



Generell informasjon

Brønnbane navn	16/2-17 S
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	16/2-17
Seismisk lokalisering	inline 4273-crossline 3224(on 3D cube LN0902STR11)
Utvinningstillatelse	265
Boreoperatør	Statoil Petroleum AS
Boretillatelse	1423-L
Boreinnretning	OCEAN VANGUARD
Boredager	58
Borestart	24.03.2013
Boreslutt	20.05.2013
Frigitt dato	20.05.2015
Publiseringsdato	20.05.2015
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	LATE JURASSIC
1. nivå med hydrokarboner, formasjon.	INTRA DRAUPNE FM SS
2. nivå med hydrokarboner, alder	EARLY JURASSIC
2. nivå med hydrokarboner, formasjon	STATFJORD GP
Avstand, boredekk - midlere havflate [m]	22.0
Vanndybde ved midlere havflate [m]	111.0
Totalt målt dybde (MD) [m RKB]	2052.0
Totalt vertikalt dybde (TVD) [m RKB]	2039.0
Maks inklinasjon [°]	15.6
Temperatur ved bunn av brønnbanen [°C]	81



Eldste penetrerte alder	TRIASSIC
Geodetisk datum	ED50
NS grader	58° 48' 15.92" N
ØV grader	2° 31' 46.03" E
NS UTM [m]	6518520.01
ØV UTM [m]	472811.62
UTM sone	31
NPDID for brønnbanen	7085

Brønnhistorie



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General

Well 16/2-17 S was drilled on the western flank of the Johan Sverdrup Discovery. The main objectives were to investigate the reservoir thickness, quality and facies along the western bounding fault of the Johan Sverdrup Field. The main bounding fault separates the basin to the east where Intra-Draupne Formation sandstone is present in all the wells, and the main Utsira High to west where Intra-Draupne Formation sandstone has not been encountered in the wells nearby.

Operations and results

A pilot hole 16/2-U-17 was drilled 25m South-East of the main wellbore to investigate for shallow gas. No gas or shallow water flow were encountered.

Appraisal well 16/2-17 S was spudded with the semi-submersible installation Ocean Vanguard on 24 March 2013 and drilled to TD at 2052 m (2039 m TVD) in the Triassic Skagerrak Formation. No significant problem was encountered in the operations. The well was drilled with seawater down to 905 m and with Performadril water based mud from 905 m to TD.

The top of the main reservoir, Draupne Formation, was picked at 1873 m (1859.7 m TVD), 18.3m deeper than prognosed. The reservoir showed excellent reservoir properties and held an 82 m thick oil column down to the oil-water contact in the Statfjord Group at 1957 m (1922 m TVD MSL). A formation gas peak with C2+ hydrocarbons was recorded in the top of the Shetland Group, and at 1873 m good oil shows were recorded. Gas generally dropped off down in the Shetland Group. Below the OWC oil shows were described down to 1965 m.

A total of 164 m core were recovered from seven coring runs covering the Jurassic interval and 21 m TVD into the Triassic Skagerrak Formation. Core recoveries varied between 98.8 and 105.3%. The high recoveries are due to core expansion. MDT fluid samples were taken at 1884.8 m (oil), 1934.5 m (oil), and 1959.7 m (water).

The well was permanently abandoned on 20 May 2013 as an oil appraisal.

Testing

Two Drill Stem Tests were performed.

DST 1 tested the interval 1929 to 1937 m in the Statfjord Formation reservoir section. It produced 422 Sm³ oil and 14200 Sm³ gas /day through a 40/64" choke. The DST temperature was 77.7 °C.

