General information

Wellbore name	6407/5-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6407/5-1
Seismic location	MG 304 SP. 300
Production licence	121
Drilling operator	Mobil Exploration Norway INC
Drill permit	562-L
Drilling facility	TREASURE SCOUT
Drilling days	85
Entered date	11.12.1987
Completed date	04.03.1988
Release date	04.03.1990
Publication date	18.05.2004
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	23.0
Water depth [m]	221.0
Total depth (MD) [m RKB]	4306.0
Final vertical depth (TVD) [m RKB]	4303.0
Maximum inclination [°]	7.1
Bottom hole temperature [°C]	155
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	GARN FM
Geodetic datum	ED50
NS degrees	64° 36' 22.4'' N
EW degrees	7° 28' 26.54'' E
NS UTM [m]	7165626.69
EW UTM [m]	426984.94
UTM zone	32
NPDID wellbore	1174

Wellbore history

General

Well 6407/5-1 was situated in Gimsan Basin, on the eastern limits of the Halten Terrace adjacent to the Trøndelag Platform. The primary target for the well was an Early Cretaceous stratigraphic play, which had been interpreted seismically as a submarine fan deposit.

Operations and results

Wildcat well 6407/5-1 was spudded with Wilh. Wilhelmsen A/S semi-submersible rig Treasure Scout on 11 December 1987 and drilled to TD at 4306 m in the Middle Jurassic Garn Formation. The well was drilled with seawater and hi-vis pills down to 1025 m, with seawater/gel/lignosulphonate mud from 1025 m to 2053, and with seawater/polymer mud from 2053 m to TD.á Drilling proceeded without significant problems. No shallow gas was encountered.

The well penetrated the Early Cretaceous at 2920.5 m, (prognosed at 2980 m) and a thick argillaceous sequence was drilled. There were no indications of sand in Early Cretaceous, or in Late Jurassic. Seismics showed a wedge (the prospect), but there was no sand present. An exotic section of Early Cretaceous and Late Jurassic claystones is present within the Early Cretaceous over the interval 3605 m to 3655 m. The logs showed two well-defined hot shales that have not been observed before. This section was interpreted as a displaced gravity slide block. The Early Cretaceous sediments below consist of argillaceous lithologies, again with no reservoir development.

Minor weak shows occurred in thin sandstone units over the interval 2370 to 2600 m in the Lange Formation. Weak shows were also recorded in the shales of the displaced slide block, in the Spekk Formation, and in the Melke Formation. The sandstones of the Garn Formation also had weak shows, but without visible stain. The Garn sandstones had porosity less than 6 %, and there were no noticed closures at Garn level. The Late Jurassic Spekk shales showed good development in the well position with a thickness of 247 m, and geochemical analyses showed very good source potential with total organic carbon in the range 1 % to 8 %. However, the geochemistry also indicated that the organic matter in Spekk in the area is less oil prone and more gas prone than is usual for this formation. Two cores were cut, one from 3964 m to 3973.1 m in the Late Jurassic Spekk Formation shales, and the second from 4206 m to 4224 m in the Middle Jurassic Garn Formation sandstone. Attempts to obtain RFT measurements and samples were unsuccessful due to tight formation. Consequently it was decided not to perform further tests.

The well was plugged and abandoned on 4 March 1988 as a dry well with shows.

Testing

No drill stem test was performed

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1030.00	4306.00

Cuttings available for sampling?	NO

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3964.0	3973.1	[m]
2	4206.0	4220.7	[m]

Total core sample length [m]	23.8
Cores available for sampling?	YES

Core photos


3964-3969m


3969-3973m


4206-4211m


4211-4216m


4216-4220m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
620.0	[m]	DC	OD
630.0	[m]	DC	OD
640.0	[m]	DC	OD
650.0	[m]	DC	OD
660.0	[m]	DC	OD
670.0	[m]	DC	OD
680.0	[m]	DC	OD
690.0	[m]	DC	OD
700.0	[m]	DC	OD
710.0	[m]	DC	OD
720.0	[m]	DC	OD
730.0	[m]	DC	OD
740.0	[m]	DC	OD
750.0	[m]	DC	OD
760.0	[m]	DC	OD

