

Well no : 6507/11-03

Operator : SAGA

Coordinates : 65 01 59.80 N  
07 30 42.34 E

UTM coord. : 7213169  
429908

Licence no : 62

Permit no : 469

Rig : TREASURE SAGA

Rig type : SEMI-SUB.

Contractor : WILHELMSSEN OFFSHORE SERVICES

Bottom hole temperature : 96 deg.C

Elev. KB : 26 M

Spud. date : 85.06.03

Water depth : 290 M

Compl. date : 85.08.12

Total depth : 3250 M

Spud. class : WILDCAT

Form. at TD : TRIASSIC

Compl. class : P&A. OIL/GAS DISC.

Prod. form : M.JURASSI

Seisloca : SG 8458 - 412 SP. 527

## LICENSEES

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10.000000 ARCO NORGE A/S  
5.000000 NORSK HYDRO PRODUKSJON A.S  
10.000000 SAGA PETROLEUM A.S.  
25.000000 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
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CONDUCTOR	30	414.0	36	421.0	
SURF.COND.	20	849.0	26	868.0	1.52
INTERM.	13 3/8	1903.0	17 1/2	1918.0	1.83
INTERM.	9 5/8	2600.0	12 1/4	2615.0	1.79
OPEN HOLE			8 1/2	3250.0	

## CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	2428.0 - 2437.5	9.4	99.5	MIDDLE JURASSIC
2	2437.5 - 2456.0	18.5	100.0	MIDDLE JURASSIC
3	2456.0 - 2465.3	9.3	100.0	M/L JURASSIC
4	2467.0 - 2494.5	27.5	100.0	M/L JURASSIC
5	2494.5 - 2522.0	27.5	100.0	M/L JURASSIC
6	2522.0 - 2537.0	14.8	98.7	M/L JURASSIC
7	2637.0 - 2643.9	6.9	100.0	LOWER JURASSIC
8	2650.0 - 2660.2	10.2	100.0	LOWER JURASSIC
9	2668.5 - 2677.5	9.0	100.0	LOWER JURASSIC

## MUD PROPERTIES

Depth below KB meter	Mud weight g/cm <sup>3</sup>	Plastic viscosity mPa.s	Mud type
316.000	1.03		WATER BASED
449.000	1.05	10.0	WATER BASED
763.000	1.17	10.0	WATER BASED
868.000	1.18	10.0	WATER BASED
873.000	1.15	14.0	WATER BASED
1300.000	1.20	16.0	WATER BASED
1580.000	1.23	18.0	WATER BASED
1918.000	1.40	21.0	WATER BASED
2151.000	1.53	25.0	WATER BASED
2402.000	1.60	36.0	WATER BASED
2623.000	1.26	19.0	WATER BASED
2644.000	1.21	17.0	WATER BASED
2679.500	1.20	16.0	WATER BASED

## DRILL STEM TEST

### INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	2519.000 - 2520.500	25.4	1396.6	3335.9	1160.3
2.0	2495.700 - 2508.700	31.8	1865.1	2900.8	1740.4
3.0	2413.000 - 2419.500	38.1	1466.2	3480.9	1450.4

### RECOVERY

Test no.	Oil Sm <sup>3</sup> /d	Gas M 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	1490		0.847	0.720	198
2.0		1.48		0.690	
3.0		1.74		0.675	

## DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	430 - 3250	500
Wet Samples	430 - 3250	300

## SHALLOW GAS

Interval below KB	REMARKS
540 M	
558 M	
576 M	
660 M	SHALLOW GAS OCCUR

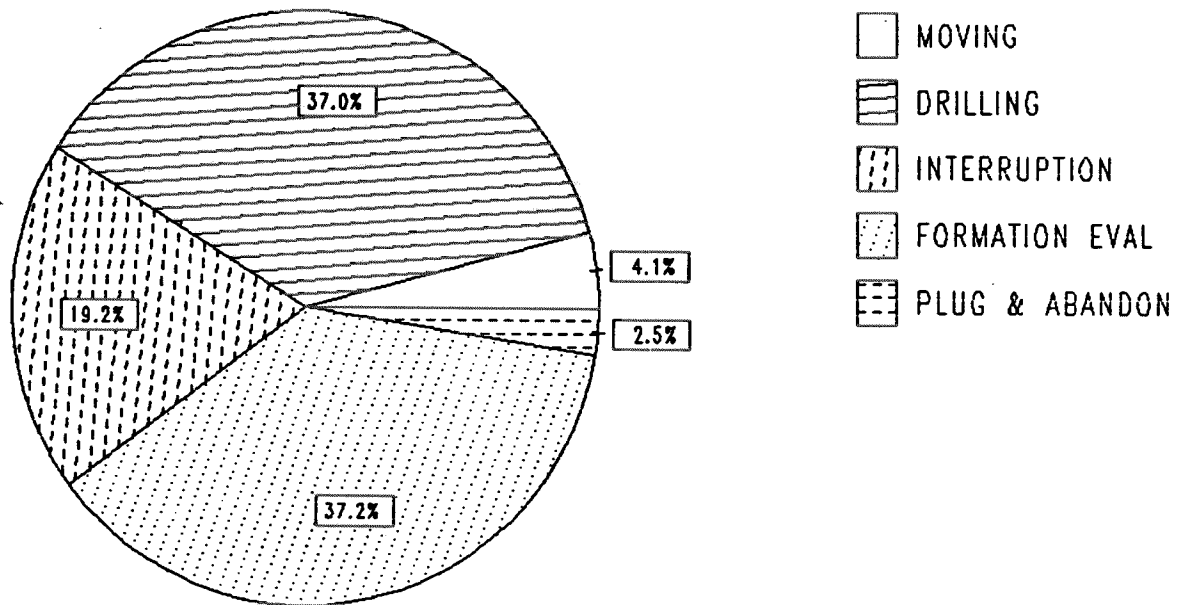
## AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500
* DIFL LS BHC AC CAL GR	850 - 1919	X <==>	X
* DIFL LS BHC AC CAL	1902 - 2615	X <==>	X
* DIFL LS BHC AC CAL	2659 - 3244	X <==>	X
* CDL	850 - 1899	X <==>	X
* CDL CNL	1902 - 2614	X <==>	X
* CDL CNL	2659 - 3242	X <==>	X
* DLL MLL	2320 2610	X <==>	X
CDM	1902 - 2610	X	
CDM	2659 - 3244	X	
CDM AP	1902 - 2610	X	X
CDM AP	2659 - 3244	X	X
* FMT	2089 - 2566	X <==>	X
* FMT	2089 - 2566	X <==>	X
* FMT	2642 - 3226	X <==>	X
WIRELIN DATA PRESSURE	421 - 3250		1:5000
DRILLING DATA PRESSURE	421 - 3250		1:5000
PRESSURE EVALUATION	421 - 3250		1:5000
TEMPERATURE DATA	421 - 3250		1:5000
* CBL VDL AC	730 - 1902	X <==>	X
* CBL VDL AC	1700 - 2599	X <==>	X
MUD	421 - 3250		X
VELOCITY	850 - 3215		1:1000 X
(+ Synthetic Seismogram, Geogram, 10 cm/s,			12 stk)
(+ V.S.P., Zero-offset VSP, Plot 1-8b, 10 cm/s,			12 stk)

\* - BOTH SCALES ON SAME LOG

# DAILY DRILLING REPORT SYSTEM

Main operation : 6507/11-03



Total : 1824 HRS

Main operation	Minutes	Hours	% of total
MOVING	4500	75.00	4.11
DRILLING	40500	675.00	37.01
INTERRUPTION	21000	350.00	19.19
FORMATION EVAL	40740	679.00	37.23
PLUG & ABANDON	2700	45.00	2.47

MAIN OPERATIONS WELL : 6507/11-03

MAIN OPERATION: DRILLING

Sub operations	Min	Hrs	% of total
BOP/WELLHEAD EQ	2010	33.50	4.96
TRIP	9840	164.00	24.30
DRILL	15300	255.00	37.78
SURVEY	600	10.00	1.48
CIRC/COND	3810	63.50	9.41
CASING	3300	55.00	8.15
PRESS DETECTION	180	3.00	0.44
UNDERREAM	1410	23.50	3.48
OTHER	2880	48.00	7.11
BOP ACTIVITIES	1020	17.00	2.52
WAIT	150	2.50	0.37
<b>TOTAL</b>	<b>40500</b>	<b>675.00</b>	

MAIN OPERATION: MOVING

Sub operations	Min	Hrs	% of total
TRANSIT	3060	51.00	68.00
ANCHOR	1440	24.00	32.00
<b>TOTAL</b>	<b>4500</b>	<b>75.00</b>	

