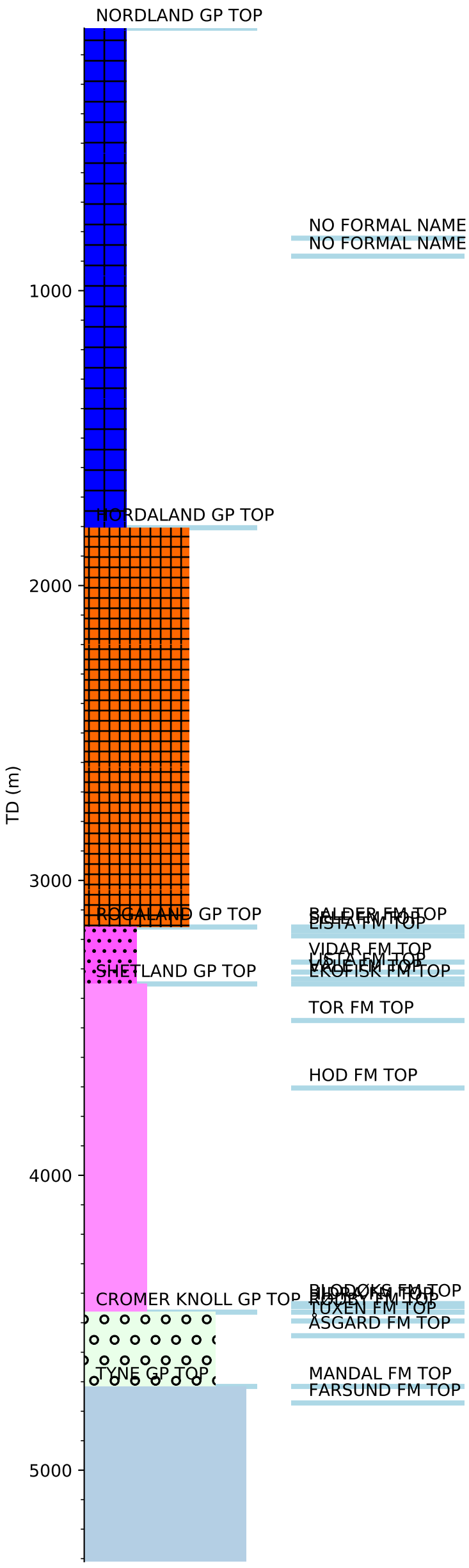

Wellbore History

GENERAL

Well 2/4-18 R is located in the northern part of the block, on the eastern margin of the Feda Graben, Southern Norwegian North Sea. A number of wells originally operated by SAGA are located in this area on the Hidra Terrace, in the transition zone between the Hidra High-Steinbit Terrace to the NE, and the Feda Graben to the SW. The structural elements are separated by large NW-SE striking normal fault systems, forming series of rotated and downstepping terraces towards the axis of the Central Graben. The main objective of well was to test the reservoir potential of the Late Jurassic in a down-dip position with respect to previous wells 2/4-14 and 2/4-16. Secondary prospects were to be evaluated in the Late and Early Cretaceous. Planned TD was 5042 m +/- 150 m.

OPERATIONS AND RESULTS

Well 2/4-18 R was spudded with the jack-up installation Maersk Guardian on19 February 1994 and drilled to TD at 5310 m in the Late Jurassic Farsund Formation. Drilling went without significant technical problems and close to the planned time schedule. The well was drilled with spud mud down to 521 m; with gel mud from 521 m to 1008 m; with pseudo oil based mud (Novadrill with poly-alpha-olefins from 1008 m to 3230 m, and with HI TEMP Polymer mud from 3230 m to TD.

The well penetrated 3048 m of sediments confined to the Holocene-Eocene Nordland and Hordaland Groups. As in the previous wells in the area, the uppermost 900 m was composed of sand and clay. The rest was dominated by claystones with thin beds of limestone and sandstone. The Lowermost Eocene-Early Paleocene Rogaland Group proved a thickness of 193 m. The uppermost part was characteristically containing tuffaceous claystones. The middle part was dominated by claystones with traces of limestone/dolomite, whereas limestones and marls dominated the lower part. The Early Paleocene - Late Cretaceous Shetland Group had a thickness of 1113 m, and rested unconformable on the 252 m thick, Early Cretaceous Cromer Knoll Group. Chalky limestones and marls/claystones dominated the lithology, respectively. Weak hydrocarbon shows (limited porosity) was observed restricted zones in claystones of the Lista Formation and limestones in the lower part (i.e. not Ekofisk) Formation part of the Shetland Group.

The well terminated 594 m into the Late Jurassic Tyne Group, nearly 300 m deeper than originally planned. Base Cretaceous Unconformity was identified 26 m shallower than expected. Expanded thicknesses and additional sequences were penetrated, and potential reservoir intervals were discovered deeper than expected. The interval was dominated by organic rich shales, and with downward increasing sandstone content, predominantly calcite cemented and in parts with traces of hydrocarbon shows. Vitrinite reflection measurements reveal that the shales of the Tyne Group are no longer oil generative in the well location, but are well into the gas generation window (%Ro = 1.1 to 1.7). Analyses of source richness in the Tyne Group show there are several claystones lithologies with highly variable hydrocarbon potentials. The dominating lithology is reported as a variably grey claystone with a very limited potential (TOC < 0.5%). Subordinate lithologies are generally darker. They are commonly coaly and/or silty and are found in zones in the Mandal Formation (TOC in the range 6 - 8 %), and in the Farsund Formation (TOC in the range 2 - 5 %).

CPI data indicate net-pay hydrocarbon saturations in the order of 52% in an "Intra Farsund Sand" at 5137 to 5164 m. Several attempts of fluid sampling from 5150 m in this zone were unsuccessful. Sandstone beds below this level were water bearing and with a significantly higher pore pressure. Two conventional cores were cut in the Farsund Formation at 5105 m to 5114 m and at 5134 m to 5137.5 m.

The well was permanently abandoned on 10 July as a well with strong shows.

TESTING

No drill stem test was performed

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/4-18 R