

**General information**

Wellbore name	6407/7-8
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Discovery	6407/7-8 (Noatun)
Well name	6407/7-8
Seismic location	NH9806M-line 1366 & trace 2881-Seismic 3D survey
Production licence	107
Drilling operator	StatoilHydro Petroleum AS
Drill permit	1188-L
Drilling facility	WEST ALPHA
Drilling days	89
Entered date	18.06.2008
Completed date	14.09.2008
Release date	14.09.2010
Publication date	14.09.2010
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	FANGST GP
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	BÅT GP
Kelly bushing elevation [m]	18.0
Water depth [m]	293.0
Total depth (MD) [m RKB]	5138.0
Final vertical depth (TVD) [m RKB]	5105.0
Maximum inclination [°]	8.9
Bottom hole temperature [°C]	185
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	64° 25' 49.3" N



EW degrees	7° 7' 38.5" E
NS UTM [m]	7146478.78
EW UTM [m]	409822.02
UTM zone	32
NPDID wellbore	5844

Wellbore history

**General**

The 6407/7-8 Noatun well is located in the Gimsan Basin, ca 15 km north of the Njord Field in the Norwegian Sea. The main objective of the well was to prove hydrocarbons in the Ile and Tilje Formations (Noatun C prospect). The structure was expected to contain gas and condensate.

Operations and results

An 8 1/2" pilot hole (6407/7-U-1) was drilled to 810 m due to a shallow gas warning.

Wildcat well 6407/7-8 was spudded with the semi-submersible installation West Alpha on 18 June 2008 and drilled to TD at 5138 m (5105 m TVD) in the Early Jurassic Åre Formation. No overpressured shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 8 1/2" pilot hole, the 36" hole or the 26" hole. From ca 800 m to ca 3600 m the well was drilled with a ca 8.5 degree deviation, leading to measured depth at TD being 33 m more than true vertical depth. Due to high temperatures in the reservoir section the MDT wire line operations proved difficult and several runs and Mini-DST's failed or did not give valid data. The well was drilled with Spud mud down to 1109 m, with Glydril mud from 1109 m to 2452 m, and with Versatherm oil based mud from 2452 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous, and Jurassic age. A 50 m thick sandstone section was penetrated in the upper Springar Formation and some thin sandstone stringers were penetrated in the Lange Formation, otherwise lithology was mudstone. All sands above BCU were dry. The well proved gas/condensate in both the Fangst and Båt Groups. Gas readings were considered relatively high in the Tertiary with a maximum of 5.3% at 2084 m in the Rogaland Group. The gas levels also increased abruptly when entering the Spekk Formation (maximum 13.1%), and in the reservoirs of the Fangst and Båt Groups. Oil shows were recorded in the intervals 4972 - 5085 m and 5118 - 5127 m in the base Tilje and Åre Formations; else no oil shows were recorded in the well.

Seven cores were cut in the well. Core no 1 was cut in the Ile Formation, the remaining were cut in the Båt Group. MDT runs were run under very good conditions in calm sea, but it proved difficult to hit the sandstone intervals. The results showed that the different reservoir sections belong to separate pressure regimes. The Garn Formation, the Upper Ror and the Tofte Formations did not have any reservoir quality sands present, while the top part of the Ile Formation was too cemented to get any pressure measurements made. In the Tilje and Åre Formations several good quality pressure measurements were made. Gas samples were taken in the Ile Formation at 4525.8 m, 4525.9 m and 4555.2 m, in the Tilje Formation at 4916.0 m, 4958.25 m and 4958.7 m, and in the Åre Formation at 5016.2 m. A successful MDT mini-DST was performed at 5019.1 - 5020.1 m.

