

**General information**

Wellbore name	6506/12-9 S
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	ÅSGARD
Discovery	6506/12-1 Smørbukk
Well name	6506/12-9
Seismic location	ST 8801- CDP 789 (RAD) & KOLONNE 790
Production licence	094
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	760-L
Drilling facility	ROSS ISLE
Drilling days	160
Entered date	04.04.1993
Completed date	10.09.1993
Release date	10.09.1995
Publication date	24.09.2002
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	FANGST GP
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	BÅT GP
Kelly bushing elevation [m]	23.0
Water depth [m]	294.0
Total depth (MD) [m RKB]	4910.0
Final vertical depth (TVD) [m RKB]	4903.0
Maximum inclination [°]	9.3
Bottom hole temperature [°C]	166
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 6' 52.02" N
EW degrees	6° 45' 15.7" E



NS UTM [m]	7223265.37
EW UTM [m]	394568.52
UTM zone	32
NPDID wellbore	2128

Wellbore history

General

The main objective of well 6506/12-9 S was to appraise the oil and gas potential within the Ile and Tilje Formations.

Operations and results

Appraisal well 6506/12-9 S was spudded 5 April 1993 with the semi-submersible installation "Ross Isle" and drilled to a total depth of 4910 m driller's depth (4903 m TVD), 4915.2 m loggers depth (4908.2 m TVD), into rocks of Early Jurassic age. Oil and gas was encountered in the Early to Middle Jurassic Båt and Fangst Groups. The well was drilled with seawater and hi-vis pills down to 802 m, Gyp/PAC mud from 802 m to 2242 m, Anco 2000 with glycols (Anco 208) from 2242 to 4378 m, and with Ancotherm mud from 4378 to TD. A total of 13 cores were cut in this well. Two were cut in the Paleocene Tang formation but these only 0,35m was recovered(1%)The other 11 cores were cut in the interval 4415 m to 4846.9 m in the Båt and Fangst Groups. Recoveries for these were from 65 to 100%. Three FMT samples were taken in the Tilje Formation. The well was abandoned as an oil and gas appraisal on 11 September 1993.

Testing

Five production tests were performed in the Jurassic sandstone section. Drill stem test no 1 in the Åre formation in the interval 4846.0 to 4876 m produced a near-critical gas condensate. The well production was 444 000 Sm³/day of gas and 840 Sm³/day of condensate through a 44/64" (17,46 mm) choke size. Density of the gas was 0.832 (air = 1) and condensate density was 0.814 g/cm³. Drill stem test no 2 tested the Tilje formation in the interval 4805.0 to 4834 m, and it produced a light oil. The well production was 249 000 Sm³/day of gas and 900 Sm³/day of oil through a 56/64" (22,23 mm) choke size. Density of the gas was 0.832 (air = 1) and condensate density was 0.855 g/cm³. Drill stem test no 3 tested the Tilje formation in the interval 4742.0 to 4751.0 m, and it produced a light oil. The well production was 138 000 Sm³/day of gas and 567 Sm³/day of oil through a 44/64" (17.46 mm) choke size. Density of the gas was 0.794 (air = 1) and oil density was 0.825 g/cm³. Drill stem test no 4 perforated two zones in Tilje Formation. First the interval 4712 to 4730 m was perforated. No production was observed from this interval. The zone 4695 to 4709 m was then perforated. Just a minor influx into the well was observed. The rate measured was approximately 60 liter/hrs. Drill stem test no 5 tested the Ile formation in the interval 4477.0 to 4510.0 m, and produced gas condensate. The well production was 33 000 Sm³/day of gas and 17 Sm³/day of condensate through a 110/64" (43.66 mm) choke size. Density of the gas was 0.781 (air = 1) and condensate density was 0.807 g/cm³.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
810.00	4910.00



