

**General information**

Wellbore name	15/3-3
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	GUDRUN
Discovery	15/3-1 S Gudrun
Well name	15/3-3
Seismic location	line 580 517;SP 260
Production licence	025
Drilling operator	Elf Petroleum Norge AS
Drill permit	209-L
Drilling facility	PENTAGONE 84
Drilling days	217
Entered date	05.01.1979
Completed date	09.08.1979
Release date	09.08.1981
Publication date	10.08.2013
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	NO
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA DRAUPNE FM SS
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	HUGIN FM
3rd level with HC, age	MIDDLE JURASSIC
3rd level with HC, formation	SLEIPNER FM
Kelly bushing elevation [m]	24.0
Water depth [m]	109.0
Total depth (MD) [m RKB]	5115.0
Final vertical depth (TVD) [m RKB]	5112.0
Maximum inclination [°]	4.5
Bottom hole temperature [°C]	169
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	SKAGERRAK FM
Geodetic datum	ED50



NS degrees	58° 52' 31.25" N
EW degrees	1° 46' 46.24" E
NS UTM [m]	6526963.86
EW UTM [m]	429625.80
UTM zone	31
NPDID wellbore	313

Wellbore history

**General**

Well 15/3-3 was drilled west of the Gudrun Terrace on the east flank of the North Sea Central Graben, about 4.5 km north-east of the 15/3-1 S discovery. The main objective of the 15/3-3 well was to appraise the complete Jurassic series up-dip of well 15/3-1 S drilled on the same structure in 1975.

Well 15/3-3 is type well for the Grid Formation.

Operations and results

Appraisal well 15/3-3 was spudded with the semi-submersible installation Pentagone 84 on 5 January 1979 and drilled to TD at 5115 m in the Triassic Skagerrak Formation.

Several water bearing sands with high porosity were encountered in the Tertiary section including the Grid, Heimdal and Ty formations. The Cretaceous had no reservoir sections and was drilled without gas shows. The Late Jurassic Draupne Formation was encountered at 4017 m. The Draupne Formation was 208 m thick and consisted of shales with only a few < 1 m sandstone beds. The Heather Formation was penetrated from 4225 to 4522 m and contained a main Intra Heather Formation sandstone from 4260 to 4369 m. This sandstone was gas and condensate bearing in the upper part down to a GOC at 4272 m. The Hugin Formation came in at 4522 m and then the Sleipner Formation at 4545 m. The Hugin Formation contained gas filled sandstone from 4522 to 4527 m. Several thinner sandstones with gas followed down to a main gas filled sandstone in the Sleipner Formation from 4588 to 4632 m. A second hydrocarbon filled Sleipner Formation sandy interval was penetrated from 4679 to 4693 m. The upper part down to 4687 m consisted of good sandstone, further down it was cemented.

The only oil shows in the well was rare pale yellow to greenish crush cut fluorescence on cuttings around 4100 m and on white - yellowish fluorescence on all cores.

Six conventional cores were cut in the Jurassic section all with full recovery. The three first were cut in the Heather Formation from 4262 to 4307 m (4264 to 4309.9 m logger's depth). The three last were cut in the Sleipner Formation (cored depth = loggers depth): Core 4 from 4547 to 4562 m; core 5 from 4851 to 4860 m; and core 6 from 4995 to 5004 m. Three RFT fluid samples were taken at 4262 m (gas and condensate), 4262.5 m (mud and traces of condensate), and 4261.5 m (condensate). Four FIT samples were taken at 5059.5 m (water), 4989.5 m (mud filtrate), 4626.5 m (gas and mud), and 4262 m (oil and gas).

The well was permanently abandoned on 9 August 1979 as a gas/condensate appraisal.

Testing

Two DSTs were performed through perforations in the 7" liner.

DST 1 tested 4967 - 4990 m with packer at 4957 m. It produced 4.3 m3 of salt water (125 g/1) with traces of gas in 11 hours.

