

**General information**

Wellbore name	2/7-3
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	2/7-3
Seismic location	LINE PG-031430 S SP.478
Production licence	018
Drilling operator	Phillips Petroleum Company Norway
Drill permit	68-L
Drilling facility	ORION
Drilling days	181
Entered date	14.04.1972
Completed date	11.10.1972
Release date	11.10.1974
Publication date	12.08.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	PALEOCENE
1st level with HC, formation	EKOFISK FM
2nd level with HC, age	LATE CRETACEOUS
2nd level with HC, formation	TOR FM
3rd level with HC, age	LATE JURASSIC
3rd level with HC, formation	ELDFISK FM
Kelly bushing elevation [m]	28.0
Water depth [m]	69.0
Total depth (MD) [m RKB]	4359.0
Maximum inclination [°]	4.5
Bottom hole temperature [°C]	134
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	56° 23' 1.7" N
EW degrees	3° 14' 44.6" E
NS UTM [m]	6248963.28



EW UTM [m]	515173.66
UTM zone	31
NPDID wellbore	262

Wellbore history

General

Well 2/7-3, was drilled on the southern compartment of the Eldfisk structure in the North Sea. The Eldfisk structure is a NNW-SSE trending partly salt-related anticlinal structure located between the Valhall and Embla fields to the south and the Ekofisk Field to the north. The primary objectives were to test the Danian Limestone, and the possibility of Jurassic sandstone development on the crest of the Eldfisk structure. Both objectives were expected to be ca 120 m thick. The Late Cretaceous carbonate, lower Cretaceous sandstones and Triassic sandstones were secondary objectives.

Operations and results

Wildcat well 2/7-3 was spudded with the jack-up installation Orion on the 14 April 1972 and drilled to TD at 4359 m in the Permian Zechstein Group. Note that the Daily Report records Decca final fix as 56° 23' 01.7"N, 03° 14' 44.6"E, 60 meters off desired location, while other parts of the Completion Report seems to record the coordinates of the slightly different planned well location. The well was drilled with seawater and hi-vis sweeps down to 482 m, with gypsum-CMC lignosulphonate mud from 482 m to 3195 m, and with salt saturated gypsum-CMC lignosulphonate mud from 3195 m to TD. Between 482 m and TD diesel was added to the mud.

The Danian section was 90 m thick, highly fractured, and yielded commercial quantities of oil. Logs and two drill stem tests (DST 1 and DST 2) in the Late Cretaceous rocks indicated low porosity and permeability. One hundred and fifty gross meter of Jurassic sandstones was penetrated in the well. Log analysis indicated the sands are very shaly and silty. Three of the sidewall cores from this interval were described as hard, black shale and the fourth as a very calcareous sandstone. Although the logs showed high resistivities through this section and oil was present in the; mud pits while drilling this interval, tests indicated low permeability. No Early Cretaceous sandstones or Triassic sandstones were present in the well.

A total of 19 m core was cut in four cores from the interval 2851.1 m to 2901.4 m in the Shetland Group. No fluid samples were taken on wire line.

The well was permanently abandoned on 11 October 1972 as an oil discovery.

Testing

A total of sixteen drill stem tests were attempted in the well; five in the Shetland Group and eleven in the Jurassic Farsund Formation and Haugesund Formation. The Eldfisk Formation was not tested. Ten of the Jurassic tests did not produce fluid to the surface. Representative data for the Shetland Group tests and the one in the Jurassic that produced oil are given here.

DST 1 tested the interval 2971.8 to 3002.3 m. The test produced total of 4.53 m3 of water and mud with 10% oil.

DST 2 tested the interval 2907.8 to 2938.3 m. The test flowed 64 Sm3 oil and 14800 Sm3 gas /day through a 32/64" choke. The GOR was 231 Sm3/Sm3 and the oil gravity was 29.9 °API.



DST 3 tested the interval 2883.4 to 2895.6 m. The test produced after acidizing 667 Sm³ oil and 135200 Sm³ gas /day through a 32/64" choke. The GOR was 202 Sm³/Sm³ and the oil gravity was 35.96 °API.

DST 4 tested the interval 2868.2 to 2877.3 m. The test produced after acidizing 227 Sm³ oil and 57200 Sm³ gas /day through a 28/64" choke. The GOR was 252 Sm³/Sm³ and the oil gravity was 36.75 °API.

