

**General information**

Wellbore name	15/3-4
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Discovery	15/3-4 (Sigrun)
Well name	15/3-4
Seismic location	line 783 402 SP 490
Production licence	025
Drilling operator	Elf Petroleum Norge AS
Drill permit	304-L
Drilling facility	BORGSTEN DOLPHIN
Drilling days	179
Entered date	03.10.1981
Completed date	30.03.1982
Release date	30.03.1984
Publication date	10.08.2013
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	HUGIN FM
Kelly bushing elevation [m]	25.0
Water depth [m]	107.0
Total depth (MD) [m RKB]	4259.0
Bottom hole temperature [°C]	139
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	SKAGERRAK FM
Geodetic datum	ED50
NS degrees	58° 49' 5.28" N
EW degrees	1° 52' 59.82" E
NS UTM [m]	6520489.03
EW UTM [m]	435502.74
UTM zone	31
NPDID wellbore	314



Wellbore history

General

Well 15/3-4 was drilled on the Gudrun Terrace, east of the 15/3-1 S Gudrun Discovery in the North Sea. The main objective of the well was to test sandstones of the Late and Middle Jurassic, which were found to contain gas and condensate in wells 15/3-1 S and 15/3-3. The secondary target was the Eocene sands where oil shows were encountered in well 15/5-3.

Operations and results

Wildcat well 15/3-4 was spudded with the semi-submersible installation Borgsten Dolphin on 3 October 1981 and drilled to TD at 4259 m in the Triassic Skagerrak Formation. After the 13 3/8" casing had been cemented drilling was interrupted for 13 days due to a combination of bad weather and repairs on the BOP stack. When running in hole at TD the drill string stuck leaving a fish with top at 4098 m. Hence, no logs were run between 4098 m and TD.

The Eocene sands from 1628 to 2025 m (Grid Formation sands) were found water bearing. The Brent Group was encountered with top Hugin Formation at 3786 m and top Sleipner Formation at 3856 m. Sandstones in the Brent Group contained oil and gas in four different intervals: 3786 to 3817 m, 3819.5 to 3826.5 m, 3849.9 to 3854.8 m, and 3872.2 to 3876.4 m. The four zones were in different pressure regimes. The interval from 3819.5 to 3826.5 m had a low hydrocarbon saturation based on the logs, but the cores from this section had good shows with a similar bulk hydrocarbon composition as in the uppermost interval. Triassic sands below 4050 m were found water bearing. Good oil shows were seen on all cores from the Hugin Formation, otherwise no shows were reported from the well.

Five cores were cut in the well. Core 1 was cut in the Grid Formation from 1678 to 1694 m with 27% recovery. Coring of the Grid sands was difficult due to their unconsolidated nature. Cores 2 - 5 were cut in the interval 3792 to 3839 m in the Hugin Formation with recovery from 65% to 100%. RFT fluid samples were taken at 3802.5 m (water, mud and filtrate), 3823.5 m (water, mud and filtrate), and 3850.2 m (gas and water). FIT fluid samples were taken at 3822.5 m (water and dissolved gas), 3852.6 m (oil, gas and water), and 3873.5 m (oil, gas and water).

The well was permanently abandoned on 30 March 1982 as an oil and gas discovery.

Testing

One DST was performed through perforations in the interval 3789 to 3807.5 m. The test produced 615 Sm³ oil and 245000 Sm³ Gas/day through a 40/64" choke. The GOR was 400 Sm³/Sm³, the oil density was 0.816 g/cm³, and the gas gravity was 0.803 (air = 1). The gas contained 7.4 % CO₂. Bottom hole temperature during the DST, at reference depth 3800 m, was 127.8 deg C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
210.00	4254.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1678.0	1683.0	[m]
2	3792.0	3795.6	[m]
3	3796.1	3806.0	[m]
4	3806.0	3821.1	[m]
5	3821.0	3839.3	[m]

