



Generell informasjon

Brønnbane navn	6506/12-8
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORWEGIAN SEA
Felt	ÅSGARD
Funn	6506/12-3 Smørbukk Sør
Brønn navn	6506/12-8
Seismisk lokalisering	ST 8701 - 529 SP 858
Utvinningstillatelse	094
Boreoperatør	Den norske stats oljeselskap a.s
Boretillatelse	579-L
Boreinnretning	WEST DELTA
Boredager	88
Borestart	04.06.1988
Boreslutt	30.08.1988
Frigitt dato	30.08.1990
Publiseringsdato	28.06.2007
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	FANGST GP
2. nivå med hydrokarboner, alder	EARLY JURASSIC
2. nivå med hydrokarboner, formasjon	TILJE FM
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	296.0
Totalt målt dybde (MD) [m RKB]	4335.0
Totalt vertikalt dybde (TVD) [m RKB]	4334.0
Maks inklinasjon [°]	2.3
Temperatur ved bunn av brønnbanen [°C]	149
Eldste penetrerte alder	EARLY JURASSIC



Eldste penetrerte formasjon	TILJE FM
Geodetisk datum	ED50
NS grader	65° 0' 59.32" N
ØV grader	6° 56' 58.75" E
NS UTM [m]	7212038.59
ØV UTM [m]	403380.37
UTM sone	32
NPDID for brønnbanen	1068

Brønnhistorie

**General**

Well 6506/12-8 is located in the Haltenbanken area off shore Mid Norway. It was designed to appraise the Smørbukk South discovery in the southern part of the block. The main objective was to establish productivity in the Garn Formation down flank of well 6506/12-3, the fluid properties, and to provide better understanding of diagenesis effects. In the Ile Formation the gas/water contact should be established, and in the Tilje Formation the oil/water and gas/oil contacts should be established or confirmed.

Operations and results

Appraisal well 6506/12-8 was spudded with the semi-submersible installation West Delta on 4 June 1988 and drilled to TD at 4334 m in the Early Jurassic Tilje Formation. The well was drilled without significant problems or incidents. It was drilled with spud mud down to 558 m, with gypsum polymer mud from 558 m to 3877 m, and with gel/lignosulphonate/lignite from 3877 m to TD. Gas bearing shallow sands were penetrated at 571 to 573 m and at 881 to 885 m.

Weak shows were recorded in sands in the Lysing Formation at 3158 - 3185 m. Top of the target reservoir (top Garn Formation) was encountered at 3875 m, the Ile Formation was encountered at 3992.5 m, and the Tilje Formation was encountered at 4186 m. The logs showed good reservoir properties, especially in the Garn Formation. The Garn and the Tilje Formations were tested and found hydrocarbon bearing. The Garn Formation was hydrocarbon bearing all through down to the tight sandstones/siltstones of the Not Formation. Weak shows were recorded also in the Ile Formation sandstone, and the logs indicated hydrocarbons down to top Ror Formation at 4065 m. However, no test was conducted in the Ile Formation. In the Tilje Formation geochemical analyses of the cores showed that the hydrocarbons were distributed in distinct zones within the reservoir. The most likely OWC was estimated at ca 4269 m, but no clear contact was found.

Eight cores were cut in the well. One core was cut in a claystone interval from 2311 - 2321 m in the Tertiary Tang Formation, but it was not recovered to the surface. The remaining seven cores recovered a total of 208.8 m core. Five cores were cut in the interval 3878 - 4038.5 m (Fangst Group), and two cores were cut in the interval 4235 - 4292 m in the Tilje Formation. RFT fluid samples were taken at 3921 m (Garn), 3925 m (Garn), 3948.3 m (Garn), and at 4264 m (Tilje). The well was suspended on 1 September 1988 as an oil and gas appraisal well.

Testing

Two DST tests were performed.

