General information

Wellbore name	16/2-15
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Field	JOHAN SVERDRUP
Discovery	16/2-6 Johan Sverdrup
Well name	16/2-15
Seismic location	inline 4481 & crossline3113 on 3D cube LN0902STR11
Production licence	265
Drilling operator	Statoil Petroleum AS
Drill permit	1411-L
Drilling facility	OCEAN VANGUARD
Drilling days	51
Entered date	21.11.2012
Completed date	13.01.2013
Release date	13.01.2015
Publication date	13.04.2015
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA DRAUPNE FM SS
Kelly bushing elevation [m]	22.0
Water depth [m]	111.0
Total depth (MD) [m RKB]	2006.0
Final vertical depth (TVD) [m RKB]	2006.0
Maximum inclination [°]	1.4
Bottom hole temperature [°C]	79
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	SKAGERRAK FM
Geodetic datum	ED50
NS degrees	58° 47' 0.09'' N
EW degrees	2° 33' 34.49'' E

NS UTM [m]	6516162.71
EW UTM [m]	474536.97
UTM zone	31
NPDID wellbore	6979

Wellbore history

General

The 16/2-15 Kvitsøy Basin well was drilled as an appraisal well for the Aldous Major South discovery in PL265 that together with Avaldsnes discovery in PL501 was to be called the Johan Sverdrup Field. The objective of 16/2-15 was to investigate the reservoir thickness, quality and facies in the southwestern part of the Johan Sverdrup Field. A specific objective was to obtain good water samples from the reservoir.

Operations and results

Appraisal well 16/2-15 was spudded with the semi-submersible installation Ocean Vanguard on 21 November 2012 and drilled to TD at 2006 in the Triassic Skagerrak Formation. A 9 7/8” pilot hole was drilled to 511 m to check for shallow gas. No shallow gas was observed. No significant problem was encountered in the operations. The well was drilled with seawater down to 736 m, with Performadril water based mud from 736 m to 1159 m, and with XP07 oil based mud from 1159 m to TD. The oil-based mud was chosen to avoid drill water contamination in the water samples from the reservoir.

The target reservoir, Intra Draupne Formation sandstones, was encountered at 1913 m. The reservoir was oil filled down to top Statfjord Group at 1945 m. Pressure data and logs indicate a true OWC at this depth. Oil shows on cores continued down to 1958 m. Oil shows were not observed above top reservoir or below 1958 m.

Five cores were cut from 1895 m in the Åsgard Formation and down through the entire reservoir section to 1990.7 m in the Skagerrak Formation. MDT fluid samples were taken at 1913.8 m (oil), 1916.6 m (oil), 1926.9 m (oil), 1946.5 m (water), and at 1957.1 m (water). Water samples of good quality was obtained.

The well was permanently abandoned on 13 January 2013 as an oil appraisal well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
733.00	2006.37

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1895.0	1910.7	[m]
2	1911.0	1925.3	[m]
3	1925.3	1938.9	[m]
4	1938.9	1965.9	[m]
5	1965.9	1990.7	[m]

Total core sample length [m]	95.4
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
751.0	[m]	DC	ROBERTSO
760.0	[m]	DC	ROBERT
769.0	[m]	DC	ROBERT
778.0	[m]	DC	ROBERT
784.0	[m]	DC	ROBERT
790.0	[m]	DC	ROBERT
796.0	[m]	DC	ROBERT
802.0	[m]	DC	ROBERT
808.0	[m]	DC	ROBERT
814.0	[m]	DC	ROBERT
820.0	[m]	DC	ROBERT
826.0	[m]	DC	ROBERT
832.0	[m]	DC	ROBERT
838.0	[m]	DC	ROBERT
844.0	[m]	DC	ROBERT
850.0	[m]	DC	ROBERT
856.0	[m]	DC	ROBERT
862.0	[m]	DC	ROBERT
868.0	[m]	DC	ROBERT
874.0	[m]	DC	ROBERT
880.0	[m]	DC	ROBERT
886.0	[m]	DC	ROBERT
892.0	[m]	DC	ROBERT
898.0	[m]	DC	ROBERT
904.0	[m]	DC	ROBERT
910.0	[m]	DC	ROBERT

916.0	[m]	DC	ROBERT
922.0	[m]	DC	ROBERT
928.0	[m]	DC	ROBERT
934.0	[m]	DC	ROBERT
940.0	[m]	DC	ROBERT
946.0	[m]	DC	ROBERT
952.0	[m]	DC	ROBERT
958.0	[m]	DC	ROBERT
964.0	[m]	DC	ROBERT
970.0	[m]	DC	ROBERT
976.0	[m]	DC	ROBERT
982.0	[m]	DC	ROBERT
988.0	[m]	DC	ROBERT
994.0	[m]	DC	ROBERT
1000.0	[m]	DC	ROBERT
1006.0	[m]	DC	ROBERT
1012.0	[m]	DC	ROBERT
1018.0	[m]	DC	ROBERT
1024.0	[m]	DC	ROBERT
1030.0	[m]	DC	ROBERT
1036.0	[m]	DC	ROBERT
1042.0	[m]	DC	ROBERT
1048.0	[m]	DC	ROBERT
1054.0	[m]	DC	ROBERT
1060.0	[m]	DC	ROBERT
1066.0	[m]	DC	ROBERT
1072.0	[m]	DC	ROBERT
1078.0	[m]	DC	ROBERT
1084.0	[m]	DC	ROBERT
1090.0	[m]	DC	ROBERT
1096.0	[m]	DC	ROBERT
1102.0	[m]	DC	ROBERT
1123.0	[m]	DC	ROBERT
1144.0	[m]	DC	ROBERT
1160.0	[m]	DC	ROBERT
1180.0	[m]	DC	ROBERT
1200.0	[m]	DC	ROBERT
1220.0	[m]	DC	ROBERT
1240.0	[m]	DC	ROBERT
1260.0	[m]	DC	ROBERT

