General information

Wellbore name	15/3-5
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Discovery	15/3-4 (Sigrun)
Well name	15/3-5
Seismic location	EL 8206 - 418 A SP 726
Production licence	025
Drilling operator	Elf Petroleum Norge AS
Drill permit	397-L
Drilling facility	BYFORD DOLPHIN
Drilling days	138
Entered date	28.12.1983
Completed date	13.05.1984
Release date	13.05.1986
Publication date	10.08.2013
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	SLEIPNER FM
Kelly bushing elevation [m]	25.0
Water depth [m]	110.0
Total depth (MD) [m RKB]	4130.0
Final vertical depth (TVD) [m RKB]	4130.0
Bottom hole temperature [°C]	115
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	SLEIPNER FM
Geodetic datum	ED50
NS degrees	58° 47' 13.04'' N
EW degrees	1° 50' 34.11'' E
NS UTM [m]	6517057.34
EW UTM [m]	433105.22
UTM zone	31
NPDID wellbore	52

Wellbore history

General

Well 15/3-5 was drilled on the Gudrun Terrace, east of the 15/3-1 S Gudrun Discovery in the North Sea. Well 15/3-5 was drilled in a downdip position of a structure explored by the well 15/3-4, where oil bearing reservoirs of Middle Jurassic age were tested. The main objectives of 15/3-5 were to find the extension of these reservoirs and to define a hydrocarbon/water contact.

Operations and results

Appraisal well 15/3-5 was spudded with the semi-submersible installation Byford Dolphin on 28 December 1983 and drilled to TD at 4130 m in the Middle Jurassic Sleipner Formation. Drilling was suspended at 195 m due to bad weather. The well was re-spudded on 6 January 25 m west of the original location. Some technical problems with the BOP occurred after setting of the 20" and 13 3/8" casings. A seat protector got stuck in the riser during drilling of the 17 1/2" hole. Drilling breaks occurred at 3943 m, 3954 m, 4018 m, 4032 m and at 4041 4043 m in the 8 1/2" hole section. The well was drilled using water based mud.

Top Draupne Formation was encountered at 3808 m, followed by the Heather Formation at 3881 m, and the target Middle Jurassic Sleipner Formation at 3935 m. Several thin reservoir zones were penetrated in the Sleipner Formation. The sands were interpreted as minor fluvial channels (2 to 5m in thickness) deposited in two main sequences. Four of the channels were oil-bearing with an oil gradient of 0.61 bar/10 m based on pressure measurements. An OWC could be established at 4022.6 m. Pressure measurements showed that the upper fluvial channel sequence is over-pressured, and not in contact with the sands encountered in well 15/3-4. The lower fluvial sequence could be connected between the two wells. Petrophysical evaluation of the whole system gave a net pay of 6.7 m.

In the Quaternary, Tertiary and Cretaceous series no fluorescence due to hydrocarbons were observed. In the Upper Jurassic sequence, a weak yellow colour in direct fluorescence light was observed on sandstone pieces. A pale to clear yellow and orange colour in direct fluorescence light was reported from the Middle Jurassic sequence down to about 4060m. Below 4060 m to TD nil to very weak direct fluorescence was observed.

Three cores were cut in the Sleipner Formation. Cores 1 and 2 were cut from 3971 to 4003 m (3973.6 to 4005.6 m logger's depth) with 98 % and 84% recovery, respectively. Core 3 was cut from 4020 to 4029 m (4023.9 to 4032.9 m logger's depth) with 94% recovery. RFT wire line fluid samples were taken at 3969.9 m (gas + mud filtrate), 3984 m (gas + mud filtrate), 4022.2 m (minor gas + mud filtrate), and 4028.5 m (trace gas + mud filtrate),

The well was permanently abandoned on 13 May 1984 as an oil appraisal.

Testing

No drill stem test was performed.

