

Well no :	34/10-33 B	Operator :	STATOIL
Coordinates :	61° 07' 34.44" N 02° 12' 57.10" E	UTM coord. :	677726200 N 45775618 E
Licence no :	50	Permit no :	608
Rig :	DEEPSEA BERGEN	Rig type :	SEMI-SUB.
Contractor :	ODFJELL DRILLING A/S	Elev. KB :	23 M
Bottom hole temp:	102 °C	Water depth :	134 M
Spud. date :	89.04.27	Total depth :	3942 M
Compl. date :	89.07.11	Form. at TD	JURASSIC
Spud. class :	APPRAISAL	Prod.form. :	
Compl. class :	P&A. OIL		
Seisloca :	ST 8134-156 CP.296 OG 297 (BHPOS.CP.270)		

LICENSEES

6,000000	SAGA PETROLEUM A.S.
85,000000	DEN NORSKE STATS OLJESELSKAP A.S
9,000000	NORSK HYDRO PRODUKSJON 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	219,0	36	220,0	
INTERM.	20	459,0	26	461,0	1,43
INTERM.	13 3/8	1822,0	17 1/2	1838,0	1,53
INTERM.	9 5/8	3484,0	12 1/4	3493,0	1,70
			8 1/2	3942,0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery	
		M	%
1	3742,0	- 3751,0	9,1 101,1
2	3785,0	- 3790,6	5,6 100,0
3	3850,5	- 3860,0	9,8 103,2

MUD

Depth	Mud weight	Visc.	Mud type
1840,000	1,44	21,0	WATER BASED
1864,000	1,45	18,0	OIL BASED
3458,000	1,58	27,0	OIL BASED
3484,000	1,50	25,0	OIL BASED
3493,000	1,58	28,0	OIL BASED
3493,000	1,42	20,0	OIL BASED
3493,000	1,59	31,0	OIL BASED
3625,000	1,42	25,0	OIL BASED
3628,000	1,53	24,0	OIL BASED

Depth	Mud weight	Visc.	Mud type
3730,000	1,55	24,0	OIL BASED
3860,000	1,57	20,0	OIL BASED
3942,000	1,60	28,0	OIL BASED

DRILL BIT CUTTINGS AND WET SAMPLES

Sample type	Interval below KB	Number of samples
WET SAMPLES	1850 - 3942	330

SHALLOW GAS

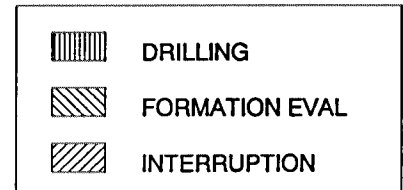
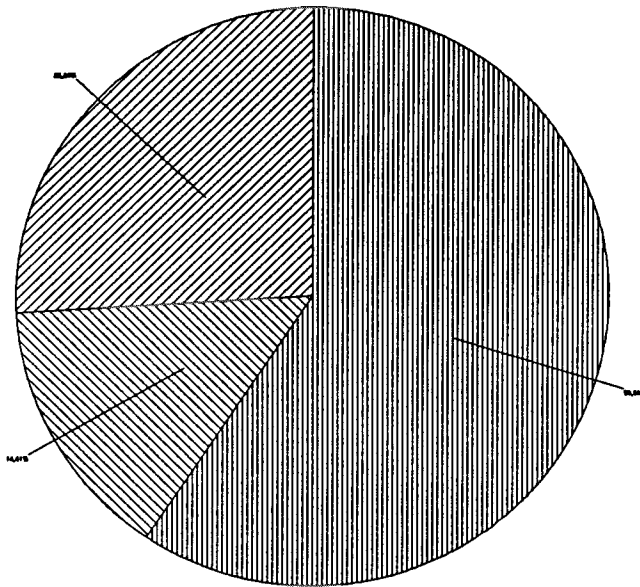
Interval below KB	Remarks
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AVAILABLE LOGS

Log type	Intervals	1/200	1/500	Div.
4-ARM CALIPER LOG GR	1822,0 - 3419,0	X	X	
AC CBL VDL GR	1800,0 - 3475,0	X		
CDL CNL GR	3190,0 - 3475,0			
FMT	3545,0 - 3895,0	X	X	
MWD	1840,0 - 3942,000		X	
MWD EWR	3475,0 - 3940,0		X	
GR CCL	1690,0 - 3440,0	X	X	
PRESS EVAL LOG	1840,0 - 3942,0			1:1000

Daily Drilling Report System (DDRS)

Operations for well: 34/10-33 B



Main operations	Minutes	Hours	% of total
DRILLING	56550	942,50	59,50
FORMATION EVAL	13890	231,50	14,61
INTERRUPTION	24600	410,00	25,88
Total	95040	1584,00	100,00

