

Well no : 7226/11-01

Operator : STATOIL

Coordinates : 72 14 18.16 N  
26 28 44.78 EUTM coord. : 8015817 N  
482263 E

Licence no : 139

Permit no : 561

Rig : ROSS RIG

Rig type : SEMI-SUB.

Contractor : ROSS DRILLING CO. A/S

Bottom hole temperature : 143 deg.C

Elev. KB : 23 M

Spud. date : 87.10.22

Water depth : 238 M

Compl. date : 88.04.11

Total depth : 5200 M

Spud. class : WILDCAT

Form. at TD : PRECAMBR.

Compl. class : P&amp;A. GAS DISCOVERY

Prod. form :

Seisloca : D-14-84A SP. 7349/N-1-86 SP. 5667

## LICENSEES

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 10.000000 NORSKE CONOCO A/S  
 10.000000 ELF AQUITAINE NORGE A/S  
 10.000000 NORSKE FINA A/S  
 10.000000 MOBIL DEVELOPMENT NORWAY A.S.  
 10.000000 A/S NORSKE SHELL  
 50.000000 DEN NORSKE STATS OLJESELSKAP A.S

## CASING AND LEAK-OFF TESTS

Type	Casing diam.	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm3
CONDUCTOR	30	359.0	36	363.0	.
SURF.COND.	20	698.0	26	720.0	1.73
INTERM.	13 3/8	2485.0	17 1/2	2515.0	1.89
INTERM.	9 5/8	4095.0	12 1/4	4061.0	1.85

## CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	1167.0 - 1168.1	1.1	100.0	
2	1202.0 - 1223.4	21.4	100.0	
3	1224.0 - 1247.3	23.3	100.0	
4	2140.0 - 2142.0	2.0	100.0	
5	2951.0 - 2957.0	6.0	89.5	
6	3057.0 - 3083.1	26.1	96.7	
7	3236.0 - 3238.4	2.4	100.0	
8	4139.0 - 4146.0	7.0	100.0	
9	4593.0 - 4615.5	22.5	100.0	
10	5195.0 - 5200.0	4.6	92.0	

## MUD PROPERTIES

Depth below KB meter	Mud weight g/cm3	Viscosity	Mud type
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500.000	1.30	1100.0	WATER BASED
548.000	1.35	1100.0	WATER BASED
720.000	1.03	100.0	WATER BASED
1005.000	1.12	2300.0	WATER BASED
1165.000	1.17	1400.0	WATER BASED
1165.000	1.18	1600.0	WATER BASED
1165.000	1.17	1800.0	WATER BASED
1165.000	1.18	1600.0	WATER BASED
1165.000	1.20	1800.0	WATER BASED
1165.000	1.18	1300.0	WATER BASED
1246.000	1.17	2300.0	WATER BASED
1300.000	1.18	1300.0	WATER BASED
1399.000	1.17	2300.0	WATER BASED
1502.000	1.16	1500.0	WATER BASED
1608.000	1.16	1400.0	WATER BASED
1730.000	1.17	1800.0	WATER BASED
1829.000	1.18	1600.0	WATER BASED
1906.000	1.20	1800.0	WATER BASED
2051.000	1.19	1300.0	WATER BASED
2140.000	1.17	1100.0	WATER BASED
2141.000	1.18	1300.0	WATER BASED
2160.000	1.19	1200.0	WATER BASED
2283.000	1.18	1300.0	WATER BASED
2400.000	1.25	1500.0	WATER BASED
2404.000	1.18	1300.0	WATER BASED
2464.000	1.18	1300.0	WATER BASED
2475.000	1.22	1500.0	WATER BASED
2515.000	1.25	1500.0	WATER BASED
2515.000	1.24	1300.0	WATER BASED
2703.000	1.20	1400.0	WATER BASED
2854.000	1.22	1600.0	WATER BASED
2903.000	1.35	1000.0	WATER BASED
2903.000	1.34	1000.0	WATER BASED
2913.000	1.30	1100.0	WATER BASED
2913.000	1.28	1100.0	WATER BASED
2913.000	1.41	2100.0	WATER BASED
2913.000	1.41	2100.0	WATER BASED
2913.000	1.32	1100.0	WATER BASED
2913.000	1.35	1100.0	WATER BASED
3240.000	1.30	2400.0	WATER BASED
3240.000	1.31	2200.0	WATER BASED
3373.000	1.30	1800.0	WATER BASED
3407.000	1.32	2200.0	WATER BASED
3407.000	1.33	2000.0	WATER BASED
3420.000	1.32	2000.0	WATER BASED
3556.000	1.35	2000.0	WATER BASED
3635.000	1.41	2100.0	WATER BASED
3879.000	1.44	2200.0	WATER BASED
3888.000	1.35	1400.0	WATER BASED
3888.000	1.34	1100.0	WATER BASED
3923.000	1.44	1600.0	WATER BASED
4060.000	1.46	1500.0	WATER BASED
4061.000	1.45	3000.0	WATER BASED
4061.000	1.46	1900.0	WATER BASED
4061.000	1.43	1700.0	WATER BASED
4562.000	1.38	2200.0	WATER BASED
4645.000	1.41	2300.0	WATER BASED

