

## WDSS Report

Date: 13/09/96

PB/SKR

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<b>Well no:</b>	<b>Operator:</b>
<b>2/11-08</b>	<b>HYDRO</b>

### Well

Coordinates :	56° 08' 08.60" N 03° 20' 46.64" E	UTM coord. :	6221376.9 N 521522.54 E
License no :	68	Permit no :	673
Rig :	POLAR PIONEER	Rig type :	SEMI-SUB.
Contractor :	FRONTIER DRILLING A/S		
Bottom hole temp:	145 °C	Elev. KB :	23 M
Spud. date :	91.04.03	Water depth :	66 M
Compl. date :	91.07.11	Total depth :	4584 M
Spud. class :	WILDCAT	Form. at TD :	PRE-JURA.
Compl. class :	P&A. DRY HOLE	Prod.form. :	
Seisloca :	NH 8201 - 244 SP 1307		

### Licensees

25.000000 NORSK HYDRO PRODUKSJON AS  
 7.500000 MOBIL DEVELOPMENT NORWAY AS  
 10.000000 SAGA PETROLEUM A.S.  
 50.000000 DEN NORSKE STATS OLJESELSKAP A.S  
 7.500000 NORSKE CONOCO 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	174.0	36	174.0	
INTERM.	18 5/8	1000.0	24	1015.0	2.06
INTERM.	13 3/8	2500.0	17 1/2	2515.0	1.98
INTERM.	9 5/8	4147.0	12 1/4	4164.0	2.17
OPEN HOLE			8 1/8	4584.0	

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### Conventional Cores

Core no.	Intervals cored meters	Recovery m	%
1	4774 - 4583.9	9.9	100.0

### Mud

Depth	Mud weight	Visc.	Mud type
140.0	1.05		WATER BASED
216.0	1.20		WATER BASED
750.0	1.60	19.0	WATER BASED
1015.0	1.08		WATER BASED
2515.0	1.60	24.0	WATER BASED
3080.0	1.52	24.0	WATER BASED
3140.0	1.51	24.0	WATER BASED
3687.0	1.45	19.0	WATER BASED
3717.0	1.50	19.0	WATER BASED
3766.0	1.60	20.0	WATER BASED
3767.0	1.62	20.0	WATER BASED
3819.0	1.61	20.0	WATER BASED
3850.0	1.60	20.0	WATER BASED
3852.0	1.61	18.0	WATER BASED
4037.0	1.60	16.0	WATER BASED
4060.0	1.90	23.0	WATER BASED
4085.0	1.70	15.0	WATER BASED
4137.0	1.60	15.0	WATER BASED
4251.0	1.70	15.0	WATER BASED
4276.0	1.71	18.0	WATER BASED
4353.0	1.70	17.0	WATER BASED
4354.0	1.75	18.0	WATER BASED
4584.0	1.80	17.0	WATER BASED
4584.0	1.90	17.0	WATER BASED
4584.0	1.80	17.0	WATER BASED
4584.0	1.90	18.0	WATER BASED

### Drill Stem Test (intervals and pressures)

Test no.	Test interval meter	Choke size	Pressure (psi) WHP	BTHP	FFP
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### Drill Stem Test (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>

### Drill Bit Cuttings and Wet Samples

Sample type	Interval below KB	Number of samples
WET SAMPLES	1020 - 4582	750
CUTTINGS	1010 - 4585	540

### Shallow Gas

Interval below KB	Remarks

### Available Logs

Log type	Intervals logged	1/200	1/500	
AMS	1000.0 - 4582.0			
CDM AP/SHDT MSD	4150.0 - 4584.0			
LDL CNL GR	1000.0 - 4582.0			
DIL LSL SP GR	1000.0 - 4582.0			
DIL LSS AMS SP GR	4150.0 - 4582.0			
FMS AMS GR	4150.0 - 4583.0			
LDL CNL AMS GR	4150.0 - 4581.0			
LDL CNL GR	1000.0 - 4582.0			
LDL GR	1000.0 - 2499.0			
LSS GR	2497.0 - 4151.0			

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MUD	89.0 - 4584.0			
MWD	89.0 - 4353.0			
RFTB AMS GR	4320.0 - 4568.0			
SYNTHETIC SEISMOGRAM				
TWO-WAY TRAVEL TIME	100.0 - 4500.0			
VDL 8"	1972.0 - 2483.0			
VSP				

**Main operations for well: 2/11-8****Main operation: DRILLING**

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	3510	58,5	3,70
BOP/WELLHEAD EQ	4200	70,0	4,43
CASING	11520	192,0	12,15
CIRC/COND	3270	54,5	3,45
DRILL	47400	790,0	49,98
HOLE OPEN	1290	21,5	1,36
OTHER	120	2,0	0,13
REAM	2820	47,0	2,97
SURVEY	300	5,0	0,32
TRIP	20400	340,0	21,51
<b>Total</b>	<b>94830</b>	<b>1580,5</b>	<b>100,00</b>

