



Wellbore History

GENERAL

Well 35/11-13 is an exploration well in PL 090B on the Astero prospect, which is located north of the Fram West field. The primary objectives were to test the presence and type of hydrocarbons in the Oxfordian Turbidite sands of the Astero prospect. The chosen location was designed to test the Astero prospect within structural closure and stratigraphic trap, close to the top of the structure, in an area where there was good HC indication with thick reservoir sand thickness, leaving acceptable up dip volumes.

OPERATIONS AND RESULTS

Well 35/11-13 was spudded with the semi-submersible installation Deepsea Trym on 18 March 2005 and drilled to TD at 3296 m in sediments of the Late Jurassic Heather Formation. The well was drilled without significant technical problems or delays. The mud used was spud mud down to 701 m and "AquadriII" glycol mud from 701 m to TD.

Water wet Paleocene sandstones were penetrated at 1697 - 1752 m (Heimdal Formation) and at 1842 - 1923 m (Ty Formation). The well encountered a 111 m thick Draupne Formation at 2902 m. The Heather Formation was encountered at 3013 m with Intra-Heather Oxfordian turbiditic sandstones from 3096 m to 3206 m. The sandstones were hydrocarbon bearing and from MDT pressure test results, a gas oil contact was inferred at 3098 m and an oil water contact (FWL) at 3137 m.

Two cores were cut in the interval 3100 to 3142 m in the Oxfordian turbidites. They cores comprised mainly sandstones with occasional thin siltstones. MDT fluid samples were taken at four levels across the reservoir: 3097.0 m (gas and 0.789 g/cm3 oil), 3107.0 m (0.848 g/cm3 Oil), 3128.0 m (Oil), and 3157.5 m (Water).

The well was permanently abandoned on 28 May 2005 as an oil and gas discovery.

TESTING

A Drill Stem Test was undertaken at 3111.5 to 3130 m in the oil-bearing zone of the Oxfordian sands. A fixed choke size of 32/64" was selected for the main flow period achieving average flow rates of 500 m3/day oil and 78000 m3/day of gas (a total of 2.7 m3 produced water was recorded). A maximum of 2.5 ppm H2S and 6 % CO2 was measured during this period. The oil gravity at 15 deg C was 36 deg API and the GOR was 160 Sm3/Sm3. The formation temperature at mid perforation was determined to 118 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 35/11-13