUE TO HANGING UP ON STABILIZERS AND FREQUENT STALLING PROBLEMS.
	0600	1500	9,00	3632,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3573M TO 3632M. UNABLE TO STEER TO ACHIVE TARGET.
	1500	1730	2,50	3632,0	DCAU	OK	OK	CIRC HOLE CLEAN. DROP CARBIDE, EST HOLE SIZE 10,47 IN. CAVINGS RATE AT 100 L/HR AFTER CIRC 1,5 BTM UP. BOOSTED RISER.
	1730	2400	6,50		DTAK	OK	OK	FLOW CHECK 10 MIN, OK. PUMP SLUG. POOH. WELL SLICK. FLOW CHECK INSIDE SHOE AND BEFORE BHA ENTERED BOP. L/DOWN 1 DC, 2 STABILIZERS AND BIT.
970808	0000	0330	3,50	1040,0	DTAK	OK	OK	MADE UP NEW BIT, SET AKO TO 1,5 DEGR TILT, UNLOAD MWD AND M/UP NEW JAR

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
970808	0000	0330	3,50	1040,0	DTAK	OK	OK	AND RIH TO 1040M.
	0330	0400	,50	1040,0	DTAK	OK	OK	FILL DRILL PIPE AND TEST MWD. FAIL TO GET SIGNALS FROM MWD. RE-BOOT MWD COMPUTER AND GOT SIGNALS OK.
	0400	0530	1,50	2160,0	DTAK	OK	OK	CONTINUE RIH TO 2160M.
	0530	0600	,50	2160,0	DEOU	OK	OK	SLIP AND CUT DRILLING LINE.
	0600	0630	,50	2160,0	DEOU	OK	OK	CONTINUED TO SLIP AND CUT 33,5M DRILLING LINE.
	0630	0700	,50	2185,0	DTAK	OK	OK	ORIENTED TOOL FACE AND ENTERCSG WINDOW. P/UP 4-5 T DRAG OUTSIDE WINDOW
	0700	1030	3,50	3632,0	DTAK	OK	OK	RIH TO 3612M. WASHED DOWN TO BTM AT 3632M.
	1030	1430	4,00	3653,0	DDTU	OK	OK	DRILL 8 1/2" HOLE IN ORIENTED MODE FROM 3632 TO 3653M. NO SIGNALS FROM MWD.
	1430	1630	2,00	2653,0	DEMD	FAIL	E FAIL	CIRC UNTIL SHAKERS CLEARED UP. BOOSTED RISER.
	1630	1830	2,00	2700,0	DEMD	FAIL	E FAIL	FLOW CHECK, OK. PUMP SLUG. POOH TO CHANGE MWD.
	1830	1900	,50	2700,0	DEMD	FAIL	E FAIL	ATTEMPT TO GET COMMUNICATION WITH MWD WITHOUT SUCCESS.
	1900	2100	2,00	1220,0	DEMD	FAIL	E FAIL	PUMP SLUG. POOH. GOT 15 T DRAG AT 1220M.
	2100	2130	,50	1220,0	DEMD	FAIL	E FAIL	CIRC 1,25 BTM UP AT 1220M. BOOST RISER. GOT FAIR AMOUNT OF LARGE SIZE TYPE CAVINGS OVER SHAKERS.
	2130	2400	2,50		DEMD	FAIL	E FAIL	FLOW CHECK, OK CONTINUE POOH AND L/DOWN MWD AND BIT. START RELOAD NEW MWD.
970809	0000	0030	,50		DEMD	FAIL	E FAIL	CONTINUE CHANGE MWD AND LOAD SAME. M/UP NEW BIT.
	0030	0400	3,50	2160,0	DEMD	FAIL	E FAIL	RIH TO CSG WINDOW AT 2160M. TESTED MWD OK AT 1000M.
	0400	0430	,50	2185,0	DEMD	FAIL	E FAIL	FILL PIPE AND ORIENTED TOOL FACE AND ENTER INTO CSG WINDOW WITHOUT OBSTRUCTIONS.
	0430	0600	1,50	3056,0	DEMD	FAIL	E FAIL	CONTINUED RIH TO CURRENT DEPTH 3085M.
	0600	0800	2,00	3653,0	DEMD	FAIL	E FAIL	CONTINUED RIH TO 3640M. WASH TO BTM AT 3653M. NO FILL.
	0800	1130	3,50	3673,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3653 - 3673M. FLOW CHECK DRILLING BREAK AT FROM 3670M - 3673M.
	1130	1230	1,00	3673,0	DCAU	OK	OK	CIRC FOR GEOLOGHICAL SAMPLES.
	1230	1900	6,50	3724,0	DDTU	OK	OK	CONTINUED DRILLING FROM 3673M - 3724M. FLOW CHECK AT 3717M.
	1900	2000	1,00	3724,0	DCAU	OK	OK	CIRC FOR GEOLOGHICAL SAMPLES.
	2000	2400	4,00	3752,0	DDTU	OK	OK	CONTINUED DRILLING FROM 3724M - 3752M.
970810	0000	0600	6,00	3783,0	DDTU	OK	OK	CONTINUED DRILLING F/3752 - 3783M. USED CONSTANT PARAMETERS TO SPOT DRILLING BREAK.
	0600	0830	2,50	3799,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3783M - 3799M. DRILLING BREAK 3796 - 3799M.
	0830	1000	1,50	3799,0	ECSU	OK	OK	CIRC FOR GEOLOGICAL SAMPLES. BOOSTED RISER.
	1000	1230	2,50	3810,0	DDTU	OK	OK	CONTINUED DRILLING FROM 3799M - 3810M.
	1230	1400	1,50	3810,0	ECSU	OK	OK	CIRC FOR GEOLOGICAL SAMPLES. BOOSTED RISER.
	1400	1530	1,50	3820,0	DDTU	OK	OK	CONTINUED DRILLING FROM 3810M - 3820M.
	1530	1600	,50	3820,0	ECSU	OK	OK	CIRC FOR GEOLGICAL SAMPLE.
	1600	1700	1,00	3823,0	DDTU	OK	OK	CONTINUED DRILLING FROM 3820M - 3823M.
	1700	1830	1,50	3823,0	DCAU	OK	OK	CIRC HOLE CLEAN. BOOSTED RISER.
	1830	2400	5,50	978,0	DTBK	OK	OK	FLOW CHECK, OK. PUMP SLUG AND POOH. HOLE IN GOOD CONDITION.
970811	0000	0130	1,50		DTBK	OK	OK	CONTINUED POOH TO SURFACE.
	0130	0200	,50		DTBK	OK	OK	CHANGED BIT. SET AKO TO 0,6 DEGR. FUNCTION TEST SHEAR RAM FROM YELLOW POD.
	0200	0230	,50		ELOU	OK	OK	DUMP MEMORY ON MWD.
	0230	0330	1,00	340,0	DTBK	OK	OK	RIH TO GET BHA BELOW BOP.
	0330	0400	,50	340,0	BBDU	OK	OK	TEST BOP FUNCTIONS FROM YELLOW POD. ALL OK.
	0400	0600	2,00	2004,0	DTBK	OK	OK	CONTINUED RIH TO CURRENT DEPTH 2004M. FILL PIPE, TESTED MWD AT 1000M .
	0600	0930	3,50	3823,0	DTBK	OK	OK	CONTINUED RIH. BREAK CIRC AND WASH LAST STAND TO BTM. CIRC TO CLEAR STEEL DEBRIS OFF BTM.
	0930	1200	2,50	3837,0	DDTU	OK	OK	DRILLED 8 1/2" HOLE FROM 3823M - 3837M. MWD INDICATE SAND AT 3822M
	1200	1400	2,00	3837,0	ECSU	OK	OK	CIRC FOR GEOLOGICAL SAMPLES.
	1400	2030	6,50		DTRU	OK	OK	FLOW CHECK, OK. PUMP SLUG. POOH. FLOW CHECKED AT 2163M AND WITH BHA BELOW BOP.
	2030	2100	,50		DTRU	OK	OK	LAYED OUT BIT AND DOWNLOADED MWD.
	2100	2330	2,50		ETCU	OK	OK	MADE UP 27M COREBARREL AND PDC CORHEAD.

	2330	2400	,50	100,0	ETCU	OK	OK	STARTED TO RIH WITH CORING BHA.
970812	0000	0430	4,50	3212,0	ETCU	OK	OK	CONT RIH WITH CORING BHA. FILL PIPE AT CSG WINDOW. RIH PASS WINDOW AND PULL BACK INTO CSG WITH COREBARREL, OK. CONT RIH TO 3212M. WORK AWAY 15T OBSTRUCTION AT 3008M AND 3174M. DID NOT GET CORRECT AMOUNT OF MUD IN RETURNS.
	0430	0500	,50	3212,0	EROD	OK	OK	BREAK CIRC AND FILLED PIPE TOO EARLY. FLOAT VALVE NOT OPERATING CORRECT. CIRC 1 STRING CONTENT AND GOT 6.6% GASPEAK FROM 65M. FLOW CHECK, OK.
	0500	0600	1,00	3303,0	ETCU	OK	OK	CONTINUE RIH. STOOD UP WITH 15T AT 3287M. REAMED OBSTRUCTION. CONT RIH AND STODD UP AT 3303M. CURRENTLY REAMING AWAY OBSTRUCTION.

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
970812	0600	1630	10,50	3820,0	ETCU	OK	OK	WASH AND REAM TIGHT HOLE FROM 3303 - 3820M WITH COREBARREL BHA.
	1630	1800	1,50	3820,0	ECFU	OK	OK	CIRCULATED BTMS UP AT 3820M.
	1800	2000	2,00	3837,0	ETCU	OK	OK	CONTINUED WASH AND REAM TIGHT HOLE FROM 3820M - 3837M.
	2000	2030	,50	3837,0	ECFU	OK	OK	TAG BTM AND SPACED OUT. DROP BALL AND SEATED SAME WITH 14 BAR OVER PRESSURE. TAKE SCR'S.
	2030	2400	3,50	3849,0	ERCU	OK	OK	START CORING FROM 3837-3849M. STALLED OUT ON BTM TWICE DURING FIRST 2M CORING. PULLED OFF BTM AND RE-STARTED.
970813	0000	0130	1,50	3854,0	ERCU	OK	OK	CONTINUED CUT CORE FROM 3849 - 3854M. CORE JAMMED, TORQUE DROPPED OFF AND PRESSURE DEGREASED. ATTEMPT TO RESTART CORING, NOT ABLE TO OBTAIN TORQUE ON BTM.
	0130	0600	4,50	1244,0	ETCU	OK	OK	FLOW CHECK, OK. PUMP SLUG AND POOH. HAD 15T OVER PULL AT 3278 AND 3269M. FLOW CHECKED INSIDE CSG WINDOW, OK. CONT POH. CURRENT DEPTH AT REPORT TIME, 1244M.
	0600	0830	2,50		ETCU	OK	OK	CONTINUED POOH TO SURFACE. PULLED LAST 400M WITH RESTRICTED SPEED, 6 MIN/STAND. FLOW CHECKED BEFORE PULLED BHA.
	0830	0930	1,00		ETCU	OK	OK	RETRIEVED CORE NO 1, 95 % RECOVERY.
	0930	1300	3,50		ETCU	OK	OK	BREAK CH AND CHANGED ALL STABS FROM 8 15/16" TO 8 3/8" ON CORE BARREL MADE UP CORE HEAD.
	1300	1800	5,00	2161,0	ETCU	OK	OK	RIH TO CSG WINDOW AT 2161M. FILL STRING EACH 1000M.
	1800	1900	1,00	2161,0	DEOU	OK	OK	SLIP AND CUT 29,3M DRILLING LINE.
	1900	2200	3,00	3830,0	ETCU	OK	OK	CONTINUED RIH TO 3830M. BREAK CIRC.
	2200	2230	,50	3854,0	ETCU	OK	OK	REAM TO BTM 3854M. 2M HARD FILL. TAG BTM 3 TIMES AND SPACED OUT STRING
	2230	2300	,50	3854,0	ECFU	OK	OK	DROP BALL AND SEATED SAME IN COREBARREL WITH 17 BAR PRESS INCREASE. TAKE SCR'S.
	2300	2400	1,00	3858,0	ERCU	OK	OK	START CUT CORE NO 2 FROM 3854 - 3858M.
970814	0000	0130	1,50	3881,0	ERCU	OK	OK	CONTINUED CORING FROM 3858 - 3881M. TOTAL CUT 27M.
	0130	0200	,50	3852,0	ETCU	OK	OK	FLOW CHECKED, OK. LAID DOWN SPACER PUP JT. PUMP SLUG.
	0200	0600	4,00	780,0	ETCU	OK	OK	POOH. FLOW CHECKED INSIDE CSG WINDOW, OK. CURRENT DEPTH AT REPORT TIME, 780M.
	0600	0900	3,00		ETCU	OK	OK	CONTINUED POOH WITH CORE NO 2. REDUCED SPEED LAST 400M. HELD SAFETY BRIEF BEFORE PULL CORE BARREL TO DRILL FLOOR. HAD 20 PPM H2S IN COREBARREL. PERSONNEL PUT ON PROTECTION EQUIPMENT BEFORE START LAYING DOWN CORE.
	0900	1030	1,50		ETCU	OK	OK	RETRIVED CORE NO 2, 100 % RECOVERY. MAX 5 PPM H2S WHEN RETRIVING CORE.
	1030	1230	2,00		ETCU	OK	OK	M/UP COREBARREL AND COREHEAD. SERVICED COREBARREL.
	1230	1530	3,00	2160,0	ETCU	OK	OK	RIH TO CSG WINDOW AT 2161M. BREAK CIRC EACH 1000 M.
	1530	1600	,50	2160,0	EROW	OK	OK	HELD SAFETY MEETING WITH ALL PERSONNEL WITH H2S GAS, GAS PROCEDYRES AND CONTINGENCIES.
	1600	1830	2,50	3876,0	ETCU	OK	OK	CONTINUED RIH TO 3876M.
	1830	2030	2,00	3876,0	ECFU	OK	OK	CIRC BTM'S UP IN ORDER TO CLEAN WELL FOR GAS. MAX PEAK FROM PREVIOUS CORING; 15,2 %. CIRC GAS LEVEL DOWN TO 0,9 %.
	2030	2100	,50	3881,0	ETCU	OK	OK	ROTATE AND WASH TO BTM AT 3881,5M. SPACED OUT STRING.
	2100	2130	,50	3881,0	ECFU	OK	OK	DROP BALL AND SEATED SAME IN COREBARREL WITH 17 BAR PRESS INCREASE. TAKE SCR'S.
	2130	2300	1,50	3908,0	ERCU	OK	OK	CUT CORE NO 3 FROM 3881,5 TO 3908,5M.
	2300	2330	,50	3820,0	ETCU	OK	OK	PUMP OUT OF HOLE TO 3820M. HAD 45 T OVER PULL AT CONNECTION AT 3880M. ROTATE STRING AND HAD NO EXCESSIVE TORQUE TO BREAK ROTATION, NORMAL PUMP PRESSURES INDICATING GEOMETRICAL OBSTRUCTION.
	2330	2400	,50	3820,0	ECFU	OK	OK	CIRC TO CLEAN OUT CORING GAS.
970815	0000	0200	2,00	3820,0	ECFU	OK	OK	CONTINUED CIRC BTM'S UP. MAX GAS FROM CORING 12,75 % DECLINED TO 2,8 %
	0200	0600	4,00	1412,0	ETCU	OK	OK	FLOW CHECKED OK. PUMP SLUG AND POOH. FLOW CHECKED INSIDE CSG WINDOW.OK CURRENT DEPTH AT REPORT TIME 1412M.
	0600	0830	2,50		ETCU	OK	OK	CONTINUED POOH WITH CORE NO 3. FLOW CHECKED AT CSG WINDOW AND BEFORE PULLING BHA INTO BOP.
	0830	1000	1,50		ETCU	OK	OK	RETRIEVED CORE NO 3. INITIAL TOP OF CORE HAD 80 PPM H2S GAS CONTENT WHICH DISPERSED, CHECKS WHILE RETRIEVING WERE 10 PPM DOWN TO 0 PPM. 99,6 % CORE RECOVERY.

	1000	1130	1,50		ETCU	OK	OK	SERVICED CORE BARREL AND MADE UP COREBARREL WITH INNERBARREL.
	1130	1730	6,00	3820,0	ETCU	OK	OK	RIH TO 3820M. BROKE CIRC EACH 1000M.
	1730	1830	1,00	3908,0	ETCU	OK	OK	WASH AND ROTATE FROM 3820 TO BTM AT 3908,5M.
	1830	2000	1,50	3908,0	ECFU	OK	OK	CIRC BTM'S UP IN ORDER TO CLEAN WELL FOR GAS. MAX GAS 4,5 %, DECLINED TO 1 %.
	2000	2100	1,00	3908,0	ECFU	OK	OK	DROP BALL AND SPACE OUT STRING. SEATED BALL IN COREBARREL WITH 17 BAR PRESSURE INCREASE. TAKE SCR'S.
	2100	2300	2,00	3935,0	ERCU	OK	OK	CUT CORE NO 4 FROM 3908,5 TO 3935,5M. MAX GAS FROM CORING 9%.
	2300	2400	1,00	3820,0	ETCU	OK	OK	BROKE CORE ON 3RD ATTEMPT HOLDING 16T OVER PULL. PUMPED AND ROTATED SLOWLY WHILE PULLING BACK TO 3820M.
970816	0000	0200	2,00	3820,0	ECFU	OK	OK	CIRCULATED BTM UP TO CLEAN WELL FOR CORING GAS. MAX GAS 0,7 %

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
970816	0200	0600	4,00	1195,0	ETCU	OK	OK	FLOW CHECKED, OK. PUMP SLUG AND POOH. FLOW CHECKED INSIDE CSG WINDOW, OK. CURRENT DEPTH AT REPORT TIME 1195M.
	0600	0900	3,00		ETCU	OK	OK	CONTINUED TO POOH. FLOW CHECKED BEFORE PULLING BHA INTO BOP, OK.
	0900	1030	1,50		ETCU	OK	OK	RETRIEVED CORE NO 4. 96,3 % RECOVERY. NO H2S GAS PRESENT IN COREBARREL
	1030	1100	,50		ETCU	OK	OK	MADE UP NEW COREHEAD AND INNERBARREL. SERVICED COREBARREL.
	1100	1700	6,00	3847,0	ETCU	OK	OK	RIH WITH COREBARREL TO 3847M. BROKE CIRCULATION EACH 1000M.
	1700	1730	,50	3935,0	ETCU	OK	OK	WASHED AND ROTATED FROM 3847M TO 3935,5M.
	1730	1830	1,00	3935,0	ECFU	OK	OK	TAGGED BTM AND SPACED OUT. SEATED BALL IN BALL SEAT WITH 26 BAR PRESSURE INCREASED. RECORDED SCR'S.
	1830	2030	2,00	3962,0	ERCU	OK	OK	CUT CORE NO 5 FROM 3935,5M TO 3962,5M. BROKE CORE WITH 11 TON OVER PULL.
	2030	2200	1,50	3820,0	ETCU	OK	OK	PUMPED AND ROTATED UP TO 3820M.
	2200	2330	1,50	2820,0	ECFU	OK	OK	CIRCULATED BTM UP TO CLEAN WELL FROM CORING GAS. MAX GAS 2,1 % DECLINED TO 0,8 %.
	2330	2400	,50	3600,0	ETCU	OK	OK	FLOW CHECKED, OK. PUMPED SLUG AND POOH TO 3600M AT 2400 HRS.
970817	0000	0600	6,00	25,0	ETCU	OK	OK	CONTINUED POOH. FLOW CHECKED AT CSG WINDOW AND BEFORE BHA ENTERED BOP. CHECKED COREBARREL FOR H2S GAS, NO GAS PRESENT.
	0600	0700	1,00		ETCU	OK	OK	RECOVERED CORE NO 5. 102 % RECOVERY. NO H2S GAS DETECTED FROM COREBARREL.
	0700	0830	1,50		ETCU	OK	OK	MADE UP COREHEAD AND INNERBARREL, SERVICED COREBARREL.
	0830	1330	5,00	3905,0	ETCU	OK	OK	RIH WITH COREBARREL TO 3905M. BROKE CIRCULATION EACH 1000M.
	1330	1430	1,00	3962,0	ETCU	OK	OK	WASHED AND ROTATED FROM 3905M TO 3962M.
	1430	1500	,50	3962,5	ECFU	OK	OK	TAGGED BTM AT 3962,5M AND SPACED OUT. SEATED BALL IN BALL SEAT WITH 29 BAR PRESSURE INCREASE. RECORDED SCR'S
	1500	1730	2,50	3990,0	ERCU	OK	OK	CUTTED CORE NO 6 FROM 3962,5M TO 3990M. BROKE CORE WITH 10 T OVER PULL.
	1730	1830	1,00	3820,0	ETCU	OK	OK	PUMPED AND ROTATED UP TO 3820M.
	1830	2030	2,00	3820,0	ECFU	OK	OK	CIRCULATED BTM UP TO CLEAN WELL FROM CORING GAS. MAX GAS 1,7 % DECLINED TO 0,8 %.
	2030	2400	3,50	1400,0	ETCU	OK	OK	FLOW CHECKED , OK. PUMPED SLUG AND POOH TO 1400M AT 2400 HRS. HAD FLICKERS ON WEIGHT INDICATOR AT 2725 AND 2472M, MAX 22 T OVER PULL FLOW CHECKED IN CSG WINDOW, OK.
970818	0000	0200	2,00		ETCU	OK	OK	CONTINUED POOH. FLOW CHECKED, OK, BEFORE BHA ENTERED BOP. HELD RESTRICTED SPEED FROM 400M AND TO SURFACE.
	0200	0300	1,00		ETCU	OK	OK	RECOVERED CORE NO 6. 100.5 % RECOVERY.
	0300	0430	1,50	26,0	ETCU	OK	OK	MADE UP NEW COREHEAD AND INNERBARREL, SERVICED COREBARREL.
	0430	0600	1,50	600,0	ETCU	OK	OK	RIH WITH COREBARREL TO 600M.
	0600	0730	1,50	2162,0	ETCU	OK	OK	CONTINUED RIH TO CSG WINDOW. BROKE CIRCULATION.
	0730	0830	1,00	2162,0	DEOU	OK	OK	SLIP AND CUT 36,6 M DRILLING LINE.
	0830	1100	2,50	3924,0	ETCU	OK	OK	CONTINUED RIH TO 3924M.
	1100	1930	8,50	3990,0	ETCU	OK	OK	PUMPED AND ROTATED FROM 3924M TO 3933M. REAMED TIGHT SPOT AT 3933M TO 3936M. FREQUENTLY STALLED STRING AND HAD MAX 90T OVERPULL. CONTINUED REAMING TO BTM AT 3990M WITH STALLING CONDITIONS.
	1930	2030	1,00	3990,0	ECFU	OK	OK	TAGGED BTM AT 3990M AND SPACED OUT. SEATED BALL IN BALL SEAT WITH 18 BAR PRESSURE INCREASE. RECORDED SCR'S.
	2030	2330	3,00	4017,0	ERCU	OK	OK	CUTTED CORE NO 7 FROM 3990M TO 4017M. BROKE CORE WITH NO SIGNIFICANT OVERPULL.
	2330	2400	,50	3990,0	ETCU	OK	OK	PUMPED AND ROTATED UP TO 3990M.
970819	0000	0100	1,00	3820,0	ETCU	OK	OK	CONTINUED PUMPING AND ROTATION UP TO 3820M.
	0100	0330	2,50	3820,0	ECFU	OK	OK	CIRCULATED BTM UP TO CLEAN WELL FROM CORING GAS. MAX GAS 2,9 % DECLINED TO 0,15 %. FLOW CHECKED, OK.
	0330	0600	2,50	2546,0	ETCU	OK	OK	PUMPED SLUG. POOH WITH CORE NO 7. CURRENT DEPTH AT REPORT TIME 2546 M.
	0600	0930	3,50		ETCU	OK	OK	CONTINUED POOH WITH CORE NO 7. FLOW CHECKED IN CSG WINDOW AND BEFORE BHA ENTERED BOP, OK.
	0930	1030	1,00		ETCU	OK	OK	RECOVERED CORE NO 7. 98,9 % RECOVERY. NO H2S GAS PRESENT IN COREBARREL
	1030	1230	2,00		ERCU	OK	OK	SERVICE BREAK AND LAID DOWN COREBARREL.
	1230	1300	,50	107,0	BBDU	OK	OK	MADE UP BOP TEST PLUG AND INSTALLED SAME IN WELLHEAD.

	1300	1400	1,00	107,0	BBDU	OK	OK	TESTED BOP AND PLUG TO 34 BAR/5 MIN AND 345 BAR/10 MIN. USED YELLOW POD.
	1400	1430	,50	107,0	BBOD	FAIL	E FAIL	ATTEMPTED TO TEST UIBOP, VALVE LEAKED. RIGGED DOWN TEST LINE.
	1430	1700	2,50	107,0	BBDU	OK	OK	CONTINUED TEST BOP FROM YELLOW POD. TESTED ALL VALVES AND PIPE RAMS TO 34/345 BAR FOR 5/10 MIN. TESTED BOTH ANNULARS TO 34/241 BARS. FUNCTION TESTED WITH BLUE POD FROM TP REMOTE PANEL. ALL WHILST REPAIR ON UIBOP.
	1700	1800	1,00		BBOU	OK	OK	RETRIVED TEST PLUG. LAID DOWN STABILIZER STAB AND TEST PLUG.
	1800	2400	6,00		BEUD	FAIL	E FAIL	CHANGED OUT UIBOP ON TDS. RENEWED SAVER SUB AND NEW PIPEHANDLER HANGER UIBOP ACTUATOR, CRANK LEVER, ACTUATOR ROLLERS.
970820	0000	0030	,50		BEUD	FAIL	E FAIL	CONTINUED TO ASSEMBLE AND ADJUST LEVER FOR UIBOP ACTUATOR.

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
970820	0030	0130	1,00		BBUU	OK	OK	CONTINUED TEST ON UIBOP AND LIBOP TO 34/345 BAR 5/10 MIN, OK.
	0130	0330	2,00		DTAK	OK	OK	CHANGED MWD. SET NAVIDRILL AKO TO 0 DEGR. LOAD MWD AND MADE UP BIT.
	0330	0600	2,50	630,0	DTAK	OK	OK	RIH TO CURRENT DEPTH 630M.
	0600	1300	7,00	3824,0	DTAK	OK	OK	CONTINUED RIH WITH DRILLING BHA TO 3824M. BROKE CIRCULATION EACH 1000M PERFORMED CHECK SHOTS WITH NEW MWD AT 3794M AND 3805M, OK.
	1300	2130	8,50	4017,0	ELOU	OK	OK	WASHED AND ROTATED WHILST LOGGING CORED INTERVAL WITH MWD FROM 3805M TO 4003M.
	2130	2400	2,50	4039,0	DDNU	OK	OK	DRILLED 8 1/2" HOLE FROM 4017M TO 4039M.
970821	0000	0600	6,00	4087,0	DDNU	OK	OK	CONTINUED DRILLING FROM 4039M TO 4087M. NORMAL AMOUNT OF CUTTINGS IN RETURNS WITH APPROX 5% SMALL SIZE CAVINGS.
	0600	1100	5,00	4131,0	DDNU	OK	OK	DRILLED 8 1/2" HOLE FROM 4087M TO 4131M.
	1100	1500	4,00	4131,0	ECFU	OK	OK	CIRCULATED AND CONDITIONED HOLE AND MUD FOR LOGGING.
	1500	2330	8,50		DTLU	OK	OK	FLOWCHECKED, PUMPED SLUG, AND POOH. DUMPED MWD MEMORY. L/D MWD AND MOTOR.
	2330	2400	,50		ELWU	OK	OK	R/U ATLAS WIRELINE.
970822	0000	0600	6,00		ELWK	FAIL	OK	FINISHED R/U ATLAS. RIH WITH FIRST LOG RUN: HDIL-MAC-DGR-CHT. LOGGING TOOL STOOD UP AT 2755M. ATTEMPTED TO WORK PAST W/O SUCCESS - TOOL STOOD UP AT SAME PLACE AND PICKED UP CLEANLY EACH TIME. LOGGED OUT FROM 2755M.
	0600	0800	2,00		ELWK	FAIL	OK	FINISHED LOGGING RUN #1: HDIL-MAC-DGR-CHT. R/D LOGGING TOOLS.
	0800	1700	9,00		ELWU	OK	OK	R/U TO RUN TO RUN VSP ON WIRELINE AND RIH. TOOL STOOD UP AT 2762M. LOGGED OUT OF HOLE WITH VSP.
	1700	2030	3,50		ELDU	OK	OK	R/U TO RUN LOGS ON DRILL PIPE.
	2030	2400	3,50		EESD	FAIL	OK	REPAIRED TOP DRIVE - BOLTS SHEARED ON SWIVEL LINK PINION CLAMP (PART OF TDS/TRAVELLING BLOCK RETRACT SYSTEM).
970823	0000	0330	3,50		EESD	FAIL	OK	FINISHED REPAIRING TOP DRIVE.
	0330	0600	2,50	227,0	ELDU	OK	OK	FINISHED R/U AND BEGAN RIH WITH LOGS ON DRILL PIPE. HDIL-MAC-ZDL-CND-SPL-CHT-VSP
	0600	2400	18,00	3610,0	ELDU	OK	OK	CONTINUED RIH WITH LOGGING TOOLS ON DRILL PIPE: HDIL-MAC-ZDL-CND-SPL-CHT-VSP. EXPERIENCED PROBLEMS WITH A DISCONTINUOUS SIGNAL AT +\- 2825M - 2840M.
970824	0000	0430	4,50	4120,0	ELDU	OK	OK	CONTINUED RUNNING LOGS ON DRILL PIPE. PROBLEM WITH DISCONTINUOUS SIGNAL FROM +\- 3845M - 3872M, 4018M - 4024M, 4045M - 4120M.
	0430	0600	1,50	4040,0	ELDU	OK	OK	BEGAN LOGGING OUT OF THE HOLE WITH VSP.
	0600	1500	9,00	2730,0	ELDU	OK	OK	CONTINUED LOGGING OUT OF THE HOLE WITH VSP ON DRILL PIPE.
	1500	2300	8,00	4125,0	ELDU	OK	OK	RIH WITH LOGGING TOOLS ON DRILL PIPE.
	2300	2400	1,00	4090,0	ELDU	OK	OK	LOGGED OUT OF HOLE ON DRILL PIPE: HDIL-MAC-ZDL-CND-SPL-CHT.
970825	0000	0600	6,00	3513,0	ELDU	OK	OK	CONTINUED LOGGING OUT OF HOLE ON DRILL PIPE: HDIL-MAC-ZDL-CND-SPL-CNT. SOME PROBLEMS WITH BAD/DISCONTINUOUS SIGNAL IN THE BEGINNING BUT IT WAS CORRECTED AND A GOOD LOG IS BEING ACQUIRED.
	0600	1130	5,50	2144,0	ELDU	OK	OK	CONTINUED LOGGING OUT OF HOLE ON DRILL PIPE: HDIL-MAC-ZDL-CND-SPL-CHT.
	1130	1300	1,50	2144,0	ELDU	OK	OK	POOH WITH WET CONNECTOR (WIRELINE). BROKE AND LAID OUT SIDE ENTRY SUB AND WET CONNECTOR.
	1300	1900	6,00		ELDU	OK	OK	POOH WITH LOGGING TOOLS ON DRILL PIPE. MEANWHILE AWS CHANGED OUT WIRELINE DRUM.
	1900	2130	2,50		ELDU	OK	OK	BROKE AND LAID OUT LOGGING TOOLS.
	2130	2400	2,50		EESD	FAIL	OK	AWS THREADED WIRELINE THROUGH SIDE ENTRY SUB AND RE-HEADED WIRE.
970826	0000	0230	2,50		EESD	FAIL	OK	AWS RE-TERMINATED AND CHECKED OUT WIRELINE DRUM COLLECTOR.
	0230	0600	3,50		ELDU	OK	OK	CHECKED TOOLS FOR NEXT LOGGING RUN: FMT-ZDL-MAC-HDIP-CHT. BEGAN R/U TO RIH ON DRILL PIPE.
	0600	0830	2,50		ELDU	OK	OK	R/U LOGGING TOOLS TO RUN ON DRILL PIPE: FMT-ZDL-MAC-HDIP-CHT.
	0830	1800	9,50		EESD	FAIL	OK	POOR SIGNAL FROM LOGGING TOOLS. DISMANTLED AND RE-TERMINATED WIRELINE DRUM COLLECTOR. CUT 700 METERS OF WIRE. RE-HEADED WIRE TO THROUGH SIDE ENTRY SUB TO WET CONNECTOR. RE-CHECKED TOOL STRING.

	1800	1900	1,00	263,0	ELDU	OK	OK	BEGAN RIH WITH LOGGING TOOLS ON DRILL PIPE.
	1900	2300	4,00	263,0	ELOW	OK	OK	OPERATIONS SUSPENDED DUE TO INDUSTRIAL ACTION.
	2300	2400	1,00	352,0	ELDU	OK	OK	RESUMED RIH WITH LOGGING TOOLS ON DRILL PIPE.
970827	0000	0600	6,00	1677,0	ELDU	OK	OK	CONTINUED RIH WITH LOGGING TOOLS ON DRILL PIPE TO CASING WINDOW.
	0600	0800	2,00	2168,0	ELDU	OK	OK	CONTINUED RIH WITH LOGGING TOOLS ON DRILL PIPE TO 2168M (BOTTOM OF LOGGING TOOL STRING).
	0800	2400	16,00	2168,0	ELOW	OK	OK	OPERATIONS SUSPENDED DUE TO INDUSTRIAL ACTION. MEANWHILE CIRCULATED AT SLOW RATE - 330 LPM, 15 BAR.
970828	0000	0600	6,00	2168,0	ELOW	OK	OK	OPERATIONS SUSPENDED DUE TO INDUSTRIAL ACTION. CONTINUED CIRCULATING

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
970828	0000	0600	6,00	2168,0	ELOW	OK	OK	AT 330 LPM, 15 BAR.
	0600	1200	6,00	2168,0	ELOW	OK	OK	OPERATIONS SUSPENDED DUE TO INDUSTRIAL ACTION. CIRCULATED AT 330 LPM, 15 BAR.
	1200	1430	2,50	2168,0	ELDU	OK	OK	R/U WIRELINE SIDE ENTRY SUB AND RIH WITH WET CONNECTOR. ENGAGED CONNECTOR. COMMUNICATION AND PULL TESTED OK.
	1430	2130	7,00	3640,0	ELDU	OK	OK	RIH WITH LOGGING TOOLS ON DRILL PIPE TO 3640M.
	2130	2400	2,50	3640,0	ELDU	OK	OK	CIRCULATED TO CONDITION MUD.
970829	0000	0330	3,50	4123,0	ELDU	OK	OK	CONTINUED RIH WITH LOGGING TOOLS ON DRILL PIPE. LOST SIGNAL TO LOGGING TOOLS AT 3800M.
	0330	0600	2,50	4123,0	ELSD	OK	OK	PIPE STUCK WHILE MAKING UP TOP DRIVE. WORKED PIPE WITH NO SUCCESS. ATLAS SHEARED CLAMP ON SIDE ENTRY SUB AND POOH WITH WIRELINE IN ORDER TO GAIN ROTATION OF DRILL PIPE.
	0600	0830	2,50	4123,0	ELSD	OK	OK	ATLAS POOH WITH WET CONNECTOR TO SIDE ENTRY SUB AND SHEARED OUT OF ROPE SOCKET WITH 5.4 MT PULL. ATLAS FINISHED POOH WITH WIRELINE. WORKED PIPE FREE WITH ROTATION AND RECIPROCATION.
	0830	1530	7,00	3530,0	ELDU	OK	OK	BACKREAMED FROM 4123M TO 3530M. MAXIMUM OVERPULL 32 MT.
	1530	2130	6,00		ELDU	OK	OK	PUMPED SLUG, FLOWCHECKED, AND POOH.
	2130	2400	2,50		ELDU	OK	OK	ATLAS BROKE DOWN AND L/D LOGGING TOOL STRING.
970830	0000	0200	2,00		ELDU	OK	OK	ATLAS CONTINUED BREAK OUT AND L/D LOGGING TOOL STRING.
	0200	0600	4,00	1921,0	CCWK	OK	OK	M/U BIT AND BHA AND RIH FOR WIPER TRIP TO CONDITION HOLE FOR RUNNING 7" CASING.
	0600	0630	,50	2158,0	CCWK	OK	OK	CONTINUED RIH FOR WIPER TRIP TO CONDITION HOLE AND MUD FOR RUNNING 7" CASING.
	0630	0730	1,00	2158,0	DEOU	OK	OK	CUT AND SLIPPED DRILLING LINE.
	0730	1100	3,50	4047,0	CCWK	OK	OK	FINISHED RIH.
	1100	1130	,50	4047,0	CCWK	OK	OK	CIRCULATED.
	1130	1230	1,00	3800,0	CCWK	OK	OK	BACKREAMED FROM 4047M TO 3800M.
	1230	1730	5,00	3800,0	CCWK	OK	OK	CIRCULATED TO CONDITION MUD FOR RUNNING 7" CASING - LOWERED AND EVENED MUD WEIGHT TO 1.55 SG FROM HIGH SPOTS OF 1.58 SG TO 1.61 SG.
	1730	2400	6,50	421,0	CCWK	OK	OK	POOH TO RUN 7" CASING.
970831	0000	0100	1,00		CCWK	OK	OK	FINISHED POOH. L/D DRILLING JAR.
	0100	0230	1,50		BHRU	OK	OK	P/U SL TOOL (WEAR BUSHING RETRIEVING TOOL), RIH, AND RETRIEVE WEAR BUSHING (NO DISCERNIBLE WEAR OR MARKS).
	0230	0430	2,00		CAOU	OK	OK	M/U CASING HANGER WITH SEAL ASSEMBLY TO TYPE ST CASING HANGER RUNNING TOOL C/W SSR PLUGS. M/U HALLIBURTON CEMENTING HEAD.
	0430	0600	1,50		CERU	OK	OK	R/U FRANK'S FC-1 CASING FILLUP AND CIRCULATING TOOL. R/U WEATHERFORD CASING EQUIPMENT.
	0600	0700	1,00		CERU	OK	OK	FINISHED R/U WEATHERFORD TO RUN 7" CASING.
	0700	1630	9,50	1030,0	CARU	OK	OK	RAN 7" CASING.
	1630	1730	1,00	1030,0	CAOD	FAIL	OK	HYDRAULIC POWER UNIT FOR CASING TONG OVERHEATED.
	1730	2200	4,50	1669,0	CARU	OK	OK	RAN 7" CASING.
	2200	2230	,50	1699,0	CAOD	FAIL	OK	CASING TONG NOT WORKING - PROBLEM WITH HYDRAULIC PRESSURE/VOLUME SUPPLY. CHANGED POWER UNITS.
	2230	2400	1,50	1837,0	CARU	OK	OK	RAN 7" CASING.
970901	0000	0600	6,00	2539,0	CARU	OK	OK	CONTINUED RUNNING 7" CASING.
	0600	1900	13,00	3935,0	CARU	OK	OK	CONTINUED RUNNING 7" CASING.
	1900	2030	1,50	3935,0	CERU	OK	OK	M/U CASING HANGER. R/D CASING HANDLING TOOLS AND R/U TO RUN CASING ON DRILL PIPE.
	2030	2100	,50	4044,0	CARU	OK	OK	RIH WITH CASING ON HWDP RUNNING STRING. LANDED CASING AND CHECKED DATUM LINE - OK. TOTAL MUD LOSSES RUNNING CASING - 6 M3.
	2100	2400	3,00	4044,0	CCCU	OK	OK	CIRCULATED CASING. 20% - 30% MUD RETURNS WHILE CIRCULATING AT 330 LPM - 475 LPM. LOST 26 M3 MUD TOTAL.
970902	0000	0100	1,00	4044,0	CSSU	OK	OK	PUMPED 15 M3 HALLIBURTON SPACER 500E+. GAINED 2 M3 (13 M3 LOST). DROPPED BALL AND SHEARED OUT BOTTOM PLUG WITH 100 BAR.
	0100	0200	1,00	4044,0	CSSU	OK	OK	BATCHED UP AND MIXED AND PUMPED 10.1 M3 1.80 SG CEMENT. DROPPED DART

							AND SHEARED TOP PLUG WITH 230 BAR.
0200	0430	2,50	4044,0	CSSU	OK	OK	DISPLACED CEMENT. PUMP RATE 475 LPM, 10% MUD RETURNS. LOST 68 M3 MUD WHILE DISPLACING CEMENT. CIRCULATING PRESSURE FROM TIME BOTTOM PLUG HIT FLOAT COLLAR (CEMENT BEHIND BOTTOM PLUG) UNTIL TOP PLUG BUMPED ROSE 13 BAR (12 BAR CALCULATED). BUMPED PLUG WITH 70 BAR OVER FCP TO 132 BAR. FLOATS HELD OK.
0430	0600	1,50	4044,0	CAOU	OK	OK	SET SEAL ASSEMBLY. PRESSURE TEST FAILED - RETURNS COMING UP DRILL STRING. BEGIN POOH.
0600	0630	,50		BHSD	FAIL	OK	TEST OF SEAL ASSEMBLY FAILED. POOH WITH ST CASING HANGER RUNNING TOOL.
0630	0700	,50		BHSD	FAIL	OK	FOUND SEALS ON ST TOOLS TO BE WASHED OUT. ATTEMPTED TO TEST SEAL ASSEMBLY AGAINST BLIND RAMS WITHOUT SUCCESS.

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
970902	0700	1030	3,50		BHSD	FAIL	O FAIL	M/U SEAL ASSEMBLY RUNNING TOOL AND RIH. RE-TORQUED SEAL ASSEMBLY AND ATTEMPTED TO PRESSURE TEST WITHOUT SUCCESS.
	1030	1200	1,50		BHSD	FAIL	OK	M/U SL TOOL. RIH AND RETRIEVED SEAL ASSEMBLY.
	1200	1430	2,50		BHSD	OK	OK	M/U MILL/FLUSH TOOL AND RIH. MILLED AND FLUSHED SEAL AREA AT TOP OF CASING HANGER - WELLHEAD. PUMPED 5 M3 HIVIS AND BOOSTED RISER. POOH.
	1430	1700	2,50		BHSD	FAIL	OK	M/U SEAL ASSEMBLY RUNNING TOOL WITH ELASTOMER TYPE SEAL ASSEMBLY AND RIH. SET SEAL ASSEMBLY AND TESTED TO 345 BAR OK. POOH.
	1700	2130	4,50		BBDU	OK	OK	M/U SL TOOL AND 7" WEAR BUSHING AND RIH. SET WEAR BUSHING IN WELLHEAD AND TESTED BOP TO 35/345 BAR ON YELLOW POD FROM MAIN PANEL. FUNCTION TESTED ON BLUE POD FROM TOOLPUSHERS MINIPANEL. FUNCTION TESTED ACOUSTIC CONTROLS FROM CELLAR DECK. POOH.
	2130	2230	1,00		BHRD	FAIL	OK	FOUND WEAR BUSHING NOT RELEASED FROM SL TOOL. RIH AND RE-SET WEAR BUSHING. POOH.
	2230	2300	,50		CSSU	OK	OK	R/D CEMENTING HEAD AND L/D SAME.
	2300	2330	,50		BBOU	OK	OK	CHANGED XO SUB ON BOTTOM OF EMERGENCY HANGOFF TOOL FOR 3 1/2" DRILL PIPE.
	2330	2400	,50	24,0	DTPU	OK	OK	R/U TO RUN 3 1/2" DRILL PIPE. START RIH WITH SAME.
970903	0000	0600	6,00	1337,0	DTPU	OK	OK	CONTINUED P/U AND RIH WITH 3 1/2" DRILL PIPE.
	0600	1100	5,00	2530,0	DTPU	OK	OK	COMPLETED PU & RIH WITH 3 1/2" DP TO 2530 M.
	1100	1200	1,00	2636,0	DTPU	OK	OK	TIH TO WELLHEAD WITH HANG-OFF-TOOL.SECURED WELL WITH MIDDLE 5" PIPE RAMS. BACK-OUT OF H-O-T. POOH WITH LANDING STRING.
	1200	1300	1,00		DDOU	OK	OK	CLOSED BLIND SHEAR RAMS. TESTED 7" CASING TO 345 BAR.
	1300	1500	2,00		TXOW	OK	OK	DISPLACED RISER TO SEAWATER. RU SPIDER & MU DIVERTER RUNNING TOOL.
	1500	2400	9,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970904	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970905	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970906	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970907	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970908	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970909	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970910	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970911	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970912	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970913	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970914	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970915	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.

