



Wellbore History

GENERAL

Well 24/9-9 S is located in the Vana Sub-basin ca 6 km east of the UK border in the North Sea. The primary objective of the well was to establish the presence of hydrocarbons within the Hermod Formation of the Marihøne A prospect. Given success, an optional sidetrack (24/9-9 A) would be drilled to test the A2 segment of the same Hermod Formation. The surface location was placed so as to enable both segments to be tested from the same wellhead location. Further unplanned sidetracks would be contingent on results of the first wells.

OPERATIONS AND RESULTS

Wildcat well 24/9-9 S was spudded with the semi-submersible installation Songa Dee on 12 September 2009 and drilled to TD at 2402 m in the Paleocene Heimdal Formation. No significant technical problem occurred in the operations. The well was drilled with seawater and hi-vis sweeps down to 144 m, with Glydril mud from 144 m to 1033m, and with Versatec oil based mud from 1033 m to TD.

The target Hermod Formation was encountered at 2202 m (2041.8 m TVD MSL) and proved to be oil bearing. Logging showed a 29.1 m TVD oil leg with OWC at 2238.5m (2070.9m TVD MSL). Average porosity of the oil bearing zone was 27% with an average Sw of 25%. The gross thickness of the reservoir was 52.5 m TVD. The Heimdal Formation sands were water bearing. The only true oil shows recorded were on the cores taken in the reservoir. These extended through the oil-bearing zone and down to the end of the cored interval at 2261 m. The oil based mud used produced a background weak dull yellow direct fluorescence and faint cut fluorescence, which effectively masked any mineral oil show. Additionally the solvent properties of the mud, combined with the structure destroying effect of the PDC bits and the flushing effect due to the overbalanced mud weight may have removed virtually all trace of shows from disaggregated sand grains and minimised or removed shows from sandstone aggregates.

Two cores were cut 2207 to 2261 m in the Hermod Formation. A wire line programme was run comprising 4 runs: 1A Quad combo, 1B MDT, 1C VSP and 1D MDT. The first MDT run proved Oil and Water gradients in addition to sampling the Oil zone at 2221 m. The second MDT run provided additional oil samples from the same oil horizon. Maximum temperature recorded in the first run was 103 deg C, corresponding to a rather high temperature gradient: 47.6 deg C/km with 4 deg C at sea floor. This was the only BHT reported from the well.

The well was plugged back for sidetracking on 7 October 2009 as an oil discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 24/9-9 S