



Generell informasjon

Brønnbane navn	7/12-6
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	ULA
Funn	7/12-2 Ula
Brønn navn	7/12-6
Seismisk lokalisering	CN7 - 111 SP: 584.
Utvinningstillatelse	019
Boreoperatør	BP Norway Limited U.A.
Boretillatelse	282-L
Boreinnretning	SEDCO 707
Boredager	106
Borestart	10.04.1981
Boreslutt	24.07.1981
Frigitt dato	24.07.1983
Publiseringsdato	01.01.2012
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	LATE JURASSIC
1. nivå med hydrokarboner, formasjon.	ULA FM
2. nivå med hydrokarboner, alder	TRIASSIC
2. nivå med hydrokarboner, formasjon	SKAGERRAK FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	69.0
Totalt målt dybde (MD) [m RKB]	3700.0
Totalt vertikalt dybde (TVD) [m RKB]	3699.0
Maks inklinasjon [°]	2.5
Temperatur ved bunn av brønnbanen [°C]	153
Eldste penetrerte alder	TRIASSIC



Eldste penetrerte formasjon	SKAGERRAK FM
Geodetisk datum	ED50
NS grader	57° 7' 16.85" N
ØV grader	2° 50' 4.14" E
NS UTM [m]	6331048.10
ØV UTM [m]	489977.47
UTM sone	31
NPDID for brønnbanen	281

Brønnhistorie

**General**

Well 7/12-6 was drilled as an appraisal well on the Ula Field in the southern North Sea. The objective was to determine sand distribution in northern part of the Ula field, and production and injection properties of reservoir and aquifer.

Operations and results

Appraisal well 7/12-6 was spudded with the semi-submersible installation Sedco 707 on 10 April 1981 and drilled to TD at 3700 m in the Triassic Skagerrak Formation. Some hole problems and excessive cavings due to underbalanced drilling occurred in the 12 1/4" section between 2633 and 3353 m, otherwise the well was drilled without significant technical problems or delay. The well was drilled with gel/seawater and fluid loss additives down to 480 m and with gypsum/lignosulphonate and fluid loss additives from 480 m to TD.

The Ula Formation sandstones were penetrated at 3406 m. The sandstones were 115 m thick, very fine to fine grained with porosities from 10 to 25% and permabilities from 1 to 2000 mD. The reservoir was oil bearing throughout, no OWC was established. An unexpected Triassic reservoir of good quality was found below the Ula Formation. The well drilled 179 m into it without reaching the OWC. The reservoir consisted of various types of micaceous sandstones with porosities from 4 to 23% and permabilities from 0.03 to 2600 mD. The first hydrocarbon indication was recorded as a weak oil show at 2440 in siltstone. Further shows were recorded in the Late Cretaceous between 3010 m and 3060 m, however the logs did not indicate any significant mobile hydrocarbon. Hydrocarbon shows were recorded throughout the Upper Jurassic Ula Formation between 3407 m and 3521 m. Patchy shows were recorded in the Triassic interval between 3521 m and TD.

A total of 240 m core was cut in 9 cores over the interval 3407.7 to 3647.17 m in the Ula and Skagerrak formations. RFT fluid samples were taken at 3437 m (oil), 3533.5 m (mud filtrate), and at 3530.5 m (mud filtrate).

The well was permanently abandoned on 24 July 1981 as an oil appraisal well.

Testing

Both reservoirs were tested.

DST 1C in the Triassic Skagerrak Formation reservoir (3543 - 3612 m) flowed 160 Sm³ oil and 5720 Sm³ gas through a 12/64" choke. The GOR was 36 Sm³/Sm³. The oil density was 0.810 g/cm³ and the separator gas gravity was 0.806 (air = 1). The bottom hole temperature measured at 3531 m, was 149.4 deg C.

DST 2 in the Ula Formation sandstone reservoir (3434 - 3511 m) flowed 1269 Sm³ oil and 84526 Sm³ gas through a 32/64" choke. The GOR was 67 Sm³/Sm³. The oil density was 0.842 g/cm³ and the separator gas gravity was 0.840 (air = 1). The bottom hole temperature measured at 3425 m, was 143.3 deg C.

DST 2 was followed by an injection test. The maximum injection rate was 1407 Sm³/day at a wellhead injection pressure of 3100 to 3200 psi. As no OWC was seen the no injection test could be performed in the aquifer.



Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
180.00	3632.00
Borekaks tilgjengelig for prøvetaking?	NO

Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3406.7	3434.3	[m]
2	3434.3	3461.3	[m]
3	3461.6	3488.6	[m]
4	3488.6	3515.5	[m]
5	3515.5	3542.8	[m]
6	3542.8	3569.8	[m]
7	3569.8	3596.8	[m]
8	3596.8	3624.3	[m]
9	3624.3	3647.2	[m]

Total kjerneprøve lengde [m]	240.1
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