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	4415.0	4434.2	[m]
2	4462.0	4489.7	[m]
3	4489.7	4515.0	[m]
4	4598.0	4634.9	[m]
5	4635.0	4654.5	[m]
6	4671.5	4703.0	[m]
7	4703.3	4741.0	[m]
8	4741.1	4778.0	[m]
9	4779.0	4815.3	[m]
10	4815.3	4825.0	[m]
11	4830.0	4846.9	[m]

Total core sample length [m]	297.7
Cores available for sampling?	YES

Core photos



4415-4420m



4420-4425m



4425-4430m



4430-4434m



4462-4467m



4467-4472m



4472-4477m



4477-4482m



4482-4487m



4487-4489m



4489-4494m



4494-4499m



4499-4504m



4504-4509m



4509-4514m



4514-4515m



4598-4603m



4603-4608m



4608-4613m



4613-4618m



4618-4623m



4623-4628m



4628-4633m



4633-4635m



4635-4640m



4640-4645m



4645-4650m



4650-4654m



4671-4676m



4676-4681m



4681-4686m



4686-4691m



4691-4696m



4696-4701m



4701-4703m



4703-4708m



4708-4713m



4713-4718m



4718-4723m



4723-4728m



4728-4733m



4733-4738m



4738-4741m



4741-4746m



4746-4751m



4751-4756m



4756-4761m



4761-4766m



4766-4771m



4771-4776m



4776-4779m



4779-4784m



4784-4789m



4789-4794m



4794-4799m



4799-4804m



4804-4809m



4809-4814m



4814-4815m



4815-4820m



4820-4825m



4825-4826m



4830-4835m



4835-4840m



4840-4845m



4845-4847m

**Palynological slides at the Norwegian Offshore Directorate**

Sample depth	Depth unit	Sample type	Laboratory
1910.0	[m]	DC	RRI
1930.0	[m]	DC	RRI
1950.0	[m]	DC	RRI
1970.0	[m]	DC	RRI
1990.0	[m]	DC	RRI
2010.0	[m]	DC	RRI
2030.0	[m]	DC	RRI
2050.0	[m]	DC	RRI
2070.0	[m]	DC	RRI
2090.0	[m]	DC	RRI
2110.0	[m]	DC	RRI
2130.0	[m]	DC	RRI
2150.0	[m]	DC	RRI
2170.0	[m]	DC	RRI
2190.0	[m]	DC	RRI
2210.0	[m]	DC	RRI
2230.0	[m]	DC	RRI
2250.0	[m]	DC	RRI
2270.0	[m]	DC	RRI
2290.0	[m]	DC	RRI
2310.0	[m]	DC	RRI
2330.0	[m]	DC	RRI
2350.0	[m]	DC	RRI
2370.0	[m]	DC	RRI
2390.0	[m]	DC	RRI
2410.0	[m]	DC	RRI
2430.0	[m]	DC	RRI
2450.0	[m]	DC	RRI
2470.0	[m]	DC	RRI
2490.0	[m]	DC	RRI
2510.0	[m]	DC	RRI
2530.0	[m]	DC	RRI
2550.0	[m]	DC	RRI
2570.0	[m]	DC	RRI
2590.0	[m]	DC	RRI
2610.0	[m]	DC	RRI