770.0	[m]	DC	OD
780.0	[m]	DC	OD
790.0	[m]	DC	OD
800.0	[m]	DC	OD
810.0	[m]	DC	OD
820.0	[m]	DC	OD
830.0	[m]	DC	OD
840.0	[m]	DC	OD
850.0	[m]	DC	OD
860.0	[m]	DC	OD
1060.0	[m]	DC	RRI
1180.0	[m]	DC	RRI
1300.0	[m]	DC	RRI
1420.0	[m]	DC	RRI
1540.0	[m]	DC	RRI
1660.0	[m]	DC	RRI
1780.0	[m]	DC	RRI
1900.0	[m]	DC	RRI
2020.0	[m]	DC	RRI
2110.0	[m]	DC	RRI
2150.0	[m]	DC	RRI
2200.0	[m]	DC	RRI
2250.0	[m]	DC	RRI
2290.0	[m]	DC	RRI
2350.0	[m]	DC	RRI
2470.0	[m]	DC	RRI
2560.0	[m]	DC	RRI
2650.0	[m]	DC	RRI
2740.0	[m]	DC	RRI
2830.0	[m]	DC	RRI
2920.0	[m]	DC	RRI
2950.0	[m]	SWC	RRI
2980.0	[m]	DC	RRI
3010.0	[m]	DC	RRI
3030.0	[m]	DC	RRI
3050.0	[m]	DC	RRI
3070.0	[m]	DC	RRI
3100.0	[m]	DC	RRI
3115.0	[m]	DC	RRI
3130.0	[m]	DC	RRI

3150.0	[m]	SWC	RRI
3170.0	[m]	DC	RRI
3190.0	[m]	DC	RRI
3200.0	[m]	DC	RRI
3220.0	[m]	DC	RRI
3238.0	[m]	SWC	RRI
3256.0	[m]	SWC	RRI
3269.0	[m]	SWC	RRI
3279.0	[m]	DC	RRI
3300.0	[m]	SWC	RRI
3320.0	[m]	DC	RRI
3350.0	[m]	SWC	RRI
3370.0	[m]	DC	RRI
3400.0	[m]	SWC	RRI
3420.0	[m]	DC	RRI
3441.0	[m]	DC	RRI
3445.0	[m]	DC	RRI
3449.0	[m]	SWC	RRI
3456.0	[m]	DC	RRI
3459.0	[m]	DC	RRI
3471.0	[m]	DC	RRI
3486.0	[m]	DC	RRI
3501.0	[m]	SWC	RRI
3516.0	[m]	DC	RRI
3531.0	[m]	DC	RRI
3540.0	[m]	DC	RRI
3546.0	[m]	DC	RRI
3549.0	[m]	DC	RRI
3550.0	[m]	SWC	RRI
3561.0	[m]	DC	RRI
3561.0	[m]	DC	OD
3573.0	[m]	DC	OD
3576.0	[m]	DC	RRI
3585.0	[m]	DC	OD
3591.0	[m]	DC	RRI
3597.0	[m]	DC	OD
3600.0	[m]	DC	OD
3600.0	[m]	SWC	RRI
3600.0	[m]	DC	RRI
3609.0	[m]	DC	RRI

3609.0	[m]	DC	OD
3610.0	[m]	SWC	RRI
3618.0	[m]	DC	OD
3621.0	[m]	DC	OD
3627.0	[m]	DC	OD
3627.0	[m]	DC	RRI
3630.0	[m]	DC	RRI
3630.0	[m]	SWC	RRI
3636.0	[m]	DC	OD
3639.0	[m]	DC	RRI
3645.0	[m]	DC	OD
3648.0	[m]	DC	RRI
3650.0	[m]	SWC	RRI
3654.0	[m]	DC	OD
3660.0	[m]	SWC	RRI
3663.0	[m]	DC	OD
3666.0	[m]	DC	RRI
3670.0	[m]	SWC	RRI
3670.0	[m]	DC	RRI
3678.0	[m]	DC	RRI
3680.0	[m]	SWC	RRI
3690.0	[m]	SWC	RRI
3696.0	[m]	DC	RRI
3700.0	[m]	SWC	RRI
3710.0	[m]	SWC	RRI
3720.0	[m]	DC	RRI
3726.0	[m]	DC	RRI
3730.0	[m]	SWC	RRI
3740.0	[m]	SWC	RRI
3750.0	[m]	SWC	RRI
3760.0	[m]	SWC	RRI
3770.0	[m]	SWC	RRI
3790.0	[m]	SWC	RRI
3800.0	[m]	SWC	RRI
3810.0	[m]	SWC	RRI
3819.0	[m]	DC	RRI
3820.0	[m]	SWC	RRI
3830.0	[m]	SWC	RRI
3837.0	[m]	DC	RRI
3840.0	[m]	SWC	RRI

