

**General information**

Wellbore name	6507/3-5 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	ALVE
Discovery	6507/3-5 S
Well name	6507/3-5
Seismic location	ST03M03:inline 4486 & crossline 3280
Production licence	159 B
Drilling operator	StatoilHydro ASA
Drill permit	1113-L
Drilling facility	OCEAN VANGUARD
Drilling days	71
Entered date	28.02.2008
Completed date	08.05.2008
Release date	08.05.2010
Publication date	08.05.2010
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	ILE FM
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	BÅT GP
Kelly bushing elevation [m]	22.0
Water depth [m]	368.0
Total depth (MD) [m RKB]	4265.0
Final vertical depth (TVD) [m RKB]	3834.0
Maximum inclination [°]	37
Bottom hole temperature [°C]	142
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 58' 6.5" N



EW degrees	7° 48' 35.4" E
NS UTM [m]	7317094.19
EW UTM [m]	445915.57
UTM zone	32
NPDID wellbore	5307

Wellbore history

**General**

Well 6507/3-5 S was drilled on the Alve Field on the Nordland High of the Norwegian Sea. It was drilled both as a producer for earlier proven reserves in the Garn and Not Formations of the Middle Jurassic Fangst Group and as an exploration well. In the exploration part of well 6507/3-5 S the objective was to delimit the volume of hydrocarbons in the Early Jurassic sandstones of the Lower Fangst/Båt Group, Ile and Tilje Formation, underlying the Garn and Not Formations, and to map the productive properties of this reservoir.

Operations and results

Well 6507/3-5 S was spudded with the semi-submersible installation Ocean Vanguard on 28 February 2008 and drilled to TD at 4265 m in the Early Jurassic Åre Formation. After the 36" top hole a 9 7/8" pilot hole was drilled from 456 m to 1226 m to check for shallow gas. No shallow gas was seen. The following 26" section was slide drilled from 548 m in an attempt to make a kick-off, but in fact kick-off from the pilot hole was not achieved until a depth of ca 850 m. The angle built up to ca 36 deg at ca 1400 m. Inclination was kept within 35 to 37 deg down to ca 3200 m, and then dropped back towards the vertical at TD. The well was drilled with sea water and bentonite pills down to 1243 m, with Aquadrill (KCl, Glycol) mud from 1243 m to 2480 m, and with Carbosea oil based mud from 2480 m to TD.

From 3154 to 3319 m frequent thin sand zones were encountered within the Kvitnos and Lange Formations. These sands had a net thickness of ca 10 m. Most of them had clear HC-indication from the MWD resistivity reading as well as a good gas response in the mud returns. Wire line logging was not done in this part of the well due to unstable hole conditions. The Garn/Not gas was proven as expected, with a slightly shallower gas-water contact than pre-well (3633m MSL vs. earlier 3646 m). The well discovered gas in Early and Middle Jurassic sandstones in the Ile -, Ror - and Tilje Formations, and a thin oil-leg in Tilje Fm. Log data from the well indicated a most likely gas oil contact in the Tilje Formation at 3708 m TVD MSL, and an oil water contact (OWC) in the Tilje Formation sandstones at 3755 m TVD MSL.

Shows (fluorescence) were observed on cores from the reservoir in Garn, Not and Tilje Formations, but after comparison with the base oil they were found questionable.

Two cores were cut in the well, at 3959 to 4013 m in the Garn and Not Formations and at 4144 to 4180.8 m in the Tilje Formation. MDT wire line fluid samples were taken at 3960.5 m in t (gas) in Garn Formation, 4049.5 m in the Ile Formation (gas/condensate), 4083.3 m in the Tofte Formation (oil), 4119.5 m in Tilje Formation (gas/condensate), 4160.8 m in Tilje Formation (oil), and at 4166.6 m in Tilje Formation (oil). Most of the samples were heavily contaminated with base oil from the mud (32 - 75 %), only the Garn and the deepest Tilje Formation samples had minor contamination (5 - 12%)

The exploration well bore was plugged and permanently abandoned back to 3818 m. The well above 3818 m was suspended. A development well, 6507/3-L-2H, was to be sidetracked from this well in late 2008.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1250.00	4265.00



Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3959.0	4012.4	[m]
2	4144.0	4180.8	[m]