## DRILL STEM TEST

### ----- INTERVALS AND PRESSURES

Test no.	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
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1.0 2935.000 - 2951.000 TIGHT FORMATION  
 Test temperature: N/A  
 1.1 2913.000 - 2926.000 4.9 N/A N/A N/A  
 Test temperature: N/A

RECOVERY

Test no.	Oil Sm <sup>3</sup> /d	Gas Sm <sup>3</sup> /d	Oil grav. g/cm <sup>3</sup>	Gas grav. rel. air	GOR m <sup>3</sup> /m <sup>3</sup>
1.0	TIGHT FORMATION				
1.1	N/A	15000	N/A	N/A	N/A

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	718-5196	870
Wet Samples	718-5196	810

SHALLOW GAS

Interval below KB	REMARKS
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AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
DIL LSS GR	263.000 - 719.000	X	X	
DIL LSS GR	696.000 - 2497.000	X	X	
DIL LSS MSFL GR.	2485.000 - 2950.000	X	X	
DIL LSS MSFL GR	2485.000 - 3405.000	X	X	
DIL LSS GR CALI MERG	3350.000 - 4059.000	X	X	
ISF LSS MSFL GR.	4044.000 - 5200.000	X	X	
MSFL	696.000 - 2551.000	X	X	
LDL CNL NGS	263.000 - 5195.000	X	X	
DLL MSFL GR	2800.000 - 4057.000	X	X	
DLL	4044.000 - 5195.000	X	X	
MWD	272.000 - 4612.000		X	
CDM AP	1100.000 - 2500.000	X	X	
CDM AP	2490.000 - 3404.000	X	X	
CDM AP	3450.000 - 4060.000	X	X	
SHDT GR	696.000 - 2498.000	X		
SHDT GR	2485.000 - 3407.000	X		
SHDT GR	3300.000 - 4060.000	X		
NGS SPEC	696.000 - 2551.000	X	X	
NGS SPEC	2486.000 - 3405.000	X	X	
NGS RATIOS	3350.000 - 4060.000	X	X	

CALIPER	2485.000 - 3407.000	X
CALIPER	2485.000 - 4060.000	X
RFT HP	1201.000 - 2451.000	
RFT STRAIN GAUGE	1201.000 - 2455.000	
RFT	2914.000 - 2949.000	
RFT STRAIN GAUGE	3060.000 - 3229.000	
RFT HP	3060.000 - 3229.000	
RFT HP	4597.000 - 4935.000	
PRESSURE EVAL.LOG	270.000 - 5200.000	1:1000
CBL VDL GR	680.000 - 2485.000	X
CBL VDL GR	700.000 - 4045.000	X
CBL VDL GR	2850.000 - 3000.000	X
CBL VDL GR	2750.000 - 3050.000	X
MUD	261.000 - 5200.000	X
VELOCITY LOG	720.000 - 5023.000	1:1000 X
(Synthetic Seismogram, 10cm/s		3 stk)
(V.S.P., Zero Offset V.S.P., 10cm/s		5 stk)
(Summed Data, 30 cm/s		2 stk)
(Acoustic Log Calibration, 10 cm/s		1 stk)
BHT= 316 DEG.F		TD=5200 M

