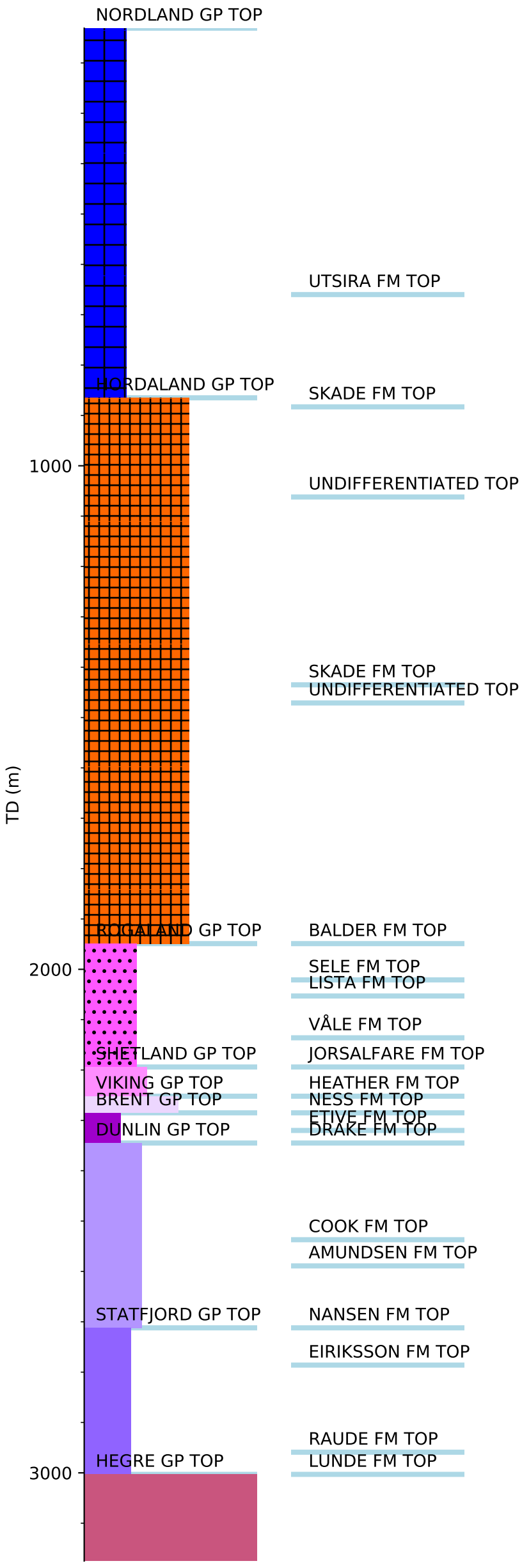
Groups

Formation Tops



Wellbore History

GENERAL

Well 30/6-1 was drilled on the Oseberg Fault block in the North Sea. The primary objective was to penetrate sandstones of Middle Jurassic age and to evaluate their possible content of hydrocarbons. Secondary objectives were sandstones of Lower Jurassic and Paleocene age. The well is Reference well for the Statfjord Group.

OPERATIONS AND RESULTS

Wildcat well 30/6-1 was spudded with the semi-submersible installation Deepsea Saga on 18 June 1979 and drilled to TD at 3175 m in the Triassic Lunde Formation. Problems with setting the 9 5/8” casing at 2443 m caused an 8 days delay in the drilling phase. Also gumbo problems were encountered in the interval 1000 – 1600 m and 4 days rig time as lost due to this. Otherwise operation proceeded without significant problems. The well was drilled with spud mud down to 895 m and with a lignosulphonate/bentonite mud from 895 m to 2456 m and with chromium-lignosulphonate/bentonite mud from 2456 m to TD. Diesel was added at 1720 m to reduce problems with sloughing shales. A 6% to trace levels of oil was recorded in the mud from this depth to TD.

The Cretaceous Jorsalfare Formation had 6.75 m of net pay gas in thin sandstones with average porosity of 29% and water saturation of 39.3%. The Brent Group was encountered at 2285 m and was gas/condensate filled in 38.75 m of net pay sandstones with average porosity of 22.5% and water saturation of 29.2%. The hydrocarbon/water contact was not encountered in the well. The Dunlin Group was water bearing with 45 m of net sand with an average porosity of 24.6%. The Statfjord Group was water bearing with 235 m of net sand with an average porosity of 21.4%. Weak shows were described on conventional and sidewall cores in sandstones from below the hydrocarbon bearing Brent Group down to 2547 m in the Cook Formation.

Six cores were cut. Cores 1 to 5 were cut from 2333.5 m to 2381.2 m in the lower Etive and upper Drake formations. Recovery was generally good, from 89.2 to 100%, but only 52.9 % recovery was obtained in core 5. Core 6 was cut from 2722 to 2733 m in the Nansen Formation with 88.2% recovery. The RFT tool was run for pressure points, but no fluid sampling was done.

The well was permanently abandoned on 22 September as a gas/condensate discovery.

TESTING

Two drill stem tests were conducted in the Brent Group.

DST1 tested the interval 2320 to 2330 m in the Etive Formation. It produced 153 Sm3 oil and 487000 Sm3 gas /day through a 32/64” choke. The GOR was 3063 Sm3/Sm3, the oil gravity was 58.9 °API, and the gas gravity was 0.657 (air = 1). The maximum DST temperature was 91.7 °C.

DST1 tested the interval 2301 to 2305 m in the Ness Formation. It produced 166 Sm3 oil and 659800 Sm3 gas /day. Due to a technical problem the effective choke size is unknown. The GOR was 4150 Sm3/Sm3, the oil gravity was 53.5 °API, and the gas gravity was 0.663 (air = 1). The maximum DST temperature was 91.1 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 30/6-1