Total core sample length [m]	90.2
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1370.0	[m]	DC	GEOSTRAT
1390.0	[m]	DC	GEOSTR
1410.0	[m]	DC	GEOSTR
1440.0	[m]	DC	GEOSTR
1460.0	[m]	DC	GEOSTR
1490.0	[m]	DC	GEOSTR
1510.0	[m]	DC	GEOSTR
1540.0	[m]	DC	GEOSTR
1560.0	[m]	DC	GEOSTR
1600.0	[m]	DC	GEOSTR
1610.0	[m]	DC	GEOSTR
1630.0	[m]	DC	GEOSTR
1660.0	[m]	DC	GEOSTR
1680.0	[m]	DC	GEOSTR
1710.0	[m]	DC	GEOSTR
1730.0	[m]	DC	GEOSTR
1760.0	[m]	DC	GEOSTR
1780.0	[m]	DC	GEOSTR
1800.0	[m]	DC	GEOSTR
1830.0	[m]	DC	GEOSTR
1860.0	[m]	DC	GEOSTR
1880.0	[m]	DC	GEOSTR
1910.0	[m]	DC	GEOSTR
1930.0	[m]	DC	GEOSTR



1950.0	[m]	DC	GEOSTR
1980.0	[m]	DC	GEOSTR
2000.0	[m]	DC	GEOSTR
2030.0	[m]	DC	GEOSTR
2060.0	[m]	DC	GEOSTR
2080.0	[m]	DC	GEOSTR
2100.0	[m]	DC	GEOSTR
2130.0	[m]	DC	GEOSTR
2160.0	[m]	DC	GEOSTR
2180.0	[m]	DC	GEOSTR
2200.0	[m]	DC	GEOSTR
2230.0	[m]	DC	GEOSTR
2250.0	[m]	DC	GEOSTR
2280.0	[m]	DC	GEOSTR
2300.0	[m]	DC	GEOSTR
2330.0	[m]	DC	GEOSTR
2350.0	[m]	DC	GEOSTR
2380.0	[m]	DC	GEOSTR
2400.0	[m]	DC	GEOSTR
2420.0	[m]	DC	GEOSTR
2450.0	[m]	DC	GEOSTR
2470.0	[m]	DC	GEOSTR
2500.0	[m]	DC	GEOSTR
2520.0	[m]	DC	GEOSTR
2550.0	[m]	DC	GEOSTR
2570.0	[m]	DC	GEOSTR
2600.0	[m]	DC	GEOSTR
2620.0	[m]	DC	GEOSTR
2650.0	[m]	DC	GEOSTR
2670.0	[m]	DC	GEOSTR
2700.0	[m]	DC	GEOSTR
2720.0	[m]	DC	GEOSTR
2750.0	[m]	DC	GEOSTR
2770.0	[m]	DC	GEOSTR
2800.0	[m]	DC	GEOSTR
2820.0	[m]	DC	GEOSTR
2840.0	[m]	DC	GEOSTR
2870.0	[m]	DC	GEOSTR
2890.0	[m]	DC	GEOSTR
2920.0	[m]	DC	GEOSTR



2940.0	[m]	DC	GEOSTR
2960.0	[m]	DC	GEOSTR
2990.0	[m]	DC	GEOSTR
3020.0	[m]	DC	GEOSTR
3040.0	[m]	DC	GEOSTR
3070.0	[m]	DC	GEOSTR
3100.0	[m]	DC	GEOSTR
3120.0	[m]	DC	GEOSTR
3140.0	[m]	DC	GEOSTR
3160.0	[m]	DC	GEOSTR
3180.0	[m]	DC	GEOSTR
3190.0	[m]	DC	GEOSTR
3200.0	[m]	DC	GEOSTR
3220.0	[m]	DC	GEOSTR
3230.0	[m]	DC	GEOSTR
3240.0	[m]	DC	GEOSTR
3250.0	[m]	DC	GEOSTR
3260.0	[m]	DC	GEOSTR
3280.0	[m]	DC	GEOSTR
3290.0	[m]	DC	GEOSTR
3300.0	[m]	DC	GEOSTR
3310.0	[m]	DC	GEOSTR
3320.0	[m]	DC	GEOSTR
3340.0	[m]	DC	GEOSTR
3350.0	[m]	DC	GEOSTR
3360.0	[m]	DC	GEOSTR
3370.0	[m]	DC	GEOSTR
3380.0	[m]	DC	GEOSTR
3390.0	[m]	DC	GEOSTR
3400.0	[m]	DC	GEOSTR
3420.0	[m]	DC	GEOSTR
3430.0	[m]	DC	GEOSTR
3440.0	[m]	DC	GEOSTR
3450.0	[m]	DC	GEOSTR
3460.0	[m]	DC	GEOSTR
3470.0	[m]	DC	GEOSTR
3480.0	[m]	DC	GEOSTR
3490.0	[m]	DC	GEOSTR
3500.0	[m]	DC	GEOSTR
3510.0	[m]	DC	GEOSTR



