

**General information**

Wellbore name	6507/2-5 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	ØRN
Discovery	6507/2-5 S Ørn
Well name	6507/2-5
Seismic location	MC3D HVG2012M Inline: 7791 Xline: 5770
Production licence	942
Drilling operator	Equinor Energy AS
Drill permit	1771-L
Drilling facility	WEST PHOENIX
Drilling days	54
Entered date	23.07.2019
Completed date	14.09.2019
Plugged and abandon date	14.09.2019
Release date	14.09.2021
Publication date	10.11.2021
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	GARN FM
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	NOT FM
Kelly bushing elevation [m]	38.6
Water depth [m]	332.0
Total depth (MD) [m RKB]	4230.0
Final vertical depth (TVD) [m RKB]	4186.0
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	TILJE FM
Geodetic datum	ED50
NS degrees	65° 50' 44.19" N
EW degrees	7° 22' 43.71" E



NS UTM [m]	7303841.52
EW UTM [m]	425977.89
UTM zone	32
NPDID wellbore	8775

Wellbore history

**General**

Well 6507/2-5 S (Ørn) is located on the Dønna Terrace in the Norwegian Sea, approximately 10 km southwest of the Marulk field. The objectives were to prove presence of hydrocarbons in the Fangst Group, Middle Jurassic shallow marine deposits in the Ørn structure, and acquire sufficient information on reservoir and fluid properties to be able to decide on a potential appraisal well for middle Jurassic discovery. If hydrocarbons are proven in Garn or Ile formations, the well would drill into Tofte and Tilje formations to clarify if these are water bearing. In addition, acquire data on reservoir and fluid properties in the Lysing Formation interval for regional understanding with the aim to clarify the relationship between logged resistivity, calculated saturation, and water salinity.

Operations and results

The well was entered with the semi-submersible rig West Phoenix on 23 July 2019 and drilled to TD at 4230 m (4186 m TVD) in the Early Jurassic Tilje Formation. The well was drilled down to 1386 m with seawater and CMC spud sweeps, from 1386 to 2807 with Versatec oil-based mud and from 2807 to TD with Exploradrill oil-based mud. The well was drilled vertical until 2000 m where it started to build inclination in the 17 ½" and 12 ¼" hole sections, before returning to vertical before 12 ¼" hole section TD.

The Lange Formation was penetrated at 2981 m (2918.4 m TVD MSL) and consists of predominantly claystone with single meter-scale limestone stringers as well as occurrences of sandstone bodies in the lower half. Unexpected hydrocarbon indications were observed in multiple levels within the Lange Formation. However, no moveable hydrocarbons were proven from logging results. A 16 meters thick Garn Formation sandstone was encountered at 4099 m (4016.4 m TVD MSL), 67 m deeper than original prognosis. The Ile Formation was encountered at 4107 m (4025 m TVD MSL), 35.6 m deeper than original prognosis and is dominated by a thicker sandstone interval in upper parts with varying siltstone and sandstone in lower parts. A 33 m gas column was indicated in a hydrocarbon down-to scenario. The results were supported by pressure gradients and fluid sampling in the Garn and Ile formations. One conventional core of 41.5 m was cut covering Garn to Ile formations from 4107.5 to 4149 m. MDT fluid samples were taken in the Lysing Formation at 2980 m (water), in the Garn Formation at 4099 m (gas), and in the Ile Formation at 4127.4 m (condensate), 4118 m (condensate), 4111.3 m (gas), and 4116 m (gas).

The well was permanently plugged and abandoned on 14 September 2019 as a gas discovery well.

Testing

No drill stem test was performed.



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1390.00	4230.00

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	4107.0	4148.5	[m]

Total core sample length [m]	41.5
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
371	NORDLAND GP
544	NAUST FM
1440	KAI FM
1816	ROGALAND GP
1816	TARE FM
1873	TANG FM
1949	SHETLAND GP
1949	SPRINGAR FM
2145	NISE FM
2513	KVITNOS FM
2953	CROMER KNOLL GP
2953	LYSING FM
2981	LANGE FM
3705	VIKING GP
3705	SPEKK FM
3725	MELKE FM
4099	FANGST GP
4099	GARN FM
4107	ILE FM
4150	BÅT GP
4150	ROR FM



4170 [TILJE FM](#)

Logs

Log type	Log top depth [m]	Log bottom depth [m]
GR NGI PPC MSIP	1820	4231
MDT GR	1870	1967
MDT GR	2956	3684
MDT GR	4099	4230
MWD LWD - ARC TELE	433	2804
MWD LWD - ARC TELE SONVIS ADN	2804	3910
MWD LWD - GVR ECOS TELES	3910	4230
QAIT NEXT LDS APS HNGS NMR	3909	4231
VSI4	1100	4230
XLR GR	2956	3707
XLR GR	4097	4200

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	36	433.0	42	435.0	0.00	
SURF.COND.	20	1377.0	26	1386.0	1.63	FIT
INTERM.	14	2796.0	17 1/2	2807.0	1.82	FIT
LINER	9 7/8	3909.0	12 1/4	3913.0	2.17	LOT
OPEN HOLE		4230.0	8 1/2	4230.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1340	1.45	41.0		Versatec	
1590	1.50	57.0		Versatec	
1783	1.54	55.0		Versatec	
2802	1.73	23.0		Exploradrill	
2804	1.54	54.0		Versatec	
2904	1.71	28.0		Exploradrill	
2973	1.72	26.0		Exploradrill	



2995	1.73	27.0		Exploradrill	
3448	1.73	31.0		Exploradrill	
3910	1.76	36.0		Exploradrill	
3949	1.83	44.0		Exploradrill	
4230	1.54	40.0		Versatec	
4230	1.83	45.0		Exploradrill	