DST 2 tested 4615 - 4632 m with packer at 4600 m. It produced 520000 m3 gas, 60 m3 41.5 deg API paraffinic condensate and 2.2 m3 water /day in 24 hours. The GOR was ca 8600 Sm3/Sm3.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
200.00	5111.00



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	4262.0	4268.5	[m]
2	4274.0	4287.0	[m]
3	4287.5	4307.9	[m]
4	4547.0	4562.0	[m]
5	4851.0	4860.0	[m]
6	4995.0	5004.0	[m]

Total core sample length [m]	72.9
Cores available for sampling?	YES

Core photos



High: 4262-
4268m



Low: 4262-
4268m



High: 4268-
4272m



Low: 4268-
4272m



High: 4272-
4277m



Low: 4272-
4277m



High: 4277-
4283m



Low: 4277-
4283m



High: 4283-
4287m



Low: 4283-
4287m



High: 4288-
4293m



Low: 4288-
4293m



High: 4293-
4299m



Low: 4293-
4299m



High: 4299-
4304m



Low: 4299-
4304m



High: 4304-
4307m



Low: 4304-
4307m



High: 4547-
4552m



Low: 4547-
4552m



High: 4552-
4559m



Low: 4552-
4559m



High: 4559-
4562m



Low: 4559-
4562m



High: 4851-
4856m



Low: 4851-
4856m



High: 4856-
4860m



Low: 4856-
4860m



High: 4995-
5000m



Low: 4995-
5000m



High: 5000-
5004m



Low: 5000-
5004m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
4570.0	[m]	C	RRI
4586.0	[m]	C	RRI
4640.0	[m]	C	RRI
4650.0	[m]	C	RRI
4670.0	[m]	C	RRI
4705.0	[m]	C	RRI
4710.0	[m]	C	RRI



4720.0	[m]	C	RRI
4735.0	[m]	C	RRI
4746.0	[m]	C	RRI
4752.0	[m]	C	RRI
4758.0	[m]	C	RRI
4764.0	[m]	C	RRI

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	DST 2	4615.00	4632.00	WATER		YES
DST		4967.00	4990.00			NO
DST	DST 0	0.00	0.00			YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
133	NORDLAND GP
677	UTSIRA FM
851	HORDALAND GP
1470	GRID FM
2176	ROGALAND GP
2176	BALDER FM
2235	SELE FM
2290	HEIMDAL FM
2557	LISTA FM
2653	TY FM
2692	SHETLAND GP
2692	EKOFISK FM
2764	JORSALFARE FM
3023	KYRRE FM
3250	TRYGGVASON FM
3521	BLODØKS FM
3628	SVARTE FM
3743	CROMER KNOLL GP



3901	ÅSGARD FM
4017	VIKING GP
4017	DRAUPNE FM
4225	HEATHER FM
4522	VESTLAND GP
4522	HUGIN FM
4545	SLEIPNER FM
5033	SKAGERRAK FM

Geochemical information

Document name	Document format	Document size [MB]
313_1	pdf	1.58
313_2	pdf	0.61
313_3	pdf	0.24

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

Document name	Document format	Document size [MB]
313_01_WDSS_General_Information	pdf	0.13
313_02_WDSS_completion_log	pdf	0.33

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

Document name	Document format	Document size [MB]
313_15_3_3_Completion_log	pdf	3.24
313_15_3_3_Completion_report	pdf	3.94

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	4967	4990	18.7
2.0	4615	4615	12.7





Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0					
2.0		520000			8600

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHG	4042	5116
CBL	846	4042
CBL VDL	30	1000
CBL VDL	1800	2862
CBL VDL	3840	5067
DLL MSFL	4042	5110
FDC CNL GR CAL	4042	5110
FDC GR CAL	858	4052
HDT	2000	5111
ISF SON GR SP	195	4967
SONIC	2844	4048
TEMP	1500	2853
VELOCITY	1580	5103

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	195.0	36	196.0	0.00	LOT
SURF.COND.	20	857.0	26	870.0	1.33	LOT
INTERM.	13 3/8	2845.0	17 1/2	2859.0	0.00	LOT
INTERM.	9 5/8	4040.0	12 1/4	4052.0	2.20	LOT
LINER	7	5109.0	8 3/8	5115.0	0.00	LOT

**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
940	1.11	46.0		waterbased	
1380	1.15	66.0		waterbased	
2215	1.22	62.0		waterbased	
2870	1.27	54.0		waterbased	
3460	1.29	60.0		waterbased	
3800	1.34	63.0		waterbased	
4050	1.95	75.0		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]
313 Formation pressure (Formasjonstrykk)	pdf	0.22

