General information

Wellbore name	31/2-20 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Field	TROLL
Discovery	31/2-1 (Troll Vest)
Well name	31/2-20
Seismic location	NH0102-Inline 1281 & crossline 898
Production licence	054
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	1045-L
Drilling facility	POLAR PIONEER
Drilling days	9
Entered date	27.11.2002
Completed date	08.12.2002
Release date	08.12.2004
Publication date	11.02.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/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]	332.0
Total depth (MD) [m RKB]	3400.0
Final vertical depth (TVD) [m RKB]	1928.0
Maximum inclination [°]	66.5
Bottom hole temperature [°C]	72
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	BRENT GP
Geodetic datum	ED50
NS degrees	60° 47' 59.3'' N
EW degrees	3° 26' 57.7'' E
NS UTM [m]	6740732.20

EW UTM [m]	524457.97
UTM zone	31
NPDID wellbore	4636

Wellbore history

General

Well 31/2-20 S was drilled from the Troll B platform as a joint Pl054 and Pl191 activity. The objective was to investigate the Hydrocarbon-potential in the "P/Q"-prospect shortly west of the Troll West oil province. The main objective was the middle Jurassic Brent Group. A structural closure in the Late Jurassic Fensfjord formation was a secondary target.

Operations and results

Exploration well 31/2-20 S was kicked off on 27 November 2002 from the 13 3/8" casing at 2447/1468 m MD/TVD RKB in production well 31/2-E-3H/AY1H/AY2H/AY3H on the Troll B platform. It was drilled to TD at 3400/1928 m MD/TVD RKB in the Brent group without significant problems. It was drilled as an 8 1/2 " hole from kick-off to TD using a KCl/polymer mud. The main results were:

The P/Q prospect was found to be dry. No hydrocarbon shows were observed in the Brent Group

The Sognefjord Formation sandstones were encountered with oil and gas according to prognosis (GOC and OWC were met at 2695 m/1545.5 m MD/TVD MSL and 2759.2 m/1572 m MD/TVD MSL respectively). No other contacts were observed.

Top Brent was penetrated 39 m deeper than expected ? basically due to higher than expected Jurassic interval velocities. A hydrocarbon fluid-inclusion study performed concludes: No fluorescent hydrocarbon fluid inclusions are observed, either in cemented fractures or in quartz overgrowth, which confirm low probability of any petroleum charging during geologic time.

The well was drilled with return to seabed from seafloor 355m to setting depth of 15 5/8" casing at 1146m. MWD was run through the whole well. In the interval 2457-3400m MD RKB an LWD-suite comprising GR, resistivity, density, neutron, and sonic logs was run. No wire line survey was run. No cores were taken. No biostratigraphic evaluation has been performed. No fluid samples were taken.

The well was permanently abandoned on 8 December. Oil and gas was encountered in the Sognefjord Formation as expected, but the exploration targets were dry.

Testing

No drill stem test was performed

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
355	NORDLAND GP

765	HORDALAND GP
2200	ROGALAND GP
2669	SHETLAND GP
2673	VIKING GP
2673	SOGNEFJORD FM
2887	FENSFJORD FM
3148	KROSSFJORD FM
3252	HEATHER FM
3365	BRENT GP

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
4636_31_2_20_S_COMPLETION_LOG	.pdf	1.17
4636_31_2_20_S_COMPLETION_REPORT	.PDF	1.26

Logs

Log type	Log top depth [m]	Log bottom depth [m]
LWD - GR DIR RES MPR-ECD	417	1137
LWD - GR DIR RES MPR-ECD	1096	1981
LWD - NBI GR RES DIR DEN NEU SON	2447	3203
LWD - NBI GR RES DIR DEN NEU SON	3203	3395
MWD - DIR	355	417
MWD - DIR ECD	1981	2454

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	417.0	36	417.0	0.00	LOT
SURF.COND.	18 5/8	1146.0	26	1146.0	1.40	LOT
INTERM.	13 3/8	2447.0	17 1/2	2450.0	1.43	LOT
OPEN HOLE		3400.0	8 1/2	3400.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2400	1.25	17.0		WATER BASED	
2430	1.25	21.0		WATER BASED	
2457	1.25	15.0		WATER BASED	
2501	1.25	14.0		WATER BASED	
2788	1.25	16.0		WATER BASED	
3144	1.25	15.0		WATER BASED	
3214	1.25	16.0		WATER BASED	
3400	1.25	18.0		WATER BASED	