



## Generell informasjon

|                                          |                                            |
|------------------------------------------|--------------------------------------------|
| Brønnbane navn                           | 25/8-8 A                                   |
| Type                                     | EXPLORATION                                |
| Formål                                   | APPRAISAL                                  |
| Status                                   | P&A                                        |
| Faktakart i nytt vindu                   | <a href="#">lenke til kart</a>             |
| Hovedområde                              | NORTH SEA                                  |
| Felt                                     | <a href="#">JOTUN</a>                      |
| Funn                                     | <a href="#">25/8-8 S Jotun</a>             |
| Brønn navn                               | 25/8-8                                     |
| Seismisk lokalisering                    | ES 9403- INLINE 2672 & CDP 2131            |
| Utvinningstillatelse                     | <a href="#">027 P</a>                      |
| Boreoperatør                             | Esso Exploration and Production Norway A/S |
| Boretillatelse                           | 830-L                                      |
| Boreinnretning                           | <a href="#">VILDKAT EXPLORER</a>           |
| Boredager                                | 13                                         |
| Borestart                                | 29.09.1995                                 |
| Boreslutt                                | 11.10.1995                                 |
| Frigitt dato                             | 11.10.1997                                 |
| Publiseringsdato                         | 29.08.2003                                 |
| Opprinnelig formål                       | APPRAISAL                                  |
| Gjenåpnet                                | NO                                         |
| Innhold                                  | OIL/GAS                                    |
| Funnbrønnbane                            | NO                                         |
| 1. nivå med hydrokarboner, alder         | PALEOCENE                                  |
| 1. nivå med hydrokarboner, formasjon.    | HEIMDAL FM                                 |
| Avstand, boredekk - midlere havflate [m] | 25.0                                       |
| Vanndybde ved midlere havflate [m]       | 126.5                                      |
| Totalt målt dybde (MD) [m RKB]           | 2601.0                                     |
| Totalt vertikalt dybde (TVD) [m RKB]     | 2183.1                                     |
| Maks inklinasjon [°]                     | 51.7                                       |
| Eldste penetrerte alder                  | PALEOCENE                                  |
| Eldste penetrerte formasjon              | TY FM                                      |
| Geodetisk datum                          | ED50                                       |
| NS grader                                | 59° 25' 51.87" N                           |
| ØV grader                                | 2° 24' 18.73" E                            |



|                      |            |
|----------------------|------------|
| NS UTM [m]           | 6588357.70 |
| ØV UTM [m]           | 466254.24  |
| UTM sone             | 31         |
| NPDID for brønnbanen | 2690       |

## Brønnhistorie

### General

Well 25/8-8 S was drilled to test the Paleocene Heimdal Formation sandstones (Tau Prospect) located southeast of the Jotun Field and north east of the Balder Field on the east margin of the South Viking Graben. The well was planned with flexibility to be sidetracked into two other reservoir segments from the same 13 3/8" casing. The well proved oil in the target and two sidetracks were drilled. Well 25/8-8 A was the first sidetrack and the objective was to appraise the discovery in the primary well and to evaluate the sand quality in the eastern segment of the Tau Structure. Well 25/8-8 B was the second sidetrack and the objective was to appraise and evaluate resource potential in the western segment of the 25/8-8 S Discovery and to confirm oil-water and possibly gas-oil contacts.

### Operations and results

Exploration well 25/8-8 S was spudded with the semi-submersible installation "Vildkat Explorer" on 22 August 1995 and drilled deviated to TD at 2592 m (2343.7 m TVD SS) in the Late Jurassic Draupne Formation. The well was drilled to 1058 m with seawater and high viscosity gel pills. From 1058 m to TD the well was drilled using an oil-based mud, "Safemul". MWD-GR-Res was used during drilling. MWD-resistivity failed at 872 m and the hole was drilled to 1058 m without resistivity log. No shallow gas was observed. The 13 3/8" casing was set at 1046.5 m.

When the second run with the MDT was done, the MDT cable became stuck. The cable broke at the casing shoe, leaving the tool and about 1000 m of cable in the hole. A fishing job was performed to get the tool and cable out. The fishing job was successful and the rest of the logging program was completed.