	0600	2400	18,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970916	0000	0600	6,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970917	0000	0600	6,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970918	0000	0600	6,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970919	0000	0600	6,00	TXON	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.

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Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
970919	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970920	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970921	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970922	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970923	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970924	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970925	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970926	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970927	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970928	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE.
970929	0000	0600	6,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
970930	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
971001	0000	0600	6,00		TXOW	OK	OK	OPERATIONS SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE.
971002	0000	0600	6,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE.
	0600	2400	18,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE
971003	0000	0600	6,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE
	0600	2400	18,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE
971004	0000	0600	6,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE
	0600	1700	11,00		TXOW	OK	OK	OPERATION SUSPENDED DUE TO OFS STRIKE.
	1700	1900	2,00		TXOW	OK	OK	LAID OUT DIVERTER RUNNING TOOL AND SPIDER.
	1900	1930	,50	102,0	DTPU	OK	OK	RIH WITH OPEN ENDED 5" DP TO TOP OF SHEARRAM.
	1930	2130	2,00	102,0	TCCU	OK	OK	DISPLACED RISER AND KILL AND CHOKELINES TO OBM. VERIFIED NO PRESSURE UNDER BOP.
	2130	2200	,50	2620,0	DTPU	OK	OK	OPENED SHEARRAM. SCREWED INTO HANG-OFF TOOL. PULLED HANG-OFF TOOL OVER BOP.
	2200	2330	1,50	2636,0	TCCU	OK	OK	BROKE CIRCULATION AND CIRCULATED BOTTOMS UP.
	2330	2400	,50	2575,0	TCCU	OK	OK	SLUGGED PIPE AND POOH TO 2575 M.
971005	0000	0600	6,00	170,0	DTPU	OK	OK	CONTINUED POOH WITH 3 1/2" DP TO 170 M.
	0600	0630	,50		DTPU	OK	OK	POOH FROM 170 M WITH 3 1/2" DP.
	0630	0900	2,50		BBDD	FAIL	O FAIL	RIH WITH 4 STDS OF 3 1/2" DP BELOW BOP TEST TOOL. OD ON XO SUB BELOW TEST TOOL WAS TOO BIG TO ENTER 7" CSG. TEST PLUG WAS NOT SEATED. POOH AND RACKED BACK 3 1/2" DP.

	0900	1100	2,00		BBDU	OK	OK	UNSCREWED EXTENSION SUB FROM BOP TEST TOOL. PU 9JTS X 5" HWDP FROM DECK. RIH AND SEATED BOP TEST TOOL.
	1100	1530	4,50		BBDU	OK	OK	TESTED BOP ON BLUE POD. TESTED ALL VALVES AND RAMS TO 20/345 BAR. TESTED ANNULAR TO 20/241 BAR. FUNCTION TESTED BOP ON YELLOW POD.
	1530	1630	1,00		BBDU	OK	OK	POOH WITH TEST TOOL. FUNCTION TESTED ACCUSTIC SYSTEM AND SHEARRAM.
	1630	1900	2,50		BBDU	OK	OK	TESTED IBOPS ON TOPDRIVE AND STAB-IN VALVES TO 20/345 BAR.
	1900	2400	5,00		TCCU	OK	OK	LD 70 JTS OF 5" DP FROM DERRICK.
971006	0000	0600	6,00		TCCU	OK	OK	CONTINUED LD 5" DP. LAID DOWN TOTAL 144 JTS.
	0600	0630	,50		TCCU	OK	OK	LD 5" DP FROM DERRICK.
	0630	1000	3,50	226,0	TCCU	OK	OK	CHANGED HANDLING TOOLS AND MU 5 7/8" BIT AND 7" CSG SCRAPER. PU 9 JTS

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
971006	0630	1000	3,50	226,0	TCCU	OK	OK	OF 4 3/4" DC AND 15 JTS OF 3 1/2" HWDP FROM DECK AND RIH.
	1000	1430	4,50	1502,0	TCCU	OK	OK	RIH TO 1502 M WITH 3 1/2" DP FROM DERRICK. BROKE CIRCULATION AT 1000 M.
	1430	1800	3,50	1502,0	TCCU	OK	OK	LD 15 JTS OF 5" HWDP AND 9 JTS OF 6 1/2" DC FROM DERRICK.
	1800	2400	6,00	2550,0	TCCU	OK	OK	PU 3 1/2"DP FROM DECK. RIH TO 2550 M. BROKE CIRCULATION AT 2000 M AND 2500 M.
971007	0000	0100	1,00	2718,0	TCCU	OK	OK	CONTINUED PU 3 1/2" DP FROM DECK. RIH TO 2718 M.
	0100	0530	4,50	3820,0	TCCU	OK	OK	RIH WITH STANDS TO 3820 M. BROKE CIRCULATION AT 3000 M AND 3500 M.
	0530	0600	,50	3820,0	TCCU	OK	OK	INSTALLED XO SUB AND 5" PUP JOINT. CONNECTED TOP DRIVE AND WORKED CSG SCRAPER OVER PACKER SETTING AREA FROM 3795 M TO 3820 M. PUMPED 850 LPM - 310 BAR SPP.
	0600	0630	,50	3820,0	TCCU	OK	OK	WORKED CASING SCRAPER OVER PACKER SETTING AREA FROM 3795 M TO 3820 M. CIRCULATED 850 LPM - 310 BAR STAND PIPE PRESSURE.
	0630	0700	,50	3850,0	TCCU	OK	OK	RIH TO 3850 M. HAD BACKFLOW THROUGH DRILLSTRING DUE TO UNBALANCED MUD.
	0700	0730	,50	3850,0	TCCU	OK	OK	CIRCULATED AND CONDITION MUD AT 3850 M.
	0730	0800	,50	3950,0	TCCU	OK	OK	RIH TO 3950 M. HAD BACKFLOW THROUGH DRILLSTRING.
	0800	0830	,50	3950,0	TCCU	OK	OK	CIRCULATED AND CONDITION MUD AT 3950 M.
	0830	1030	2,00	4019,0	TCCU	OK	OK	WASHED DOWN FROM 3950 M. TAGGED FLOAT COLLAR AT 4019 M.
	1030	1300	2,50	4019,0	TCCU	OK	OK	CIRCULATED AND CONDITION MUD TO 1.55 SG.
	1300	2200	9,00		TCCU	OK	OK	SLUGGED PIPE AND POOH. LD 5 7/8" BIT AND 7" CSG SCRAPER.
	2200	2400	2,00		TLLU	OK	OK	HELD PRE-JOB MEETING WITH ALL PERSONNEL INVOLVED. RU TO RUN SHOOTING NIPPLE ON 7" CASING. PU XO SUB FOR WIRELINE STUFFING BOX AND MU TO JOINT OF 7" CASING. LD SAME ON DECK.
971008	0000	0100	1,00	92,0	TLLU	OK	OK	PU SHOOTING NIPPLE AND RIH WITH SAME ON 7" CASING TO 92 M.
	0100	0230	1,50	92,0	TLLU	OK	OK	INSTALLED XO SUB FOR WIRELINE SHIEVE ON TOP DRIVE SAVER SUB. CHANGED TO 45 FT BAILS.
	0230	0330	1,00		TLLU	OK	OK	WESTERN / ATLAS MADE UP SBT - CCL - GR.
	0330	0430	1,00		TLLD	FAIL	E FAIL	WESTERN / ATLAS INVESTIGATED POWER FAILURE ON LOGGING TOOL. CHANGED OUT SWIVEL AND MU NEW CONNECTION.
	0430	0500	,50		TLLU	OK	OK	PU CASING JOINT WITH XO SUB AND STUFFING BOX. CONNECTED LOGGING CABLE.
	0500	0600	1,00		TLLD	FAIL	E FAIL	WESTERN / ATLAS HAD INDICATION OF PERIODICAL FAILURE ON LOGGING TOOL. CHANGED OUT CABLE HEAD.
	0600	0630	,50	65,0	TLLU	OK	OK	RIH WITH SBT-CCL-GR TO 65 M. MU LAST CASING JOINT. POSITIONED STRING WITH HEAVE COMPENSATOR AND CLOSED LOWER ANNULAR.
	0630	1000	3,50	1440,0	TLLD	FAIL	O FAIL	WESTERN/ATLAS RIH WITH SBT-CCL-GR. TOOL STOOD UP AT 1270 M. WORKED TOOL DOWN. STOOD UP AGAIN AT 1440 M. TRIED TO WORK THROUGH; NO SUCCESS.
	1000	1230	2,50		TLLD	FAIL	OK	POOH WITH WIRELINE. DISCONNECTED UPPER CASING JOINT AND LD LOGGING TOOL.
	1230	1430	2,00		TLLD	FAIL	OK	INSTALLED WTS TOOLS BELOW SBT TO ALLOW FOR MORE WEIGHT.
	1430	1700	2,50	150,0	TLLD	FAIL	E FAIL	TOOL CHECK SHOWED FAILURE ON VDL SECTION. CHANGED TO BACK UP TOOL. PERFORMED NEW TOOLCHECK. OK. RIH TO 150 M AND INSTALLED UPPER CASING JOINT.
	1700	2300	6,00	4019,0	TLLU	OK	OK	RIH WITH SBT-CCL-GR. CHECKED PICK UP WEIGHT AT 1000 M / 2500 LBS - 2000 M / 3600 LBS - 2500 M / 5600 LBS. AT 3000 M PICK UP WEIGHT (PUW) WAS 8000 LBS, LOGGING WEIGHT (LW) WAS 7500 LBS. AT 3500 M WE SHOWED PUW / LW = 8000 / 7500 LBS. AT TD (4036 M WIRELINE DEPTH) WE SHOWED PUW / LW = 10000 / 9500 LBS.
	2300	2400	1,00	3556,0	TLLU	OK	OK	LOGGED FROM 3993 M TO 3556 M.
971009	0000	0200	2,00	2592,0	TLLU	OK	OK	LOGGED FROM 3556 M TO 2592 M.
	0200	0400	2,00		TLLU	OK	OK	POOH FROM 2592 M WITH LOGGING TOOL.
	0400	0530	1,50		TLLU	OK	OK	LD UPPER CASING JOINT. LD LOGGING TOOL AND RIGGED DOWN WIRELINE.
	0530	0600	,50		TLLU	OK	OK	CHANGED BAILS AND LD HANG-OFF SUB FOR LOGGING SHIEVE.
	0600	0800	2,00		TLLU	OK	OK	L/D 7" LINER / SHOOTING NIPPLE EQUIPMENT. BROKE AND L/D STUFFING BOX EQUIP.
	0800	1000	2,00		TLLU	OK	OK	PREPARED FOR RUNNING ATLAS MAC LOG. R/D ATLAS WIRELINE.

	1000	2400	14,00	4019,0	DCWK	OK	OK	M/U AND RIH W/ 5-7/8" BIT AND 7" CSG SCRAPER FOR MUD CONDTION/ CLENAUP RUN. BROKE CIRC. EVERY 500 M. CIRC. TO CONDITION MUD. RECORDED TORQUE/ DRAG EACH 500 M. RIH TO FC (4019 M). TREATED MUD. MW DRIFTED BACK FROM 1,55 SG TO 1,47 SG.
971010	0000	0400	4,00	4019,0	DCWK	OK	OK	CIRCULATED TO CONDITION MUD, 820 LPM / 300 BAR. HAD PROBLEMS W/ UNSTABLE MW. CIRC. UNTIL EVEN 1,47 SG.
	0400	0600	2,00	3200,0	DCWK	OK	OK	POOH FROM 4019 M TO 3200 M.
	0600	0830	2,50	1630,0	DCWK	OK	OK	POOH W/ 5-7/8" BIT FROM 3200 M TO 1630 M.
	0830	0930	1,00	1630,0	DCWK	OK	OK	FLUSHED KILL-/CHOKE LINES. CIRC. TO CONDITION MUD (1300 LPM).
	0930	1300	3,50		DCWK	OK	OK	POOH W/ 5-7/8" BIT FROM 1630 M. RACKED BHA IN DERRICK.

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
971010	1300	1430	1,50		TLLU	OK	OK	R/U ATLAS WIRELINE. M/U MAC TOOL STRING.
	1430	2400	9,50	3500,0	TLLU	OK	OK	RAN ATLAS LOG NO. 2 B: MAC-GR. IH: 1430 HRS. OOH: 2344 HRS.
971011	0000	0030	,50		TLLU	OK	OK	R/D ATLAS LOG NO. 2B: MAC-GR.
	0030	0230	2,00		TLLU	OK	OK	M/U ATLAS PERFORATING GUN ASSY.
	0230	0600	3,50	3550,0	TLLU	OK	OK	RIH W/ ATLAS PERFORATING GUN ASSY. IH: 0235 HRS. RECORDED PICK-UP WT AS RIH; 2000 M: 3000 LBS, 2500 M: 4000 LBS, 3000 M: 5300 LBS, 3500 M: 6600 LBS.
	0600	2400	18,00	4015,5	TLLU	OK	OK	RAN ATLAS PERFORATING GUN ON WIRELINE. FIRED 2 FIRST LEVELS. NO INDIC. OF FIRING. POOH. OOH: 1420 HRS. VERIFIED BOTH LEVELS FIRED. RIH: 1435 HRS. FIRED REMAINING 5 LEVELS; HAD INDIC. OF FIRING FIRST 2 LEVELS. POOH.
971012	0000	0100	1,00		TLLU	OK	OK	CONT. POOH W/ ATLAS PERF. RUN ASSY. OOH: 0020 HRS. FOUND 3 UPPER UPPER LEVELS NOT FIRED, AND LOWEST 2,6 M OF GUN ASSY. LEFT IN HOLE.
	0100	0200	1,00		DEOU	OK	OK	SLIPPED / CUT DRILLING LINE WHILE TROUBLE SHOOTING ON ATLAS EQUIP.
	0200	0430	2,50		TLLD	FAIL	E FAIL	WORKED ON ATLAS LOGGING EQUIPMENT.
	0430	0600	1,50		TLLD	FAIL	E FAIL	M/U AND RIH W/ ATLAS PERFORATING GUN. IH: 0450 HRS.
	0600	2200	16,00	3963,0	TLLD	FAIL	E FAIL	RIH W/ ATLAS PERF. GUN ASSY. NOT ABLE TO PASS 3505 M. POOH. ADDED WEIGHTS. RIH. FIRED LEVEL 5 AND 6 INSIDE 7" CSG. SKIPPED LEVEL 7, DUE TO NOT ABLE TO CORRELATE. POOH. OOH 2145 HRS. R/D LOGGING TOOLS.
	2200	2400	2,00		TLLU	OK	OK	P/U AND M/U SCHLUMBERGER MDT TOOL STRING.
971013	0000	0130	1,50		TLLU	OK	OK	M/U SCHLUMB. MDT TOOL STRING.
	0130	0230	1,00		TLLU	OK	OK	CONNECTED CABLE TO SCHLUMB. MDT TOOL STRING. TESTED SIGNALS. GOT INDIC. OF CONTACT FAILURE IN TOOL STRING.
	0230	0600	3,50		TLLD	FAIL	E FAIL	WORKED TO SOLVE CONTACT FAILURE IN SCHLUMB. MDT TOOL STRING.
	0600	0730	1,50		TLLD	FAIL	E FAIL	WORKED TO SOLVE CONTACT FAILURE IN SCHLUMB. MDT TOOL STRING. FOUND CONTACT FAILURE ON CHAMBRE MODULE. REPAIRED SAME. TESTED MDT ASSY.
	0730	2200	14,50	3602,0	TLLU	OK	OK	M/U SCHLUMB. MDT TOOL STRING TO 3-1/2" DP AND RIH, SPEED: 2 MIN/STD. FILLED PIPE EVERY 3. STD, BROKE CIRC. EVETY 10. STD. RIH TO 3602 M.
	2200	2400	2,00	3602,0	TLLU	OK	OK	LAUNCHED LOCOMOTIVE INTO DP, INSTALLED SIDE ENTRY SUB. RAN/PUMPED LOCOMOTIVE INSIDE 3-1/2" DP ON ATLAS CABLE.
971014	0000	0100	1,00	3602,0	TLLU	OK	OK	CONT. RUNNING/PUMPING LOCOMOTIVE INTO DP ON ATLAS CABLE. LATCHED SAME ONTO MDT TOOL STRING.
	0100	0130	,50	3602,0	TLLU	OK	OK	TESTED CABLE CONNECTION TO SCHLUMB. MDT TOOL STRING.
	0130	0600	4,50	3602,0	TLLD	FAIL	E FAIL	HAD CONTACT FAILURE W/ PACKER MODULE ON SCHLUMB. MDT TOOL STRING. WORKED TO SOLVE PROBLEM. UNLATCHED/LATCHED LOCOMOTIVE; MAX. 9500 LBS TENSION ON CABLE. NOT ABLE TO GET PROPER SIGNALS W/ PACKER MODULE ON MDT TOOL STRING. POOH W/ CABLE.
	0600	0730	1,50		TLLD	FAIL	E FAIL	POOH W/ ATLAS CABLE. CHECKED SINGNALS AT SURFACE; CABLE OK.
	0730	1400	6,50		TLLD	FAIL	E FAIL	POOH W/ SCHLUMB. MDT TOOL ASSY. FROM 3602 M.
	1400	1800	4,00		TLLD	FAIL	E FAIL	WORKED TO LOCATE PROBLEM IN SCHLUMB. MDT TOOL ASSY. LOCATED FAULT IN FLUID ANALYZER. CHANGED OUT SAME. TESTED OUT TOOL STRING.
	1800	2030	2,50	860,0	TLLD	FAIL	E FAIL	M/U AND RIH W/ SCHLUMB. MDT TOOL ASSY. ON 3-1/2" DP; SPEED: 2 MIN/STD. FILLED PIPE EVERY 3. STD, BROKE CIRC. EVERY 10 STD. RIH TO 860 M.
	2030	2130	1,00	860,0	DERD	FAIL	E FAIL	REPAIRED ON BROKEN HYDRAULIC HOSE ON UPPER RACKING ARM.
	2130	2400	2,50	1800,0	TLLD	FAIL	E FAIL	CONT. RIH W/SCHLUMB. MDT TOOL ASSY. ON 3-1/2" DP FROM 860 M TO 1800 M.
971015	0000	0500	5,00	3600,0	TLLD	FAIL	E FAIL	CONT. RIH W/SCHLUMB. MDT TOOL ASSY. ON 3-1/2" DP FROM 1800 M TO 3600 M.
	0500	0600	1,00	3600,0	TLLD	FAIL	E FAIL	LAUNCHED LOCOMOTIVE INTO DP, INSTALLED SIDE-ENTRY SUB. RAN/PUMPED LOCOMOTIVE INSIDE 3-/2" DP ON ATLAS CABLE.
	0600	1100	5,00	3600,0	TLLD	FAIL	E FAIL	PUMPED LOCOMOTIVE DOWN DP ON ATLAS CABLE. LATCHED SAME ONTO MDT TOOL STRING. ATTEMPTED TO GET GOOD TEST SIGNALS FROM MDT; NEG. UNLATCHED / LATCHED LOCOMOTIVE. NO IMPROVMENT. POOH W/ ATLAS CABLE. CHECKED CABLE SIGNALS AT SURFACE; OK.
	1100	1800	7,00		TLLD	FAIL	E FAIL	POOH W/SCHLUMB. MDT TOOL ASSY. FROM 3600 M. L/D MDT ASSY.
	1800	1900	1,00		TLLD	FAIL	E FAIL	P/U AND M/U MODIFIED MDT TOOL ASSY.; REDUCED ASSY. W/ 3 MODULES.

								TESTED SIGNALS; OK.
	1900	2400	5,00	1960,0	TLLD	FAIL	E FAIL	RIH W/SCHLUMB. MDT TOOL ASSY. ON 3-1/2" DP TO 1960 M. SPEED: 2 MIN/STD FIRST 500 M, THEN 1 MIN/STD. FILLED PIPE EVERY 3. STD, BROKE CIRC. EVERY 10. STD.
971016	0000	0330	3,50	3604,0	TLLD	FAIL	E FAIL	CONT. RIH W/SCHLUMB. MDT TOOL ASSY. ON 3-/2" DP FROM 1960 M TO 3604 M.
	0330	0530	2,00	3604,0	TLLD	FAIL	E FAIL	LAUNCHED LOCOMOTIVE INSIDE 3-1/2" DP, INSTALLED SIDE-ENTRY SUB. RAN/PUMPED LOCOMOTIVE INSIDE DP ON ATLAS CABLE. LATCHED SAME ONTO MDT TOOL ASSY.
	0530	0600	,50	3604,0	TLLU	OK	OK	TESTED SCHLUMB. MDT SIGNALS THROUGH ATLAS CABLE. GOOD TEST.
	0600	0630	,50	3604,0	TLLU	OK	OK	FINISHED TESTING MDT.

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
971016	0630	0900	2,50	3604,0	TLLD	FAIL	E FAIL	CHAMBER VALVE ON MDT NOT OPERATING. ATTEMPTED TO TROUBLESHOOT AND REPAIR WITHOUT SUCCESS.
	0900	1030	1,50	3604,0	TLLD	FAIL	E FAIL	PULLED LOCOMOTIVE TO SURFACE. CHECKED OUT CABLE - OK.
	1030	1130	1,00	3360,0	TLLD	FAIL	E FAIL	PUMPED SLUG AND POOH TO 3360M.
	1130	1930	8,00	3360,0	TCCU	OK	OK	CIRCULATED AND CONDITONED MUD.
	1930	2400	4,50		TLLD	FAIL	E FAIL	SLUGGED PIPE AND POOH WITH MDT TOOL.
971017	0000	0130	1,50		TLLD	FAIL	E FAIL	L/D MDT TOOL.
	0130	0600	4,50	3955,0	TPPU	OK	OK	R/U ATLAS AND RIH WITH ATLAS PERFORATING GUNS ON WIRELINE. CORRELATED GUN DEPTH AND FIRED GUNS - GOOD INDICATION OF DETONATION. ATLAS POOH.
	0600	0800	2,00		TPPU	OK	OK	POOH WITH ATLAS WIRELINE PERFORATING GUNS.
	0800	1300	5,00		BBDU	OK	OK	RIH WITH BOP TEST TOOL. TESTED BOP TO 20/345 BAR (UAP TO 20/240 BAR) FOR 5/10 MINUTES ON YELLOW POD. FUNCTIONED TESTED BOP ON BLUE POD.
	1300	1400	1,00		TEDU	OK	OK	M/U LUBRICATOR #1 TO SINGLE 5" TUBING AND L/D SAME.
	1400	1500	1,00		BBUU	OK	OK	TESTED TDS IBOP'S TO 20/345 BAR FOR 5/10 MINUTES.
	1500	2000	5,00		TEDU	OK	OK	M/U LUBRICATOR #2 TO SINGLE 5" TUBING AND L/D SAME. M/U FLUTED HANGER AND L/D SAME. M/U FLOWHEAD AND L/D SAME.
	2000	2400	4,00	185,0	TEDU	OK	OK	P/U DST BHA INCLUDING 19 X 4-3/4" DRILL COLLARS.
971018	0000	0330	3,50	238,0	TEDU	OK	OK	CONTINUED P/U DST BHA + 1 STAND 3-1/2" DP.
	0330	0600	2,50	238,0	TXPU	OK	OK	FILLED TEST STRING WITH 1500 L HIVIS MUD AND DIESEL. PRESSURE TESTED TO 345 BAR.
	0600	0630	,50	238,0	TXPU	OK	OK	FINISHED PRESSURE TESTING DST STRING TO 345 BAR.
	0630	2100	14,50	3828,0	TEDU	OK	OK	RIH W/ 3-1/2" DP TEST STRING FILLING WITH DIESEL AS CUSHION.
	2100	2130	,50	3829,0	TXPU	OK	OK	TESTED DST STRING TO 345 BAR.
	2130	2400	2,50	3937,0	TEDU	OK	OK	M/U FLUTED HANGER AND MADE DUMMY RUN ON 5" DP. LANDED IN WELLHEAD AND OPERATED MPR'S. POOH AND L/D FLUTED HANGER.
971019	0000	0300	3,00	3828,0	TEDU	OK	OK	CLEANED AND CLEARED RIG FLOOR. P/U UMBILICAL REEL AND CONTROL PANEL. MADE UP FLUTED HANGER AND SSTT. FUNCTIONED SSTT.
	0300	0600	3,00	3937,0	TEDU	OK	OK	RIH WITH TEST STRING ON 5" TUBING. P/U AND FUNCTIONED 2 X SUBSEA LUBRICATOR VALVES.
	0600	0700	1,00	3937,0	TEDU	OK	OK	CONTINUED RIH WITH TEST STRING.
	0700	0930	2,50	3937,0	TXPU	OK	OK	TESTED DST STRING AGAINST TESTER VALVE TO 345 BAR. INFLOW TESTED SSTT WITH 345 BAR. INFLOW TESTED LUBRICATOR VALVES WITH 345 BAR. TESTED LOWER LUBRICATOR VALVE TO 345 BAR.
	0930	1930	10,00	3937,0	TEDU	OK	OK	INSTALLED 45'BAILS. INSTALLED WIRELINE BOP ON FLOWHEAD. INSTALLED KILL AND FLOWLINE COFLEX HOSES TO FLOWHEAD. P/U AND M/U FLOWHEAD. INSTALLED KILL AND FLOWLINE COFLEX HOSES TO STANDPIPES. HOOK UP CONTROL HOSES TO FLOWHEAD AND WIRELINE BOP.
	1930	2400	4,50	3937,0	TXPU	OK	OK	LANDED FLUTED HANGER IN WELLHEAD. TESTED KILL COFLEX LINE TO 345 BAR. TESTED DST STRING AGAINST TESTER VALVE TO 345 BAR. INFLOW TESTED MASTER VALVE WITH 345 BAR. INFLOW TESTED KILL WING VALVE WITH 345 BAR. FLUSHED ACROSS FLOWHEAD AND THROUGH FLOW WING VALVE TO BURNER HEADS.
971020	0000	0030	,50	3937,0	TXPU	OK	OK	TESTED FLOWLINE TO CHOKE MANIFOLD TO 345 BAR.
	0030	0100	,50	3937,0	TEPU	OK	OK	SET PACKER AT 3937M.
	0100	0230	1,50	3937,0	TEDU	OK	OK	HELD PRE-TEST SAFETY MEETING. CHECKED SURFACE VALVES LINES UP CORRECTLY. TESTED ESD SYSTEM.
	0230	0600	3,50	3937,0	TFFU	OK	OK	OPENED TESTER VALVE AND INITIATED MAIN FLOW PERIOD OF WATER ZONE.
	0600	0800	2,00	3937,0	TFFU	OK	OK	CONTINUED MAIN FLOW PERIOD OF WATER ZONE. POOR RESPONSE, WELL DIED BEFORE WATER REACHED SURFACE.
	0800	0830	,50	3937,0	TFSU	OK	OK	SHUT IN WELL WITH SELECT TESTER VALVE TO CHECK OPERATION OF VALVE.
	0830	1100	2,50	3937,0	TFFU	OK	OK	OPENED WELL AND CONTINUED FLOW PERIOD. NO RESPONSE FROM WELL.
	1100	1630	5,50	3937,0	TEWU	OK	OK	SHUT IN WELL WITH UPPER SUBSEA LUBRICATOR VALVE. R/U WIRELINE LUBRICATOR AND MWS BOTTOM HOLE SAMPLER/GR/CCL.
	1630	2300	6,50	3937,0	TLLD	FAIL	E FAIL	RIH WITH MWS BOTTOM HOLE SAMPLING TOOL. SAMPLE CHAMBER FAILED TO OPEN. POOH WITH WIRELINE.
	2300	2400	1,00	3937,0	TXWW	OK	OK	WAITED ON SWELL AND HEAVE TO SUBSIDE TO DISCONNECT WIRELINE LUBRICATOR AND CHANGE OUT BOTTOM HOLE SAMPLING TOOL. RIG HEAVING 2M-3M.

971021	0000	0330	3,50	3937,0	TXWW	OK	OK	CONTINUED WAITING FOR SWELL AND HEAVE TO SUBSIDE TO DISCONNECT WIRELINE LUBRICATOR AND CHANGE OUT BOTTOM HOLE SAMPLING TOOLS. RIG HEAVE 2M-3M.
	0330	0600	2,50	3937,0	TLLD	FAIL	E FAIL	RIG HEAVE LESS THAN 2M. DISCONNECTED WIRELINE LUBRICATOR AND CHANGED OUT BOTTOM HOLE SAMPLING TOOLS.
	0600	0700	1,00		TLLU	OK	OK	INSTALLED WIRELINE LUBRICATOR AND TESTED TO 345 BAR.
	0700	1130	4,50	3200,0	TLLU	OK	OK	RIH WITH MWS BOTTOM HOLE SAMPLING TOOL/GR/CCL AND OBTAINED WATER SAMPLE. POOH.
	1130	1230	1,00		TLLU	OK	OK	L/D SAMPLING TOOL/GR/CCL.
	1230	1600	3,50	3937,0	TCCU	OK	OK	CYCLED OMNI VALVE TO CIRCULATING POSITION. REVERSE CIRCULATED TUBING

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
971021	1230	1600	3,50	3937,0	TCCU	OK	OK	CONTENTS TO MUD AND COLLECTED FORMATION WATER SAMPLES. OBSERVED WELL. CIRCULATED TUBING TO SEAWATER. CYCLED OMNI TO TEST POSITION.
	1600	1800	2,00	3937,0	TCCU	OK	OK	ATTEMPTED TO PERFORM MINI-FRAC. PRESSURED TUBING TO 345 BAR, PRESSURE DROPPED TO 210 BAR IN 2 MINUTES AND THEN TO 50 BAR AFTER 3 MORE MINUTES. COULD NOT ESTABLISH INJECTION RATE.
	1800	2230	4,50	3937,0	TFKU	OK	OK	CYCLED OMNI VALVE TO CIRCULATING POSITION. REVERSE CIRCULATED TUBING TO MUD. CYCLED OMNI TO TEST POSTION.
	2230	2330	1,00	3937,0	TEWU	OK	OK	R/D WIRELINE PRESSURE CONTROL EQUIPMNENT. MEANWHILE FLOWCHECKED WELL.
	2330	2400	,50	3937,0	TEDU	OK	OK	P/U STRING AS HIGH AS POSSIBLE TO UNSEAT PACKER.
971022	0000	0030	,50	3937,0	TCCU	OK	OK	ATTEMPTED TO ESTABLISH INJECTION DOWN ANNULUS - PACKER SET (PACKER HAD NOT COME UNJAYED BEFORE AND RESET WHEN STRING WAS SLACKED OFF TO LAND FLUTED HANGER IN WELLHEAD).
	0030	0500	4,50	3930,0	TEDU	OK	OK	L/D FLOWHEAD AND DISCONNECTED COFLEX LINES. CHANGED ELEVATOR BAILS.
	0500	0600	1,00	3937,0	TCCU	OK	OK	LANDED FLUTED HANGER IN WELLHEAD. OPENED RD CIRCULATING VALVE AND LOCKED OPEN SELECT TESTER VALVE.
	0600	0830	2,50	3937,0	TCCU	OK	OK	CIRCULATED BOTTOMS UP. MAXIMUM GAS 8.7%. FLOWCHECKED. PUMPED SLUG.
	0830	2400	15,50		TEDU	OK	OK	POOH WITH DST STRING. L/D LUBRICATOR VALVES AND SUBSEA TEST TREE. CHECKED ROTARY TORQUE - MAX 9000 FT X LBS. CONTINUED POOH. L/D DST TOOLS. MEANWHILE, AFTER DST TOOLS ABOVE BOP, CLOSED BSR'S AND ATTEMPTED TO ESTABLISH INJECTION INTO PERFORATIONS - NO LEAK OFF AT 200 BAR (WITH 1.48 MUD AT 3156M TVD = 2.13 SG EMW).
971023	0000	0600	6,00	2200,0	PTTU	OK	OK	P/U 7" EZSV RETAINER AND RIH TO 2200 M.
	0600	1230	6,50	3940,0	PTTU	OK	OK	COMPLETED TIH WITH 7" EZSV TO 3940 M.
	1230	1330	1,00	3940,0	PXXU	FAIL	E FAIL	CROWN-MOUNTED-COMPENSATOR WOULDN'T UNLOCK - CMC HYDRAULIC VALVE WAS STUCK IN CLOSED POSITION. TROUBLESHOOTED SYSTEM UNTIL VALVE WAS FREED & CMC UNLOCKED.
	1330	1730	4,00	3947,0	PXXU	OK	OK	ATTEMPTED TO SET EZSV AT 3940 M - NO SUCCESS IN SETTING. ATTEMPTED TO SET AT 3945 M - NO SUCCESS. FINALLY SET EZSV AT 3947 M - DIDN'T SEE ANY OVERPULL TO SHEAR-OFF OF EZSV BUT SUCCESSFUL IN SETTING 22,5 MT DOWN ONTO EZSV.
	1730	1930	2,00	3947,0	PXXU	OK	OK	PRESSURE TESTED EZSV TO 345 BAR FOR 15 MINUTES.
	1930	2230	3,00	3920,0	PCCU	OK	OK	CIRCULATED 1 COMPLETE CIRCULATION WHILE S/C DRILLINE.
	2230	2400	1,50	3400,0	PTTU	OK	OK	POOH WITH EZSV MECHANICAL SETTING TOOL.
971024	0000	0600	6,00		PTTU	OK	OK	COMPLETED POOH WITH EZSV MECHANICAL SETTING TOOL. PERFORMED WEEKLY FUNCTION TEST OF BOPS WHEN SETTING TOOL LOCATED@480M. FUNCTION TESTED ON YELLOW POD FROM TOOLPUSHER'S OFFICE.
	0600	0800	2,00		TEDU	OK	OK	PU USED SSTT & BROKE-OUT ASSOCIATED TUBULARS. LD SSTT & PU BACK-UP SSTT. MU ASSOCIATED TUBULARS & LD ON PIPE RACK FOR PRESSURE TESTING.
	0800	1030	2,50		TEDU	OK	OK	PU BACK-UP FLOW HEAD & MU 1 JOINT OF 5" TBG. BELOW HEAD. LD FLOW HEAD ON PIPE RACK FOR PRESSURE TESTING.
	1030	1630	6,00	3888,0	TPPU	OK	OK	RU ATLAS ELECTRIC LINE. RIH & PERFORATED DST #1A ZONE FORM 3885,5 - 3888,5 M AT 6 SPF. POOH & RD ATLAS.
	1630	2400	7,50	220,0	TEDU	OK	OK	HELD PRE-JOB SAFETY MEETING. MU DST BHA.
971025	0000	0230	2,50	317,0	TEDU	OK	OK	COMPLETED MU DST BHA. TESTED TO 345 BAR FOR 10 MINUTES.
	0230	0600	3,50	674,0	TEDU	OK	OK	CONTINUED RUNNING DST STRING - PU/MU 3 1/2" PH-6 TUBING FOR TESTING. FILLING TUBING WITH BASE OIL EVERY 7 JOINTS. 38 JOINTS PU/MU AS OF REPORT TIME.
	0600	2400	18,00	3758,0	TEDU	OK	OK	CONTINUED RUNNING DST STRING - PU/MU 3 1/2" PH-6 TUBING FOR TESTING. FILLING TUBING WITH BASE OIL EVERY 7 JOINTS.
971026	0000	0130	1,50	3758,0	TEDU	OK	OK	COMPLETED P/U AND M/U 3 1/2" TUBING. RAN A TOTAL OF 358 JTS.
	0130	0300	1,50	3865,0	TEDU	OK	OK	M/U DUMMY FLUTED HGR. AND RIH ON 5" DP. LANDED IN WEAR BUSHING. CLOSED MPR TO MARK PIPE.
	0300	0600	3,00	3865,0	TEDU	OK	OK	R/U AWS AND MWS. RUN WITH GR/CCL AND CORRELATED DEPTH.
	0600	0700	1,00		TEDU	OK	OK	POOH WITH ELECTRIC LINE AFTER CORRELATION RUN. RD ATLAS/MWS.

0700	0900	2,00	3758,0	TEDU	OK	OK	CLOSED MPR FOR SPACE-OUT PURPOSES. OPENED RAMS & POOH WITH DUMMY FLUTED HANGER. LD HANGER.
0900	1130	2,50	3757,0	TEDU	OK	OK	CLEANED RIG FLOOR. RAN 2 PUP JTS. 3 1/2" TBG. FOR SPACE-OUT. PRESSURE TESTED DST STRING AGAINST LPR-N VALVE TO 345 BAR FOR 10 MINUTES. PU WEIGHT = 113 MT; SO WEIGHT = 68 MT.
1130	1230	1,00	3758,0	TEDU	OK	OK	PU SSTT & MU SAME INTO TEST STRING.
1230	1500	2,50	3758,0	TEOD	FAIL	E FAIL	SSTT WOULDN'T RE-LATCH DURING FUNCTION TEST. LD SSTT & PU BACK-UP SSTT.
1500	1530	,50	3758,0	TEDU	OK	OK	FUNCTION TESTED LATCHING MECHANISM ON SSTT.
1530	1600	,50	3827,0	TEDU	OK	OK	RIH WITH 5" LANDING STRING.
1600	2000	4,00	3840,0	TEDU	OK	OK	MU 2 LUBRICATOR VALVES + ASSOCIATED TUBULARS TO LANDING STRING.

Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
971026	1600	2000	4,00	3840,0	TEDU	OK	OK	PRESSURE TESTED DST STRING AGAINST LPR-N VALVE TO 345 BAR FOR 10 MINUTES. TESTED SSTT VALVES & LUBRICATOR VALVES AS PER TEST PROCEDURE.
	2000	2400	4,00	3865,0	TEDU	OK	OK	MU 1 JT. 5" TBG. MU FLOWHEAD & RU ASSOCIATED HOSES.
971027	0000	0100	1,00	3865,0	TEDU	OK	OK	COMPLETED RU FLOWHEAD.
	0100	0400	3,00	3865,0	TEDU	OK	OK	LANDED FLUTED HANGER INTO WEAR BUSHING. TEST FLOWHEAD, TEST STRING, & TESTING EQUIPMENT AS PER TEST PROCEDURE.
	0400	0600	2,00	3865,0	TEDU	OK	OK	ESTABLISHED WEIGHTS: PU = 122 MT; SO = 82 MT. SET 7" RTTS PACKER @ 3799 M. LANDED HANGER BACK INTO WEAR BUSHING. CLOSED MPR. CHECKED THAT SURFACE VALVES CORRECTLY LINED-UP. TESTED ESD SYSTEM FROM 2 POINTS-RIG FLOOR & CHOKE MANIFOLD. HELD SAFETY BRIEFING ON RIG FLOOR.
	0600	2230	16,50	3865,0	TFFU	OK	OK	OPENED WELL VIA LPR-N VALVE @ 0645 HRS. FLOWED 11 M3 BASE OIL CUSHION TO STOCK TANK - THEN SWITCHED TO FLARE BOOM. FLOWED & TESTED WELL.
	2230	2400	1,50	3865,0	TFSU	OK	OK	SHUT-IN WELL @ 2233 HRS. BY CLOSING LPR-N VALVE. MONITORED SHUT-IN SURFACE PRESSURE FOR 1 HOUR TO INSURE THAT LPR-N VALVE WASN'T LEAKING.
971028	0000	0200	2,00	3865,0	TFSU	OK	OK	VERIFIED THAT LPR-N VALVE WASN'T LEAKING.CLOSED LOWER LUBRICATOR VALVE & PERFORMED 10 MINUTE IN-FLOW TEST. CLOSED UPPER LUBRICATOR VALVE. BLED PRESSURE OFF OF SURFACE LINES THROUGH CHOKE MANIFOLD & FLUSHED LINES TO STOCK TANK WITH SEAWATER.
	0200	0400	2,00	3865,0	TFSU	OK	OK	WHILE CONTINUING WITH SHUT-IN PRESSURE BUILD-UP TEST, RU ELECTRIC LINE IN PREPARATION FOR FUTURE WIRELINE SAMPLING.
	0400	0600	2,00	3865,0	TFSU	OK	OK	CONTINUED PERFORMING SHUT-IN BUILD-UP TEST.
	0600	1430	8,50	3865,0	TFSU	OK	OK	CONTINUED PERFORMING SHUT-IN BUILD-UP TEST.
	1430	1700	2,50	3865,0	TFFU	OK	OK	OPENED WELL & FLOWED IN PREPARATION OF BOTTOM-HOLE-SAMPLING *BHS* OPERATIONS. SHUT-IN WELL @ 1645 HRS.
	1700	2200	5,00	3765,0	TFFU	OK	OK	RU 4 BHS TOOLSTRING ON ATLAS ELECTRIC LINE. TESTED LUBRICATOR/BOPS TO 200 BAR. RIH WITH BHS TO 3765 M - WELL WAS OPENED-UP AFTER TOOLSTRING WAS BELOW 500 M.
	2200	2330	1,50	3765,0	TFSU	OK	OK	SHUT-IN WELL. PERFORM BHS OPERATIONS.
	2330	2400	,50		TFSU	OK	OK	POOH WITH BHS / ELECTRIC LINE.
971029	0000	0100	1,00		TFSU	OK	OK	COMPLETED POOH WITH BHS / ELECTRIC LINE.
	0100	0400	3,00	3865,0	TFSU	OK	OK	RD BHS TOOLSTRING. ANALYZED/CHECKED SAMPLERS FOR ACCEPTABLE SAMPLES.
	0400	0600	2,00	3865,0	TCCU	OK	OK	START PERFORMING MINI-FRAC BY PUMPING/BULLHEADING SEAWATER/POLYMER DOWN TEST STRING.
	0600	0900	3,00	3865,0	TCCU	OK	OK	CONTINUED WITH MINI-FRAC JOB - USING CEMENT UNIT. PUMP RATE DECREASED TO 50 LPM @ 345 BAR AFTER 6,6 M3 HAD BEEN BULLHEADED;LOW INFLOW RATE INDICATING THAT NO FRACTURE HAD BEEN CREATED.STOPPED PUMPING & RECORDED FALL-OFF PRESSURE.
	0900	1030	1,50	3865,0	TCCU	OK	OK	CONTINUED BULLHEADING WITH 345 BAR. LOW PUMPING RATE = 4 LPM. PUMPED ANOTHER 0,8 M3 SEAWATER/POLYMER FLUID. STOPPED PUMPING - NO FRACTURE CREATED. MINI-FRAC JOB CONCLUDED.
	1030	1300	2,50		TPPU	OK	OK	CLOSED LUBRICATOR VALVES & BLED DOWN ABOVE VALVES TO 0 BAR. RU PERFORATING BAR TOOLSTRING & ELECTRIC LINE TO PERFORATE ZONE #1B.
	1300	1700	4,00	3865,0	TPPU	OK	OK	RIH WITH ELECTRIC LINE + BAR. PERFORATED VIA TCP GUNS - USING BAR TO DETONATE - @ 1513 HRS. PERFORATED FROM 3826 - 3865 M. POOH WITH BAR + ELECTRIC LINE.
	1700	2030	3,50	3865,0	TPPU	OK	OK	RD ELECTRIC LINE, LUBRICATOR & WIRELINE BOPS.
	2030	2400	3,50	3865,0	TFFU	OK	OK	OPENED WELL TO FLOW @ 2051 HRS. FLOWED/TESTED WELL.
971030	0000	0600	6,00	3865,0	TFFU	OK	OK	FLOWED/TESTED WELL ON MAIN FLOW.
	0600	2400	18,00	3865,0	TFFU	OK	OK	FLOWED/TESTED WELL - ON MAIN FLOW PERIOD.
971031	0000	0600	6,00	3865,0	TFFU	OK	OK	FLOWED/TESTED WELL.
	0600	1430	8,50	3865,0	TFFU	OK	OK	FLOWED/TESTED WELL. TOOK PVT SAMPLES.
	1430	2400	9,50	3865,0	TFSU	OK	OK	SHUT-IN WELL BY CLOSING LPR-N/TESTER VALVE. CHECKED FOR LEAKAGE & THEN CLOSED FLOW WING VALVE ON FLOW-HEAD. BLED OFF PRESSURE DOWNSTREAM OF FLOW-HEAD. CLOSED CHOKE MANIFOLD. CONDUCTED DOWNHOLE PRESSURE BUILD-UP

								TEST.
971101	0000	0600	6,00	3865,0	TFSU	OK	OK	CONTINUED PERFORMING SHUT-IN BUILD-UP TEST.
	0600	2400	18,00	3865,0	TFSU	OK	OK	CONTINUED PERFORMING SHUT-IN BUILD-UP TEST.
971102	0000	0600	6,00	3865,0	TFSU	OK	OK	CONTINUED PERFORMING SHUT-IN BUILD-UP TEST.
	0600	0830	2,50	3865,0	TFSU	OK	OK	COMPLETED SHUT-IN BUILD-UP TEST.
	0830	1030	2,00	3865,0	TCCU	OK	OK	PRESSURED UP ON ANNULUS TO 200 BAR-LOCKED OPEN TESTER VALVE.PERFORMED MINI-FRAC TEST 2B. USING SEAWATER/POLYMER MIXTURE, THE FRACTURE CLOSURE PRESSURE WAS DETERMINED TO BE APPROXIMATELY 555 BAR AT 3045 M TVD - TOP PERFORATION.

