



Generell informasjon

Brønnbane navn	30/11-4
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	30/11-4
Seismisk lokalisering	83 - 36 SP. 284
Utvinningstillatelse	035
Boreoperatør	A/S Norske Shell
Boretillatelse	402-L
Boreinnretning	DYVI DELTA
Boredager	182
Borestart	25.01.1984
Boreslutt	24.07.1984
Frigitt dato	24.07.1986
Publiseringsdato	13.01.2015
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL SHOWS
Funnbrønnbane	NO
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	110.0
Totalt målt dybde (MD) [m RKB]	5255.0
Totalt vertikalt dybde (TVD) [m RKB]	5248.0
Maks inklinasjon [°]	9
Temperatur ved bunn av brønnbanen [°C]	173
Eldste penetrerte alder	LATE TRIASSIC
Eldste penetrerte formasjon	STATFJORD GP
Geodetisk datum	ED50
NS grader	60° 2' 43.96" N
ØV grader	2° 32' 39.47" E
NS UTM [m]	6656726.58
ØV UTM [m]	474615.76
UTM sone	31
NPDID for brønnbanen	98



Brønnhistorie

**General**

Well 30/11-4 was drilled north-east of the Frigg area in the Fensal Sub-basin in the North Sea. Previous well 30/11-3 was abandoned at top Statfjord Group for technical reasons, due to high pressures, without being production-tested. Well 30/11-4 was then proposed as a virtual re-drill, only some 400 m NE of 30/11-3. The objective of the well was to test the hydrocarbon potential of the Middle Jurassic Vestland Group sandstones and the Early Jurassic Statfjord Group sandstones in a westward tilted horst block

Operations and results

Wildcat well 30/11-4 was spudded with the semi-submersible installation Dyvi Delta on 25 January 1984 and drilled to TD at 5255 m in Late Triassic sediments belonging to the Statfjord Group. At 2179 m the drill string parted, leaving a 24 m fish in the hole. After unsuccessful fishing the well was sidetracked from 1918 m. The well was drilled with bentonite and brack water down to 813 m, with KCl/polymer mud from 813 m to 4205 m, with gel/lignosulphonate/lignite mud from 4205 m to 5059 m, and with gel/polymer lignite mud from 5059 m to TD.

Well 30/11-4 penetrated water bearing reservoir sands in the Tertiary Frigg and Heimdal formations. The Vestland Group was penetrated at 3434 m. This section had oil shows at 3434 m to 3470 m, where some oil emulsion was retrieved by RFT, at 3514 m to 3550 m, and at 3635 m to 3650 m. An anomaly in the reservoir pressure occurred at about 3580 m where a siltstone/claystone interval possibly acts as a seal/pressure barrier. A total of 615 m of sands and shales assigned to the Statfjord Group, between 4640 m and TD in the well. Log interpretation pointed towards the presence of at least 75 metres of sands with porosities up to 20% and water saturations as low as 40%. The Group had gas shows and weak oil/condensate shows on the cores. Subsequent microscopic studies on the cores, taken near to the top of the Group, have revealed that, although rather high porosities are locally preserved, permeability is destroyed by clay mineral authigenesis.

Five cores were cut in the well. One was cut in the Vestland Group from 3514 - 3532 m. The remaining four were cut in the Statfjord Group in the intervals 4632 - 4649 m, 4652 - 4666 m, 4839 - 4839.4 m, and 5011 - 5011.4 m. The two latter were junk basket cores. A depth shift of ca 10 m downwards has to be applied on the cores in order to match with logger's depth. A segregated RFT fluid sample was taken at 3452 m in the Vestland Group. It contained water, gas, and oil emulsion.

The well was permanently abandoned on 24 July 1984 as a dry well with shows.

Testing

The Vestland Group was not considered worth testing. Two drill stem tests were performed in the Statfjord Group.

DST 1 tested the interval 5015 to 5029 m. The test flowed only insignificant and non-representative fluids, even after acid stimulation. Extremely tight formation was concluded. Maximum temperature, measured at 5000.6 m, was 167 °C.

DST 2 tested the intervals 4823 - 4837 m and 4854 - 4875 m. The test produced prior to acidization some 5 to 6 m³ formation water and some bubbles of gas over a period of 3 days at a flowing bottom hole pressure declining from 479 to 90 bar. After stimulation with 12 m³ acid the well produced 22 m³ water during 20 hours. The interval was concluded to be very tight. Maximum temperature, measured at 4809 m, was 162 °C.



Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
260.00	5255.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3514.0	3531.5	[m]
2	4635.0	4645.7	[m]
3	4652.0	4664.9	[m]
4	4839.0	4839.4	[m]
5	5011.0	5011.4	[m]

Total kjerneprøve lengde [m]	41.9
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



3514-3519m



3519-3524m



3524-3529m



3529-3531m



4641-4645m



4635-4641m



4652-4658m



4658-4664m



4664-4665m



4839-4839m





5011-5011m

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
3517.6	[m]	C	SPT
3526.9	[m]	C	SPT
3529.6	[m]	C	SPT

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
139	NORDLAND GP
514	UTSIRA FM
1080	HORDALAND GP
1989	FRIGG FM
2160	ROGALAND GP
2160	BALDER FM
2199	HERMOD FM
2345	LISTA FM
2597	VÅLE FM
2611	SHETLAND GP
2611	JORSALFARE FM
2870	KYRRE FM
3156	TRYGGVASON FM
3193	SVARTE FM
3225	CROMER KNOLL GP
3262	VIKING GP
3262	DRAUPNE FM
3283	HEATHER FM
3434	VESTLAND GP
3434	HUGIN FM
3668	SLEIPNER FM
4010	DUNLIN GP
4010	DRAKE FM
4210	COOK FM
4273	BURTON FM
4319	AMUNDSEN FM



4640 [STATFJORD GP](#)

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
98_GCH_1	pdf	0.12
98_GCH_2	pdf	4.97
98_GCH_3	pdf	0.53

Dokumenter - eldre Søkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
98_01_WDSS_General_Information	pdf	0.20
98_02_WDSS_completion_log	pdf	0.47

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
98_30_11_4_Completion_log	pdf	2.73
98_30_11_4_Completion_report	pdf	15.08

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BGT GR	796	2330
CBL VDL GR	248	2351
CBL VDL GR	1050	4202
CBL VDL GR	3428	5047
CYBERLOOK	2362	4202
DLL MSFL GR	2363	4200
DLL MSFL GR	4600	5058
DLL MSFL GR	5051	5220
HDT	3050	4200
HDT	4200	5062
ISF BHC GR	239	812
ISF BHC GR	812	2333





ISF BHC GR	2363	4202
ISF BHC GR	4201	5059
ISF BHC GR	4202	4846
LDL CNL GR	239	813
LDL CNL GR	4202	4841
LDL CNL GR	4600	5059
LDL CNL GR	5051	5224
LDL CNL NGS	2320	4030
NGS	2320	4030
RFT	2607	3915
RFT	4644	5064
RFT	5073	5203
SWC	0	0
VELOCITY	0	5059

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	239.0	36	250.0	0.00	LOT
SURF.COND.	20	796.0	26	812.0	1.10	LOT
INTERM.	13 3/8	2362.0	17 1/2	2375.0	1.79	LOT
INTERM.	9 5/8	4192.0	12 1/4	4205.0	1.94	LOT
LINER	7	5046.0	8 1/2	5059.0	2.09	LOT
OPEN HOLE		5255.0	5 7/8	5255.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
512	1.06	5.0	18.0	WATER BASED	
817	1.07	16.0	13.0	WATER BASED	
1019	1.08	14.0	11.0	WATER BASED	
1310	1.10	16.0	16.0	WATER BASED	
1694	1.09	14.0	13.0	WATER BASED	
2041	1.10	14.0	14.0	WATER BASED	
2460	1.20	19.0	19.0	WATER BASED	
3875	1.25	24.0	19.0	WATER BASED	
4205	1.26			WATER BASED	



4219	1.30			WATER BASED	
4310	1.35			WATER BASED	
4563	1.55	26.0	15.0	WATER BASED	
4652	1.60	24.0	14.0	WATER BASED	
4692	1.58	20.0	13.0	WATER BASED	
4899	1.59	23.0	16.0	WATER BASED	
5069	1.58	23.0	13.0	WATER BASED	
5086	1.56	27.0	15.0	WATER BASED	
5195	1.58	28.0	13.0	WATER BASED	

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
4657.10	[m]
4635.80	[m]
4642.30	[m]
4660.70	[m]
4839.00	[m]

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]
98 Formation pressure (Formasjonstrykk)	pdf	0.23

