



Generell informasjon

Brønnbane navn	16/2-4
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Funn	16/2-4
Brønn navn	16/2-4
Seismisk lokalisering	ST06M02-inline 1800-crossline 660
Utvinningstillatelse	265
Boreoperatør	StatoilHydro ASA
Boretillatelse	1155-L
Boreinnretning	WEST EPSILON
Boredager	69
Borestart	08.10.2007
Boreslutt	15.12.2007
Frigitt dato	15.12.2009
Publiseringsdato	15.12.2009
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	LATE CRETACEOUS
1. nivå med hydrokarboner, formasjon.	TOR FM
2. nivå med hydrokarboner, alder	PRE-DEVONIAN
2. nivå med hydrokarboner, formasjon	BASEMENT
Avstand, boredekk - midlere havflate [m]	48.0
Vanndybde ved midlere havflate [m]	113.0
Totalt målt dybde (MD) [m RKB]	2000.0
Totalt vertikalt dybde (TVD) [m RKB]	2000.0
Maks inklinasjon [°]	1.97
Temperatur ved bunn av brønnbanen [°C]	91
Eldste penetrerte alder	PRE-DEVONIAN



Eldste penetrerte formasjon	BASEMENT
Geodetisk datum	ED50
NS grader	58° 52' 21.5" N
ØV grader	2° 23' 24.7" E
NS UTM [m]	6526180.80
ØV UTM [m]	464834.53
UTM sone	31
NPDID for brønnbanen	5625

Brønnhistorie



General

Well 16/2-4 is located on the Utsira High in the North Sea. The objective of drilling 16/2-4 was to delineate the Tor Formation oil discovery made in 16/2-3 and to test the permeability and productivity of the chalk. The secondary objective was to check the presence of hydrocarbon in the basement and to test the permeability and productivity of the basement rock.

Operations and results

Well 16/2-4 was spudded with the jack-up installation West Epsilon on 8 October 2007 and drilled to TD at 2000 m, 121 m into basement rock. No major problem was encountered in the operations. The well was drilled with spud mud down to 640 m and with KCl/polymer/glycol mud from 640 m to TD. No shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 36" hole or the 17 1/2" hole.

The Tor Formation reservoir section was encountered with hydrocarbons at 1709.5 m, 12.5 m shallower than prognosed. A clear hydrocarbon contact was not seen. The best indication of an OWC was seen on cores as a disappearance of shows below 1775. The well showed that the size of the 16/2-3 discovery is likely to be in the range 5 - 10 million Sm³ recoverable oil. A series of small-scale formation tests were carried out, showing promising flow properties. Smaller amounts of oil and gas were found also in basement, but small-scale tests in the basement showed limited flow properties. Apart from the oil and gas bearing reservoirs, no significant shows were seen in the well.

Five cores were cut. The first core was cut in the Lista Formation, the second core covered the transition zones between the Lista, Våle and Ekofisk Formation, the third core was in the Tor Formation, the fourth core was in the Tor and Hod Formation, and the fifth core was in Basement. Four mini-DST runs were performed in the Tor Formation and in the Basement for pressure points and fluid sampling. Oil and water were sampled from the Tor Formation. Gas, oil and water were sampled from the Basement. The following depths were sampled (hydrocarbon type is verified only from chromatographic analyses of the oil phase): 1939 m (water), 1930 m, 1904 m (oil), 1898,1 m (oil), 1896.1 m, 1886.1 m (gas/condensate), 1727.5 m (oil), and 1710 m (water). Due to high draw-down during pumping with the wire line tools, most of the hydrocarbon samples are flashed and not representative for PVT analysis.

The well was permanently abandoned on 15 December as a gas/minor oil discovery and an oil appraisal.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
290.00	2000.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1701.0	1701.9	[m]
2	1706.0	1708.7	[m]
3	1709.0	1761.8	[m]
4	1762.0	1816.0	[m]
5	1882.0	1883.9	[m]

Total kjerneprøve lengde [m]	112.2
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
MDT		1858.00	0.00	OIL		YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
161	NORDLAND GP
819	UTSIRA FM
1057	HORDALAND GP
1079	SKADE FM
1091	NO FORMAL NAME
1243	GRID FM
1325	NO FORMAL NAME
1620	ROGALAND GP
1620	BALDER FM
1641	SELE FM
1655	LISTA FM
1707	VÅLE FM
1708	SHETLAND GP
1708	EKOFISK FM
1710	TOR FM



1802	HOD FM
1859	CROMER KNOLL GP
1859	RØDBY FM
1877	SOLA FM
1879	BASEMENT

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
5625	pdf	0.39

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
5625_1	pdf	0.85
5625_2	pdf	6.67

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
FMI MSIP ECRD ACTS	1500	2000
MDT PA ACTS ECRD	1709	1956
MDT PA ACTS ECRD	1710	1956
MDT PA ACTS ECRD	1895	1911
MDT PA ACTS ECRD	1895	1930
MWD - DIR	161	288
MWD - GR RES DIR	288	2000
PEX HRLA ACTS ECRD	1560	2000
PEX MSIP PPC1	631	1905
ZOVSP	181	2000

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	281.0	36	288.0	1.15	LOT





SURF.COND.	13 3/8	631.0	17 1/2	640.0	1.45	LOT
INTERM.	9 5/8	1689.0	12 1/4	1690.0	1.80	LOT
OPEN HOLE		2000.0	8 1/2	2000.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
288	1.03			SEAWATER	
431	1.08	9.0		SPUD MUD	
640	1.10	10.0		SPUD MUD	
1020	1.30	23.0		KCL/POLYMER/GLY COL	
1200	1.35	30.0		KCL/POLYMER/GLY COL	
1706	1.20	22.0		KCL/POLYMER/GLY COL	
1709	1.20	18.0		KCL/POLYMER	
1709	1.20	23.0		KCL/POLYMER/GLY COL	

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]
5625 Formation pressure (Formasjonstrykk)	pdf	0.19