The target Heimdal Formation was penetrated at 2236 m and was found hydrocarbon bearing. A GOC is indicated within the interval 2244.9-2252.0 m (2057.0-2063.0 m TVD SS) based on ELAN log analysis, pressure analysis and geochemical analyses. Available well data indicate an OWC at 2283.5 m (2089.3 m TVD SS) with oil saturation up to 5 m TVD deeper. Three 27-metre cores were cut in the Lista and Heimdal Formations in the interval 2228 m to 2309 m. Fluid samples were taken in the first MDT run at 2244.2 m (gas) and 2260.0 m (oil). After testing the well was plugged back to the 13 3/8" casing and the casing pulled to get ready for the first sidetrack, 25/8-8 A.

Sidetrack 25/8-8 A was kicked off from below the 13 3/8" casing shoe at 1080 m on 26 September 1995 and drilled to a TD of 2601.3 m (2158.1 m TVD SS) in the Early Paleocene Ty Formation. The wellbore was drilled with "Safemul" oil based mud from kick off to TD. Based on MDT pressures and extensive MDT sampling 25/8-8 A confirmed oil and gas in the Heimdal Formation with a GOC estimated at 2057.8 m TVD SS and an OWC estimated at 2094.5 m TVD SS. It also proved the amount of sand and reservoir quality decrease eastwards from the original 25/8-8 S well location. Borehole 25/8-8 A was not drill stem tested. Four conventional cores were cut in the Lista and Heimdal Formations in the interval 2414 m to 2522 m. MDT fluid samples were recovered from the Heimdal Formation at depths 2430 m (gas), & 2445.6 m (gas), 2453 m (oil), and 2457.8 m (oil). Post-well organic geochemical analyses indicated some "diesel" contamination in the oil samples. After logging sidetrack 25/8-8A was plugged and abandoned as an oil and gas appraisal well.



The second sidetrack, 25/8-8 B, was kicked off from 1080 m on 11 October 1995 and drilled to a total depth of 2510 m (2152 m TVD SS) in the Paleocene Lista Formation. The well was drilled with oil-based mud from kick off to TD.

Pressures and extensive MDT sampling confirmed the oil and water gradients and defined the OWC in the Heimdal Formation. The oil water contact was found at 2428.9 m (2094.7 m TVD SS). The well was not drill stem tested. Three cores were cut in the Lista and Heimdal Formations from 2375 m to 2441 m. After logging sidetrack 25/8-8 B was plugged back and abandoned as an oil and gas appraisal well.

The primary wellbore 25/8-8 S was permanently abandoned on October 24, 1995 as an oil and gas discovery, named the 25/8-8 S Jotun Discovery.

#### Testing

Well 25/8-8 S was drill stem tested. The main interval 2258 m - 2267 m produced a little sand (1%) at 795 Sm<sup>3</sup>/day and was chocked back to 628 Sm<sup>3</sup>/day for the main flow. GOR was 70 Sm<sup>3</sup>/Sm<sup>3</sup>. After the main flow, a lower interval 2275-2279 m was perforated with tubing conveyed gun and the two intervals were flowed co-mingled at 1065 Sm<sup>3</sup>/day with traces of sand. GOR was 70 Sm<sup>3</sup>/Sm<sup>3</sup>.

#### Borekaks i Sokkeldirektoratet

| Borekaksprøve, topp dybde [m] | Borekaksprøve, bunn dybde [m] |
|-------------------------------|-------------------------------|
| 1060.00                       | 2601.30                       |

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

#### Borekjerne i Sokkeldirektoratet

| Kjerneprøve nummer | Kjerneprøve - topp dybde | Kjerneprøve - bunn dybde | Kjerneprøve dybde - enhet |
|--------------------|--------------------------|--------------------------|---------------------------|
| 1                  | 2414.0                   | 2450.0                   | [m ]                      |
| 2                  | 2450.0                   | 2464.3                   | [m ]                      |
| 3                  | 2464.3                   | 2496.0                   | [m ]                      |
| 4                  | 2496.0                   | 2523.7                   | [m ]                      |

|                                       |       |
|---------------------------------------|-------|
| Total kjerneprøve lengde [m]          | 109.6 |
| Kjerner tilgjengelig for prøvetaking? | YES   |