3520.0	[m]	DC	GEOSTR
3530.0	[m]	DC	GEOSTR
3540.0	[m]	DC	GEOSTR
3560.0	[m]	DC	GEOSTR
3570.0	[m]	DC	GEOSTR
3580.0	[m]	DC	GEOSTR
3590.0	[m]	DC	GEOSTR
3600.0	[m]	DC	GEOSTR
3610.0	[m]	DC	GEOSTR
3620.0	[m]	DC	GEOSTR
3630.0	[m]	DC	GEOSTR
3640.0	[m]	DC	GEOSTR
3650.0	[m]	DC	GEOSTR
3660.0	[m]	DC	GEOSTR
3670.0	[m]	DC	GEOSTR
3680.0	[m]	DC	GEOSTR
3690.0	[m]	DC	GEOSTR
3700.0	[m]	DC	GEOSTR
3710.0	[m]	DC	GEOSTR
3720.0	[m]	DC	GEOSTR
3730.0	[m]	DC	GEOSTR
3740.0	[m]	DC	GEOSTR
3750.0	[m]	DC	GEOSTR
3760.0	[m]	DC	GEOSTR
3770.0	[m]	DC	GEOSTR
3780.0	[m]	DC	GEOSTR
3790.0	[m]	DC	GEOSTR
3800.0	[m]	DC	GEOSTR
3810.0	[m]	DC	GEOSTR
3820.0	[m]	DC	GEOSTR
3830.0	[m]	DC	GEOSTR
3840.0	[m]	DC	GEOSTR
3850.0	[m]	DC	GEOSTR
3860.0	[m]	DC	GEOSTR
3870.0	[m]	DC	GEOSTR
3880.0	[m]	DC	GEOSTR
3890.0	[m]	DC	GEOSTR
3900.0	[m]	DC	GEOSTR
3910.0	[m]	DC	GEOSTR
3920.0	[m]	DC	GEOSTR



3930.0	[m]	DC	GEOSTR
3935.0	[m]	DC	GEOSTR
3936.0	[m]	DC	GEOSTR
3939.0	[m]	DC	GEOSTR
3942.0	[m]	DC	GEOSTR
3945.0	[m]	DC	GEOSTR
3948.0	[m]	DC	GEOSTR
3951.0	[m]	DC	GEOSTR
3954.0	[m]	DC	GEOSTR
3957.0	[m]	DC	GEOSTR
3960.2	[m]	SWC	GEOSTR
3970.0	[m]	C	GEOSTR
3971.6	[m]	C	GEOSTR
3975.6	[m]	C	GEOSTR
3979.7	[m]	C	GEOSTR
3982.7	[m]	C	GEOSTR
3986.0	[m]	C	GEOSTR
3988.8	[m]	C	GEOSTR
3990.3	[m]	C	GEOSTR
3993.4	[m]	C	GEOSTR
3996.9	[m]	C	GEOSTR
4000.0	[m]	C	GEOSTR
4002.5	[m]	C	GEOSTR
4005.0	[m]	C	GEOSTR
4009.4	[m]	C	GEOSTR
4012.3	[m]	C	GEOSTR
4017.0	[m]	DC	GEOSTR
4019.0	[m]	SWC	GEOSTR
4023.0	[m]	DC	GEOSTR
4026.5	[m]	SWC	GEOSTR
4029.0	[m]	DC	GEOSTR
4032.0	[m]	DC	GEOSTR
4035.0	[m]	DC	GEOSTR
4038.0	[m]	SWC	GEOSTR
4047.0	[m]	DC	GEOSTR
4050.0	[m]	DC	GEOSTR
4059.0	[m]	DC	GEOSTR
4061.0	[m]	SWC	GEOSTR
4065.0	[m]	DC	GEOSTR
4068.0	[m]	DC	GEOSTR



4071.0 [m]	DC	GEOSTR
4077.0 [m]	DC	GEOSTR
4083.0 [m]	DC	GEOSTR
4092.5 [m]	SWC	GEOSTR
4095.0 [m]	DC	GEOSTR
4098.0 [m]	DC	GEOSTR
4101.0 [m]	DC	GEOSTR
4104.0 [m]	DC	GEOSTR
4110.0 [m]	DC	GEOSTR
4113.0 [m]	DC	GEOSTR
4117.0 [m]	SWC	GEOSTR
4119.0 [m]	DC	GEOSTR
4125.0 [m]	DC	GEOSTR
4129.0 [m]	SWC	GEOSTR
4133.0 [m]	SWC	GEOSTR
4137.0 [m]	DC	GEOSTR
4144.1 [m]	C	GEOSTR
4149.9 [m]	C	GEOSTR
4151.3 [m]	C	GEOSTR
4153.1 [m]	C	GEOSTR
4157.9 [m]	C	GEOSTR
4159.9 [m]	C	GEOSTR
4164.9 [m]	C	GEOSTR
4167.2 [m]	C	GEOSTR
4169.0 [m]	C	GEOSTR
4170.5 [m]	C	GEOSTR
4172.2 [m]	C	GEOSTR
4174.0 [m]	DC	GEOSTR
4174.1 [m]	C	GEOSTR
4176.0 [m]	C	GEOSTR
4185.0 [m]	DC	GEOSTR
4191.0 [m]	DC	GEOSTR
4197.0 [m]	DC	GEOSTR
4203.0 [m]	DC	GEOSTR
4209.0 [m]	DC	GEOSTR
4215.0 [m]	DC	GEOSTR
4221.0 [m]	DC	GEOSTR
4227.0 [m]	DC	GEOSTR
4233.0 [m]	DC	GEOSTR
4239.0 [m]	DC	GEOSTR



