

Well no :	2/4-15 S	Operator :	SAGA
Coordinates :	56° 40' 27.25" N 03° 08' 38.79" E	UTM coord.	628127369 N 50883106 E
Licence no :	146	Permit no :	602
Rig :	TREASURE SAGA	Rig type :	SEMI-SUB.
Contractor :	WILRIG A/S		
Bottom hole temp:	158 °C	Elev. KB :	26 M
Spud. date :	89.01.31	Water depth	68 M
Compl. date :	90.03.16	Total depth :	4962 M
Spud. class :	WILDCAT	Form. at TD	
Compl. class :	SUSPENDED	Prod.form. :	
Seisloca :	BB - 87 - 043 SP. 1987		

LICENSEES

30,000000	BP PETROLEUM DEV. OF NORWAY AS
10,000000	NORSK HYDRO PRODUKSJON A.S
50,000000	DEN NORSKE STATS OLJESELSKAP A.S
10,000000	NORSK AGIP 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	216,0	36	216,0	
INTERM.	20	900,0	26	920,0	1,75
INTERM.	16	2100,0	22	2096,0	1,85
INTERM.	13 3/8	2653,0	17 1/2	2662,0	2,03
INTERM.	9 5/8	4505,0	12 1/4	4543,0	2,11
LINER	7	4929,0	8 1/2	4930,0	
OPEN HOLE			5 7/8	4962,0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery	
		M	%
1	3867,0	- 3876,5	2,5 26,3

MUD

Depth	Mud weight	Visc.	Mud type
122,000	1,05	,0	WATER BASED
301,000	1,11	8,0	WATER BASED
825,000	1,57	35,0	WATER BASED
840,000	1,67	29,0	WATER BASED
915,000	1,17	5,0	WATER BASED
920,000	1,18	5,0	WATER BASED
960,000	1,22	14,0	WATER BASED
1112,000	1,57	28,0	WATER BASED

Depth	Mud weight	Visc.	Mud type
1250,000	1,25	19,0	WATER BASED
1322,000	1,57	35,0	WATER BASED
1398,000	1,29	17,0	WATER BASED
1613,000	1,62	30,0	WATER BASED
1687,000	1,45	22,0	WATER BASED
1720,000	1,67	29,0	WATER BASED
1755,000	1,72	27,0	WATER BASED
1818,000	1,59	21,0	WATER BASED
1853,000	1,65	30,0	WATER BASED
1900,000	1,67	30,0	WATER BASED
1907,000	1,72	35,0	WATER BASED
1920,000	1,61	28,0	WATER BASED
2010,000	1,72	34,0	WATER BASED
2093,000	1,50	23,0	WATER BASED
2100,000	1,72	36,0	WATER BASED
2210,000	1,63	26,0	WATER BASED
2298,000	1,72	29,0	WATER BASED
2331,000	1,67	30,0	WATER BASED
2363,000	1,63	31,0	WATER BASED
2644,000	1,67	32,0	WATER BASED
3811,000	1,72	27,0	WATER BASED
4474,000	1,74	18,0	WATER BASED
4505,000	1,78	20,0	WATER BASED
4548,000	1,76	18,0	WATER BASED
4863,000	1,78	16,0	WATER BASED
4886,000	1,80	16,0	WATER BASED
4896,000	1,80	16,0	WATER BASED
4905,000	1,90	17,0	WATER BASED
4930,000	2,20	58,0	WATER BASED
4932,000	1,95	22,0	WATER BASED
4962,000	2,25	15,0	WATER BASED
4963,000	2,20	65,0	WATER BASED

DRILL BIT CUTTINGS AND WET SAMPLES

Sample type	Interval below KB	Number of samples
CUTTINGS	230 - 4750	210

SHALLOW GAS

Interval below KB	Remarks
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AVAILABLE LOGS

Log type	Intervals	1/200	1/500	Div.
AC CBL VDL	122,0 - 2653,6	X	X	*
AC CBL VDL	3100,0 - 4508,0	X		
AC CBL VDL	4303,0 - 4890,0	X		
AC CBL VDL	4303,0 - 4890,0	X		

Log type	Intervals		1/200	1/500	Div.
CDL CNL GR	4460,0	- 4891,8	X	X	*
DIFFERENTIAL TEMP.	2500,0	- 3651,0	X	X	*
DIFFERENTIAL TEMP	3485,0	- 4880,0		X	
DIFFERENTIAL .TEMP	3995,0	- 4878,0		X	
DIFFERENTIAL. TEMP	4200,0	- 4880,0		X	
DIFFERENTIAL TEMP.	3480,0	- 4870,0		X	
DIFFERENTIAL TEMP.	650,0	- 4700,0		X	
DIFFERENTIAL TEMP.	650,0	- 4865,0		X	
MWD	220,0	- 4930,0	X	X	

* BOTH 1:200 AND 1:500
ON THE SAME LOG.