3406-3409m



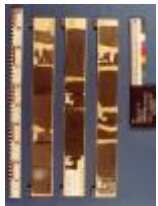
3409-3412m



3412-3414m



3414-3417m



3417-3420m



3420-3422m



3422-3425m



3425-3428m



3428-3431m



3431-3433m



3433-3434m



3434-3437m



3437-3439m



3439-3442m



3442-3445m



3445-3447m



3447-3450m



3450-3453m



3453-3455m



3455-3458m



3458-3461m



3461-3464m



3464-3467m



3467-3469m



3469-3472m



3472-3475m



3475-3477m



3477-3480m



3480-3483m



3483-3485m



3485-3488m



3488-3491m



3491-3494m



3494-3496m



3496-3499m



3499-3502m



3502-3504m



3504-3507m



3507-3510m



3510-3512m



3512-3515m



3515-3518m



3518-3520m



3520-3523m



3523-3526m



3526-3528m



3528-3531m



3531-3534m



3534-3537m



3537-3539m



3539-3542m



3542-3543m



3543-3545m



3545-3548m



3548-3550m



3550-3553m



3553-3556m



3556-3558m



3558-3561m



3561-3564m



3564-3567m



3567-3569m



3569-3572m



3572-3575m



3575-3577m



3577-3580m



3580-3583m



3583-3585m



3585-3588m



3588-3591m



3591-3594m



3594-3596m



3596-3599m



3599-3602m



3602-3604m



3604-3607m



3607-3610m



3610-3612m



3612-3615m



3615-3618m



3618-3621m



3621-3623m



3623-3624m



3624-3626m



3626-3629m



3629-3632m



3632-3635m



3635-3637m



3637-3640m



3640-3643m



3643-3645m



3645-3646m

Oljeprøver i Sökkeldirektoratet



Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST2	0.00	3511.00		16.07.1981 - 00:00	YES
DST		0.00	0.00		29.06.1983 - 00:00	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
94	NORDLAND GP
1672	HORDALAND GP
2539	ROGALAND GP
2539	BALDER FM
2564	SELE FM
2605	LISTA FM
2661	VIDAR FM
2702	LISTA FM
2710	VÅLE FM
2730	SHETLAND GP
2730	EKOFISK FM
2810	TOR FM
3002	HOD FM
3071	BLODØKS FM
3085	HIDRA FM
3092	CROMER KNOLL GP
3092	RØDBY FM
3292	TYNE GP
3292	MANDAL FM
3332	FARSUND FM
3406	ULA FM
3521	NO GROUP DEFINED
3521	SKAGERRAK FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
281_1	pdf	1.21





281_2	pdf	5.39
281_3	pdf	0.35

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
281_01_WDSS_General_Information	pdf	0.11
281_02_WDSS_completion_log	pdf	0.27

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
281_7_12_6_Completionh_report_I	pdf	18.37
281_7_12_6_Completion_log	pdf	2.34
281_7_12_6_Completion_report_II	pdf	29.48
281_7_12_6_Drill_stem_testing_field_report	pdf	27.74
281_7_12_6_Evaluation_of_core_data	pdf	0.30
281_7_12_6_Formation_Evaluation_Study_of_Ula_Field	pdf	37.34
281_7_12_6_Formation_testing_service_report_DST_NO_1C	pdf	5.33
281_7_12_6_Formation_testing_service_report_DST_NO_2	pdf	3.87
281_7_12_6_Geological_Evaluation_of_the_Triassic_oil_Discovery	pdf	3.95
281_7_12_6_Geological_Evaluation_of_the_Triassic_oil_Discovery	pdf	3.98
281_7_12_6_Injection_testing_measurement_DST_NO_2	pdf	2.60
281_7_12_6_Petroleum_Engineering_Completion_Report	pdf	29.48
281_7_12_6_Pressure_survey_report_DST_NO_2	pdf	4.31
281_7_12_6_Reservoir_fluid_study_DST_NO_1	pdf	1.66
281_7_12_6_Reservoir_fluid_study_DST_NO_2	pdf	1.81
281_7_12_6_Sampling_and_gas_analysis	pdf	0.68
281_7_12_6_Sedimentology_and_Diagenesis_of_Triassic_Cored	pdf	45.04
281_7_12_6_Special_core_analysis_study_UK_SCAL-311-811891	pdf	13.49





281 7 12 6 Special core analysis study UK SCAL-311-811893	pdf	3.88
281 7 12 6 Special Fluid Study DST NO 2	pdf	0.99
281 7 12 6 Specia core analysis study UK SAL-311-811892	pdf	11.31
281 7 12 6 Temperature Survey Report	pdf	2.96
281 7 12 6 Testing procedures	pdf	2.67
281 7 12 6 The sedimentology and reservoir geology	pdf	207.05
281 7 12 6 Well testing Report annexes	pdf	9.83
281 7 12 6 Well testing Report DST NO.1 C	pdf	10.26
281 7 12 6 Well testing Report DST NO.2	pdf	11.87

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsventil størrelse [mm]
1.0	3544	3612	4.7
2.0	3434	3511	12.7

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				149
2.0				143

Test nummer	Olje produksjon [Sm ³ /dag]	Gass produksjon [Sm ³ /dag]	Oljetetthet [g/cm ³]	Gasstyngde rel. luft	GOR [m ³ /m ³]
1.0	160	5720	0.816	0.806	36
2.0	1270	84526	0.842	0.840	66

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	3125	3632
CCL	160	195
CCL	3100	3508
CCL	3300	3525





CCL	3300	3390
DLL MSFL	3337	3703
FDC CNL CAL GR	3337	3704
HDT SL	3337	3703
ISF BHCS GR MSFL CAL	465	1692
ISF BHCS GR MSFL CAL	1684	3351
ISF BHCS GR SP	93	477
ISF BHCS SP GR	3337	3702
RFT GR	3415	3670
RFT GR	3416	3570
VELOCITY	200	3650

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	167.0	36	172.0	0.00	LOT
SURF.COND.	18 5/8	465.0	17 1/2	480.0	1.88	LOT
INTERM.	13 3/8	1684.0	17 1/2	1696.0	1.83	LOT
INTERM.	9 5/8	3337.0	12 1/4	3350.0	1.97	LOT
LINER	7	3688.0	8 1/2	3700.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
390	1.14	85.0		waterbased	
1680	1.30	58.0		waterbased	
1990	1.42	48.0		waterbased	
2630	1.50	59.0		waterbased	
3390	1.50	51.0		waterbased	

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]
281 Formation pressure (Formasjonstrykk)	pdf	0.22