DST 1 tested the intervals 4205 - 4221 m and 4237 - 4277 m in the Tilje Formation. It produced 460 Sm³ oil, 115000 Sm³ gas and 8 - 10% water/d through a 28/64" choke. The GOR was 250 Sm³/Sm³, the oil density was 0.820 g/cm³, and the gas gravity was 0.820 (air = 1). The maximum bottom hole temperature was 148 deg C.

DST 2 tested the intervals 3915 - 3923 m and 3934 - 3955 m in the Garn Formation. It produced 1420 Sm³ oil, 460000 Sm³ gas and no water/d through a 64/64" choke. The GOR was 324 Sm³/Sm³, the oil density was 0.830 g/cm³, and the gas gravity was 0.775 (air = 1). The maximum bottom hole temperature was 138 deg C.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
560.00	4335.00



Borekaks tilgjengelig for prøvetaking?	NO
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
2	3878.0	3904.8	[m]
3	3905.0	3941.2	[m]
4	3941.0	3972.2	[m]
5	3973.0	3995.8	[m]
6	4003.0	4036.8	[m]
7	4235.0	4258.6	[m]
8	4258.6	4293.0	[m]

Total kjerneprøve lengde [m]	208.7
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



3878-3883m



3883-3888m



3888-3893m



3893-3898m



3898-3903m



3903-3904m



3905-3910m



3910-3915m



3915-3920m



3920-3925m



3925-3930m



3930-3935m



3935-3940m



3940-3941m



3941-3946m



3946-3951m



3951-3956m



3956-3961m



3961-3966m



3966-3971m



3971-3972m



3973-3978m



3978-3983m



3983-3988m



3988-3993m



3993-3995m



4003-4008m



4008-4013m



4013-4018m



4018-4023m



4023-4028m



4028-4033m



4033-4036m



4235-4240m



4240-4245m



4245-4250m



4250-4255m



4255-4258m



4258-4263m



4263-4268m



4268-4273m



4273-4278m



4278-4283m



4283-4288m



4288-4293m



Palynologiske preparater i Søkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2000.0	[m]	DC	RRI
2020.0	[m]	DC	RRI
2040.0	[m]	DC	RRI
2060.0	[m]	DC	RRI
2080.0	[m]	DC	RRI
2100.0	[m]	DC	RRI
2120.0	[m]	DC	RRI
2140.0	[m]	DC	RRI
2160.0	[m]	DC	RRI
2180.0	[m]	DC	RRI
2200.0	[m]	DC	RRI
2218.0	[m]	DC	RRI
2236.0	[m]	DC	RRI
2254.0	[m]	DC	RRI
2272.0	[m]	DC	RRI
2299.0	[m]	DC	RRI
2311.0	[m]	DC	RRI
2326.0	[m]	DC	RRI
2344.0	[m]	DC	RRI
2362.0	[m]	DC	RRI
2380.0	[m]	DC	RRI
2398.0	[m]	DC	RRI
2416.0	[m]	DC	RRI
2434.0	[m]	DC	RRI
2452.0	[m]	DC	RRI
2497.0	[m]	DC	RRI
2515.0	[m]	DC	RRI
2533.0	[m]	DC	RRI
2551.0	[m]	DC	RRI
2569.0	[m]	DC	RRI
2587.0	[m]	DC	RRI
2605.0	[m]	DC	RRI
2623.0	[m]	DC	RRI
2641.0	[m]	DC	RRI
2659.0	[m]	DC	RRI
2677.0	[m]	DC	RRI



