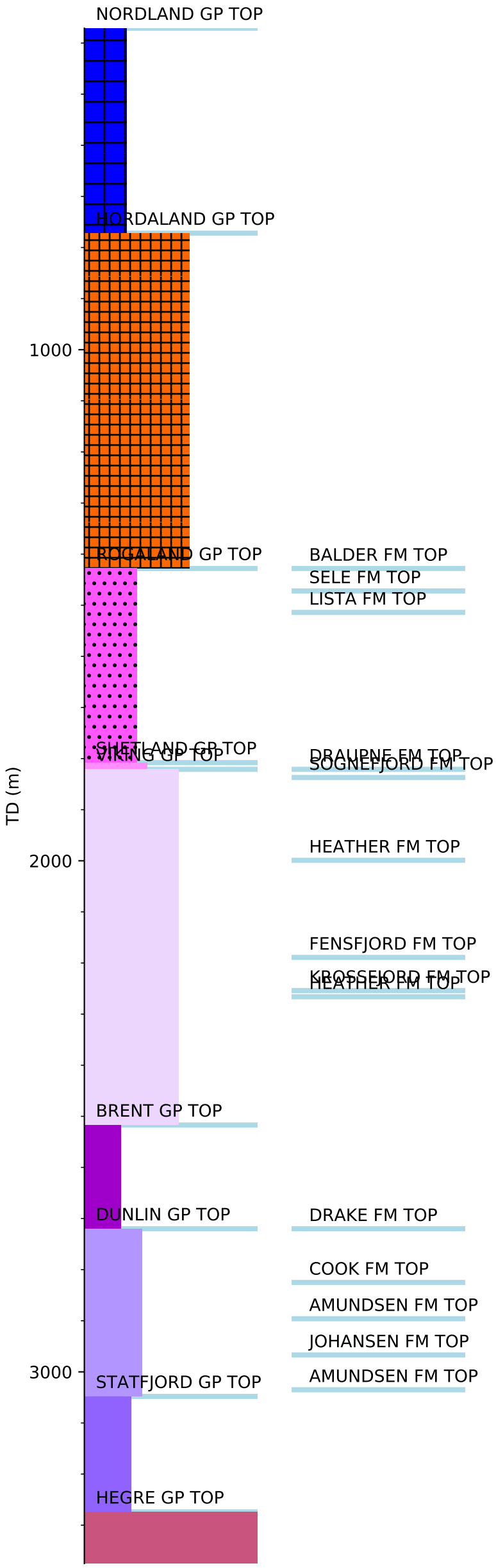
Groups

Formation Tops



Wellbore History

GENERAL

Well 31/2-8 was drilled in the northern part of block 31/2, some 3 km NW of the Troll Field boundary, to test a downthrown Jurassic fault-block outside the Troll Field. The primary objective was the Late Jurassic, shallow marine sands of the Viking Group, especially the Sognefjord Formation. The Early Jurassic was secondary objective and would be evaluated by drilling into Triassic sediments.

OPERATIONS AND RESULTS

Wildcat well 31/2-8 was spudded with the semi-submersible installation Borgny Dolphin on 16 June 1982 and drilled to TD at 3375 m in the Triassic Hegre Group. A gas zone (confirmed by logs) between 510 - 530 m did not cause any problems during drilling of the 14 3/4" pilot hole. Maximum gas reading through this zone was 10 %. The hole was drilled to 840 m and under-reamed to 26" without incident. The 17 1/2" section was drilled first by an 8 1/2" pilot hole down to 1063 m to provide better control when drilling through a potential gas charged fault plane. No indications of gas were seen. 3 cores were taken in the 12 1/4" section. Two washouts occurred when drilling the 8 1/2" hole below 3317 m. The well was drilled with seawater gel down to 840 m, with KCl/polymer from 840 m to 1745 m, with seawater and Drispac from 1745 m to 2743 m and wit Drispac/lignosulphonate from 2743 m to TD.

Only 13 m of Shetland Group chalk was found on top of the Kimmerian unconformity at 1821 m. The Viking Group contained a 15.5 m thick Draupne shale on top of a 680 m thick sequence of sandstone units interbedded in the Heather Formation. The Middle to Early Jurassic was also well developed. Shows occurred sporadically in limestones, siltstone, and claystones through the Early Tertiary and Late Cretaceous. When entering into the Late Jurassic reservoir sands at 1836.5 m (Sognefjord Formation) ditch gas readings went up to more than 4% from a background lower than 1%, but without oil indications in the uppermost section. On the cores taken, very good oil shows were observed in the coarser grained, clean sands between 1841.8 m and 1854.8 m. In the carbonate-cemented band down to 1856.6 m, direct fluorescence became patchy. In the deeper, very fine to fine, micaceous sands the quality of the shows deteriorated further until they disappeared completely around 1872 m. Below the Sognefjord Formation, the only shows encountered was in a sidewall sample at 3050.5 m (at the top of the Statfjord Formation). From log analysis the Jurassic sands were interpreted to be oil bearing from 1836.5 m to ca. 1868 m; below this depth no hydrocarbons were seen.

Three conventional cores were cut in the interval 1841.8 m to 1888.5 m in the Late Jurassic. One RFT sample at 1849 m recovered 1800 ml mud contaminated formation water and 100 ml of emulsified hydrocarbons.

The well was completed on 18 August 1982 as a well with shows.

TESTING

Oil shows on cores and preliminary log interpretation led to a DST in the interval 1843 m to 1848 m in Late Jurassic sandstone. After some technical problems the well was flowed for 2 minutes followed by a one-hour build-up. The well was then flowed until it died after having produced approximately 33 barrels of formation fluid with a trace of oil. A wire line sandballer found 22 m of sand on top of the bridge plug.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 31/2-8