



Wellbore History

GENERAL

Well 33/12-3 was drilled on the Statfjord structure in the Tampen Spur area. It was designed to test the erosional escarpment on the east flank of the structure for possible trapping of hydrocarbons in an area downfaulted to the Statfjord Field pay section to the west. Primary objectives of the well were the Early Jurassic Statfjord Group sands and possible Middle Jurassic Brent Formation sands. Well 33/12-3 was junked due to technical problems. The rig was moved 30 m and re-spudded as replacement well 33/12-4.

OPERATIONS AND RESULTS

Appraisal well 33/12-4 was spudded with the semi-submersible installation Nordskald on 17 May and drilled to 2896 m in Late Triassic sediments in the Statfjord Group. The well was drilled with seawater down to 495 m and with water based lignosulphonate mud from 495 m to TD.

The Middle Jurassic Brent Group was encountered at 2675 m, ca 55 m high to prognosis but, as anticipated, well below the Brent oil/water contact of 2609 m (2584 m MSL) in the upthrown block of the field. Scattered poor to fair hydrocarbon indications were noted in the cores but gas readings were low. Average core porosity in the sands is 23 %, ranging from two to 29 %. Measured horizontal permeabilities average 604 mD and range between 0.01 and 2028 mD. The CPI log indicated some 40 feet of prospective net pay with 23 percent average porosity and 53 percent average water saturation.

The top of the Statfjord Group was penetrated at 2757 m, only 2 m low to prognosis. Core 4 at the top of Statfjord recovered sand, siltstones and claystones with no shows. However, poor shows were recorded above and below the cored section. Using a 65% water saturation cut-off Schlumberger's preliminary CPI analysis showed hydrocarbon indications over approximately 7 m of net sand within the Statfjord Group, with porosities ranging between 25 to 30 percent and high water saturations of 59 to 65 percent.

Seven cores were cut. Cores 1 to 4 were cut from 2679.2 m to 2721.3 m, core 5 was cut from 2764.8 m to 2772.5 m, and core 6 and 7 were cut from 2775.5 m to 2790.4 m. No wire line fluid samples were taken.

The well was permanently abandoned on 17 July as an oil appraisal well on the Statfjord Field.

TESTING

Two through-casing drill stem test were run to evaluate the best sections of the thin Brent and Statfjord Formation sands. Both tests produced water at a low rate with insignificant amounts of oil and gas:

DST1 tested the interval 2774 to 2778 m at the top of the Statfjord Formation. The test produced 51 m3 water with 3% oil per day. Oil gravity was 32.4 °API. Bottom hole temperature during the test was 95.6 °C.

DST2 tested the interval 2685 to 2688 m in the upper part of the Brent Group. The test produced 65 m3 oil with 5-10% oil per day. Bottom hole temperature during the test was 85 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 33/12-4