

Well no : 25/02-12 Operator : ELF

Coordinates : 59 57 48.34 N UTM coord. : 6647648 N
 02 23 40.78 E 466196 E

Licence no : 26 Permit no : 584

Rig : WEST VANGUARD Rig type : SEMI-SUB.

Contractor : A/S SMEDVIG DRILLING CO.

Bottom hole temperature : 129 deg.C Elev. KB : 22 M

Spud. date : 88.07.17 Water depth : 115 M

Compl. date : 88.11.13 Total depth : 4103 M

Spud. class : APPRAISAL Form. at TD : L.JURASSIC

Compl. class : P&A. GAS/COND. DISC. Prod. form :

Seisloca : EL 8706 - 116 SP 435

LICENSEES

41.420000 ELF AQUITAINE NORGE A/S
 32.870000 NORSK HYDRO PRODUKSJON A.S
 5.000000 DEN NORSKE STATS OLJESELSKAP A.S
 20.710000 TOTAL NORGE 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	197.0	36	199.0	.
SURF.COND.	20	890.0	26	912.0	1.25
INTERM.	13 3/8	2848.0	17 1/2	2879.0	1.88
LINER	TOP	3300.0		.0	.
INTERM.	9 5/8	3412.0	12 1/4	3512.0	2.05
LINER	7	3821.0	8 1/2	.0	.
LINER	7	4100.0	8 1/2	.0	.

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	3514.0 - 3515.0	0.0	000.0	
2	3685.0 - 3686.0	1.0	100.0	
3	3690.0 - 3715.4	25.4	100.0	
4	3943.0 - 3952.0	9.0	100.0	
5	3994.0 - 4019.0	25.0	100.0	

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm3	Viscosity	Mud type
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1195.000	1.12	43.0	WATER BASED
1355.000	1.14	35.0	WATER BASED
1367.000	1.13	32.0	WATER BASED
1508.000	1.14	33.0	WATER BASED
1707.000	1.17	35.0	WATER BASED
1993.000	1.20	30.0	WATER BASED
2427.000	1.19	32.0	WATER BASED
2594.000	1.22	23.0	WATER BASED
2795.000	1.24	35.0	WATER BASED
2863.000	1.26	34.0	WATER BASED
2867.000	1.28	36.0	WATER BASED
2867.000	1.30	23.0	WATER BASED
2879.000	1.50	34.0	WATER BASED
3021.000	1.53	36.0	WATER BASED
3157.000	1.66	36.0	WATER BASED
3221.000	1.74	37.0	WATER BASED
3281.000	1.79	33.0	WATER BASED
3392.000	1.85	33.0	WATER BASED
4052.000	1.92	50.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	3685.500 - 3690.500		STOPPED DUE TO LARGE SANDPROD.		
	Test temperature:				

RECOVERY

Test no.	Oil Sm3/d	Gas Sm3/d	Oil grav. g/cm3	Gas grav. rel.air	GOR m3/m3
1.0	TEST STOPPED DUE TO LARGE SANDPRODUCTION				

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting		
Wet Samples	910-4100	510

SHALLOW GAS

Interval below KB	REMARKS

AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
LDL GR AMS	890.000 - 2500.000	X	X	
LDL GR	2850.000 - 3384.000	X	X	
LDL CNL NGL	3415.000 - 3819.000	X	X	

LDL NGL	3784.000 - 4102.800	X	X
DIL DDBHC GR SP AMS	880.000 - 2509.000	X	X
DIL SLS GR SP	2851.000 - 3393.000	X	X
DIL SLS GR SP	3415.000 - 3820.000	X	X
DIL DDBHC GR SP	3774.000 - 4101.000	X	X
DLL MSFL GR	3593.000 - 3818.000	X	X
MWD	199.000 - 4090.000	X	X
CBL VDL GR CCL	648.000 - 2847.000	X	
CBL VDL GR CCL	2790.000 - 3405.000	X	
CDM AP	3415.000 - 3820.000	X	X
NGT RATIOS	3415.000 - 3819.000	X	X
NGT RATIOS	3784.000 - 4103.000	X	X
FMS	3415.000 - 3855.000	X	X
FMS	3800.000 - 4014.000	X	X
RFT HP GR	3687.000 - 3797.500	X	
RFT GR	3687.000 - 3797.500		
MUD	900.000 - 4108.000		X
VELOCITY LOG	890.000 - 4108.000		X
(Synthetic Seismogram, 10+20+40 cm/s			12 stk)
(V.S.P, Rigshot VSP, 10+20 cm/s			6 stk)
(V.S.P, East Offset VSP, 10cm/s			6 stk)
(V.S.P, West Offset VSP, 10cm/s			6 stk)
(V.S.P, Offset VSP's, 20cm/s			1 stk)

MAIN OPERATIONS FOR WELL: 002502 12

Main operation: DRILLING

Sub operations	Minutes	Hrs	% of total
BOP ACTIVITIES	7200	120,0	6,73
BOP/WELLHEAD EQ	1620	27,0	1,51
CASING	12960	216,0	12,12
CIRC/COND	5550	92,5	5,19
DRILL	46620	777,0	43,59
HOLE OPEN	1290	21,5	1,21
OTHER	840	14,0	0,79
PRESS DETECTION	120	2,0	0,11
REAM	3330	55,5	3,11
SURVEY	330	5,5	0,31
TRIP	27060	451,0	25,30
WAIT	30	0,5	0,03
Total	106950	1782,5	100,00

