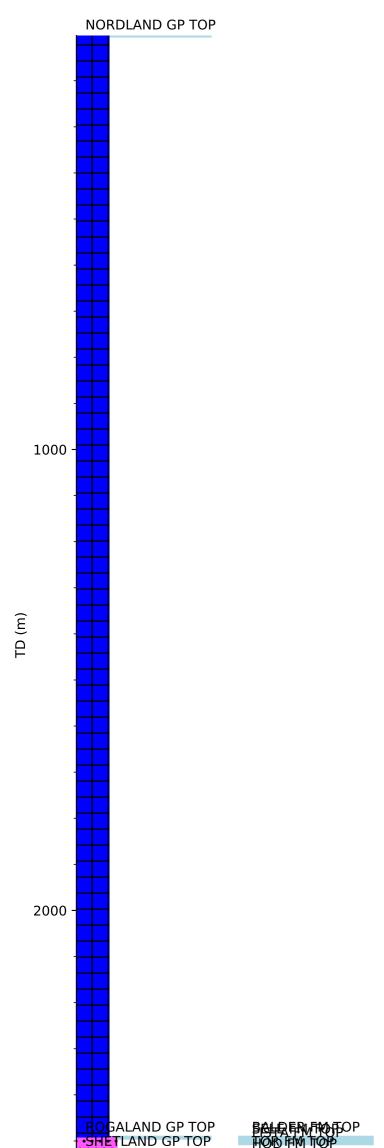


## **Wellbore History**



CROMER KNOLL GP TOP RODBY FM TOP

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## **GENERAL**

Well 2/8-9 was drilled as an appraisal to help establish the commerciality of the southern North Sea Valhall Field, which had earlier been discovered by 2/8-6 and confirmed by 2/8-8. The primary objective of 2/8-9 was an evaluation of the Chalk reservoirs of Maastrichtian (Tor Formation) and pre-Maastrichtian (Hod Formation) age. The existence of hydrocarbons in the Early-Middle Miocene section creates a low velocity "bright spot" on the seismic, blanketing the crest of the Valhall structure and causing "dimming" or total loss of the top chalk section. The Valhall crest is therefore an area where the estimated thickness of the Tor section and the fault patterns are questionable. Only one previous well, 2/8-4, had been drilled in the vicinity some 2.5 km to the west. Well 2/8-4 was essentially a dry hole with only 1 m of Tor and tight but oil bearing Hod Formation.

## **OPERATIONS AND RESULTS**

Appraisal well 2/8-9 was spudded with the semi-submersible installation Sedco 135 G on 9 April 1976 and drilled to TD at 2703 m in the Early Cretaceous Rødby Formation. The well was drilled in a total of 30 days, without any major drilling problems. It was drilled with sea water and viscous mud down to 183 m, with seawater and gel from 183 m to 392 m, and with Drispac/lime/seawater mud from 392 m to TD.

Well 2/8-9 penetrated a normal of Quarternary -Tertiary section from surface to top of the Late Cretaceous. The Danian was found to have been removed by erosion. The well found the Chalk hydrocarbon bearing at 2524 m correlating 53.3 m high and 76.8 m low to wells 2/8-4 and 2/8-8, respectively. The Tor Formation was 5.5 m thick with high reservoir quality; porosity of up to 48% and a water saturation close to zero. The Hod Formation was 128 m thick. The average porosity and water saturations of the Upper Hod were 30% and 60%, respectively. An oil-water contact was encountered in the Lower Hod at 2605 m. Oil shows (fluorescence and cut) were recorded above the chalk reservoir in shales, claystones and siltstones at 1555 to 1963 m; in limestone at 2048 to 2064 m; and in siltstone 2094.5 to 2105.

Four conventional cores were cut from 2531 to 2573.5 m with 85 - 100% recovery. No wire line fluid samples were taken.

The well was permanently abandoned on 27 June as an oil appraisal well.

## **TESTING**

Two drill stem tests were performed

Test 1 tested the interval 2550.6 m to 2557 m in the Hod Formation after stimulation by hydraulic fracturing and sand injection. The well flowed solids that plugged up the test string. A second attempt, Test 1A, was made but with no success. The test from this interval was terminated.

Test 2 tested the interval 2524 to 2529.2 m, the entire Tor Formation. Prior to stimulation the well cleaned up sufficiently to be put through the separator. Stable flow was not obtained due to solids production. The average fluid production during 11 hrs and on variable choke was 353 Sm3 oil and 82100 Sm3 gas /day. Average GOR was 233 Sm3/Sm3. The oil gravity was 36 deg API. After simulation similar to Test 1 no flow was obtained due to solids problems.