



Wellbore History

GENERAL

Wildcat well 34/4-1 was drilled on the rotated fault block systems on the Tampen Spur area of the Northern North Sea. The objective of the well was to test the stratigraphic sequence below the Base Cretaceous Unconformity. The primary target was the Intra Triassic "Carnian Sandstone", which was known from two wells in block 33/12 where it constitutes more than 100 m silty, argillaceous, partly calcareous cemented sandstone. The secondary targets were possible reworked Late Jurassic sandstones immediately below the Unconformity, and by possible sands associated with stratigraphically undefined seismic reflectors between Base Cretaceous and Carnian level.

OPERATIONS AND RESULTS

Well 34/4-1 was spudded with the semi-submersible installation Byford Dolphin on 11 July 1979. The well was first drilled to 2961 m. When pulling out of hole to change bit it got stuck. The bit could not be worked free and the drill string was eventually backed off and left in the hole. A sidetrack was made from 2484 m and drilled to final TD at 2916 m in the Triassic Teist Formation. The well was drilled with seawater and viscosity slugs down to 844 m, with Drispac/Unical/gypsum mud from 844 m to 1988 m, and with Drispac/Unical mud from 1988 m to TD, including sidetrack.

The well penetrated Tertiary, Cretaceous and Triassic rocks with a hiatus ranging from Late Triassic to Early Cretaceous

Secondary target for the well was reworked Late Jurassic sediments immediately below Base Cretaceous. Such deposits were not established. The Triassic sandstones (Lunde Formation) were encountered at 2508 m and contained oil over a column of more than 100 m. No definite OWC was seen, but it could be estimated to be at 2618 m. Numerous shows on sandstone stringers were observed in the Cretaceous from ca 2025 m (top Kyrre Formation) and down to top of the Triassic reservoir. No shows were observed below 2622 m.

Eleven cores were cut in the Lunde Formation. Cores 1 and 2 were cut in the primary well bore, and the first of these was a mis-run. The remaining nine cores were cut in the side track. Two RFT segregated fluid samples were taken. The first, at 2541 m, recovered oil, gas and mud filtrate. The second, at 2639.5 m, recovered formation water and mud filtrate.

The well was permanently abandoned on 16 December 1979 as an oil discovery.

TESTING

Two drill stem tests were performed in the Lunde Formation.

DST 1 tested the interval 2608 - 2613 m. It produced a total of 1.65 m³ salt water at a rate of approximately 11 m³ /day (79 bbls/day). The BHT in the test was 94.4 deg C

DST 2 tested the interval 2510 - 2536 m. The average rate in the final flow in this test was 238 m³/day of oil through a 1/4" choke. Average GOR was 120 m³/m³, oil Gravity was 0.82 g/cm³ (41.7 deg API) and the gas gravity was 0.712 (air = 1). The BHT in the test was 90.6 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/4-1