



Wellbore History

GENERAL

Well 6406/3-8 was drilled on the Maria prospect located is located in the Haltenbanken area, offshore Mid Norway. The prospect area is surrounded by producing fields and discoveries; Kristin (W), Smørbukk Sør (NW), Smørbukk (NW), Heidrun (N), Midgard (E), Tyrihans (SE) and Trestakk (SW). The primary objective was to confirm petroleum in the Middle Jurassic Garn Formation, with the deeper Ile and Tilje formations as secondary objectives. Also the Cretaceous Lysing Formation was seen at potentially hydrocarbon bearing.

OPERATIONS AND RESULTS

Wildcat well 6406/3-8 was drilled with the semi-submersible installation Songa Delta. The well was spudded on three different locations with a 9 7/8" pilot hole assembly, due to shallow gas zones at 569 m, 620 m, and 670 m. The third pilot hole was drilled to revised 20" setting depth, at 545 m. Technical problems with lost circulation in the 14 3/4"x 17 1/2" hole led to a sidetrack at 1727 m (6406/3-8 T2) from the 16" liner shoe around the problem section, and back to the planned trajectory towards the end of the 12 1/4" section. This gave significant deviation from the vertical trajectory. The well was drilled to 4216 m (4138 m TVD) in the Early Jurassic Tilje Formation. The well was drilled with sea water down to 541 m and with Carbo-Sea oil based mud from 541 m to TD.

The Lysing Formation was found tight and water bearing. Clear hydrocarbon shows and increased gas values were observed when penetrating the Middle Jurassic Garn Formation at 3841 m (3771 m TVD). Based on log and pressure data an OWC was established at 3907 m (3837 m TVD) giving an oil column of 66 m TVD in the well. No gas cap was observed. Two parallel oil gradients of 0.66 g/cc with a separation of 0.4 Bar was established in the Garn Formation and a clear water gradient of 0.982 g/cc in the lower part of Garn Formation was encountered. The Garn Formation sandstones had an average porosity of 14.5 % with porosity cut off of 10 % and Vclay cut-off of 50 %. The secondary targets, Ile and Tilje Formations, were water bearing.

Two cores were cut from 3846 to 3929.6 m in the Garn Formation with 100% core recovery. The sandstones had an average porosity of 14.5 % when using a 10% cut off. The second core was water wet in the bottom after coring through the OWC. The upper 5 m of the Garn Formation was missed in the process of picking the coring point, and a sidewall coring run was performed to compensate for this. Oil and water samples were collected from the Garn Fm, both with conventional RCI probe and with the RCI straddle packer as part of the mini DST program. The fluid samples were taken at 3842.01 m (oil), 3843.5 m (oil), 3852 m (oil), 3873.5 m (oil), 3877.53 m (oil), 3896.12 m (oil), 3900 m (oil), and 3920 m (water). The samples were variably contaminated by the OBM in the C13 to C20 alkane range. The oil gravity was measured to 36.4 deg API with a GOR of 170 Sm3/Sm3.

The well was permanently abandoned on 10 August 2010 as an oil discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6406/3-8