3849.0	[m]	DC	OD
3850.0	[m]	SWC	RRI
3860.0	[m]	SWC	RRI
3867.0	[m]	DC	OD
3870.0	[m]	SWC	RRI
3873.0	[m]	DC	RRI
3880.0	[m]	SWC	RRI
3885.0	[m]	DC	OD
3890.0	[m]	SWC	RRI
3897.0	[m]	DC	RRI
3900.0	[m]	DC	RRI
3900.0	[m]	SWC	RRI
3903.0	[m]	DC	OD
3909.0	[m]	DC	RRI
3910.0	[m]	SWC	RRI
3918.0	[m]	DC	RRI
3921.0	[m]	DC	OD
3930.0	[m]	SWC	RRI
3930.0	[m]	DC	RRI
3939.0	[m]	DC	OD
3945.0	[m]	DC	RRI
3950.0	[m]	SWC	RRI
3957.0	[m]	DC	OD
3964.1	[m]	C	OD
3964.1	[m]	C	RRI
3965.1	[m]	C	OD
3966.0	[m]	C	RRI
3967.9	[m]	C	OD
3968.6	[m]	C	OD
3969.3	[m]	C	OD
3970.2	[m]	C	OD
3971.5	[m]	C	OD
3972.0	[m]	DC	RRI
3972.7	[m]	C	OD
3973.0	[m]	C	RRI
3975.0	[m]	DC	OD
3980.0	[m]	SWC	RRI
3990.0	[m]	SWC	RRI
3990.0	[m]	DC	RRI
3993.0	[m]	DC	OD

3999.0	[m]	DC	RRI
4010.0	[m]	SWC	RRI
4011.0	[m]	DC	OD
4029.0	[m]	DC	OD
4040.0	[m]	SWC	RRI
4047.0	[m]	DC	OD
4050.0	[m]	DC	RRI
4057.0	[m]	SWC	RRI
4062.0	[m]	DC	RRI
4065.0	[m]	DC	OD
4083.0	[m]	DC	OD
4089.0	[m]	DC	RRI
4090.0	[m]	SWC	RRI
4100.0	[m]	SWC	RRI
4101.0	[m]	DC	RRI
4101.0	[m]	DC	OD
4110.0	[m]	SWC	RRI
4119.0	[m]	DC	OD
4131.0	[m]	DC	OD
4134.0	[m]	DC	RRI
4140.0	[m]	SWC	RRI
4157.0	[m]	DC	RRI
4170.0	[m]	SWC	RRI
4181.0	[m]	SWC	RRI
4181.0	[m]	DC	RRI
4191.0	[m]	SWC	RRI
4197.0	[m]	DC	RRI
4206.0	[m]	C	RRI
4211.0	[m]	C	RRI
4215.0	[m]	C	RRI
4250.0	[m]	SWC	RRI
4260.0	[m]	DC	RRI
4270.0	[m]	SWC	RRI
4290.0	[m]	DC	RRI
4300.0	[m]	SWC	RRI
4306.0	[m]	DC	RRI

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
244	NORDLAND GP
244	NAUST FM
1206	KAI FM
1277	HORDALAND GP
1277	BRYGGE FM
1988	ROGALAND GP
1988	TARE FM
2070	TANG FM
2173	SHETLAND GP
2173	SPRINGAR FM
2345	NISE FM
2921	CROMER KNOLL GP
2921	LANGE FM
3605	NO FORMAL NAME
3655	LANGE FM
3850	LYR FM
3873	VIKING GP
3873	SPEKK FM
4120	MELKE FM
4205	FANGST GP
4205	GARN FM

Composite logs

Document name	Document format	Document size [MB]
1174	pdf	0.75

Geochemical information

Document name	Document format	Document size [MB]
1174_1	pdf	9.66

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

Document name	Document format	Document size [MB]
1174_01_WDSS_General_Information	pdf	0.22
1174_02_WDSS_completion_log	pdf	0.31

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

Document name	Document format	Document size [MB]
1174_6407_5_1_COMPLETION_REPORT_AND_LOG	pdf	24.74

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	880	1445
CST GR	2100	4000
CST GR	3710	4300
DIL BHC GR	1000	2052
DIL BHC MSFL GR	0	0
DIL BHC SP CAL	2042	4252
DIL BHC SP CAL	4252	4306
DLL MSFL GR CAL	3800	4301
LDL CNL GR CAL	1000	2054
LDL CNL NGS CAL	2042	4308
MWD - GR SN RES DIR	244	4206
RFT GR	3926	4288
RFT GR	3926	4288
SHDT FMS	2042	4306
VSP	244	2320

