



Wellbore History

GENERAL

Well 33/2-2 S, was an exploration well drilled to test the Morkel prospect on the eastern down faulted terrace of the Makrell Horst. The well is located 1.7 km northeast of the closest neighbouring well, 33/5-1 (1979), which was drilled on the crest of the horst. The primary exploration target for the well was to prove petroleum in Late and Middle Jurassic reservoir rocks (Intra-Draupne Formation sandstone and the Brent group). The secondary exploration target was to prove hydrocarbons in Early Jurassic (the Statfjord Group) and Late Triassic reservoir rocks (the Lunde Formation).

OPERATIONS AND RESULTS

Wildcat well 33/2-2 S was spudded with the semi-submersible installation Bredford Dolphin on 2 March 2015 and drilled to TD at 3530 m in the Triassic Teist Formation. No significant problem was encountered in the operations. The well was drilled with seawater and hi-vis pills down to 435 m, with Aqua-Drill mud from 435 m to 1754 m, with Carbo-Sea oil based mud from 1754 m to 2793 m, and with Aqua-Drill mud from 2793 m to TD.

The Early Cretaceous Mime Formation rest unconformably on the Triassic in the well. The Jurassic, including the primary exploration target was not encountered. In the secondary exploration target, the well encountered oil in the Lunde Formation from 2945 m to 3113 m, of which 12 m sandstone of poor reservoir quality. An ODT at 3112 m (3105 m TVD) is supported by the data, but it is not possible to establish hydrocarbon contacts confidently. Hydrocarbon shows were observed in greater parts of the well: from 1410 to 1650 m, from 2242 to 2260 m, and more or less the whole well below 2941 m.

Four cores were cut in the Triassic section. Core 1 and 2 were cut from 2943 to 2960.4 m. Core 3 was cut from 2988.7 to 2997.2 m, and core 4 from 3049 to 3059 m. Core recovery was from 81 to 98%. MDT fluid samples were taken at 2946.3 m (water), 3005.8 m (oil), 3066.9 m (oil), 3079.4 m (oil). Single stage separation of the samples gave GOR's in the range 193 to 219 Sm3/Sm3 and stock-tank oil density in the range 0.819 to 0.822 g/cm3.

The well was permanently abandoned on 10 June 2015 as an oil discovery.

TESTING

One drill stem test was performed from the interval 3007.5 to 3115 m in the Lunde Formation. The test produced approximately 20 Sm3 oil and 4500 Sm3 gas /day through an 18/64" choke. The DST confirms the logging and poro-perm assessment indicating that the reservoir formation is rather tight and has low producability. The DST temperature was 121.5 °C

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 33/2-2 S