Operations for well: 34/10-33 B**Main operation: DRILLING**

Sub operations	Minutes	Hours	% of total
BOP ACTIVITIES	2220	37,00	3,93
BOP/WELLHEAD EQ	600	10,00	1,06
CASING	6180	103,00	10,93
CIRC/COND	3720	62,00	6,58
DRILL	17010	283,50	30,08
REAM	7290	121,50	12,89
SURVEY	930	15,50	1,64
TRIP	18600	310,00	32,89
Total	56550	942,50	100,00

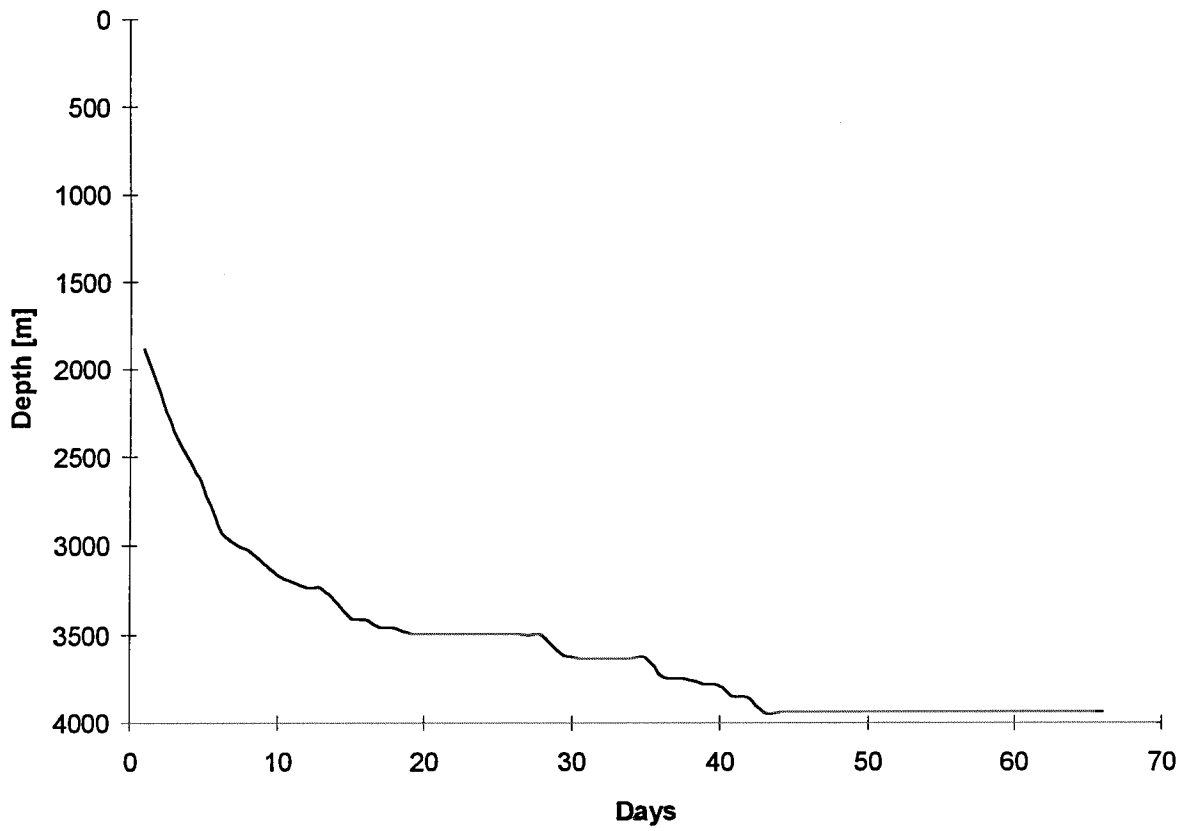
Main operation: FORMATION EVAL

Sub operations	Minutes	Hours	% of total
CIRC/COND	390	6,50	2,81
CORE	600	10,00	4,32
LOG	3000	50,00	21,60
RFT/FIT	5190	86,50	37,37
TRIP	4710	78,50	33,91
Total	13890	231,50	100,00