#### Kjernebilder



2414-2419m



2419-2424m



2424-2429m



2429-2434m



2434-2439m



2439-2444m



2444-2449m



2449-2450m



2450-2455m



2455-2460m



2460-2464m



2464-2469m



2469-2474m



2474-2479m



2479-2484m



2484-2489m



2489-2494m



2494-2495m



2495-2500m



2500-2505m



2505-2510m



2510-2515m



2515-2520m



2520-2524m

### Palynologiske preparater i Sokkeldirektoratet

| Prøve dybde | Dybde enhet | Prøve type | Laboratorie |
|-------------|-------------|------------|-------------|
| 2240.0      | [m]         | SWC        | STRAT       |
| 2271.0      | [m]         | SWC        | STRAT       |
| 2280.0      | [m]         | SWC        | STRAT       |



|        |     |     |       |
|--------|-----|-----|-------|
| 2282.0 | [m] | SWC | STRAT |
| 2284.0 | [m] | SWC | STRAT |
| 2290.0 | [m] | DC  | STRAT |
| 2296.0 | [m] | SWC | STRAT |
| 2300.0 | [m] | DC  | STRAT |
| 2320.0 | [m] | DC  | STRAT |
| 2330.0 | [m] | DC  | STRAT |
| 2335.0 | [m] | SWC | STRAT |
| 2340.0 | [m] | DC  | STRAT |
| 2350.0 | [m] | SWC | STRAT |
| 2354.0 | [m] | SWC | STRAT |
| 2356.0 | [m] | SWC | STRAT |
| 2370.0 | [m] | DC  | STRAT |
| 2375.0 | [m] | SWC | STRAT |
| 2395.0 | [m] | SWC | STRAT |
| 2398.0 | [m] | SWC | STRAT |
| 2414.0 | [m] | C   | STRAT |
| 2425.0 | [m] | C   | STRAT |
| 2426.0 | [m] | C   | STRAT |
| 2430.0 | [m] | C   | STRAT |
| 2434.0 | [m] | C   | STRAT |
| 2436.0 | [m] | C   | STRAT |
| 2438.0 | [m] | C   | STRAT |
| 2446.0 | [m] | C   | STRAT |
| 2449.0 | [m] | C   | STRAT |
| 2467.0 | [m] | C   | STRAT |
| 2481.0 | [m] | C   | STRAT |
| 2495.0 | [m] | C   | STRAT |
| 2498.0 | [m] | C   | STRAT |
| 2503.0 | [m] | C   | STRAT |
| 2511.0 | [m] | C   | STRAT |
| 2521.0 | [m] | C   | STRAT |
| 2521.0 | [m] | C   | STRAT |
| 2530.0 | [m] | DC  | STRAT |
| 2542.8 | [m] | SWC | STRAT |
| 2552.9 | [m] | SWC | STRAT |
| 2560.0 | [m] | DC  | STRAT |
| 2570.0 | [m] | DC  | STRAT |
| 2582.0 | [m] | SWC | STRAT |
| 2590.0 | [m] | DC  | STRAT |



|            |    |       |
|------------|----|-------|
| 2601.3 [m] | DC | STRAT |
|------------|----|-------|

### Litostratigrafi

| Topp Dyb<br>[mMD RKB] | Litostrat. enhet               |
|-----------------------|--------------------------------|
| 152                   | <a href="#">NORDLAND GP</a>    |
| 474                   | <a href="#">UTSIRA FM</a>      |
| 610                   | <a href="#">NO FORMAL NAME</a> |
| 668                   | <a href="#">HORDALAND GP</a>   |
| 668                   | <a href="#">SKADE FM</a>       |
| 1025                  | <a href="#">NO FORMAL NAME</a> |
| 1185                  | <a href="#">SKADE FM</a>       |
| 1232                  | <a href="#">NO FORMAL NAME</a> |
| 1291                  | <a href="#">GRID FM</a>        |
| 1310                  | <a href="#">NO FORMAL NAME</a> |
| 2203                  | <a href="#">ROGALAND GP</a>    |
| 2203                  | <a href="#">BALDER FM</a>      |
| 2286                  | <a href="#">SELE FM</a>        |
| 2351                  | <a href="#">LISTA FM</a>       |
| 2425                  | <a href="#">HEIMDAL FM</a>     |
| 2478                  | <a href="#">LISTA FM</a>       |
| 2554                  | <a href="#">TY FM</a>          |

### Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

| Dokument navn                                           | Dokument format | Dokument størrelse [KB] |
|---------------------------------------------------------|-----------------|-------------------------|
| <a href="#">2690_25_8_8_A_COMPLETION_REPORT_AND_LOG</a> | pdf             | 91.01                   |