4245.0 [m]	DC	GEOSTR
4251.0 [m]	DC	GEOSTR
4257.0 [m]	DC	GEOSTR
4263.0 [m]	DC	GEOSTR
4265.0 [m]	DC	GEOSTR

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
390	NORDLAND GP
390	NAUST FM
1415	KAI FM
1772	HORDALAND GP
1772	BRYGGE FM
2046	ROGALAND GP
2046	TARE FM
2098	TANG FM
2137	SHETLAND GP
2137	SPRINGAR FM
2296	NISE FM
3155	KVITNOS FM
3240	CROMER KNOLL GP
3240	LANGE FM
3432	LYR FM
3566	VIKING GP
3566	SPEKK FM
3570	MELKE FM
3960	FANGST GP
3960	GARN FM
3972	NOT FM
4016	ILE FM
4063	BÅT GP
4063	ROR FM
4080	TOFTE FM
4095	ROR FM
4113	TILJE FM
4216	ÅRE FM

**Geochemical information**

Document name	Document format	Document size [MB]
5307_01_6507_3_5S_gch_transfer_1	txt	0.00
5307_02_6507_3_5S_gch_results_1	txt	0.17

Logs

Log type	Log top depth [m]	Log bottom depth [m]
2XPPC IS MSIP RT+ACTS ECRD	2530	4266
ACTS B ECRD VSP-VSI4 GR	883	4255
ACTS ECRD MDT	3960	4213
EDTC B-MDT MRPA	3982	4119
EDTC B-MDT MRPA	4022	4160
GR ECS PEX CMR +ACTS ECRD	3918	4266
GR MSCT	3960	4186
MWD - ARCVRES9	448	2480
MWD - GVR6 ARCVRES6 PP	3935	4265
MWD - PP GVR8 ARCVRES8	2480	3935

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	448.0	36	456.0	0.00	LOT
SURF.COND.	20	1238.0	26	1243.0	1.57	LOT
INTERM.	13 3/8	2066.0	17 1/2	2480.0	1.60	LOT
INTERM.	9 5/8	3917.0	12 1/4	3935.0	1.70	LOT
OPEN HOLE		4265.0	8 1/2	4265.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1055	1.50	40.0		CARBOSEA	
1235	1.52	21.0		Aquadrill	
1246	1.25	16.0		Aquadrill	
1442	1.28	13.0		Aquadrill	





1500	1.52	24.0		Aquadrill	
1515	1.51	26.0		Aquadrill	
1759	1.59	53.0		CARBOSEA	
1907	1.41	18.0		Aquadrill	
1931	1.59	53.0		CARBOSEA	
2000	1.59	64.0		CARBOSEA	
2033	1.59	60.0		CARBOSEA	
2066	1.54	20.0		Aquadrill	
2130	1.59	61.0		CARBOSEA	
2140	1.52	29.0		Aquadrill	
2257	1.52	21.0		Aquadrill	
2449	1.51	27.0		Aquadrill	
2480	1.51	26.0		Aquadrill	
2508	1.54	34.0		CARBOSEA	
2767	1.54	40.0		CARBOSEA	
3000	1.54	42.0		CARBOSEA	
3395	1.55	52.0		CARBOSEA	
3728	1.56	52.0		CARBOSEA	
3935	1.59	64.0		CARBOSEA	
3959	1.50	53.0		CARBOSEA	
4013	1.50	42.0		CARBOSEA	
4145	1.50	42.0		CARBOSEA	
4180	1.50	42.0		CARBOSEA	
4203	1.50	42.0		CARBOSEA	
4265	1.50	44.0		CARBOSEA	
4580	1.50	40.0		CARBOSEA	

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]
5307 Formation pressure (Formasjonstrykk)	PDF	0.28