Date	From hrs	To hrs	Dura tion	Depth mMD	Act. code	Main mode	Sub mode	Description
971102	1030	1200	1,50	3865,0	TCCU	OK	OK	CONTINUED WITH THE MINI-FRAC JOB. PUMPED 14,5 M3 OF 1,47 SG MUD. PUMP RATE = 1000 LPM AT 340 BAR.
	1200	1400	2,00	3865,0	TCCU	OK	OK	FLUSHED SURFACE TEST LINES & EQUIPMENT WITH SEAWATER.OPENED MPR & RELEASED RTTS W/13MT O/PULL.CLOSED MPR & SHEARED APR-RD VALVE W/300BAR ANNULUS PRESSURE. COMPLETED THE KILL PROCEDURE BY BULLHEADING 1,6 M3 1,47 SG MUD DOWN THE ANNULUS - FORCING FLUID BELOW PACKER TO BE BULLHEADED INTO FORMATION.
	1400	1730	3,50	3865,0	TCCU	OK	OK	OPENED MPR & CIRCULATED BOTTOMS UP - SHUTTING IN THE WELL & TAKING RETURNS THROUGH THE CHOKE LINE AFTER 2/3 ANNULAR VOLUME HAD BEEN PUMPED. MAX GAS READING = 3,7%. AFTER GAS DECREASED, OPENED WELL & CONTINUED CIRCULATING UP RISER - FOR A TOTAL OF 2 BOTTOMS UP.
	1730	1800	,50	3865,0	TCCU	OK	OK	FLOW CHECKED & PUMPED SLUG.
	1800	2400	6,00	3755,0	TEDU	OK	OK	RD SURFACE FLOWHEAD. POOH/LD 5" LANDING STRING - LD 2 LUBRICATOR VALVES. STARTED LD SSTT-SUBSEA TEST TREE.
971103	0000	0100	1,00	3755,0	TEDU	OK	OK	COMPLETED LD SSTT.
	0100	0600	5,00	2500,0	TEDU	OK	OK	POOH - LD 3 1/2" TEST STRING. 125 JTS. LD AT REPORT TIME.
	0600	1400	8,00	317,0	TEDU	OK	OK	FINISHED POOH WITH 3 1/2" TEST TUBING STRING. LD A TOTAL OF 358 JTS.
	1400	2000	6,00		TEDU	OK	OK	LD DST BHA/TOOLS.
	2000	2400	4,00		PTTU	OK	OK	CLEARED RIG FLOOR. MU CEMENTING STAND & TESTED TIW + LO-TORQ VALVES TO 345 BAR FOR 5 MINUTES. STAND SAME BACK.
971104	0000	0600	6,00	1400,0	PTTU	OK	OK	MU 7" EZSV & TIH USING 3 1/2" DP. 47 STANDS IN AT REPORT TIME.
	0600	1700	11,00	3818,0	PTTU	OK	OK	COMPLETED TIH WITH 7" EZSV TO 3818 M.
	1700	1900	2,00	3818,0	PSMU	OK	OK	SET EZSV @ 3818M. SHEARED SLEEVE W/18MT O/P; SET DOWN 18MT TO CONFIRM THAT EZSV WAS SET. STUNG OUT OF EZSV & TESTED EZSV TO 345 BAR FOR 15 MINUTES. STING BACK INTO EZSV & CLOSED UPPER ANNULAR IN PREPARATION FOR SQUEEZE JOB.
	1900	2400	5,00	3818,0	PSQK	FAIL	O FAIL	WHILE TRANSFERRING CEMENT SPACER TO CEMENT UNIT, 3,5 M3 OF SPACER WAS ACCIDENTALLY TRANSFERRED TO ACTIVE SYSTEM. THE AMOUNT OF SPACER NEEDED FOR SQUEEZE JOB NOW NOT AVAILABLE. REBUILT THE SPACER. NOTE:CIRCULATED MUD AT 450 LPM - 130 BAR - WHILE REBUILDING THE SPACER CIRCULATED TOTAL OF 1,2 X BTMS UP.
971105	0000	0130	1,50	3818,0	PSQK	FAIL	O FAIL	FINISHED RE-BUILDING CEMENT SPACER IN PREPARATION FOR SQUEEZE JOB. HELD PRE-JOB SAFETY MEETING ON RIG FLOOR WHILE SPACER WAS BEING WEIGHED UP. CLOSED UPPER ANNULAR & PRESSURED UP ON ANNULUS TO 60 BAR IN PREPARATION FOR SQUEEZE JOB.
	0130	0330	2,00	3818,0	PSQK	OK	OK	PERFORMED SQUEEZE JOB - SQUEEZING PERFS BELOW EZSV. PUMPED 3 M3 SPACER,4 M3 1,90SG CEMENT, 1,1 M3 SPACER & 7 M3 MUD;STUNG INTO EZSV & SQUEEZED 3 M3 CEMENT BELOW - FINAL SQUEEZE PRESSURE = 192 BAR @ ,33 M3 PER MIN. SQUEEZED APPROX. 1,67 M3 CEMENT INTO PERFS. SHUT-DOWN-PRESSURE HELD @ 135 BAR. WT. DOWN ON EZSV DURING JOB:10 MT.
	0330	0500	1,50	3605,0	PSSU	OK	OK	STUNG OUT OF EZSV & BLED OFF BACK-PRESSURE FROM ANNULUS. OPENED UPPER ANNULAR & SPOTTED 1 M3 CEMENT ON TOP OF EZSV. POOH TO 3605 M. TOC = PBTD = 3765 M.
	0500	0530	,50	3605,0	PCCU	OK	OK	REVERSED OUT 1,5 X STRING VOLUME/670 LPM @ 152 BAR. NO SPACER OR CEMENT IN RETURNS.
	0530	0600	,50	3605,0	PSMU	OK	OK	TESTED EZSV TO 345 BAR FOR 15 MINUTES USING UPR.
	0600	1100	5,00	2325,0	PTTU	OK	OK	PUMPED SLUG & POOH TO 2325 M ; LD 132 JTS. 3 1/2" DP ON TOH.
	1100	1400	3,00	2325,0	PCCU	OK	OK	CIRCULATED & INCREASED MUD WT. TO 1,55 SG.
	1400	1700	3,00		PTTU	OK	OK	PUMPED SLUG & COMPLETED POOH WITH 7" EZSV MECHANICAL SETTING TOOL.
	1700	1900	2,00	106,0	BBDU	OK	OK	MU FMC SPRING-LOADED TOOL & TIH TO WEAR BUSHING IN PREPARATION TO TEST BOPS.
	1900	2200	3,00	106,0	BBDU	OK	OK	TESTED BOPS ON YELLOW POD - UPPER ANNULAR TESTED TO 20/241 BAR; LOWER ANNULAR + PIPE RAMS + FAIL SAFE VALVES TESTED TO 20/345 BAR. FUNCTION TESTED BOPS ON BLUE POD.
	2200	2230	,50		BBDU	OK	OK	POOH WITH SPRING-LOADED TOOL.
	2230	2300	,50		RMRU	OK	OK	CHANGED SAVER SUB ON TOP DRIVE FROM 3 1/2" IF TO 4 1/2" IF.
	2300	2400	1,00		BBUU	OK	OK	RU & STARTED TESTING SURFACE EQUIPMENT.

971106	0000	0100	1,00		BBUU	OK	OK	FINISHED TESTING 2 TOP DRIVE SAFETY VALVES + KELLY HOSE TO 20/345 BAR. RD TESTING EQUIPMENT.
	0100	0230	1,50		PTTU	OK	OK	REPLACED 1 BENT JOINT OF 3 1/2" DP IN CEMENTING STAND & MOVED STAND IN DERRICK + LD 1 STAND 3 1/2" DP - TO ALLOW ACCESS TO 3 1/2" HWDP TO BE USED IN CUTTING BHA.
	0230	0600	3,50	1200,0	PTTU	OK	OK	MU BAKER 7" CASING CUTTING BHA + 3 1/2" HWDP. TIH WITH BHA ON 3 1/2" DP. 36 STANDS DP IN HOLE - AT APPROX. 1200 M - AT REPORT TIME.
	0600	1000	4,00	2275,0	PTTU	OK	OK	CONTINUED RIH W/ CSG CUTTING ASSY. SPACED OUT WITH SWIVEL IN WELLHEAD RECORDED PRESSURE AND TORQUE READINGS. START CUT AT 2275M.
	1000	1030	,50	2275,0	PTTU	OK	OK	CONT 7" CSG CUT AND HAD 40 BAR PRESSURE DROP AND SLIGHT LOSS OF MUD.

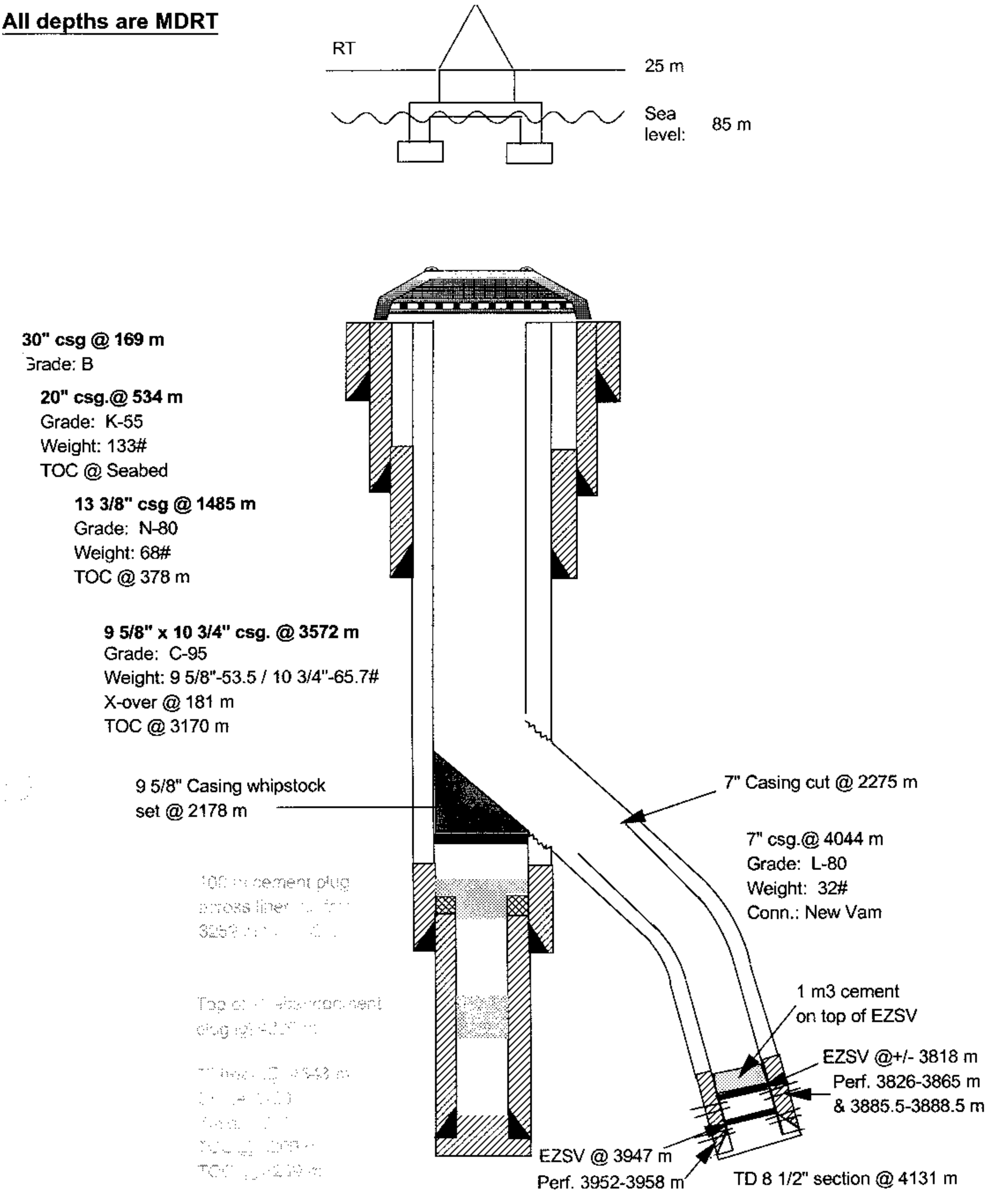
Date	From hrs	To hrs	Duration	Depth mMD	Act. code	Main mode	Sub mode	Description
971106	1000	1030	,50	2275,0	PTTU	OK	OK	PULLED ABOVE CUT AND OBSERVED WELL IN 15 MIN. TRIP TANK GAINED 0,5 M3 WITH DECLINING RATE TO STEADY.
	1030	1430	4,00	160,0	PTTU	OK	OK	PUMPED SLUG AND POOH. FLOW CHECKED BELOW BOP, OK.
	1430	1600	1,50		PTPU	OK	OK	LAID DOWN 15 JT 3 1/2" HWDP AND CSG CUTTER ASSY.
	1600	1800	2,00		PAOU	OK	OK	MADE UP SPRING ACTUATED TOOL AND RETRIEVED WEAR BUSHING.
	1800	2200	4,00		PACD	FAIL	E FAIL	MADE UP FMC SPRING LOADED TOOL AND ATTEMPTED TO RETRIEVE SEAL ASSY WITH 15 TON DOWN WT AND 2700 DNM TORQUE. FLOW CHECKED AND PUMPED BTM UP OVER CHOKE. POOH, DID NOT RETRIEVE SEAL ASSY. RIH AND ATTEMPT TO RETRIEVE SEAL ASSY WITHOUT SUCCESS.
	2200	2400	2,00		PACD	FAIL	E FAIL	MADE UP RUBBER NOSE JET SUB AND RIH TO SEAL ASSY AND WASH WELLHEAD WITH 1500 L/MIN AND 103 BAR. POOH.
971107	0000	0130	1,50		PACD	FAIL	E FAIL	RIH AND ATTEMPT TO ENGAGE SEAL ASSY, NO GO. POOH.
	0130	0230	1,00		PACD	FAIL	E FAIL	MODEFIED SPRING LOADED TOOL BY REMOVING LATCH LUGS AND GRIND OFF 4 MM. REDRESSED SAME.
	0230	0400	1,50		PACU	OK	OK	RIH AND ENGAGED SEAL ASSY. SET DOWN 5 TON, CLOSE L/ANNULAR FOR SUPPORT AND APPLIED 6000 DNM TORQUE, SET DOWN TO 14 TON DOWN WT AND PICKED UP NO INDICATION OF OVER PULL. CHECKED FOR FLOW, OPEN ANNULAR AND POOH. LAID DOWN SEAL ASSY AND RETRIEVING TOOL.
	0400	0600	2,00	106,0	PACU	OK	OK	MADE UP 7" CSG SPEAR/PACKOFF ASSY AND RIH TO WELLHEAD.
	0600	0630	,50	105,0	PACU	OK	OK	ENGAGED SPEAR IN 7" CSG AND PULLED CSG FREE WITH 100 TON OVER PULL FLOW CHECKED WELL, WELL STATIC.
	0630	0730	1,00	2169,0	PACU	OK	OK	POOH WITH 7" CSG. RELEASED CSG SPEAR AND RACKED BACK IN DERRICK.
	0730	0900	1,50	2169,0	PACU	OK	OK	RIG UP 7" CSG HANDLING EQUIPMENT.
	0900	2000	11,00		PACU	OK	OK	POOH AND LAID DOWN 179 JT 7" CSG.
	2000	2130	1,50		PACU	OK	OK	RIGGED DOWN CSG HANDLING EQUIPMENT AND CLEARED DRILLFLOOR.
	2130	2200	,50		PACU	OK	OK	LAID DOWN CSG SPEAR ASSY.
	2200	2400	2,00	106,0	PACU	OK	OK	MADE UP WEAR BUSHING RUNNING TOOL, SET 10 3/4" WEAR BUSHING IN WELLHEAD. LAID DOWN RUNNING TOOL.
971108	0000	0430	4,50	2210,0	PTTU	OK	OK	MADE UP MULESHOE ON 3 1/2" DP AND RIH TO 2210M. BROKE CIRC AND GOT 12% GAS IN RETURN AT START OF CIRCULATION.
	0430	0600	1,50	2210,0	PTTU	OK	OK	FLOW CHECKED WELL, STATIC CONDITION. START CIRC 10 MIN AND GOT 38% GAS IN RETURNS. CLOSE ANNULAR AND INVESTIGATED FROZEN DP PRESSURE GAUGE ON CHOKE PANEL. STARTED TO CIRC BTMS UP WITH OPEN CHOKE.
	0600	0900	3,00	2210,0	PTTU	OK	OK	CONTINUED CIRCULATION THROUG OPEN CHOKE. GAS READING DECLINED TO 9% OPENED WELL AND CIRC LONG WAY UNTIL GAS STABILIZED AGAIN AT 9%.
	0900	1000	1,00	2425,0	PTTU	OK	OK	CONTINUED RIH TO 2425M. WASHED SECTION FROM 2205M TO 2275M PRIOR TO SET CMT PLUG.
	1000	1230	2,50	2425,0	PCCU	OK	OK	CIRCULATED AND CONDITION MUD 1,5 TIMES HOLE VOLUME. FLOW CHECKED, WELL STATIC.
	1230	1300	,50	2425,0	PSSU	OK	OK	PUMPED 2 M3 HI-VIS PILL AND DISPLACED TO 2325M.
	1300	1330	,50	2325,0	PTTU	OK	OK	POOH TO 2325M. MADE UP CMT STAND W/VALVES AND CMT LINE.
	1330	1400	,50	2325,0	PSSU	OK	OK	PUMPED 5,9 M3 SPACER WITH RIG PUMP AND TESTED CMT LINE TO 200 BAR.
	1400	1530	1,50	2325,0	PSSU	OK	OK	MIX AND PUMPED 5,4 M3 1,95 SG CMT SLURRY. DISPLACED WITH 6,55 M3 MUD TO SET PLUG. ESTIMATED TOC 2205M. ROTATED STRING WITH 70 RPM DURING JOB.
	1530	1600	,50	2205,0	PTTU	OK	OK	POOH TO 2205M.
	1600	1730	1,50	2205,0	PSSU	OK	OK	REVERSE OUT 1,2 TIMES PIPE VOLUME, NO CMT/SPACER OBSERVED. FLOW CHECKED, WELL STATIC.
	1730	1900	1,50	2170,0	PCCU	OK	OK	RACKED BACK CMT STAND AND POOH TO 2170M. CIRCULATED BTMS UP. MAX GAS 12%, DECLINED TO 2% AT END OF CIRULATION.
	1900	2100	2,00	1387,0	PTTU	OK	OK	PUMPED SLUG AND POOH TO 1387M.
	2100	2400	3,00	450,0	PTPU	OK	OK	LAID DOWN 3 1/2" DP.
971109	0000	0230	2,50		PTPU	OK	OK	CONTINUED LAY DOWN 3 1/2" DP. TOTAL 147 JT. RIG DOWN 3 1/2" HANDLING EQUIPMENT.
	0230	0600	3,50		PTPU	OK	OK	LAID DOWN CMT STAND. RIH AND LAID DOWN 4 3/4" DC. TOTAL 16 JT AT REPORT TIME.
	0600	0730	1,50		PTPU	OK	OK	CONTINUED TO LAY DOWN EXCESS 4 3/4" DC'S, TOTAL 27 JT, CSG SCRAPER,BIT

							AND 3 JT 5" DP DUE TO WASHED OUT JT.
0730	2000	12,50	2065,0	PAOU	OK	OK	MADE UP RTTS TOOL AND RIH. START TO GET RESISTANCE AT 2070M, PULLED BACK TO 2065M AND SET RTTS. TEST 9 5/8" CSG WITH 180 BAR, OK. POOH AND LAID DOWN RTTS.
2000	2200	2,00		DEOU	OK	OK	SLIP AND CUT DRILLING LINE AND PRECAUTIONARY CHANGE WASH PIPE ON TOP DRIVE. TRANSFERED RIG TO WELL 15/9-19B AT 2200 HRS.

4.8 Wellbore schematic

WELL SCHEMATIC: 15/9-19A
"Byford Dolphin"

All depths are MDRT



4.9 Rig time distribution / Drilling time vs depth

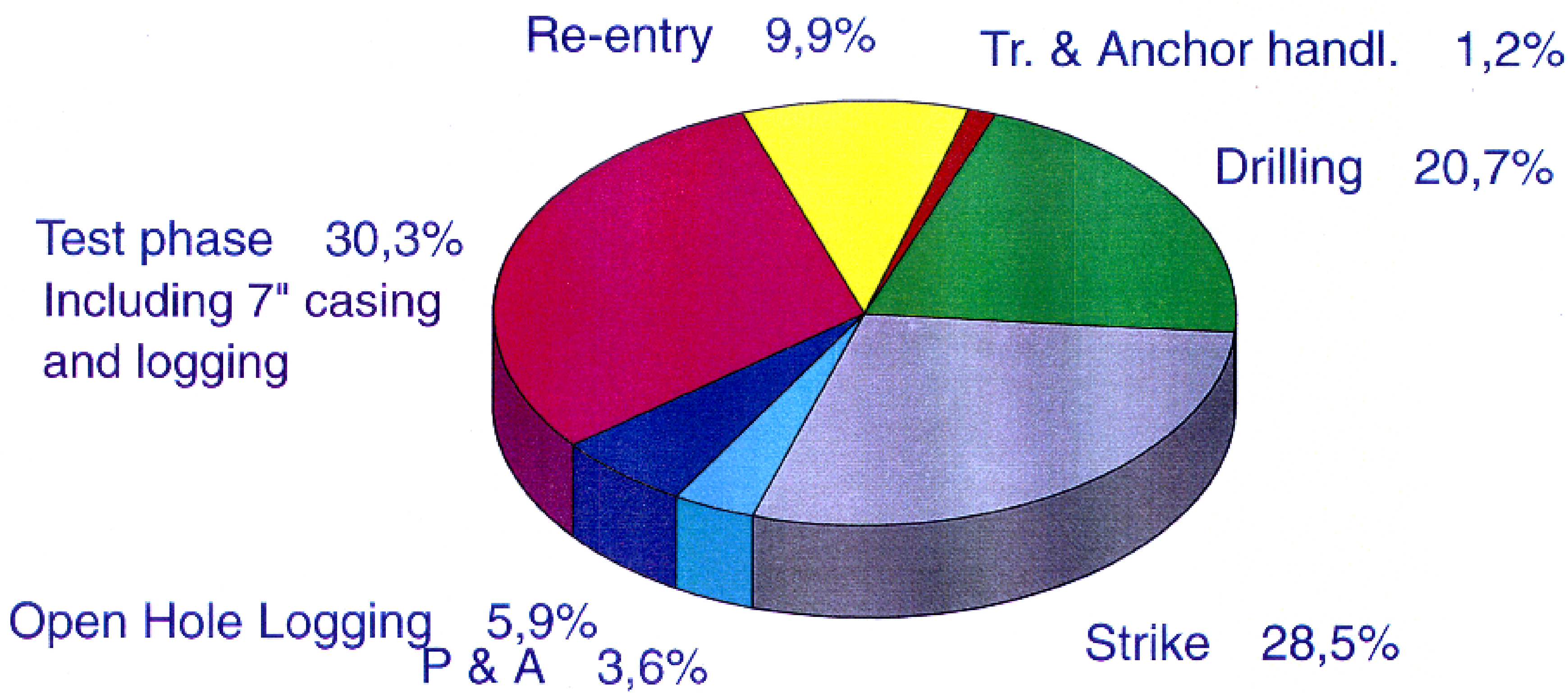
Well 15/9-19SR2 & 19A
Time distribution (hrs)

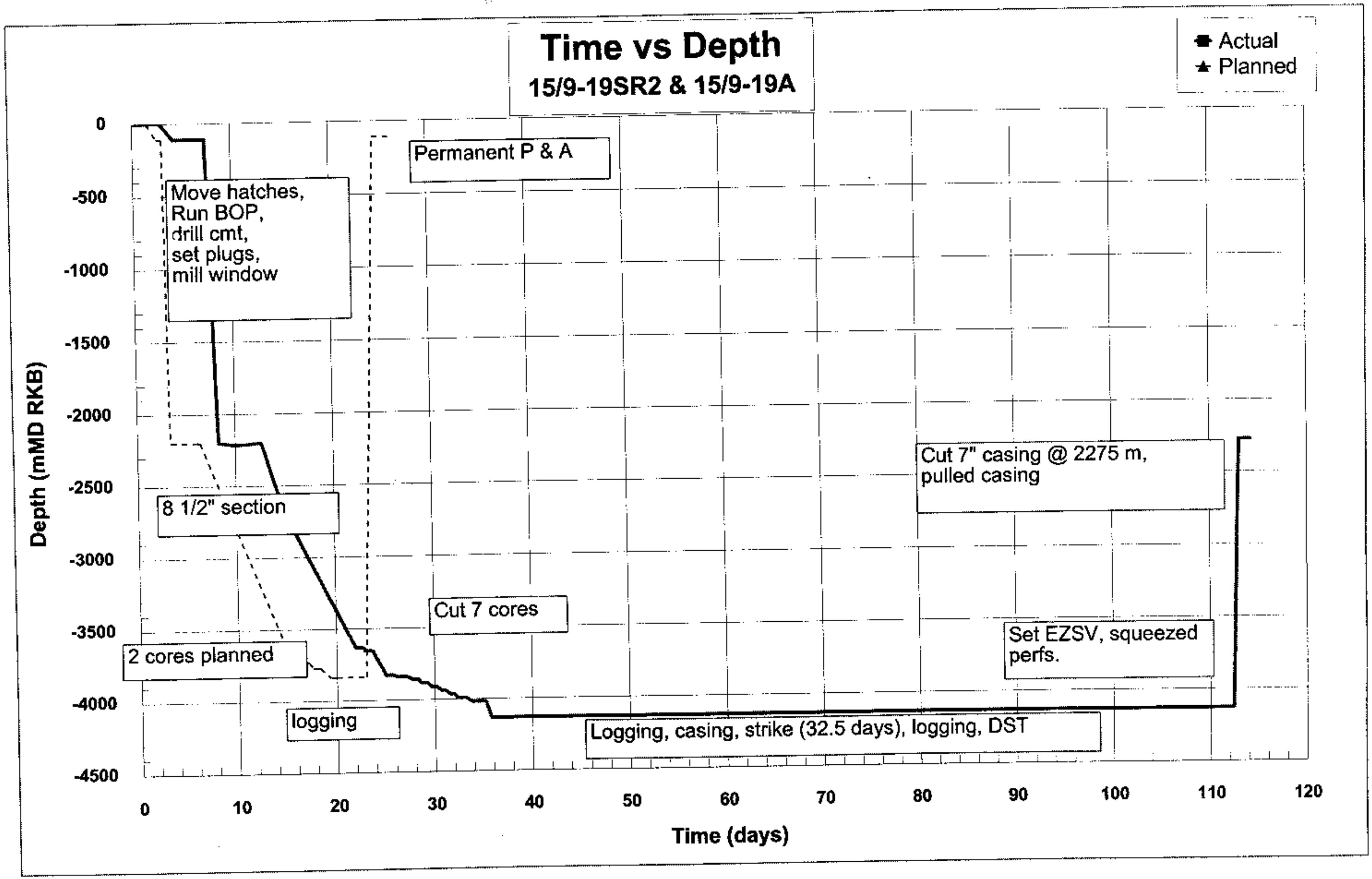
STATOIL

ACTIVITY	PLANNED TIME (hrs)	ACTUAL TIME (hrs)	DIFF. (hrs)	COMMENTS
TRANSIT	12	7,5	-4,5	
ANCHOR HANDLING, BALLAST RIG	24	26	2	
REMOVE HATCH % CORR. CAP		36	36	
RUN BOP	24	32	8	DOWN TIME 3,5 hrs
DRILL CEMENT PLUGS	12	76,5	64,5	DOWN TIME 1 hr
SET WHIPSTOCK / MILL WINDOW	72	125,5	53,5	DOWN TIME 51 hrs
DRILL 8 1/2" HOLE TO CORE POINT	240	326	86	DOWN TIME 24 hrs
CORING	48	183,5	135,5	2 cores planned, 7 cores cut. DOWN TIME 0,5 hrs
DRILLING TO TD	48	59	11	DOWN TIME 7 hrs
OPEN HOLE LOGGING	72	194,5	122,5	DOWN TIME 66,5 hrs Including strike 32 hrs
TEST PHASE INCLUDING 7" CASING AND LOGGING		1578	1578	DOWN TIME 877 hrs Including strike 748 hrs
P & A	36	98	62	DOWN TIME 15 hrs
BOP & ANCHOR HANDLING	48		-48	Started sidetrack 19B
TOTAL TIME	**636 (26,5 days)**	**2742,5 (114,3 days)**	**2106,5 (87,8 days)**	

Well 15/9-19SR2 & 19A
Time distribution (%)

STATOIL





Time vs Depth
15/9-19SR2 & 15/9-19A
Actual
Planned
Depth (mMD RKB)
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
-4000
-4500
Time (days)
0
10
20
30
40
50
60
70
80
90
100
110
120
Permanent P & A
Move hatches,
Run BOP,
drill cmt,
set plugs,
mill window
8 1/2" section
Cut 7 cores
2 cores planned
logging
Logging, casing, strike (32.5 days), logging, DST
Cut 7" casing @ 2275 m,
pulled casing
Set EZSV, squeezed
perfs.

4.10 Bit record

DBR

Print date: 98/04/19

B I T   R E C O R D

Page: 1

Well: 0015/09-019SR2

Run no.	Bit Size	Bit no.	BHA no.	Bit type	IADC code	Manufacturer	Serial no.	Nozzles no x n	(n/32") no x n	no x n	no x n	Flow area in2
1	8 1/2"	1	1	ATJG8	346	HUGHES	P39CD	1 x 18	2 x 24	x	x	1,132

Run no.	Flow-rate l/min	Pump pres bar	Depth In mMD	Depth Out mMD	Made m.	HR. Drlg.	ROP m/hr	WOB Min ton	WOB Max ton	RPM Min	RPM Max	IADC Dull Grading IO	DC	L	B	G	OC	RP	Remarks
1	2800	85	190,0	403,0	213,0	25,9	8,2	2	13	68	74	74	CT	M	E	I	NO	TD	DRILLED 212 M CMT AND 9-5/8" BRIDGE PLUG

B I T   R E C O R D

Well: 0015/09-019A

Run no.	Bit Size	Bit no.	BHA no.	Bit type	IADC code	Manufacturer	Serial no.	Nozzles (n/32") no x n	no x n	no x n	no x n	Flow area in2
1	8 1/2"	1	2	M16VX	M432	SMITH	JR3251	6 x 16	x	x	x	1,178
2	8 1/2"	2	5	M16VX	M432	SMITH	JR3248	6 x 16	x	x	x	1,178
3	8 1/2"	3	6	EHP44HDL	447	REED	LB8707	3 x 22	x	x	x	1,114
4	8 1/2"	1RR	7	M16VX	M432	SMITH	JR3251	6 x 16	x	x	x	1,178
5	8 1/2"	4	8	EHP43ALFDH	437	REED	LB8070	3 x 22	x	x	x	1,114
6	8 1/2"	5	9	G449DG3	M433	HUGHES	1901580	4 x 12	1 x 20	1 x 22	x	1,120
7	8 1/2"	6	10	EHP43ALFDH	437	REED	QD4568	3 x 24	x	x	x	1,325
8	8 1/2"	7	10	EHP51ADL	437	REED	RT 2967	3 x 24	x	x	x	1,325
9	8 1/2"	5 RR	10	G449DG3	M433	HUGHES	1901580	4 x 12	1 x 20	1 x 22	x	1,120
10	8 1/2"	8	11	CD93FDIL	M233	DIAMANT BOART S	7940506	x	x	x	x	,700
11	8 1/2"	8 RR	12	CD93FDIL	M233	DIAMANT BOART S	7940506	x	x	x	x	,700
12	8 1/2"	8 RR	12	CD93FDIL	M233	DIAMANT BOART S	7940506	x	x	x	x	,700
13	8 1/2"	8 RR	12	CD93FDIL	M233	DIAMANT BOART S	7940506	x	x	x	x	,700
14	8 1/2"	9	12	CD93FDIL	M233	DIAMANT BOART S	7941023	x	x	x	x	,700
15	8 1/2"	9 RR	12	CD93FDIL	M233	DIAMANT BOART S	7941023	x	x	x	x	,700
16	8 1/2"	10	12	CD193FDIL	M232	DIAMANT BOART S	7960248	x	x	x	x	,700
17	8 1/2"	5 RR	13	G449DG3	M433	HUGHES	1901580	4 x 12	1 x 20	1 x 22	x	1,120

Run no.	Flow-rate l/min	Pump pres bar	Depth In mMD	Depth Out mMD	Made m.	HR. Drlg.	ROP m/hr	WOB Min ton	WOB Max ton	RPM Min	RPM Max	IADC Dull Grading IO	DC	L	B	G	OC	RP	Remarks
1	2070	200	2213,0	2213,0	,0	,2	,0	1	2		20	88	JD	A	X	I	BT	BHA	6 BLADES BROKEN/DAMAGED THROUGH WINDOW IN 9 5/8" CSG.
2	2500	289	2202,0	2768,0	566,0	21,1	26,8	1	3	225	335	11	WT	A	X	I	NO	BHA	BIT IN OVERALL GOOD CONDITION-RE-RUNNABLE
3	2500	303	2768,0	2783,0	15,0	4,2	3,6	2	18	220	320	22	CR	C	E	I	NO	PR	CENTER OF 3 CONES -NOSE- OF BIT WAS CORED-OUT
4	2500	210	2783,0	2783,0	,0		,0			40	60	88	JD	A	X	I	BT	BHA	TRIP TO CHECK HOLE/WINDOW CONDITION
5	2400	293	2783,0	3057,0	274,0	13,1	20,9	1	12	220	320	34	BT	A	E	1/16	LT	BHA	BROKEN BUTTONS MISSING BUTTONS
6	2309	303	3057,0	3632,0	575,0	40,6	14,2	4	18	205	336	22	NO	A	X	0	NO	BHA	BIT GOOD FOR RE-RUN
7	2332	301	3632,0	3653,0	21,0	2,9	7,2	7	24	203	333	12	NO	A	3	0	CT	DTF	3 CRUSHED INSERTS ON OUTER ROW, CONE NO 3
8	2206	277	3653,0	3823,0	170,0	21,3	8,0	3	14	190	262	88	CT	A	8	1	JD	PR	1 LOOSE CONE.
9	2230	298	3823,0	3837,0	14,0	2,3	6,1	3	14	191	318	22	NO	A	X	0	NO	CP	
10	1094	96	3838,0	3854,0	16,0	4,5	3,6	1	6	100	121	22	NO	A	X	0	NO	PR	
11			3854,0	3881,0	27,0		,0					22	NO	A	X	0	NO	CP	
12	970	94	3881,5	3908,5	27,0	1,4	19,3	3	9	102	119	33	NO	A	X	0	NO	CP	GOOD FOR RERUN.
13	1029	113	3905,5	3935,5	30,0	2,0	15,0	3	8	57	112	44	WT	S	X	0	NO	CP	
14	1035	117	3935,5	3962,5	27,0	1,7	15,9	4	9	82	116	22	WT	S	X	0	NO	CP	
15	1034	109	3962,5	3990,0	27,5	2,6	10,7	1	11	41	124	33	WT	S	X	1/16	RG	CP	UNDER GAUGE BY 1/16"
16	1103	106	3990,0	4017,0	27,0	3,3	8,2	2	6	84	123	23	WT	A	X	1/32	NO	TD	
17	2116	292	4017,0	4131,0	114,0	7,2	15,8	6	10	341	360	23	WT	A	X	0	NO	TD	

DBR

Print date: 98/04/19

B I T   R E C O R D

Page: 2

Well: 0015/09-019A

Run no.	Bit Size	Bit no.	BHA no.	Bit type	IADC code	Manufacturer	Serial no.	Nozzles no x n	(n/32") no x n	no x n	no x n	Flow area in2
18	8 1/2"	4RR	14	EHP43AFLDK	447	REED	LB8070	3 x 24	x	x	x	1,325
19	5 7/8"	12	15	*	***	HUGHES	DO 2YB	x	x	x	x	
20	5 7/8"	12RR1	15	STR1	116	HUGHES	DO 2YB	x	x	x	x	

Run no.	Flow-rate l/min	Pump pres bar	Depth In mMD	Depth Out mMD	Made m.	HR. Drlg.	ROP m/hr	WOB Min ton	WOB Max ton	RPM Min	RPM Max	IO	DC	L	B	G	OC	RP	Remarks
18	2000	180	4131,0	4131,0	,0		,0			150	150	00	NO	A	E	I	NO	CM	WIPER TRIP FOR 7" CASING.
19					,0		,0												CLEAN-UP RUN. NO NOZZLES.
20					,0		,0												BIT NOT GRADED (RACKED BACK)

4.11 Bottom hole assemblies

B O T T O M   H O L E   A S S E M B L I E S

Well: 0015/09-019SR2

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970721	1	BIT, TRI CONE	8,500		,23	,23
		SCRAPER	5,500	2,000	,83	1,06
		FLOAT SUB		2,875	,76	1,82
		STABILIZER	8,250	2,875	1,86	3,68
		DRILL COLLAR	6,500	2,875	110,58	114,36
		JAR	6,250	2,750	9,30	123,66
		DRILL COLLAR	6,500	2,875	18,50	142,16

Remarks: 9-5/8" CSG SCRAPER

Well: 0015/09-019A

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970725	3	WHIPSTOCK	9,625		8,84	8,84
		MILL, CASING	7,938	1,500	,46	9,30
		MILL, MELON	8,000	2,250	1,72	11,02
		FLEX JOINT	4,875	2,750	3,09	14,11
		MILL, MELON	8,500	2,250	1,89	16,00
		HW DRILL PIPE	5,000	3,000	9,15	25,15
		BUMPER SUB	6,500	3,125	2,75	27,90
		XO SUB			,34	28,24
		MWD TOOL	6,750		12,72	40,96
		DRILL COLLAR	6,313	2,875	110,68	151,64
		JAR	6,250	2,750	9,30	160,94
		DRILL COLLAR	6,313	2,875	18,50	179,44
		HW DRILL PIPE	5,000	3,000	109,93	289,37

Remarks: BAKER WINDOWMASTER WHIPSTOCK

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
70727	2	BIT, PDC	8,500		,29	,29
		NAVIDR. AKO MKI XL	8,250		9,64	9,93
		STABILIZER	8,375	3,000	1,86	11,79
		MWD TOOL	6,750		13,06	24,85
		STABILIZER	8,250	3,000	1,86	26,71
		DRILL COLLAR	6,438	2,938	9,34	36,05
		DRILL COLLAR	6,438	2,875	9,24	45,29
		JAR	6,250	2,750	9,30	54,59
		DRILL COLLAR	6,313	2,875	9,16	63,75
		HW DRILL PIPE	5,000	3,000	109,93	173,68

Remarks: DRILLING BHA - SIDETRACK OPERATIONS

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970728	4	WHIPSTOCK	9,625		8,84	8,84
		MILL, CASING	7,938	1,500	,46	9,30
		MILL, MELON	8,125	2,250	1,75	11,05
		FLEX JOINT	4,875	2,750	3,09	14,14
		MILL, MELON	8,500	2,250	1,89	16,03
		HW DRILL PIPE	5,000	3,000	9,15	25,18
		BUMPER SUB	6,500	3,125	2,75	27,93
		XO SUB			,34	28,27
		MWD TOOL	6,750		12,72	40,99
		DRILL COLLAR	6,313	2,875	110,68	151,67
		JAR	6,250	2,750	9,30	160,97
		DRILL COLLAR	6,313	2,875	18,50	179,47
		HW DRILL PIPE	5,000	3,000	109,93	289,40

Remarks: BAKER WINDOWMASTER WHIPSTOCK

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970730	5	BIT, PDC	8,500		,29	,29
		NAVIDR. AKO MKI XL	6,750	4,000	9,64	9,93
		DOUBLE PIN SUB	6,750		,34	10,27
		MWD TOOL	6,750		12,80	23,07
		DRILL COLLAR	6,438	2,875	9,08	32,15
		DRILL COLLAR	6,438	2,875	9,24	41,39
		JAR	6,250	2,750	9,30	50,69
		DRILL COLLAR	6,313	2,875	9,16	59,85
		HW DRILL PIPE	5,000	3,000	109,93	169,78

Remarks: SLICK BHA - NO STABILIZERS

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970801	6	BIT, TRI CONE	8,500		,26	,26
		NAVIDR. AKO MKI XL	6,750	4,000	9,64	9,90
		DOUBLE PIN SUB	6,750		,34	10,24
		MWD TOOL	6,750		12,80	23,04
		DRILL COLLAR	6,438	2,875	9,08	32,12
		DRILL COLLAR	6,438	2,875	9,24	41,36
		JAR	6,250	2,750	9,30	50,66
		DRILL COLLAR	6,313	2,875	9,16	59,82
		HW DRILL PIPE	5,000	3,000	109,93	169,75

Remarks: SLICK BHA - NO STABILIZERS

Well: 0015/09-019A

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970803	7	BIT, PDC	8,500		,29	,29
		BIT SUB W/FLOAT	6,500	2,813	,89	1,18
		DRILL COLLAR	6,313	2,875	9,35	10,53
		DRILL COLLAR	6,250	2,875	9,24	19,77
		JAR	6,500	2,750	9,42	29,19
		DRILL COLLAR	6,313	2,875	9,16	38,35
		HW DRILL PIPE	5,000	3,000	109,93	148,28

Remarks: PDC BIT RUN TO CHECK CONDITION OF HOLE

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970804	8	BIT, TRI CONE	8,500		,26	,26
		NAVIDR. AKO MKI XL	6,750	4,000	9,64	9,90
		DOUBLE PIN SUB	6,750		,34	10,24
		MWD TOOL	6,750		12,80	23,04
		DRILL COLLAR	6,438	2,875	9,08	32,12
		DRILL COLLAR	6,438	2,875	9,24	41,36
		JAR	6,250	2,750	9,42	50,78
		DRILL COLLAR	6,313	2,875	9,16	59,94
		HW DRILL PIPE	5,000	3,000	109,93	169,87

Remarks: SLICK BHA - NO STABILIZERS

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970805	9	BIT, PDC	8,500		,34	,34
		NAVIDR. AKO MKI XL	8,250	4,000	9,64	9,98
		STABILIZER	8,375	3,000	1,86	11,84
		DOUBLE PIN SUB	6,750		,34	12,18
		MWD TOOL	6,750		12,80	24,98
		STABILIZER	8,250	2,875	1,86	26,84
		DRILL COLLAR	6,438	2,875	9,08	35,92
		DRILL COLLAR	6,438	2,875	9,24	45,16
		JAR	6,250	2,750	9,42	54,58
		DRILL COLLAR	6,313	2,875	9,16	63,74
		HW DRILL PIPE	5,000	3,000	109,93	173,67
970808	10	BIT, TRI CONE	8,500		,27	,27
		NAVIDR. AKO MKI XL	6,750	4,000	9,64	9,91
		DOUBLE PIN SUB	6,750		,34	10,25
		MWD TOOL	6,750		12,80	23,05
		HW DRILL PIPE	5,000	3,000	27,48	50,53
		JAR	6,500	2,813	9,94	60,47
		HW DRILL PIPE	5,000	3,000	82,45	142,92

Remarks: ORIENTING BHA

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970812	11	BIT, CORE	8,500		,28	,28
		CORE BARREL	8,469	4,000	30,10	30,38
		FLOAT SUB	6,500	2,875	,77	31,15
		HW DRILL PIPE	5,000	3,000	27,48	58,63
		JAR	6,500	2,813	9,94	68,57
		HW DRILL PIPE	5,000	3,000	82,45	151,02

Remarks: CORE RUN NO 1

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970814	12	BIT, CORE	8,500		,36	,36
		CORE BARREL	8,375	4,000	30,10	30,46
		FLOAT SUB	6,500	2,875	,77	31,23
		HW DRILL PIPE	5,000	3,000	9,16	40,39
		STABILIZER	8,250	2,875	1,86	42,25
		HW DRILL PIPE	5,000	3,000	18,32	60,57
		JAR	6,500	2,813	9,94	70,51
		HW DRILL PIPE	5,000	3,000	82,45	152,96

Remarks: CORE RUN NO 2. CHANGED STABILIZERS TO 8 3/8 ON CB.

