



## Generell informasjon

|                                          |                                           |
|------------------------------------------|-------------------------------------------|
| Brønnbane navn                           | 6608/10-14 S                              |
| Type                                     | EXPLORATION                               |
| Formål                                   | WILDCAT                                   |
| Status                                   | P&A                                       |
| Pressemelding                            | <a href="#">lenke til pressemelding</a>   |
| Faktakart i nytt vindu                   | <a href="#">lenke til kart</a>            |
| Hovedområde                              | NORWEGIAN SEA                             |
| Felt                                     | <a href="#">SKULD</a>                     |
| Funn                                     | <a href="#">6608/10-14 S Skuld</a>        |
| Brønn navn                               | 6608/10-14                                |
| Seismisk lokalisering                    | 3D Survey:ST04M17-inline 821 & xline 2986 |
| Utvinningstillatelse                     | <a href="#">128</a>                       |
| Boreoperatør                             | Statoil Petroleum AS                      |
| Boretillatelse                           | 1291-L                                    |
| Boreinnretning                           | <a href="#">OCEAN VANGUARD</a>            |
| Boredager                                | 39                                        |
| Borestart                                | 22.02.2010                                |
| Boreslutt                                | 01.04.2010                                |
| Frigitt dato                             | 01.04.2012                                |
| Publiseringsdato                         | 01.04.2012                                |
| Opprinnelig formål                       | WILDCAT                                   |
| Gjenåpnet                                | NO                                        |
| Innhold                                  | OIL/GAS                                   |
| Funnbrønnbane                            | YES                                       |
| 1. nivå med hydrokarboner, alder         | MIDDLE JURASSIC                           |
| 1. nivå med hydrokarboner, formasjon.    | INTRA MELKE FM SS                         |
| 2. nivå med hydrokarboner, alder         | MIDDLE JURASSIC                           |
| 2. nivå med hydrokarboner, formasjon     | ILE FM                                    |
| 3. nivå med hydrokarboner, alder         | EARLY JURASSIC                            |
| 3. nivå med hydrokarboner, formasjon     | TOFTE FM                                  |
| Avstand, boredekk - midlere havflate [m] | 22.0                                      |
| Vanndybde ved midlere havflate [m]       | 354.0                                     |
| Totalt målt dybde (MD) [m RKB]           | 2880.0                                    |
| Totalt vertikalt dybde (TVD) [m RKB]     | 2771.0                                    |



|                                        |                 |
|----------------------------------------|-----------------|
| Maks inklinasjon [°]                   | 30.5            |
| Temperatur ved bunn av brønnbanen [°C] | 97              |
| Eldste penetrerte alder                | EARLY JURASSIC  |
| Eldste penetrerte formasjon            | ÅRE FM          |
| Geodetisk datum                        | ED50            |
| NS grader                              | 66° 8' 58.46" N |
| ØV grader                              | 8° 14' 45.76" E |
| NS UTM [m]                             | 7336972.86      |
| ØV UTM [m]                             | 465980.00       |
| UTM sone                               | 32              |
| NPDID for brønnbanen                   | 6306            |

## Brønnhistorie

**General**

Well 6608/10-14S was drilled on the Fossekalv prospect on the Dønna terrace in the Norwegian Sea. The well is located 8 km north of the Svale field and 15 km northeast of the Norne field. The objective was to prove hydrocarbon bearing sands in the Ile, Tofte and Åre formations (Fangst and Båt Group) of Middle - Early Jurassic age in the Fossekalv prospect and to establish fluid contacts.

**Operations and results**

Wildcat well 6608/10-14S was spudded with the semi-submersible installation Ocean Vanguard on 22 February 2010 and drilled to TD at 2880 m (2771 m TVD). The well was designed as a vertical well down to the 12 1/4" hole section at 1332.5 m and then directionally drilled from the 12 1/4" section to hit the geological target at a ca 30 deg angle, holding this inclination to TD of the well. No significant problem was encountered in the operations. No shallow gas observed. The well was drilled with Seawater and CaCl<sub>2</sub>/Polymer down to 1332.5 m and with "yellow" Enviromul oil based mud from 1332.5 m to TD.

