



Wellbore History

GENERAL

Well 7225/3-1 was the first well to be drilled on the faulted Norvarg Dome on the Bjarmeland Platform in the Barents Sea. It was drilled fairly close to the crest of the structure. The primary objective was to prove hydrocarbon presence, determine fluid nature and evaluate reservoir characteristics in sandstones of the Late Triassic (Carnian) Lower Snadd Formation and the Early Triassic Kobbe Formation. Secondary objective was to prove hydrocarbons in the Jurassic Stø Formation, the Early Triassic Havert Formation, and the Permian Tempelfjorden and Bjarmeland groups.

OPERATIONS AND RESULTS

Wildcat well 7225/3-1 was spudded with the semi-submersible installation West Phoenix on 30 April 2011 and drilled to TD at 4150 m in the Permian Isbjørn Formation. No major drilling problems were encountered, but P&A in the upper part was subject to extensive delays associated with trying to retrieve casing, failed cement plugs or leak in 20" casing and extra time spent trying to locate the source of a gas leak. The well was drilled with bentonite mud with hiv-vis pills down to 672 m, and with KCl/polymer mud from 672 m to TD.

Gas was proven both in intervals from the Jurassic and the Triassic. The Jurassic Stø Formation was gas bearing from top at 726 m to a likely GWC at 766.5 m. In the Triassic the upper part of the Snadd Formation with top at 804 m was supposed to be gas bearing, but this was not proven by sampling. The best Snadd sands, below 1040 m, could be sampled and they were water bearing. An Intra-Carnian section was penetrated from 1146 m to 1521 m. It contained gas in two zones with GWC's at 1218 m and ca 1250 m, respectively, and in a third thin sandstone from 1347 m to 1357 m. The upper and the lowermost Intra-Carnian gas zone were confirmed by MDT sampling. The Kobbe Formation was encountered at 1521 m. It is 634 m thick with 27.5% net/gross based on petrophysical evaluations. Gas was tested in numerous thin sandstone beds from 1557 m to 1779 m by MDT sampling and by a DST. The Havert Formation with top at 2554 m had only poorly developed reservoir rocks. MDT testing failed, but it was assumed to be gas bearing as well based on logs.

Rig site analyses of fluorescence (oil shows) and by GCMS analyses of up to C7 components in mud gas ("FLAIR analysis") suggested that the Stø and upper Snadd gas zones were oil-associated. The deeper gas zones were practically devoid of liquid components based on these analyses.

Four conventional cores were cut. Core 1 was cut in intra-Carnian sandstone and claystone from 1204-1258 m with 98% recovery. Core 2 was cut in the Kobbe Formation from 1675 to 1695 m with 83.3% recovery (jammed off). Core 3 was cut from 2610 to 2637 m in the Havert Formation with 100% recovery. Core 4 was cut from 4013 to 4016 m in the Isbjørn Formation with 15% recovery (jammed off). During two successful MDT wire line runs a total of 9 sampling stations were performed. Samples were taken at 1090.01 m (Snadd Formation; water+gas), 1121.98 m (Snadd Formation water), 1215.26 m (Intra-Carnian Sandstone; gas), 1279.99 m (Intra-Carnian sandstone; water), 1349.78 m (Intra-Carnian sandstone; gas), 1353.41 m (Intra-Carnian sandstone; gas), 1560.21 m (Kobbe Formation: gas), 1595.97 m (Kobbe Formation: only fluid scanning; no sample), 1778.65 m (Kobbe Formation: gas).

The well was permanently abandoned on 25 September 2011 as a gas discovery.

TESTING

The well was perforated from 1557-1570 m,1580-1621 m and 1631 m-1685 m in the Kobbe interval.The test produced 180000 Sm3 gas/day throught a 44/64" choke. The gas gravity 0,618(air=1)

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7225/3-1