B O T T O M   H O L E   A S S E M B L I E S

Well: 0015/09-019A

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970820	13	BIT, PDC	8,500		,34	,34
		NAVIDR. AKO MKI XL	6,750	4,000	9,64	9,98
		STABILIZER	8,250	3,000	1,86	11,84
		DOUBLE PIN SUB	6,750	2,750	,34	12,18
		MWD TOOL	6,750	4,000	15,72	27,90
		STABILIZER	8,250	3,000	1,86	29,76
		HW DRILL PIPE	5,000	3,000	27,48	57,24
		JAR	6,250	2,750	9,94	67,18
		HW DRILL PIPE	5,000	3,000	82,45	149,63

Remarks: AKO SETTING 0 DEGR.

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
970830	14	BIT, TRI CONE	8,500		,26	,26
		BIT SUB W/FLOAT	6,500	2,875	,92	1,18
		HW DRILL PIPE	5,000	3,000	55,25	56,43
		JAR	6,250	2,750	9,42	65,85
		HW DRILL PIPE	5,000	3,000	54,68	120,53

Remarks: WIPER TRIP FOR 7" CASING.

Date	BHA no	BHA component	O.D. (inch)	I.D. (inch)	Length (m)	Akk. length (m)
971007	15	BIT, TRI CONE	5,975		,19	,19
		BIT SUB	4,813	2,000	,91	1,10
		SCRAPER	4,688	1,500	1,40	2,50
		DRILL COLLAR	4,750	2,313	85,79	88,29
		HW DRILL PIPE	3,500	2,063	138,25	226,54

Remarks: SEE GENERAL REMARKS FOR BIT INFO.

4.12 Drilling fluid summary

Schlu[illegible]ger
Dowell

[illegible]ILLING FLUIDS SERVICES

MudCADE*

Administration Data					
Well Name	15/9-19A	Location	NORWAY	Date & Time	03-Sep-97 23:59
Operator	Statoil	Contractor/Rig	Dolphin Drilling	Interval	8 1/2 in
Operator Rep.	S. Løland	Contractor Rep.	S.Skarsbø	Dowell Eng.	Gareth Finley/Neil Rothnie
Analysis Type	OBM	Fluid System	ULTIDRILL	Spud Date	16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 23-Jul-1997 23:59 to 10-Aug-1997 23:59

Property Name	Units	1	2	3	4	5	6	7	8	9	10	11	12	13
Date		24-Jul-97	25-Jul-97	25-Jul-97	26-Jul-97	27-Jul-97	28-Jul-97	28-Jul-97	29-Jul-97	30-Jul-97	30-Jul-97	30-Jul-97	31-Jul-97	01-Aug-97
Time		23:59	14:26	21:00	22:00	21:15	17:00	22:15	22:45	10:21	17:30	21:00	17:00	05:00
Sample loc.		Pit 2	Active S	Active S	Active S	Active S	Active S	FlowLine	Active S	Active S	Active S	Active S	Active S	Active S
MD	m	2310.	2310.	2213.	2213.	2187.	2178.	2192.	2314.	2450.	2622.	2684.	2768.	2768.
TVD	m						2178.					2000.	2079.	2079.
Hole Angle	deg		60.			60.	60.	60.	60.	36.	37.	37.	26.	26.
Density	g/cm3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.49	1.5	1.5	1.5	1.5
Gradient	kPa/m	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.6	14.7	14.7	14.7	14.7
Funnel Visc.	s		135	117	143	143	151	147	75	71	70	64	65	80
600 rpm		102	137	122	120	128	131	133	102	107	104	107	107	116
300 rpm		61	81	73	74	78	81	82	64	67	63	66	66	72
200 rpm		47	60	56	56	57	61	61	50	52	48	51	51	55
100 rpm		31	39	37	36	38	41	40	34	36	32	35	35	38
6 rpm		12	14	16	16	17	20	19	15	16	14	15	15	16
3 rpm		11	13	15	15	15	18	17	14	14	12	14	14	15
Plastic Visc.	cP	41	56	49	46	50	50	51	38	40	41	41	41	44
Yield Point	Pa	9.6	12.	11.5	13.4	13.4	14.6	14.8	12.4	12.9	10.5	12.	12.	13.4
10 sec. Gel	Pa	8.	10.	13.	12.	13.	15.	14.	11.	10.	10.	10.	10.	12.
10 min. Gel	Pa	15.	19.	19.	18.	20.	22.	20.	18.	17.	17.	17.	17.	16.
n-annulus		0.372	0.397	0.344	0.347	0.358	0.327	0.342	0.33	0.34	0.36	0.337	0.337	0.341
K-annulus	Pa·s^n	3.064	3.475	4.378	4.355	4.275	5.399	4.975	4.176	4.109	3.408	4.131	4.131	4.398
HTHP Filtrate	mL	1.5	2.	1.2	1.5	2.	2.	2.	1.6	2.	2.	2.	2.	1.8
HTHP Cake	1/32nd"	2.	1.	2.	2.	2.	1.	2.	2.	1.	1.	2.	1.	2.
HTHP Temp.	degC	250.	250.	250.	250.	250.	250.	250.	250.	100.	100.	100.	100.	100.
CaCl2 (Acq)	g/L	112.7	158.9	92.5	112.7	92.5	111.	98.5	99.1	144.9	172.1	144.3	172.1	125.6
CaCl2 (Mud)	g/L	36.1	50.9	30.5	36.1	30.5	33.3	30.5	27.7	39.1	43.	36.1	43.	33.3
Alkalinity		1.1	.55	1.7	1.7	1.4	1.5	1.7	1.7	2	2.5	1.6	1.55	1.3
Excess Lime	kg/m3	4.1	2.	6.3	6.3	5.2	5.6	6.3	6.3	7.4	9.3	5.9	5.7	4.8
Electric Stab	V	344		458	398	528	600	579	598	636	705	544	567	692
Aw (calc)		0.864	0.864	0.888	0.874	0.866	0.866	0.861	0.88	0.876	0.852	0.852	0.852	0.861
Chlorides	g/L	32.5	32.5	27.5	30.	27.5	30.	27.5	25.	25.	27.5	27.5	27.5	27.5
Sand %	%	0.	0.	1.	0.5	1.	1.	0.3	0.5	0.3	0.3	0.3	0.3	0.3
Water %	%	32.	32.	33.	32.	33.	30.	31.	28.	27.	25.	25.	25.	26.5
Oil %	%	49.	49.	49.	49.	49.	49.	49.	52.	52.	53.	54.	54.	53.
Corr. Solids %	%	17.6	17.8	16.8	17.8	16.8	19.8	18.8	18.9	20.1	21.	19.9	20.	19.4
LGS %	%	1.4	1.9	2.	1.5	1.4	5.9	3.5	3.2	4.6	5.8	3.5	3.7	2.5
HGS %	%	16.2	15.9	14.9	16.2	15.5	13.9	15.4	15.7	15.5	15.2	16.4	16.3	16.9
Oil/Water Ratio	%	60:40	60:40	60:40	60:40	60:40	62:38	61:39	65:35	66:34	68:32	68:32	68:32	67:33
Sulphide	mg/L													

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* Mark of Schlumberger

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DRILLING FLUIDS SERVICES

MudCADE*

Administration Data					
Well Name	15/9-19A	Location	NORWAY	Date & Time	03-Sep-97 23:59
Operator	Statoil	Contractor/Rig	Dolphin Drilling	Interval	8 1/2 in
Operator Rep.	S. Løland	Contractor Rep.	S.Skarsbø	Dowell Eng.	Gareth Finley/Neil Rothnie
Analysis Type	OBM	Fluid System	ULTIDRILL	Spud Date	16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 23-Jul-1997 23:59 to 10-Aug-1997 23:59

Property Name	Units	14	15	16	17	18	19	20	21	22	23	24	25	26
Date		01-Aug-97	01-Aug-97	02-Aug-97	03-Aug-97	03-Aug-97	04-Aug-97	04-Aug-97	05-Aug-97	05-Aug-97	05-Aug-97	06-Aug-97	06-Aug-97	06-Aug-97
Time		13:45	22:00	22:00	16:00	22:00	04:45	17:00	08:45	16:30	22:00	04:00	11:45	18:00
Sample loc.		Active S	Active S	Active S	Active S	Active S	FlowLine	Active S	Active S	Active S	Active S	Active S	Active S	Active S
MD	m	2783.	2783.	2783.	2806.	2912.	3028.	3057.	3180.	3316.	3356.	3380.	3437.	3370.
TVD	m		2089.	2089.		2207.	2315.	2343.	2407.	2578.	2614.	2636.	2688.	
Hole Angle	deg			26.	24.	22.	23.		25.	25.	25.	25.	25.	
Density	g/cm3	1.5	1.5	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.55	1.55	0.0
Gradient	kPa/m	14.7	14.7	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.2	15.2	0.
Funnel Visc.	s	70	72	79	68	70	66	70	60	56	54	54	54	
600 rpm		102	105	109	111	105	105	105	82	90	89	88	84	
300 rpm		64	66	67	68	65	65	65	51	56	55	54	52	
200 rpm		50	51	51	52	50	51	51	40	43	43	42	40	
100 rpm		33	33	36	35	35	35	35	27	30	29	29	27	
6 rpm		14	14	13	13	13	13	13	11	12	12	12	11	
3 rpm		13	13	12	12	12	12	12	10	11	11	11	10	
Plastic Visc.	cP	38	39	42	43	40	40	40	31	34	34	34	32	
Yield Point	Pa	12.4	12.9	12.	12.	12.	12.	12.	9.8	10.5	10.1	9.6	9.6	
10 sec. Gel	Pa	10.	10.	11.	9.	9.5	9.5	10.	8.	8.	8.	8.	14.	
10 min. Gel	Pa	20.	20.	19.	18.	19.	18.	18.	17.	17.	17.	18.	31.	
n-annulus		0.346	0.353	0.373	0.377	0.367	0.367	0.367	0.354	0.353	0.349	0.346	0.358	
K-annulus	Pa·s^n	3.777	3.736	3.335	3.317	3.371	3.371	3.371	2.869	3.158	3.179	3.199	2.85	
HTHP Filtrate	mL	1.2	1.3	1.3	1.	1.5	1.6	1.6	1.8	1.8	1.8	1.7	2.	
HTHP Cake	1/32nd"	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	
HTHP Temp.	degC	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	
CaCl2 (Acq)	g/L	123.3	123.3	128.8	133.6	144.1	144.3	144.3	144.8	144.8	144.8	144.8	145.3	
CaCl2 (Mud)	g/L	33.3	33.3	36.1	36.1	37.5	36.1	36.1	33.3	33.3	33.3	33.3	30.5	
Alkalinity		2.2	2.2	3	3.3	3.5	3.5	3.5	3.3	3.1	3.15	3.1	3.2	
Excess Lime	kg/m3	8.2	8.2	11.1	12.2	13.	13.	13.	12.2	11.5	11.7	11.5	11.9	
Electric Stab	V	677	671	618	639	628	668	652	669	677	651	682	737	
Aw (calc)		0.863	0.863	0.868	0.863	0.845	0.839	0.839	0.84	0.84	0.84	0.84	0.824	
Chlorides	g/L	27.5	27.5	27.5	27.5	30.	30.	30.	27.5	27.5	27.5	27.5	27.5	
Sand %	%	0.3	0.3	0.4	0.	0.3	0.2	0.2	0.5	0.3	0.4	0.3	0.	
Water %	%	27.	27.	28.	27.	26.	25.	25.	23.	23.	23.	23.	21.	
Oil %	%	53.	53.	51.	52.	52.	53.	53.	55.	55.	55.	55.	57.	
Corr. Solids %	%	18.9	18.9	19.9	19.9	20.8	20.7	20.7	20.9	20.9	20.9	20.9	20.8	
LGS %	%	1.5	1.5	1.4	1.2	3.1	2.9	2.9	2.7	2.7	2.7	2.7	1.7	
HGS %	%	17.4	17.4	18.5	18.7	17.7	17.8	17.8	18.1	18.1	18.1	18.1	19.1	
Oil/Water Ratio	%	66:34	66:34	65:35	66:34	67:33	68:32	68:32	71:29	71:29	71:29	71:29	73:27	
Sulphide	mg/L								0.				0.	

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DRILLING FLUIDS SERVICES

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Administration Data					
Well Name	15/9-19A	Location	NORWAY	Date & Time	03-Sep-97 23:59
Operator	Statoil	Contractor/Rig	Dolphin Drilling	Interval	8 1/2 in
Operator Rep.	S. Løland	Contractor Rep.	S.Skarsbø	Dowell Eng.	Gareth Finley/Neil Rothnie
Analysis Type	OBM	Fluid System	ULTIDRILL	Spud Date	16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 23-Jul-1997 23:59 to 10-Aug-1997 23:59

Property Name	Units	27	28	29	30	31	32	33	34	35	36	37	38	39
Date		06-Aug-97	06-Aug-97	06-Aug-97	06-Aug-97	06-Aug-97	07-Aug-97	07-Aug-97	07-Aug-97	08-Aug-97	09-Aug-97	09-Aug-97	10-Aug-97	10-Aug-97
Time		18:00	18:00	18:00	18:06	22:00	04:05	08:00	22:30	14:00	14:30	21:45	04:30	14:00
Sample loc.		Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S
MD	m	3370.	3370.	3370.	3494.	3532.	3561.	3586.	3632.	3653.	3701.	3736.	3774.	3803.
TVD	m				2739.	2774.	2800.	2824.	2866.	2886.	2926.	2960.	2995.	3020.
Hole Angle	deg				25.	24.	24.	25.	24.	24.	24.	24.	25.	24.
Density	g/cm3	0.0	0.0	0.0	1.55	1.55	1.55	1.55	1.55	1.55	1.58	1.56	1.55	1.55
Gradient	kPa/m	0.	0.	0.	15.2	15.2	15.2	15.2	15.2	15.2	15.5	15.3	15.2	15.2
Funnel Visc.	s				54	55	52	54	58	57	76	64	58	68
600 rpm					83	84	89	86	86	92	101	98	95	96
300 rpm					52	52	55	54	54	57	64	62	59	60
200 rpm					40	40	43	42	43	44	50	48	46	47
100 rpm					28	27	29	28	29	30	33	33	31	30
6 rpm					11	12	12	11	11	11	11	11	11	11
3 rpm					10	11	11	10	10	10	10	10	10	10
Plastic Visc.	cP				31	32	34	32	32	35	37	36	36	38
Yield Point	Pa				10.1	9.6	10.1	10.5	10.5	10.5	12.9	12.4	11.	11.5
10 sec. Gel	Pa				14.	7.	7.	8.	8.	9.	9.	7.	6.5	9.
10 min. Gel	Pa				32.	16.	15.5	18.	18.	18.	18.	16.	15.	18.
n-annulus					0.358	0.337	0.349	0.366	0.366	0.378	0.403	0.396	0.385	0.389
K-annulus	Pa·s^n				2.85	3.242	3.179	2.812	2.812	2.759	2.648	2.678	2.725	2.709
HTHP Filtrate	mL				1.8	1.9	2.	2.6	2.1	2.1	2.1	2.1	2.2	2.1
HTHP Cake	1/32nd"				2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
HTHP Temp.	degC				100.	100.	100.	100.	100.	100.	100.	100.	100.	
CaCl2 (Acq)	g/L				145.3	158.5	138.7	166.5	166.5	158.5	158.5	158.5	151.3	158.5
CaCl2 (Mud)	g/L				30.5	33.3	30.5	33.3	33.3	33.3	33.3	33.3	33.3	33.3
Alkalinity					3	3.2	3.2	3	3.25	3.25	3.75	3.6	4	3.8
Excess Lime	kg/m3				11.1	11.9	11.9	11.1	12.	12.	13.9	14.1	14.8	14.1
Electric Stab	V				765	702	707	729	714	606	796	601	594	547
Aw (calc)					0.824	0.824	0.847	0.815	0.815	0.824	0.824	0.824	0.832	0.824
Chlorides	g/L				27.5	27.5	25.	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Sand %	%				0.	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.3
Water %	%				21.	21.	22.	20.	20.	21.	21.	21.	22.	21.
Oil %	%				57.	56.	56.	57.	57.	57.	56.	57.	56.	57.
Corr. Solids %	%				20.8	21.8	21.	21.8	21.8	20.8	21.8	20.8	20.9	20.8
LGS %	%				1.7	3.9	2.	1.9	2.5	1.8	2.1	1.2	1.9	1.8
HGS %	%				19.1	17.9	19.	19.9	19.3	19.	19.8	19.7	18.9	19.
Oil/Water Ratio	%				73:27	73:27	72:28	74:26	74:26	73:27	73:27	73:27	72:28	73:27
Sulphide	mg/L							0.		0.	0.			

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DRILLING FLUIDS SERVICES

MudCADE*

Administration Data					
Well Name Operator Operator Rep. Analysis Type	15/9-19A Statoil S. Løland OBM	Location Contractor/Rig Contractor Rep. Fluid System	NORWAY Dolphin Drilling S.Skarsbø ULTIDRILL	Date & Time Interval Dowell Eng. Spud Date	03-Sep-97 23:59 8 1/2 in Gareth Finley/Neil Rothnie 16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 10-Aug-1997 23:59 to 03-Sep-1997 23:59

Property Name	Units	40	41	42	43	44	45	46	47	48	49	50	51	52
Date		11-Aug-97	12-Aug-97	12-Aug-97	13-Aug-97	14-Aug-97	14-Aug-97	15-Aug-97	15-Aug-97	16-Aug-97	16-Aug-97	17-Aug-97	17-Aug-97	18-Aug-97
Time		13:00	14:00	22:45	21:27	03:00	22:30	14:00	23:00	14:00	23:00	15:30	21:00	14:00
Sample loc.		Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S
MD	m	3837.	3838.	3845.	3854.	3881.	3893.	3908.	3936.	3936.	3962.	3968.	3990.	3990.
TVD	m	3061.	3051.	3058.	3070.	3089.	3100.	3113.	3136.	3136.	3159.	3160.	3183.	3180.
Hole Angle	deg	24.	25.	25.	25.	25.	26.	27.	27.	27.	27.	27.	27.	27.
Density	g/cm3	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Gradient	kPa/m	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Funnel Visc.	s	64	63	59	60	65	58	75	75	74	74	67	68	68
600 rpm		97	97	91	93	105	98	96	100	100	99	102	110	104
300 rpm		60	60	55	56	64	59	60	64	60	63	60	70	62
200 rpm		44	45	42	43	49	44	44	49	45	46	45	54	47
100 rpm		30	30	28	29	32	29	30	32	21	33	31	35	31
6 rpm		11	11	11	11	12	11	11	12	11	12	11	13	11
3 rpm		10	10	10	10	11	10	10	10	10	10	10	11	10
Plastic Visc.	cP	37	37	36	37	41	39	36	36	40	36	42	40	42
Yield Point	Pa	11.	11.	9.1	9.1	11.	9.6	11.5	13.4	9.8	12.9	8.6	14.4	9.6
10 sec. Gel	Pa	9.	9.	7.	7.	7.	7.	9.	7.	7.	7.	10.	8.	9.
10 min. Gel	Pa	18.	16.	13.	13.	14.	14.	17.	15.	14.	15.	18.	16.	18.
n-annulus		0.389	0.389	0.37	0.374	0.382	0.385	0.389	0.403	0.389	0.4	0.389	0.402	0.396
K-annulus	Pa·s^n	2.709	2.709	2.794	2.776	3.012	2.725	2.709	2.648	2.709	2.662	2.709	2.918	2.678
HTHP Filtrate	mL	2.2	2.1	1.8	1.8	1.8	1.9	2.	2.	2.	2.	2.2	2.2	2.1
HTHP Cake	1/32nd"	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
HTHP Temp.	degC	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.
CaCl2 (Acq)	g/L	151.3	151.3	151.3	151.3	151.3	151.3	151.3	151.3	151.3	151.3	151.3	151.3	136.3
CaCl2 (Mud)	g/L	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	31.4
Alkalinity		4.5	3.95	3.9	3.8	3.75	3.75	3.85	3.95	3.95	3.9	4	3.5	3.7
Excess Lime	kg/m3	16.7	14.6	14.4	14.1	13.9	13.9	14.3	14.6	14.6	14.4	14.8	13.	13.7
Electric Stab	V	547	550	494	502	594	678	580	587	540	534	553	550	504
Aw (calc)		0.832	0.832	0.832	0.832	0.832	0.832	0.832	0.832	0.832	0.832	0.024	0.085	0.84
Chlorides	g/L	27.5	27.5	27.5	27.5	27.5	27.6	27.5	27.5	27.5	27.5	160.	150.	27.5
Sand %	%	0.3	0.3	0.1	0.1	0.1	0.1	0.	0.	0.	0.	0.2	0.1	0.3
Water %	%	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	23.
Oil %	%	56.	56.	56.	56.	56.	56.	56.	56.	56.	56.	56.	56.	55.
Corr. Solids %	%	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	19.3	19.3	20.8
LGS %	%	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.3	0.4	2.
HGS %	%	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.8
Oil/Water Ratio	%	72:28	72:28	72:28	72:28	72:28	72:28	72:28	72:28	72:28	72:28	72:28	72:28	71:29
Sulphide	mg/L			0.				0.	0.	0.	0.	0.	0.	0.

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* Mark of Schlumberger

Administration Data					
Well Name	15/9-19A	Location	NORWAY	Date & Time	03-Sep-97 23:59
Operator	Statoil	Contractor/Rig	Dolphin Drilling	Interval	8 1/2 in
Operator Rep.	S. Løland	Contractor Rep.	S.Skarsbø	Dowell Eng.	Gareth Finley/Neil Rothnie
Analysis Type	OBM	Fluid System	ULTIDRILL	Spud Date	16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 10-Aug-1997 23:59 to 03-Sep-1997 23:59

Property Name	Units	53	54	55	56	57	58	59	60	61	62	63	64	65
Date		18-Aug-97	19-Aug-97	20-Aug-97	20-Aug-97	21-Aug-97	21-Aug-97	21-Aug-97	22-Aug-97	23-Aug-97	24-Aug-97	25-Aug-97	26-Aug-97	27-Aug-97
Time		23:00	14:00	14:00	21:00	04:30	13:00	23:00	23:58	23:00	23:00	21:57	21:51	22:12
Sample loc.		Active S	Active S	Active S	Active S	Active S	Active S	Pit 2	Active S	Pit 2	Pit 2	Active S	Active S	Active S
MD	m	4017.	4017.	4017.	4017.	4017.	4131.	4131.	4131.	4131.	4131.	4131.	4131.	4131.
TVD	m	3205.	3205.	3205.	3205.	3205.	3318.	3318.		3318.	3318.	3318.	3318.	3331.
Hole Angle	deg	27.	27.	25.	25.	25.	25.	25.		25.	25.	25.	25.	25.
Density	g/cm3	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Gradient	kPa/m	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Funnel Visc.	s	67	62	69	63	70	70	70	75	70	71	75	76	70
600 rpm		102	100	111	120	120	118	116	116	117	116	115	134	118
300 rpm		60	60	68	85	81	75	78	79	78	77	76	85	75
200 rpm		44	43	51	69	61	51	59	58	57	55	55	69	58
100 rpm		29	30	31	45	40	32	40	40	42	41	42	45	38
6 rpm		11	11	12	14	13	13	13	13	14	14	14	14	13
3 rpm		10	10	10	12	11	11	11	11	12	12	12	12	12
Plastic Visc.	cP	42	40	43	35	39	43	38	37	39	39	39	49	43
Yield Point	Pa	8.6	9.6	12.	23.9	20.1	15.3	19.2	20.1	18.7	18.2	17.7	17.2	15.3
10 sec. Gel	Pa	9.	9.	9.	8.	8.	8.	8.	8.	8.	8.	10.	10.	10.
10 min. Gel	Pa	18.	18.	17.	16.	19.	19.	18.	18.	18.	18.	17.	17.	17.
n-annulus		0.389	0.389	0.416	0.425	0.434	0.417	0.425	0.428	0.406	0.404	0.401	0.425	0.398
K-annulus	Pa·s^n	2.709	2.709	2.591	3.065	2.771	2.848	2.809	2.796	3.16	3.174	3.189	3.065	3.204
HTHP Filtrate	mL	2.1	2.1	2.1	2.1				2.	2.2	2.2	1.	1.	2.2
HTHP Cake	1/32nd"	2.	2.	2.	2.				1.	2.	2.	2.	2.	2.
HTHP Temp.	degC	100.	100.	100.	100.					100.	100.	100.	100.	100.
CaCl2 (Acq)	g/L	144.8	132.7	138.7	127.2	144.8	144.8	144.8	170.1	144.8	144.8	144.6	144.6	168.9
CaCl2 (Mud)	g/L	33.3	30.5	33.3	30.5	33.3	33.3	33.3	39.1	33.3	33.3	33.3	33.3	37.2
Alkalinity		3.7	3.85	3.5	3.5	3.5	3.5	3.5	3	3	3	2	2.5	1
Excess Lime	kg/m3	13.7	14.3	13.	13.	13.	13.	13.	11.1	11.1	11.1	7.4	9.3	3.7
Electric Stab	V	505	511	445	578	501	478	618	595	540	535	550	550	565
Aw (calc)		0.84	0.125	0.329	0.217	0.796	0.796	0.796	0.854	0.796	0.796	0.876	0.876	0.855
Chlorides	g/L	27.5	150.	120.	140.	35.	35.	35.	25.	35.	35.	21.2	21.2	23.7
Sand %	%	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.	0.4	0.4	0.3	0.3	0.3
Water %	%	23.	23.	24.	24.	23.	23.	23.	23.	23.	23.	23.	23.	22.
Oil %	%	55.	55.	54.	54.	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	55.
Corr. Solids %	%	20.9	19.2	20.7	19.1	21.	21.	20.9	21.6	20.9	20.9	21.7	21.7	22.1
LGS %	%	2.1	0.3	2.1	0.4	2.8	2.2	2.7	3.5	2.7	2.7	3.5	3.5	4.4
HGS %	%	18.8	18.8	18.6	18.7	18.2	18.8	18.2	18.1	18.2	18.2	18.2	18.2	17.7
Oil/Water Ratio	%	71:29	71:29	69:31	69:31	70:30	70:30	70:30	70:30	70:30	70:30	70:30	70:30	71:29
Sulphide	mg/L	0.	0.	0.	0.	0.	0.							

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Schlumberger
Dowell

DRILLING FLUIDS SERVICES

MudCADE*

Administration Data					
Well Name	15/9-19A	Location	NORWAY	Date & Time	03-Sep-97 23:59
Operator	Statoil	Contractor/Rig	Dolphin Drilling	Interval	8 1/2 In
Operator Rep.	S. Løland	Contractor Rep.	S.Skarsbø	Dowell Eng.	Gareth Finley/Neil Rothnie
Analysis Type	OBM	Fluid System	ULTIDRILL	Spud Date	16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 10-Aug-1997 23:59 to 03-Sep-1997 23:59

Property Name	Units	66	67	68	69	70	71
Date		28-Aug-97	29-Aug-97	30-Aug-97	31-Aug-97	01-Sep-97	02-Sep-97
Time		20:04	20:56	23:31	22:20	23:59	22:44
Sample loc.		Active S	Active S	Active S	Active S	Active S	Active S
MD	m	4131.	4131.	4131.	4131.	4131.	4044.
TVD	m	3318.	3318.	3318.	3318.	3318.	
Hole Angle	deg	25.	25.	25.	25.	25.	
Density	g/cm3	1.55	1.56	1.55	1.55	1.55	1.55
Gradient	kPa/m	15.2	15.3	15.2	15.2	15.2	15.2
Funnel Visc.	s	71	75	65	65	65	65
600 rpm		120	133	110	112	110	112
300 rpm		75	81	65	67	66	67
200 rpm		59	61	52	52	52	52
100 rpm		39	39	33	33	33	33
6 rpm		14	13	12	12	13	12
3 rpm		13	12	10	11	11	11
Plastic Visc.	cP	45	52	45	45	44	45
Yield Point	Pa	14.4	13.9	9.6	10.5	10.5	10.5
10 sec. Gel	Pa	10.	10.	9.	9.	9.	9.
10 min. Gel	Pa	17.	16.	13.	14.	15.	17.
n-annulus		0.381	0.415	0.406	0.392	0.389	0.392
K-annulus	Pa*s^n	3.571	3.118	2.633	2.964	2.98	2.964
HTHP Filtrate	mL	2.	1.	2.	2.	2.	2.
HTHP Cake	1/32nd"	2.	2.	2.	2.	2.	2.
HTHP Temp.	degC	100.	100.	100.	100.	100.	100.
CaCl2 (Acq)	g/L	168.9	168.9	160.	160.	160.	160.
CaCl2 (Mud)	g/L	37.2	37.2	35.2	35.2	35.2	35.2
Alkalinity		2	2.5	3	3	3	3.5
Excess Lime	kg/m3	7.4	9.3	11.1	11.1	11.1	13.
Electric Stab	V	560	540	550	550	550	
Aw (calc)		0.855	0.855	0.863	0.863	0.863	0.863
Chlorides	g/L	23.7	23.7	22.5	22.5	22.5	22.5
Sand %	%	0.3	0.3	0.3	0.3	0.3	0.3
Water %	%	22.	22.	22.	22.	22.	22.
Oil %	%	55.	55.	56.	56.	56.	56.
Corr. Solids %	%	22.1	22.1	21.2	21.2	21.2	21.2
LGS %	%	4.4	3.8	2.3	2.3	2.3	2.3
HGS %	%	17.7	18.3	18.9	18.9	18.9	18.9
Oil/Water Ratio	%	71:29	71:29	72:28	72:28	72:28	72:28
Sulphide	mg/L						

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* Mark of Schlumberger

Schlumberger
Dowell

DRILLING FLUIDS SERVICES

MudCADE*

Administration Data					
Well Name	15/9-19A	Location	NORWAY	Date & Time	08-Nov-97 23:59
Operator	Statoil	Contractor/Rig	Dolphin Drilling	Interval	6 9/100 In
Operator Rep.	S. Løland	Contractor Rep.	S.Skarsbø	Dowell Eng.	Gareth Finley/Neil Rothnie
Analysis Type	OBM	Fluid System	ULTIDRILL	Spud Date	16-Jul-1997

DRILLING FLUIDS PROPERTIES RECORD - From 03-Sep-1997 23:59 to 06-Jan-1998 17:08

Property Name	Units	1	2	3	4	5	6	7	8	9	10	11	12	13
Date		11-Oct-97	12-Oct-97	13-Oct-97	14-Oct-97	15-Oct-97	16-Oct-97	17-Oct-97	18-Oct-97	19-Oct-97	20-Oct-97	21-Oct-97	22-Oct-97	23-Oct-97
Time		18:00	18:00	20:00	18:00	20:00	23:30	23:00	22:08	23:57	23:59	23:59	23:59	22:55
Sample loc.		Pit 2	Pit 2	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S	Active S
MD	m	4132.	4132.	4132.	4132.	4132.	4132.	4132.	4132.	4132.	4132.	4132.	4132.	4132.
TVD	m	3238.	3238.	3238.	3328.	3328.								
Hole Angle	deg													
Density	g/cm3	1.47	1.47	1.47	1.47	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.47
Gradient	kPa/m	14.4	14.4	14.4	14.4	14.4	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.4
Funnel Visc.	s													
600 rpm		132	132	132	132	130	118	116	118	116	117	116	118	139
300 rpm		80	80	80	80	82	72	72	72	72	72	71	72	83
200 rpm		58	58	58	58	58	57	59	58	59	59	59	59	61
100 rpm		36	36	36	36	36	36	38	38	39	39	39	40	40
6 rpm		13	13	13	13	13	13	13	13	13	13	14	14	14
3 rpm		11	11	11	11	11	10	10	10	11	11	11	11	13
Plastic Visc.	cP	52	52	52	52	48	46	44	46	44	45	45	46	56
Yield Point	Pa	13.4	13.4	13.4	13.4	16.3	12.4	13.4	12.4	13.4	12.9	12.4	12.4	12.9
10 sec. Gel	Pa	7.	7.	7.	7.	11.	10.	11.	11.	11.	11.	11.	11.	15.
10 min. Gel	Pa	17.	17.	17.	17.	13.	13.	14.	13.	13.	13.	14.	14.	17.
n-annulus		0.431	0.431	0.431	0.431	0.436	0.429	0.429	0.429	0.408	0.408	0.405	0.408	0.403
K-annulus	Pa·s^n	2.784	2.784	2.784	2.784	2.759	2.539	2.539	2.539	2.889	2.889	2.904	2.889	3.445
HTHP Filtrate	mL	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8
HTHP Cake	1/32nd"	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
HTHP Temp.	degC	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.
CaCl2 (Acq)	g/L	74.	74.	74.	74.	74.	94.4	94.4	97.8	97.8	97.8	97.8	97.8	97.8
CaCl2 (Mud)	g/L	22.2	22.2	22.2	22.2	22.2	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4
Alkalinity		2.5	2.5	2.5	2.5	2.75	2.5	2.75	2.7	2.75	2.75	2.75	2.75	2.75
Excess Lime	kg/m3	9.3	9.3	9.3	9.3	10.2	9.3	10.2	10.	10.2	10.2	10.2	10.2	10.2
Electric Stab	V	440	440	440	440	440	434	440	440	440	440	440	438	427
Aw (calc)		0.922	0.922	0.922	0.922	0.922	0.919	0.919	0.916	0.916	0.916	0.916	0.916	0.916
Chlorides	g/L	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
Sand %	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.	3.	0.3	3.	0.3	0.3
Water %	%	30.	30.	30.	30.	30.	29.	29.	28.	28.	28.	28.	28.	28.
Oil %	%	52.	52.	52.	52.	52.	52.	52.	52.	52.	52.	52.	52.	52.
Corr. Solids %	%	17.3	17.3	17.3	17.3	17.3	18.4	18.4	19.4	19.4	19.4	19.4	19.4	19.4
LGS %	%	1.3	1.3	1.3	1.3	1.3	2.9	2.9	4.9	4.9	4.9	4.9	4.9	5.5
HGS %	%	16.	16.	16.	16.	16.	15.5	15.5	14.5	14.5	14.5	14.5	14.5	13.9
Oil/Water Ratio	%	63:37	63:37	63:37	63:37	63:37	64:36	64:36	65:35	65:35	65:35	65:35	65:35	65:35
Sulphide	mg/L													

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4.13 Cement summary

Cementing Parameters Summary

Job Type		Plug in liner lap		7" Casing		Squeeze Perforations	
Well Data							
Measured Depth	m	4644		4131		4131	
True Vertical Depth	m			3318		3319	
BHST/BHCT	°C	80	65	120	91	120	100
Spacer Details							
First Spacer		Fresh Water 1 SG		Spacer 500E- 1.59 SG		Spacer 500E- 1.69 SG	
Second Spacer							
Third Spacer							
Spacer Behind		Fresh Water 1 SG				Spacer 500E- 1.69 SG	
Volumes Spacer 1,2,3,4	M3	5	2	15		3	1.1
Comments							
Cement Slurry Details		Lead	Tail	Lead	Tail	Lead	Tail
Theorectical Top Of Cement	m		3259		+/- 3631		N/A
Norcem Class G	100kg				Yes		
Bentonite	bwoc						
HR-4L - Low Temp. Retarder	ltrs/100kg						
Microblok Stabiliser	ltrs/100kg				18.00		12.00
CFR-3L - Dispersant	ltrs/100kg		0.50		1.10		1.00
SCR-100L -Retarder	ltrs/100kg		1.30		2.00		1.60
Halad-600LE	ltrs/100kg				6.00		5.00
NF-5 Defoamer	ltrs/100kg		0.10		0.10		0.10
Water Type			Fresh		Fresh		Fresh
Water	ltrs/100kg		42.18		37.86		31.92
Total Mix Fluid	ltrs/100kg		44.08		65.06		51.62
Density	SG		1.92		1.8		1.9
Yield	ltrs/100kg		75.14		96.11		82.57
Thickening Time, 70BC	hrs:min		03:01		07:35		03:51
Free Water	%		Nil		Nil		Nil
Fluid Loss	cc/30 min				44		50
24 hr. Comp.	psi		2500		1950		3000
Laboratory Report No.			97-z-426-2		97-z-489-3		97-z-601-2
Cement Slurry Volume Pumped	M3		4.65		10.1		4
Excess Cement	%orNotes				50%		N/A
Comments							

4.14 Directional surveys

Statoil: Block 15/9
Byford Dolphin
slot #3
Sleipner Area 15/9
Norwegian North Sea

S U R V E Y   L I S T I N G

Well name : 15/9-19A

Your ref : Definitive 15/9-19A
Our ref : svy1965

Date printed : 17-Feb-98
Date created : 17-Feb-98
Last revised : 17-Feb-98

Field is centred on 437499.840,6477880.580,3.00000,N

Structure is centred on 437499.840,6477880.580,3.00000,N

DEFINITIVE

Support Eng. Sign.

20/2-98

Statoil: Block 15/9
Byford Dolphin <not named>,15/9-19A
Sleipner Area 15/9,Norwegian North Sea

SURVEY LISTING Page 1
Your ref : Definitive 15/9-19A
Last revised : 17-Feb-98

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES		Dogleg Deg/30m	Vert Sect
109.00	0.94	273.97	109.00	6.89 N	7.02 E	0.00	0.00
122.95	0.07	171.71	122.97	6.84 N	6.99 E	2.06	0.02
133.00	0.08	251.27	132.98	6.82 N	6.99 E	0.29	0.01
142.96	0.08	250.91	142.96	6.81 N	7.01 E	0.01	-0.01
152.93	0.09	231.59	152.91	6.79 N	7.03 E	0.10	-0.03
162.98	0.04	245.01	162.96	6.75 N	7.07 E	0.16	-0.08
173.00	0.13	210.73	173.00	6.70 N	7.09 E	0.29	-0.11
182.94	0.06	189.55	182.92	6.62 N	7.10 E	0.23	-0.14
192.92	0.18	247.57	192.92	6.55 N	7.08 E	0.46	-0.13
202.92	0.18	250.22	202.91	6.53 N	7.05 E	0.03	-0.11
212.94	0.15	237.38	212.93	6.53 N	7.02 E	0.15	-0.08
222.95	0.21	250.26	222.94	6.51 N	6.98 E	0.22	-0.05
233.00	0.21	261.92	232.99	6.51 N	6.95 E	0.13	-0.02
242.98	0.22	264.03	242.97	6.50 N	6.91 E	0.03	0.02
253.01	0.20	255.65	253.00	6.49 N	6.86 E	0.11	0.07
262.92	0.21	256.09	262.89	6.48 N	6.83 E	0.04	0.09
272.98	0.24	266.62	272.97	6.47 N	6.77 E	0.15	0.15
282.94	0.37	263.24	282.93	6.47 N	6.71 E	0.39	0.21
293.00	0.45	262.97	292.98	6.47 N	6.64 E	0.24	0.28
302.94	0.43	263.30	302.94	6.46 N	6.57 E	0.05	0.34
313.00	0.47	258.58	312.98	6.46 N	6.50 E	0.16	0.41
323.01	0.49	263.19	323.00	6.46 N	6.41 E	0.13	0.50
332.98	0.44	266.94	332.94	6.45 N	6.33 E	0.18	0.57
342.92	0.48	262.95	342.91	6.44 N	6.25 E	0.17	0.65
352.96	0.48	259.02	352.94	6.45 N	6.16 E	0.10	0.74
363.02	0.50	258.16	363.01	6.46 N	6.08 E	0.07	0.82
372.96	0.45	247.73	372.95	6.48 N	6.01 E	0.30	0.89
383.02	0.52	250.17	383.00	6.48 N	5.92 E	0.22	0.98
392.96	0.47	236.70	392.96	6.45 N	5.84 E	0.39	1.05
402.93	0.51	238.35	402.92	6.41 N	5.76 E	0.12	1.12
413.04	0.45	241.29	413.00	6.38 N	5.70 E	0.19	1.17
422.93	0.40	232.38	422.92	6.34 N	5.64 E	0.25	1.22
432.93	0.42	231.70	432.92	6.32 N	5.57 E	0.05	1.29
442.93	0.40	229.31	442.92	6.29 N	5.50 E	0.07	1.35
453.02	0.37	222.08	453.00	6.25 N	5.45 E	0.17	1.39
463.02	0.32	220.66	463.00	6.17 N	5.40 E	0.15	1.42
472.94	0.31	222.28	472.93	6.13 N	5.36 E	0.05	1.45
482.95	0.31	221.62	482.93	6.08 N	5.31 E	0.01	1.49
493.02	0.34	219.71	492.99	6.04 N	5.26 E	0.11	1.53
503.02	0.40	210.70	503.01	5.99 N	5.22 E	0.24	1.55
512.93	0.32	225.75	512.91	5.97 N	5.17 E	0.36	1.60
523.00	0.33	212.87	522.97	5.93 N	5.12 E	0.22	1.64
533.01	0.39	214.21	533.00	5.87 N	5.08 E	0.15	1.66
542.98	0.30	209.18	542.96	5.82 N	5.03 E	0.27	1.70
552.94	0.37	212.08	552.93	5.77 N	5.00 E	0.20	1.72
562.95	0.41	227.68	562.93	5.71 N	4.95 E	0.35	1.75
572.91	0.78	266.95	572.89	5.68 N	4.85 E	1.60	1.85
583.01	1.55	276.61	583.00	5.68 N	4.65 E	2.34	2.04
593.00	2.39	281.49	592.98	5.75 N	4.31 E	2.58	2.39
602.99	3.16	283.25	602.95	5.85 N	3.83 E	2.31	2.88
612.93	4.08	285.37	612.87	6.01 N	3.21 E	2.82	3.52
622.95	4.92	286.68	622.88	6.24 N	2.47 E	2.52	4.29
632.94	5.82	287.58	632.81	6.51 N	1.58 E	2.73	5.22
642.92	6.56	288.27	642.73	6.84 N	0.55 E	2.23	6.30
653.04	7.21	288.54	652.74	7.22 N	0.60 W	1.94	7.50
663.02	7.77	288.61	662.67	7.65 N	1.84 W	1.69	8.81

All data is in metres unless otherwise stated
Coordinates are from structure centre and TVDs are from rkb.
Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES		Dogleg Deg/30m	Vert Sect
672.94	8.69	288.83	672.48	8.08 N	3.19 W	2.76	10.22
683.01	9.52	286.81	682.43	8.61 N	4.70 W	2.49	11.81
692.96	10.22	289.30	692.25	9.19 N	6.33 W	2.12	13.53
702.95	11.07	289.03	702.05	9.79 N	8.10 W	2.54	15.39
712.96	11.80	289.03	711.86	10.42 N	9.97 W	2.20	17.35
722.92	12.67	288.57	721.59	11.12 N	11.96 W	2.62	19.45
732.95	13.47	287.91	731.37	11.82 N	14.13 W	2.44	21.72
742.99	14.53	287.45	741.11	12.57 N	16.47 W	3.19	24.17
753.02	15.57	287.42	750.77	13.35 N	18.98 W	3.11	26.79
762.99	16.72	287.36	760.37	14.19 N	21.62 W	3.45	29.55
772.97	17.75	287.80	769.89	15.09 N	24.45 W	3.14	32.51
782.99	18.69	287.97	779.44	16.02 N	27.45 W	2.81	35.64
793.01	19.66	287.74	788.87	16.99 N	30.57 W	2.93	38.90
802.96	20.57	288.04	798.23	18.05 N	33.85 W	2.74	42.33
812.99	21.30	287.97	807.59	19.23 N	37.21 W	2.20	45.87
822.99	22.09	287.69	816.87	20.35 N	40.72 W	2.38	49.54
832.98	22.85	287.66	826.12	21.47 N	44.39 W	2.29	53.37
842.95	23.67	287.39	835.27	22.62 N	48.19 W	2.47	57.33
852.98	24.19	287.08	844.45	23.84 N	52.08 W	1.60	61.39
862.93	24.59	286.91	853.49	25.06 N	55.96 W	1.24	65.45
872.92	25.21	286.81	862.56	26.23 N	59.96 W	1.87	69.61
882.95	25.91	286.59	871.61	27.48 N	64.14 W	2.11	73.96
892.97	26.50	286.41	880.59	28.74 N	68.38 W	1.77	78.38
902.92	27.08	286.03	889.47	30.02 N	72.67 W	1.82	82.84
912.95	27.77	285.79	898.38	31.32 N	77.10 W	2.11	87.45
923.00	28.41	285.48	907.24	32.62 N	81.68 W	1.96	92.21
932.97	29.15	285.27	915.98	33.86 N	86.33 W	2.25	97.02
942.95	29.83	285.13	924.67	35.17 N	91.07 W	2.05	101.93
952.95	30.36	284.97	933.32	36.50 N	95.95 W	1.62	106.98
962.95	30.97	284.56	941.91	37.77 N	100.93 W	1.92	112.12
972.93	31.52	284.24	950.44	39.07 N	105.95 W	1.72	117.30
982.93	32.23	284.23	958.93	40.41 N	111.07 W	2.14	122.59
992.94	32.92	284.17	967.37	41.63 N	116.32 W	2.08	127.98
1003.00	34.04	284.01	975.76	42.99 N	121.71 W	3.34	133.54
1012.92	34.89	283.95	983.95	44.39 N	127.17 W	2.58	139.18
1022.92	35.93	283.90	992.10	45.69 N	132.77 W	3.12	144.92
1032.95	36.82	283.81	1000.16	47.11 N	138.54 W	2.67	150.87
1042.98	37.51	283.71	1008.17	48.64 N	144.42 W	2.05	156.94
1052.98	38.22	283.78	1016.06	50.06 N	150.39 W	2.15	163.07
1062.93	39.31	283.74	1023.83	51.56 N	156.47 W	3.28	169.34
1072.93	40.35	283.72	1031.49	53.12 N	162.70 W	3.11	175.76
1082.95	41.42	283.69	1039.07	54.66 N	169.07 W	3.23	182.31
1092.99	42.56	283.68	1046.53	56.18 N	175.66 W	3.39	189.07
1102.98	43.31	283.68	1053.85	57.85 N	182.25 W	2.26	195.87
1112.92	44.10	283.66	1061.04	59.37 N	188.90 W	2.37	202.69
1122.98	45.14	283.68	1068.20	60.95 N	195.85 W	3.11	209.82
1132.92	46.24	283.63	1075.14	62.60 N	202.73 W	3.32	216.89
1142.93	47.30	283.28	1081.99	64.36 N	209.85 W	3.25	224.23
1152.94	48.34	283.08	1088.72	66.08 N	217.04 W	3.17	231.62
1162.94	49.45	282.71	1095.31	67.91 N	224.34 W	3.41	239.14
1172.96	50.48	282.51	1101.74	69.44 N	231.82 W	3.13	246.78
1182.95	51.54	282.35	1108.02	71.14 N	239.39 W	3.19	254.53
1192.97	52.49	282.23	1114.19	72.84 N	247.10 W	2.86	262.43
1202.92	53.47	282.21	1120.19	74.49 N	254.85 W	2.95	270.35
1212.95	54.43	282.13	1126.10	76.19 N	262.81 W	2.89	278.49
1222.96	55.44	282.04	1131.84	77.69 N	270.80 W	3.02	286.61