2630.0	[m]	DC	RRI
2650.0	[m]	DC	RRI
2670.0	[m]	DC	RRI
2690.0	[m]	DC	RRI
2710.0	[m]	DC	RRI
2730.0	[m]	DC	RRI
2750.0	[m]	DC	RRI
2770.0	[m]	DC	RRI
2790.0	[m]	DC	RRI
2810.0	[m]	DC	RRI
2830.0	[m]	DC	RRI
2850.0	[m]	DC	RRI
2870.0	[m]	DC	RRI
2890.0	[m]	DC	RRI
2910.0	[m]	DC	RRI
2930.0	[m]	DC	RRI
2950.0	[m]	DC	RRI
2970.0	[m]	DC	RRI
2990.0	[m]	DC	RRI
3010.0	[m]	DC	RRI
3030.0	[m]	DC	RRI
3070.0	[m]	DC	RRI
3090.0	[m]	DC	RRI
3110.0	[m]	DC	RRI
3130.0	[m]	DC	RRI
3150.0	[m]	DC	RRI
3170.0	[m]	DC	RRI
3190.0	[m]	DC	RRI
3210.0	[m]	DC	RRI
3230.0	[m]	DC	RRI
3250.0	[m]	DC	RRI
3271.0	[m]	DC	RRI
3289.0	[m]	DC	RRI
3310.0	[m]	DC	RRI
3321.0	[m]	SWC	STATO
3332.5	[m]	SWC	STATO
3350.0	[m]	SWC	STATO
3373.0	[m]	SWC	STATO
3391.0	[m]	DC	RRI
3421.0	[m]	DC	STATO



3440.0 [m]	DC	RRI
3460.0 [m]	DC	RRI
3480.0 [m]	DC	RRI
3500.0 [m]	DC	RRI
3520.0 [m]	DC	RRI
3540.0 [m]	DC	RRI
3560.0 [m]	DC	RRI
3580.0 [m]	DC	RRI
3600.0 [m]	DC	RRI
3620.0 [m]	DC	RRI
3640.0 [m]	DC	RRI
3660.0 [m]	DC	RRI
3700.0 [m]	DC	RRI
3720.0 [m]	DC	RRI
3740.0 [m]	DC	RRI
3760.0 [m]	DC	RRI
3807.0 [m]	SWC	STATO
3837.0 [m]	SWC	STATO
3860.0 [m]	DC	RRI
3880.0 [m]	DC	RRI
3896.0 [m]	SWC	STATO
3909.0 [m]	SWC	STATO
3960.0 [m]	DC	RRI
4000.0 [m]	DC	RRI
4020.0 [m]	DC	RRI
4040.0 [m]	DC	RRI
4060.0 [m]	DC	RRI
4130.0 [m]	SWC	STATO
4137.5 [m]	SWC	STATO
4171.0 [m]	SWC	STATO
4185.0 [m]	SWC	STATO
4193.0 [m]	SWC	STATO
4198.0 [m]	SWC	STATO
4207.5 [m]	SWC	STATO
4370.0 [m]	DC	RRI
4374.0 [m]	SWC	STATO
4377.0 [m]	SWC	STATO
4378.0 [m]	DC	RRI
4388.0 [m]	DC	RRI
4412.0 [m]	DC	RRI



4416.5 [m]	C	RRI
4419.3 [m]	C	RRI
4426.8 [m]	C	RRI
4432.0 [m]	C	RRI
4433.3 [m]	C	RRI
4443.0 [m]	SWC	STATO
4451.0 [m]	DC	RRI
4454.0 [m]	SWC	STATO
4459.0 [m]	SWC	STATO
4461.0 [m]	SWC	STATO
4462.2 [m]	C	RRI
4466.8 [m]	C	RRI
4469.1 [m]	C	RRI
4472.7 [m]	C	RRI
4478.7 [m]	C	RRI
4484.9 [m]	C	RRI
4491.8 [m]	C	RRI
4497.3 [m]	C	RRI
4500.2 [m]	C	RRI
4503.3 [m]	C	RRI
4506.7 [m]	C	RRI
4508.7 [m]	C	RRI
4511.9 [m]	C	RRI
4525.0 [m]	SWC	STATO
4535.0 [m]	SWC	STATO
4537.0 [m]	SWC	STATO
4545.0 [m]	SWC	STATO
4559.6 [m]	SWC	STATO
4573.0 [m]	SWC	STATO
4583.0 [m]	SWC	STATO
4589.5 [m]	SWC	STATO
4596.0 [m]	SWC	STATO
4598.9 [m]	C	RRI
4607.3 [m]	C	RRI
4627.2 [m]	C	RRI
4638.6 [m]	C	RRI
4643.1 [m]	C	RRI
4646.7 [m]	C	RRI
4650.0 [m]	C	RRI
4654.3 [m]	C	RRI