2695.0	[m]	DC	RRI
2704.0	[m]	DC	RRI
2718.0	[m]	DC	RRI
2722.0	[m]	DC	RRI
2740.0	[m]	DC	RRI
2755.0	[m]	DC	RRI
2773.0	[m]	DC	RRI
2788.0	[m]	DC	RRI
2803.0	[m]	DC	RRI
2818.0	[m]	DC	RRI
2833.0	[m]	DC	RRI
2848.0	[m]	DC	RRI
2863.0	[m]	DC	RRI
2878.0	[m]	DC	RRI
2893.0	[m]	DC	RRI
2908.0	[m]	DC	RRI
2923.0	[m]	DC	RRI
2938.0	[m]	DC	RRI
2953.0	[m]	DC	RRI
2968.0	[m]	DC	RRI
2983.0	[m]	DC	RRI
2998.0	[m]	DC	RRI
3013.0	[m]	DC	RRI
3028.0	[m]	DC	RRI
3043.0	[m]	DC	RRI
3058.0	[m]	DC	RRI
3073.0	[m]	DC	RRI
3088.0	[m]	DC	RRI
3103.0	[m]	DC	RRI
3118.0	[m]	DC	RRI
3133.0	[m]	DC	RRI
3148.0	[m]	DC	RRI
3163.0	[m]	DC	RRI
3178.0	[m]	DC	RRI
3193.0	[m]	DC	RRI
3208.0	[m]	DC	RRI
3223.0	[m]	DC	RRI
3238.0	[m]	DC	RRI
3253.0	[m]	DC	RRI
3268.0	[m]	DC	RRI



3283.0	[m]	DC	RRI
3298.0	[m]	DC	RRI
3313.0	[m]	DC	RRI
3328.0	[m]	DC	RRI
3340.0	[m]	DC	RRI
3358.0	[m]	DC	RRI
3373.0	[m]	DC	RRI
3388.0	[m]	DC	RRI
3403.0	[m]	DC	RRI
3418.0	[m]	DC	RRI
3433.0	[m]	DC	RRI
3448.0	[m]	DC	RRI
3463.0	[m]	DC	RRI
3478.0	[m]	DC	RRI
3493.0	[m]	DC	RRI
3508.0	[m]	DC	RRI
3523.0	[m]	DC	RRI
3538.0	[m]	DC	RRI
3553.0	[m]	DC	RRI
3568.0	[m]	DC	RRI
3583.0	[m]	DC	RRI
3598.0	[m]	DC	RRI
3613.0	[m]	DC	RRI
3628.0	[m]	DC	RRI
3643.0	[m]	DC	RRI
3658.0	[m]	DC	RRI
3673.0	[m]	DC	RRI
3688.0	[m]	DC	RRI
3703.0	[m]	DC	RRI
3733.0	[m]	DC	RRI
3748.0	[m]	DC	RRI
3763.0	[m]	DC	RRI
3778.0	[m]	DC	RRI
3793.0	[m]	DC	RRI
3808.0	[m]	DC	RRI
3823.0	[m]	DC	RRI
3838.0	[m]	DC	RRI
3853.0	[m]	DC	RRI
3868.0	[m]	DC	RRI
4045.0	[m]	DC	RRI



4075.0	[m]	DC	RRI
4090.0	[m]	DC	RRI
4105.0	[m]	DC	RRI
4120.0	[m]	DC	RRI
4135.0	[m]	DC	RRI
4150.0	[m]	DC	RRI
4165.0	[m]	DC	RRI
4180.0	[m]	DC	RRI
4195.0	[m]	DC	RRI
4210.0	[m]	DC	RRI
4225.0	[m]	DC	RRI
4242.5	[m]	C	RRI
4258.1	[m]	C	RRI
4266.5	[m]	C	RRI
4273.8	[m]	C	RRI
4303.0	[m]	DC	RRI
4333.0	[m]	DC	RRI

Oljeprøver i Søkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST1	4237.00	4277.00		16.08.1988 - 05:00	YES
DST	TEST2	3915.00	3923.00		25.08.1988 - 01:00	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
325	NORDLAND GP
325	NAUST FM
1342	KAI FM
1968	HORDALAND GP
1968	BRYGGE FM
2235	ROGALAND GP
2235	TARE FM
2298	TANG FM
2353	SHETLAND GP