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	405.0	36	413.0	0.00	LOT
SURF.COND.	20	1000.0	26	1025.0	1.67	LOT
INTERM.	13 3/8	2041.0	17 1/2	2053.0	1.83	LOT
OPEN HOLE		4306.0	12 1/4	4306.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
314	1.04			WATER BASED	05.05.1987
400	1.06			WATER BASED	14.12.1987
405	1.06			WATER BASED	16.12.1987
410	1.08			WATER BASED	06.05.1987
410	1.08			WATER BASED	07.05.1987
481	1.06			WATER BASED	17.12.1987
523	1.05	1000.0		WATER BASED	11.05.1987
596	1.05	1000.0		WATER BASED	11.05.1987
596	1.03			WATER BASED	12.05.1987
753	1.35	2900.0	6.7	WATER BASED	14.05.1987
803	1.06			WATER BASED	18.12.1987
1155	1.21	1100.0	6.3	WATER BASED	14.05.1987
1164	1.58	12.0	33.5	WATER BASED	04.01.1988
1313	1.58	12.0	41.2	WATER BASED	04.01.1988
1467	1.21	1000.0	5.9	WATER BASED	18.05.1987
1634	1.60	12.0	46.9	WATER BASED	04.01.1988
1815	1.61	15.0	47.4	WATER BASED	04.01.1988
1960	1.25	900.0	5.9	WATER BASED	18.05.1987
2028	1.61	25.0	16.3	WATER BASED	04.01.1988
2053	1.61	21.0	11.5	WATER BASED	07.01.1988
2053	1.68	18.0	5.8	WATER BASED	12.01.1988
2053	1.62	31.0	16.7	WATER BASED	05.01.1988
2053	1.61	30.0	21.1	WATER BASED	06.01.1988
2081	1.45	1800.0	5.5	WATER BASED	18.05.1987
2213	1.68	30.0	7.7	WATER BASED	12.01.1988
2218	1.45	1900.0	5.5	WATER BASED	19.05.1987
2218	1.45	1900.0	6.3	WATER BASED	18.05.1987
2218	1.45	1400.0	5.5	WATER BASED	20.05.1987
2221	1.68	25.0	6.2	WATER BASED	12.01.1988
2221	1.68	27.0	8.6	WATER BASED	12.01.1988
2221	1.68	35.0	7.7	WATER BASED	14.01.1988
2351	1.68	35.0	9.6	WATER BASED	14.01.1988
2370	1.68	36.0	19.6	WATER BASED	15.01.1988
2370	1.68	21.0	13.4	WATER BASED	25.01.1988

2370	1.68	28.0	8.1	WATER BASED	19.01.1988
2370	1.68	23.0	11.5	WATER BASED	19.01.1988
2370	1.68	23.0	7.7	WATER BASED	20.01.1988
2370	1.68	24.0	12.0	WATER BASED	20.01.1988
2370	1.68	23.0	11.0	WATER BASED	21.01.1988
2370	1.68	19.0	10.5	WATER BASED	25.01.1988
2370	1.68	22.0	9.6	WATER BASED	25.01.1988
2730	1.68	27.0	7.7	WATER BASED	19.01.1988
3600	1.68	23.0	10.1	WATER BASED	25.01.1988
3612	1.68	20.0	11.5	WATER BASED	26.01.1988
3670	1.68	18.0	31.1	WATER BASED	27.01.1988
3719	1.68	9.0	28.7	WATER BASED	02.02.1988
3719	1.69	17.0	11.0	WATER BASED	02.02.1988
3719	1.68	5.4	47.4	WATER BASED	28.01.1988
3719	1.68	16.0	13.4	WATER BASED	29.01.1988
3719	1.68	11.0	14.4	WATER BASED	02.02.1988
3719	1.69	10.0	24.9	WATER BASED	02.02.1988
3719	1.68	16.0	11.5	WATER BASED	03.02.1988
3719	1.68	16.0	8.6	WATER BASED	04.02.1988
3719	1.68	14.0	20.6	WATER BASED	05.02.1988
3719	1.72	16.0	20.1	WATER BASED	09.02.1988
3719	1.72	17.0	17.2	WATER BASED	09.02.1988
3719	1.72	17.0	17.7	WATER BASED	12.02.1988
3719	1.72	14.0	18.7	WATER BASED	12.02.1988
3719	1.72	14.0	17.7	WATER BASED	12.02.1988
3719	1.72	13.0	11.5	WATER BASED	12.02.1988
3719	1.72	13.0	14.4	WATER BASED	15.02.1988
3719	1.72	12.0	15.8	WATER BASED	15.02.1988
3719	1.72	14.0	9.6	WATER BASED	15.02.1988
3719	1.72	14.0		WATER BASED	15.02.1988
3719	1.72	11.0	5.8	WATER BASED	16.02.1988
3719	1.72	13.0	13.9	WATER BASED	17.02.1988
3719	1.72	12.0	12.0	WATER BASED	18.02.1988
3719	1.72	16.0	7.2	WATER BASED	19.02.1988
3719	1.72	15.0	7.7	WATER BASED	22.02.1988
3719	1.72	15.0	7.7	WATER BASED	22.02.1988
3719	1.72	14.0	7.2	WATER BASED	22.02.1988
3719	1.72	14.0	7.2	WATER BASED	23.02.1988
4306	1.72	14.0	7.2	WATER BASED	26.02.1988