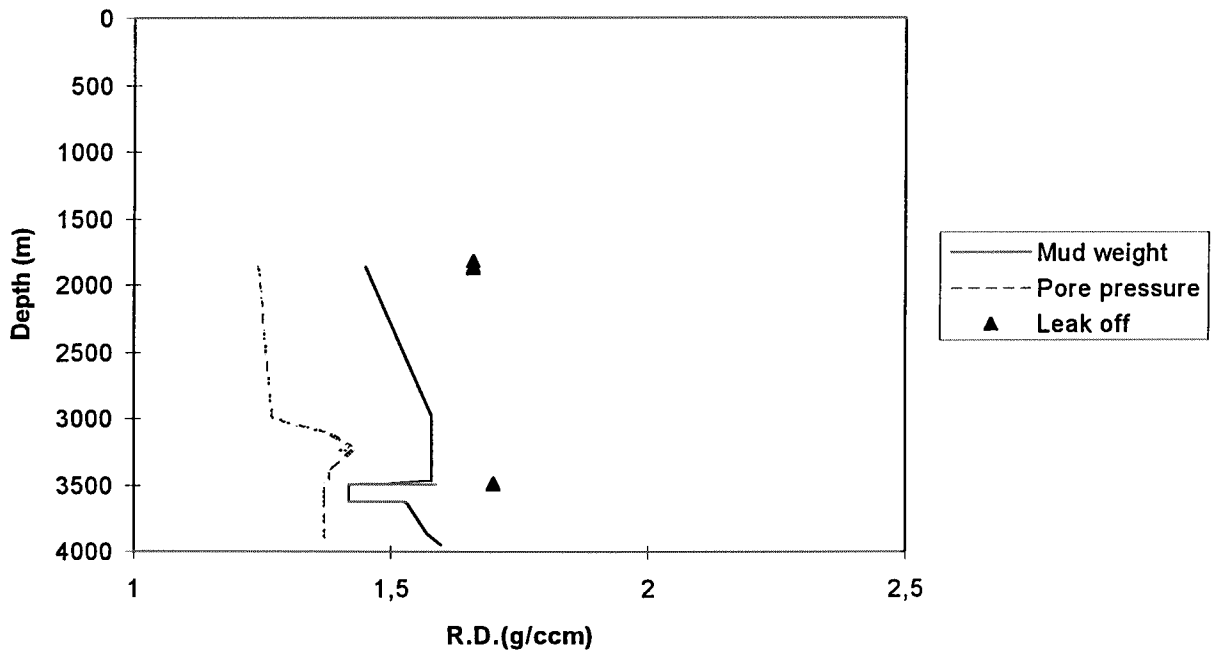
Main operation: INTERRUPTION

Sub operations	Minutes	Hours	% of total
FISH	12570	209,50	51,10
LOST CIRC	270	4,50	1,10
MAINTAIN/REP	10980	183,00	44,63
SIDETRACK	660	11,00	2,68
WAIT	120	2,00	0,49
Total	24600	410,00	100,00

Depth vs time for well: 34/10-33 B



Composite plot for well:34/10-33 B



Well History 34/10-33 B.

General:

Well 34/10-33 B was designed to drill a horizontal sidetrack from the appraisal well 34/10-33 A on part of the area downstepping from the Shetland Platform towards the Viking Graben, and was the eighth well drilled to the reservoir level in the Gullfaks South structure. The main purpose of the well was to perform a long period test from a horizontal well through the upper part of the Brent Group. Except from getting important production data, the results from the well should be used to calibrate the simulation model for the reservoir and also update the geological model for this part of the Brent Group. The well was planned to give useful data for a possible field development of the Gullfaks South.

34/10-33 B would be the first horizontal well ever drilled on the Norwegian continental shelf, and might therefore add useful experience for this type of drilling operations.

Operations:

Appraisal well 34/10-33 B was spudded 27 April 1989 by Odfjell Drilling semi-submersibel rig Deepsea Bergen, and completed 11 July 1989 at a depth of 4050 m MD in Jurassic rocks. The hole was sidetracked from the vertical at 1840 m, just below the 13 3/8" casing shoe. Oilbased mud was used to stabilise the hole. The hole was approximately horizontal in the interval 3670 - 3942 m. During setting of the 7" liner, for testing of the discovered hydrocarbon zone, this pipe got stuck and broke between the extension pipe and drillstring. Fishing was unsuccessful, and NPD gave permission to plug the 8 1/2" section. Partly plugging was performed, and Statoil informed NPD and the partners about the alternatives for future operations. Due to evaluation of FMT data, it was decided to go for a new sidetrack, 34/10-33 C. The formation tops came in close to the prognosis. The fault was not prognosed, neither was the shale barrier at 3675 m. On top of the barrier there was water, while the rest of the hole contained hydrocarbons. A significant part of the planned test zone was therefore water bearing. Three cores were cut in the intervals 3742 -3751 m, 3785 - 3790 m, and 3850,5 - 3860 m. The well was plugged back for the sidetrack 34/10-33 C.

Testing:

No DST tests were performed in this well.

Geological Tops.

Well: 34/10-33 B.

	Depth m (RKB).
Rogaland Group	1821.0
Balder Fm	1821.0
Lista Fm	1897.0
Shetland Group	2048.0
Cromer Knoll Group	3008.0
Viking Group	3012.0
Draupne Fm	3012.0
Heather Fm	3045.0
Brent Group	3215.0
Tarbert Fm	3215.0
Ness Fm	3352.5
Tarbert Fm	3679.0
Viking Group	3896.5
Heather Fm	3896.5
T.D.	3942.0