Main operations for well: 2/4-15 S

Main operation: DRILLING

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	8040	134,0	3,71
BOP/WELLHEAD EQ	7920	132,0	3,66
CASING	27030	450,5	12,48
CIRC/COND	13470	224,5	6,22
DRILL	74130	1235,5	34,21
OTHER	90	1,5	0,04
PRESS DETECTION	810	13,5	0,37
REAM	10470	174,5	4,83
SURVEY	5550	92,5	2,56
TRIP	61560	1026,0	28,41
UNDERREAM	6870	114,5	3,17
WAIT	720	12,0	0,33
Total	216660	3611,0	100,00

Main operation: FORMATION EVAL

Sub operation:	Minutes:	Hours:	% of total:
CIRC/COND	1440	24,0	14,63
CORE	240	4,0	2,44
LOG	6570	109,5	66,77
TRIP	1590	26,5	16,16
Total	9840	164,0	100,00

Main operation: INTERRUPTION

Sub operation:	Minutes:	Hours:	% of total:
FISH	19860	331,0	5,84
LOST CIRC	1140	19,0	0,34
MAINTAIN/REP	14670	244,5	4,31
OTHER	19830	330,5	5,83
SIDETRACK	2160	36,0	0,63
WAIT	5100	85,0	1,50
WELL CONTROL	277470	4624,5	81,55
Total	340230	5670,5	100,00

Main operation: MOVING

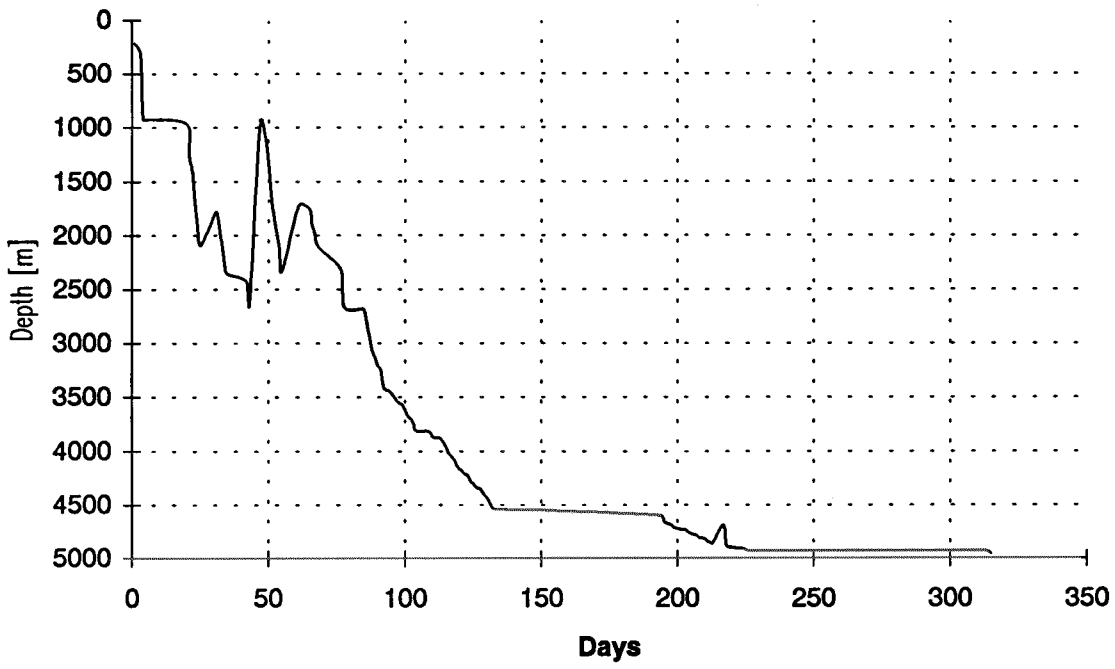
Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	4560	76,0	57,36
POSITION	90	1,5	1,13
TRANSIT	3300	55,0	41,51
Total	7950	132,5	100,00