## MAIN OPERATIONS FOR WELL: 722611 01

### Main operation: DRILLING

Sub operations	Minutes	Hrs	% of total
BOP ACTIVITIES	7410	123,5	4,90
BOP/WELLHEAD EQ	3960	66,0	2,62
CASING	12780	213,0	8,45
CIRC/COND	3840	64,0	2,54
DRILL	84840	1414,0	56,09
HOLE OPEN	2340	39,0	1,55
OTHER	870	14,5	0,58
PRESS DETECTION	120	2,0	0,08
REAM	3540	59,0	2,34
SURVEY	720	12,0	0,48
TRIP	30300	505,0	20,03
WAIT	540	9,0	0,36
Total	151260	2521,0	100,00

### Main operation: FORMATION EVAL

Sub operations	Minutes	Hrs	% of total
CIRC SAMPLES	600	10,0	1,18
CIRC/COND	2850	47,5	5,59
CORE	5460	91,0	10,71
DST	10050	167,5	19,72
LOG	17430	290,5	34,20
PROD TEST	2880	48,0	5,65
TRIP	11700	195,0	22,95
Total	50970	849,5	100,00

### Main operation: INTERRUPTION

Sub operations	Minutes	Hrs	% of total
FISH	13080	218,0	35,83
MAINTAIN/REP	21780	363,0	59,65
OTHER	180	3,0	0,49
WAIT	1470	24,5	4,03
Total	36510	608,5	100,00

### Main operation: MOVING

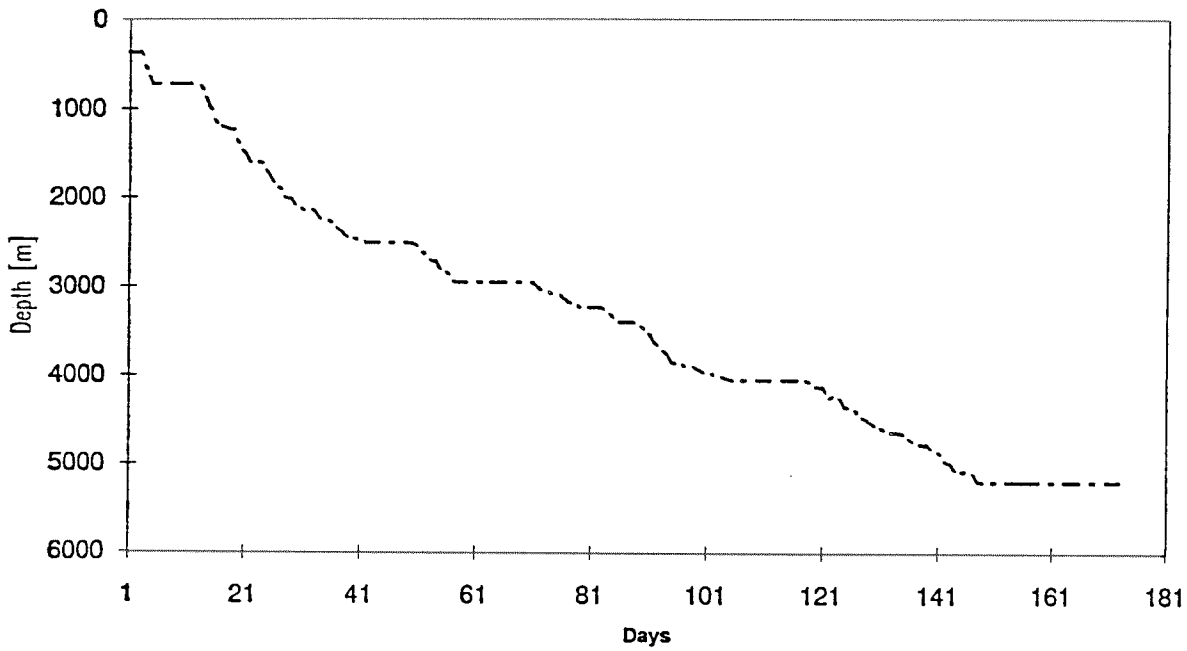
Sub operations	Minutes	Hrs	% of total
ANCHOR	1560	26,0	56,52
TRANSIT	1200	20,0	43,48
Total	2760	46,0	100,00