DST 2 tested the interval 1875.5 to 1914.5 m, nearly the whole Intra Draupne Formation sandstone section of the reservoir. It produced 910 Sm³ oil and 24300 Sm³ gas /day through a 48/64" choke. The DST temperature was 75.5 °C.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
905.00	2052.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1875.0	1901.8	[m]
2	1902.0	1914.4	[m]
3	1914.4	1930.4	[m]
4	1930.4	1958.4	[m]
5	1958.5	1985.6	[m]
6	1985.7	2012.3	[m]
7	2012.6	2040.6	[m]

Total kjerneprøve lengde [m]	164.9
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
950.0	[m]	DC	FUGRO
956.0	[m]	DC	FUGRO
962.0	[m]	DC	FUGRO
968.0	[m]	DC	FUGRO
974.0	[m]	DC	FUGRO
980.0	[m]	DC	FUGRO
986.0	[m]	DC	FUGRO
992.0	[m]	DC	FUGRO
998.0	[m]	DC	FUGRO
1004.0	[m]	DC	FUGRO
1010.0	[m]	DC	FUGRO
1016.0	[m]	DC	FUGRO
1022.0	[m]	DC	FUGRO
1028.0	[m]	DC	FUGRO
1034.0	[m]	DC	FUGRO
1040.0	[m]	DC	FUGRO
1046.0	[m]	DC	FUGRO
1052.0	[m]	DC	FUGRO
1058.0	[m]	DC	FUGRO
1064.0	[m]	DC	FUGRO
1070.0	[m]	DC	FUGRO



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 16.5.2024 - 21:47

1076.0 [m]	DC	FUGRO
1082.0 [m]	DC	FUGRO
1088.0 [m]	DC	FUGRO
1094.0 [m]	DC	FUGRO
1100.0 [m]	DC	FUGRO
1106.0 [m]	DC	FUGRO
1112.0 [m]	DC	FUGRO
1118.0 [m]	DC	FUGRO
1124.0 [m]	DC	FUGRO
1130.0 [m]	DC	FUGRO
1136.0 [m]	DC	FUGRO
1142.0 [m]	DC	FUGRO
1148.0 [m]	DC	FUGRO
1170.0 [m]	DC	FUGRO
1190.0 [m]	DC	FUGRO
1210.0 [m]	DC	FUGRO
1230.0 [m]	DC	FUGRO
1250.0 [m]	DC	FUGRO
1270.0 [m]	DC	FUGRO
1290.0 [m]	DC	FUGRO
1310.0 [m]	DC	FUGRO
1330.0 [m]	DC	FUGRO
1350.0 [m]	DC	FUGRO
1370.0 [m]	DC	FUGRO
1390.0 [m]	DC	FUGRO
1410.0 [m]	DC	FUGRO
1430.0 [m]	DC	FUGRO
1450.0 [m]	DC	FUGRO
1470.0 [m]	DC	FUGRO
1490.0 [m]	DC	FUGRO
1510.0 [m]	DC	FUGRO
1530.0 [m]	DC	FUGRO
1550.0 [m]	DC	FUGRO
1804.0 [m]	DC	FUGRO
1822.0 [m]	DC	FUGRO
1840.0 [m]	DC	FUGRO
1858.0 [m]	DC	FUGRO
1875.2 [m]	C	FUGRO
1882.5 [m]	C	FUGRO
1893.5 [m]	C	FUGRO