2353	SPRINGAR FM
2545	NISE FM
2702	KVITNOS FM
3158	CROMER KNOLL GP
3158	LYSING FM
3185	LANGE FM
3725	LYR FM
3743	VIKING GP
3743	SPEKK FM
3787	MELKE FM
3875	FANGST GP
3875	GARN FM
3956	NOT FM
3993	ILE FM
4065	BÅT GP
4065	ROR FM
4186	TILJE FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
1068_1	pdf	0.27
1068_2	pdf	2.24
1068_3	pdf	2.25
1068_4	pdf	0.19

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
1068_01_WDSS_General_Information	pdf	0.25
1068_02_WDSS_completion_log	pdf	0.27

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
1068_6506_12_8_COMPLETION_REPORT_AND_LOG	pdf	12.33





Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	4237	4277	22.2
1.2	4205	4221	11.1
2.0	3915	3955	12.7

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
1.2				
2.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0	1100	300000	0.810	0.827	273
1.2	460	115000	0.820	0.820	250
2.0	610	180000	0.829	0.756	295

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL VDL GR	325	1858
CBL VDL GR	3100	3856
CBL VDL GR	3664	4285
CDL CN GR CAL	1858	3873
CDL CN SPL	3856	4332
DIFL AC GR	1858	3873
DIFL AC GR 3CAL	3856	4331
DIFL AC GR CDL CAL	553	1872
DIPLOG	3856	4328
FMT GR	3179	3179
FMT HP	3856	4258
MLL DLL GR	3856	4332
MLL DLL GR CAL	3092	3240



MWD - GR RES DIR	386	4335
SPL	4180	4275
VELOCITY	1000	4333

Foringsrør og formasjonsstyrketester

Type utforing	Utforing diam. [tommer]	Utforing dybde [m]	Brønnbane diam. [tommer]	Brønnbane dyp [m]	LOT/FIT slam eqv. [g/cm3]	Type formasjonstest
CONDUCTOR	30	386.0	36	386.0	0.00	LOT
SURF.COND.	20	553.0	26	577.0	1.43	LOT
INTERM.	13 3/8	1859.0	17 1/2	1876.0	1.83	LOT
INTERM.	9 5/8	3858.0	12 1/4	3877.0	1.75	LOT
LINER	7	4332.0	8 1/2	4335.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
390	1.04	120.0		WATER BASED	06.06.1988
390	1.03			WATER BASED	06.06.1988
571	1.03			WATER BASED	08.06.1988
571	1.20	8.0	2.0	WATER BASED	10.06.1988
577	1.70			WATER BASED	07.06.1988
981	1.20	45.0	5.0	WATER BASED	13.06.1988
1406	1.30	48.0	3.5	WATER BASED	13.06.1988
1579	1.30	14.0	4.0	WATER BASED	13.06.1988
1873	1.35	17.0	5.5	WATER BASED	15.06.1988
1873	1.35	17.0	6.0	WATER BASED	14.06.1988
1873	1.70	21.0	2.5	WATER BASED	20.06.1988
1876	1.70	58.0	3.0	WATER BASED	20.06.1988
1941	1.70	8.0	14.5	WATER BASED	21.06.1988
2311	1.60	28.0	3.0	WATER BASED	24.06.1988
2311	1.60	28.0	3.0	WATER BASED	27.06.1988
2530	1.65	23.0	11.0	WATER BASED	06.07.1988
2530	1.63	35.0	8.0	WATER BASED	27.06.1988
2530	1.63	24.0	8.0	WATER BASED	27.06.1988
2530	1.63	26.0	10.0	WATER BASED	28.06.1988
2530	1.65	28.0	9.0	WATER BASED	29.06.1988
3180	1.65	24.0	9.0	WATER BASED	01.07.1988