### Main operation: PLUG & ABANDON

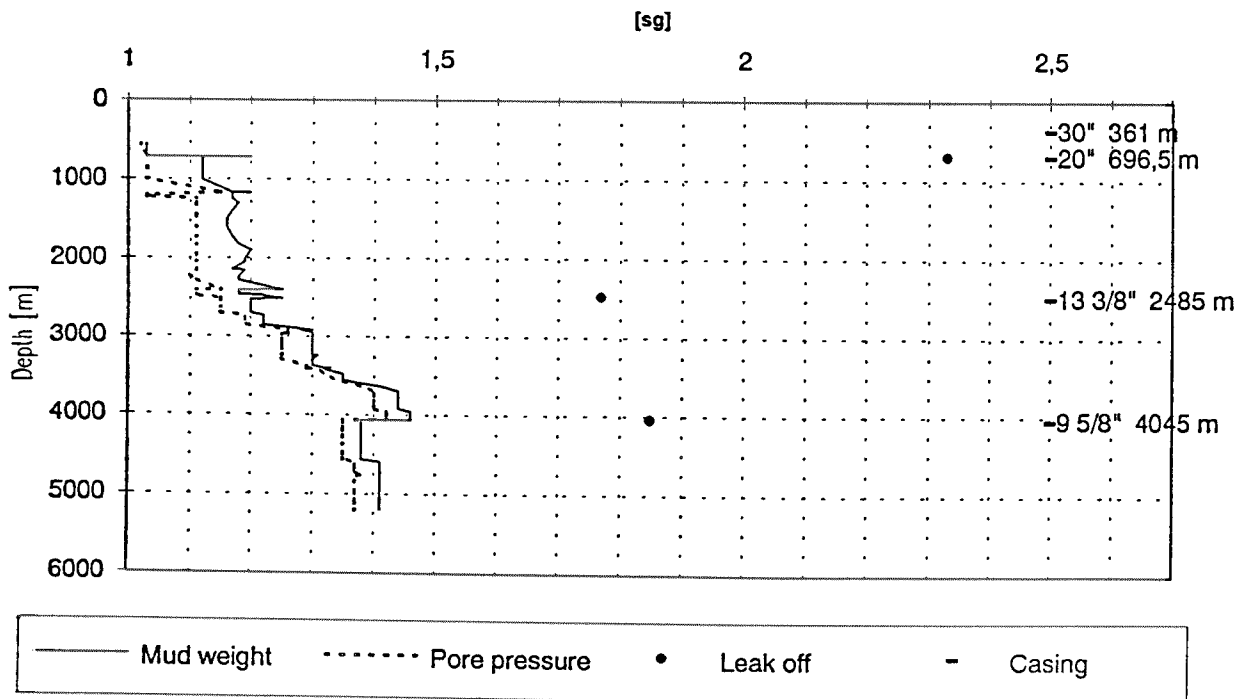
Sub operations	Minutes	Hrs	% of total
CEMENT PLUG	1470	24,5	16,23
CIRC/COND	630	10,5	6,95
CUT	810	13,5	8,94
EQUIP RECOVERY	2130	35,5	23,51
MECHANICAL PLUG	540	9,0	5,96
OTHER	120	2,0	1,32
PERFORATE	570	9,5	6,29
SQUEEZE	480	8,0	5,30
TRIP	2100	35,0	23,18
WAIT	210	3,5	2,32
Total	9060	151,0	100,00

Total time used 4176 hrs ( 174 days)

Depth v.s. time plot for well: 722611 01



Composite plot for well: 722611 01



# Well History 7226/11-1

## GENERAL:

Block 7226/11 lies in Key Area I, by the southwestern edge of the Nordkapp basin. 7226/11-1 was drilled on a structure north in the block. The well was designed to test Early Jurassic/Late Triassic sandstones, Base Anisian sandstones and Permian carbonates. The well should also test the geophysical and structural interpretation and improve the geological, geochemical and paleontological understanding of this new area in the Barents Sea. Total depth of the well was planned to be drilled to 4620 m, penetrating the Early Permian Unconformity.