The well penetrated a 6 m thick Spekk Formation at 2375 m on top of the Melke Formation at 2381 m. There were two main reservoir levels in Fossekalv; Melke Formation of Late Jurassic age and in the Ile, Tofte and Åre Formations of Middle to Early Jurassic age. The two reservoir levels are separated by the Not Shale. Gas was observed in Intra- Melke Formation sandstone from 2433 m (2380.1 m TVD) to 2504 m (2441.5 m TVD), while oil was present in sandstones from top Ile Formation at 2549.2 m (2480.9 m) and down through the Tofte and Åre Formations. MDT sampling and fluid scanning found water up to 2714 m (2623.9 m TVD), while the logs and shows on cores indicate moveable oil down to a thin sand at 2704.5 m (2616 m TVD). Oil shows (cut fluorescence) continued down to 2731.5 m, otherwise no shows were recorded outside of the oil and gas reservoirs. Pressure data showed that the Melke gas and the Ile/Tofte/Åre were in different pressure regimes.

Five cores were cut, one in the Melke Formation, one in the Ile/Tofte/Åre formations, and three in the Åre Formation. Sixteen oil samples were taken with MDT at depths 2549.9, 2567.9, 2568.1, 2692.4, and 2704.6, m (Tofte and Åre formations); three gas samples at 2448.5 m (Melke Formation); and three water samples at 2725.9 m (Åre Formation). The samples were of good quality, except for high mud filtrate contamination in one gas sample.

The well was permanently abandoned on 1 April 2010 as an oil and gas discovery.

**Testing**

No drill stem test was performed.

**Borekaks i Sokkeldirektoratet**

| Borekaksprøve, topp dybde [m] | Borekaksprøve, bunn dybde [m] |
|-------------------------------|-------------------------------|
| 1350.00                       | 2879.00                       |

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



### Borekjerne i Sokkeldirektoratet

| Kjerneprøve nummer | Kjerneprøve - topp dybde | Kjerneprøve - bunn dybde | Kjerneprøve dybde - enhet |
|--------------------|--------------------------|--------------------------|---------------------------|
| 1                  | 2437.0                   | 2463.8                   | [m ]                      |
| 2                  | 2549.5                   | 2604.5                   | [m ]                      |
| 3                  | 2605.0                   | 2659.0                   | [m ]                      |
| 4                  | 2659.0                   | 2704.5                   | [m ]                      |
| 5                  | 2705.5                   | 2731.7                   | [m ]                      |

|                                       |       |
|---------------------------------------|-------|
| Total kjerneprøve lengde [m]          | 207.5 |
| 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       | 3C            | 2568.10         | 0.00            | OIL        |                | YES                 |
| DST       | 1A            | 2692.40         | 0.00            | OIL        |                | YES                 |

### Litostratigrafi

| Topp Dyb [mMD RKB] | Litostrat. enhet                |
|--------------------|---------------------------------|
| 376                | <a href="#">NORDLAND GP</a>     |
| 376                | <a href="#">NAUST FM</a>        |
| 1406               | <a href="#">KAI FM</a>          |
| 1513               | <a href="#">HORDALAND GP</a>    |
| 1513               | <a href="#">BRYGGE FM</a>       |
| 1798               | <a href="#">ROGALAND GP</a>     |
| 1798               | <a href="#">TARE FM</a>         |
| 1865               | <a href="#">TANG FM</a>         |
| 1889               | <a href="#">SHETLAND GP</a>     |
| 1889               | <a href="#">SPRINGAR FM</a>     |
| 2028               | <a href="#">NISE FM</a>         |
| 2283               | <a href="#">CROMER KNOLL GP</a> |