**Main operation: FORMATION EVAL**

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	270	4,5	2,44
CIRC/COND	930	15,5	8,40
CORE	570	9,5	5,15
LOG	7560	126,0	68,29
TRIP	1740	29,0	15,72
<b>Total</b>	<b>11070</b>	<b>184,5</b>	<b>100,00</b>

**Main operation: INTERRUPTION**

Sub operation:	Minutes:	Hours:	% of total:
FISH	9540	159,0	38,50
MAINTAIN/REP	9780	163,0	39,47
OTHER	1800	30,0	7,26
WAIT	3660	61,0	14,77
<b>Total</b>	<b>24780</b>	<b>413,0</b>	<b>100,00</b>

**Main operation: MOVING**

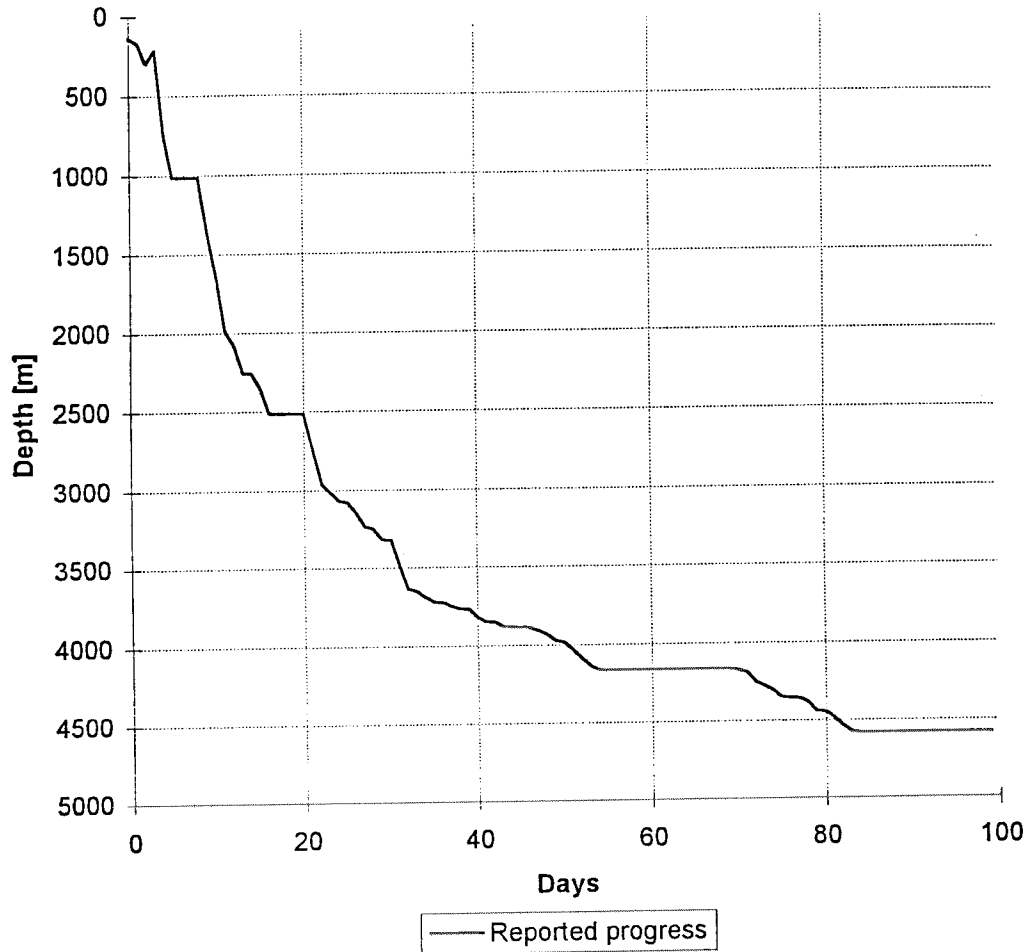
Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	840	14,0	6,67
TRANSIT	11760	196,0	93,33
<b>Total</b>	<b>12600</b>	<b>210,0</b>	<b>100,00</b>

