



Generell informasjon

Brønnbane navn	30/9-19 A
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	OSEBERG
Funn	30/9-19
Brønn navn	30/9-19
Seismisk lokalisering	NH 9201- INLINE 439 & X-LINE 1341
Utvinningstillatelse	079
Boreoperatør	Norsk Hydro Produksjon AS
Boretillatelse	942-L
Boreinnretning	WEST DELTA
Boredager	55
Borestart	28.10.1998
Boreslutt	21.12.1998
Frigitt dato	21.12.2000
Publiseringsdato	24.01.2014
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	TARBERT FM
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	105.0
Totalt målt dybde (MD) [m RKB]	3775.0
Totalt vertikalt dybde (TVD) [m RKB]	3632.0
Maks inklinasjon [°]	36
Temperatur ved bunn av brønnbanen [°C]	132
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	DRAKE FM
Geodetisk datum	



NS grader	60° 27' 35.38" N
ØV grader	2° 41' 38.94" E
NS UTM [m]	6702819.74
ØV UTM [m]	483176.89
UTM sone	31
NPDID for brønnbanen	3593

Brønnhistorie

General

Well 30/9-19 A is a geological sidetrack to well 30/9-19 on the Delta structure west of the Oseberg Field in the North Sea. Well 30/9-19 found gas and oil in two separately pressured compartments within the Tarbert Formation. The objective of the sidetrack was to test the hydrocarbon potential in the deltaic sands of the Tarbert Formation in the DeltaS1 structure, west of the structure drilled by the primary 30/9-19 well bore.

Operations and results

Appraisal well 30/9-19 A was kicked off from 2322 m in well 30/9-19 on 28 October 1998. The semi-submersible installation West Delta drilled the sidetrack to TD at 3775 m (3632 m TVD) in the Early Jurassic Drake Formation. Drilling proceeded without significant problems using ANCO 2000 mud from kick-off to TD.

Top Tarbert Formation was penetrated at 3210 m (3127 m TVD). The upper part of the Tarbert Formation down to 3277 m (Tarbert 4) is tight with no pay, while the section from 3277 m to 3310 m (Tarbert 3) has only 2 m net pay. The Tarbert 2 main reservoir was penetrated at 3310.5 m (3208.5 m TVD). The gradients from MDT pressure points showed that gas, oil and water are present in the Tarbert 2 reservoir with densities respectively 0.25 g/cc, 0.66 g/cc and 0.99 g/cc. Between the gas and the oil columns there is a carbonate-cemented layer. The gas and oil columns are not in pressure communication and a gas down to is set to 3344 m MD (3235.8 m TVD) and an oil up to at 3347.5 m (3238.7 m TVD). The oil water contact was observed from logs at 3368 m (3255.5 m TVD). The oil column is thus 16.8 m TVD thick. The only oil show outside of the hydrocarbon-bearing reservoir was recorded on sandstone cuttings at 3710 m.

One core was cut from 3300 m to 3342 m in the Tarbert Formation with 98% recovery. MDT fluid samples were taken at 3331.5 m, 3359 m, and at 3442 m.

The well was permanently abandoned on 21 December 1998 as a gas and oil appraisal well.

Testing

A drill stem test over the interval 3347.4 - 3363.4 m (3238.5 - 3251.5 m TVD) was performed. The test produced at maximum flow 895 Sm³ oil/per day through a 64/64" choke. The GOR was 415 Sm³/Sm³ (solution GOR approximately 210 Sm³/Sm³), the oil density was 0.84 g/cm³, and the gas gravity was 0.71 (air = 1) with 2 % CO₂ and 2.5 ppm H₂S. Free gas from the gas zone above the test interval is thought to enter the wellbore area through fractures in the carbonate-cemented layer above.

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Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
2330.00	3775.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3300.0	3341.5	[m]

Total kjerneprøve lengde [m]	41.5
Kjerner tilgjengelig for prøvetaking?	YES

Oljeprøver i Sokkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST1	3347.00	3363.00	OIL	05.12.1998 - 22:15	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
134	NORDLAND GP
645	UTSIRA FM
933	HORDALAND GP
933	NO FORMAL NAME
1257	GRID FM
2119	ROGALAND GP
2119	BALDER FM
2172	SELE FM
2249	LISTA FM
2395	VÅLE FM
2410	SHETLAND GP



2410	HARDRÅDE FM
2441	JORSALFARE FM
2659	KYRRE FM
3062	TRYGGVASON FM
3140	CROMER KNOLL GP
3140	RØDBY FM
3180	VIKING GP
3180	DRAUPNE FM
3188	HEATHER FM
3210	BRENT GP
3210	TARBERT FM
3473	NESS FM
3712	ETIVE FM
3715	NO FORMAL NAME
3730	DUNLIN GP
3730	DRAKE FM

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
3593_30_9_19_A_COMPLETION_REPORT	.pdf	28.37

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	3347	3363	25.4

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

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyingde rel. luft	GOR [m3/m3]
1.0	910	370000			





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 brønnspar. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
3593 Formation pressure (Formasjonstrykk)	pdf	0.21

