

**General information**

Wellbore name	6604/6-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6604/6-1
Seismic location	Win18M01 Inline 16968; Crossline 27527
Production licence	894
Drilling operator	Wintershall Dea Norge AS
Drill permit	1800-L
Drilling facility	SCARABEO 8
Drilling days	42
Entered date	01.12.2019
Completed date	11.01.2020
Plugged and abandon date	11.01.2020
Release date	11.01.2022
Publication date	08.08.2022
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	34.0
Water depth [m]	1127.0
Total depth (MD) [m RKB]	3640.0
Final vertical depth (TVD) [m RKB]	3640.0
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	SPRINGAR FM
Geodetic datum	ED50
NS degrees	66° 36' 15.35" N
EW degrees	4° 53' 56.34" E
NS UTM [m]	7388734.05
EW UTM [m]	584137.96
UTM zone	31
NPDID wellbore	8952



Wellbore history

General

Well 6604/6-1 was drilled to test the Gullstjerne prospect ca 14 km east of the 6604/5-1 Balderbrå discovery on the Vigrid Syncline in deep waters in the Norwegian Sea. The primary objective was to confirm live hydrocarbons in the Late Cretaceous Springar Formation submarine fan systems.

Operations and results

Wildcat well 6604/6-1 was spudded with the semi-submersible installation Scarabeo 8 on 1 December 2019 and drilled to TD at 3640 m in the Late Cretaceous Springar Formation. Operations proceeded without significant problems, although adverse weather led to as much as 22.3 days (45.5%) of the rig time. The well was drilled with seawater and hi-vis pills down to 2200 m, with Innover NS oil-based mud from 2200 m to 2318 m and with water-based DW/HT mud from 2318 m to TD.

The Springar Formation came in at 3084 m. It is composed of mudstones with two sandstone units Sandstone 2 with top at 3306 m and Sandstone 3 with top at 3452 m. The sands are separated by a ca 65 m thick claystone unit. The Sandstone 2 unit was finely laminated and had poor permeability and only residual gas saturation, but good porosity - up to 30 %. The Sandstone 3 unit consisted of two separate sandstone packages with poor permeability. The upper one was more laminated with porosities up to 22 % and the lower one was less laminated with porosities up to 24 %. A common water gradient was observed from pressure measurements in sandstone units 2 and 3. The well was drilled with no shows.

No cores were cut. MDT fluid samples were taken at 3322 m, 3463.5 m, and 3529.4 m. All samplings recovered formation water, mud filtrate and a little gas. The only temperatures available from the well are those from MDT sampling. The temperature from the sampling station at 3529.41 m was 114.55 °C. This was considered to be in equilibrium after having pumped 29 l of fluids and it is the basis for the extrapolated temperature of 119 °C at final TD.

The well was permanently abandoned on 16 January 2020 as a dry well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
2322.00	3640.00

Cuttings available for sampling?	YES
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Lithostratigraphy



Top depth [mMD RKB]	Lithostrat. unit
1161	NORDLAND GP
1161	NAUST FM
1450	KAI FM
1727	HORDALAND GP
1727	BRYGGE FM
1849	NO FORMAL NAME
2350	ROGALAND GP
2350	TARE FM
2485	TANG FM
3084	SHETLAND GP
3084	SPRINGAR FM
3306	UNDIFFERENTIATED
3375	UNDIFFERENTIATED
3452	UNDIFFERENTIATED
3577	UNDIFFERENTIATED

Logs

Log type	Log top depth [m]	Log bottom depth [m]
LWD - DIR	1161	1244
LWD - DIR BG RES DEN NEU	3110	3640
LWD - DIR GR RES	1244	2318
LWD - DIR GR RES SON DEN NEU	2318	3110
MDT	3109	3640
SEISMIC	3109	3640
XPT RES LITH DEN NEU SGR	3109	3640

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	1243.0	36	1243.0	0.00	
SURF.COND.	13 3/8	2312.0	17 1/2	2312.0	1.35	LOT
LINER	9 5/8	3109.0	12 1/4	3109.0	1.53	LOT
OPEN HOLE		3640.0	8 1/2	3640.0	0.00	