Main operation: FORMATION EVAL

Sub operations	Minutes	Hrs	% of total
CIRC SAMPLES	180	3,0	0,72
CIRC/COND	930	15,5	3,71
CORE	1350	22,5	5,38
DST	1470	24,5	5,86
LOG	8880	148,0	35,41
OTHER	30	0,5	0,12
RFT/FIT	1200	20,0	4,78
TRIP	11040	184,0	44,02
Total	25080	418,0	100,00

Main operation: INTERRUPTION

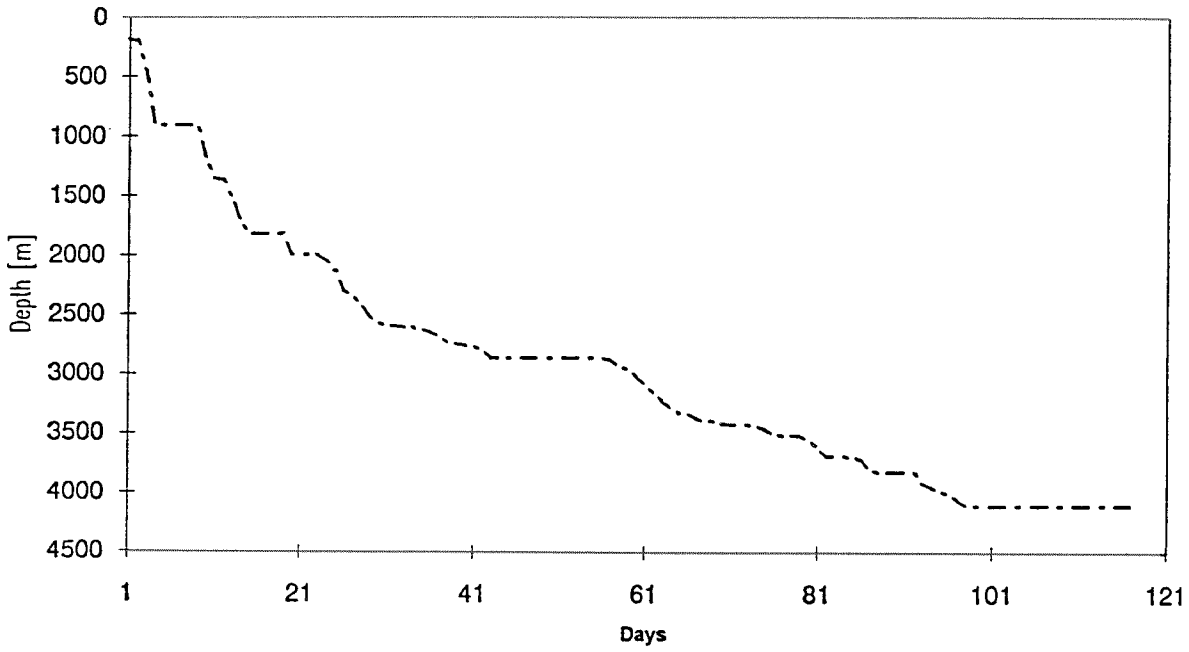
Sub operations	Minutes	Hrs	% of total
FISH	4740	79,0	17,08
LOST CIRC	7950	132,5	28,65
MAINTAIN/REP	4440	74,0	16,00
OTHER	330	5,5	1,19
WAIT	2220	37,0	8,00
WELL CONTROL	8070	134,5	29,08
Total	27750	462,5	100,00