MAIN OPERATION: FORMATION EVAL

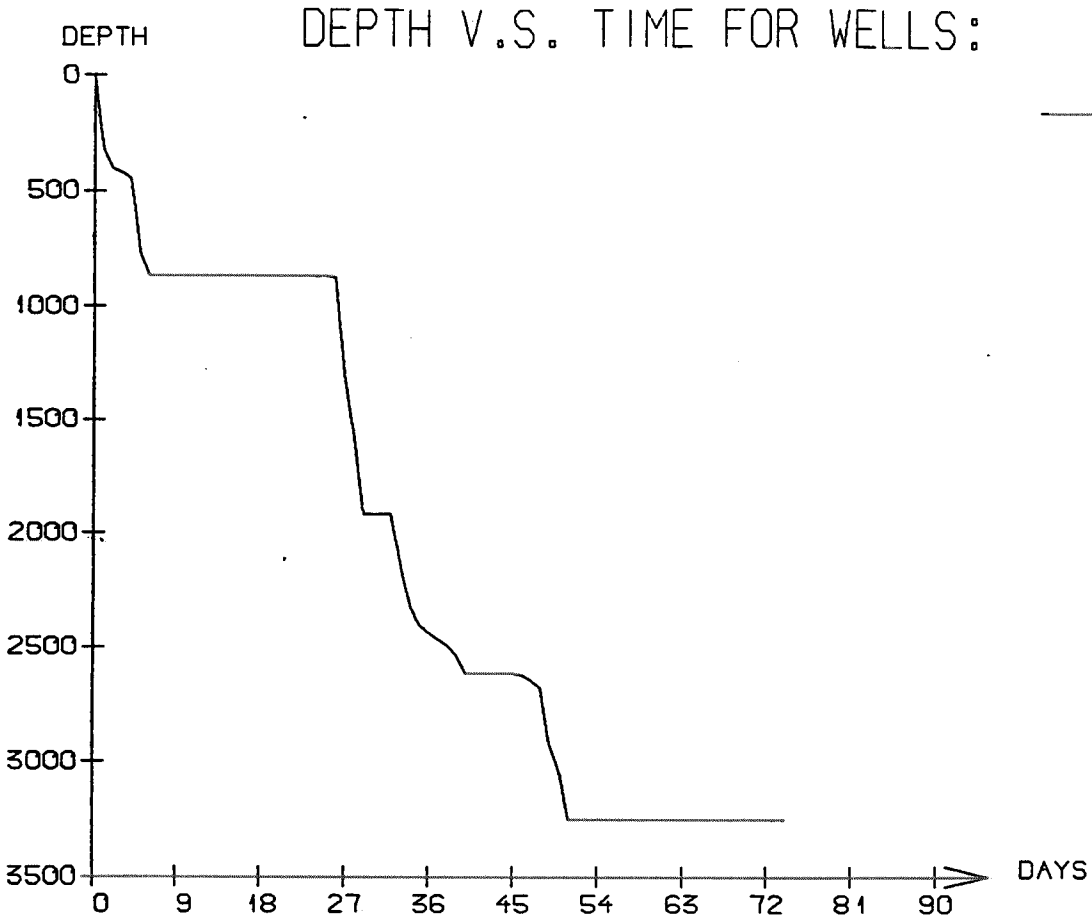
Sub operations	Min	Hrs	% of total
LOG	6090	101.50	14.95
TRIP	11550	192.50	28.35
CIRC/COND	1650	27.50	4.05
CORE	3390	56.50	8.32
OTHER	1830	30.50	4.49
PROD TEST	7110	118.50	17.45
DST	9120	152.00	22.39
<b>TOTAL</b>	<b>40740</b>	<b>679.00</b>	

MAIN OPERATION: INTERRUPTION

Sub operations	Min	Hrs	% of total
MAINTAIN/REP	270	4.50	1.29
WAIT	20730	345.50	98.71
<b>TOTAL</b>	<b>21000</b>	<b>350.00</b>	

MAIN OPERATION: PLUG & ABANDON

Sub operations	Min	Hrs	% of total
MECHANICAL PLUG	150	2.50	5.56
CIRC/COND	150	2.50	5.56
SQUEEZE	60	1.00	2.22
TRIP	570	9.50	21.11
OTHER	210	3.50	7.78
PERFORATE	300	5.00	11.11
CUT	420	7.00	15.56
EQUIP RECOVERY	750	12.50	27.78
CEMENT PLUG	90	1.50	3.33
<b>TOTAL</b>	<b>2700</b>	<b>45.00</b>	



