General information

Wellbore name	6608/10-14 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	SKULD
Discovery	6608/10-14 S Skuld
Well name	6608/10-14
Seismic location	3D Survey:ST04M17-inline 821 & xline 2986
Production licence	128
Drilling operator	Statoil Petroleum AS
Drill permit	1291-L
Drilling facility	OCEAN VANGUARD
Drilling days	39
Entered date	22.02.2010
Completed date	01.04.2010
Release date	01.04.2012
Publication date	01.04.2012
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	INTRA MELKE FM SS
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	ILE FM
3rd level with HC, age	EARLY JURASSIC
3rd level with HC, formation	TOFTE FM
Kelly bushing elevation [m]	22.0
Water depth [m]	354.0
Total depth (MD) [m RKB]	2880.0
Final vertical depth (TVD) [m RKB]	2771.0
Maximum inclination [°]	30.5
Bottom hole temperature [°C]	97
Oldest penetrated age	EARLY JURASSIC

Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	66° 8' 58.46'' N
EW degrees	8° 14' 45.76'' E
NS UTM [m]	7336972.86
EW UTM [m]	465980.00
UTM zone	32
NPDID wellbore	6306

Wellbore history

General

Well 6608/10-14S was drilled on the Fossekall prospect on the Dønna terrace in the Norwegian Sea. The well is located 8 km north of the Svale field and 15 km northeast of the Norne field. The objective was to prove hydrocarbon bearing sands in the Ile, Tofte and Åre formations (Fangst and Båt Group) of Middle - Early Jurassic age in the Fossekall prospect and to establish fluid contacts.

Operations and results

Wildcat well 6608/10-14S was spudded with the semi-submersible installation Ocean Vanguard on 22 February 2010 and drilled to TD at 2880 m (2771 m TVD). The well was designed as a vertical well down to the 12 1/4" hole section at 1332.5 m and then directionally drilled from the 12 1/4 section to hit the geological target at a ca 30 deg angle, holding this inclination to TD of the well. No significant problem was encountered in the operations. No shallow gas observed. The well was drilled with Seawater and CaCl2/Polymer down to 1332.5 m and with "yellow" Enviromul oil based mud from 1332.5 m to TD.

The well penetrated a 6 m thick Spekk Formation at 2375 m on top of the Melke Formation at 2381 m. There were two main reservoir levels in Fossekall; Melke Formation of Late Jurassic age and in the Ile, Tofte and Åre Formations of Middle to Early Jurassic age. The two reservoir levels are separated by the Not Shale. Gas was observed in Intra- Melke Formation sandstone from 2433 m (2380.1 m TVD) to 2504 m (2441.5 m TVD), while oil was present in sandstones from top Ile Formation at 2549.2 m (2480.9 m) and down through the Tofte and Åre Formations. MDT sampling and fluid scanning found water up to 2714 m (2623.9 m TVD), while the logs and shows on cores indicate moveable oil down to a thin sand at 2704.5 m (2616 m TVD). Oil shows (cut fluorescence) continued down to 2731.5 m, otherwise no shows were recorded outside of the oil and gas reservoirs. Pressure data showed that the Melke gas and the Ile/Tofte/Åre were in different pressure regimes.

Five cores were cut, one in the Melke Formation, one in the Ile/Tofte/Åre formations, and three in the Åre Formation. Sixteen oil samples were taken with MDT at depths 2549.9, 2567.9, 2568.1, 2692.4, and 2704.6, m (Tofte and Åre formations); three gas samples at 2448.5 m (Melke Formation); and three water samples at 2725.9 m (Åre Formation). The samples were of good quality, except for high mud filtrate contamination in one gas sample.

The well was permanently abandoned on 1 April 2010 as an oil and gas discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1350.00	2879.00

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	2437.0	2463.8	[m]
2	2549.5	2604.5	[m]
3	2605.0	2659.0	[m]
4	2659.0	2704.5	[m]
5	2705.5	2731.7	[m]

Total core sample length [m]	207.5
Cores available for sampling?	YES

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
DST	3C	2568.10	0.00	OIL		YES
DST	1A	2692.40	0.00	OIL		YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
376	NORDLAND GP
376	NAUST FM
1406	KAI FM
1513	HORDALAND GP
1513	BRYGGE FM
1798	ROGALAND GP
1798	TARE FM
1865	TANG FM
1889	SHETLAND GP
1889	SPRINGAR FM
2028	NISE FM
2283	CROMER KNOLL GP
2283	LYR FM

2375	VIKING GP
2375	SPEKK FM
2381	MELKE FM
2433	INTRA MELKE FM SS
2504	FANGST GP
2504	NOT FM
2549	ILE FM
2557	BÅT GP
2557	TOFTE FM
2592	ÅRE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CMR ECS	2394	2880
MDT	2436	2692
MDT	2549	2871
MSIP	2394	2880
MWD - ARCVIS9 TELE	437	1338
MWD - GVR6 ARCVRES8 TELE	2731	2880
MWD - PP ARCVIS8 TELE	1338	2394
MWD - TELESCOPE	376	437
PEX AIT	2394	2704
PEX AIT	2394	2880

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	437.0	36	440.0	0.00	LOT
SURF.COND.	13 3/8	1332.0	17 1/2	1332.0	1.57	LOT
INTERM.	9 5/8	2393.0	12 1/4	2394.0	1.87	LOT
OPEN HOLE		2880.0	8 1/2	2880.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1338	1.45	29.0		Enviromul Yellow	
2225	1.25	16.0		Enviromul Yellow	
2394	1.46	23.0		Enviromul Yellow	
2394	1.47	35.0		Enviromul Yellow	
2394	1.52	35.0		Enviromul Yellow	
2457	1.25	12.0		Enviromul Yellow	
2581	1.27	12.0		Enviromul Yellow	
2704	1.25	14.0		Enviromul Yellow	
2880	1.25	15.0		Enviromul Yellow	

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
6306_Formation_pressure_(Formasjonstrykk)	pdf	0.28