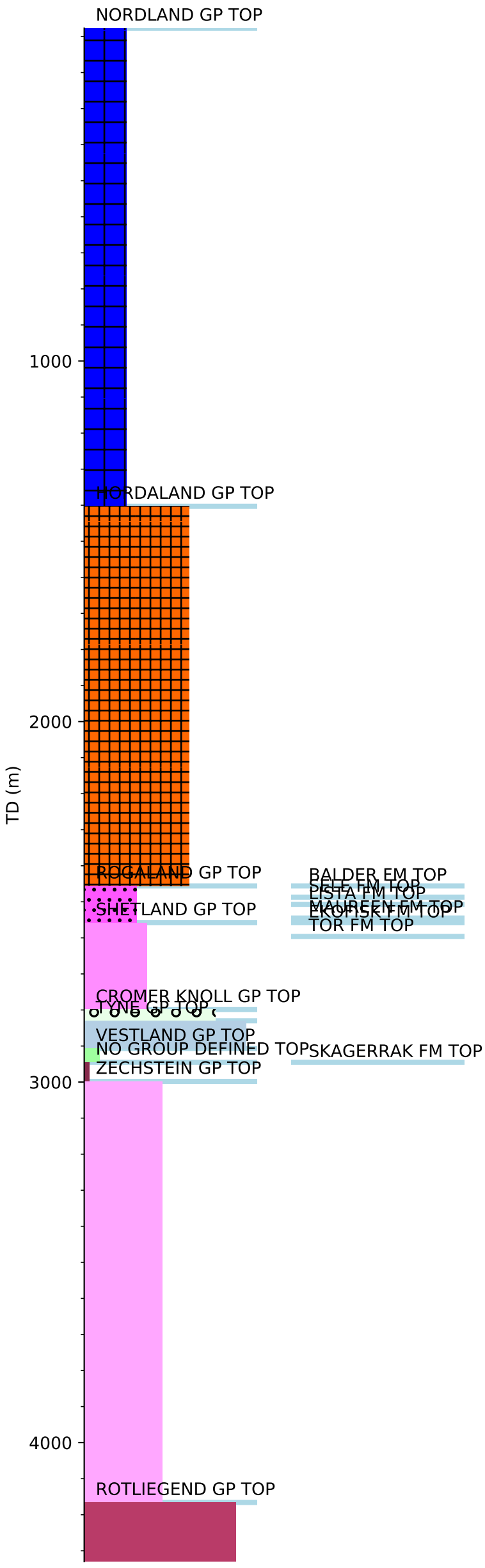
Groups

Formation Tops



Wellbore History

GENERAL

Well 3/7-2 was drilled on a structure located across blocks 3/4 (Amoco Group) and 3/7 (Petronord Group. The primary targets were: Tertiary sands found gas bearing in well 2/3-1; Danian/Late Cretaceous limestone (chalk) hydrocarbon bearing in the Ekofisk area and in the Danish well Lulu 1; Middle Jurassic sandstones which were hydrocarbon bearing in well 2/6-2; and Rotliegendes sandstones. The TD was planned into the Carboniferous in order to establish the source potential of this formation.

OPERATIONS AND RESULTS

Wildcat well 3/7-2 was spudded with the semi-submersible installation Dyvi Alpha on 30 March and drilled to TD at 4330 m in the Early Permian Rotliegendes Group. A drilling break occurred at 2534 m. Flow check at 2553 m showed a weak flow, which was controlled by raising the mud weight to 1.46 sg. Drilling resumed and was stopped at 2563 m for logging. Three days were necessary to run the electric logs because of continuous slight flow. Deviation problems were experienced in the salt. The deviation reached a maximum of 9 1/2 deg at 3659 m then was reduced to 2 1/2 deg at 4004 m. The well was drilled with a lignosulphonate mud from 2563 m to 3027 m. Below the 9 5/8" casing shoe at 3012 m the mud was displaced to a salt saturated mud.

The Eocene/Oligocene sands were found missing. Only 8 meters of sand were encountered in the Paleocene. The chalk was tight and water bearing. The Jurassic sandstones were not as developed as prognosed, and they were water bearing. No sandstones were encountered in the Rotliegendes Group, which consisted of an upper shale and a lower volcanic unit. Carboniferous sediments were not penetrated. All the targets above the salt were found water bearing while no reservoir was encountered below 4166 m (base salt, F horizon). Prognosed stratigraphy at base Cretaceous and below was in error. Base Cretaceous was encountered 115 m higher than prognosed, top salt was 209 m higher than prognosed, while base salt (F Horizon) was 150 m deeper than prognosed. The interval velocities were confirmed by the velocity surveys, so the wrong picking was due to a weak base Cretaceous reflector, Jurassic sandstones being too thin to provide good reflectors, and the reflector taken for top salt in fact was an intra-salt reflector corresponding to a thick layer of Potassium salt. Rare and weak fluorescences and cuts in the upper Jurassic Shale were the only shows recorded in the well.

Five cores were cut, three in the Danian/Late Cretaceous Limestone, one in the Middle Jurassic and one at TD in the Rotliegendes basalt. RFT sampling was performed in the Jurassic at 2909 m. The sample was opened and found to contain 9 l salted water (NaCl 115 g/l), slightly contaminated by the lignosulphonate mud. (The mud salinity was 47 g NaCl /l).

The well was permanently abandoned on 20 June 1981 as a dry well.

TESTING

No drill stem test was performed in the well.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 3/7-2