



Wellbore History

GENERAL

Well 2/8-10 was drilled as a field delineation well intended to help establish the commerciality of the Valhall Field, which was discovered by well 2/8-6 and confirmed by wells 2/8-8 and 2/8-9. The main purpose of 2/8-10 was to evaluate the Tor and Upper Hod reservoirs on the south eastern flank of the Valhall structure.

OPERATIONS AND RESULTS

Appraisal well 2/8-10 was spudded with the semi-submersible installation Sedco 135 G on 30 June 1976 and drilled to TD at 2682 m in the Early Cretaceous Rødby Formation. The well was drilled with seawater and bentonite down to 375 m, and with seawater/lime/Drispac mud from 375 m to TD.

The objective reservoirs, developed in chalk of the Tor and Hod Formations, were encountered at depths of 2476.5 m and 2516 m respectively. A gross pay interval of 77 m was encountered. The Tor Formation was approximately 38 m thick with an oil saturation of 95% and was tested at rates of up to 1000 Sm³/day. The upper Hod reservoir, approximately 38 m thick, was found to be hydrocarbon bearing, although oil saturations were low, averaging 25% and the reservoir was tested at up to 67 Sm³/day. As anticipated, the lower Hod reservoir was wet.

Only insignificant, although fairly consistent, oil shows were encountered in the Hordaland and Rogaland Groups. Excellent shows were recorded in the Tor Formation. The quality of the shows decreased gradually through the upper part of the Hod Formation and only minor oil shows were encountered below 2570 m.

Four conventional cores were cut in the interval 2477.1 m to 2508.5 m with an overall recovery of 70%. No wire line fluid samples were taken.

The well was permanently abandoned on 29 August 1076 as an oil appraisal well.

TESTING

Three drill stem tests were conducted. DST1 and DST3 were conducted after fracturing the reservoirs using the Kiel water-frac process.

DST1 was conducted over the interval 2535.9 to 2546.6 m in the Hod Formation. It produced 57 Sm³ oil/day with a GOR of 309 Sm³/Sm. Oil gravity was 31.9 deg API and gas gravity was 0.674 (air = 1). DST2 was conducted over the interval 2493.2 to 2508.5 m in the lower Tor Formation. It produced 566 Sm³ oil/day with a GOR of 138 Sm³/Sm. Oil gravity was 36.5 deg API and gas gravity was 0.653 (air = 1). DST3 was conducted over the interval 2479.5 to 2485.6 m in the upper Tor Formation. It produced 876 Sm³ oil/day with a GOR of 167 Sm³/Sm³ through a 5/8" (15.9 mm) choke. Oil gravity was 37.5 deg API and gas gravity was 0.660 (air = 1). Sperry Sun reported a bottom hole temperature of 116.7 deg C from this test.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/8-10