General information

Wellbore name	8/4-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	8/4-1
Seismic location	
Production licence	005
Drilling operator	Unocal Norge A/S
Drill permit	177-L
Drilling facility	NORJARL
Drilling days	35
Entered date	21.06.1977
Completed date	25.07.1977
Release date	25.07.1979
Publication date	22.04.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	24.0
Water depth [m]	63.0
Total depth (MD) [m RKB]	2632.0
Final vertical depth (TVD) [m RKB]	2631.0
Maximum inclination [°]	4
Bottom hole temperature [°C]	90
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	57° 44' 50.24'' N
EW degrees	3° 0' 3.86'' E
NS UTM [m]	6400720.56
EW UTM [m]	500063.83
UTM zone	31
NPDID wellbore	302

Wellbore history

General

Wildcat well 8/4-1 is located in the Danish Norwegian Basin of the North Sea. The primary objective was to test the hydrocarbon potential of Middle Jurassic sandstones, expected at 2430 m with a 122 m thickness. A secondary objective was seen in the Late Cretaceous chalk. Planned TD was at 2850 m in the Permian Zechstein Group.

Operations and results

Wildcat well 8/4-1 was spudded with the semi-submersible installation Norjarl on 21 June 1977 and drilled to TD at 2632 m, 50 m into the Permian Zechstein Group. The well was drilled with lime and Drispac down to 1757 m and with, and lignosulphonate from 1757 m to TD.

The well encountered a 116 m thick Middle Jurassic sandstones sequence (Bryne Formation) with top at 2397, fairly close to prognosis. The secondary target was also encountered close to prognosis, at 1664 m (Tor Formation). Early Cretaceous Cromer Knoll Group was found unconformable on Late Jurassic shales. The Upper part of the Boknfjord Group was not present in the well. The well was electrically logged from 85 m to 2623 m and no pay was present in the well to this depth. Trace residual oil shows were seen in sidewall cores at 2417 m and 2462 m. Total gas averaged 5 to 10 units throughout the course of drilling with no significant gas peaks. Shows of the heavier hydrocarbon gases C2 to C4 were present in the interval 2355 m to 2466 m. Three pressure regimes exists in this well. The first includes the Late Tertiary sediments and is only very slightly overpressured reaching approximately 9.2 ppg at its base at 899 m. This is the top of the second regime and marks the unconformity between the Late Tertiary and Eocene sediments. The Eocene and the Paleocene below, exhibit an increasing pore pressure with depth reaching a maximum of approximately 12.6 ppg EMW above the Paleocene/Late Cretaceous unconformity at 5261 ft. (1604 m). The third regime extends to TD and is assumed to be near normally pressured. Organic geochemical analyses indicated a thermally immature well all through with %Ro approaching 0.40 at TD. Good source rock, but immature at well site, was found in the Tau Formation, which had 3 - 7 % TOC and hydrogen index in the range 300 - 400 mg HC/g TOC. No conventional cores were cut. Twenty-seven sidewall cores were recovered out of 30 attempted. No fluid sample was taken.

The well was permanently abandoned on 25 July as a dry hole.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
160.00	2630.00

Cuttings available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1000.0	[m]	DC	RRI
1020.0	[m]	DC	RRI
1060.0	[m]	DC	RRI
1090.0	[m]	DC	RRI
1120.0	[m]	DC	RRI
1140.0	[m]	DC	RRI
1150.0	[m]	DC	RRI
1170.0	[m]	DC	RRI
1180.0	[m]	DC	RRI
1200.0	[m]	DC	RRI
1210.0	[m]	DC	RRI
1230.0	[m]	DC	RRI
1240.0	[m]	DC	RRI
1260.0	[m]	DC	RRI
1270.0	[m]	DC	RRI
1290.0	[m]	DC	RRI
1300.0	[m]	DC	RRI
1320.0	[m]	DC	RRI
1330.0	[m]	DC	RRI
1350.0	[m]	DC	RRI
1360.0	[m]	DC	RRI
1380.0	[m]	DC	RRI
1390.0	[m]	DC	RRI
1405.0	[m]	DC	RRI
1410.0	[m]	DC	RRI
1420.0	[m]	DC	RRI
1430.0	[m]	DC	RRI
1435.0	[m]	DC	RRI
1440.0	[m]	DC	RRI
1450.0	[m]	DC	RRI
1455.0	[m]	DC	RRI
1465.0	[m]	DC	RRI
1470.0	[m]	DC	RRI
1480.0	[m]	DC	RRI
1485.0	[m]	DC	RRI
1495.0	[m]	DC	RRI
1510.0	[m]	DC	RRI
1515.0	[m]	DC	RRI

