



Generell informasjon

Brønnbane navn	6507/11-9
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORWEGIAN SEA
Felt	HALTEN ØST
Funn	6507/11-9 (Natalia)
Brønn navn	6507/11-9
Seismisk lokalisering	MGW98R01-line2988-trace 3976-Seismic 3D survey
Utvinningstillatelse	263
Boreoperatør	StatoilHydro Petroleum AS
Boretillatelse	1167-L
Boreinnretning	WEST ALPHA
Boredager	38
Borestart	12.03.2008
Boreslutt	18.04.2008
Frigitt dato	18.04.2010
Publiseringsdato	18.04.2010
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	GAS
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	GARN FM
Avstand, boredekk - midlere havflate [m]	18.0
Vanndybde ved midlere havflate [m]	281.0
Totalt målt dybde (MD) [m RKB]	3069.0
Totalt vertikalt dybde (TVD) [m RKB]	3058.0
Maks inklinasjon [°]	9.3
Temperatur ved bunn av brønnbanen [°C]	109
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	BÅT GP



Geodetisk datum	ED50
NS grader	65° 9' 7.8" N
ØV grader	7° 25' 10.6" E
NS UTM [m]	7226521.88
ØV UTM [m]	425900.64
UTM sone	32
NPDID for brønnbanen	5766

Brønnhistorie



General

Well 6507/11-9 was drilled on the Natalia prospect in the Grinda Graben, ca 5 km north of the Midgard Field in the Norwegian Sea. The structure is a rotated fault block and comprise of Jurassic reservoir sandstones. It was drilled up-dip from the previously drilled 6507/11-4 on the structure. The primary objective of the well was to prove presence of hydrocarbons in Jurassic sandstones in the Fangst Group. The secondary target was to examine the hydrocarbon migration route in the prospect area.

Operations and results

The rig arrived at the 6507/11-9 location already on 20 February 2008, but had to wait 20 days due to bad weather before setting anchors. The well was spudded with the semi-submersible rig West Alpha on 12 March 2008 and drilled to TD at 3069 m in sandstones and claystones of the Early Jurassic Båt Group. No shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 26" hole. The well was drilled with spud mud down to 810 m and with Glydril mud from 810 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous and Jurassic age. The well penetrated the Garn reservoir section at 2597 m, 24.2 m shallower than prognosed. The well proved a ca 40 m gas column in the Garn Formation; with a gas-down-to top Not Formation at 2637.8 m (2612 m TVD MSL). The Ile Formation was water bearing. The first water bearing sand to be penetrated below the hydrocarbon column was in the Not Formation at 2645 m (2619 m TVD MSL). The hydrocarbon contact for the Natalia structure is therefore expected to be between 2637.8 and 2645 m (2612 m and 2619 m TVD MSL respectively), if same pressure regime and hydrocarbon system up dip. The updated seismic interpretation indicates that the structure spills to the north at 2646 m (2620 m TVD MSL), which is in conformance with the expected contact. The apex of the structure is mapped at 2575m (2550 m TVD MSL), which gives a corresponding column height for the entire structure of 60 m. Shows (fluorescence and cut) were recorded on sandstone cuttings down to 2658 m. The reservoir properties and sedimentary facies observed in the well are similar to the excellent reservoir properties observed on the Midgard Field. Porosity and permeability are estimated to 26% and 4 Darcy respectively.

Apart from shows in the reservoir, a 7.7% gas peak was recorded at 2240 m, with fluorescence and cut recorded on sandy/silty claystone cuttings at the same depth in the Nise Formation.

One core was cut at 2621 - 2642 m in the Garn and Not Formations with 97% recovery. MDT fluid samples were taken in the Garn and Ile Formations at 2609.0 m (condensate), 2625.0 m (gas/oil), and at 2671.5 m (water).

The well was permanently abandoned on 18 April 2008 as a gas Discovery.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
820.00	3069.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2621.0	2641.3	[m]

Total kjerneprøve lengde [m]	20.3
Kjerner tilgjengelig for prøvetaking?	YES

Oljeprøver i Sokkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	2A	0.00	0.00	WATER		YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
299	NORDLAND GP
299	NAUST FM
1392	KAI FM
1640	HORDALAND GP
1640	BRYGGE FM
2005	ROGALAND GP
2005	TARE FM
2068	TANG FM
2121	SHETLAND GP
2121	SPRINGAR FM
2174	NISE FM
2389	KVITNOS FM
2529	CROMER KNOLL GP
2529	LANGE FM
2531	LYR FM
2535	VIKING GP
2535	SPEKK FM



2543	MELKE FM
2597	FANGST GP
2597	GARN FM
2637	NOT FM
2653	ILE FM
2730	BÅT GP
2730	ROR FM
2812	TILJE FM
2910	ÅRE FM

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
ACTS ECRD CMR PEX ECS HNGS HRLA	2600	3071
ACTS ECRD FMI DSI	1800	3071
MDT ACTS	2602	3015
MWD - ONTRACK	360	3069
VSP ACTS ECRD	450	3071

Foringsrør og formasjonsstyrketester

Type utforing	Utforing diam. [tommer]	Utforing dybde [m]	Brønnbane diam. [tommer]	Brønnbane dyp [m]	LOT/FIT slam eqv. [g/cm3]	Type formasjonstest
CONDUCTOR	30	188.0	36	363.0	0.00	LOT
SURF.COND.	20	802.0	26	810.0	1.51	LOT
INTERM.	13 3/8	1793.0	17 1/2	1806.0	1.91	LOT
INTERM.	9 5/8	2600.0	12 1/4	2619.0	1.67	LOT
OPEN HOLE		3069.0	8 1/2	3069.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
395	1.37	16.0		Glydril	
525	1.37	19.0		Glydril	
740	1.37	18.0		Glydril	
810	1.60	26.0		Spud Mud	
880	1.35	16.0		Glydril	



990	1.35	16.0		Glydril	
1063	1.37	18.0		Glydril	
1414	1.37	18.0		Glydril	
1536	1.37	17.0		Glydril	
1722	1.37	19.0		Glydril	
1807	1.37	20.0		Glydril	
1807	1.37	20.0		Glydril	
1813	1.55	15.0		Glydril	
1925	1.54	15.0		Glydril	
2095	1.55	18.0		Glydril	
2213	1.55	17.0		Glydril	
2428	1.55	17.0		Glydril	
2493	1.60	19.0		Glydril	
2493	1.55	19.0		Glydril	
2619	1.61	30.0		Glydril	
2619	1.61	25.0		Glydril	
2619	1.60	18.0		Glydril	
2621	1.25	14.0		Glydril	
2632	1.25	14.0		Glydril	
2642	1.25	13.0		Glydril	
2700	1.25	13.0		Glydril	
2780	1.25	16.0		Glydril	
3069	1.25	14.0		Glydril	

Trykkplott

Porertrykksdataene kommer fra logging i brønnen hvis ingen annen kilde er oppgitt. I noen brønner der trykk ikke er logget, er det brukt informasjon fra formasjonstester eller brønnspark. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
5766 Formation pressure (Formasjonstrykk)	pdf	0.29