1280.0	[m]	DC	ROBERT
1300.0	[m]	DC	ROBERT
1320.0	[m]	DC	ROBERT
1340.0	[m]	DC	ROBERT
1360.0	[m]	DC	ROBERT
1380.0	[m]	DC	ROBERT
1400.0	[m]	DC	ROBERT
1420.0	[m]	DC	ROBERT
1440.0	[m]	DC	ROBERT
1460.0	[m]	DC	ROBERT
1480.0	[m]	DC	ROBERT
1500.0	[m]	DC	ROBERT
1520.0	[m]	DC	ROBERT
1540.0	[m]	DC	ROBERT
1799.0	[m]	DC	ROBERT
1820.0	[m]	DC	ROBERT
1841.0	[m]	DC	ROBERT
1859.0	[m]	DC	ROBERT
1865.0	[m]	DC	ROBERT
1871.0	[m]	DC	ROBERT
1877.0	[m]	DC	ROBERT
1883.0	[m]	DC	ROBERT
1889.0	[m]	DC	ROBERT
1894.0	[m]	DC	ROBERT
1900.5	[m]	C	ROBERT
1901.7	[m]	C	ROBERT
1912.1	[m]	C	ROBERT
1912.7	[m]	C	ROBERT
1914.2	[m]	C	ROBERT
1914.8	[m]	C	ROBERT
1915.7	[m]	C	ROBERT
1916.7	[m]	C	ROBERT
1917.8	[m]	C	ROBERT
1918.3	[m]	C	ROBERT
1919.5	[m]	C	ROBERT
1920.6	[m]	C	ROBERT
1920.9	[m]	C	ROBERT
1921.2	[m]	C	ROBERT
1922.9	[m]	C	ROBERT
1925.0	[m]	C	ROBERT

1940.3	[m]	C	ROBERT
1943.2	[m]	C	ROBERT
1946.2	[m]	C	ROBERT
1947.3	[m]	C	ROBERT
1951.3	[m]	C	ROBERT
1959.0	[m]	C	ROBERT
1963.0	[m]	C	ROBERT
1964.1	[m]	C	ROBERT
1965.8	[m]	C	ROBERT
1969.9	[m]	C	ROBERT
1997.0	[m]	DC	ROBERT
2006.4	[m]	DC	ROBERT

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
MDT		1913.80	0.00	OIL		NO
MDT		1926.90	0.00	OIL		YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
134	NORDLAND GP
794	UTSIRA FM
877	UNDIFFERENTIATED
912	NO FORMAL NAME
945	UNDIFFERENTIATED
968	HORDALAND GP
968	SKADE FM
1027	UNDIFFERENTIATED
1435	ROGALAND GP
1435	BALDER FM
1459	SELE FM
1468	LISTA FM
1522	VÅLE FM
1534	SHETLAND GP

1534	EKOFISK FM
1539	TOR FM
1675	HOD FM
1754	BLODØKS FM
1769	SVARTE FM
1797	CROMER KNOLL GP
1797	RØDBY FM
1886	ÅSGARD FM
1913	VIKING GP
1913	INTRA DRAUPNE FM SS
1945	STATFJORD GP
1945	UNDIFFERENTIATED
1969	HEGRE GP
1969	SKAGERRAK FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
2XOBMI MSIP GR	1400	2001
AIT PEX ADT HNGS GR	1564	2006
CMR ECS GR	1564	1995
MDT GR	1913	1917
MDT GR	1917	1972
MWD - GR RES ECD DIR	197	1574
MWD - GR RES ECD DIR	1894	2006
MWD - GVR ARCRES DIR	1574	1894
MWD - SURVEY	124	197
USIT CBL GR	1150	1564
VSP GR	900	1980

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	194.0	36	194.0	0.00	
SURF.COND.	20	720.0	26	1010.0	1.57	LOT
INTERM.	13 3/8	1145.0	17 1/2	1155.0	1.59	LOT
INTERM.	9 5/8	1564.0	12 1/4	1577.0	1.56	LOT
OPEN HOLE		2006.0	8 1/2	2006.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
718	1.29	38.0		Performadril	
744	1.30	31.0		Performadril	
854	1.31	42.0		Performadril	
1162	1.35	25.0		XP-07 - Yellow	
1353	1.22	20.0		XP-07 - Yellow	
1353	1.24	18.0		XP-07 - Yellow	
1463	1.23	35.0		XP-07 - Yellow	
1536	1.35	26.0		XP-07 - Yellow	
1577	1.21	26.0		XP-07 - Yellow	
1627	1.22	16.0		XP-07 - Yellow	
1965	1.22	16.0		XP-07 - Yellow	
2006	1.22	20.0		XP-07 - Yellow	