All data is in metres unless otherwise stated
Coordinates are from structure centre and TVDs are from rkb.
Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/30m	Vert Sect
1232.96	56.26	281.97	1137.47	79.55 N	278.91 W	2.47	294.93
1242.94	57.07	281.89	1142.96	81.18 N	287.04 W	2.46	303.22
1252.95	57.44	281.86	1148.37	82.90 N	295.23 W	1.12	311.59
1262.92	57.72	281.94	1153.71	84.58 N	303.50 W	0.84	320.03
1272.93	58.10	282.02	1159.02	86.40 N	311.80 W	1.17	328.52
1282.92	58.55	282.12	1164.28	88.18 N	320.10 W	1.38	337.01
1292.93	58.89	282.21	1169.47	89.98 N	328.45 W	1.06	345.55
1302.94	59.08	282.25	1174.63	91.79 N	336.77 W	0.57	354.07
1312.93	59.24	282.36	1179.74	93.72 N	345.15 W	0.57	362.67
1322.91	58.95	282.42	1184.89	95.49 N	353.50 W	0.90	371.20
1332.92	58.46	282.41	1190.09	97.31 N	361.88 W	1.47	379.78
1342.91	58.05	282.30	1195.34	99.06 N	370.14 W	1.25	388.22
1352.96	57.74	282.39	1200.68	100.88 N	378.46 W	0.94	396.73
1362.95	57.37	282.50	1206.04	102.75 N	386.67 W	1.16	405.15
1372.94	56.77	282.55	1211.48	104.60 N	394.84 W	1.81	413.53
1382.94	56.41	282.66	1216.98	106.28 N	403.01 W	1.11	421.87
1392.93	55.92	282.79	1222.54	108.12 N	411.11 W	1.50	430.18
1402.91	55.83	282.90	1228.13	110.10 N	419.21 W	0.39	438.51
1412.91	56.29	282.99	1233.74	111.80 N	427.21 W	1.40	446.69
1422.94	57.06	282.99	1239.26	113.84 N	435.44 W	2.32	455.17
1432.95	57.71	283.05	1244.64	115.80 N	443.59 W	1.95	463.55
1442.93	57.80	283.03	1249.96	117.68 N	451.73 W	0.26	471.91
1452.96	58.17	283.07	1255.27	119.55 N	460.03 W	1.13	480.41
1462.95	58.84	283.07	1260.49	121.35 N	468.38 W	2.00	488.95
1472.96	59.11	283.03	1265.65	123.39 N	476.75 W	0.83	497.57
1482.92	58.79	283.17	1270.77	125.40 N	484.99 W	1.04	506.05
1492.92	58.10	283.48	1276.03	127.29 N	493.30 W	2.20	514.57
1502.93	58.37	284.16	1281.30	129.28 N	501.56 W	1.91	523.07
1512.96	57.92	285.43	1286.58	131.41 N	509.83 W	3.50	531.60
1522.92	58.21	286.17	1291.85	133.82 N	517.90 W	2.09	540.01
1532.93	58.54	286.91	1297.10	136.26 N	526.10 W	2.13	548.55
1542.95	58.94	287.86	1302.30	138.78 N	534.22 W	2.71	557.02
1552.94	59.25	289.02	1307.43	141.53 N	542.41 W	3.13	565.62
1562.95	59.51	290.37	1312.52	144.37 N	550.52 W	3.57	574.16
1572.95	59.89	291.64	1317.57	147.44 N	558.56 W	3.49	582.68
1582.92	60.35	292.71	1322.54	150.71 N	566.55 W	3.10	591.20
1592.90	60.59	293.58	1327.45	154.17 N	574.55 W	2.41	599.77
1602.91	60.85	295.30	1332.35	157.85 N	582.43 W	4.54	608.27
1612.92	61.11	296.18	1337.20	161.69 N	590.33 W	2.44	616.83
1622.93	61.24	296.73	1342.01	165.59 N	598.15 W	1.49	625.33
1632.92	61.29	296.86	1346.81	169.60 N	605.89 W	0.37	633.77
1642.93	61.38	296.55	1351.61	173.55 N	613.81 W	0.87	642.37
1652.92	61.00	295.82	1356.43	177.36 N	621.62 W	2.21	650.83
1662.93	60.08	294.56	1361.35	181.10 N	629.52 W	4.29	659.37
1672.92	59.62	293.70	1366.36	184.65 N	637.40 W	2.62	667.84
1682.92	59.45	292.95	1371.42	188.07 N	645.27 W	2.02	676.28
1692.93	59.31	292.46	1376.52	191.34 N	653.16 W	1.32	684.70
1702.94	59.66	291.72	1381.62	194.61 N	661.11 W	2.18	693.18
1712.92	59.80	290.88	1386.64	197.76 N	669.09 W	2.23	701.66
1722.94	59.87	290.17	1391.68	200.82 N	677.10 W	1.86	710.15
1732.94	59.76	289.48	1396.71	203.86 N	685.36 W	1.81	718.88
1742.94	59.47	288.59	1401.77	206.77 N	693.44 W	2.46	727.40
1752.91	59.40	288.09	1406.84	209.62 N	701.62 W	1.31	736.01
1762.94	59.17	287.16	1411.94	212.25 N	709.91 W	2.47	744.68
1772.95	58.98	286.50	1417.08	214.66 N	718.19 W	1.80	753.29
1782.94	59.09	285.91	1422.22	217.07 N	726.40 W	1.55	761.83

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Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

Statoil: Block 15/9 SURVEY LISTING Page 4
Byford Dolphin <not named>,15/9-19A Your ref : Definitive 15/9-19A
Sleipner Area 15/9,Norwegian North Sea Last revised : 17-Feb-98

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR	COORDINATES	Dogleg Deg/30m	Vert Sect
1792.93	59.20	285.06	1427.35	219.40 N	734.71 W	2.23	770.45
1802.94	58.91	284.24	1432.50	221.67 N	743.05 W	2.28	779.09
1812.94	59.00	283.73	1437.66	223.76 N	751.40 W	1.34	787.69
1822.94	58.85	282.96	1442.81	225.57 N	759.84 W	2.01	796.33
1832.93	58.73	282.37	1447.98	227.40 N	767.92 W	1.57	804.60
1842.96	58.67	282.14	1453.20	229.28 N	776.58 W	0.61	813.47
1852.93	58.72	281.99	1458.37	231.11 N	784.94 W	0.41	822.03
1862.93	58.70	281.93	1463.57	232.85 N	793.23 W	0.16	830.50
1872.92	58.68	282.03	1468.76	234.57 N	801.66 W	0.25	839.10
1882.95	58.74	281.89	1473.97	236.37 N	809.96 W	0.40	847.59
1892.95	58.64	281.83	1479.17	238.15 N	818.37 W	0.33	856.19
1902.91	58.54	281.81	1484.35	239.85 N	826.80 W	0.30	864.78
1912.95	58.68	281.78	1489.59	241.62 N	835.11 W	0.41	873.28
1922.93	58.88	281.68	1494.73	243.35 N	843.56 W	0.66	881.90
1932.91	58.84	281.59	1499.93	245.06 N	851.88 W	0.26	890.39
1942.92	58.75	281.62	1505.12	246.75 N	860.38 W	0.29	899.06
1952.95	58.64	281.56	1510.33	248.41 N	868.73 W	0.35	907.57
1962.95	58.67	281.38	1515.52	250.15 N	876.97 W	0.47	915.99
1972.93	58.63	281.37	1520.73	251.74 N	885.45 W	0.12	924.61
1982.93	58.82	281.46	1525.93	253.38 N	893.81 W	0.64	933.12
1992.93	58.75	281.34	1531.13	255.17 N	902.26 W	0.41	941.76
2002.94	58.75	281.38	1536.33	256.87 N	910.53 W	0.11	950.20
2012.91	58.81	282.42	1541.50	258.66 N	919.02 W	2.67	958.88
2022.94	58.81	282.60	1546.69	260.40 N	926.88 W	0.47	966.93
2032.95	58.84	282.63	1551.88	262.21 N	935.36 W	0.09	975.60
2042.93	58.78	282.54	1557.06	263.98 N	943.93 W	0.27	984.34
2052.93	58.73	282.50	1562.24	265.95 N	952.27 W	0.19	992.91
2062.92	58.74	282.41	1567.42	267.73 N	960.61 W	0.23	1001.44
2072.91	58.86	282.42	1572.60	269.54 N	968.86 W	0.34	1009.89
2082.93	58.78	282.32	1577.79	271.41 N	977.22 W	0.33	1018.45
2092.95	58.78	282.26	1582.99	273.25 N	985.56 W	0.15	1026.99
2102.94	58.78	282.21	1588.16	274.99 N	993.89 W	0.14	1035.50
2112.93	58.79	282.19	1593.33	276.82 N	1002.19 W	0.05	1044.00
2122.92	58.92	282.20	1598.50	278.62 N	1010.64 W	0.42	1052.64
2132.93	58.90	282.02	1603.67	280.51 N	1018.93 W	0.46	1061.14
2142.94	58.94	282.03	1608.85	282.25 N	1027.17 W	0.13	1069.56
2152.94	58.88	281.97	1614.02	284.06 N	1035.70 W	0.22	1078.28
2162.92	58.92	281.92	1619.17	285.82 N	1043.95 W	0.17	1086.72
2172.94	58.91	281.90	1624.33	287.59 N	1052.28 W	0.06	1095.23
2178.00	58.95	281.87	1626.94	288.48 N	1056.52 W	0.25	1099.56
2192.00	58.05	283.94	1634.26	291.15 N	1068.16 W	4.24	1111.50
2202.00	57.30	283.83	1639.60	293.18 N	1076.36 W	2.27	1119.95
2212.00	56.50	284.11	1645.06	295.20 N	1084.49 W	2.50	1128.32
2222.00	55.68	284.21	1650.64	297.23 N	1092.54 W	2.47	1136.62
2232.00	54.57	284.14	1656.36	299.24 N	1100.49 W	3.33	1144.82
2242.00	54.30	284.20	1662.18	301.23 N	1108.38 W	0.82	1152.96
2252.00	53.51	284.12	1668.07	303.21 N	1116.21 W	2.38	1161.03
2262.00	52.29	284.24	1674.10	305.16 N	1123.94 W	3.67	1169.01
2272.00	51.76	284.25	1680.25	307.10 N	1131.58 W	1.59	1176.89
2282.00	50.92	284.24	1686.50	309.02 N	1139.15 W	2.52	1184.70
2292.00	49.86	284.10	1692.88	310.91 N	1146.62 W	3.20	1192.40
2302.00	49.58	283.88	1699.34	312.75 N	1154.02 W	0.98	1200.02
2312.00	48.78	284.07	1705.88	314.58 N	1161.37 W	2.44	1207.59
2322.00	47.63	284.82	1712.54	316.44 N	1168.59 W	3.84	1215.04
2332.00	47.08	285.12	1719.32	318.34 N	1175.69 W	1.78	1222.39
2342.00	46.54	285.37	1726.16	320.25 N	1182.73 W	1.71	1229.68

All data is in metres unless otherwise stated
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Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

Statoil: Block 15/9 SURVEY LISTING Page 5
Byford Dolphin <not named>,15/9-19A Your ref : Definitive 15/9-19A
Sleipner Area 15/9,Norwegian North Sea Last revised : 17-Feb-98

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/30m	Vert Sect
2352.00	45.33	286.16	1733.12	322.21 N	1189.64 W	4.01	1236.86
2362.00	44.87	286.33	1740.18	324.19 N	1196.44 W	1.43	1243.93
2372.00	44.31	286.54	1747.30	326.17 N	1203.18 W	1.74	1250.93
2382.00	43.16	287.36	1754.52	328.19 N	1209.79 W	3.85	1257.83
2392.00	42.84	287.30	1761.84	330.22 N	1216.30 W	0.97	1264.63
2402.00	42.31	287.78	1769.20	332.26 N	1222.75 W	1.86	1271.37
2412.00	41.73	288.52	1776.63	334.34 N	1229.11 W	2.29	1278.04
2422.00	41.05	288.85	1784.13	336.46 N	1235.38 W	2.14	1284.62
2432.00	40.33	289.48	1791.71	338.60 N	1241.53 W	2.49	1291.10
2442.00	39.62	289.77	1799.38	340.76 N	1247.59 W	2.20	1297.48
2452.00	39.30	290.12	1807.10	342.93 N	1253.56 W	1.17	1303.78
2462.00	38.38	291.19	1814.89	345.14 N	1259.43 W	3.42	1310.00
2472.00	37.44	291.58	1822.78	347.38 N	1265.15 W	2.91	1316.08
2482.00	37.26	291.77	1830.73	349.62 N	1270.79 W	0.64	1322.07
2492.00	36.26	292.88	1838.74	351.89 N	1276.32 W	3.60	1327.97
2502.00	35.79	293.26	1846.82	354.20 N	1281.73 W	1.56	1333.76
2512.00	35.84	293.56	1854.93	356.52 N	1287.10 W	0.55	1339.52
2522.00	35.81	294.42	1863.04	358.90 N	1292.45 W	1.51	1345.26
2532.00	35.42	295.45	1871.17	361.36 N	1297.73 W	2.15	1350.96
2542.00	35.32	296.15	1879.33	363.88 N	1302.94 W	1.25	1356.60
2552.00	34.44	297.06	1887.53	366.44 N	1308.06 W	3.07	1362.15
2562.00	33.76	297.98	1895.81	369.03 N	1313.03 W	2.56	1367.58
2572.00	33.20	298.71	1904.15	371.64 N	1317.88 W	2.07	1372.90
2582.00	32.60	299.56	1912.55	374.29 N	1322.63 W	2.27	1378.11
2592.00	31.79	300.39	1921.01	376.95 N	1327.24 W	2.77	1383.20
2602.00	31.44	300.84	1929.52	379.62 N	1331.76 W	1.27	1388.20
2612.00	30.44	301.62	1938.10	382.29 N	1336.15 W	3.23	1393.08
2622.00	29.90	302.71	1946.75	384.96 N	1340.41 W	2.31	1397.82
2632.00	29.62	304.01	1955.43	387.69 N	1344.55 W	2.11	1402.47
2642.00	29.19	305.17	1964.14	390.48 N	1348.59 W	2.14	1407.04
2652.00	29.08	306.26	1972.88	393.32 N	1352.55 W	1.63	1411.52
2662.00	29.04	307.70	1981.62	396.24 N	1356.43 W	2.10	1415.96
2672.00	28.67	309.43	1990.37	399.25 N	1360.20 W	2.74	1420.31
2682.00	28.01	310.66	1999.18	402.30 N	1363.83 W	2.64	1424.53
2692.00	27.66	312.14	2008.02	405.39 N	1367.34 W	2.32	1428.63
2702.00	27.57	313.32	2016.88	408.53 N	1370.74 W	1.66	1432.66
2712.00	27.01	314.72	2025.77	411.72 N	1374.04 W	2.56	1436.58
2724.00	26.70	317.00	2036.47	415.61 N	1377.81 W	2.69	1441.13
2752.00	26.10	319.90	2061.55	424.92 N	1386.07 W	1.52	1451.26
2781.00	25.30	322.10	2087.69	434.69 N	1393.99 W	1.29	1461.15
2810.00	25.50	328.30	2113.89	444.89 N	1401.07 W	2.76	1470.34
2839.00	24.10	336.20	2140.22	455.62 N	1406.75 W	3.72	1478.26
2867.00	23.40	341.00	2165.85	466.11 N	1410.86 W	2.20	1484.62
2896.00	21.60	348.10	2192.65	476.78 N	1413.84 W	3.37	1489.90
2924.00	20.90	354.20	2218.75	486.80 N	1415.41 W	2.48	1493.67
2953.00	20.70	2.30	2245.86	497.07 N	1415.72 W	2.98	1496.27
2982.00	21.40	11.70	2272.93	507.37 N	1414.45 W	3.56	1497.32
3011.00	23.10	15.00	2299.78	518.05 N	1411.90 W	2.18	1497.22
3040.00	23.90	16.80	2326.37	529.17 N	1408.73 W	1.11	1496.62
3070.00	24.50	17.80	2353.73	540.91 N	1405.07 W	0.73	1495.67
3100.00	24.00	17.60	2381.09	552.65 N	1401.33 W	0.51	1494.64
3129.00	23.90	15.90	2407.59	563.92 N	1397.93 W	0.72	1493.85
3158.00	23.60	17.10	2434.13	575.12 N	1394.62 W	0.59	1493.12
3187.00	23.80	17.30	2460.69	586.25 N	1391.17 W	0.22	1492.24
3216.00	24.00	15.70	2487.20	597.52 N	1387.83 W	0.70	1491.51
3245.00	24.40	15.20	2513.65	608.98 N	1384.67 W	0.46	1490.98

All data is in metres unless otherwise stated
Coordinates are from structure centre and TVDs are from rkb.
Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

Statoil: Block 15/9
Byford Dolphin <not named>,15/9-19A
Sleipner Area 15/9,Norwegian North Sea

SURVEY LISTING Page 6
Your ref : Definitive 15/9-19A
Last revised : 17-Feb-98

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R	C O O R D I N A T E S	Dogleg Deg/30m	Vert Sect	
3274.00	24.60	15.30	2540.04	620.58 N	1381.50 W	0.21	1490.48	
3303.00	24.80	14.80	2566.39	632.28 N	1378.36 W	0.30	1490.03	
3331.00	24.70	15.00	2591.82	643.61 N	1375.34 W	0.14	1489.62	
3360.00	25.00	13.50	2618.13	655.42 N	1372.34 W	0.72	1489.34	
3389.00	24.80	13.30	2644.44	667.30 N	1369.51 W	0.22	1489.23	
3418.00	24.70	13.70	2670.77	679.10 N	1366.68 W	0.20	1489.10	
3447.00	24.80	12.90	2697.11	690.92 N	1363.89 W	0.36	1489.02	
3477.00	24.70	13.40	2724.35	703.15 N	1361.03 W	0.23	1488.96	
3505.00	24.20	13.80	2749.84	714.41 N	1358.31 W	0.56	1488.82	
3533.00	23.70	12.40	2775.43	725.48 N	1355.73 W	0.81	1488.78	
3562.00	23.40	11.10	2802.02	736.83 N	1353.37 W	0.62	1489.01	
3592.00	22.30	11.60	2829.66	748.25 N	1351.08 W	1.12	1489.33	
3615.00	21.30	9.60	2851.02	756.64 N	1349.50 W	1.62	1489.67	
3632.00	20.70	9.10	2866.89	762.65 N	1348.51 W	1.11	1490.04	
3657.00	24.00	18.20	2890.01	771.85 N	1346.22 W	5.73	1489.87	
3678.00	23.40	23.50	2909.24	779.73 N	1343.23 W	3.16	1488.71	
3707.00	25.00	28.30	2935.70	790.41 N	1338.02 W	2.62	1486.02	
3721.00	26.60	30.20	2948.30	795.72 N	1335.05 W	3.86	1484.30	
3736.00	26.80	31.20	2961.70	801.52 N	1331.60 W	0.98	1482.24	
3765.00	26.80	33.10	2987.59	812.59 N	1324.65 W	0.89	1477.93	
3794.00	27.50	34.60	3013.39	823.58 N	1317.28 W	1.01	1473.20	
3823.00	26.10	34.20	3039.28	834.36 N	1309.89 W	1.46	1468.40	
3852.00	25.50	34.70	3065.39	844.77 N	1302.75 W	0.66	1463.77	
3882.00	25.60	33.30	3092.45	855.50 N	1295.51 W	0.61	1459.11	
3911.00	25.60	33.80	3118.61	865.94 N	1288.59 W	0.22	1454.69	
3939.00	25.70	33.90	3143.85	876.01 N	1281.84 W	0.12	1450.36	
3968.00	25.90	32.90	3169.96	886.55 N	1274.89 W	0.50	1445.94	
3997.00	25.90	32.50	3196.04	897.21 N	1268.05 W	0.18	1441.65	
4025.00	25.60	32.20	3221.26	907.48 N	1261.54 W	0.35	1437.60	
4084.00	22.50	29.60	3275.14	928.09 N	1249.16 W	1.67	1430.14	
4111.00	21.60	27.90	3300.16	936.97 N	1244.29 W	1.23	1427.37	
4131.00	21.60	27.90	3318.76	943.48 N	1240.84 W	0.00	1425.46	EXTRAPOLATED TO TD

All data is in metres unless otherwise stated
Coordinates are from structure centre and TVDs are from rkb.
Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

Comments in wellpath

MD	TVD	Rectangular Coords.		Comment
4131.00	3318.76	943.48 N	1240.84 W	EXTRAPOLATED TO TD

Casing positions in string 'ABCDE'

Top MD	Top TVD	Rectangular Coords.		Shoe MD	Shoe TVD	Rectangular Coords.		Casing
0.00	n/a	n/a	n/a	175.00	175.00	6.70N	7.09E	30" COND AT 175m TVD
0.00	n/a	n/a	n/a	535.00	534.99	5.86N	5.07E	20" CSG AT 535m MD, 534.99TV
0.00	n/a	n/a	n/a	1485.00	1271.85	125.81N	486.72W	13 3/8" CSG AT 1485m MD, 127
0.00	n/a	n/a	n/a	2178.00	1626.94	288.48N	1056.52W	9 5/8" WINDOW

All data is in metres unless otherwise stated
Coordinates are from structure centre and TVDs are from rkb.
Vertical section is from wellhead on azimuth 282.90 degrees.
Calculation uses the minimum curvature method.

4.15 Down time including equipment failure

Well 15/9-19SR2 & 19A
Total down time (hrs)

STATOIL

- *RE-ENTRY*

DOWN TIME DUE TO:	*HRS*	*COMPANY*
– Wrong type shear-pin on WB	3,5	FMC/KOS
– Repair on DP elevator	1,0	Dolphin
– Two misrun on CCL, not able to set bridge plug	16,5	Western Atlas
– Burst hydraulic hose on upper racking arm	1,0	Dolphin
– Repair yellow pod on BOP	4,5	Dolphin
– Stuck pipe, unable to pass through window	6,5	
– No progress in milling through window	7,5	
– String plugged when circulating	1,0	
– Set second whipstock, mill second window	14,0	

- *8 1/2" SECTION*

DOWN TIME DUE TO:	*HRS*	*COMPANY*
– Electrical problem on top drive	1,0	Dolphin
– Hole packed off, string stuck	5,5	
– MWD failure	17,5	BHI
– Float valve not opening correct (coring)	0,5	Security DBS
– Repair on UIBOP	7,0	Dolphin
– Logging tool stood up at 2775 m	8,0	
– Repair on top drive	7,0	Dolphin
– Logging equipment problems	14,5	Western Atlas
– Stuck pipe (with logging tools)	5,0	
– Strike	32,0	

Well 15/9-19SR2 & 19A
Total down time (hrs), cont.

STATOIL

- *TEST PHASE and P & A*

DOWN TIME DUE TO:	*HRS*	*COMPANY*
– Hydraulic power unit/casing tong	*1,5*	*Weatherford*
– Failed seal assembly test, pulled same, set elastomer type	*11,0*	
– Re-set wear bushing	*1,0*	
– OD on XO-sub below test tool was too big to enter 7" casing	*2,5*	
– Logging tool stood up	*8,0*	
– Logging equipment problems	*24,5*	*Western Atlas*
– Logging equipment problems	*76,0*	*Schlumberger*
– Broken hydraulic hose	*1,0*	*Dolphin*
– Crown mounted compensator would not unlock	*1,0*	*Dolphin*
– SSTT would not re-latch during function test	*2,5*	*Halliburton*
– Lost cement spacer into mud system, rebuild spacer	*6,5*	*Dolphin*
– Unable to retrieve seal assembly. Modified tool	*8,5*	*FMC/KOS*
– Strike	*748,0*	

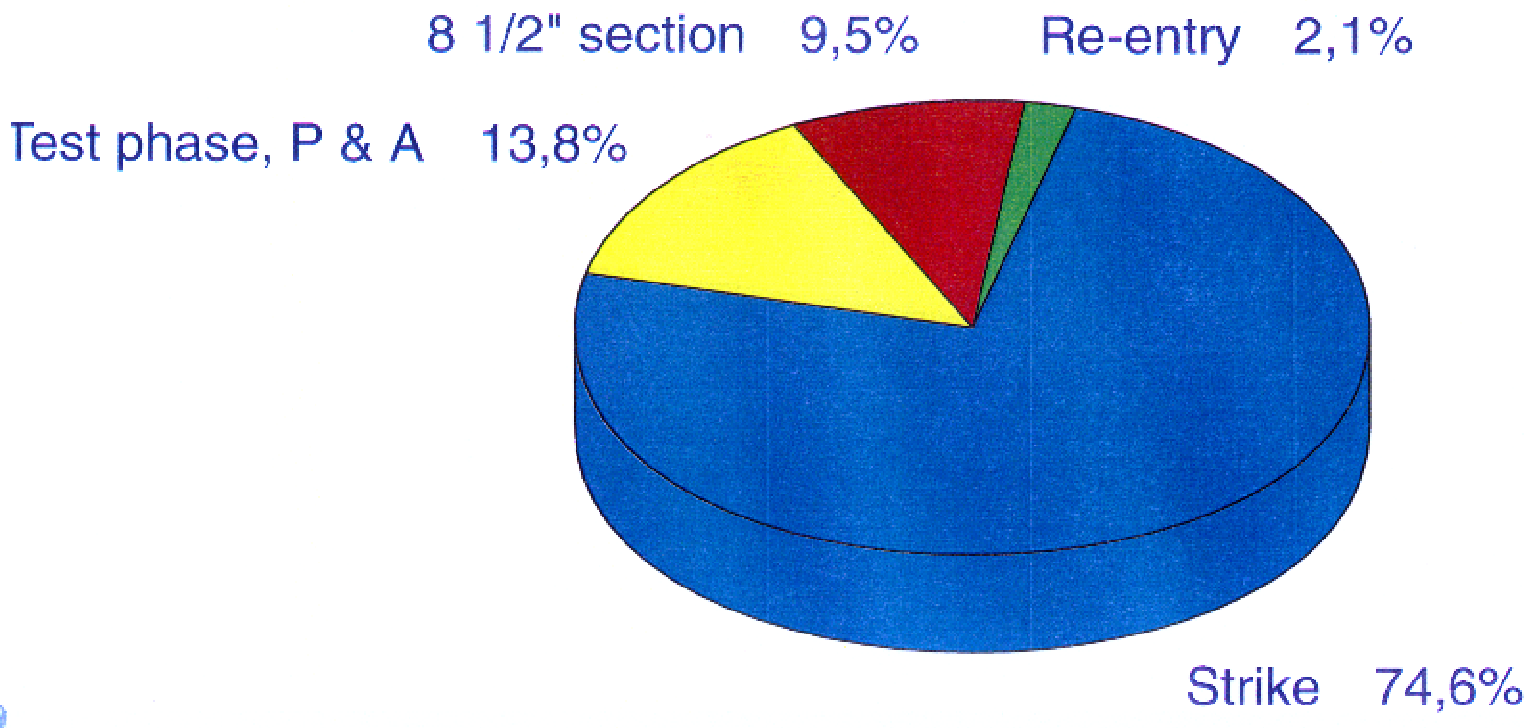
Well 15/9-19SR2 & 19A
Down time (hrs), related to contractors

STATOIL

COMPANY	HRS
Dolphin	30,0
FMC/KOS	12,0
Western Atlas	55,5
BHI (MWD)	17,5
Weatherford	1,5
Sclumberger	76,0
Halliburton	2,5
Security DBS	0,5

Well 15/9-19SR2 & 19A
Down Time Distribution (%)

STATOIL



Total incl. strike: 1045,5 hrs (38,1% of well total time incl. strike)

Total excl. strike: 265,5 hrs (13,5% of well total time excl. strike)

5 Appendix

5.1 Wellsite Sample Description

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 01 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: TFK	Date: 29 - 30.07.97	

Depth (m RT)	Lithology (%)		Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
2200	100	Clst:	olv gry, mod hd, blky, slty, micromic, micropyr, mod calc	No shows
2210	100	Clst:	a.a.	a.a.
2220	100	Clst:	brn gry - olv gry, mod hd, blky, slty, micromic, micropyr, mod calc	a.a.
2230	100	Clst:	a.a.	a.a.
	Gd Tr	Ls:	pa brn - gry orng pk, frm - mod hd, micr, arg	
2240	100	Clst:	a.a.	a.a.
	Gd Tr	Ls:	a.a.	
2250	100	Clst:	med dk gry - olv gry, brn gry, mod hd, blky, slty, micromic, micropyr i.p., non - slily calc	a.a.
	Tr	Ls:	a.a.	
	Tr	Sst:	clr - trnsl qtz, v f - f, mod srt, sbang - sbrndd, lse (i.p. barite contam!!)	
2260	100	Clst:	brn gry - olv gry, frm, blky, slily slty - slty, micromic, occ micropyr, non - occ slily calc	a.a.
	Sl Tr	Sst:	a.a.	
2270	100	Clst:	a.a.	a.a.
	Tr	Ls:	pa brn, gry orng pk, frm, micr, arg	
2280	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2290	100	Clst:	a.a.	a.a.
	Tr	Sst:	a.a.	
2300	100	Clst:	a.a.	a.a.
2310	100	Clst:	olv gry - brn gry, frm - mod hd, blky, slily slty - slty, micromic, occ micropyr, non - occ slily calc	a.a.
	Tr	Ls:	a.a.	
2320	100	Clst:	a.a.	a.a.
	Tr	Ls:	pa brn, pk gry - gry orng pk, frm - mod hd, micr, arg	
2330	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2340	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2350	100	Clst:	olv gry - brn gry, frm - mod hd, blky, gen slty, micromic, micropyr i.p., non - occ slily calc	a.a.
	Tr	Ls:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 02 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: TFK		Date: 30.07.97

Depth (m RT)	Lithology (%)		Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
2360	100	Clst:	olv gry - brn gry, frm - mod hd, blky, gen slty, micromic, micropyr i.p., non - occ slily calc	No shows
	Tr	Ls:	pa brn, pk gry - gry orng pk, frm - mod hd, micr, arg	
2370	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2380	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2390	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2400	90	Clst:	olv gry - brn gry, med dk gry, frm - mod hd, blky, slty, micromic, occ micropyr, non - occ slily calc	a.a.
	10	Ls:	pa brn - gry orng pk - pk gry, frm - mod hd, micr, arg	
2410	90	Clst:	brn gry - olv gry, frm - mod hd, blky, slty, occ v slty, micromic, micropyr, occ slily glauc, pred non calc	a.a.
	10	Ls:	a.a.	
2420	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
2430	100	Clst:	brn gry - olv gry - med dk gry, loc sdy, else a.a.	a.a.
2440	100	Clst:	a.a.	a.a.
2450	100	Clst:	brn gry - olv gry - med dk gry, frm - mod hd, blky, slty, loc v slty, occ sdy, micromic, micropyr i.p., occ slily glauc, non calc	a.a.
2460	100	Clst:	a.a.	a.a.
2470	100	Clst:	a.a.	a.a.
2480	80	Clst:	a.a.	a.a.
	20	Dol:	pa brn, frm - mod hd, micr, slily sdy, arg, slily calc	
2490	90	Clst:	a.a.	a.a.
	10	Dol:	pa brn, yel brn, frm - hd, micr - microxln, arg, slily calc i.p.	
2500	100	Clst:	brn gry, olv gry - med dk gry, frm - mod hd, blky, slty, micromic, occ micropyr, non calc	a.a.
	Tr	Dol:	a.a.	
2510	90	Clst:	a.a.	a.a.
	10	Dol:	pa brn, pred frm, occ mod hd, micr, arg, occ slily calc	
2520	100	Clst:	a.a.	a.a.
	Tr	Dol:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 03 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: TFK / E. Langset		Date: 30.07.97

Depth (m RT)	Lithology (%)		Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
2530	80	Clst:	brn gry, olv gry - med dk gry, frm - mod hd, blky, slty, micromic, occ micropyr, non calc	No shows
	20	Dol:	pa brn, pred frm, occ mod hd, micr, arg, occ slily calc	
	Tr	Ls:	pk gry, frm - mod hd, micr, arg	
2540	80	Clst:	a.a.	a.a.
	20	Dol:	a.a.	
2550	100	Clst:	a.a.	a.a.
	Tr	Dol:	a.a.	
2560	100	Clst:	a.a.	a.a.
	Tr	Dol:	a.a.	
2570	100	Clst:	a.a.	a.a.
	Tr	Dol:	a.a.	
2580	100	Clst:	pred brn blk - olv blk, else a.a.	a.a.
	Tr	Dol:	a.a.	
2590	100	Clst:	a.a.	a.a.
	Tr	Dol:	a.a.	
2600	100	Clst:	brn blk - olv blk, frm - mod hd, blky, slty, micromic, occ micropyr, non calc	a.a.
2610	90	Clst:	brn blk - olv blk, olv gry - med dk gry, frm - mod hd, blky, slty i.p., micromic, loc pyr, non calc	a.a.
	10	Dol:	pa brn, frm - mod hd, micr, arg	
2620	100	Clst:	gn gry - dk gn gry, olv gry - med dk gry, frm - mod hd, blky, slty i.p., micromic, loc pyr, non calc	a.a.
	Tr	Dol:	a.a.	
2630	100	Clst:	a.a.	a.a.
	Tr	Dol:	a.a.	
2640	100	Clst:	med gry - med lt gry i.p., else a.a.	a.a.
2650	100	Clst:	med dk gry - olv gry, dk gnsh gry, non calc, blky, frm	a.a.
	Tr	Ls/Dol:	a.a.	
2660	100	Clst.	dk gn gry - olv gry, gnsh gry, else a.a.	a.a.
	Tr	a.a.		
2670	a.a.			a.a.
2680	a.a.			a.a.
2690	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: TFK / E. Langset		Date: 31.07.97

Depth (m RT)	Lithology (%)	Lithological Description	Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
2700	100	Clst:	pred med gry, gn gry - lt olv gry, brnsh gry, blky, frm, non calc	No shows
	Tr	Ls/Dol:	pa brn, frm - mod hd, micr, arg i/p	
2710	100	Clst:	med dk gry - olv blk, frm - mod hd, blky, slty, micromic, non calc	a.a.
	Tr	Dol:	pa brn, frm - mod hd, micr, arg, occ slily calc	
2720	100	Clst:	med dk gry, olv blk, else a.a.	a.a.
	Tr	Dol:	a.a.	
2730	80	Clst:	med gry - med dk gry, frm, blky, slty, micromic, non calc	a.a.
	10	Dol:	pa brn, frm - mod hd, micr, arg calc i.p.	
	10	Ls:	lt gry, frm - mod hd, micr, arg	
2740	90	Clst:	a.a.	a.a.
	5	Dol:	a.a.	
	5	Ls:	a.a.	
2750	100	Clst:	med gry - med dk gry, a.a.	a.a.
	Tr	Dol:	a.a.	
2760	100	Clst:	med gry - med dk gry a.a.	a.a.
	Tr	Ls:	a.a.	
2768	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a	
	Tr	Sst:	f	
2770	a.a.	with trace anhydrite/gypsum, else a.a.		a.a.
2780	70	Clst:	a.a.	a.a.
	30	Gypsum/Anhydrite: offwhite - lt brn ,arg,firm,blocky		
		High res MWD,no response HCl, sulfate test performed, dens. test		
	Gd tr	Sd		

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 05 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: E.Undersrud/E.Langset		Date: 03.08.97

Depth (m RT)	Lithology (%)		Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
2790	50	Clst:	med gy, frm, blky, slty, micromic, non calc	No shows
	40	Gyp:	lt gry - wh, sft	
	10	Sst:	clr, f - vf, sbrndd - rndd, lse	
2800	60	Clst:	a.a.	a.a.
	40	Gyp:	a.a.	
	Tr	Sst:	a.a.	
2810	50	Clst:	a.a.	a.a.
	40	Gyp:	a.a.	
	10	Sst:	a.a.	
2820	90	Clst:	a.a.	a.a.
	10	Gyp:	a.a.	
	Tr	Sst:	a.a.	
2830	a.a.			a.a.
2840	100	Clst:	v stky, else a.a.	a.a.
2850	100	Clst:	a.a.	a.a.
2860	100	Clst:	a.a.	a.a.
2870	100	Clst:	a.a.	a.a.
2880	100	Clst:	a.a.	a.a.
2890	100	Clst:	a.a.	a.a.
2900	80	Clst:	med gry, gn gry, frm - sft, blky, slty I.P., micromic, non calc	a.a.
	20	Sst:	clr, vf - f, rndd - sbrndd, lse	
2910	a.a.			a.a.
2920	80	Clst:	a.a.	a.a.
	10	Sst:	a.a.	
	10	Ls:	mod hd, else a.a.	
2930	60	Clst:	a.a.	a.a.
	30	Sst:	a.a.	
	10	Ls:	a.a.	
2940	80	Clst:	w/varic Tf: rd brn, med gry - gry, olv gry	a.a.
	20	Ls:	a.a.	
2950	a.a.			
2960	100	Clst/Tf:	a.a.	a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION

Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: E.Undersrud/E.Langset		Date: 03.08.97

Depth (m RT)	Lithology (%)	Lithological Description Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks Shows, cavings, mud additives, etc.
2970	100	Clst:	med gry, gn gry, frm - sft, blky, slty I.P., micromic, non calc, w/tr Tf	No shows
2980	a.a.			a.a.
2990	100	Clst:	varic, frm, blky - sbfis, micromic, tf, non - mod calc	a.a.
3060	80	Clst:	varic a.a.	a.a.
	20	Sd:	trnsp - lt brn, f, mod - wl srt, sbrndd	
	Tr	Tf, Ls		
3070	90	Clst:	dk gry - brn gry, blky, frm - hd,	a.a.
	10	Sd:	occ gn gry, else a.a.	
	Tr	Tf, Ls		
3080	a.a.			a.a.
3090	100	Clst:	a.a.	a.a.
	Tr	Tf, Sd, Ls		
3100	a.a.			a.a.
3110	100	Clst:	varicl, gen gn gry, else a.a.	a.a.
	Tr	Sd, Tf, Ls		
3130	a.a.			a.a.
3140	100	Clst:	dk gn gry, dk rd brn, frm, non calc	a.a.
	Tr	Ls, Tf		
3150	80	Clst:	dk gn gry - olv gry - med dk gry, else a.a.	a.a.
	20	Sltst:	off wh - lt brn, arg I.P., tf I.P., frm - lse, sli calc, arg I.P.	
	Tr	Tf, Ls		
3160	a.a.			a.a.
3170	60	Clst:	a.a.	a.a.
	40	Sltst:	non calc, a.a.	
	Tr	a.a.		
3180	a.a.			a.a.
3190	a.a.			a.a.
3200	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 07 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: E.Undersrud/E.Langset		Date: 05.08.97

Depth (m RT)	Lithology (%)		Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
3210	60	Clst:	dk gn gry - olv gry - med dk gry, else a.a.	No shows
	40	Sltst:	off wh - lt brn, tuff I.P., frm - lse, slily calc, arg I.P., sdy I.P.	
	Tr	Ls		
3220	60	Sltst	a.a.	a.a.
	40	Clst:	a.a.	
3230	70	Sltst:	bec more sdy, else a.a.	yel brn fluor on Sd
	20	Sd:	f - crs, trnsl, sbrndd - rndd, prly srt	Gn, wk mlky cut,
	10	Clst:	a.a.	bl wh res ring
3240	70	Sd:	a.a.	No shows
	30	Clst:	a.a.	
3250	50	Sd:	a.a.	a.a.
	30	Sltst:	a.a.	
	20	Clst:	a.a.	
	Tr	Ls		
3260	a.a.			a.a.
3270	a.a.			a.a.
3280	a.a.			a.a.
3290	a.a.			a.a.
3300	60	Sltst:	a.a.	a.a.
	30	Sd:	a.a.	
	10	Clst:	a.a.	
	Tr	Ls		
3310	60	Ls:	off wh, arg, micr, slty and sdy I.P.	a.a.
	30	Clst:	lt olv gry - med dk gry, non calc	
	10	Sd:	a.a.	
	Tr	Sltst		
3320	100	Ls:	off wh, gry, hd - mod hd, xln - microxln	a.a.
	Tr	Clst:	med gy, slily calc, frm	
3330	a.a			No shows Cavings over shaker
3340	a.a.			a.a.
3350	a.a			a.a.
3360	a.a.			a.a.
3370	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 08 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: E.Undersrud/E.Langset		Date: 06.08.97

Depth (m RT)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
3380	90	Ls:	off wh - wh, micr, hd, blky, arg I.P.	No shows
	10	Clst:	varic, hd, blky, non calc	Steering - cuttings
	Tr	Sd		substantially mixed
3390	a.a.			a.a.
3400	a.a.			a.a.
3410	a.a.			a.a.
3420	90	Ls:	off wh - mod rd orng, else a.a.	a.a.
	10	Clst:	a.a.	
3430	a.a.			a.a.
3440	a.a.			a.a.
3450	a.a.			a.a.
3460	a.a.			a.a.
3470	a.a.			a.a.
3480	a.a.			a.a.
3490	a.a.			a.a.
3500	100	Ls:	Varic gry/rd/wh	a.a.
3510	a.a.			a.a.
3520	100	Ls:	more mrly else a.a.	a.a.
3530	100	Ls:	Up to 40% Mrl	a.a.
3540	100	Ls:	Up to 50 % Mrl	a.a.
3550	100	Ls:/Mrl:	dk gry, blky, arg	a.a.
3560	80	Ls:	off-wh, I.P. brn orng, micr, arg I.P., occ glauc, occ slty	a.a.
	20	Mrl/Clst:	varic, blky, occ slty, hd, glauc I.P.	
	Tr	Clst		
3570	a.a.			a.a.
3580	a.a.			a.a.
3590	50	Ls:	a.a.	a.a.
	50	Mrl/Clst:	a.a. w/ tr a.a.	
3600	a.a.			a.a.

