General information

Wellbore name	35/10-7 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Discovery	35/10-7 S (Toppand)
Well name	35/10-7
Seismic location	CGG18M01 inline 7148.xline26748
Production licence	630
Drilling operator	Equinor Energy AS
Drill permit	1871-L
Drilling facility	WEST HERCULES
Drilling days	40
Entered date	02.11.2021
Completed date	11.12.2021
Plugged date	11.12.2021
Release date	11.12.2023
Publication date	12.09.2023
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
Kelly bushing elevation [m]	31.0
Water depth [m]	354.0
Total depth (MD) [m RKB]	3594.0
Final vertical depth (TVD) [m RKB]	3540.0
Maximum inclination [°]	19.5
Bottom hole temperature [°C]	137
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	AMUNDSEN FM
Geodetic datum	ED50
NS degrees	61° 1' 3.29'' N
EW degrees	3° 17' 37.37'' E
NS UTM [m]	6764941.56

EW UTM [m]	515877.74
UTM zone	31
NPDID wellbore	9403

Wellbore history

General

Well 35/10-7 S was drilled to test the Toppand prospect on the Lomre Terrace in the North Sea. The primary objective was to Prove commercial hydrocarbons in the Etive and Oseberg formations (Brent Group) and Cook Formation

(Dunlin Group).

Operations and results

Wildcat well 35/10-7 S was spudded with the semi-submersible installation West Hercules on 2 November 2021 and drilled to TD at 3594 m (3540,6 m TVD) in the Early Jurassic Amundsen Formation. The well was drilled S-shaped, vertically through the target reservoirs section. In the 17 1/2" section a leak in the BSR was discovered. The BOP was pulled for repairs. This caused 5.5 days NPT. Otherwise operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 781 , with Glydril mud from 781 m to 1742 m, and with Exploradrill oil-based mud from 1742 m to TD.

Well 35/10-7 S found hydrocarbons in the Ness and Etive formations. The Oseberg and Cook Formations were dry. A hydrocarbon-down-to contact was found in the Etive Formation at 3374 m (3320 m TVD). PVT analyses show that the hydrocarbon fluids are in a near-critical state and that there is a gas-condensate phase over an oil leg. A mean gas-oil-contact (GOC) of 3294 m (3241 m TVD) has been estimated. In addition to shows in the hydrocarbon-bearing formations there were shows (petroleum odour, direct and cut fluorescence) in the interval 3405 to 3467 m in the Oseberg Formation.

Two cores were cut in succession from 3323 m to 3469 m in the Ness, Etive, Rannoch, Oseberg, and Drake formations. MDT fluid samples were taken at 3260.4 m in the Ness Formation (oil), 3320.2 m in the Etive Formation (oil), and 32400 m in the Oseberg Formation (water).

The well was permanently abandoned on 11 December 2021 as a near-critical oil and condensate discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
790.00	3594.00

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	3323.0	3414.0	[m]
2	3414.0	3467.4	[m]

Total core sample length [m]	144.4
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
383	UNDIFFERENTIATED
385	NORDLAND GP
827	UTSIRA FM
906	HORDALAND GP
1761	ROGALAND GP
1761	BALDER FM
1822	SELE FM
1857	LISTA FM
1960	VÅLE FM
2150	SHETLAND GP
2150	JORSALFARE FM
2274	KYRRE FM
2763	SVARTE FM
2830	CROMER KNOLL GP
2830	RØDBY FM
2865	SOLA FM
2868	ÅSGARD FM
2877	VIKING GP
2877	DRAUPNE FM
3014	HEATHER FM
3248	BRENT GP
3248	TARBERT FM
3260	NESS FM
3343	ETIVE FM
3374	RANNOCH FM
3398	OSEBERG FM

3464	DUNLIN GP
3464	DRAKE FM
3489	COOK FM
3545	AMUNDSEN FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
MDT CMR	3225	3595
MSIP NGI	0	0
MWD - GR RES DEN NEU SON FPWD PW	784	1710
MWD - GR RES DEN NEU SON FPWD PW	1742	3129
MWD - GR RES DEN NEU SON PWD	404	765
MWD - GR RES PWD	404	784
MWD - GR RES PWD	784	1742
MWD - GR RES PWD	3469	3594
NGI MSIP	3128	3595
PEX HNGS NEXT XPT AIT	3128	3595
VSI4	1039	3594

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
INTERM.	20	771.3	26	781.0	1.35	FIT
INTERM.	13 3/8	1734.3	17 1/2	1742.0	1.62	LOT
LINER	9 5/8	3128.0	12 1/4	3129.0	1.91	LOT
OPEN HOLE		3595.5	8 1/2	3595.5	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
539	1.60	12.0	14.5	Spud Mud	
603	1.30	9.0	13.5	Spud Mud	
741	1.15	20.0	15.0	Glydril	

883	1.18	17.0	12.5	Glydril	
901	1.16	16.0	11.0	Glydril	
923	1.20	18.0	12.5	Glydril	
1035	1.16	18.0	9.0	Glydril	
1385	1.20	17.0	13.0	Glydril	
1482	1.17	16.0	12.5	Glydril	
1675	1.35	27.0	9.0	Exploradrill	
1710	1.17	16.0	11.0	Glydril	
1741	1.26	19.0	4.0	Exploradrill	
1742	1.20	19.0	12.5	Glydril	
1872	1.22	19.0	8.0	Exploradrill	
2061	1.25	21.0	8.5	Exploradrill	
2352	1.32	26.0	11.0	Exploradrill	
2680	1.33	26.0	12.0	Exploradrill	
2924	1.35	25.0	10.0	Exploradrill	
3208	1.57	29.0	9.0	Exploradrill	
3594	1.58	34.0	8.5	Exploradrill	