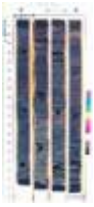
Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
200.00	4130.00

Cuttings available for sampling?	YES

Core photos


High: 3971-3975m


Low: 3971-3975m


High: 3975-3979m


Low: 3975-3979m


High: 3979-3983m


Low: 3979-3983m


High: 3983-3987m


Low: 3983-3987m


3987-3989m


3989-3991m


High: 3991-3995m


Low: 3991-3995m


High: 3995-3999m


Low: 3995-3999m


3999-4001m


4020-4022m


4022-4026m


4026-4029m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
3971.4	[m]	C	WESTL

3973.5	[m]	C	WESTL
3977.1	[m]	C	WESTL
3979.6	[m]	C	WESTL
3980.7	[m]	C	WESTL
3983.4	[m]	C	WESTL
3986.4	[m]	C	WESTL
3987.2	[m]	C	WESTL
3992.0	[m]	C	WESTL
3995.8	[m]	C	WESTL
4000.4	[m]	C	WESTL
4020.3	[m]	C	WESTL
4021.4	[m]	C	WESTL
4023.1	[m]	C	WESTL
4024.2	[m]	C	WESTL
4028.3	[m]	C	WESTL

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		0.00	0.00	WATER		YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
135	NORDLAND GP
702	UTSIRA FM
928	HORDALAND GP
1129	SKADE FM
1596	GRID FM
2236	ROGALAND GP
2236	BALDER FM
2294	SELE FM
2350	HEIMDAL FM
2695	LISTA FM
2757	TY FM
2803	SHETLAND GP

2803	JORSALFARE FM
3063	KYRRE FM
3401	BLODØKS FM
3486	SVARTE FM
3623	CROMER KNOLL GP
3623	RØDBY FM
3672	ÅSGARD FM
3808	VIKING GP
3808	DRAUPNE FM
3881	HEATHER FM
3935	VESTLAND GP
3935	SLEIPNER FM

Geochemical information

Document name	Document format	Document size [MB]
52_1	pdf	0.04
52_2	pdf	1.67

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

Document name	Document format	Document size [MB]
52_01_WDSS_General_Information	pdf	0.16
52_02_WDSS_completion_log	pdf	0.34

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

Document name	Document format	Document size [MB]
52_15_3_5_Completion_log	pdf	2.17
52_15_3_5_Completion_report	pdf	11.39

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BGT GR CAL	962	2800

CST	2817	3829
CST	3210	3828
CST	3830	3905
CST	3938	4130
DLL MSFL GR	3816	4133
ISF LSS GR SP	2797	3832
ISF LSS GR SP	3816	4005
ISF LSS GR SP	3816	4133
ISF SON GR	135	973
ISF SON GR SP	962	2808
LDL CAL	962	2808
LDL CNL GR CAL	3816	4005
LDL CNL NGL	3815	4135
LDT GR CAL	194	967
LDT NGT CAL	2797	3817
RFT	3960	4135
RFT	3984	4048
RFT	4022	4028
SHDT	2797	3830
SHDT	3815	4135
SSL	1000	4125

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	196.0	36	196.0	0.00	LOT
SURF.COND.	20	962.0	26	977.0	1.28	LOT
INTERM.	13 3/8	2798.0	17 1/2	2813.0	1.72	LOT
INTERM.	9 5/8	3816.0	12 1/4	3832.0	0.00	LOT
OPEN HOLE		4130.0	8 1/2	4130.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
180	1.03	26.0	10.0	WATER BASED	
210	1.11	26.0	10.0	WATER BASED	
1040	1.15	15.0	10.0	WATER BASED	

1170	1.17			WATER BASED	
1245	1.18	25.0	20.0	WATER BASED	
1530	1.19	24.0	14.0	WATER BASED	
1790	1.21	21.0	13.0	WATER BASED	
2160	1.26			WATER BASED	
2370	1.26	32.0	26.0	WATER BASED	
2605	1.28	21.0	16.0	WATER BASED	
3010	1.29	35.0	28.0	WATER BASED	
3070	1.30	35.0	26.0	WATER BASED	
3530	1.33	36.0	24.0	WATER BASED	
3660	1.37	36.0	20.0	WATER BASED	
3710	1.41	48.0	20.0	WATER BASED	
3740	1.43	48.0	20.0	WATER BASED	
3785	1.45	40.0	26.0	WATER BASED	
3850	1.60			WATER BASED	
3930	1.61	42.0	18.0	WATER BASED	
3970	1.70			WATER BASED	

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]
52_Formation_pressure_(Formasjonstrykk)	pdf	0.22