



Generell informasjon

Brønnbane navn	16/2-16
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	JOHAN SVERDRUP
Funn	16/2-6 Johan Sverdrup
Brønn navn	16/2-16
Seismisk lokalisering	LN0902 : inline 4191 & crossline 3733
Utvinningstillatelse	501
Boreoperatør	Lundin Norway AS
Boretillatelse	1416-L
Boreinnretning	TRANSOCEAN WINNER
Boredager	32
Borestart	11.11.2012
Boreslutt	12.12.2012
Frigitt dato	12.12.2014
Publiseringsdato	11.03.2015
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	JURASSIC
1. nivå med hydrokarboner, formasjon.	INTRA DRAUPNE FM SS
Avstand, boredekk - midlere havflate [m]	26.0
Vanndybde ved midlere havflate [m]	115.0
Totalt målt dybde (MD) [m RKB]	2214.0
Totalt vertikalt dybde (TVD) [m RKB]	2214.0
Maks inklinasjon [°]	3.3
Eldste penetrerte alder	PERMIAN
Eldste penetrerte formasjon	ROTLIEGEND GP
Geodetisk datum	ED50
NS grader	58° 51' 1.14" N
ØV grader	2° 35' 50.55" E



NS UTM [m]	6523604.82
ØV UTM [m]	476766.88
UTM sone	31
NPDID for brønnbanen	7047

Brønnhistorie

General

Well 16/2-16 was drilled on the northeastern part of the Johan Sverdrup Field on the Utsira High. The main objective was to acquire information about the Jurassic reservoir properties and hydrocarbon column in this part of the field. Secondary objectives were to investigate the reservoir properties of the Zechstein Group, and to determine whether oil-bearing Paleocene sandstones (Heimdal and Hermod formations) were present.

Operations and results

Well 16/2-16 was spudded with the semi-submersible installation Transocean Winner on 11 November 2012 and drilled to TD at 2214 m in the Permian Rotliegend Group. A 9 7/8" pilot hole was drilled to a total depth of 706 m to check for shallow gas before opening up the pilot hole to 36" and 26" sections. No shallow gas was observed. No significant problem was encountered in the operations. The well was drilled with seawater and bentonite mud down to 695 m and with Glydril mud from 695 m to TD.

No Paleocene sands were present in the well. In total 15 m of net sandstone was found within a 60 m Jurassic sequence. The top of the reservoir was penetrated at 1950 m as prognosed. The oil/water contact was identified at 1952 m just above the good reservoir sand. This is the same level as observed in well 16/2-13 A and 3 m deeper than found in previously drilled wells in PL 501. The 6 m thick Intra Draupne Formation sandstone below the contact sand had good shows. A 3 m thick sandstone in the Vestland Group had similar, but weaker shows; otherwise, no shows were reported from the well. The Zechstein Group consisted of water-wet sandstones, limestones and siltstones with a water gradient in line with the above Jurassic sandstones.

Two successive cores were cut from 1947 m in the lower Draupne Formation and down to 1986.8 m in the Statfjord Group. Oil and water samples were collected using MDT. Water was sampled at 1952.1 and 1966.0 m. At 1951.6 m, formation water, mud filtrate and oil were sampled with 68 bars drawdown.

The well was plugged back and completed for sidetracking on 12 December 2012. It is classified as an oil appraisal well.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
710.00	2214.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1947.0	1965.8	[m]
2	1967.0	1986.8	[m]

Total kjerneprøve lengde [m]	38.6
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		1951.60	0.00	OIL	06.12.2012 - 00:00	NO

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
141	NORDLAND GP
833	UTSIRA FM
928	NO FORMAL NAME
992	HORDALAND GP
1020	SKADE FM
1107	NO FORMAL NAME
1451	NO FORMAL NAME
1505	ROGALAND GP
1505	BALDER FM
1535	SELE FM
1552	LISTA FM
1662	VÅLE FM
1685	SHETLAND GP
1685	EKOFISK FM
1690	TOR FM
1720	HOD FM



1787	BLODØKS FM
1791	SVARTE FM
1824	CROMER KNOLL GP
1824	RØDBY FM
1924	SOLA FM
1934	ÅSGARD FM
1946	VIKING GP
1946	DRAUPNE FM
1952	INTRA DRAUPNE FM SS
1957	HEATHER FM
1964	VESTLAND GP
1964	HUGIN FM
1966	STATFJORD GP
1966	EIRIKSSON FM
1999	HEGRE GP
1999	SKAGERRAK FM
2065	ZECHSTEIN GP
2165	ROTLIEGEND GP

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CMR XPT	1890	2201
GR RES DEN NEU SON DIR PWD	687	2213
MDT	1951	1968
MSCT	1920	2200
MSIP FMI	1872	2210
MWD - GR RES DIR PWD	142	701
PEX HRLA HNGS ECS	1873	2207
VSP	1237	2204

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	220.0	36	222.0	0.00	
SURF.COND.	20	686.0	26	695.0	1.91	LOT
OPEN HOLE		700.0	17 1/2	700.0	0.00	
PILOT HOLE		706.0	9 7/8	706.0	0.00	



INTERM.	9 5/8	1872.0	12 1/4	1878.0	1.77	LOT
OPEN HOLE		2214.0	8 1/2	2214.0	0.00	

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
700	1.35	26.0		Brine	
732	1.35	22.0		Brine	
1283	1.39	24.0		Brine	
1835	1.39	24.0		Brine	
2214	0.00	21.0		Brine	
2214	0.00	14.0		Brine	