Total core sample length [m]	51.9
Cores available for sampling?	YES

Core photos



High: 1678-
1682m



Low: 1678-
1682m



High: 1682-
1683m



Low: 1682-
1683m



High: 3792-
3795m



Low: 3792-
3795m



High: 3796-
3799m



Low: 3796-
3799m



High: 3799-
3803m



Low: 3799-
3803m



High: 3803-
3807m



Low: 3803-
3807m



High: 3813-
3816m



Low: 3813-
3816m



High: 3816-
3819m



Low: 3816-
3819m



High: 3820-
3824m



Low: 3820-
3824m



High: 3824-
3827m



Low: 3824-
3827m



High: 3827-
3832m



Low: 3827-
3832m



High: 3832-
3836m



Low: 3832-
3836m



High: 3836-
3839m



Low: 3836-
3839m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1501.0	[m]	SWC	HYDRO
1530.0	[m]	SWC	HYDRO
1561.5	[m]	SWC	HYDRO
1593.0	[m]	SWC	HYDRO
1630.0	[m]	SWC	HYDRO
1697.0	[m]	SWC	HYDRO
1718.0	[m]	SWC	HYDRO
1738.0	[m]	SWC	HYDRO
1754.0	[m]	SWC	HYDRO
1778.0	[m]	SWC	HYDRO
1800.0	[m]	SWC	HYDRO
1824.5	[m]	SWC	HYDRO
1856.0	[m]	SWC	HYDRO
1874.0	[m]	SWC	HYDRO



1909.0	[m]	SWC	HYDRO
1954.5	[m]	SWC	HYDRO
1983.5	[m]	SWC	HYDRO
2000.0	[m]	SWC	HYDRO
2032.0	[m]	SWC	HYDRO
2058.5	[m]	SWC	HYDRO
2071.0	[m]	SWC	HYDRO
2085.0	[m]	SWC	HYDRO
2098.0	[m]	SWC	HYDRO
2172.0	[m]	SWC	HYDRO
2182.0	[m]	SWC	HYDRO
2194.0	[m]	SWC	HYDRO
3792.7	[m]	C	APT
3797.8	[m]	C	APT
3802.2	[m]	C	APT
3813.3	[m]	C	APT
3817.1	[m]	C	APT
3821.0	[m]	C	APT
3821.4	[m]	C	APT
3830.6	[m]	C	APT
3833.5	[m]	C	APT
3839.1	[m]	C	APT

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
132	NORDLAND GP
682	UTSIRA FM
913	HORDALAND GP
925	SKADE FM
1635	GRID FM
2258	ROGALAND GP
2258	BALDER FM
2314	SELE FM
2423	LISTA FM
2463	HEIMDAL FM
2580	LISTA FM
2612	TY FM
2763	SHETLAND GP



2763	JORSALFARE FM
3017	KYRRE FM
3314	BLODØKS FM
3390	SVARTE FM
3525	CROMER KNOLL GP
3525	RØDBY FM
3608	ÅSGARD FM
3675	VIKING GP
3675	DRAUPNE FM
3742	HEATHER FM
3786	VESTLAND GP
3786	HUGIN FM
3856	SLEIPNER FM
4044	SKAGERRAK FM

Geochemical information

Document name	Document format	Document size [MB]
314 1	pdf	0.17
314 2	pdf	0.21
314 3	pdf	0.25
314 4	pdf	0.59

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
314 01 WDSS General Information	pdf	0.18
314 02 WDSS completion log	pdf	0.27

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
314 15 3 4 Completion log	pdf	2.52
314 15 3 4 Completion report	pdf	24.14



**Drill stem tests (DST)**

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3789	3807	15.8

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	615	245000	0.816	0.803	399

Logs

Log type	Log top depth [m]	Log bottom depth [m]
3436	0	0
BGT	921	2823
CBL	175	2819
CBL	3382	3946
CST	2850	3700
CST	3720	3949
CST	3949	4095
CYBERLOOK	3775	3830
HDT CYBERDIP	2819	4095
ISF GR BHC SL	132	4094
LDT CNL GR CAL	192	4096
MSFL DLL GR CAL	3682	3935
NGT	3682	3946
RFT	3802	3850
RFT	3823	3823

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	192.0	36	192.0	0.00	LOT
SURF.COND.	20	921.0	26	937.0	1.45	LOT



INTERM.	13 3/8	2818.0	17 1/2	2833.0	1.78	LOT
INTERM.	9 5/8	3681.0	12 1/4	3700.0	2.05	LOT
LINER	7	3946.0	8 1/2	3948.0	2.07	LOT
OPEN HOLE		4259.0	5 7/8	4259.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
220	1.07	66.0		waterbased	
540	1.10	65.0		waterbased	
1240	1.17	45.0		waterbased	
1730	1.24	58.0		waterbased	
2020	1.24	75.0		waterbased	
2330	1.29	65.0		waterbased	
3110	1.34	54.0		waterbased	
3330	0.00			waterbased	
3380	1.38	54.0		waterbased	
3615	1.55	54.0		waterbased	
3970	1.50	58.0		waterbased	

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]
314 Formation pressure (Formasjonstrykk)	pdf	0.21

