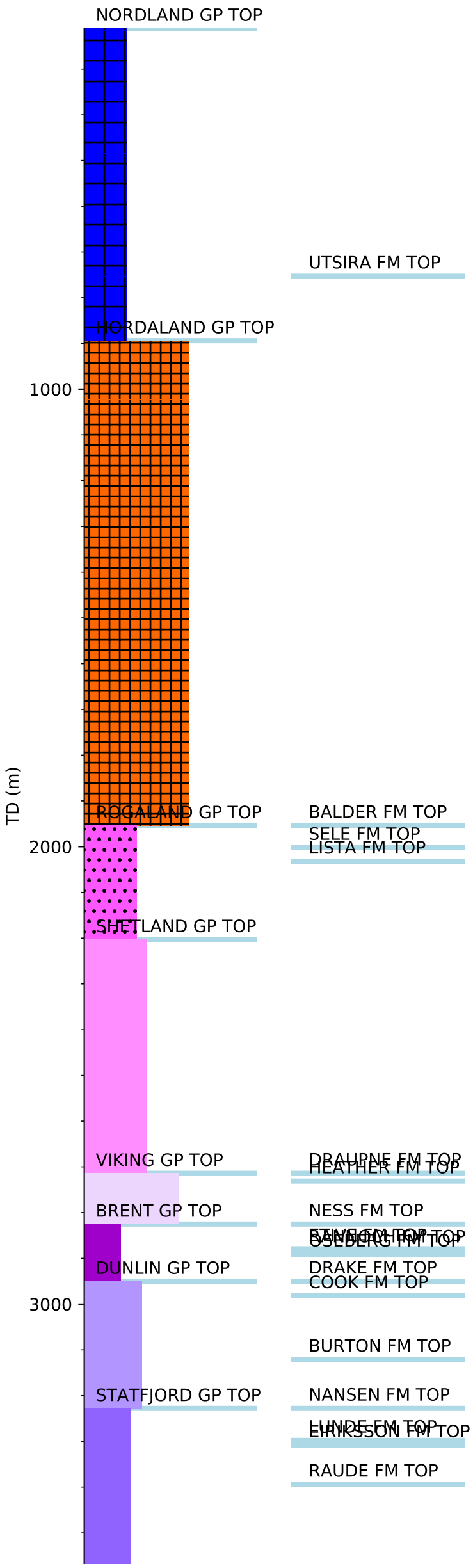

Wellbore History

GENERAL

Well 30/3-2 R is a re-entry of well 30/3-2, which was suspended at 955 m in Miocene sediments due to a strike. It is located ca 7 km north of the Oseberg Field in the Northern North Sea. The primary objective of the well was to test sandstones belonging to the Brent and Dunlin group. Secondary objective was sandstones in the Statfjord formation.

OPERATIONS AND RESULTS

Wildcat well 30/3-2 was re-entered with the semi-submersible installation Deepsea Bergen on 2 September 1980 and drilled to TD at 3567 m in the Triassic Lunde Formation. The re-entry well track was drilled first with gel/lignosulphonate in 12 1/4" pilot hole from 955 m to 2350. Severe problems were experienced when opening up the pilot hole to 17 1/2". The mud system was changed, and a gypsum system was chosen. This change made it possible to complete the 17 1/2" section, but several days were lost due to hole problems and problems with the draw-works control circuits. The rest of the well was drilled with a gypsum/lignosulphonate mud and proceeded according to the program.

The Brent group was encountered at 2825 m and consisted of the Ness Formation down to 2878 m and the Etive Formation from 2878 m to top Dunlin Group at 2949.5 m. The Statfjord Formation was encountered at 3228 m. The Brent Group contained two separate hydrocarbon-bearing reservoirs with one oil/water contact at 2839 m in the Ness formation, and another at 2932 m in the Oseberg Formation. RFT data also indicated a light hydrocarbon gradient (0.433 g/cc) in a 7 m thick Intra Dunlin (Cook) sand at 3071 m. The character of the fluorescence seen on this sand indicated gas. Frequent but discontinuous oil shows on limestone and claystone were observed beginning at 1930 m and down through Paleocene, Cretaceous and Late Jurassic to top reservoir in the Brent Group. Below OWC shows on sandstones were observed down to 3339 m.

A total of 148 m core was recovered in 12 cores in the interval 2828 m to 3306.5 m in the Brent and Dunlin Groups and the Nansen Member of the Statfjord Formatoion. Three RFT segregated samples were taken in the Brent Group at 2833.5 m (mud filtrate and traces of oil and gas), 2872 m (mud filtrate, oil and some gas), and 2897.5 m (mud filtrate, 37 deg API oil and some gas). A fourth RFT segregated sample was taken in the upper Statfjord Formation, Nansen Member, at 3229.5 m (mud filtrate and gas). An FIT fluid sample was taken in the Dunlin Group at 3078 m (only mud filtrate and sand).

The well was permanently abandoned on 16 February 1981 as an oil and gas discovery.

TESTING

Three drill stem tests were attempted in the Brent Group reservoir, two of which were successful.

DST 1 tested the interval 2916 - 2923 m in the Oseberg Formation. It produced 324 Sm3 oil and 26335 Sm3 gas /day through a 12.7 mm choke. The GOR was 81 Sm3/Sm3, the oil gravity was 38.8 deg API, and the gas gravity was 0.714 (air = 1). The DST temperature was 125.6 deg C.

DST 2 tested the interval 2870 - 2874 m in the Ness Formation. It produced 370 Sm3 oil and 30865 Sm3 gas /day through a 12.7 mm choke. The GOR was 85.9 Sm3/Sm3, the oil gravity was 39.8 deg API, and the gas gravity was 0.710 (air = 1). The DST temperature was 122.2 deg C.

DST 3 at 2832 - 2837 m in the Ness Formation failed for technical reasons.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 30/3-2 R