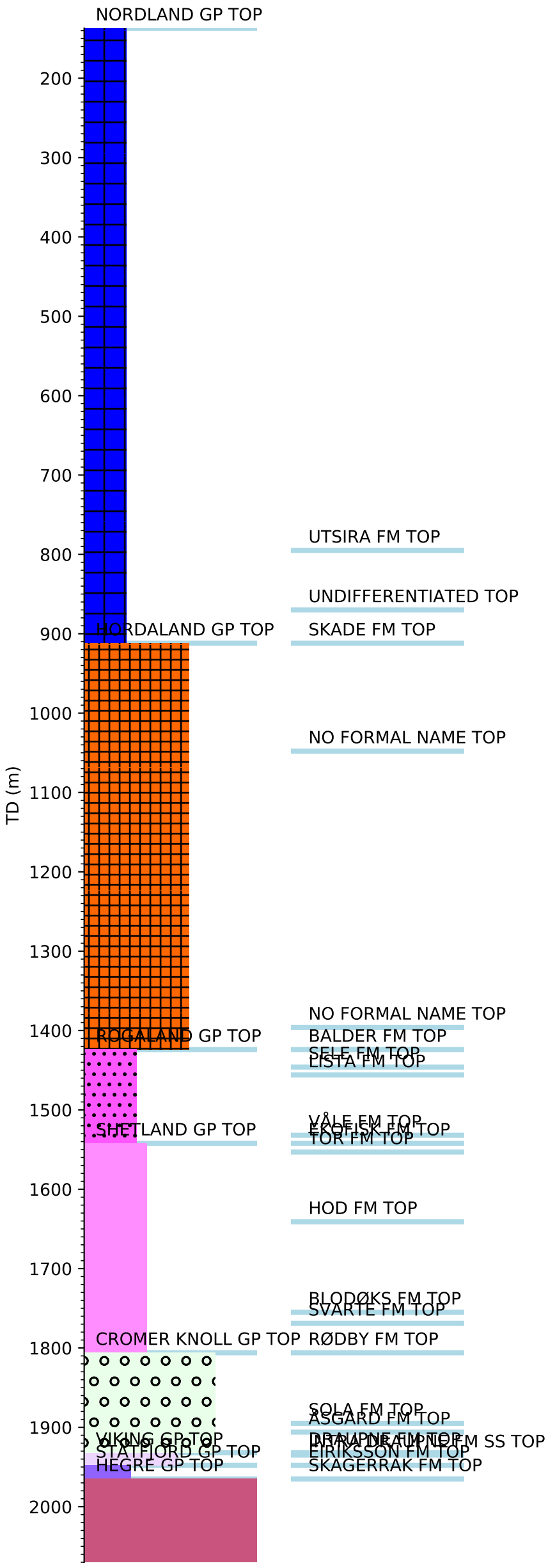

Wellbore History

GENERAL

Well 16/2-21 was drilled to appraise the central part of the Johan Sverdrup discovery on the Utsira high in the North Seas. The hydrocarbon column height was predicted to be 14 m in the well location. The main objectives of the well were to investigate the reservoir sequence, facies and thickness in the central part of the discovery and to find the free water level (FWL).

OPERATIONS AND RESULTS

Appraisal well 16/2-21 was spudded with the semi-submersible installation Bredford Dolphin on 5 May 2013 and drilled to TD at 2070 m in the Late Triassic Skagerrak Formation. A 9 7/8" pilot hole was drilled from the seabed to 706 m due to slight shallow gas warnings. No shallow gas was seen. Drilling was efficient with little NPT. The NPT was caused mostly by mud losses in the Skagerrak Formation reservoir section. The well was drilled with seawater and hi-vis pills down to 706 m and with Performadril water based mud from 76 m to TD.

The top of the reservoir came in as prognosed at 1935 m, overlain by a 4 m thick Draupne Formation shale. An oil column of 12 meter entirely within the late Jurassic Intra-Draupne sandstones was proven. The well proved excellent development of these sandstones in the central part of the Johan Sverdrup discovery. The total thickness of the Intra-Draupne Formation sandstone was 12 m. No sediments of middle Jurassic age were found, but 17 m of water filled early Jurassic Eriksson Formation was encountered below the Draupne Formation. The well results show an oil water contact at 1947 m, but with residual oil saturations of 20-30% down to ca 1955 m.

Above the reservoir, increasing amounts and wetness of mud gas down through the lowermost part of the Cromer Knoll Group suggested the possibility of leakage from the reservoir. However, no oil shows were observed in the Cromer Knoll Group; the only oil shows in the well were recorded on the cores from 1935 to 1945 m, and 1953 to 1955 m, within the Intra-Draupne and Eriksson Formation sandstones.

Three cores were cut in the interval 1907 m in the Cromer Knoll Group to 1976.6 m in the Skagerrak Formation with close to 100% total recovery. MDT fluid samples were taken at 1937.02 m (oil), 1946.62 m (oil), 1947.11 m (oil), 1947.71 m (water), 1953.79 m (water), and 1975.55 m (water).

The well was permanently abandoned on 7 June 2013 as an oil appraisal well.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/2-21