### Logger

| Type logg     | Topp dyp for logg [m] | Bunn dyp for logg [m] |
|---------------|-----------------------|-----------------------|
| AIT AS GR CAL | 1046                  | 2592                  |
| CST GR        | 2240                  | 2585                  |
| IPL EPT NGS   | 1046                  | 2593                  |
| MDT GR        | 2426                  | 2429                  |
| MDT GR        | 2430                  | 2516                  |





|                  |      |      |
|------------------|------|------|
| MDT GR           | 2430 | 2560 |
| MDT GR           | 2560 | 2576 |
| MWD - GR RES DIR | 1124 | 2592 |
| VSP              | 1390 | 2580 |

Foringsrør og formasjonsstyrketester

| Type utforing | Utforing diam.<br>[tommer] | Utforing dybde<br>[m] | Brønnbane diam.<br>[tommer] | Brønnbane dyp<br>[m] | LOT/FIT slam eqv.<br>[g/cm3] | Type formasjonstest |
|---------------|----------------------------|-----------------------|-----------------------------|----------------------|------------------------------|---------------------|
| CONDUCTOR     | 30                         | 214.0                 | 36                          | 214.0                | 0.00                         | LOT                 |
| SURF.COND.    | 13 3/8                     | 1046.0                | 17 1/2                      | 1046.0               | 0.00                         | LOT                 |
| OPEN HOLE     |                            | 2601.0                | 8 1/2                       | 2601.0               | 0.00                         | LOT                 |

Boreslam

| Dybde MD [m] | Egenvekt, slam<br>[g/cm3] | Viskositet, slam<br>[mPa.s] | Flytegrense [Pa] | Type slam | Dato, måling |
|--------------|---------------------------|-----------------------------|------------------|-----------|--------------|
| 841          | 1.49                      | 61.0                        |                  | OIL BASED |              |
| 996          | 1.43                      | 38.0                        |                  | OIL BASED |              |
| 1070         | 1.00                      | 37.0                        |                  | OIL BASED |              |
| 1149         | 1.43                      | 44.0                        |                  | OIL BASED |              |
| 1334         | 1.54                      | 51.0                        |                  | OIL BASED |              |
| 2115         | 1.50                      | 43.0                        |                  | OIL BASED |              |
| 2154         | 1.43                      | 42.0                        |                  | OIL BASED |              |
| 2230         | 1.50                      | 54.0                        |                  | OIL BASED |              |
| 2242         | 1.54                      | 37.0                        |                  | OIL BASED |              |
| 2382         | 1.50                      | 45.0                        |                  | OIL BASED |              |
| 2414         | 1.50                      | 49.0                        |                  | OIL BASED |              |
| 2443         | 1.50                      | 44.0                        |                  | OIL BASED |              |
| 2450         | 1.54                      | 38.0                        |                  | OIL BASED |              |
| 2495         | 1.53                      | 37.0                        |                  | OIL BASED |              |
| 2510         | 1.50                      | 53.0                        |                  | OIL BASED |              |
| 2522         | 1.53                      | 36.0                        |                  | OIL BASED |              |
| 2601         | 1.53                      | 36.0                        |                  | OIL BASED |              |

Tynnslip i Sokkeldirektoratet

| Dybde   | Enhet |
|---------|-------|
| 2430.75 | [m ]  |





|         |      |
|---------|------|
| 2436.10 | [m ] |
| 2447.25 | [m ] |
| 2449.75 | [m ] |
| 2456.85 | [m ] |
| 2461.25 | [m ] |
| 2461.45 | [m ] |
| 2476.00 | [m ] |
| 2454.75 | [m ] |
| 2485.00 | [m ] |
| 2428.30 | [m ] |
| 2433.20 | [m ] |
| 2448.20 | [m ] |
| 2457.85 | [m ] |
| 2458.20 | [m ] |
| 2463.25 | [m ] |
| 2465.80 | [m ] |
| 2485.80 | [m ] |
| 2504.25 | [m ] |
| 2506.25 | [m ] |
| 2517.50 | [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] |
|-----------------------------------------------------------|-----------------|-------------------------|
| <a href="#">2690 Formation pressure (Formasjonstrykk)</a> | pdf             | 0.21                    |

