## Generell informasjon

| | |
|---|---|
| Brønnbane navn | 16/3-U-1 |
| Type | OTHER |
| Formål | APPRAISAL |
| Status | P&A |
| Flergrensbønn | NO |
| Hovedområde | NORTH SEA |
| Felt | JOHAN SVERDRUP |
| Funn | 16/2-6 Johan Sverdrup |
| Brønn navn | 16/3-U-1 |
| Utvinningstillatelse | 501 |
| Boreoperatør | Statoil Petroleum AS |
| Boretillatelse | 778-G |
| Boreinnretning | DEEPSEA ATLANTIC |
| Boredager | 12 |
| Borestart | 13.12.2016 |
| Boreslutt | 24.12.2016 |
| Frigitt dato | 24.12.2018 |
| Plugget og forlatt dato | 16.01.2017 |
| Plugget dato | 24.12.2016 |
| Publiseringsdato | 24.12.2018 |
| Opprinnelig formål | PILOT |
| Innhold | OIL |
| Funnbrønnbane | NO |
| 1. nivå med hydrokarboner, alder | LATE JURASSIC |
| 1. nivå med hydrokarboner, formasjon. | INTRA DRAUPNE FM SS |
| Avstand, boredekk - midlere havflate [m] | 30.0 |
| Vanndybde ved midlere havflate [m] | 118.0 |
| Totalt målt dybde (MD) [m RKB] | 2005.0 |
| Totalt vertikalt dybde (TVD) [m RKB] | 1999.0 |
| Maks inklinasjon [°] | 11.4 |
| Temperatur ved bunn av brønnbanen [°C] | 82 |
| Eldste penetrerte alder | PRE-DEVONIAN |
| Eldste penetrerte formasjon | BASEMENT |
| Geodetisk datum | ED50 |
| NS grader | 58° 46' 6.69'' N |

| | |
|---|---|
| ØV grader | 2° 47' 1.87'' E |
| NS UTM [m] | 6514447.47 |
| ØV UTM [m] | 487497.99 |
| UTM sone | 31 |
| NPDID for brønnbanen | 8071 |

## Brønnhistorie

**General**

Well 16/3-U-1 was drilled on the south-eastern end of the Johan Sverdrup Field on the Utsira High in the North Sea. The reservoir in this part of the field is below seismic resolution. The primary objective was to investigate sand presence, thickness and quality. Side-tracks were planned to further investigate horizontal well drilling and high angle hole time-stability in Draupne shales.

**Operations and results**

Well 16/3-U-1 was spudded with the semi-submersible installation Deepsea Atlantic on 13 December 2016 and drilled to TD at 2005 m (1999 m TVD) m in Basement rocks. The well was designed with open hole below the 13 3/8” casing shoe at 1119 m in the Hordaland Group. This allowed for reservoir logging at TD to be extended to the overburden. Operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to  down to 1130 m and with Carbosea oil-based mud from 1130 m to TD.

The Draupne Formation was encountered at 1938 m (1932 m TVD), the Intra-Draupne Formation sandstone at 1950 m (1944 m TVD),  and top Basement at 1959 m (1953 m TVD). The Intra-Draupne Formation sandstone had excellent reservoir properties and was oil-filled all through. No oil shows were described outside of the oil-bearing reservoir. Pressure data show ca 0.9 bar depletion in the reservoir compared to the pressure in well 16/3-5 in January 2013. Pressure data and logs in the overburden show no indication of flow potential.

One core was cut from 1943 to 1962 m in Draupne shale, sandstone and into basement. An RCX oil sample was taken at 1958.2 m.

The well was plugged back for side-tracking on 24 December 2016.

**Testing**

No drill stem test was performed.

## Borekaks i Sokkeldirektoratet

| Borekaksprøve, topp dybde [m] | Borekaksprøve, bunn dybde [m] |
|---|---|
| 1140.00 | 1960.00 |

| | |
|---|---|
| Borekaks tilgjengelig for prøvetaking? | YES |

## Borekjerner i Sokkeldirektoratet

| Kjerneprøve nummer | Kjerneprøve - topp dybde | Kjerneprøve - bunn dybde | Kjerneprøve dybde - enhet |
|---|---|---|---|
| 1 | 1943.0 | 1961.3 | [m ] |

| | |
|---|---|
| Total kjerneprøve lengde [m] | 18.3 |
| Kjerner tilgjengelig for prøvetaking? | YES |

## 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 | 36 | 197.6 | 42 | 205.0 | 0.00 | |
| INTERM. | 13 3/8 | 1119.4 | 17 1/2 | 1127.0 | 1.42 | FIT |
| OPEN HOLE | | 2005.0 | 12 1/4 | 2005.0 | 0.00 | |

## Logger

| Type logg | Topp dyp for logg [m] | Bunn dyp for logg [m] |
|---|---|---|
| MRCH JAR TTRM DSL CN CDL HDIL OR | 1287 | 1999 |
| MRCH JAR TTRM GR FLEX GXPL ORIT | 999 | 999 |
| MRCH JAR TTRM GR MREX R6TC IFX R | 1287 | 1999 |
| MWD - GR RES | 203 | 1127 |
| MWD - NBGR GR RES | 1127 | 1943 |

## Litostratigrafi

| Topp Dyb [mMD RKB] | Litostrat. enhet |
|---|---|
| 148 | NORDLAND GP |
| 773 | UTSIRA FM |
| 858 | HORDALAND GP |
| 858 | SKADE FM |
| 1307 | ROGALAND GP |

| | |
|---|---|
| 1307 | BALDER FM |
| 1340 | SELE FM |
| 1360 | LISTA FM |
| 1419 | VÅLE FM |
| 1429 | SHETLAND GP |
| 1429 | EKOFISK FM |
| 1445 | TOR FM |
| 1532 | HOD FM |
| 1647 | BLODØKS FM |
| 1739 | SVARTE FM |
| 1782 | CROMER KNOLL GP |
| 1782 | RØDBY FM |
| 1866 | SOLA FM |
| 1896 | ÅSGARD FM |
| 1938 | VIKING GP |
| 1938 | DRAUPNE FM |
| 1950 | INTRA DRAUPNE FM SS |
| 1959 | BASEMENT |

## Boreslam

| Dybde MD [m] | Egenvekt, slam [g/cm3] | Viskositet, slam [mPa.s] | Flytegrense [Pa] | Type slam | Dato, måling |
|---|---|---|---|---|---|
| 377 | 1.25 | 8.0 | | Spud Mud | |
| 1346 | 1.33 | 25.0 | | CARBOSEA | |
| 1642 | 1.25 | 29.0 | | CARBOSEA | |
| 1936 | 1.27 | 27.0 | | CARBOSEA | |
| 1996 | 1.26 | 27.0 | | CARBOSEA | |
| 2005 | 1.25 | 27.0 | | CARBOSEA | |

## Palynologiske preparater i Sokkeldirektoratet

| Prøve dybde | Dybde enhet | Prøve type | Laboratorie |
|---|---|---|---|
| 0.0 | [unknown] | C | CGG |