**Main operation: PLUG & ABANDON**

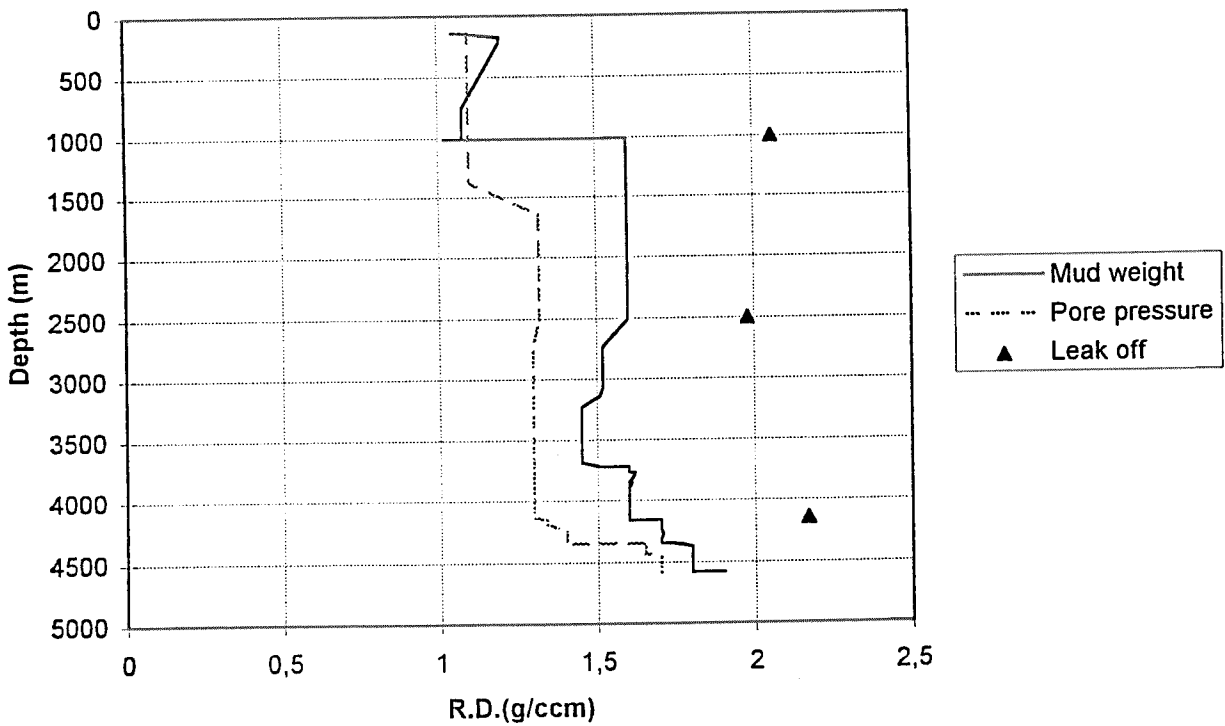
Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	720	12,0	6,72
CIRC/COND	1080	18,0	10,08
CUT	240	4,0	2,24
EQUIP RECOVERY	2370	39,5	22,13
MECHANICAL PLUG	690	11,5	6,44
OTHER	540	9,0	5,04
PERFORATE	240	4,0	2,24
TRIP	4830	80,5	45,10
<b>Total</b>	<b>10710</b>	<b>178,5</b>	<b>100,00</b>

Total time used:  Hours

Depth vs time for well: 2/11-8



Composite plot for well: 2/11-8



# Well History 2/11-8.

## General:

Well 2/11-8 was designed to drill on the western part of the 2/11 block. The location is in the south western corner of the block, approximately 2.3 km north of the Norwegian-Danish sector line, east of block 2/10. The well is located in the western part of the Ål Basin, separated from the Grensen Nose to the west by a series of faults. Seismic amplitude anomalies were present at 347, 435 and 597 m RKB. Shallow gas could not be excluded at these levels, an 8 1/2" pilothole was planned to be drilled.

The main objectives for well 2/11-8 were to:

- 1) prove hydrocarbons in rocks of Late Jurassic age.
- 2) prove hydrocarbons in Pre-Late Jurassic rocks. (Permian Formations ?)
- 3) define the reservoir level and reservoir quality adjacent to the Grensen Nose.
- 4) collect geological information important for further reservoir evaluation and geological modelling in the area.

The primary target was sandstone of Late Jurassic age. Pre-Late Jurassic, probably Permian, sandstones were considered the secondary target. The total depth of the well was planned to be at 4616 m RKB, in igneous rocks of Permian age.

## Operations:

Wildcat well 2/11-8 was spudded by the semi-submersible rig Polar Pioneer 3 April 1991 and completed 11 July 1991 at a depth of 4584 m RKB in clastic rocks of possible Devonian age. Drilling proceeded without any significant problems to TD. The only Late Jurassic sediments encountered in the well were 3 m of Carbonaceous claystone, representing the Mandal Formation of the Tyne Group. One conventional core was cut at TD for stratigraphic purposes. A total of 120 sidewall cores were attempted, and 42 were recovered. Shallow gas was encountered in two sandlayers, 580 m and 583 m RKB. The gas level interval was drilled as an 8 1/2" pilot hole. The well was permanently plugged and abandoned as a dry hole with poor hydrocarbon shows.

## Testing:

No DST tests were performed in this well.

# Geological Tops.

## Well:.2/11-8

	Depth m (RKB).
Nordland Group	88.5
Hordaland Group	1510.0
Rogaland Group	2949.0
Balder Fm	2949.0
Sele Fm	2968.0
Lista Fm	3014.0
Våle Fm	3055.0
Shetland Group	3075.0
Ekofisk Fm	3075.0
Tor Fm	3142.0
Hod Fm	3390.0
BlodoksFm	3852.0
Hidra Fm	3869.0
Cromer Knoll Group	3950.0
Rodby Fm	3950.0
Sola Fm	3982.0
Tuxen Fm	4070.0
Åsgard Fm	4168.0
Tyne Group	4265.0
Mandal Fm	4265.0
Undefined Fm	4268.0
T.D.	4584.0