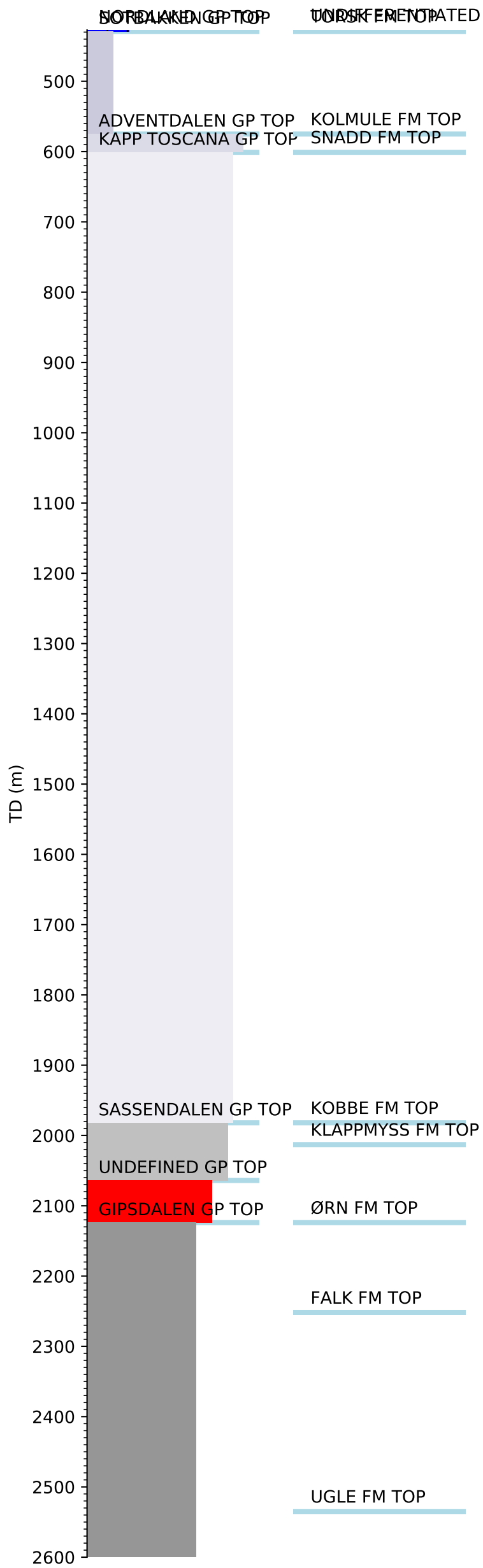

Wellbore History

Wellbore history

GENERAL

Re-entry well 7220/11-3 AR was drilled to appraise the Alta Discovery on the southern part of the Loppa High in the Barents Sea. The objectives were to deepen the 7220/11-3 A well bore to Permian and Carboniferous strata, to evaluate the reservoir properties of Permian and Carboniferous carbonates (Ørn and Falk Formations), and to test the productivity of the Permo-Triassic Alta reservoir by a drill stem test.

OPERATIONS AND RESULTS

Appraisal well 7220/11-3 A was re-entered with the semi-submersible installation Leiv Eiriksson on 27 June 2016. The extension was drilled as a 6-inch hole from 2130 m to a total depth of 2600 m (2414 m TVD) in the Carboniferous Ugle Formation. When drilling at 2246 m in fractured carbonates mud losses occurred. This caused 74 hrs NPT. During P&A the drill string parted when cutting and retrieving wellhead. This caused 43.5 hrs NPT. The well was drilled with KCl/Polymer/GEM mud from 2130 to TD.

The re-entry was drilled entirely within the water zone below the Alta reservoir. MDT pore pressure measurements confirmed the expected Permian water pressures and gradient previously seen in the 7220/11-1 discovery. The pressure points further confirmed a Free Water Level of 1924 m TVD MSL as found in well 7220/11-3 A. Traces of residual oil were observed in the dolomites and limestones from below the FWL (2089 m MD RKB for Leiv Eiriksson), down to approximately 2205 m.

Nine conventional cores were cut in four different coring runs in the interval 2133 to 2298.6 m. In total, 24.9 m was recovered. MDT fluid samples were acquired from two sampling stations in the water zone, one at 2161.1 m in the Ørn Formation and one at 2337.0 m in the Falk Formation. All samples contained water with minor dissolved gas.

The well was permanently abandoned on 10 October 2016 as an oil and gas appraisal well.

TESTING

Three drill stem tests were performed in the well.

DST1 was a water injection test in the interval 2330 to 2360 m in the Falk Formation. The test performed with an injection rate of 800 m3 seawater/day

DST2 was a water injection test in the interval 2150 to 2180 m in the Ørn Formation. The test performed with an injection rate of 2900 m3 seawater/day

DST3 tested the interval 2012 to 2020 m in the Klappmyss Formation. This test produced 595,000 Sm3 gas per day through a 64/64 inch choke.

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LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7220/11-3 AR