



Wellbore History

GENERAL

Well 6406/6-4 S is a replacement well for 6406/6-4, which was junked due to technical problems. The well was drilled to test the Tvillingen Sør prospect on the Halten Terrace in the Norwegian Sea. The primary objective was to test the hydrocarbon potential in the Middle Jurassic Garn and Ile formations. The Tofte and Tilje formations were secondary objectives, while the Åre Formation was a tertiary objective.

OPERATIONS AND RESULTS

Wildcat well 6406/6-4 S was spudded with the semi-submersible installation Leiv Eiriksson on 11 August 2015 and drilled to TD at 4484 m (4468 m TVD) in the Early Jurassic Tilje Formation. The spud location was set 30 m away from the 6406/6-4 location. The well was drilled with an S-shaped trajectory. It was drilled vertical down to 1995 m, and then deviated with a sail angle of ca 9.5 ° from ca 2600 m to ca 3600 m, and then vertical again from 3700 m to TD. No significant problem was encountered in the operations. The well was drilled with Seawater down to 1364 m, with KCl/Glydril mud from 1364 m to 1995 m, and with EMS 4400 oil based mud from 1995 m to TD.

Top of the primary objective Garn Formation was encountered at 4006 m (3990 m TVD), 48 m TVD shallow to prognosis. The Garn sandstones held a 25 m gas/condensate column down to a hydrocarbon/water contact at 4031 m (4015 m TVD). The deeper Ile, Tofte and Tilje Formations also came in slightly shallow to prognosis but were all found to be water bearing. Shows were recorded all through the Garn and Ile formations. Due to water wet Tofte and Tilje formations, the Åre Formation was not drilled.

Coring was not performed due to the reservoir pressure being above the P50 predrill prediction. Gas/condensate MDT samples were taken at 4008.05 m and 4053.5 m. Analyses of the samples taken at 4008.05 m proved a moderately rich condensate with single stage flash GCR (gas-condensate ratio) varying between 921 and 978 m3/m3. The mud contamination from the oil base, consisting of mainly n-C12 to n-C14 alkanes, was estimated to be between 13.5% and 14.4%.

The well was permanently abandoned on 30 October 2015 as a minor gas/condensate discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6406/6-4 S