4660.5 [m]	SWC	STATO
4664.0 [m]	SWC	STATO
4668.0 [m]	SWC	STATO
4671.6 [m]	C	RRI
4678.0 [m]	C	RRI
4681.6 [m]	C	RRI
4684.0 [m]	C	RRI
4690.9 [m]	C	RRI
4691.9 [m]	C	RRI
4696.1 [m]	C	RRI
4696.8 [m]	C	RRI
4699.6 [m]	C	RRI
4701.6 [m]	C	RRI
4708.1 [m]	C	RRI
4708.7 [m]	C	RRI
4712.7 [m]	C	RRI
4716.4 [m]	C	RRI
4719.8 [m]	C	RRI
4723.4 [m]	C	RRI
4728.0 [m]	C	RRI
4729.0 [m]	C	RRI
4731.4 [m]	C	RRI
4734.6 [m]	C	RRI
4737.1 [m]	C	RRI
4737.5 [m]	C	RRI
4741.8 [m]	C	RRI
4744.4 [m]	C	RRI
4748.7 [m]	C	RRI
4752.1 [m]	C	RRI
4755.8 [m]	C	RRI
4758.2 [m]	C	RRI
4759.7 [m]	C	RRI
4763.4 [m]	C	RRI
4766.6 [m]	C	RRI
4768.5 [m]	C	RRI
4772.8 [m]	C	RRI
4776.6 [m]	C	RRI
4780.1 [m]	C	RRI
4783.0 [m]	C	RRI
4810.0 [m]	C	RRI



4812.4 [m]	C	RRI
4815.0 [m]	C	RRI
4819.6 [m]	C	RRI
4823.3 [m]	C	RRI
4830.8 [m]	C	RRI
4837.6 [m]	C	RRI
4841.3 [m]	C	RRI
4845.2 [m]	C	RRI
4855.0 [m]	SWC	STATO
4861.3 [m]	SWC	STATO
4864.0 [m]	SWC	STATO
4884.0 [m]	SWC	STATO
4889.5 [m]	SWC	STATO
4895.3 [m]	SWC	STATO
4904.0 [m]	SWC	STATO
4910.0 [m]	DC	RRI

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	DST5	0.00	0.00	OIL	29.08.1993 - 18:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
317	NORDLAND GP
1458	KAI FM
1903	HORDALAND GP
1903	BRYGGE FM
2218	ROGALAND GP
2218	TARE FM
2307	TANG FM
2370	SHETLAND GP
2370	SPRINGAR FM
2530	NISE FM
2780	KVITNOS FM



3344	CROMER KNOLL GP
3344	LYSING FM
3383	LANGE FM
4128	LYR FM
4169	VIKING GP
4169	SPEKK FM
4197	MELKE FM
4379	FANGST GP
4379	GARN FM
4436	NOT FM
4464	ILE FM
4533	BÅT GP
4533	ROR FM
4601	TOFTE FM
4660	ROR FM
4672	TILJE FM
4837	ÅRE FM

Composite logs

Document name	Document format	Document size [MB]
2128	pdf	0.63

Geochemical information

Document name	Document format	Document size [MB]
2128_1	pdf	1.86
2128_2	pdf	1.59
2128_3	pdf	0.95

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

Document name	Document format	Document size [MB]
2128_6506_12_9_S_COMPLETION_REPORT_AND_LOG	pdf	54.33





Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	4846	4876	17.5
2.0	4805	4834	22.2
3.0	4742	4751	17.5
4.0	4730	4712	0.0
5.0	4477	4510	43.6

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				163
3.0				164
4.0				
5.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	840	444000	0.815	0.832	749
2.0	900	249000	0.850	0.830	390
3.0	567	138000	0.825	0.794	292
4.0					
5.0	17	33000	0.807	0.781	1379

