

**General information**

Wellbore name	31/6-2 R
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	TROLL
Discovery	31/6-1 (Troll Øst)
Well name	31/6-2
Seismic location	ST 8007 - 351 SP 1647
Production licence	085
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	393-L2
Drilling facility	DEEPSEA BERGEN
Drilling days	40
Entered date	31.07.1984
Completed date	08.09.1984
Plugged and abandon date	08.09.1984
Release date	08.09.1986
Publication date	06.06.2006
Purpose - planned	APPRAISAL
Reentry	YES
Reentry activity	DRILLING/PLUGGING
Content	GAS
Discovery wellbore	NO
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	SOGNEFJORD FM
Kelly bushing elevation [m]	23.0
Water depth [m]	303.0
Total depth (MD) [m RKB]	2235.0
Final vertical depth (TVD) [m RKB]	2235.0
Maximum inclination [°]	1
Bottom hole temperature [°C]	72
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	HEGRE GP
Geodetic datum	ED50
NS degrees	60° 34' 58.24" N
EW degrees	3° 54' 55.76" E



NS UTM [m]	6716831.54
EW UTM [m]	550164.40
UTM zone	31
NPDID wellbore	498

Wellbore history

General

Well 31/6-2 R is a re-entry of well 31/6-2 gas appraisal well on the south-east periphery of the Troll East gas province. Well 31/6-2 was suspended at 2020 m after drilling through the main target reservoir (Sognefjord Formation) and into the Early Jurassic Drake Formation. The objectives for 31/6-2 R re-entry were to test the gas column in the Sognefjord Formation, and to drill on to the planned Triassic level.

Operations and results

Well 31/6-2 was re-entered (31/6-2 R) with the semi-submersible installation Deepsea Bergen on 31 July 1984 and drilled from 2020 m in the Early Jurassic Drake Formation to final TD at 2235 m in the Late Triassic Hegre Group. The well was drilled with lignosulphonate mud. Drilling went without significant problems. No cores were cut and no fluid samples taken in this well bore.

The well was permanently abandoned on 8 September 1984 as a gas appraisal.

Testing

Prior to testing a large amount of steel particles and rust, possibly caused by oxidation of casing, was circulated out of the hole. This caused several days lost time. The rust also created problems with valves in the Otis sub-sea test tree and the Pre-Gravel-Pack test string had to be pulled because of leakage caused by steel particles in the ball valve.

The well was tested from the interval 1506 m to 1510 m in the middle of the gas column in the Sognefjord Formation, first without gravel-pack and then with gravel-pack. The well flowed 276000 Sm³/day to surface in the pre-gravel-pack test. In the gravel-pack test several acid-jobs were performed and the flow rate increased after each job. After the fifth and final acid-job the well produced gas at a rate of 851000 Sm³/day on a 1.5" choke.

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	TEST1	1510.00	1506.00		06.08.1984 - 21:50	YES
PROD	TEST1	1510.00	1506.00		06.08.1984 - 21:50	YES

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
326	NORDLAND GP
505	HORDALAND GP
626	ROGALAND GP
626	BALDER FM
776	SELE FM
885	LISTA FM
968	SHETLAND GP
968	HARDRÅDE FM
978	UNDIFFERENTIATED
1128	CROMER KNOLL GP
1128	RØDBY FM
1223	ÅSGARD FM
1322	VIKING GP
1322	DRAUPNE FM
1435	HEATHER FM
1460	SOGNEFJORD FM
1625	HEATHER FM
1642	FENSEFJORD FM
1875	KROSSFJORD FM
1910	HEATHER FM
1931	BRENT GP
1975	DUNLIN GP
1975	DRAKE FM
2055	JOHANSEN FM
2138	AMUNDSEN FM
2164	STATFJORD GP
2198	HEGRE GP

Composite logs

Document name	Document format	Document size [MB]
498	pdf	0.42

Drill stem tests (DST)





Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	1506	1510	19.1

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	13.000	5.000		

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0				0.600	

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CDL CNL GR CAL	2002	2231
DIFL BHC AC GR SP	2002	2231
VELOCITY	326	2231

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	412.0	36	412.0	0.00	LOT
SURF.COND.	20	801.0	26	818.0	1.56	LOT
INTERM.	13 3/8	902.0	17 1/2	920.0	1.76	LOT
INTERM.	9 5/8	1391.0	12 1/4	1400.0	1.61	LOT
LINER	7	2004.0	8 1/2	2020.0	0.00	LOT
OPEN HOLE		2235.0	6	2235.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2005	1.10	52.0	4.8	WATER BASED	
2075	1.10	63.0	6.2	WATER BASED	
2235	1.11	56.0	5.8	WATER BASED	



2235	1.11	57.0	4.8	WATER BASED	
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Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
498 Formation pressure (Formasjonstrykk)	pdf	0.21