|      |                                   |
|------|-----------------------------------|
| 2283 | <a href="#">LYR FM</a>            |
| 2375 | <a href="#">VIKING GP</a>         |
| 2375 | <a href="#">SPEKK FM</a>          |
| 2381 | <a href="#">MELKE FM</a>          |
| 2433 | <a href="#">INTRA MELKE FM SS</a> |
| 2504 | <a href="#">FANGST GP</a>         |
| 2504 | <a href="#">NOT FM</a>            |
| 2549 | <a href="#">ILE FM</a>            |
| 2557 | <a href="#">BÅT GP</a>            |
| 2557 | <a href="#">TOFTE FM</a>          |
| 2592 | <a href="#">ÅRE FM</a>            |

## Logger

| Type logg                | Topp dyp<br>for logg [m] | Bunn dyp for<br>logg [m] |
|--------------------------|--------------------------|--------------------------|
| CMR ECS                  | 2394                     | 2880                     |
| MDT                      | 2436                     | 2692                     |
| MDT                      | 2549                     | 2871                     |
| MSIP                     | 2394                     | 2880                     |
| MWD - ARCVIS9 TELE       | 437                      | 1338                     |
| MWD - GVR6 ARCVRES8 TELE | 2731                     | 2880                     |
| MWD - PP ARCVIS8 TELE    | 1338                     | 2394                     |
| MWD - TELESCOPE          | 376                      | 437                      |
| PEX AIT                  | 2394                     | 2704                     |
| PEX AIT                  | 2394                     | 2880                     |

## Foringsrør og formasjonsstyrketester

| Type utforing | Utforing<br>diam.<br>[tommer] | Utforing<br>dybde<br>[m] | Brønnbane<br>diam.<br>[tommer] | Brønnbane<br>dyp<br>[m] | LOT/FIT slam<br>eqv.<br>[g/cm3] | Type<br>formasjonstest |
|---------------|-------------------------------|--------------------------|--------------------------------|-------------------------|---------------------------------|------------------------|
| CONDUCTOR     | 30                            | 437.0                    | 36                             | 440.0                   | 0.00                            | LOT                    |
| SURF.COND.    | 13 3/8                        | 1332.0                   | 17 1/2                         | 1332.0                  | 1.57                            | LOT                    |
| INTERM.       | 9 5/8                         | 2393.0                   | 12 1/4                         | 2394.0                  | 1.87                            | LOT                    |
| OPEN HOLE     |                               | 2880.0                   | 8 1/2                          | 2880.0                  | 0.00                            | LOT                    |

## Boreslam



| Dybde MD [m] | Egenvekt, slam [g/cm3] | Viskositet, slam [mPa.s] | Flytegrense [Pa] | Type slam        | Dato, måling |
|--------------|------------------------|--------------------------|------------------|------------------|--------------|
| 1338         | 1.45                   | 29.0                     |                  | Enviromul Yellow |              |
| 2225         | 1.25                   | 16.0                     |                  | Enviromul Yellow |              |
| 2394         | 1.46                   | 23.0                     |                  | Enviromul Yellow |              |
| 2394         | 1.47                   | 35.0                     |                  | Enviromul Yellow |              |
| 2394         | 1.52                   | 35.0                     |                  | Enviromul Yellow |              |
| 2457         | 1.25                   | 12.0                     |                  | Enviromul Yellow |              |
| 2581         | 1.27                   | 12.0                     |                  | Enviromul Yellow |              |
| 2704         | 1.25                   | 14.0                     |                  | Enviromul Yellow |              |
| 2880         | 1.25                   | 15.0                     |                  | Enviromul Yellow |              |

## 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] |
|-----------------------------------------------------------|-----------------|-------------------------|
| <a href="#">6306 Formation pressure (Formasjonstrykk)</a> | pdf             | 0.28                    |