STATOIL

WELLSITE SAMPLE DESCRIPTION				Page 09 of 15
Country: Norway		Area: North Sea		Field: Theta Vest
Well no: 15/9-19A				
R.T.: 25 meters		Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "		Geologist: O. Beyer / P. Furmyr		Date: 07 - 09.08.97

Depth (m RT)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
3610	50	Ls: off wh, med gry, occ pk gry, mod hd, blky, occ arg lam, brit	No shows
	50	Mrl/Clst: med - dk gry, mod hd - frm, blky, arg lam	Steering - cuttings substantially mixed
3620	a.a.		a.a.
3630	a.a.		a.a.
3640	70	Mrl/Clst: a.a.	a.a.
	30	Ls: a.a.	
3651	80	Mrl/Clst: a.a.	a.a.
	20	Ls: a.a.	
3654	75	Clst/Mrl: bec dom Clst, also bluish gry, mod calc - sli calc, else pred a.a.	a.a.
	25	Ls: dom off wh, a.a.	
3657	70	Ls: a.a.	
	30	Clst: frm - mod hd, blky, non calc - sli calc, a.a.	a.a.
3660	50	Ls: Tr pk, else a.a.	
	50	Clst: also tr dk brn, else a.a.	a.a.
3663	5	Slst/Mrl: wh - spty gn mtx, clr qtz, slty - f sdy, calc Mtrx/Cmt, frm, blky, glauc Spk	a.a.
	50	Ls: pred a.a.	
	45	Clst: a.a.	
3666	a.a.		
3669	80	Ls/Mrl: dom off wh - lt brn, micr, arg & slty, frm - mod hd, Tr glauc, Tr micropyr	a.a.
	20	Clst: dk brn gry, blky - sbang, frm - mod hd, non calc (hi-GR)	
3672	60	Clst: bec dom dk brn gry - dk brn, else pred a.a.	a.a.
	40	Ls/Mrl: a.a.	
3673 Btms Up	20	Slst/Sst: lt gn gry - off wh calc Mtrx, clr- trnsl Qtz, slty - vf sdy, wl srt, frm - fri, abd arg/calc Mtrx, ti - pr vis Por	a.a.
	60	Clst: pred dk brn, a.a.	
	20	Ls/Mrl: pred a.a.	
3675	10	Slst/Sst: a.a.	a.a.
	90	Clst: a.a	
3678	a.a.		a.a.
3681	100	Clst: pred dk brn - brn blk, frm, blky, sbfis, unif, non calc	a.a.
	Tr	Pyr Nod, Ls, Slst/Sst	

WELLSITE SAMPLE DESCRIPTION			Page 10 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: O. Beyer / P. Furmyr		Date: 09 - 10.08.97

Depth (m RT)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
3684	100	Clst:	pred dk brn - brn blk - dsky yel brn, frm, blky, sbfis, slty, non calc, micromic, carb	In Clst: no fluor, sli, strm, yel wh cut Steering BHA - cuttings are substantially mixed
	Tr	Pyr Nod, Ls, Slst/Sst		
3687	100	Clst:	a.a.	a.a.
	Tr	Pyr, Ls, Sltst		
3690	a.a.			a.a.
3693	a.a.			a.a.
3696	a.a.			a.a.
3699	a.a.			a.a.
3702	a.a.			a.a.
3705	a.a.			a.a.
3708	100	Clst:	gry blk - olv blk, frm, blky, slty - v slty, non calc, micromic, carb	a.a.
	Tr	Pyr, Ls, Sltst		
3711	a.a.			a.a.
3714	a.a.			a.a.
3717	100	Clst:	olv blk - gry blk, v slty, sdy I.P., frm, blky, non calc, micromic, carb	a.a.
	Tr	Pyr, Ls, Sst		
3720	90	Clst:	olv blk - gry blk, v slty, sdy, occ grad to sdy Sltst, frm, blky, non calc, carb, micromic, occ med gry - dk gn gry	a.a.
	10	Ls:	med gry - off wh, frm, blky, slty, sdy, occ clr	
	Gd Tr	Sst:	clr Qtz, vf - f, lse Gn	
3723	95	Clst:	a.a.	a.a.
	5	Ls:	a.a.	
	Tr	Sst:	a.a.	
3726	100	Clst:	less slty and sdy, mod hd - frm, else a.a.	a.a.
	Tr	Ls:	a.a.	
3729	a.a.			a.a.
3732	100	Clst:	olv blk, frm - mod hd, blky, slty, carb, micromic, non calc, r med gry - dk gn gry	a.a.
	Tr	Ls:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 11 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: O. Beyer / P. Furnyr		Date: 10.08.97

Depth (m RT)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
3735	100	Clst:	olv blk, frm - mod hd, blky, slty, carb, micromic, non calc, r med gry - dk gn gry	In Clst: no fluor, . sli, strm, yel wh cut
	Tr	Ls:	med gry - off wh, frm - mod hd	
3738	a.a.			a.a.
3741	a.a.			a.a.
3744	a.a.			a.a.
3747	a.a.			a.a.
3750	100	Clst:	a.a.	a.a.
3753	a.a.			a.a.
3756	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
3759	a.a.			a.a.
3762	a.a.			a.a.
3765	100	Clst:	v slty, sdy, else a.a.	a.a.
	Tr	Ls:	a.a.	
3768	a.a.			a.a.
3771	a.a.			a.a.
3774	100	Clst:	less slty & sdy, else a.a.	a.a.
	Sli Tr	Ls:	a.a.	
3777	100	Clst:	colour change to med dk gry - dk gry, occ gn gry, frm, blky, non calc	No shows
	Sli Tr	Ls:	a.a.	
3780	100	Clst:	med dk gry - dk gry, occ gn gry a.a.	a.a.
	Tr	Ls:	a.a.	
3783	a.a.			a.a.
3786	a.a.			a.a.
3789	a.a.			a.a.
3792	a.a.			a.a.
3795	100	Clst:	a.a.	a.a.
	Tr	Ls:	a.a.	
	Tr	Sst:	lt brn arg mtx, clr qtz, vf - f, fri, abd arg (kao) Mtrx, tight, non calc	

STATOIL

WELLSITE SAMPLE DESCRIPTION			
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: O. Beyer / P. Furmyr		Date: 10-11.08.97

Depth (m RT)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks: Shows, cavings, mud additives, etc.
3798	100	Clst:	med dk gry - dk gry, occ gn gry, frm, blky, non calc	No shows
	Tr	Ls:	med gry - off wh, frm - mod hd, dom cln micr, also minor xln cal	
	Tr	Sst:	lt brn arg mtx, clr qtz, vf - f, fri, abd arg (kao) Mtrx, ti, non calc	
3801	20	Sst/Slst:	lt brn - off wh Mtrx, clr -trnsl Qtz, slt - f, pred vf, tr med, mod - wl srt, sbrndd - rndd, v abd kao Mtrx/Cmt, grad Clst, non calc, ti, pr vis Por	a.a.
	80	Clst:	dk olv gry, med brn, med dk gry, occ med gry - gn gry, r dk rd brn frm, blky, slty - v slty - grad Sltst, sli carb, non calc	
	Tr	Ls:	med gry, off wh, yel brn, r pk gry, frm - mod hd, dom cln micr, also minor xln Calc	
3804	30	Sst/Slst:	a.a.	a.a.
	70	Clst:	a.a.	
	Tr	Ls:	a.a.	
3807	40	Sst/Slst:	v abd kao, grad Clst	**Sli Tr** mod bri, yel Fluor. Strm, blu wh Cut Fluor (acetone)
	60	Clst:	a.a.	
	Tr	Ls:	a.a.	
	Tr	Sd:	clr Qtz, crs, lse	
3810	30	Sst/Sltst:	a.a.	Sli Tr Fluor & Cut a.a.
	70	Clst:	a.a.	
	Tr	Ls:	a.a.	
3813	40	Sst/Sltst:	a.a.	No shows
	60	Clst:	a.a.	
3816	50	Sst:	bec pred vf - f Qtz, v abd lt - mod brn kao Mtrx, frm, non calc, ti, pr vis por	a.a.
	50	Clst:	a.a.	
	Tr	Ls:	a.a.	
3819	30	Sltst:	lt - mod brn, sdy - grad vf Sst, abd brn kao Mtrx, frm, ti	a.a.
	20	Sst/Sltst:	a.a.	
	50	Clst:	a.a.	
	Tr	Ls:	a.a.	
3822	a.a.			a.a.
3825	70	Sst:	lt brn Mtrx, dk gry arg Lam, clr - transl Qtz, vf - med, mod - wl srt, sbrndd, minor ang - subang, abd kao Mtrx/Lam, also dk gry arg Lam, frm, bec gen fri, non calc Cmt, Lam mica, pr - fair vis Por	Even-lam, mod strng direct Fluor.Mod strng yel mlky wh strng Cut (w/acetone)
	30	Clst:	a.a.	
	Tr	Ls:	a.a.	Strng wh-blu wh resid Fluor. Moderate strng lam lt - med brn HC
3828	50	Sst:	bec incr med gry - med dk gry arg Mtrx also, a.a.	Spty Fluor & Cut a.a.
	50	Clst:	a.a.	
	Tr	Ls:	a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION				
Country: Norway		Area: North Sea		Field: Theta Vest
Well no: 15/9-19A				
R.T.: 25 meters		Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "		Geologist: O. Beyer / P. Furmyr		Date: 11.08.97

Depth (m RT)	Lithology (%)	Lithological Description Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination		Remarks Shows, cavings, mud additives, etc.
3831	60	Sst:	lt brn Mtrx, dk gry arg Lam, clr - transl Qtz, vf - med, mod wl srt, sbrndd, tr rndd, minor ang - sbang, abd kao & other arg Mtrx/Lam, frm - fri, non calc Cmt, Lam mica, pr - fair vis Por	Even - lam, mod strng yel direct Fluor. Mod strng mlky wh strng Cut w/acetone Strng wh-blu wh resid Fluor. Moderate strng Lam lt - med brn HC Stn in kao rich Agg
	40	Clst:	dk olv gry, med brn, med dk gry, occ med gry - gn gry, r dk rd brn frm, blky, slty - v slty - grad Sltst, sli carb, non calc	
	Tr	Ls:	med gry, off wh, yel brn, r pk gry, frm - mod hd, dom cln micr, also minor xln Calc	
3834	80	Sst:	bec gen only kao Mtrx again, gen fair vis Por, else gen a.a.	Tr Fluor & Cut a.a.
	20	Clst:	a.a.	
	Tr	Ls:	a.a.	
3837	60	Sst:	lt brn - med dk gry Mtrx and Lam, clr - transl Qtz, pred vf - f, also minor med - crs, mod - pr srt, sbrndd, Tr rndd, minor ang - sbang, abd kao & other arg Mtrx/Lam, frm - fri, non calc Cmt, Lam mica, pr - fair vis Por	Mod strng yel direct Fluor.Mod strng mlky wh strng Cut w/acetone Strng wh - blu wh resid Fluor. Moderate strng Lam lt - med brn HC Stn in some kao rich Agg
	40	Clst:	a.a	
	Tr	Ls:		

CORED INTERVAL: 3838 - 4017 m MDRT, see coredescriptions.

WELLSITE SAMPLE DESCRIPTION			Page 14 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: O. Beyer / P. Furmyr		Date: 21.08.97

Depth (m RT)	Lithology (%)	Lithological Description Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4020	95	Sst: off wh, lt - med gry, gn gry, vf - crs, mod - pr srt, dom sbrndd, gen abd off wh - gn gry kao and chlor(?) Mtrx, sli cmt, frm, occ Lam/Pch of gn gry arg Mat, Tr Mic - dom gn blk Mic, com Gr of blk, mafic Min, gen pr - fr vis Por	No shows
		Clst: gn gry, med gry, frm - mod hd, sbfis, chlor(?), non calc	
4023	a.a.		a.a.
4026	a.a.		a.a.
4029	a.a.		a.a.
4032	95	Sst: incr. gn gry, vf - f with por vis Por, else a.a.	a.a.
	5	Clst: a.a.	
4035	a.a.		a.a.
4038	a.a.		a.a.
4041	a.a.		a.a.
4044	a.a.		a.a.
4047	90	Sst: dom gn gry, vf - f, mod - wl srt, abd gn gry kao & chlor Mtrx, coma.a. gn blk Mic, pr vis Por, else a.a.	
	10	Clst: a.a.	
4050	a.a.		a.a.
4053	a.a.		a.a.
4056	a.a.		a.a
4059.	a.a.		a.a.
4062.	a.a.		a.a.
4065.	a.a.		a.a.
4068.	a.a.		a.a.
4071	a.a.		a.a.
4074	a.a.		a.a.
4077	90	Sst: rd brn patches, else a.a.	a.a.
	10	Clst: a.a.	
4080	90	Sst: a.a.	a.a
	10	Clst: occ dk rd brn - gry rd, else a.a.	

STATOIL

WELLSITE SAMPLE DESCRIPTION			Page 15 of 15
Country: Norway	Area: North Sea		Field: Theta Vest
Well no: 15/9-19A			
R.T.: 25 meters	Company: Statoil, Esso Norge, Norsk Hydro, Elf Petroleum ,Total Norge		
Hole size: 8 1/2" "	Geologist: L. Rasmussen		Date: 21.08.97

Depth (m RT)	Lithology (%)	Lithological Description: Rock name, mod.lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed.structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
4083	90	Sst: gn gry, off wh, lt - med gry, Patch of rd brn, vf - f, mod - wl srt, dom sbrnd, abd gn gry kao & chlor Mtrx, com gn blk Mic, occ Lam/Patch of gn gry arg Mat, com grains of blk mafic Min, pr vis Por	No shows
	10	Clst: gn gry - med gry, occ dk rd brn - gry rd, frm - mod hd, sbfis, chlor(?) in gn gry clst, non calc	
4086	a.a.		a.a.
4089	a.a.		a.a.
4092	a.a.		a.a.
4095	a.a.		a.a.
4098	a.a.		a.a.
4101	50	Sst: a.a.	a.a.
	40	Clst/Slty Sst: dk rd brn - gry rd, frm - mod hd, sbfis - blky, occ fis, v slty - sdy (v f), micromic, non calc	
	10	Clst: a.a.	
4104	a.a.		a.a.
4107	60	Sst: a.a.	a.a.
	30	Clst/Slty Sst: a.a.	
	10	Clst: a.a.	
4110	a.a.		a.a.
4113	80	Clst/Slty Sst: a.a.	a.a.
	10	Sst: a.a.	
	10	Clst: a.a.	
4116	100	Clst/Slty Sst: a.a.	a.a.
	Tr	Sst: a.a. / Clst: a.a.	
4119	a.a.		a.a.
4122	a.a.		a.a.
4125	100	Clst/Slty Sst: a.a.	a.a.
4128	90	Clst/Slty Sst: a.a.	a.a.
	5	Sst: a.a.	
	5	Clst: a.a.	
4131	100	Clst/Slty Sst: a.a.	a.a.
	Tr	Sst: a.a. / Clst: a.a.	

END OF 8 1/2" HOLE SECTION @ 4031mMD RT/ 3318.5mTVD RT

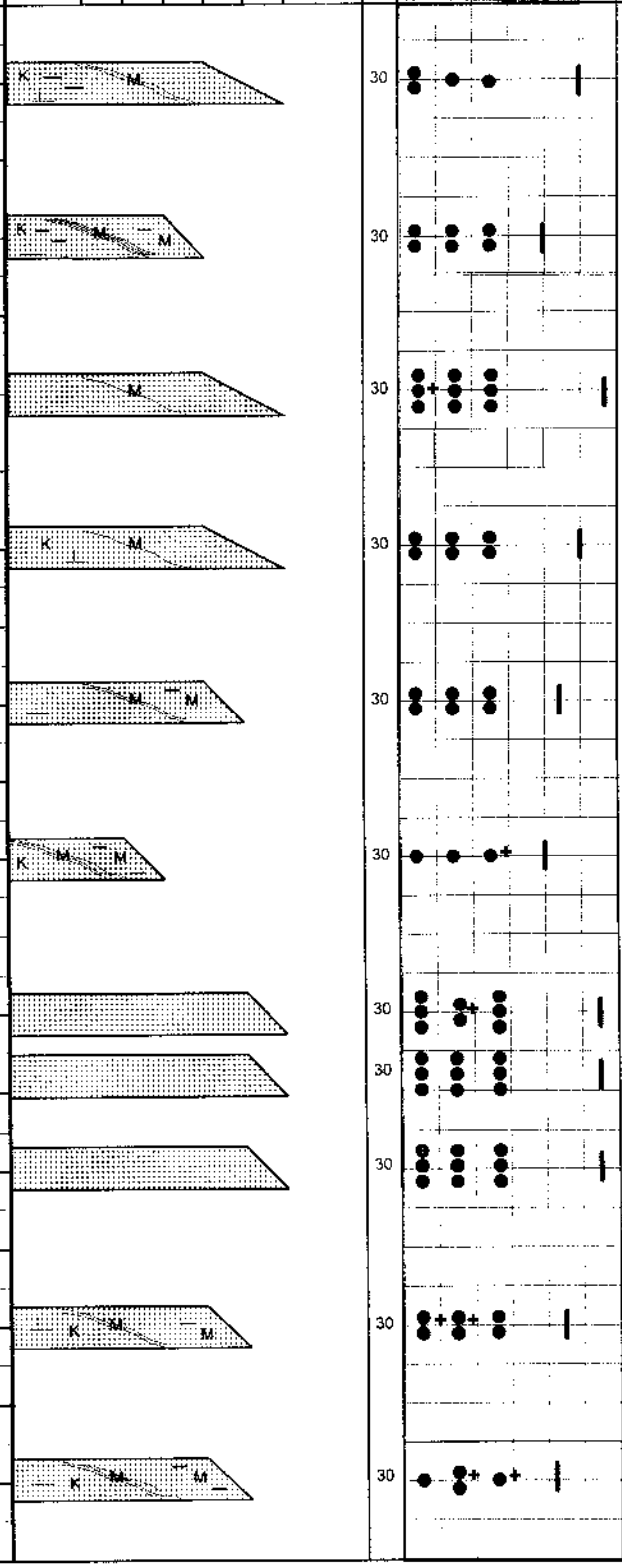
5.2 Conventional Core Description

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Hugin Fm (Vestland Gp)	
Core no: 1	**Interval:** 3838.0 - 3854.0mMDRT	**Cored:** 16.0m **Rec:** 15.22 m 95.1 %
Core size: 4"	**Geologists:** O.Beyer / P.Furmyr	**Date:** 13.08.97

Lithology/Grain size: cly slt vf f m c vc — Apparent dip — Shows: STAIN FLUOR CUT POOR FAIR GOOD — Φ



Depth (mRT)	Apparent dip	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3838	30	**SST:** Clr-transl qtz,f-crs, dom med, wll srt, sbang-sbrnd, mod arg (dom kaol) mtx/cmt, loc sl calc cmt, fri-frm, mod mica x-lam, fair - good vis por	Moderate HC odour Moderate HC stain Ptchy wk-mod strng yel direct fluor Mod fst strm wh cut w/acetone
3839	30	**SST:** Clr-transl qtz, vf-f, minor med,wll srt, sbang-sbrnd, abun arg, (dom kaol) mtx/cmt, loc sl calc cmt, fri-frm, com mica x-lam, pr -fair vis por	Mod HC odour/stn Ptchy mod strng yel direct fluor Fst strm blu wh cut
3840	30	**SST:** Clr-transl qtz, dom med-crs, wll srt, sbang-sbrnd, mod arg (dom kaol) mtx/cmt, loc sl calc cmt, fri, mod mica x-lam, good vis por	Good+HC odour/stn Even strng yel direct fluor Flshy blu wh cut
3841	30	**SST:** Clr-transl qtz, dom f-crs, mod wll srt, subang, crs pred sbrnd, loc sl arg (dom kaol) mtx/cmt, sl calc cmt, fri-frm, few mica x-lam, fair - good vis por	Mod HC odour/stn Ptchy mod strng yel direct fluor Flshy blu wh cut
3842	30	**SST:** Clr-transl qtz, dom f-med, tr crs, mod wll srt, subang, crs pred sbrnd, loc sl arg, (less kaol) mtx/cmt, sl calc cmt, frm, few mica x-lam,fair - good vis por	Mod HC odour/stn Even mod strng yel direct fluor Fast strmng blu wh cut
3843	30	**SST:** Clr-transl qtz,slt-f, dom vf, wll srt, sbang-sbrnd, abun arg (dom kaol) mtx/cmt, loc sl calc cmt, frm, com mica x-lam, pr - fair vis por	Mod-wk HC odour Mod-wk HC stain Ptchy wk yel direct fluor. Wk -mod fst strm wh cut
3844	30, 30	**SST:** Clr-transl qtz, dom med - crs, v wll srt, subang -sbrnd, cln, loc sl arg mtx/cmt, loc sl calc cmt, fri, good vis por	Good HC odour/stn Even mod strng - strng yel direct fluor Fast blu wh cut
3845	30	**SST:** pred a.a	Shows a.a.
3846	30	**SST:** Clr-transl qtz, dom f-med, tr crs, mod wll srt, subang, crs pred sbrnd, loc sl arg mtx/cmt, sl calc cmt, frm, few mica x-lam, fair - good vis por	Mod HC odour/stn Even mod strng yel direct fluor Fast strng blu wh cut
3846	30	**SST:** mod arg (dom kaol) mtx/cmt, com mica x-lam, else pred a.a	Wk HC odour/stn Even mod strng yel direct fluor Slow blu wh cut

cly slt vf f m c vc

STATOIL

CONVENTIONAL CORE DESCRIPTION

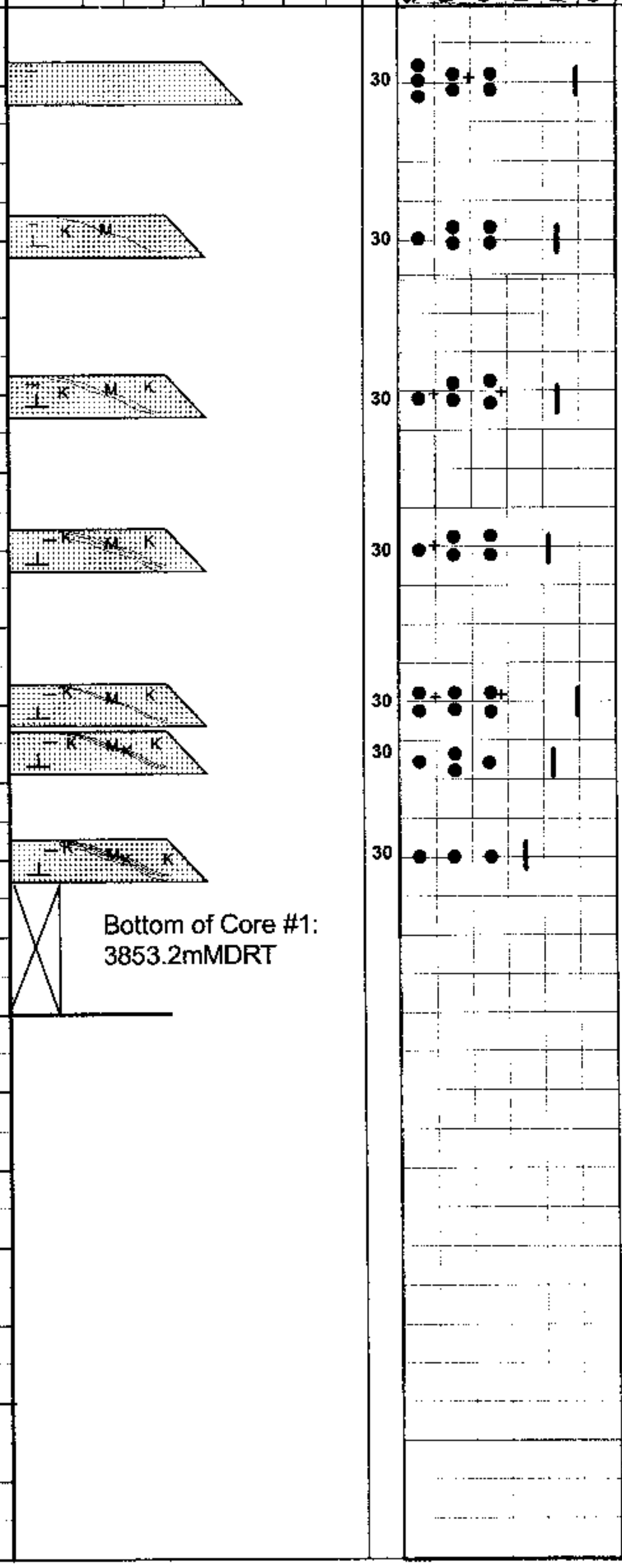
Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Hugin Fm (Vestland Gp)

Core no: 1 | **Interval:** 3838.0 - 3854.0mMDRT | **Cored:** 16.0m **Rec:** 15.22 m 95.1%

Core size: 4" | **Geologists:** O.Beyer/P.Furmyr | **Date:** 13.08.97

Lithology/Grain size: cly slt vf f m c vc — Shows (STAIN, FLUOR, CUT) — Φ (POOR, FAIR, GOOD)



Depth (mRT)	Apparent dip	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3848	30	**SST:** Clr-transl qtz, dom f - med, v wll srt, subang, cln, loc sl arg mtx/cmt, fri, fair - good vis por	Good HC odour/stn Even mod strng - strng yel direct fluor Mod fast blu wh cut
3849	30	**SST:** Clr-transl qtz, dom f - med, v wll srt, subang, cln, loc sl arg mtx/cmt, fri, fair - good vis por	Wk HC odour/stn Even mod strng - strng yel direct fluor Mod fast blu wh cut
3850	30	**SST:** pred a.a	Shows a.a.
3851	30	**SST:** pred qtz, a.a.,bec mod arg mtx/cmt, incr mica x-lam, sl calc cmt, frm, fair vis por	Shows a.a.
3852	30	**SST:** pred qtz a.a., sl - mod arg mtx/cmt, sl calc cmt, frm, fair vis por	Good HC odour/stn, else shows a.a.
	30	**SST:** pred qtz a.a., mod-abun arg (kaol) mtx/cmt, sl calc cmt,frm, fair vis por	Wk HC odour/stn Even mod strng - strng yel direct fluor. Mod fast blu wh cut
3853	30	**SST:** pred qtz a.a., abun arg (kaol) mtx/cmt, mod calc cmt, frm-mod hd, com mica x-lam, pr vis por	Wk mod ptchy/lam wk -mod shows a.a.
3854			

cly slt vf f m c vc

STATOIL

CONVENTIONAL CORE DESCRIPTION

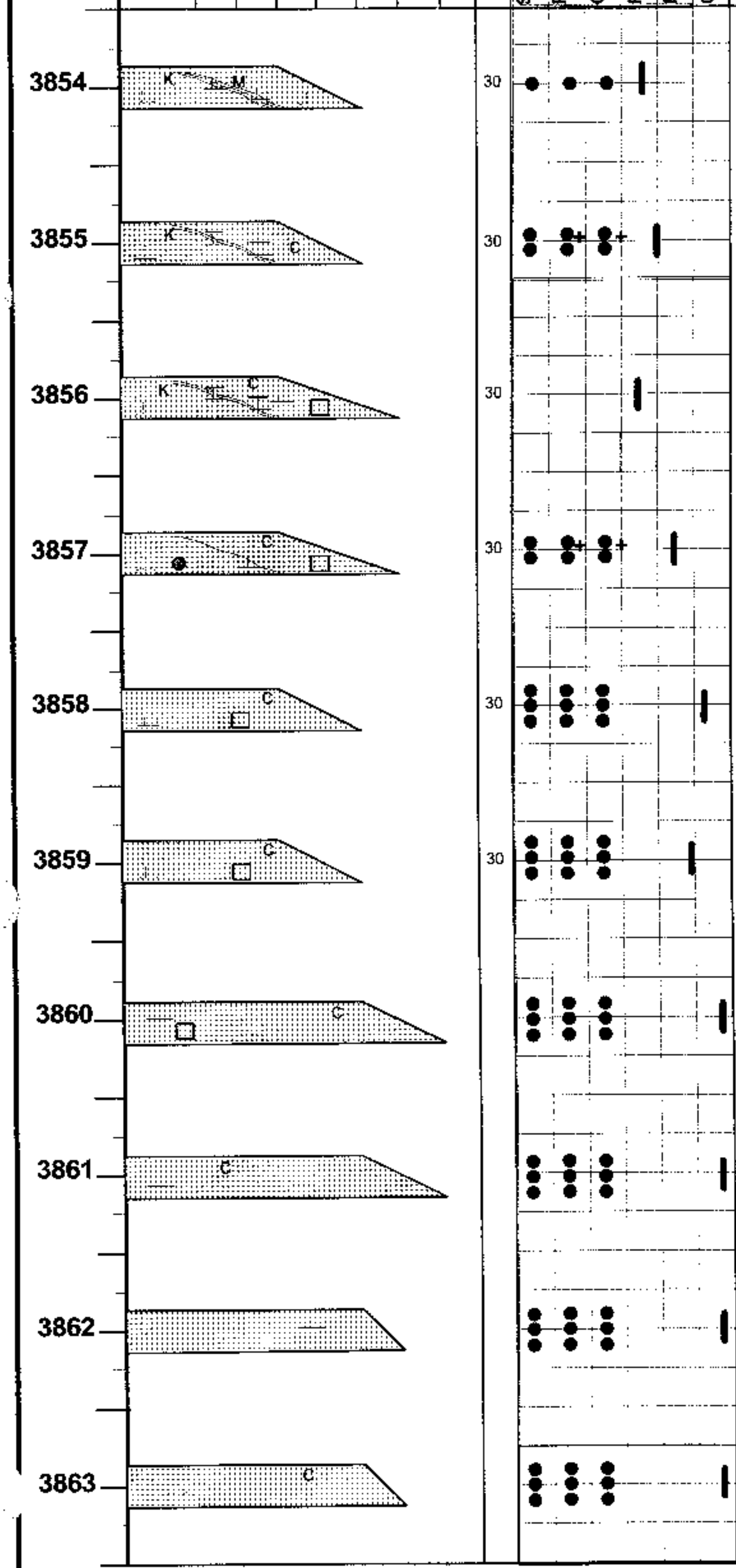
Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Hugin Fm (Vestland Gp)

Core no: 2 | **Interval:** 3854.0 - 3881.5mMDRT | **Cored:** 27.5m **Rec:** 27.65 m 100.0 %

Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 14.08.97

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



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

Remarks (Shows, etc)

5ppm H2S measured from core barrel

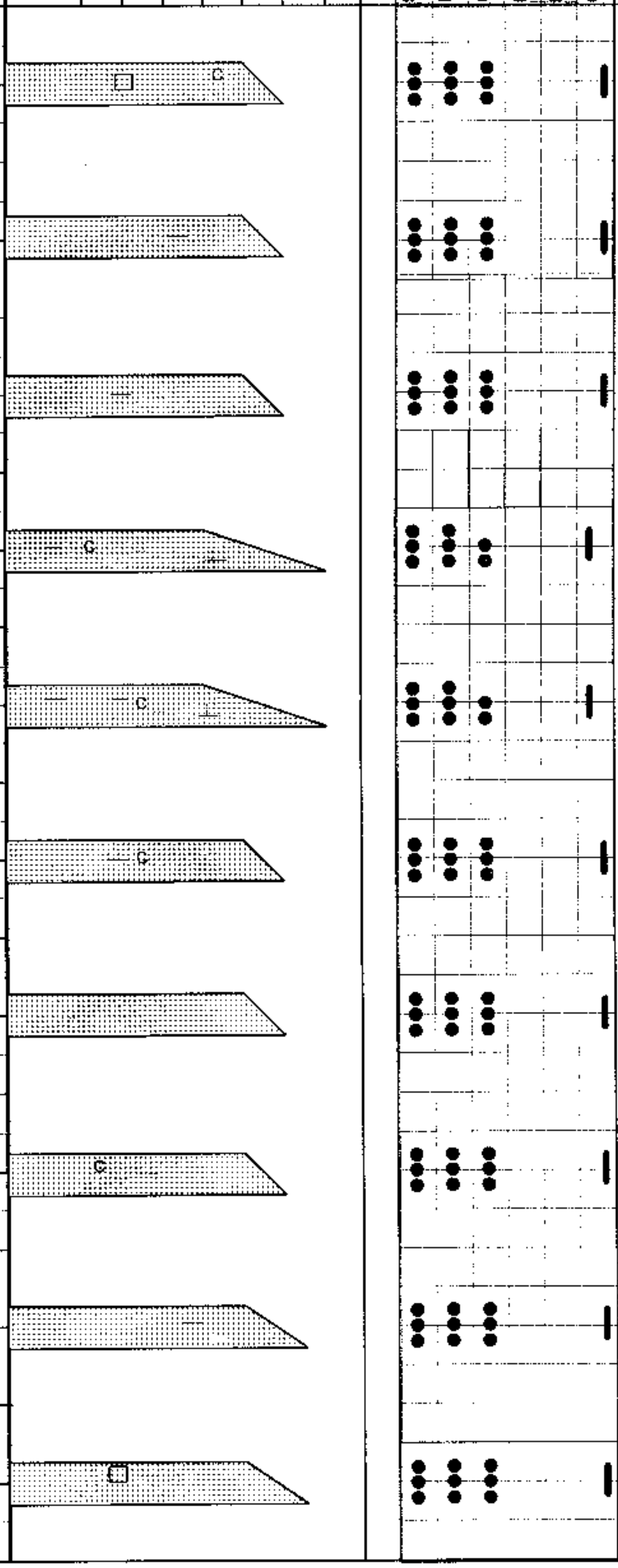
Depth	Lithological Description	Remarks
3854	SST: Clr-trnsl Qtz,vf-med, wl srt, sbang -sbrndd, sli arg (dom kao) Mtrx, abd calc cmt, mod hd, few mica x-Lam, pr vis Por	Wk HC Odour/Stn Pchy wk yel direct Fluor. Slow, strm blu wh Cut Fluor (w/acetone)
3855	SST: pred Qtz a.a., abd arg (kao) Mtrx/Cmt, mod calc cmt, frm-mod hd, few mica x-Lam, Tr carb Spk, pr-fair vis Por	Mod HC Odour/Stn Even mod strng yel direct Fluor. Fst, strm blu wh Cut Fluor
3856	SST: Clr-trnsl Qtz, vf-crs, tr v crs-pbl, mod srt, sbang, sli arg (dom kao) Mtrx, v abd calc Cmt, mod hd, pyr Nod, tr carb Spk, pr vis Por	No Shows
3857	SST: Qtz, a.a., sbang, loc sli arg Mtrx (dom kao), sli calc cmt, frm-mod hd, pyr Nod, Tr carb Spk, fr vis Por	Mod strng HC Odour/Stn. Even, mod bri yel direct Fluor. Fst-inst strm blu wh Cut Fluor (w/acetone)
3858	SST: Qtz, a.a., sbang, loc sli arg Mtrx, (dom kao), loc sli calc cmt, fri-frm, Tr pyr Nod, gd vis Por	Good HC Odour/Stn Bri yel Fluor. Flsh Cut Fluor.
3859	SST: Pred a.a.	Good HC Odour/Stn Bri yel Fluor. Flsh Cut Fluor.
3860	SST: Dk yel brn-dk brn Stn, clr-trnsl Qtz, med-v crs, mod-wl srt, sbang-sbrndd, minor Spk-Pch of dk brn arg Mtrx, v sli calc/sil cmt, fri-frm, Tr Micropyr, v sli carb, mass, ex vis Por	Strng HC Odour, even brn Stn, even bri yel Fluor, flsh wh Cut Fluor
3861	SST: Pred a.a.	
3862	SST: Med-occ crs, v wl srt, else a.a.	a.a.
3863	SST: Pred a.a.	a.a.

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Hugin Fm (Vestland Gp)	
Core no: 2	**Interval:** 3854.0 - 3881.5mMDRT	**Cored:** 27.5m **Rec:** 27.65m 100.0%
Core size: 4"	**Geologists:** O.Beyer/P.Furmyr	**Date:** 14.08.97

Lithology/Grain size: cly slt vf f m c vc — APPARENT DIP — Shows: STAIN FLUOR CUT — Φ: POOR FAIR GOOD



cly slt vf f m c vc

5ppm H2S measured from core barrel

Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3864	**SST:** Dk yel brn-dk brn oil Stn, clr-trnsl Qtz, med-occ crs, wl-v wl srt, sbang-sbrndd, minor Spk-Pch of dk brn arg Mtrx, v sli calc/sil cmt, fri-frm, Tr micropyr, v sli carb, mass, ex vis Por	Strng HC Odour, even brn Stn, even bri yel Fluor, Flsh wh Cut Fluor
3865	**SST:** Med-crs, v wl srt, else a.a.	a.a.
3866	**SST:** Crs-med, sbrndd, else a.a.	a.a.
3867	**SST:** Dk yel brn-dk brn oil stn, clr-trnsl Qtz, f-crs-occ v crs, pr srt, sbang-sbrndd, mass, sli dk brn arg Mtrx, sli carb, mod calc/sil cmt, mod hd, gd vis Por	Flsh-fst, strm, wh Cut Fluor, else a.a.
3868	**SST:** F-v crs, incr. dk brn, arg Mtrx, sli-mod calc/sil cmt, frm-mod hd, gd vis Por, else a.a.	a.a.
3869	**SST:** Dk yel brn-dk brn Stn, clr-trnsl Qtz, med-crs, v wl srt, sbang-sbrndd, Spk dk brn arg Mtrx, v sli carb, mass, v sli calc/sil cmt, fri-frm, ex vis Por	Strng HC Odour, even brn Stn, even bri yel Fluor, Flsh wh Cut Fluor
3870	**SST:** Pred a.a.	a.a.
3871	**SST:** Pred a.a.	a.a.
3872	**SST:** Med-crs, r v crs, sbrndd-occ rndd, else a.a.	a.a.
3873	**SST:** Pred a.a.	a.a.

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Hugin Fm (Vestland Gp)	
Core no: 2	**Interval:** 3854.0 - 3881.5mMDRT	**Cored:** 27.5m **Rec:** 27.65m 100.0%
Core size: 4"	**Geologists:** O.Beyer/P.Furmyr	**Date:** 14.08.97

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

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

Remarks — Shows, etc

5ppm H2S measured from core barrel

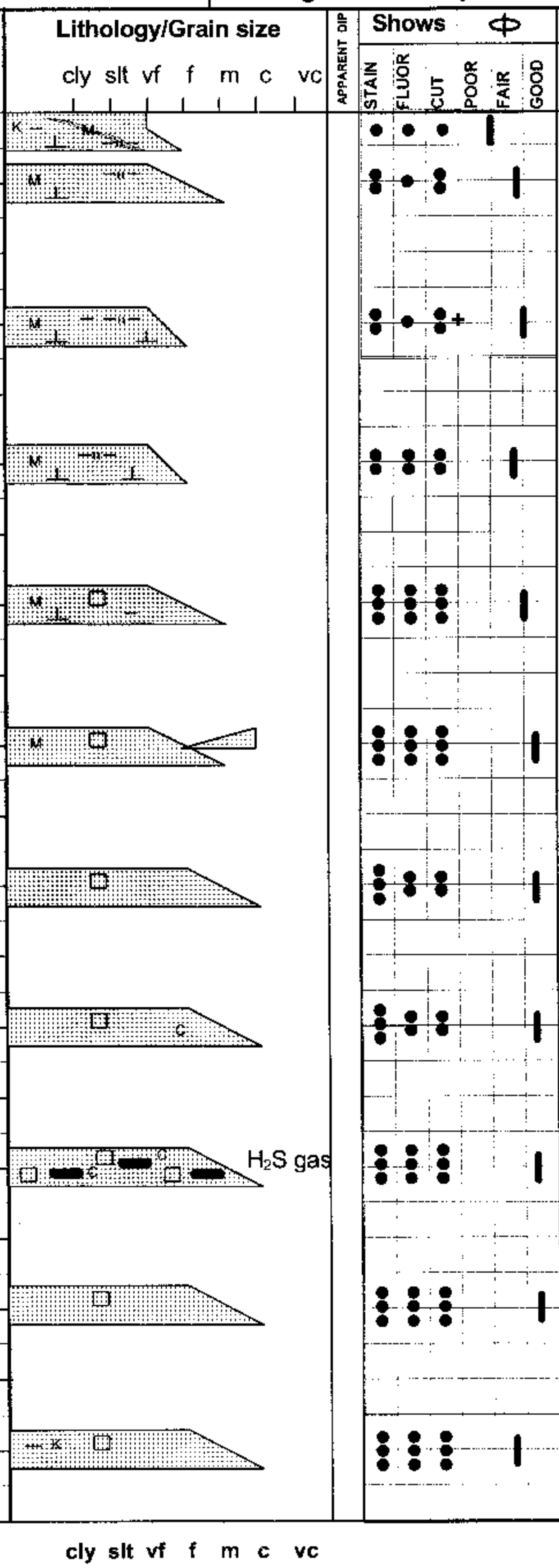
Depth (mRT)	Apparent dip	Lithological Description	Remarks
3874		**SST:** Dk yel brn-dk brn oil Stn, clr-trnsl Qtz, f-crs, mod-wl srt, sbang-sbrndd, sli dk brn arg Mtrx, v sli carb, mass, sli calc/sil cmt, frm-mod hd, gd-ex vis Por	Strng HC Odour, even brn Stn, even bri yel Fluor, Flsh wh Cut Fluor
3875		**SST:** Dk yel brn-dk brn Stn, clr-trnsl Qtz, med-v crs, mod-wl srt, sbang-sbrndd, sli dk brn arg Mtrx, Spk wh arg Mtrx (kao?), sli calc/sil cmt, frm, gd-ex vis Por	a.a.
3876	30	**SST:** Olv gry, clr-trnsl Qtz, vf-med, mod-wl srt, sbang-sbrndd, sli dk brn arg Mtrx, mod calc cmt, mod hd, few Mica x-Lam, pr-fr vis Por	Mod HC Odour, mod brn Stn, pchy-lam mod bri yel Fluor, mod fst, strm, wh Cut Fluor
3877		**SST:** Med-med dk gry, clr-trnsl Qtz, vf-f, wl srt, sbang-sbrndd, off wh arg (kao?) Mtrx, abd calc cmt, hd, mass, no-pr vis Por	Wk HC Odour, no Stn, pchy-no yel Fluor, no Cut Fluor
3878		**SST:** Pred a.a.	No Shows
3879		**SST:** Dk yel brn oil Stn, clr-trnsl Qtz, vf-med-occ crs, mod srt, sbang-sbrndd, sli dk brn arg Mtrx, mod calc cmt, frm-mod hd, fr vis Por	Mod strng HC Odour, even brn Stn, even bri yel Fluor, flsh-fst strm wh Cut Fluor
3880		**SST:** Dk yel brn oil Stn, clr-trnsl Qtz, f-med, v wl srt, sbang-sbrndd, Tr dk brn arg Mtrx, no-v sli cmt, fri-frm, mass, ex vis Por	Strng HC Odour, even brn Stn, even bri yel Fluor, flsh wh Cut Fluor
3881		**SST:** Pred a.a.	a.a.
3882			

Bottom of Core # 2:
3881.65 m MDRT

cly slt vf f m c vc

CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest
Well no: 15/9-19A | **Formation:** Hugin Fm. (Vestland Gp.)
Core no: 3 | **Interval:** 3881.5 - 3908.5mMDRT | **Cored:** 27.0m **Rec:** 26.90 m 99.6 %
Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 15.08.97

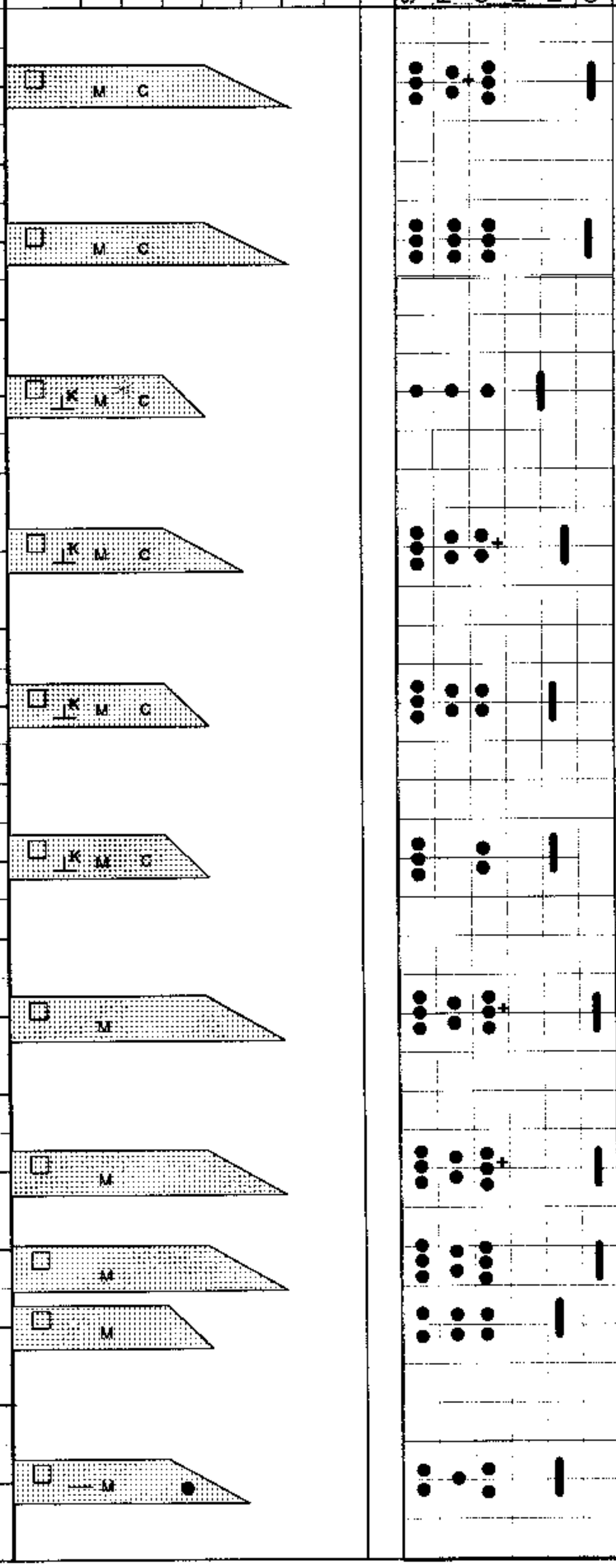


Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3881.5	**2-6ppm H2S measured from core barrel**	
	SST: Med blu gry mtx, clr-transl qtz, slt-vf, minor f, wll srt, sbang, abun arg, mtx/cmt (dom kaol), frm, loc sl calc cmt, tr mica, pr vis por	Wk HC odour/stn Ptchy wk yel direct fluor. Slow strm blu wh cut (acetone)
	SST: Qtz, vf-med, pred f, wll srt, sbang, sl -mod arg mtx/cmt, frm, loc sl calc cmt, tr mica, fair vis por	Mod HC odour/stn Ptchy wk-mod strng yel direct fluor Fst strm blu wh cut
	SST: Qtz, pred a.a. loc mod arg mtx/cmt, frm, sl- mod calc cmt, tr mica, fair vis por	Mod HC odour/stn Ptchy wk-mod strng yel direct fluor Fst strm blu wh cut
3884	**SST:** Qtz, vf-f, sl slty & arg mtx/cmt, frm-fri, loc mod calc cmt, tr mica, fair vis por	Odour/stn, a.a. Even mod strng yel direct fluor Fst strm blu wh cut
3885	**SST:** Qtz, vf-med, sl slty & arg mtx/cmt, frm-fri, loc sl calc cmt, tr mica, pyr good vis por	Good odour/stn Even strng yel direct fluor. Inst - fast strm blu wh cut
3886	**SST:** Qtz, pred a.a. + tr crs, gen fri, no calc cmt, tr mica, mod micropyr good vis por	Shows a.a.
3887	**SST:** Qtz, pred a.a.+ tr crs, sbang, gen fri no calc cmt, tr mica, mod micropyr good vis por	Shows a.a.
3888	**SST:** Qtz, pred a.a, cln, good vis por	Shows a.a.
3889	**SST:** Qtz, pred a.a.+ mod mica, abun micropyr, ptchy coal, strng H_2S stnk, good vis por	Good odour/stn Even strng yel direct fluor. Inst - fishy blu wh cut
3890	**SST:** Qtz, pred a.a, cln, gen lse, good vis por	Shows a.a.
3891	**SST:** Qtz, pred a.a, sl arg mtx, good vis por	Shows a.a.