1520.0	[m]	DC	RRI
1530.0	[m]	DC	RRI
1535.0	[m]	DC	RRI
1540.0	[m]	DC	RRI
1550.0	[m]	DC	RRI
1555.0	[m]	DC	RRI
1560.0	[m]	DC	RRI
1565.0	[m]	DC	RRI
1570.0	[m]	DC	RRI
1575.0	[m]	DC	RRI
1580.0	[m]	DC	RRI
1585.0	[m]	DC	RRI
1595.0	[m]	DC	RRI
1600.0	[m]	DC	RRI
1605.0	[m]	DC	RRI
1610.0	[m]	DC	RRI
1620.0	[m]	DC	RRI
1635.0	[m]	DC	RRI
1650.0	[m]	DC	RRI
1665.0	[m]	DC	RRI
2352.0	[m]	DC	PETROSTR
2358.0	[m]	DC	PETROS
2382.0	[m]	DC	PETROS
2388.0	[m]	DC	PETROS
2403.0	[m]	DC	PETROS
2409.0	[m]	DC	PETROS
2414.0	[m]	DC	PETROS
3802.8	[m]	C	PETROS
3807.1	[m]	C	PETROS
3811.8	[m]	C	PETROS

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
88	NORDLAND GP
635	HORDALAND GP
1452	ROGALAND GP
1452	BALDER FM
1485	SELE FM

1496	LISTA FM
1585	MAUREEN FM
1605	SHETLAND GP
1605	EKOFISK FM
1664	TOR FM
2114	CROMER KNOLL GP
2351	BOKNFJORD GP
2351	TAU FM
2397	VESTLAND GP
2397	BRYNE FM
2513	NO GROUP DEFINED
2513	SKAGERRAK FM
2582	ZECHSTEIN GP

Composite logs

Document name	Document format	Document size [MB]
302	pdf	0.44

Geochemical information

Document name	Document format	Document size [MB]
302_1	pdf	3.17
302_2	pdf	1.57

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
302_01_WDSS_General_Information	pdf	0.25

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

Document name	Document format	Document size [MB]
302_01_Well_completion_report	pdf	3.45

302_02_Composite_well_log	pdf	2.24
302_03_Biostratigraphy	pdf	46.70
302_04_Exploratory_Well_Prognosis	pdf	0.70

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC SONIC	106	433
CALI	43	397
CST	1521	2541
FDC CNL GR	1376	2600
FDC GR	412	1384
GR	85	433
HDT	1376	2602
ISF SONIC GR	412	1385
ISF SONIC GR	1376	2623
TEMP	86	397
TEMP	100	1350
VELOCITY	155	2600
WST	155	2600

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	125.0	36	125.0	0.00	LOT
SURF.COND.	20	410.0	26	433.0	0.00	LOT
INTERM.	13 3/8	1378.0	17 1/2	1388.0	0.00	LOT
OPEN HOLE		2632.0	12 1/4	2632.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
159	1.02			seawater	
433	1.09	63.0		seawater	
694	1.07	65.0		seawater	
1388	1.19	47.0		seawater	

1671	1.27	59.0		seawater	
2437	1.43	50.0		seawater	
2632	1.49	75.0		seawater	