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	1200	2229
CBL VDL GR	3205	4892
COREGUN	3321	4904
DIFL AC CHT GR	2229	4914
DIP GR	2235	2460
DIP GR	4365	4914
DLL MLL SP GR	4365	4914
FMT CHT GR	3334	3845
FMT GR	4390	4886



MWD	387	4910
VSP	1880	4903
ZDL CN SL	2229	4914

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	378.0	36	378.0	0.00	LOT
INTERM.	20	790.0	26	790.0	1.52	LOT
INTERM.	13 3/8	2228.0	17 1/2	2230.0	1.89	LOT
INTERM.	9 5/8	4363.0	12 1/4	4365.0	1.87	LOT
LINER	7	4910.0	8 1/2	4910.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
606	1.03			WATER BASED	
808	1.03	12.0		WATER BASED	
1050	1.25	15.0		WATER BASED	
1491	1.25	19.0		WATER BASED	
1640	1.25	20.0		WATER BASED	
1982	1.39	21.0		WATER BASED	
2210	1.50	24.0		WATER BASED	
2242	1.52	25.0		WATER BASED	
2323	1.70	28.0		WATER BASED	
2357	1.70	31.0		WATER BASED	
2415	1.70	28.0		WATER BASED	
2729	1.70	25.0		WATER BASED	
2884	1.70	27.0		WATER BASED	
2965	1.70	28.0		WATER BASED	
3057	1.70	30.0		WATER BASED	
3077	1.70	30.0		WATER BASED	
3146	1.70	29.0		WATER BASED	
3222	1.70	32.0		WATER BASED	
3227	1.70	32.0		WATER BASED	
3252	1.70	31.0		WATER BASED	
3311	1.70	32.0		WATER BASED	



3356	1.70	31.0		WATER BASED	
3357	1.70	30.0		WATER BASED	
3405	1.70	27.0		WATER BASED	
3409	1.70	25.0		WATER BASED	
3434	1.70	25.0		WATER BASED	
3492	1.70	36.0		WATER BASED	
3535	1.70	35.0		WATER BASED	
3578	1.70	35.0		WATER BASED	
3640	1.70	34.0		WATER BASED	
3699	1.70	35.0		WATER BASED	
3763	1.70	28.0		WATER BASED	
3826	1.75	28.0		WATER BASED	
3885	1.75	32.0		WATER BASED	
3927	1.75	30.0		WATER BASED	
3995	1.75	30.0		WATER BASED	
4000	1.75	30.0		WATER BASED	
4064	1.75	29.0		WATER BASED	
4130	1.75	30.0		WATER BASED	
4195	1.75	30.0		WATER BASED	
4258	1.75	36.0		WATER BASED	
4314	1.75	34.0		WATER BASED	
4363	1.20	23.0		DUMMY	
4363	1.20	14.0		WATER BASED	
4375	1.75	36.0		WATER BASED	
4378	1.75	31.0		WATER BASED	
4415	1.20	20.0		WATER BASED	
4438	1.20	16.0		WATER BASED	
4462	1.20	14.0		WATER BASED	
4477	1.23	28.0		WATER BASED	
4490	1.20	17.0		WATER BASED	
4516	1.20	17.0		WATER BASED	
4598	1.20	15.0		WATER BASED	
4635	1.20	17.0		WATER BASED	
4669	1.20	19.0		WATER BASED	
4703	1.20	21.0		WATER BASED	
4741	1.20	19.0		WATER BASED	
4742	1.12	24.0		WATER BASED	
4765	1.20	24.0		DUMMY	
4805	1.20	16.0		DUMMY	
4805	1.12	24.0		WATER BASED	



4805	1.12			WATER BASED	
4814	1.20	50.0		DUMMY	
4846	1.14			WATER BASED	
4850	1.20	23.0		DUMMY	
4910	1.14			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]
2128 Formation pressure (Formasjonstrykk)	pdf	0.29