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Hugin Fm. (Vestland Gp.)	
Core no: 3	**Interval:** 3881.5 - 3908.5mMDRT	**Cored:** 27.0m **Rec:** 26.9 m 99.6 %
Core size: 4"	**Geologists:** O.Beyer / P.Furmyr	**Date:** 15.08.97

Lithology/Grain size: cly slt vf f m c vc — APPARENT DIP — Shows: STAIN FLUOR CUT — Φ: POOR FAIR GOOD



Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
	2-6ppm H2S measured from core barrel	
3892	**SST:** Dk brn - brn blk stn, clr-transl qtz, f -crs, mod srt, sbrnd-sbang, fri, sl arg mtx/cmt, loc tr calc cmt, tr mica & pyr, tr carb spks, good vis por	Mod - good HC odour/stn Even mod strng yel direct fluor. Fast strm blu wh cut (acetone)
3893	**SST:** pred a.a.	Good HC odour/stn Even strng yel direct fluor. Inst - fast strm blu wh cut
3894	**SST:** Qtz,a.a., vf-f, wll srt, frm, mod arg(&kaol) mtx/cmt, loc tr calc cmt, tr mica & pyr, tr carb spks, tr glau, fair- pr vis por	Wk HC odour/stn Even wk yel direct fluor. Wk slow strm blu wh cut & crsh cut
3895	**SST:** Qtz,a.a., vf-med,mod wll srt, frm, mod arg(&kaol) mtx/cmt, loc tr calc cmt, tr mica & pyr, tr carb spks, fair- pr vis por	Good HC odour/stn Even mod yel direct fluor. Mod fast strm blu wh cut & crsh cut
3896	**SST:** Qtz,a.a., vf-f, wll srt, frm, mod arg(&kaol) mtx/cmt, loc tr calc cmt, tr mica & pyr, tr carb spks, fair- pr vis por	Good HC odour/stn Even mod yel direct fluor. Mod fast strm blu wh cut & crsh cut
3897	**SST:** pred a.a.	Shows pred a.a.
3898	**SST:** Brn blk,Clr qtz,a.a., f-med, v wll srt, fri, tr mica & pyr, tr carb spks, good vis por	Good tarry HC stn V strng odour Even mod dk yel direct fluor. Inst-flshy blu wh cut
3899	**SST:** pred a.a.	Shows pred a.a.
	SST: pred a.a.	Shows pred a.a.
3900	**SST:** Brn blk,Clr qtz,a.a., vf-f, wll srt, fri-frm, tr mica & pyr, good vis por	Mod tarry HC stn Mod strng odour Even mod dk yel direct fluor. Inst-flshy blu wh cut
3901	**SST:** Brn blk,Clr qtz,a.a., vf-med, tr pbbl, mod wll srt, fri-frm, tr mica & pyr, good vis por	Shows pred a.a.

cly slt vf f m c vc

CONVENTIONAL CORE DESCRIPTION

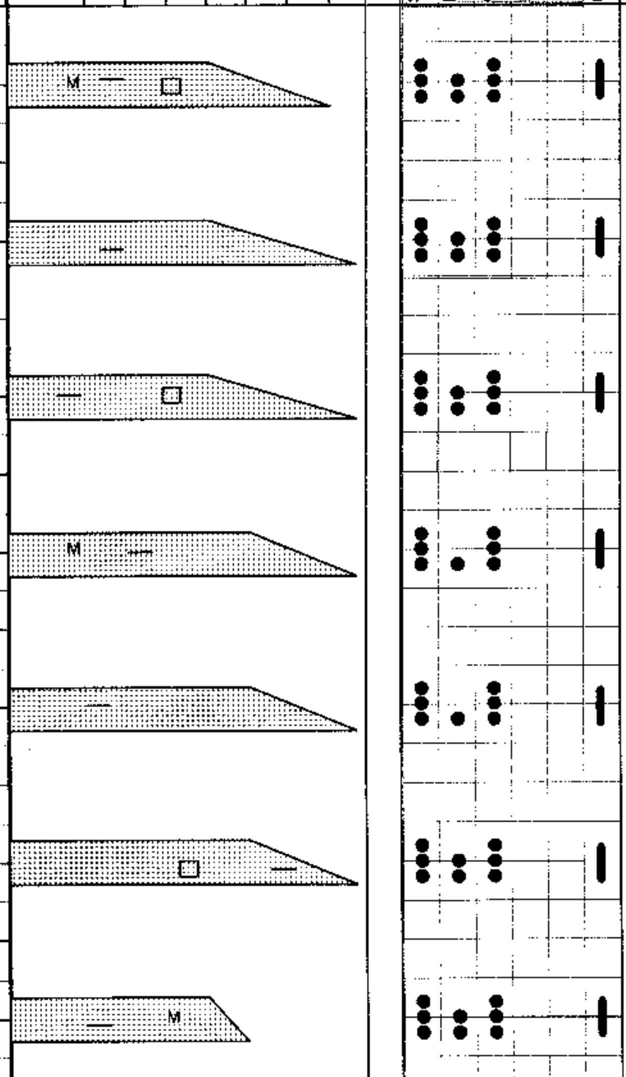
Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Hugin Fm. (Vestland Gp.)

Core no: 3 | **Interval:** 3881.5 - 3908.5mMDRT | **Cored:** 27.0m **Rec:** 26.9 m 99.6 %

Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 15.08.97

Lithology/Grain size: cly slt vf f m c vc — APPARENT DIP — Shows: STAIN FLUOR CUT — Φ: POOR FAIR GOOD



Bottom of Core # 3: 3908.4 m MDRT

cly slt vf f m c vc

Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
	2-6ppm H2S measured from core barrel	
3902	**SST:** Dsky brn-v dk brn stn, clr-trnsp Qtz, f-v crs, pr srt, ang-sbrndd, tr arg mtx, v sli cmt, frm, tr carb lam/spk, tr micropyr, tr micromic, gd vis por,	Strng HC odour. Ex, even, dk brn-brn blk, bitum, oil stn. Even, dull-mod bri, dk yel or fluor. Flsh, wh cut fluor.
3903	**SST:** Dsky brn-v dk brn stn, clr-trnsp Qtz, f-med-occ v crs-occ gran, pr srt, sbang-sbrndd, minor arg mtx, v sli cmt, frm, mass, gd vis por	a.a.
3904	**SST:** a.a.	a.a.
3905	**SST:** V dk brn stn, clr-trnsp Qtz, med-v crs-occ gran, pr srt, tr mice, else a.a.	Strng HC odour. Ex, even, brn blk, bitum, oil stn. Even, dull, brn or fluor. Flsh, wh cut fluor.
3906	**SST:** a.a.	a.a.
3907	**SST:** Slily lighter brn, tr micropyr, else a.a.	Dull-mod bri yel or-gold fluor, else a.a.
3908	**SST:** Dsky yel brn stn, clr-trnsp Qtz, f-med, wl srt, sbang-sbrndd, tr arg mtx, v sli cmt, frm, tr micropyr, tr mica, mass, gd vis por	Mod bri yel or fluor, else a.a.

CONVENTIONAL CORE DESCRIPTION

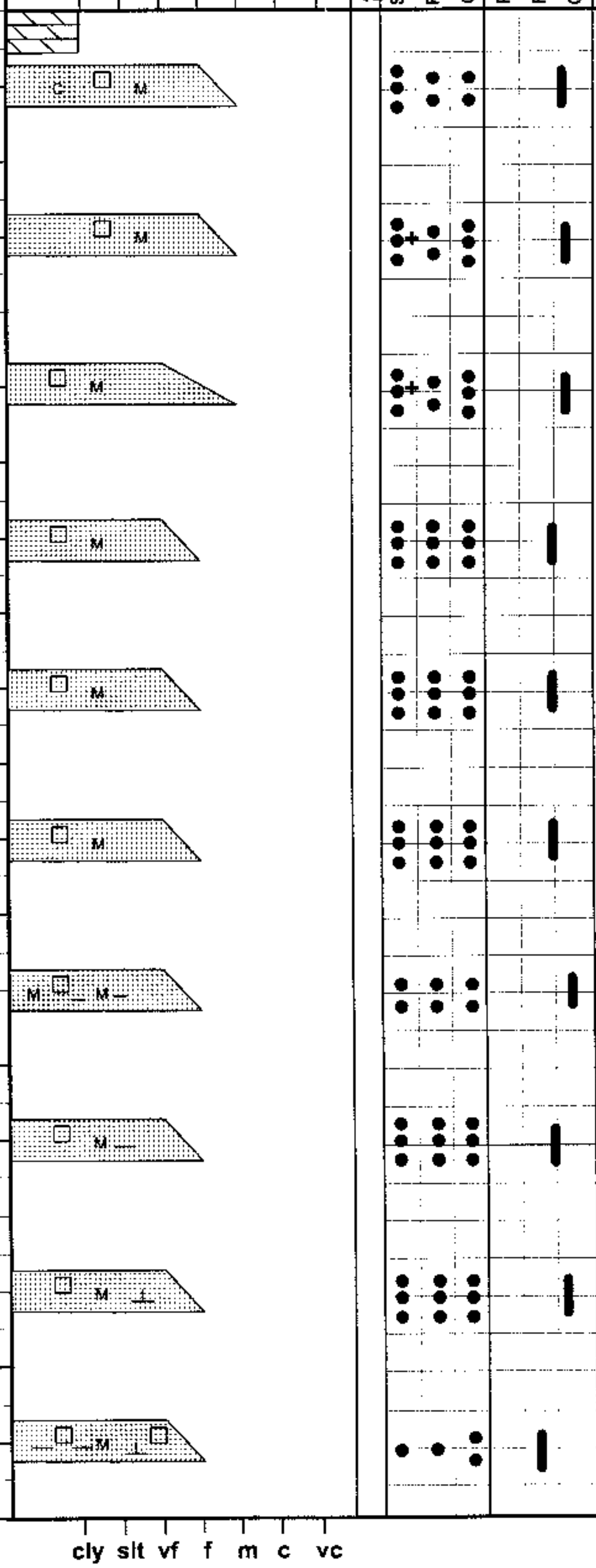
Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Hugin Fm. (Vestland Gp.)

Core no: 4 | **Interval:** 3908.5 - 3935.5mMDRT | **Cored:** 27.0m **Rec:** 26.0 m 96.3 %

Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 15.08.97

Lithology/Grain size: cly slt vf f m c vc — APPARENT DIP — Shows: STAIN FLUOR CUT — Φ: POOR FAIR GOOD



Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3908.5	ppm H2S measured from core barrel	
	DOL: Lt gry brn, ang, mod-hd, unif, macrofoss, tight, no vis por	No shows
3909	**SST:** Dsky brn-v dk brn stn, clr-trnsp Qtz, f-med, wll srt, sbang, fri, no calc cmt, tr carb lam/spk, tr micropyr, tr micromic, gd vis por	Strng HC odour. Ex, even, dk brn-brn blk, bitum, oil stn. Even, mod bri dk yel fluor. Flsh, blu wh cut fluor.
3910	**SST:** a.a.	
3911	**SST:** Qtz,a.a., vf-med, mod wll srt,cln, fri, gd vis por.	Shows pred a.a.
3912	**SST:** Qtz,a.a., vf-f, wll srt, cln, fri, fair - gd vis por.	Shows pred a.a., but pred mod bri dk yel fluor
3913	**SST:** Qtz, a.a.	Shows pred a.a.
3914	**SST:** Qtz,a.a., vf-f, wll srt, cln, fri, fair - gd vis por.	Shows pred a.a.
3915	**SST:** Qtz,a.a.,pred vf-f, cln, fri, gd vis por.	Mod HC odour. Mod dk brn-brn blk, bitum, oil stn. Even, mod dk yel fluor. Fst strng blu wh cut fluor.
3916	**SST:** Qtz,a.a., sl calc mtx, gd vis por.	Strng HC odour. Ex, even, dk brn-brn blk, bitum, oil stn. Even, mod bri dk yel fluor. Flsh, blu wh cut fluor.
3917	**SST:** Qtz,a.a., vf-med, cln, fri, gd vis por.	
3918	**SST:** Lt -med brn gry HC stnd mtx,vf-f, mod wll srt, sbang, frm, sl -mod calc cmt, carb lam/spks, abun micropyr, tr micromic, fair vis por	Wk HC odour/stn. Even, dull mod dk yel fluor. Fst strng blu wh cut fluor.

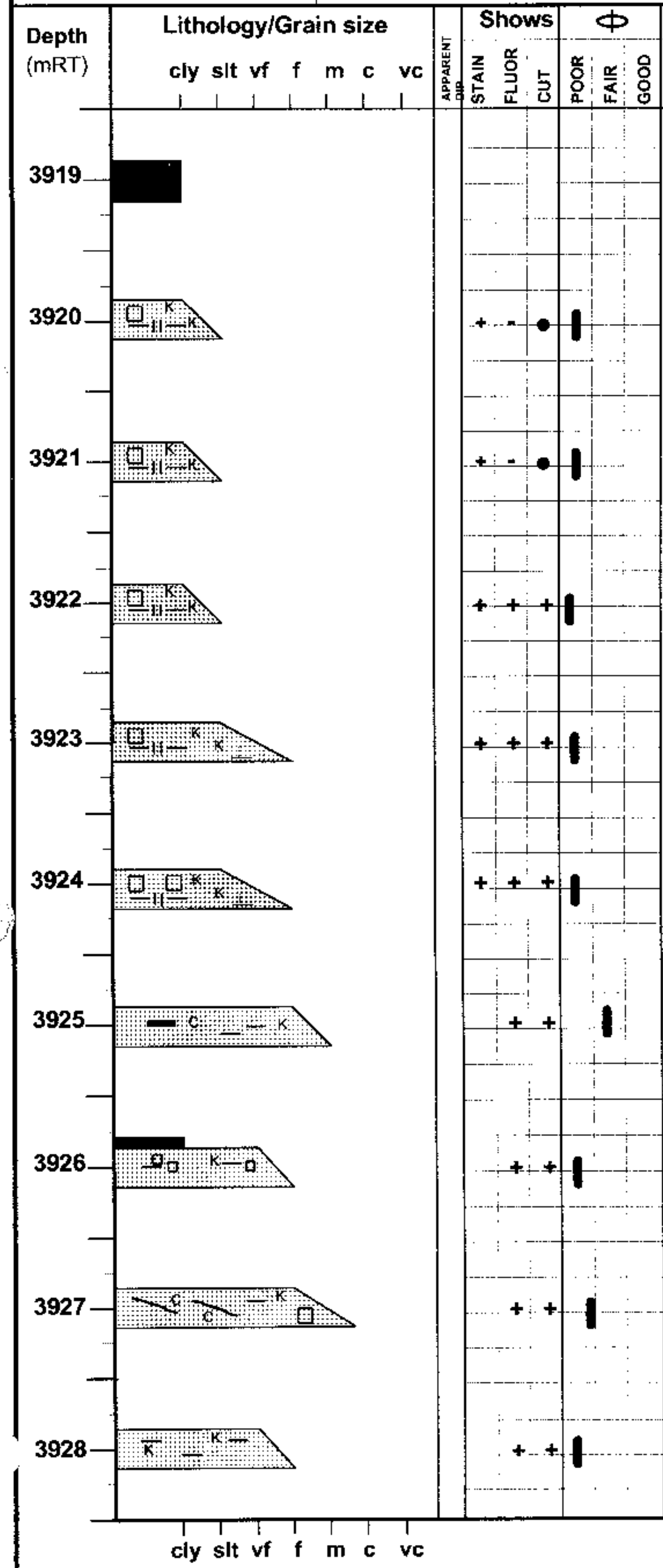
STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest
Well no: 15/9-19A | **Formation:** Hugin Fm. (Vestland Gp.)
Core no: 4 | **Interval:** 3908.5 - 3935.5mMDRT | **Cored:** 27.0m **Rec:** 26.0 m 96.3 %
Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 15.08.97

No H2S measured from core barrel

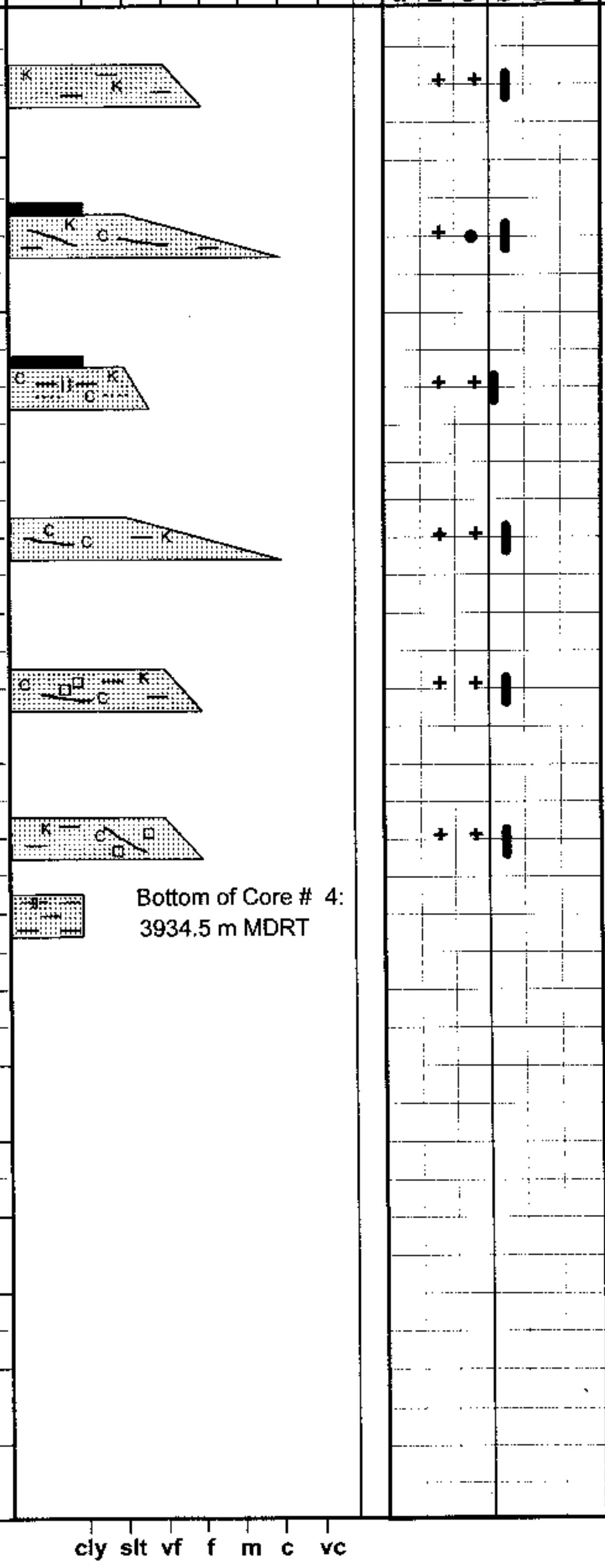
Depth (mRT)	Lithological Description	Remarks (Shows, etc)
3919	COAL: Grysh blk - blk, loc sl arg, mod hd,brit, tight, no vis por	No shows
3920	SLST: Med brn gry arg mtx, minor vf sdy, wll srt, frm - mod hd, dom kaol mtx, grdg CLST, no calc cmt, carb lam/spks, abun micropyr, tr micromic, pr vis por	V wk HC odour/stn. No direct fluor, V slw strmg wh cut & crsh cut fluor. (acetone)
3921	SLST: Lt - med brn gry arg mtx, abun kaol mtx, grdg CLST,else a.a.	Shows pred a.a.
3922	SLST: Lt - med brn gry kaol mtx, tight grdg CLST, abun ptchy pyr, carb & coal spks	Wk HC odour/stn. V dull orng-brn direct fluor, V slw strmg wh cut & crsh cut fluor.
3923	SST/SLST: Med - dk brn ptchy stn, kaol mtx, grdg SLST, loc abun ptchy pyr, tr carb & coal spks, tight, pr vis por	Shows pred a.a.
3924	SLST: Lt - med brn gry kaol mtx, tight grdg CLST, abun ptchy pyr, carb & coal spks	Shows pred a.a.
3925	SST: Med gry - lt brn gry, f - med, wl srt, ang - sbrndd, off wh arg (kao) Mtrx, sli sil cmt, frm, Spk/Pch of blk carb Mat, fr vis Por	No HC Odour/Stn. No - v dull or brn direct Fluor, Wk, wh, crsh Cut Fluor.
3926	SST w/Lrs COAL SST: Med gry - med dk gry, vf - f, wl srt, sbang - sbrndd, abd arg (kao) Mtrx W/abd Micropyr, sil cmt, mod hd - hd, pr vis Por COAL: Blk - brn blk, mass	Shows a.a.
3927	SST: Lt brn gry - brn gry, f - med - occ crs, mod - wl srt, sbang - sbrndd, off-wh - lt brn arg (kao) Mtrx, sli - wl sil cmt, frm - mod hd/hd, Lam of blk brn blk COAL and occ Lam of brn stn? SST, Tr Pyr, pr - occ fr vis Por	No HC Odour/Stn. Occ Lam of dull or brn direct Fluor, Wk, wh, crsh Cut Fluor.
3928	SST: Lt brn gry, vf - f, wl srt, abd Mtrx a.a., sil cmt, mod hd, mass, pr vis Por	Shows a.a.



CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest
Well no: 15/9-19A | **Formation:** Hugin Fm. (Vestland Gp.)
Core no: 4 | **Interval:** 3908.5 - 3935.5mMDRT | **Cored:** 27.0m **Rec:** 26.0 m 96.3 %
Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 15.08.97

Depth (mRT) | Lithology/Grain size: cly slt vf f m c vc | APPARENT DIP | Shows: STAIN FLUOR CUT | Φ: POOR FAIR GOOD | Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination) | Remarks (Shows, etc)



No H2S measured from core barrel

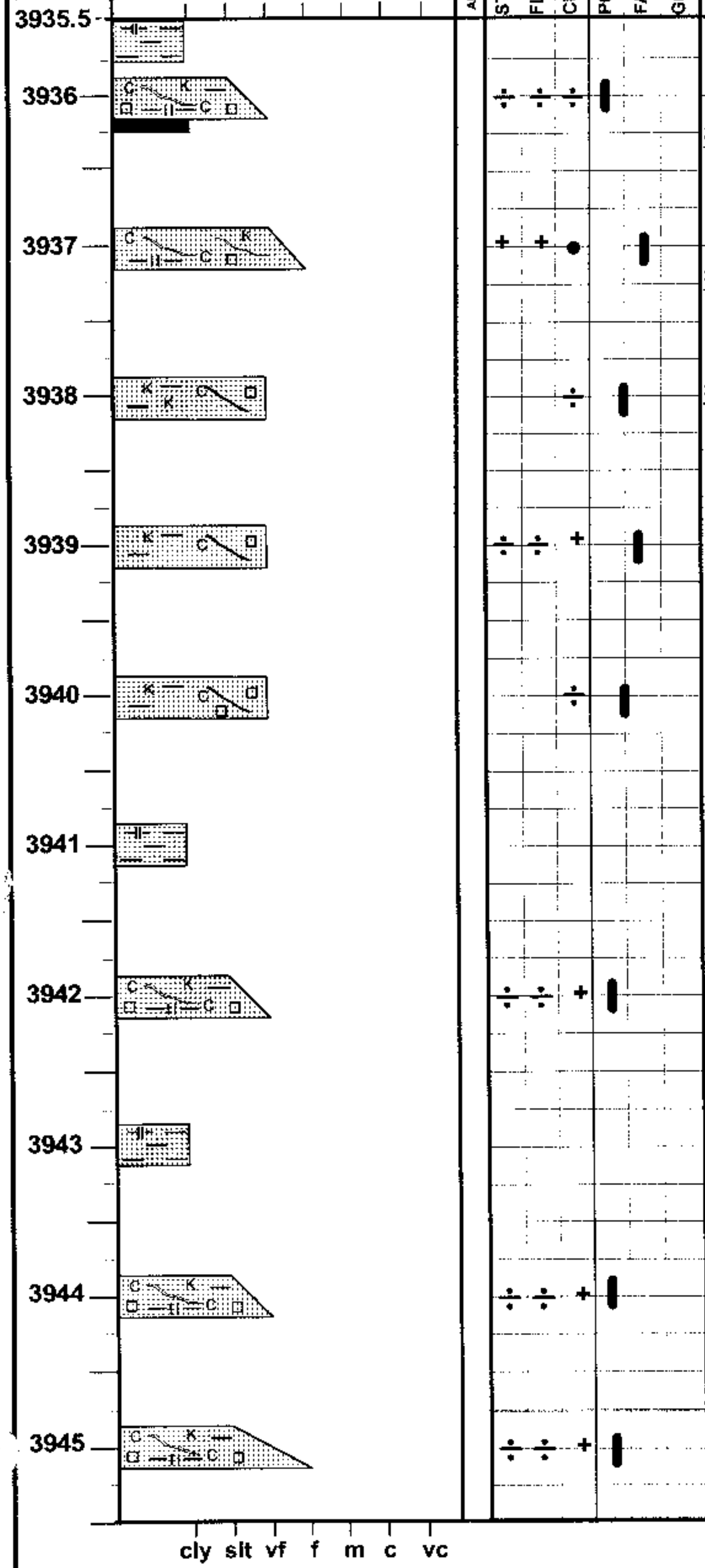
Depth (mRT)	Lithological Description	Remarks
3929	**SST:** Lt brn gry, vf - f, wl srt, sbang - sbrndd, abd lt brn gry arg (kao) Mtrx, sil cmt, mod hd, mass, pr vis Por	No HC Odour/Stn. No - dull, or brn direct Fluor, Wk, wh, crsh Cut Fluor.
3930	**SST:** Brn gry - dk yel brn, slt - crs, v pr srt, ang - sbrndd, abd pa brn arg (kao) and carb Mtrx, occ Spk wh Mtrx, sil cmt, mod hd, Lam & Pch and Lrs of COAL, pr vis Por	No HC Odour/Stn. V wk - no, dull or brn w/Spk of dull yel Fluor. Sl - mod fst, strm, wh Cut Fluor.
3931	**SLTST:** Dk yel brn, abd brn, arg (kao) and sdy - v sdy Mtrx, sil cmt, mod hd, v carb, Lam/Pch and Lrs of COAL, no - pr vis Por	No HC Odour/Stn. V wk - no, dull or brn Fluor. Wk blu wh, crush Cut Fluor.
3932	**SST:** Brn gry - dk yel brn, slt - crs, v pr srt, ang - sbrndd, abd pa brn arg (kao) and carb Mtrx, occ Spk wh Mtrx, sil cmt, mod hd, Lam & Pch coaly Mat, pr vis Por	Shows a.a.
3933	**SST:** Lt brn - brn gry, vf - med, pr - mod srt, subang - sbrndd, abd off wh - lt brn kao Mtrx, sil cmt, mod hd, Pch/Lam of Micropyr and carb Mat, pr vis Por	Shows a.a.
3934	**SST:** a.a.	Shows a.a.
	CLST: Dk yel brn, mod hd, blky - sbfis, occ slty Lam	No Shows
3935		
3936		

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Sleipner Fm. (Vestland Gp.)	
Core no: 5	**Interval:** 3935.5 - 3962.5mMDRT	**Cored:** 27.0m **Rec:** 27.5 m 101.9 %
Core size: 4"	**Geologists:** O.Beyer / P.Furmyr	**Date:** 16.08.97

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



Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
CLST: Dk yel brn, blky-ang,sbfis, mod hd, occ fn slty lam, vf sdy, non - sl calc, microcarb spks	No shows
SST: Lt - med gry, ptchy wk brn gry stn, slt -vf, wll srt, sbang - sbrndd, abd off wh -v lt brn kaol mtx, sl sil cmt, frm,mod pch/lam of micropyr and carb mat, mod micromic, pr vis por	No - v wk HC odour/Stn. No - dull, or brn direct Fluor, Wk, wh, crsh Cut Fluor. Wk blu wh residue Fluor
SST: Pred Qtz, a.a., dom vf-med, wll srt, abun lam/pch of carb mat/coal, mod micromic, micropyr, fair vis por	V wk HC odour/Stn. No - dull, or brn direct Fluor, Wk, wh, crsh Cut Fluor. Wk -mod blu wh residue Fluor
SST: Lt gry, pred vf, v wll srt, sbang - sbrnd, abd off wh lt gry kaol mtx, sl sil cmt, frm, mod pch/lam of micropyr and carb mat, mod musc micromic, pr - fair vis por	Wk, wh, crsh Cut only
SST: pred Qtz, a.a., sl - mod kaol mtx, sl sil cmt, frm - mod hd, fair vis por	No - v wk HC odour/Stn. No - dull, or brn direct Fluor, Wk-mod, wh, crsh Cut Fluor. Wk blu wh residue Fluor
SST: pred Qtz, a.a., mod kaol mtx, sl sil cmt, frm - mod hd, pr-fair vis por	Wk, wh, crsh Cut only
CLST: Med gry -med bluish gry, ang, sbfis, mod hd, slty-vf sdy, non calc, dissem micropyr, tr microcarb	No shows
SLST/SST: Lt gry, pred slt vf, v wll srt, sbang -sbrnd, abd off wh lt gry kaol mtx, non calc cmt, frm- mod hd, mod pch/lam of micropyr and carb mat, mod musc micromic, pr vis por	Wk, wh, crsh Cut Wk wh residue Fluor
CLST: Med gry -med bluish gry, shny lam, sbfis, mod hd, slty-vf sdy, non calc, dissem micropyr, tr microcarb	No shows
SLST/SST: Lt gry, pred slt vf, v wll srt, sbang -sbrnd, abd off wh lt gry kaol mtx, non calc cmt, frm- mod hd, mod pch/lam of micropyr and carb mat, mod musc micromic, pr vis por	No - v wk HC odour, no Stn. No - dull, or brn direct Fluor, Wk-mod, wh, crsh Cut Fluor. Wk wh residue Fluor
SST: Lt gry, pred slt -f, mod wll srt, sbang -sbrnd, abd off wh lt gry kaol mtx, non calc cmt, frm -mod hd	Wk, wh, crsh Cut Wk wh residue Fluor

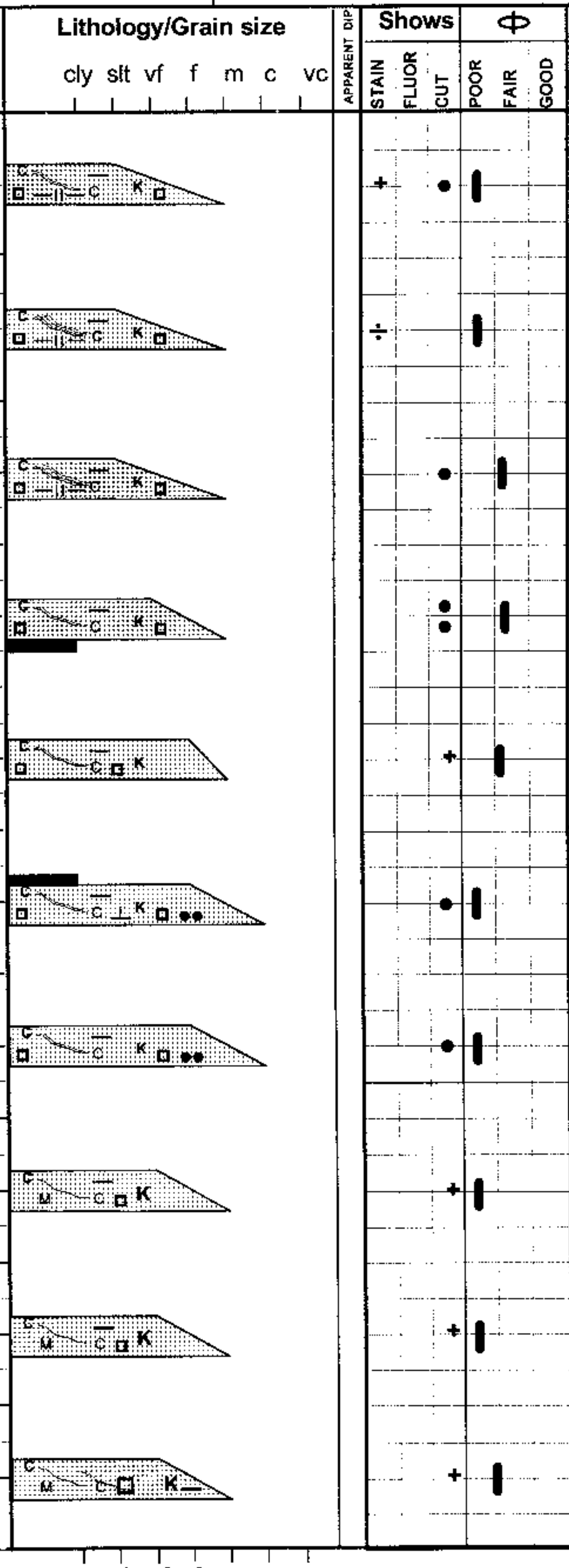
CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Sleipner Fm. (Vestland Gp.)

Core no: 5 | **Interval:** 3935.5 - 3962.5mMDRT | **Cored:** 27.0m **Rec:** 27.5 m 101.9 %

Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 16.08.97



Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3946	**SST:** Med brn, lt gry, clr-transl Qtz, slt-med, mod-pr srt, sbang -sbrnd, abd off wh lt gry kaol mtx, non calc cmt, mod hd, mod pch/lam micropyr & and carb mat, sl micromic, pr vis por	No - v wk HC odour &Stn.No direct Fluor Wk slw strm, wh, Cut Fluor. Mod fst strm, wh crsh Cut Yel wh residue Fluor
3947	**SST:** a.a, abun coal lam/ptch	Shows pred a.a.
3948	**SST:** Lt gry, pred vf-med, mod- wll srt, sbang -sbrnd, abd off wh lt gry kaol mtx, non calc cmt, frm -mod hd, fair vis por	Shows pred a.a., Wk, wh, crsh Cut Mod , wh - blu wh residue Fluor
3949	**SST:** a.a, abun coal lam/ptch **COAL:** Blk, bitum, brit, mod hd	Shows pred a.a., Mod bri, wh, crsh Cut. Mod , wh - blu wh residue Fluor
3950	**SST:** a.a, abun coal lam/ptch	Shows pred a.a., Wk, wh, crsh Cut Mod , wh - blu wh residue Fluor
3951	**COAL:** Blk, bitum, brit, mod hd **SST:** Lt gry, pred f-crs, tr v.crs-pebb, mod -pr srt, sbang -sbrnd, abd off wh lt gry kaol mtx, loc sl calc cmt, bec gen mod hd, pr vis por	No HC odour/stn. No direct Fluor Wk slw strm, wh, Cut Fluor. Mod fst strm, wh crsh Cut (Assoc. w/coal lam)
3952	**SST:** pred f-crs, tr v.crs, a.a	Shows pred a.a.,
3953	**SST:** pred f - med Qtz, abn kaol mtx, else a.a	No Odour/Stn, Wk, wh, crsh Cut Wk -mod , yel wh residue Fluor
3954	**SST:** pred f-med Qtz, a.a	Shows pred a.a.,
3955	**SST:** pred f-med Qtz, sl sil cmt, mod hd, else pred, abun coal/bitum lam, pr - fair vis por	Shows pred a.a.,

cly slt vf f m c vc

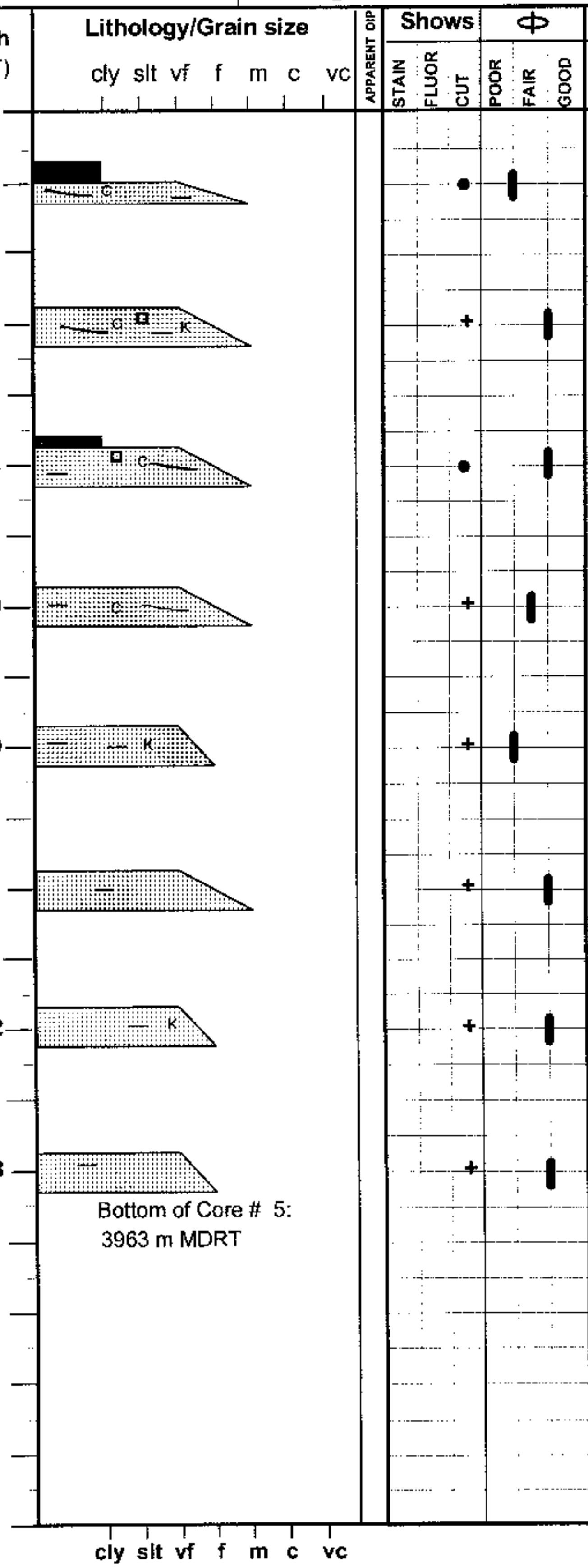
CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Sleipner Fm. (Vestland Gp.)

Core no: 5 | **Interval:** 3935.5 - 3962.5mMDRT | **Cored:** 27.0m **Rec:** 27.5 m 101.9 %

Core size: 4" | **Geologists:** O.Beyer / P.Furnyr | **Date:** 16.08.97



Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
	No H2S measured from core barrel	
3956	**COAL w/Lrs of SST:** **COAL:** Blk-brn blk, brit **SST:** Lt olv gry-lt brn gry, vf-med, mod-wl srt, sbang-sbrndd, arg Mtrx, sil cmt, mod hd, Lam of blk coaly Mat, Tr Micropyr, pr-fr vis Por	No Odour/Stn, No Fluor Wk, sl, blu wh, cldy Cut Fluor
3957	**SST:** Minor arg Mtrx, sli sil cmt, frm, fr-gd vis Por, else a.a.	No Odour/Stn, No Fluor Wk, blu wh, crush Cut Fluor
3958	**SST w/Lrs of COAL:** **SST:** a.a. **COAL:** a.a.	No Odour/Stn, No Fluor Wk, sl, blu wh, cldy - strn Cut Fluor
3959	**SST:** Med lt gry, vf-med, mod-wl srt, sbang-sbrndd, sli lt gry-off wh arg Mtrx, sli-mod sil cmt, frm-mod hd, carb Stk and Lam, fr vis Por	No Odour/Stn, No Fluor Wk, blu wh, crush Cut Fluor
3960	**SST:** Med lt gry, vf-f, r crs Gr, wl srt, sbang-sbrndd, lt gry-off wh arg Mtrx, mod sil cmt, mod hd, mass, pr-fr vis Por	Shows a.a.
3961	**SST:** Med lt gry, vf-med, mod-wl srt, sbang-sbrndd, sli off wh arg Mtrx, slily sil cmt, frm, mass, fr-gd vis Por	Shows a.a.
3962	**SST:** Vf-f, wl srt, else a.a.	Shows a.a.
3963	**SST:** Vf-f, wl srt, else a.a.	Shows a.a.

