

**General information**

Wellbore name	15/9-20 S
Type	EXPLORATION
Purpose	WILDCAT
Status	RE-CLASS TO DEV
Factmaps in new window	link to map
Main area	NORTH SEA
Field	SLEIPNER ØST
Discovery	15/9-9 Sleipner Øst
Well name	15/9-20
Seismic location	ST 8215 R-3D
Production licence	046
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	787-L
Drilling facility	SLEIPNER A
Drilling days	33
Entered date	16.02.1994
Completed date	20.03.1994
Release date	20.03.1996
Publication date	18.01.2007
Purpose - planned	WILDCAT
Reclassified to wellbore	15/9-A-22
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	PALEOCENE
1st level with HC, formation	HEIMDAL FM
2nd level with HC, age	TRIASSIC
2nd level with HC, formation	SKAGERRAK FM
Kelly bushing elevation [m]	78.0
Water depth [m]	82.0
Total depth (MD) [m RKB]	3626.0
Final vertical depth (TVD) [m RKB]	2801.0
Maximum inclination [°]	53.7
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	SMITH BANK FM
Geodetic datum	ED50
NS degrees	58° 22' 1.89" N
EW degrees	1° 54' 31.98" E



NS UTM [m]	6470257.29
EW UTM [m]	436165.07
UTM zone	31
NPDID wellbore	2319

Wellbore history

General

Wildcat well 15/9-20 S was drilled from the Sleipner A platform on the Sleipner øst Field. It started off as development well 15/9-A-22, which was designed to provide gas production from the Heimdal reservoir in the central part of the Sleipner Øst Field, and to contribute with geological and reservoir technical data for optimal reservoir management in this area. Due to unexpected geology in the deeper part of the well the Cretaceous and below was reclassified to exploration well 15/9-20 S.

Operations and results

Well 15/9-20 S was spudded from the fixed installation Sleipner A on 16 February 1994 and drilled deviated to TD at 3624 m in the Triassic Smith Bank Formation. No significant problems were reported from the operations. The well was drilled with seawater/PAC mud from below 26" conductor to 506 m, with KCl/PHPA/PAC mud from 506 m to 1735 m, with KCl/PHPA/PAC/Glycol mud from 1735 m to 2928 m, and with ester mud from 2928 m to TD. No shallow gas was encountered.

The well penetrated the Heimdal Formation target at 2931 m (2279.6 m TVD MSL), 11.6 m TVD deeper than prognosis. The Heimdal Formation was 104 m thick (71.2 m TVD) and proved to be gas filled as expected. Under the Heimdal Formation the well drilled 204 m Late Cretaceous limestone overlying 8 m Blodøks Formation. At 3247 m (2490.2 m TVD MSL) the well drilled unexpected into Jurassic/Triassic sandy sediments, which proved to have a 30 - 50 m TVD hydrocarbon leg.

Five conventional cores were cut from 2940 - 3043 m in the Heimdal and into the top of the Tor Formation. A sixth core was cut from 3216 - 3244 m, from base Hod Formation and into the Blodøks Formation. One RFT segregated sample was taken at 3272.6 m in the Skagerrak Formation.

Well bore 15/9-20 S was plugged back and permanently abandoned on 1 June 1994 as a gas discovery.

Testing

The well was perforated on wire line over the interval 3229 - 3238 m in the base of the Hod Formation and stimulated with acid, but the result was negative and the interval was plugged. Two drill stem tests were performed in the Heimdal Formation sandstone. DST 1 tested the interval 2942 - 2956 m and DST 2 tested the interval 2933 - 2942 m.

Core photos



2940-2945m



2945-2950m



2950-2954m



2954-2959m



2959-2964m



2964-2969m



2969-2974m



2974-2977m



2977-2982m



2982-2987m



2987-2992m



2992-2997m



2997-3002m



3002-3006m



3006-3010m



3010-3015m



3015-3015m



3015-3020m



3020-3025m



3025-3030m



3030-3035m



3035-3040m



3040-3045m



3216-3221m



3221-3226m



3226-3231m



3231-3236m



3236-3241m



3241-3244m

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
160	NORDLAND GP
911	UTSIRA FM
1131	HORDALAND GP
1279	SKADE FM
1308	NO FORMAL NAME
2645	ROGALAND GP
2645	BALDER FM
2713	SELE FM
2820	LISTA FM
2931	HEIMDAL FM
3035	SHETLAND GP
3035	TOR FM
3195	HOD FM
3239	BLODØKS FM
3247	VIKING GP
3247	DRAUPNE FM
3249	HEATHER FM
3259	NO GROUP DEFINED
3259	SKAGERRAK FM
3503	SMITH BANK FM

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

Document name	Document format	Document size [MB]
2319 15 9 20 S COMPLETION LOG	pdf	1.18

Logs

Log type	Log top depth [m]	Log bottom depth [m]
DIL BHC GR	2922	3627
LDL BHC GR	1729	2917
LDL CNL GR	2922	3627
MWD - DPR GR	506	2928





RFT HP GR	2942	3577
VSP	1788	3588

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	26	283.0	30	285.0	0.00	LOT
SURF.COND.	18 5/8	501.0	20	504.0	0.00	LOT
INTERM.	13 3/8	1729.0	17 1/2	1731.0	1.65	LOT
INTERM.	9 5/8	2922.0	12 1/4	2922.0	1.78	LOT
LINER	7	3624.0	8 1/2	3626.0	1.92	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
506	1.11	26.0		WATER BASED	
1073	1.30	25.0		WATER BASED	
1541	1.35	29.0		WATER BASED	
1735	1.35	32.0		WATER BASED	
2255	1.64	41.0		WATER BASED	
2653	1.64	51.0		WATER BASED	
2921	1.20	20.0		OIL BASED	
2928	1.64	44.0		WATER BASED	
2940	1.20	20.0		OIL BASED	
3015	1.23	24.0		OIL BASED	
3206	1.23	25.0		OIL BASED	
3244	1.24	25.0		OIL BASED	
3307	1.33	30.0		OIL BASED	
3626	1.28	24.0		OIL 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]
2319 Formation pressure (Formasjonstrykk)	pdf	0.23