DST 5 tested the interval 2805.7 to 2856 m. The test produced after acidizing 712 Sm³ oil and 173200 Sm³ gas /day through a 28/64" choke. The GOR was 243 Sm³/Sm³ and the oil gravity was 37.96 °API.

The interval 3502.2 to 3517.4 m (named Jurassic DST 11 in some well reports and DST 18 in other well reports) was the only interval in the Jurassic that produced oil. The flow rates declined through the flows. After acidizing and at the end of the second flow the well produced 58 Sm³ oil and 5300 Sm³ gas /day through a 24/64" choke. The GOR was 91 Sm³/Sm³ and the oil gravity was 27.4 °API.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
487.68	4358.64

Cuttings available for sampling?	NO
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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	9354.0	9370.0	[ft]
2	9388.0	9392.0	[ft]
3	9431.0	9472.0	[ft]
4	9480.0	9484.0	[ft]

Total core sample length [m]	19.8
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
10900.0	[ft]	DC	OU
10900.0	[ft]	DC	
10960.0	[ft]	DC	OU
10990.0	[ft]	DC	
11000.0	[ft]	DC	OU



11050.0	[ft]	DC	OU
11220.0	[ft]	DC	OU
11260.0	[ft]	DC	OU
11330.0	[ft]	DC	OU
11390.0	[ft]	DC	OU
11670.0	[ft]	DC	
12190.0	[ft]	DC	
12900.0	[ft]	DC	
13590.0	[ft]	DC	

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
100	NORDLAND GP
2701	ROGALAND GP
2805	SHETLAND GP
3240	CROMER KNOLL GP
3342	TYNE GP
3342	MANDAL FM
3414	FARSUND FM
3626	ELDFISK FM
3695	HAUGESUND FM
4192	ZECHSTEIN GP

Geochemical information

Document name	Document format	Document size [MB]
262_GCH_1	pdf	1.27
262_GCH_2	pdf	1.86
262_GCH_3	pdf	0.60
262_GCH_4	pdf	0.17
262_GCH_5	pdf	3.05
262_GCH_6	pdf	1.71

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





Document name	Document format	Document size [MB]
262_01_WDSS_General_Information	pdf	0.24

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

Document name	Document format	Document size [MB]
262_2_7_3_COMPLETION_LOG	pdf	2.27
262_2_7_3_COMPLETION_REPORT	pdf	20.99

Documents - Norwegian Offshore Directorate papers

Document name	Document format	Document size [MB]
262_01_NPD_Paper_No.30_Geology_of_the_Eldfisk_Area_Well_2_7_3	pdf	72.88
262_02_NPD_Paper_No.32_Late_Jurassic-early_Tertiary_Correlation_chart_Profile_3_Well_2_7_3	pdf	0.74
262_03_NPD_Paper_No.30_Interpreted_Lithology_log_Well_2_7_3	pdf	61.83
262_04_NPD_Paper_No.30_Early_Tertiary-Late_Jurassic_Correlation_chart_Eldfisk_Well_2_7_3	pdf	0.82

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2908	2938	0.0
2.0	2908	2938	0.0
3.0	2883	2896	0.0
4.0	2868	2877	0.0
5.0	2806	2856	0.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				
3.0				
4.0				





5.0				
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Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	123	31148			
2.0					
3.0	667	133089			
4.0	792	167069			
5.0	712	172732			

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC	436	4318
CBL	27	1570
CBL	2438	3048
CBL	2438	2958
CDM	2682	4191
DLL	2682	4191
FDC	2682	4191
GR	99	1591
IES	480	4315
MLL	2682	4197
SNP	2682	4176
VELOCITY	488	4359

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	133.0	36	133.0	0.00	LOT
SURF.COND.	20	482.0	26	487.0	0.00	LOT
INTERM.	13 3/8	1585.0	17 1/2	1591.0	0.00	LOT
INTERM.	9 5/8	3184.0	12 1/4	3195.0	0.00	LOT
LINER	7	4194.0	8 1/2	4359.0	0.00	LOT

Drilling mud



Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
132	1.10			seawater	
487	1.31			seawater	
1585	1.31			seawater	
3200	1.71			barite	