The well bore was plugged back to 4000 m and permanently abandoned on 14 September 2008 as a gas/condensate discovery. A sidetrack was prepared to define the hydrocarbon/water contact.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1120.00	5138.00



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	4472.0	4483.5	[m]
2	4563.0	4590.0	[m]
3	4757.0	4772.2	[m]
4	4806.0	4822.4	[m]
5	4822.4	4836.0	[m]
6	4872.0	4910.9	[m]
7	4937.0	4970.5	[m]

Total core sample length [m]	156.0
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
311	NORDLAND GP
311	NAUST FM
1212	KAI FM
1368	HORDALAND GP
1368	BRYGGE FM
1997	ROGALAND GP
1997	TARE FM
2132	TANG FM
2210	SHETLAND GP
2210	SPRINGAR FM
2362	NISE FM
2566	KVITNOS FM
2840	CROMER KNOLL GP
2840	LYSING FM
3119	LANGE FM
4005	LYR FM
4120	VIKING GP
4120	SPEKK FM
4184	MELKE FM



4330	FANGST GP
4330	GARN FM
4418	NOT FM
4457	ILE FM
4563	BÅT GP
4563	ROR FM
4606	TOFTE FM
4616	ROR FM
4752	TILJE FM
4981	ÅRE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AIT LDT APS ECS HNGS HILT GR	2439	4245
CMR GR	4301	5075
EMS OBMI2 GPIT MSIP GR	4253	5123
GPIT PPC MSIP GR	2000	4244
HIT HLDS HAPS ECS HNGS GR	4254	5128
MDT GR	4459	5134
MDT GR	4461	5134
MDT GR	4525	4555
MDT GR	4525	4958
MDT GR	4528	4528
MDT GR	4915	5016
MDT GR	4916	4916
MDT GR	4958	4958
MDT GR	4962	5002
MDT GR	5015	5015
MDT GR	5019	5019
MDT GR	5019	5019
MDT GR	5032	5032
MSCT GR	4460	5071
MWD - GR RES ECD DIR	4747	5122
MWD - RAB FORM PRESS GR RES ECD	4254	4458
MWD - RAB GR RES ECD DIR	4448	4752
MWD- GR RES ECD DIR	349	4244
VSP GR	353	5040

**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	359.0	36	363.0	0.00	LOT
PILOT HOLE		810.0	8 1/2	810.0	0.00	LOT
SURF.COND.	20	1095.0	26	1109.0	1.71	LOT
INTERM.	16	2442.0	17 1/2	2452.0	1.81	LOT
INTERM.	9 5/8	4253.0	12 1/4	4254.0	1.90	LOT
OPEN HOLE		5138.0	8 1/2	5138.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1109	1.45	17.0		Glydril	
1304	1.50	18.0		Glydril	
1908	1.62	21.0		Glydril	
2106	1.64	22.0		Glydril	
2290	1.64	27.0		Glydril	
2452	1.64	19.0		Glydril	
2452	1.64	20.0		Glydril	
3355	1.64	40.0		Versatherm	
3917	1.58	50.0		Versatherm	
4254	1.67	36.0		Versatherm	
4365	1.55	48.0		Versatherm	
4485	1.58	48.0		Versatherm	
4563	1.58	47.0		Versatherm	
4757	1.58	48.0		Versatherm	
4758	1.58	50.0		Versatherm	
4771	1.58	48.0		Versatherm	
4822	1.58	48.0		Versatherm	
4900	1.58	47.0		Versatherm	
4911	1.58	47.0		Versatherm	
4969	1.58	47.0		Versatherm	
5047	1.58	48.0		Versatherm	
5138	1.58	52.0		Versatherm	
5138	1.58	54.0		Versatherm	



5227	1.72	66.0		Versatherm	
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Thin sections at the Norwegian Offshore Directorate

Depth	Unit
4481.75	[m]
4573.50	[m]
4770.25	[m]
4829.48	[m]
4879.25	[m]
4941.00	[m]
4949.00	[m]
4958.75	[m]
4966.25	[m]
4969.00	[m]

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]
5844 Formation pressure (Formasjonstrykk)	pdf	0.30

