General information

Wellbore name	6507/3-7
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	IDUN NORD
Discovery	6507/3-7 Idun Nord
Well name	6507/3-7
Seismic location	BPN0501-innline1001 & crossline 613
Production licence	159 D
Drilling operator	StatoilHydro Petroleum AS
Drill permit	1250-L
Drilling facility	OCEAN VANGUARD
Drilling days	51
Entered date	02.06.2009
Completed date	22.07.2009
Release date	22.07.2011
Publication date	22.07.2011
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	FANGST GP
Kelly bushing elevation [m]	22.0
Water depth [m]	377.0
Total depth (MD) [m RKB]	3855.0
Final vertical depth (TVD) [m RKB]	3854.5
Maximum inclination [°]	3.47
Bottom hole temperature [°C]	145
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 49' 24.3'' N
EW degrees	7° 43' 8.1'' E
NS UTM [m]	7301009.43

EW UTM [m]	441454.51
UTM zone	32
NPDID wellbore	6123

Wellbore history

General

Well 6507/3-7 Idun Nord was drilled on the Eastern side of the Dønna Terrace in the Norwegian Sea, just north of the 6507/3-3 Idun Discovery. The main objective of the well was to prove hydrocarbons in the Middle Jurassic Fangst Group (Garn, Not and Ile Formation sandstones) and in the Early Jurassic Båt Group (Tilje and Åre Formation sandstones). A secondary target for the well was to test the hydrocarbon potential of the Cretaceous Intra Lange Formation sandstones.

Operations and results

Prior to spudding the main well, a 9 7/8" pilot hole 6507/3-U-2 was drilled approximately 15m east of this main wellbore 6507/3-7 location, to check for presence of shallow gas. No shallow gas was observed by the ROV at the wellhead and there were no indication on LWD, but the LWD confirmed thin water filled sands at 578 m, 648 m, 791 m, and 1142 m. Wildcat well 6507/3-7 was spudded with the semi-submersible installation Ocean Vanguard on 2 June 2009 and drilled to TD at 3855 m in the Early Jurassic Åre Formation. No LWD logs were run in the 36" and 26" sections of the main well bore. After drilling 3.5 m of the 8 1/2" section below the 9 5/8" shoe, a kick occurred. The pore pressure prognosis indicated 1.09 g/cm3 at top of the reservoir. The shut in well pressure estimated a pore pressure of 1.39 g/cm3. The kick was circulated out by driller's method and the mud weight increased from 1.25 g/cm3 to 1.45 g/cm3. The well was drilled with spud mud and hi-vis sweeps down to 1203 m, with Performadrill WBM from 1203 m to 2205 m, with Enviromul OBM (yellow class) from 2205 m to 3540 m, and with Performadrill WBM from 3540 m to TD.

6507/3-7 penetrated rocks of Quaternary, Tertiary, Cretaceous and Jurassic age. Top Garn Formation was encountered at 3545 m, top Not Formation at 3580 m, while the Early Jurassic Tilje Formation was encountered at 3687 m. The presence of gas bearing sandstones was proven in the Garn and Not Formations. The reservoir permeability ranged from 1240 md in Garn Formation to 1 - 7 md in Not Formation. The porosity in the Garn Formation was 16 - 20 %, while in the Not Formatio it was 12 - 19 %. No gas/water contact was proven in the well, but from logs and formation pressure there is gas down to at least 3597 m and water up to at least 3622 m. The only significant shows in the well were seen on the cores from the reservoir. Apart from elevated gas readings and a minor show on one cutting sample from 2904 m no hydrocarbon indications were seen in the secondary target Lange Formation sandstones.

Two cores were cut. Core one was cut at 3546 - 3600 m (3546 m - 3601.4 m is marked depth on the core) in the Garn and Not Formations, core 2 was cut at 3600 ? 3654 m (3601.4 m - 3654 m is marked depth on the core) in the Not, Ile and Ror Formations. MDT fluid samples were taken at 3546.5 m in the Garn Formation (gas), at 3596 m in the Not Formation (gas and water), and at 3702 m in the Tilje Formation (water). Pressure points were taken in Garn, Not, Ile, Ror, Tilje and Åre. There is a 1 m difference between MWD/LWD depth and wire line logging depth in the 8 1/2" section.

The well was permanently abandoned on 22 July 2009 as a gas discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1210.00	3855.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3546.0	3601.4	[m]
2	3601.4	3653.0	[m]

Total core sample length [m]	107.0
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
399	NORDLAND GP
670	NAUST FM
1367	KAI FM
1709	HORDALAND GP
1709	BRYGGE FM
1967	ROGALAND GP
1967	TARE FM
2021	TANG FM
2047	SHETLAND GP
2047	SPRINGAR FM
2718	CROMER KNOLL GP
2718	LANGE FM
3344	VIKING GP
3344	SPEKK FM
3363	MELKE FM
3545	FANGST GP
3545	GARN FM
3580	NOT FM
3622	ILE FM
3639	BÅT GP
3639	ROR FM
3687	TILJE FM
3785	ÅRE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CMR ECS	3541	3854
FMI PPC MSIP PPC	3541	3855
HRLA PEX HNGS	3541	3855
MDT PACKER	3605	3632
MDT PRE	3546	3832
MWD LWD - PP	399	463
MWD LWD - PP ARCRES	399	1205
MWD LWD - PP ARCRES	463	2205
MWD LWD - PP ARCRES GVR	2205	3855
VSP	891	3848

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	459.0	36	463.0	0.00	LOT
SURF.COND.	20	1198.0	26	1203.0	1.54	LOT
INTERM.	13 3/8	2200.0	17 1/2	2205.0	1.87	LOT
INTERM.	9 5/8	3539.0	12 1/4	3540.0	2.00	LOT
OPEN HOLE		3855.0	8 1/2	3855.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1203	1.26	35.0		Performadril	
1544	1.37	39.0		Performadril	
1730	1.37	44.0		Performadril	
1900	1.48	51.0		Performadril	
2025	1.45	25.0		Spud Mud	
2068	1.48	41.0		Performadril	
2205	1.50	36.0		Performadril	
2705	1.47	26.0		Spud Mud	
3215	1.56	36.0		Enviromul Yellow	
3540	1.25	20.0		Performadril	

3540	1.56	34.0		Enviromul Yellow	
3600	1.45	23.0		Performadril	
3654	1.45	23.0		Performadril	
3855	1.45	26.0		Performadril	

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.

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