Main operation: PLUG & ABANDON

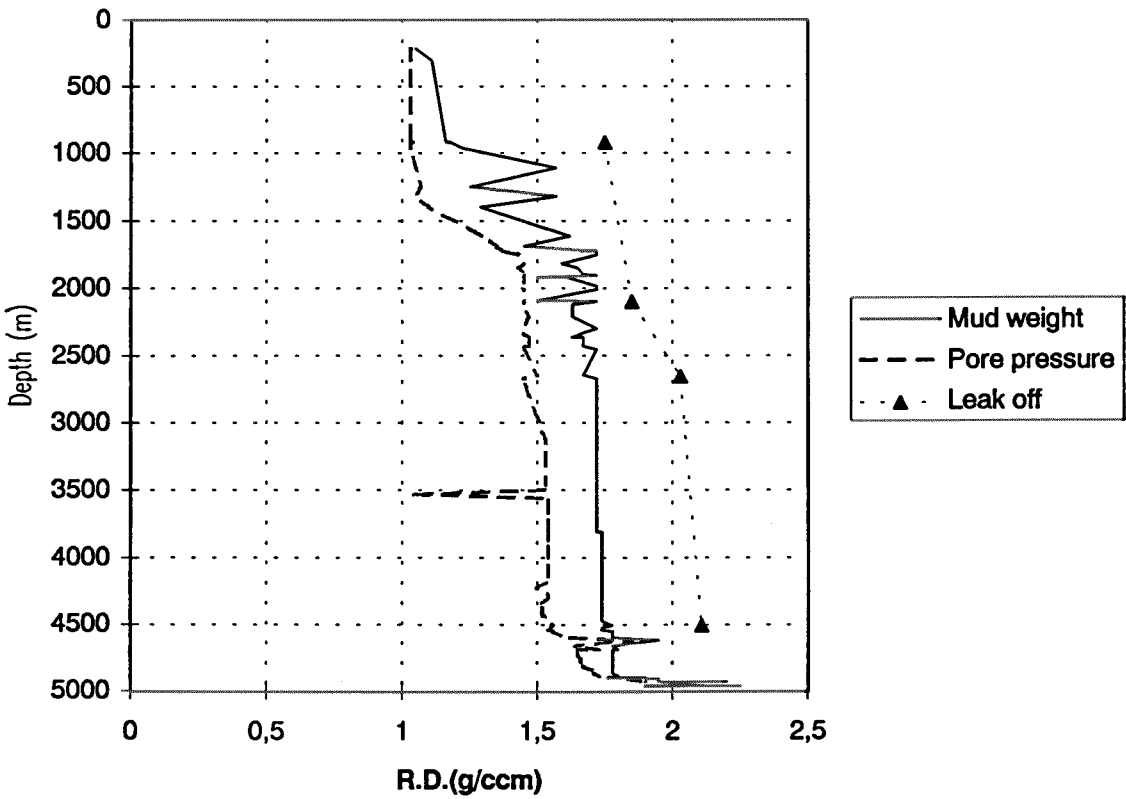
Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	210	3,5	3,76
CIRC/COND	480	8,0	8,60
EQUIP RECOVERY	1230	20,5	22,04
MECHANICAL PLUG	240	4,0	4,30
OTHER	1290	21,5	23,12
TRIP	1140	19,0	20,43
WAIT	990	16,5	17,74
Total	5580	93,0	100,00

Total time used: Hours

Depth vs time for well: 2/4-15 S



Composite plot for well: 2/4-15 S



Well History 2/4-15 S.

General:

Well 2/4-15 S was designed to drill on the A prospect in the northern part of block 2/4. The well is located in the middle of the northwest to southeast trending structure which is a structural/stratigraphic closure on a rotated fault block developed during Late Jurassic time. The purpose of the well was to serve as a relief well for well 2/4-14, and the location was selected on basis of the following:

- avoid faults and/or other geological uncertainties along the wellbore path,
 - intersection between two seismic lines,
 - downdip position with respect to shallower strata,
 - safety distances from well 2/4-14 and the Statpipe and Ula pipelines,
 - rig heading up against the prevailing winds with respect to well 2/4-14,
- Prior to spudding, several alternative uses were considered as:
- check and verify the extent of underground blowouts,
 - to cure and verify possible crossflows,
 - serve as an exploration well if the top intervention job in well 2/4-14R went successful,
 - serve as an emergency relief well to dynamically kill a possible uncontrolled blowout in well 2/4-14.

Shallow gas was predicted at 611 m RKB where a seismic anomaly corresponds to a gas bearing sandlayer in well 2/4-14

Operations:

Wildcat Relief well 2/4-15 S was spudded 31 January 1989 by the semi-submersible rig Treasure Saga and completed 16 March 1990 at a depth of 4264 m RKB in rocks of Jurassic age. Shallow gas was encountered at three different levels. No sidewall cores were attempted, and only one conventional core was cut in the Tor Formation from 3867 m RKB to 3876.5 m RKB with 26 % recovery. No FMT measurements were performed and no open hole wireline logs were run in well 2/4-15 S. Drilling proceeded with significant problems due to a rich smectite content between 1800 and 2300 m MD. The drillstring got stuck twice, backed off, and after unsuccessful fishing, technical sidetracks were performed. Sonar log was run in order to detect noise from the flow in well 2/4 14, and showed a noise maximum at 4100 m RKB. This indicated a hole in the drillpipe at this point, which later was confirmed after having killed well 2/4-14. The killing was performed by pumping kill-mud and barytt into well 2/4-14. The well was temporarily plugged and abandoned as a dry hole.

Testing:

No DST tests were performed in this well.

Geological Tops.

Well:2/4-15 S.

	Depth m (RKB).
Nordland Group	94.0
Hordaland Group	1854.0
Rogaland Group	3368.0
Balder Fm	
Sele Fm	3387.0
Lista Fm	3405.0
Vidar Fm	3456.0
Lista Fm	3497.0
Våle Fm	3547.0
Shetland Group	3558.0
Ekofisk Fm	3558.0
Tor Fm	3692.0
Hod Fm	4266.0
Blodøks Fm	4798.0
Hidra Fm	4817.0
Cromer Knoll Group	4890.0
Rødby Fm	4890.0
Åsgard Fm	4910.0
Tyne Group	4958.0
Mandal Fm	4958.0
T.D.m RKB MD.	4962.0