## OPERATIONS:

Wildcat well 7226/11-1 was spudded 22 October 1987 by Ross Drilling semi-submersible rig Ross Rig and completed 11 April 1988 at a depth of 5200 m in precambrian rocks.

9 7/8" pilot hole was drilled to 720 m without a riser. During opening of the pilot hole to 26" hole, an angle of 5° was built up at approx. 500 m and a new hole was drilled next to the 9 7/8" pilot hole. 20" casing shoe was set at 698 m. There was no shallow gas in the hole. At 1167 m a shale core was cut. Upper reservoir was encountered at 1201 m, 19 m higher than expected. Drilling data and logs indicated that this reservoir was water-bearing. 2 cores were cut in the interval 1202 - 1246 m. At 2140 m a shale core was cut.

Logging was tried, at 2470 m, but due to a tight hole at 2446 m, it was decided to clean the hole and drill to approx. 2500 m before logging. Expected bottom Anisian sandstone reservoir at 2330 m was not developed as good as expected. Only thin sandstone stringers were encountered between 2280 - 2310 m without good indications of hydrocarbons.

It was drilled to 2913 m where a sudden increase in drilling velocity was experienced. Fluid flowing into the hole and high gas readings indicated top reservoir at 2913 m. A core was cut in the interval 2951 - 2958 m. A cement plug was set, BOP tested and it was drilled out of the cement. Core # 6 was cut from 3057 - 3084 m. The outer part of the core pipe was stuck and fished up. At 3236 m core # 7 was cut. At 3240 a loss of pump pressure was encountered due to a core pipe being twisted off and left in the hole. This was fished up, the hole was cleaned, and drilling continued. The hole was logged to 2407 m. It was drilled to 4045 m, logged and 9 5/8" casing was set. A problem with mixing of cement delayed the operation.

Top Permian carbonates was encountered at 4098 m. Core # 8 was cut between 4139 - 4146 m and a core was cut at planned T.D., core # 9 between 4593 - 4615.5 m. The

partners and Statoil decided to drill further to investigate a deeper reflector. At 5137 m metamorphic rock was encountered. Core # 10 was cut between 5195 - 5200 m. The core contained chlorite, mica and schist.

RFT tests indicated water and mudfiltrate.

The well was plugged and abandoned as a gas discovery.

**TESTING:**

The well was tested in the intervals 2935 - 2951 m and 2913 - 2926 m. The lower interval was tight. The upper interval produced gas. The test was interrupted due to technical problems.



# GEOLOGICAL TOPS

WELL: 7226/11-1

Depth m (RKB)

<i>Nordland Group</i>	260.5
<i>Nordvestbanken Group</i>	374.0
<i>Kolmule Fm.</i>	374.0
<i>Knurr Fm.</i>	1140.0
<i>Teistengrunnen Group</i>	1146.5
<i>Hekkingen Fm.</i>	1146.5
<i>Realgrunnen Group</i>	1193.5
<i>Stø Fm.</i>	1193.5
<i>Tubåen Fm.</i>	1199.5
<i>Fruholmen Fm.</i>	1233.5
<i>Ingøydjupet Group</i>	1296.0
<i>Snadd Fm.</i>	1296.0
<i>Kobbe Fm.</i>	1878.0
<i>Klappmyss Fm.</i>	2276.5
<i>Havert Fm.</i>	2867.5
<i>Tempelfjorden Group</i>	3877.0
<i>Gipsdalen Group</i>	4103.0
<i>Basement</i>	5137.0
<i>T.D.</i>	5200.0