



### GENERAL

Well 17/12-4 A was drilled as a geologic sidetrack to 17/12-4 on the Bream structure in the north-western part of the Egersund Basin of the North Sea. The principle objective of the well was to identify if the Bream prospect contained hydrocarbons in the Sandnes / Bryne formation, and ascertain commercial flow rates from a horizontal well in order to make decisions regarding a future development of the Bream Discovery.

### OPERATIONS AND RESULTS

Well 17/12-4 A was sidetracked on 10 July 2009 from below the 13 3/8" shoe at ca 1202 m in well 17/12-4. The well was drilled as a horizontal appraisal well with the semi-submersible installation West Alpha to TD at 3338 m (2319 m TVD) in the Middle Jurassic Bryne Formation. Deviation was at maximum 92 deg at TD. The well was drilled without significant technical problems, but it was not possible to get the liner to the toe of the well, only reaching 2795 m. This may have been partly due to not having the correct reamer shoe on board when picking up the liner. The sidetrack was drilled with Versatec DW oil based mud all through.

The Sandnes Formation came in at 2606 m (2286.7 m TVD) and confirmed a water-wet good reservoir sand within this Formation, as in the primary well. The Bryne Formation came in at 2666.6 m (2305.3 m TVD) and was drilled near-horizontally all through to TD, without penetrating below the main OWC found in the primary well. The Bryne Formation consists of several sand bodies and thin sands with interbedded mudstones and with coal layers in the upper part. Average porosities for the different reservoir units ranged from 17% to 22%. All sands were oil-bearing.

No cores were cut in the well. The well was logged while drilling. No wire line logs were run.

The well bore was plugged back for a second sidetrack and was permanently abandoned on 15 August 2009 as an oil appraisal well.

### TESTING

One drill stem test was performed. The Bryne reservoir was perforated underbalanced at 2694 - 2760 m (2313.4 ? 2324 m TVD). The well was opened on a 20/64" fixed choke for a sample flow period, well parameters allowed to stabilise and three sets of surface PVT samples and four bottom hole samples taken. On completion of sampling the well was beaned up to a 32/64" fixed choke size for 30 hrs with flow rates stabilising at 290 Sm3 oil and 11500 Sm3 gas/day. The stabilised GOR was 40 Sm3/Sm3. The CO2 and H2S levels were nil. The maximum temperature recorded in the main flow was 84 deg C.

## LITHOSTRATIGRAPHY & HISTORY FOR WELL: 17/12-4 A