Main operation: PLUG & ABANDON

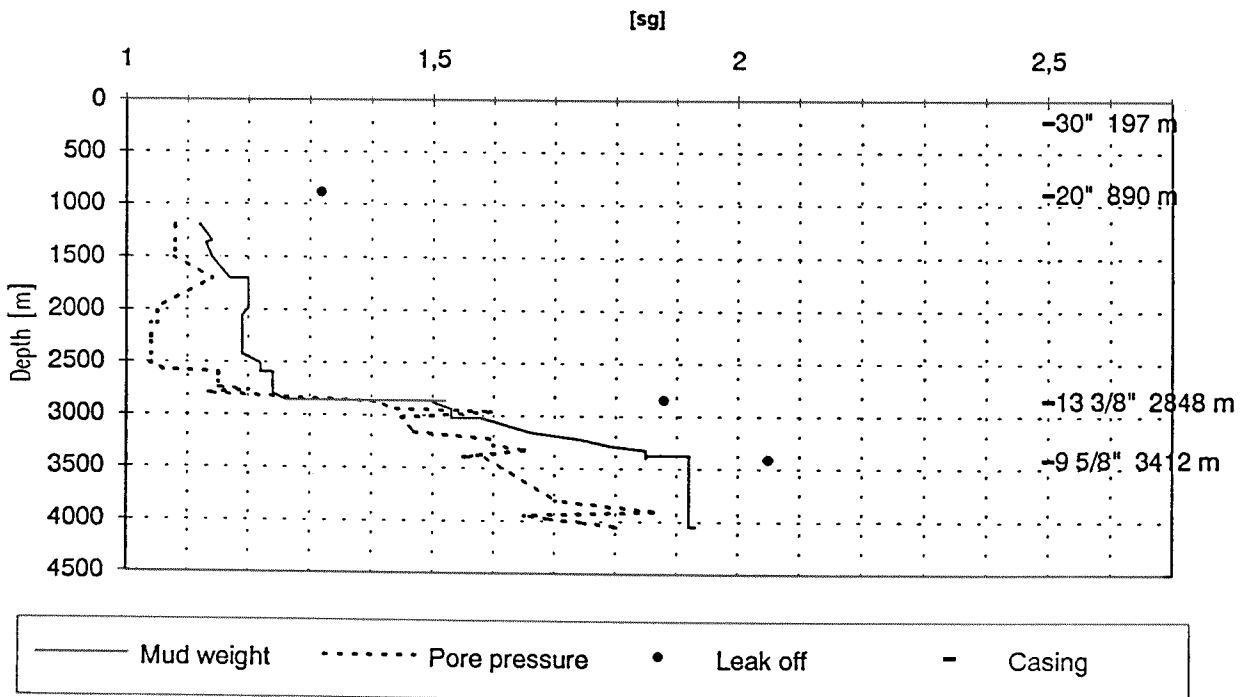
Sub operations	Minutes	Hrs	% of total
CEMENT PLUG	2100	35,0	24,14
CIRC/COND	630	10,5	7,24
MECHANICAL PLUG	1410	23,5	16,21
OTHER	150	2,5	1,72
TRIP	4350	72,5	50,00
WAIT	60	1,0	0,69
Total	8700	145,0	100,00

Total time used 2808 hrs (117 days)

Depth v.s. time plot for well: 002502 12



Composite plot for well: 002502 12



Well History 25/2-12

GENERAL:

Well 25/2-12 was the second hole drilled on a NNE-SSV-oriented structural height in the northwestern part of the block. Well 25/2-4 was drilled in a more downflank position, with a 21 m gas column and a 48 m oil column in the Vestland Group. The Statfjord Fm. was waterbearing in 25/2-4, but its position was not optimal on the structure with regards to the Jurassic prospects.

The main objective of the well was to examine the Statfjord Fm. higher up on the structure than 25/4-2, including getting more information about the oil- and gas discovery in the Vestland Group.

OPERATIONS:

Appraisal well 25/2-12 was spudded 17 July 1988 by Smedvig semi-submersible rig West Vanguard and completed 13 November 1988 at a depth of 4103 m in Late Jurassic rocks. Drilling proceeded without any significant problems down to 1366 m. Here, metamorphic gravel plugged the bit and this had to be changed. During clean-up of the hole,

mud was lost to the sand formation at 890 - 1000 m.

LCM-material was pumped into the well to isolate it. The well was in periods unstable.

The Frigg Formation was water-bearing. The gas-readings were at times very high (up to 80 %). There was danger of losing the mud in Turonian limestone. Some fractures were observed higher up in the section. There were traces of gas in the limestone. Core 1 was a "junk core".

Top reservoir came in 100 m deeper than prognosed. The reason for this was assumed to be that the top of the reservoir has been faulted. Core 2 & 3 were cut in the Brent Group and core 4 in the Dunlin Group. Core 4 was for geochemical studies. Core 5 was cut in the Statfjord Formation. The fluid contact was set to 3701 m. Analysis of this showed that it was a condensate column of 15 m. RFT gave this result at 3697 m: 4.51 mudfiltrate, 1.21 condensate and 63 cuft gas.

When Statfjord Fm. was found to be water-bearing, NPD permitted EAN to change TD from 4225 m (Triassic) to 4100 m (113 m into the Statfjord Fm.). 25/2-12 was considered a great disappointment.

The well was plugged and abandoned as a gas/condensate discovery.

TESTING:

One DST test was attempted in the interval 3685.5 - 3690.5 m, but the test had to be stopped due to large sand production.

GEOLOGICAL TOPS

WELL: 25/2-12

Depth m (RKB)

<i>Nordland Group</i>	137.0
<i>Hordaland Group</i>	1020.0
<i>Frigg Fm.</i>	2042.0
<i>Rogaland Group</i>	2169.0
<i>Balder Fm.</i>	2169.0
<i>Sele Fm.</i>	2286.0
<i>Lista Fm.</i>	2419.0
<i>Våle Fm.</i>	2492.0
<i>Maureen Fm.</i>	2580.0
<i>Shetland Group</i>	2622.0
<i>Cromer Knoll Group</i>	3606.0
<i>Viking Group</i>	3614.0
<i>Brent Group</i>	3685.5
<i>Tarbert Fm.</i>	3685.5
<i>Ness Fm.</i>	3713.0
<i>Dunlin Group</i>	3800.0
<i>Statfjord Fm.</i>	3990.0
<i>T.D.</i>	4103.0