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 16.5.2024 - 21:47

1900.5	[m]	C	FUGRO
1904.3	[m]	C	FUGRO
1908.6	[m]	C	FUGRO
1913.3	[m]	C	FUGRO
1915.5	[m]	C	FUGRO
1917.9	[m]	C	FUGRO
1920.6	[m]	C	FUGRO
1924.0	[m]	C	FUGRO
1925.0	[m]	C	FUGRO
1926.2	[m]	C	FUGRO
1928.0	[m]	C	FUGRO
1928.7	[m]	C	FUGRO
1931.6	[m]	C	FUGRO
1935.8	[m]	C	FUGRO
1937.0	[m]	DC	FUGRO
1938.2	[m]	C	FUGRO
1941.3	[m]	C	FUGRO
1942.0	[m]	DC	FUGRO
1944.2	[m]	C	FUGRO
1949.0	[m]	C	FUGRO
1951.9	[m]	C	FUGRO
1953.5	[m]	C	FUGRO
1955.1	[m]	C	FUGRO
1957.5	[m]	C	FUGRO
1958.8	[m]	C	FUGRO
1961.0	[m]	C	FUGRO
1961.6	[m]	C	FUGRO
1965.6	[m]	C	FUGRO
1968.6	[m]	C	FUGRO
1972.5	[m]	C	FUGRO
1973.2	[m]	C	FUGRO
1979.8	[m]	C	FUGRO
1983.4	[m]	C	FUGRO
1986.8	[m]	C	FUGRO
1990.9	[m]	C	FUGRO
1995.5	[m]	C	FUGRO
2002.1	[m]	C	FUGRO
2006.6	[m]	C	FUGRO
2007.5	[m]	C	FUGRO
2010.6	[m]	C	FUGRO



2012.6	[m]	C	FUGRO
2017.9	[m]	C	FUGRO
2021.3	[m]	C	FUGRO
2029.0	[m]	DC	FUGRO
2041.0	[m]	DC	FUGRO
2047.0	[m]	DC	FUGRO
2052.0	[m]	DC	FUGRO

Oljeprøver i Sokkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST		1937.00	1929.00	OIL	29.04.2013 - 08:25	YES
DST		1914.50	1875.50	OIL	10.05.2013 - 10:10	YES
MDT		0.00	1934.50	OIL		YES
MDT		0.00	1884.80	OIL		YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
133	NORDLAND GP
804	UTSIRA FM
934	HORDALAND GP
988	SKADE FM
1034	UNDIFFERENTIATED
1069	NO FORMAL NAME
1125	UNDIFFERENTIATED
1464	ROGALAND GP
1464	BALDER FM
1482	SELE FM
1501	LISTA FM
1542	VÅLE FM
1556	SHETLAND GP
1556	EKOFISK FM
1560	TOR FM



1678	HOD FM
1756	BLODØKS FM
1771	SVARTE FM
1797	CROMER KNOLL GP
1797	RØDBY FM
1866	ÅSGARD FM
1873	VIKING GP
1873	INTRA DRAUPNE FM SS
1913	STATEFJORD GP
2020	HEGRE GP
2020	SKAGERRAK FM

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	1929	1937	17.4
2.0	1875	1914	20.6

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				77
2.0				74

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	470	15400			
2.0	1050	20300			

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
ECS CMR ADT	1561	2052
HNGS HRLA PEX	1561	2052
MDT	1567	2015
MSIP FMI	122	1913
MSIP FMI	1826	2037



MWD - ARC PP	1866	2047
MWD - GVR6 ARC PP	1561	1875
MWD - PD XTRA900 ARC TELE	901	1561
MWD - PDX5 ARC PP	199	901
RESOLVE EZSV PLUG	1925	1925
USIT CBL	134	810
USIT CBL	1016	1554
USIT CBL	1490	2007
ZO VSP	168	2048

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	195.0	36	199.0	0.00	
SURF.COND.	13 3/8	890.0	17 1/2	905.0	1.86	LOT
INTERM.	9 5/8	1559.0	12 1/4	1564.0	1.45	FIT
LINER	7	2050.0	8 1/2	2051.0	1.52	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	flytegrense [Pa]	Type slam	Dato, måling
199	1.35	16.0		Spud mud	
199	1.35	16.0		Spud mud	
444	1.35	18.0		Spud mud	
613	1.23	18.0		Performadril	
901	1.35	26.0		Performadril	
902	1.60	17.0		Kill Fluid- SW/Bentonite	
1445	1.24	18.0		Performadril	
1561	1.35	29.0		Performadril	
1902	1.21	30.0		Performadril	
1925	1.24	18.0		Performadril	
2052	1.21	23.0		Performadril	