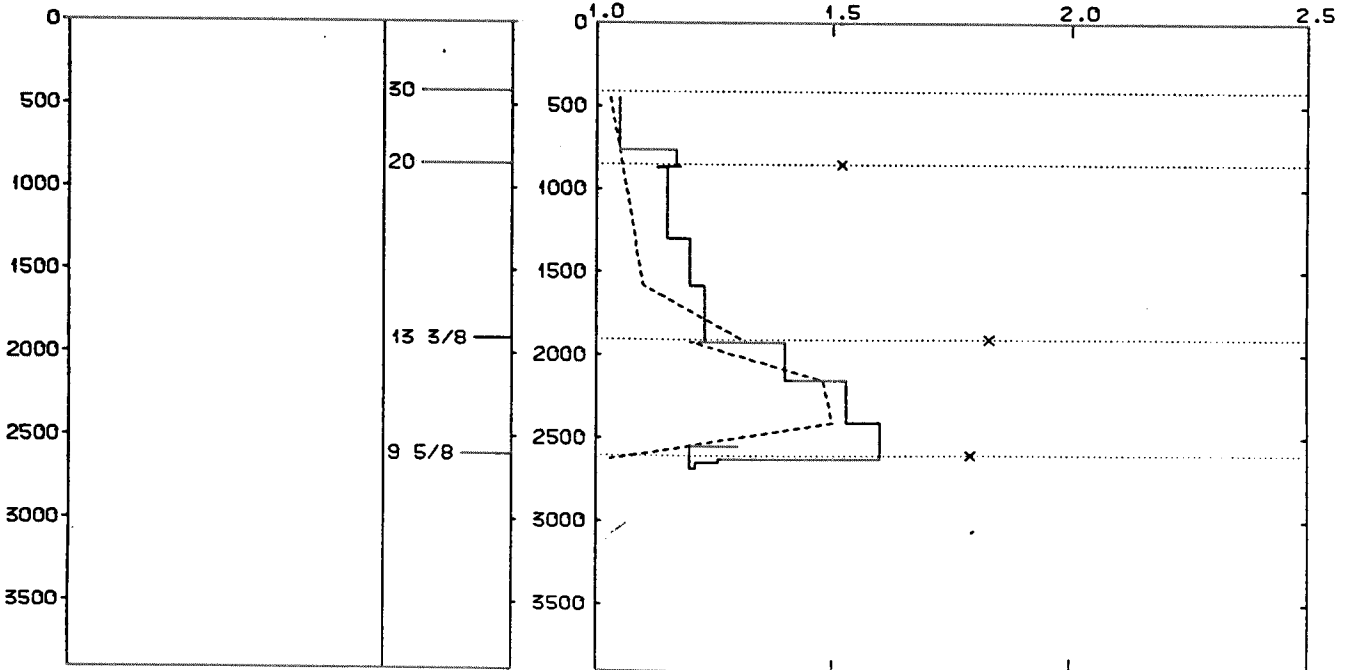
WELL: 650711 03      PRESSURE COMPOSITE PLOT

DEPTH  
(RKB)  
(METERS)

CASING

PRESSURE GRADIENTS  
(g/ccm)

— MUDWEIGHT (REPORT)  
 - - - PORE PRESSURE (REPORT)  
 x LEAK-OFF (REPORT)



## Well History 6507/11-3.

### General:

Wildcat well 6507/11-3 fulfilled the minimum work programme in this block. The well was designed to test the Beta Fault compartment of the Midgard Field. Primary objective was the reservoir rocks in the Tomma Formation, of Middle Jurassic age, and to reach Triassic rocks or drill to 500 m below the coal reflector. The proposed depth was 3250 m.

### Operations:

Well 6507/11-3 was spudded 3 June 1985 by Wilh. Wilhelmsen's semi-submersibel rig Treasure Saga, and completed 12 August 1985. Plugged and abandoned 15 August as a gas/condensate discovery at a T.D. of 3246 m in Triassic grey beds, who was found at a depth of 3195 m. The well proved mainly claystone down to the Tomma Formation.

Shallow gas was encountered at 4 levels, 540,- 556,- 576,- and 660 m respectively. While drilling the reservoir, mudweight had to be raised gradually to 1.6 g/cm<sup>3</sup> due to high trip gas. The Middle Jurassic sediments were encountered at 2412 m, 6 m above prognosed depth. Upper Jurassic consists of hot shale (Nesna Fm) and silty claystone (Engelvær Fm).

6 cores were cut in the Tomma formation. Gas/oil contact at 2514 and oil/water contact at 2525.5 m. For reservoir studies, another 3 cores were cut in oil/water contact of the Aldra formation with no shows.

Approximately 2 weeks were lost due to a work conflict.

### Testing:

3 DST tests were performed: 1 2519,0-2521,0 m Oilzone  
2 2495,0-2508,0 m Gaszone  
3 2412,5-2419,5 m Gaszone



# GEOLOGICAL TOPS

WELL: 6507/11-03

	Depth m (RKB)
Nordland Group	1395,0
Kai Fm	1395,0
Rogaland Group	1963,0
Shetland Group	2087,0
Cromer Knoll Group	2290,0
Lange Fm	2290,0
Viking Group	2358,0
Spekk Fm	2358,0
Melke Fm	2372,0
Fangst Group	2412,0
Garn Fm	2412,0
Ile Fm	2471,0
Båt Group	2630,0
Tilje Fm	2630,0
Åre Fm	2893,0
TD=	3246,0