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 20.5.2024 - 11:08

3398	1.65	23.0	9.5	WATER BASED	04.07.1988
3398	1.65	22.0	10.5	WATER BASED	05.07.1988
3620	1.65	19.0	10.5	WATER BASED	07.07.1988
3620	1.65	24.0	9.0	WATER BASED	08.07.1988
3669	1.65	26.0	9.5	WATER BASED	11.07.1988
3738	1.65	25.0	10.0	WATER BASED	11.07.1988
3808	1.65	25.0	7.5	WATER BASED	11.07.1988
3850	1.65	27.0	9.0	WATER BASED	12.07.1988
3850	1.65	23.0	8.0	WATER BASED	13.07.1988
3865	1.65	24.0	8.5	WATER BASED	14.07.1988
3871	1.67	25.0	6.5	WATER BASED	15.07.1988
3877	1.67	27.0	7.5	WATER BASED	19.07.1988
3877	1.67	23.0	5.5	WATER BASED	19.07.1988
3877	1.67	22.0	5.5	WATER BASED	19.07.1988
3877	1.67	21.0	5.0	WATER BASED	19.07.1988
3877	1.67	21.0	6.5	WATER BASED	21.07.1988
3877	1.15	33.0	4.5	WATER BASED	29.07.1988
3877	1.15	33.0	4.5	WATER BASED	01.08.1988
3877	1.15	33.0	5.0	WATER BASED	03.08.1988
3877	1.15	17.0	2.5	WATER BASED	15.08.1988
3877	1.15	13.0	3.5	WATER BASED	23.08.1988
3877	1.15	30.0	11.5	WATER BASED	29.08.1988
3877	1.15	32.0	4.5	WATER BASED	27.07.1988
3877	1.15	34.0	6.0	WATER BASED	27.07.1988
3877	1.15	37.0	5.0	WATER BASED	27.07.1988
3877	1.15	32.0	3.5	WATER BASED	28.07.1988
3877	1.15	38.0	4.0	WATER BASED	01.08.1988
3877	1.15	32.0	4.0	WATER BASED	01.08.1988
3877	1.15	40.0	4.0	WATER BASED	04.08.1988
3877	1.15	35.0	4.0	WATER BASED	05.08.1988
3877	1.15	33.0	3.0	WATER BASED	08.08.1988
3877	1.15	35.0	15.5	WATER BASED	08.08.1988
3877	1.15	35.0	10.0	WATER BASED	08.08.1988
3877	1.15	50.0	12.5	WATER BASED	09.08.1988
3877	1.15	23.0	2.0	WATER BASED	11.08.1988
3877	1.15	17.0	2.5	WATER BASED	12.08.1988
3877	1.15	11.0		WATER BASED	15.08.1988
3877	1.15	11.0	4.0	WATER BASED	15.08.1988
3877	1.15	15.0	3.5	WATER BASED	16.08.1988
3877	1.15	18.5	2.5	WATER BASED	19.08.1988



3877	1.16	16.0	3.0	WATER BASED	19.08.1988
3877	1.15	6.0	2.5	WATER BASED	22.08.1988
3877	1.15	12.0	3.0	WATER BASED	24.08.1988
3877	1.15	11.0	3.0	WATER BASED	25.08.1988
3877	1.15	17.0	4.5	WATER BASED	26.08.1988
3877	1.15	34.0	11.5	WATER BASED	29.08.1988
3877	1.15	39.0	9.5	WATER BASED	29.08.1988
3877	0.00			WATER BASED	30.08.1988
3878	1.15	12.0	2.5	WATER BASED	21.07.1988
3905	1.15	15.0	2.5	WATER BASED	27.07.1988
3918	1.15	26.0	2.5	WATER BASED	27.07.1988
3983	1.15	27.0	4.0	WATER BASED	27.07.1988

Trykkplott

Porertrykksdataene kommer fra logging i brønnen hvis ingen annen kilde er oppgitt. I noen brønner der trykk ikke er logget, er det brukt informasjon fra formasjonstester eller brønnspark. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
1068 Formation pressure (Formasjonstrykk)	pdf	0.22

