



Wellbore History

GENERAL

The 6407/6-7 S Harepus well was drilled on the eastern limits of the Halten Terrace, adjacent to the Trøndelag Platform offshore Mid Norway. The main objective was to prove hydrocarbon bearing sands in the Middle Jurassic Garn and Ile Formations (Fangst Group). Secondary objectives were to test the hydrocarbon potential of the Ror, Tilje and Åre Formations.

OPERATIONS AND RESULTS

Well 6407/6-U-2 (pilot hole) was spudded and drilled to a total depth of 437 m. A drill break and a drop in gamma measurements indicated a sand layer from 436 - 437 m. Shallow gas was observed at seabed surface by ROV sonar during the connection at 437 m. The well was killed with 1.60 SG kill mud and plugged back to surface with three cement plugs.

Wildcat well 6407/6-7 S was spudded with the semi-submersible installation Ocean Vanguard on 12 April 2009 and drilled to TD at 3227 m (3184 m TVD) in the Early Jurassic Åre Formation. The well was designed as a vertical well down to ca 1710 m in the 12 1/4" hole section and directionally drilled from the 12 1/4" section to hit the geological target at a 15 deg angle, holding this inclination to TD. No shallow gas was observed while drilling the 36" and 17 1/2" hole sections. The well was drilled with Seawater and hi-vis sweeps down to 422 m, with 1.15 SG WB spud mud from 422 m to 1149 m, with Performadril HPWBM mud from 1149 m to 2701 m, and with Performadril mud from 2701 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous, and Jurassic age. TD of the well was in the Åre Formation. Base Cretaceous/Top Spekk Formation was encountered at 2685 m with Late Jurassic Rogn Formation sandstone coming in at 2747 m (2716.2 m TVD) and a second Spekk Formation interval at 2765.7 m (2734.3 m TVD). Eroded Middle Jurassic Garn formation was encountered at 2777.3 m (2745.6 m TVD, 40 m deeper than predicted. Gas with condensate was proved in the Rogn and Garn Formations with a gas down to (GDT) proven in the Garn formation. The Garn formation pressure was 28 bar depleted and the pressure plots could not be used to determine gas-water-contact (GWC). From pressure points and logs gas is seen down to 2813.4 m (2780.6 m TVD) and water up to 2827.2 m (2794.0 m TVD). No hydrocarbons were seen in the Early Jurassic Båt Group.

No oil shows were seen in the well apart from some weak cloudy bluish white cut fluorescence, and in parts, a greenish yellow residual in core chips from the reservoir section.

One core was cut from 2756.5 to 2778.8 m in the Rogn and Garn Formations. Good quality gas samples were collected with the MDT single probe equipment in the Rogn Formation at 2764 m, 2764.7 m, and 2770.8 m and in the Garn Formation at 2784.1 m. No water samples were collected due to hole conditions.

The well was permanently abandoned on 27 May 2009 as a gas discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/6-7 S