STATOIL

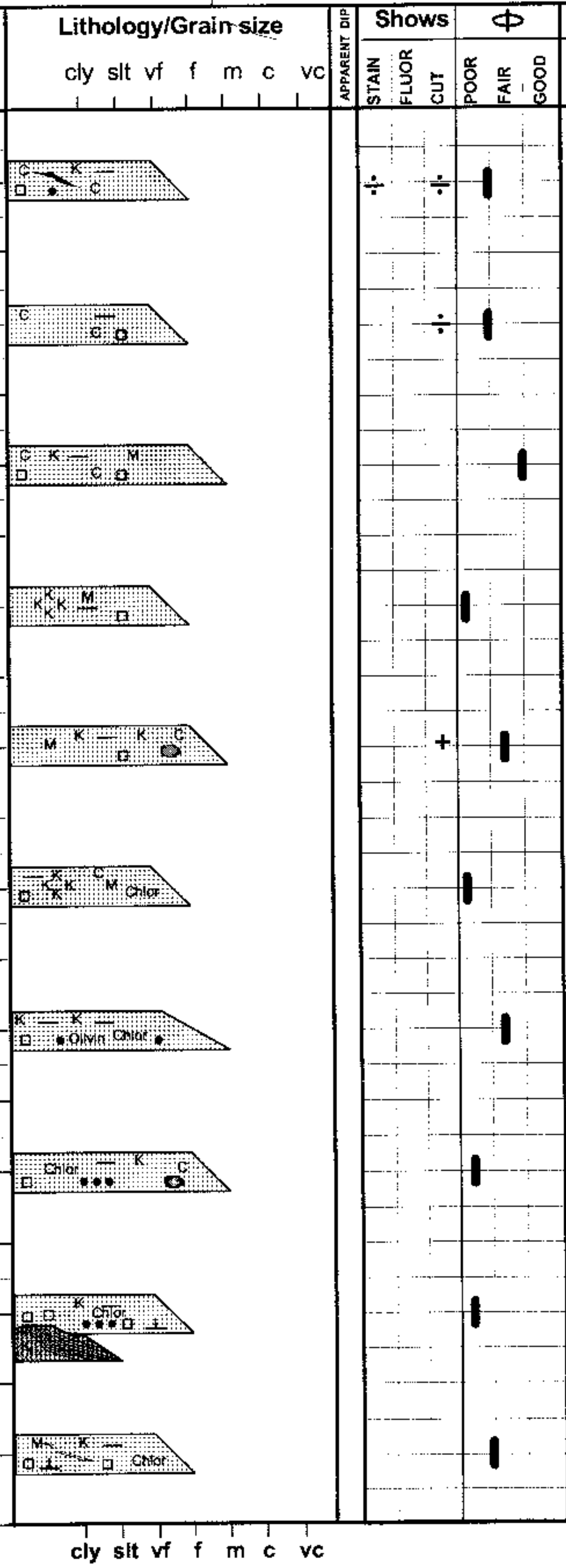
CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Sleipner Fm - Skagerrak Fm

Core no: 6 | **Interval:** 3962.5 - 3990mMDRT | **Cored:** 27.5m **Rec:** 27.64 m 100.5 %

Core size: 4" | **Geologists:** O.Beyer / P.Furnyr | **Date:** 18.08.97



Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3962.5 – 3963	**SST:** Lt-med gry-lt blu gry, vf-f, wl srt, sbang-sbrndd, sli-mod arg (kao) Mtrx, sil cmt, no calc cmt, frm-mod hd, Lam/Pch of blk coaly/carb Mat, Tr Micropyr, Tr accessory Min pr-fair vis Por	V wk HC Odour/Stn. No direct Fluor, Wk, wh, crsh Cut Fluor, v wk yel wh res Fluor
3964	**SST:** Lt gry, pred Qtz, a.a.	V wk, dk yel wh, crsh Cut Fluor. V wk yel res Fluor only
3965	**SST:** Lt gry, pred Qtz, a.a. bec pred sbrndd, sli-mod kao Mtrx, sli sil cmt, no calc cmt, frm-sft, sli Pch of blk coaly/carb Mat, Tr Micropyr, Tr Mica, pr vis Por	No Shows
3966	**SST:** Lt gry Mtrx, pred vf-f, mod wl srt, sbang-sbrnd, abd off wh-lt gry kao Mtrx, mod sil cmt, no calc, frm -mod hd, pr vis Por	No Shows
3967	**SST:** Also lt gry-smky Qtz, occ v crs-gran, sli-mod kao Mtrx,sli sil cmt, no calc cmt, frm-sft, sli Pch of blk coaly/carb Mat, fair vis Por	No HC Odour/Stn. No direct Fluor, Wk, dk yel, crsh Cut Fluor, wk-mod dk yel res Fluor
3968	**SST:** Lt gry, pred Qtz, a.a., v abd kao Mtrx, Gdtr Chlor	No Shows
3969	**SST:** Lt gry Mtrx, vf-med Qtz, mod srt, dom sbrndd, mod off wh-lt gry kao Mtrx, sli sil cmt, no calc cmt, frm, Tr Chlor, Tr Olivin?, fr vis Por	No Shows
3970	**SST:** Also lt gry-smky Qtz, occ v crs-gran, sli-mod kao Mtrx,sli sil cmt, no calc cmt, frm-sft, sli Pch of blk coaly/carb mat, fair vis Por, accessory Min	No Shows
3971	**SST:** Pa gn-gn gry Mtrx, pred vf-f, wl srt, sbrndd, abd pa gn gry kao Mtrx, mod sil/calc cmt, hd, pr vis Por	No Shows
	CLST: Pa gn, dom kao?/chlor Mtrx, wxy Lstr, sbfis, frm-mod hd,sdy, non calc, abd Micropyr, Tr accessory Min	
3972	**SST:** Pa gn-gn gry mtrx, pred vf-f, wl srt, sbrndd, abd pa gn gry kao Mtrx, mod sil/calc cmt, hd, pr vis Por	No Shows

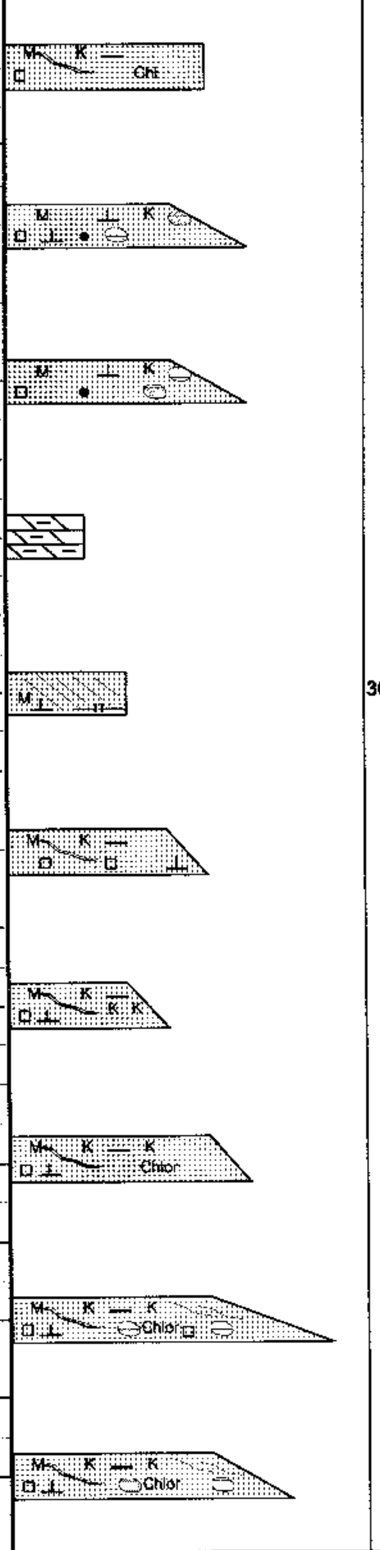
CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea - PL046 | **Field:** Theta Vest (Sleipner)

Well no: 15/9-19A | **Formation:** Skagerrak Fm

Core no: 6 | **Interval:** 3962.5 - 3990mMDRT | **Cored:** 27.5m **Rec:** 27.64 m 100.5%

Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 18.08.97



Depth (mRT)	Apparent dip	Shows (Stain / Fluor / Cut)	Φ (Poor / Fair / Good)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3973			Poor-Fair	**SST:** Dom clr-trnsl, Tr smky and rose Qtz, pred f, v wl srt, sbang, sli-mod Kao Mtrx, sli sil cmt, no-sli calc cmt, frm-mod hd, sli micropyr, sli mica, pr-fr vis Por	No Shows
3974			Fair	**SST:** Pred vf-med, clr Qtz, occ smky and rose Qtz, mod wl srt, sbang, mod off wh gry kao Mtrx, mod sil/calc cmt, mod hd-hd, fr vis Por, Clasts of Clst: pa gn, micropyr, frm, fr vis por, Tr accessory Min	No Shows
3975			Fair	**SST:** Pred vf-med Qtz,a.a.	No Shows
3976				**DOL:** Med pa yel gry, ang, hd-vhd, unif, arg, ti, no vis Por	No Shows
3977	30			**SLST:** Lt gry, arg Lam, mod hd, sli-non calc, com dk mica Lam, ti, no vis Por	No Shows
3978			Poor	**SST:** Pred vf-f Qtz,Tr med-crs, mod wl srt, sbang, sbrndd when med-crs, mod off wh kao Mtrx, mod sil/calc cmt, mod hd-hd, frm, com Micropyr, pr vis Por, Tr rose and smky Qtz	No Shows
3979			Poor	**SST:** Slt-vf Qtz, a.a., abd kao Mtrx	No Shows
3980			Poor	**SST:** Bec pred f-med Qtz, abd kao Mtrx, Tr Chlor, else a.a.	No Shows
3981			Poor	**SST:** Pred f-vcrs Qtz, pr srt, sbang, abd off wh kao Mtrx, loc sli-mod sil/calc cmt, frm-hd, Mica Lam, pr vis Por Clasts of Clst: pa gn, Micropyr, frm, Chlor	No Shows
3982			Poor	**SST:** F-crs Qtz, w/Clast Clst, pred a.a.	No Shows

cly slt vf f m c vc

STATOIL

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea - PL046	**Field:** Theta Vest (Sleipner)
Well no: 15/9-19A	**Formation:** Skagerrak Fm	
Core no: 6	**Interval:** 3962.5 - 3990mMDRT	**Cored:** 27.5m **Rec:** 27.64 m 100.5 %
Core size: 4"	**Geologists:** O.Beyer / P.Furmyr	**Date:** 18.08.97

Depth (mRT)	Lithology/Grain size (cly slt vf f m c vc)	Apparent dip	Shows (Stain, Fluor, Cut)	Φ (Poor, Fair, Good)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3983	M K K Chlor				**SST:** Clr-trnsl, Tr rose and smky Qtz, pred f-crs, pr srt, sbang, abd off wh kao Mtrx, loc sli-mod sil/calc cmt, frm-hd, pr vis Por, Clasts of Clst: pa gn, micropyr, frm, chlor	No shows
3984	K K Chlor				**SST:** Pred vf-med Qtz, mod wl srt, minor sbrndd, Clasts of Clst: pa gn, micropyr, frm-mod hd, pr vis Por, else a.a.	No shows
3985	M K K Chlor				**SST:** Clr-trnsl, Tr rose and smky, pred f-crs Qtz, pr srt, sbang, abd off-wh kao Mtrx, loc sli-mod sil/calc cmt, frm-hd, pr vis Por, Clasts of Clst: pa gn, micropyr, frm, mic	No shows
3986	K K Chlor				**SST:** Pred vf-med Qtz, mod wl srt, minor sbrndd, pr vis Por, Clasts of Clst: pa gn, micropyr, frm-mod hd	No shows
3987	M K K Chlor				**SST:** Clr-trnsl, occ rose and smky Qtz, pred f-crs, mod-wl srt, sbang, abd off wh kao Mtrx, loc sli-mod sil/calc cmt, frm-hd, Mica Lam, pr vis Por Clasts of Clst: pa gn, micropyr, frm	No shows
3988	M K K Chlor				**SST:** Pred f-crs Qtz, a.a. Clasts of Clst: pa gn, micropyr, frm,	No shows
3989	M K K Chlor				**SST:** a.a.	No shows
3990	M K K Chlor				**SST:** a.a.	No shows

Bottom of Core # 6:
3990.64 m MDRT

cly slt vf f m c vc

STATOIL

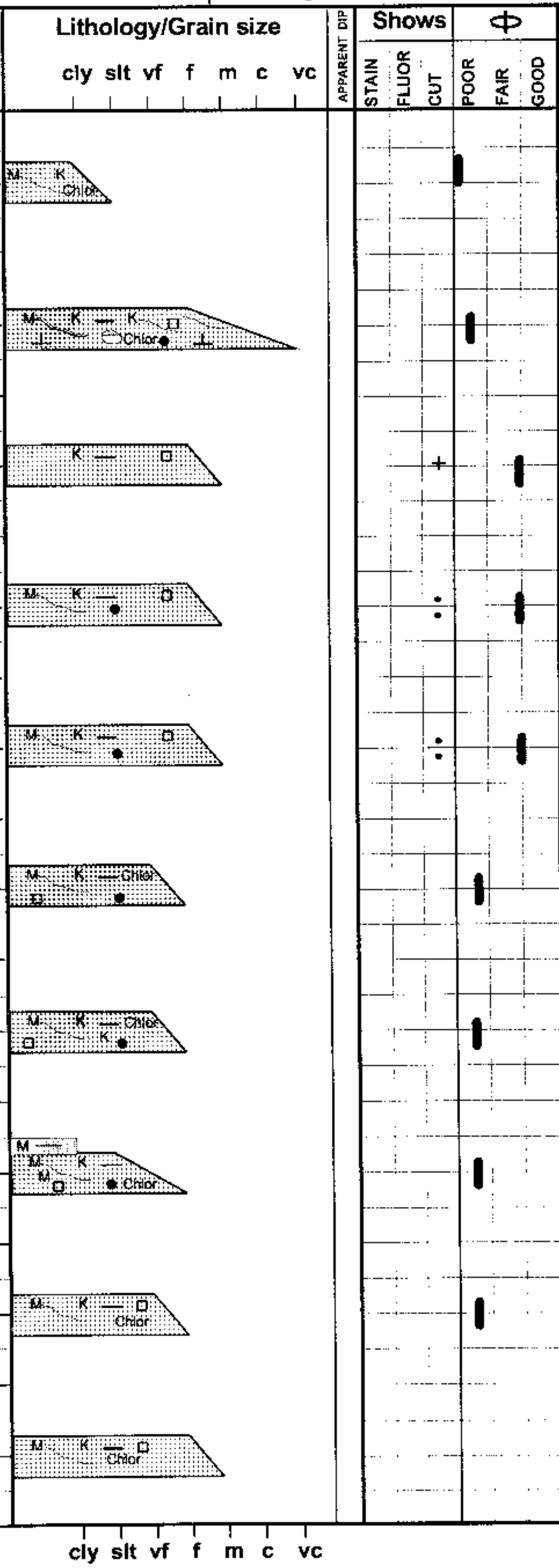
CONVENTIONAL CORE DESCRIPTION

Country: Norway | **Area:** North Sea | **Field:** Sleipner, Theta Vest

Well no: 15/9-19A | **Formation:** Skagerrak Fm (Triassic)

Core no: 7 | **Interval:** 3990.0 - 4017.0mMDRT | **Cored:** 27.0m **Rec:** 26.71 m 98.9 %

Core size: 4" | **Geologists:** O.Beyer / P.Furmyr | **Date:** 19.08.97

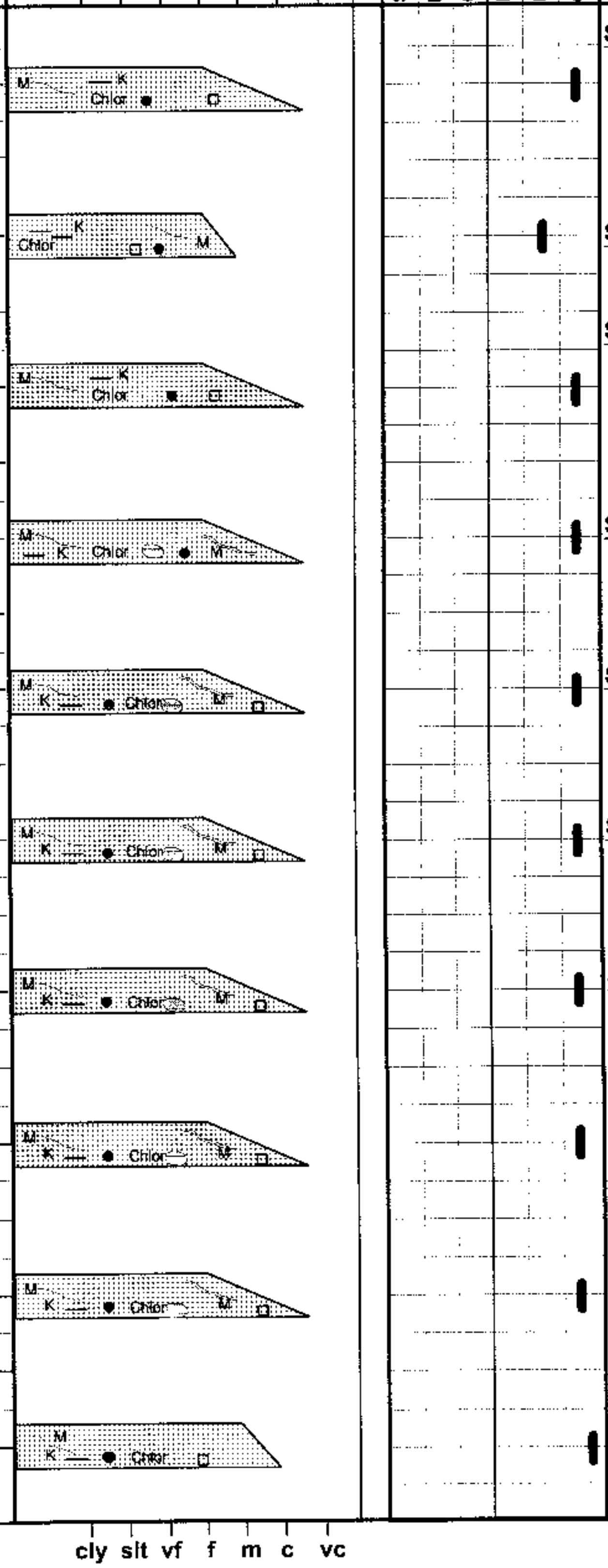


Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
3990	**SLST/CLST:** Pa gn, mod-v arg, sl sdy, wxy, micromic, micropyr, no cal, tight, no vis por	No shows
3991	**SST:** Clr-trnsl, occ rose and smky Qtz, pred f-crs, mod-wl srt, sbang, abd off wh kao Mtrx, loc sli-mod sil/calc cmt, frm-hd, Mica Lam, gdtr Chlor tr mafic rock min, pr vis Por Clasts of Clst: pa gn, micropyr, frm	No shows
3992	**SST:** Pred f-med Qtz, wll srt, sbang-sbrndd, bec less arg mtrx, less cmt, sft - frm, fair-good vis por	No direct Stn/ Odour/Fluor. Wk dk yel Cut Fluor (acetone) Wk yel residue Fluor
3993	**SST:** Pred f-med Qtz, mod sil cmt, frm - mod hd, tr mafic min,else a.a.	No direct Stn/ Odour/Fluor. V wk dk yel Cut Fluor (acetone) Wk yel residue Fluor
3994	**SST:** Pred f-med Qtz, mod sil cmt a.a.	No direct Stn/ Odour/Fluor. No - V wk dk yel Cut Fluor (acetone) Wk yel residue Fluor
3995	**SST:** Vf-f Qtz, mod - abun kaol/chl mtrx, sil cmt, no calc cmt, frm, pr vis por	No shows
3996	**SST:** Pred vf-f Qtz, less sil cmt, sft-fri, pr vis por	No shows
	CLST: Pa gn, sl slty, wxy, micromic, micropyr, no calc	
3997	**SST:** Pred f-crs Qtz, a.a. Clasts of Clst: pa gn, micropyr, frm	No shows
3998	**SST:** Pred f-crs Qtz, a.a. Clasts of Clst: pa gn, micropyr, frm	No shows
3999	**SST:** Pred f-crs Qtz, a.a. Clasts of Clst: pa gn, micropyr, frm	No shows

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Skagerrak Fm (Triassic)	
Core no: 7	**Interval:** 3990.0 - 4017.0mMDRT	**Cored:** 27.0m **Rec:** 26.71 m 98.9 %
Core size: 4"	**Geologists:** O.Beyer / P.Furmyr	**Date:** 19.08.97

Lithology/Grain size: cly slt vf f m c vc — APPARENT DIP — Shows: STAIN, FLUOR, CUT — Φ: POOR, FAIR, GOOD

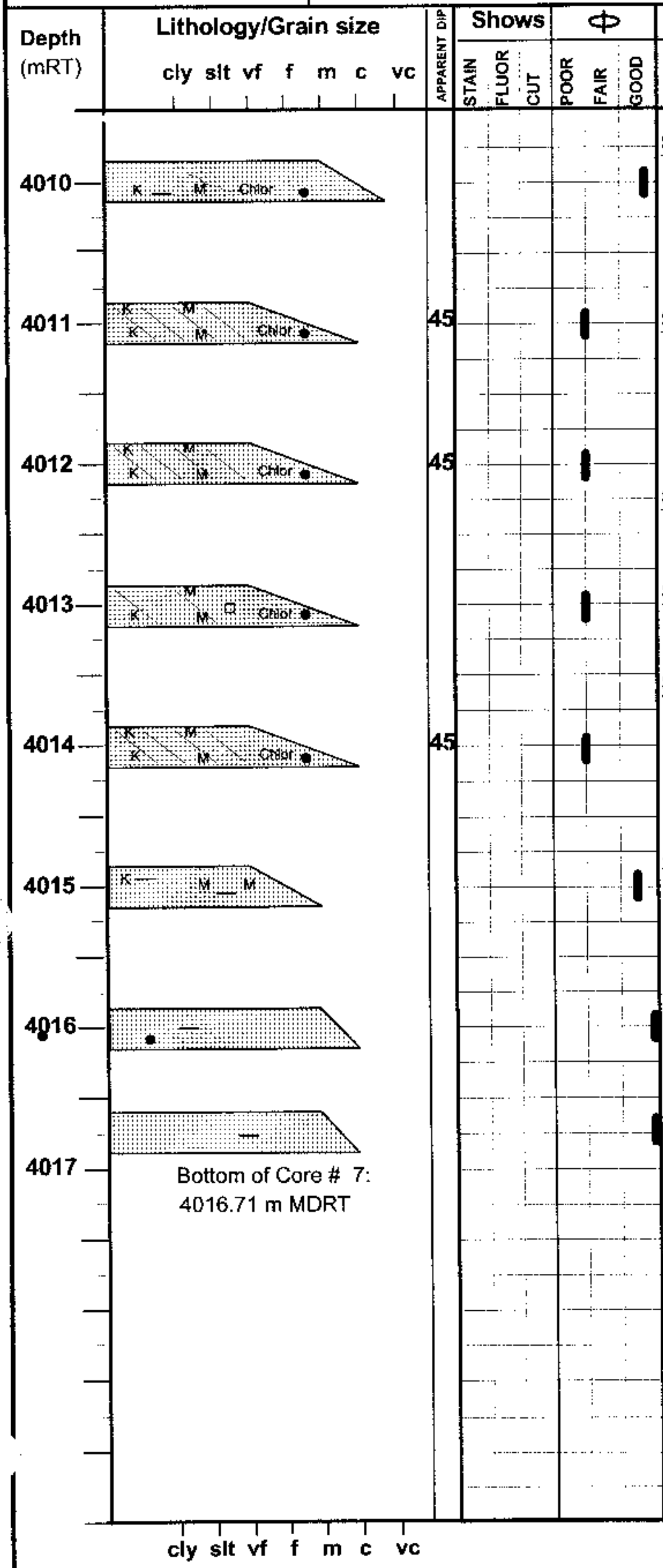


Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
4000	**SST:** Lt gry-occ off wh, clr-trns Qtz, com or/rose and smky-gn gry Qtz, f-crs, Tr v crs, pr srt, sbrndd-rndd, sph, off wh kao Mtrx, Spk/Pch gn gry arg (chlor?) Mtrx w/Micropyr, sli sil cmt, frm-fri, mass, com Spk/Gr blk mafic(?) Min, Tr Mic, gd vis Por	No shows
4001	**SST:** F-med, wl srt, incr. kao Mtrx and sil Cmt, frm-mod hd, fr vis Por, else a.a.	No shows
4002	**SST:** Lt gry-occ off wh, clr-trns Qtz, com or/rose and smky-gn gry Qtz, f-crs, Tr v crs, pr srt, sbrndd-rndd, sph, off wh kao Mtrx, Spk/Pch gn gry arg (chlor?) Mtrx w/Micropyr, sli sil cmt, frm-fri, mass, com Spk/Gr blk mafic(?) Min, Tr Mic, gd vis Por	No shows
4003	**SST:** Clasts of gn gry chlor CLST and Lam of Chlor(?) and dk gn-gn blk Mic, else as above	No shows
4004	**SST:** Tr Pyr, else as above	No shows
4005	**SST:** Tr Pyr, else as above	No shows
4006	**SST:** Tr Pyr, else as above	No shows
4007	**SST:** Tr Pyr, else as above	No shows
4008	**SST:** Tr Pyr, else as above	No shows
4009	**SST:** Off wh, med-crs, wl srt, less Clasts of chlor CLST, less Lam of Mic, gd-ex vis Por, else a.a.	No shows

cly slt vf f m c vc

CONVENTIONAL CORE DESCRIPTION

Country: Norway	**Area:** North Sea	**Field:** Sleipner, Theta Vest
Well no: 15/9-19A	**Formation:** Skagerrak Fm (Triassic)	
Core no: 7	**Interval:** 3990.0 - 4017.0mMDRT	**Cored:** 27.0m **Rec:** 26.71m 98.9%
Core size: 4"	**Geologists:** O.Beyer / P.Furmyr	**Date:** 19.08.97



Depth (mRT)	Lithological Description (Rock name, mod. lith., colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. struct., accessories, fossils, porosity, contamination)	Remarks (Shows, etc)
4010	**SST:** Off wh, clr-trns Qtz, com or/rose and also smky-gn gry Qtz, med-crs-occ v crs, mod-wl srt, sbrndd-rndd, sph, off wh kao Mtrx, sli sil cmt, fri-frm, mass, Spk gn gry chlor CLST, Spk/Gr blk mafic(?) Min, gd-ex vis Por	No Shows
4011	**SST:** Gn gry-dk gn gry, clr-trns-gn gry Qtz, com or/rose Qtz, vf-crs, pr srt, sbrndd, abd gn gy-lt gry kao & chlor Mtrx, Lam of gn blk Mica, Lam of yel brn abd kao Mtrx, sil cmt, mod hd, com Spk blk, mafic Min, pr-fr vis Por	No Shows
4012	**SST:** a.a.	No Shows
4013	**SST:** Occ v crs, less Lam, Tr Micropyr, else a.a.	No Shows
4014	**SST:** Gn gry-dk gn gry, clr-trns-gn gry Qtz, com or/rose Qtz, vf-crs, pr srt, sbrndd, abd gn gy-lt gry kao & chlor Mtrx, Lam of gn blk Mica, Lam of yel brn abd kao Mtrx, sil cmt, mod hd, com Spk blk, mafic Min, pr-fr vis Por	No Shows
4015	**SST:** Lt gry-gn gry, clr-trns Qtz, com or/rose and smky-gn gry Qtz, vf-med, mod-wl srt, sbrndd-rndd, sph, off wh-lt gry kao Mtrx, sli sil cmt, frm, mass, gd Tr Mica, com Spk/Gr dk gry-blk mafic Min, gd vis Por	No Shows
4016	**SST:** Off wh, clr-trns Qtz, com or and gn gry - smky Qtz, med-crs, v wl srt, sbrndd-rndd-occ wl rndd, sph, minor Mtrx & Cmt, clean, mass, fri-lse, Spk/Gr dk gry-blk mafic Min, ex vis Por	No Shows
4017	**SST:** a.a.	No Shows

5.3 Coring Data Summary Sheets

CORING DATA

License	PL 046
Well name	15/9-19A
Field name	Theta Vest
Area	Sleipner
Operator	Statoil

Core No.	Date	Hole section	Top of cored interval (mMD)	Bottom of cored interval (mMD)	Bottom of core	Cored interval (m)	Core recovery (m)	Core recovery (%)	Formation	Lithology (Sst/Sltst/ Sh/Coal etc.)	Pore fluid (G/ C/O/W)
1	13-aug-1997	8.5	3 838.0	3 854.0	3 853.20	16.0	15.20	95.0	Hugin Fm	Sst	O
2	14-aug-1997	8.5	3 854.0	3 881.5	3 881.65	27.5	27.65	100.5	Hugin Fm	Sst	O
3	15-aug-1997	8.5	3 881.5	3 908.5	3 908.40	27.0	26.90	99.6	Hugin Fm	Sst	O
4	15-aug-1997	8.5	3 908.5	3 935.5	3 934.50	27.0	26.00	96.3	Hugin Fm	Sst/Coal	O/W
5	16-aug-1997	8.5	3 935.5	3 963.0	3 963.00	27.5	27.50	100.0	Sleipner Fm	Sst/Coal	W
6	18-aug-1997	8.5	3 963.0	3 990.0	3 990.64	27.0	27.64	102.4	Sleipn./Skager. Fm	Sst	W
7	19-aug-1997	8.5	3 990.0	4 017.0	4 016.71	27.0	26.71	98.9	Skagerrak Fm	Sst	W

License	PL 046
Well name	15/9-19A
Field name	Theta Vest
Area	Sleipner
Operator	Statoil

CORING DATA

Core No.	Drill bit type	Hours Drilling	ROP m/ hr	WOB min(t)	WOB max(t)	RPM min	RPM max	Flowrate l/ min	Pump pressure bar	IADC Dull Grading	Bit Remarks	Core diameter (inches)
1	CD93FDIL	4.5	3.56	1.0	6.0	100	121	1 094	96	2.2.NO.A.X.0.NO.PR	S nr. 7940506	4
2	CD93FDIL	2.2	12.50	4.0	11.0	115	120	989	96	2.2.NO.A.X.0.NO.CP	S nr. 7940506	4
3	CD93FDIL	1.4	19.29	3.0	9.0	102	119	970	94	3.3.NO.A.X.0.NO.CP	S nr. 7940506	4
4	CD93FDIL	2	13.50	3.0	8.0	57	112	1 029	113	4.4.WT.S.X.0.NO.CP	S nr. 7940506	4
5	CD93FDIL	1.7	16.18	4.0	9.0	82	116	1 035	117	2.2.WT.S.X.0.NO.CP	S nr. 7941023	4
6	CD93FDIL	2.6	10.38	1.0	11.0	41	124	1 034	109	3.3.WT.S.X.1/16.RG.CP	S nr. 7941023	4
7	CD93FDIL	3.3	8.18	2.0	6.0	84	123	1 103	106	2.3.WT.A.X.1/32.NO.TD	S nr. 7960248	4

CORING DATA

License	PL 046
Well name	15/9-19A
Field name	Theta Vest
Area	Sleipner
Operator	Statoil

Core No.	Catcher type	Core barrel type	Liner type	Preservation fluid	Attempted core length	Utilization (%)	Oriented core (Y/N)	Knife type/ size	BHA
1	Spring	Standard	Aluminium	No	27	56.3	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW
2	Spring	Standard	Aluminium	No	27	102.4	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW
3	Spring	Standard	Aluminium	No	27	99.6	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW
4	Spring	Standard	Aluminium	No	27	96.3	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW
5	Spring	Standard	Aluminium	No	27	101.9	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW
6	Spring	Standard	Aluminium	No	27	102.4	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW
7	Spring	Standard	Aluminium	No	27	98.9	N	-	cbit-cbarrel-float-HW-stab-HW-jar-HW

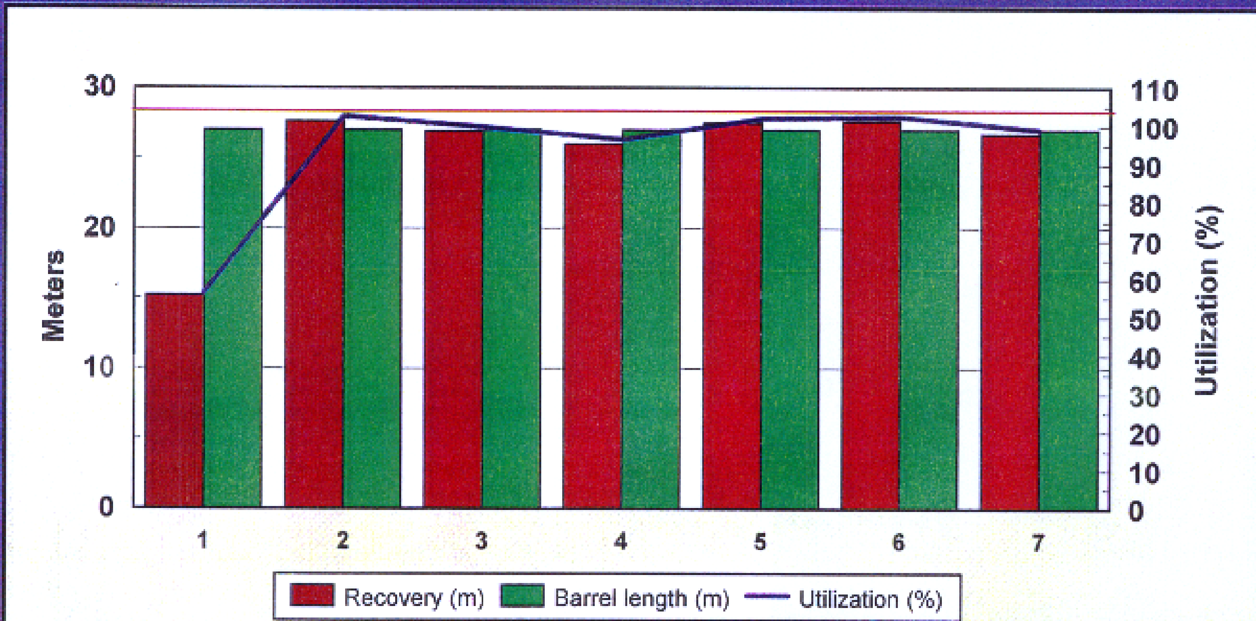
CORING DATA

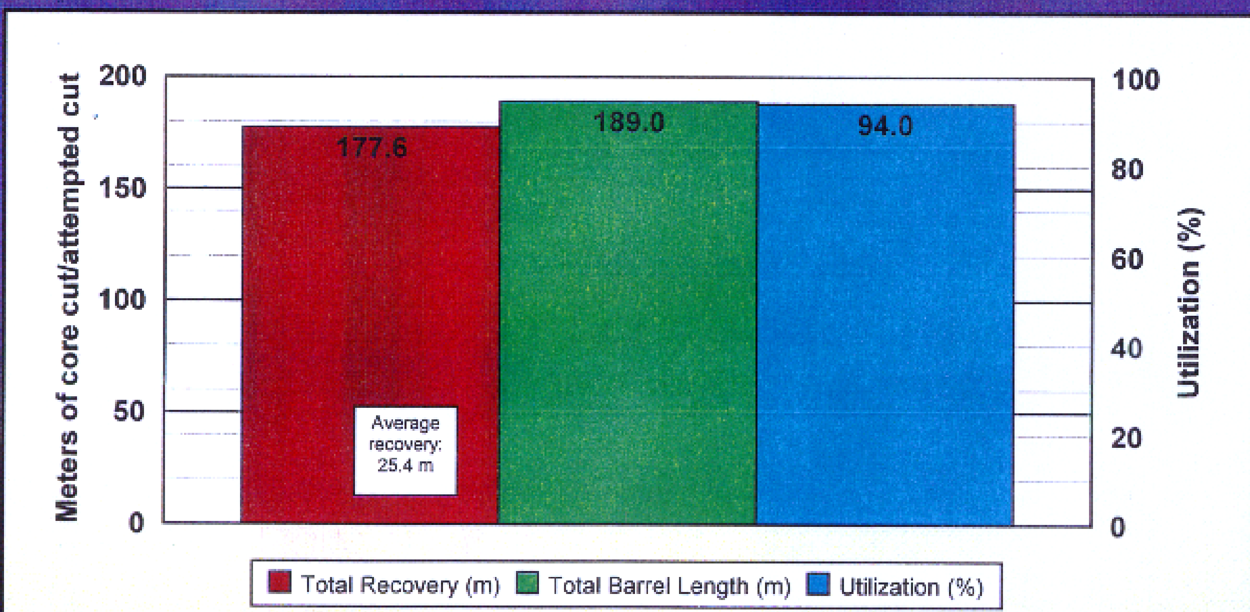
License	PL 046
Well name	15/9-19A
Field name	Theta Vest
Area	Sleipner
Operator	Statoil

Core No.	Drill mud type	Hole angle	Mud weight:	Pore pressure	Max gas (%)	Reason for pulling core and other comments/recommendations	Geologist	Coring Contractor
1	ULTIDRILL	27.5	1.55	1.14		Jammed off	O. Beyer/P. Furmyr	Secutity DBS
2	ULTIDRILL	27.5	1.55	1.14	15.20	Full core barrel	O. Beyer/P. Furmyr	Secutity DBS
3	ULTIDRILL	27.5	1.55	1.13	12.75	Full core barrel	O. Beyer/P. Furmyr	Secutity DBS
4	ULTIDRILL	27.5	1.55	1.13	0.70	Full core barrel	O. Beyer/P. Furmyr	Secutity DBS
5	ULTIDRILL	27.5	1.55	1.12	2.10	Full core barrel	O. Beyer/P. Furmyr	Secutity DBS
6	ULTIDRILL	27.5	1.55	1.11	1.70	Full core barrel	O. Beyer/P. Furmyr	Secutity DBS
7	ULTIDRILL	27.5	1.55	1.11	2.90	Full core barrel	O. Beyer/P. Furmyr	Secutity DBS

15/9-19A: Coring summary, Theta Vest

Core No.	Top of cored interval (mMD)	Bottom of cored interval (mMD)	Core recovery (m)	Core recovery (%)	ROP m/hr	Attempted core length	Utilization (%)
1	3 838.0	3 854.0	15.20	95.0	3.6	27	56.3
2	3 854.0	3 881.5	27.65	100.5	12.5	27	102.4
3	3 881.5	3 908.5	26.90	99.6	19.3	27	99.6
4	3 908.5	3 935.5	26.00	96.3	13.5	27	96.3
5	3 935.5	3 963.0	27.50	100.0	16.2	27	101.9
6	3 963.0	3 990.0	27.64	102.4	10.4	27	102.4
7	3 990.0	4 017.0	26.71	98.9	8.2	27	98.9





6 Enclosure

PIERRE0005114337 D12041 5-Jun-1998 11:44

Esso Norge a.s, Norsk Hydro Produksjon a.s,
Elf Petroleum Norge A.S, Total Norge A.S

PARTNERS

STATOIL

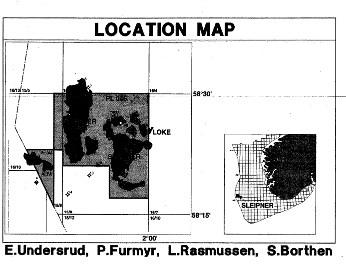
15/9-19A
WELL

Sleipner, Theta Vest
PROSPECT STRUCTURE

COMPOSITE LOG
1 : 500

AREA:	North Sea
LICENCE:	046, Sleipner East
COORDINATES:	58° 26' 09.25" N 01° 55' 47.05" E
K.B.:	25m
WATER DEPTH:	85m
TOTAL DEPTH:	4131 mMD/(-3293.5 mTVDMSL)
FM. AT T.D.:	Smith Bank Formation
SPUD DATE:	25th July 1997
RIG RELEASE:	7th November 1997
WELL STATUS:	Plugged and Abandoned
RIG:	Byford Dolphin
CONTRACTOR:	Dolphin DOC AS
GEOLOGIST:	T.F.Kristensen, O.Beyer, E.Langset, E.Undersrud, P.Furmyr, L.Rasmussen, S.Borthen
PREPARED BY:	J.M.Østby DATE: 10.05.98

LOCATION MAP



CASING DATA / LEAK OFF TESTS

9 5/8" window 2178 mMD 1602.0 mTVDMSL
7" casing 4044 mMD 3213.5 mTVDMSL

VELOCITY SURVEY

Logged normal incident VSP in 2 runs, conducted by WALS.
1st run 980 - 2670 mMDRT: 4 stations, 22 levels, 60 m levelspacing.
2nd run 2670 - 4080 mMDRT: 1 station, 95 levels, 15 m levelspacing.

LOGS RUN — CONTRACTOR: ATLAS WIRELINE SERVICES

MWD-DPR tool Run 1: 2202-2213m Run 2: 2213-2213m Run 3: 2178-2202m Run 4: 2202-2768m Run 5: 2768-2784m Run 6: 2784-3057m Run 7: 3057-3632m Run 8: 3632-3653m Run 9: 3653-3823m Run 10: 3823-3838m Run 11: 4017-4131m	HDIL-MAC-DGR-CHT Run 1A: 2178-2754m HDIL-MAC-ZDL-CND-SPL-CAL-CHT (PCL) Run 1B: 3487-4126m MAC Run 2C: 2490-3510m	VSP Run 1A: 980-2670m Run 1B: 2760-4080m	SBT-GR-CCL Run 2A: 2592-3986m	FMT-MAC-ZDL-HDIP-GR-CHT (PCL) Misrun MDT Run 1A-C: Missrun	

COMMENTS:

The rig started on contract July the 16th and plugged the well 15/9-19SR. The well 15/9-19A is sidetraced from the well 15/9-19SR at 2178 mMD / 1627 mTVDRT.

Two attempts were made to sidetrack the well out of the 9 5/8" casing. The spud date, given in the header, is when the milling of the first window started. The well is drilled successfully out of the second window.

The 7" casing had to be run prior the completion of the electric logging to secure the well due to a labour conflict. The strike delayed the well operation for 32 1/2 days.

The paleodating starts at 3500 mMD.

LITHOLOGICAL SYMBOLS

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

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

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

Well Log

Lithological Descriptions

FORMATION EVALUATION LOG

STATOIL — Geoservices

MA32_N1Q.PR1

Well name	: 15/9-19A				
Client name	: STATOIL				
Rig Name	: BYFORD DOLPHIN	Field	: THETA VEST	Spud Date	: 07-25-1997
Rig Type	: SEMI-SUBMERSIBLE	Country	: NORWAY	TD reached	: 08-21-1997
Contractor	: DOLPHIN DOC AS	Area	: NORTH SEA	Total Drill Days	: 28
		Block	: 15/9		
		Permit	: PL 046	Total Depth (m)	: 4131
				TVD (m)	: 3318.8
Location lat	: 58deg 26' 09.2" N	UTM loc [N] (m)	: 6477887.6	RT - MSL (m)	: 25
Location long	: 01deg 55' 47.1" E	UTM loc [E] (m)	: 437506.7	MSL - Seabed (m)	: 85
				Depth Reference	: ROTARY TABLE
		Plot Scale	: 1/ 500		

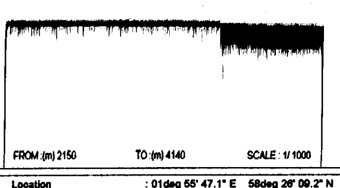
Generated by ALX Package

CLAYSTONE	SHALE	CLST sandy	CLST silty	CLST silic	CLST calc	CLST dol	CLST sandy & calc	CLST sandy & dol
CLST anhydr	CLST pyritic	MARL	MARL silty	MARL sandy	MARL dol	GYPSUM		COAL
SILT	SILTSTONE	SAND	SANDSTONE	SST coarse	CONGLOMERATE	SST calc	SST dol	SAND arg
LIMESTONE	LST argil	LST sandy	LST silty	LST arg & sandy	LST dol	LST arg & dol	LST pyritic	LST oolitic
DOLOMITE	DOL calc	DOL arg	CHALK	CHALK chert				
Fossils unspec	Fossil frags	Forams	Spicules	Plant frags	Wood frags	Corals	Shell frags	
Tuff	Mica	Pyrite	Glauconite	Carbonaceous	Silty			
Test	Mud loss	Mud gain	Deviation survey	Core	Sidewall Core	DST	PIT/LOT	RFT/FMT
Casing Shoe	Bit Change	Wiper Trip	TG Trip Gas	CG Pipe connection gas				

PRESSURE EVALUATION LOG

STATOIL

Geoservices



PEL1_N10.PR1

Well name	: 15/9-19A	Location	: 01deg 55' 47.1" E 58deg 26' 09.2" N	Rig Name	: BYFORD DOLPHIN
Company name	: STATOIL	Country	: NORWAY	Rig Type	: SEMI-SUBMERSIBLE
Reference depth	: Rotary table (RKB)	Final TD (m)	: 4131	UTM coordinate N (m)	: 6477887.6
Water depth (m)	: 85	Final TVD (m)	: 3318.8	UTM coordinate E (m)	: 437506.7
Rot table - MSL (m)	: 25	Spud date	: 07-25-1997	Well type	: APPRAISAL
Rot table - seabed (m)	: 110	Reached TD	: 08-21-1997	Area	: NORTH SEA

Generated by ALX Package

CLAYSTONE	SHALE	CLST sandy	CLST silty	CLST silic	CLST calc	CLST dol	CLST sandy & calc	CLST sandy & dol
CLST anhydr	CLST pyritic	MARL	MARL silty	MARL sandy	MARL dol	GYPSUM		COAL
SILT	SILTSTONE	SAND	SANDSTONE	SST coarse	CONGLOMERATE	SST calc	SST dol	SAND arg
LIMESTONE	LST argil	LST sandy	LST silty	LST arg & sandy	LST dol	LST arg & dol	LST pyritic	LST oolitic
DOLOMITE	DOL calc	DOL arg	CHALK	CHALK chert				
Fossils unspec	Fossil frags	Forams	Spicules	Plant frags	Wood frags	Corals	Shell frags	
Tuff	Mica	Pyrite	Glauconite	Carbonaceous	Silty			
Test	Mud loss	Mud gain	Deviation surve	Core	Sidewall Core	DST	FIT/LOT	RFT/FMT
Casing Shoe	Bit Change	Wiper Trip	TG Trip Gas	CG Pipe connection gas