Operator Locates Top of Fish Target with ABI™ Sensor

Location: Oman

Overview
An operator working in a mature field in Oman attempted to drill a deviated well, but, while drilling the 8½-in. (215.9-mm) buildup section, the bottomhole assembly (BHA) became stuck for approximately a month. After several third-party failed attempts to fish out (retrieve) the BHA, the operator turned to Sperry Drilling for a solution to sidetrack the well and to target the top of the BHA and recover it from the borehole.

Sperry Drilling PDM and ABI™ sensor technology enable successful openhole sidetrack and drilling
The local technical advisors collaborated with the operator in the planning phase to discuss how to drill the well and locate the top of fish (TOF). This resulted in the deployment of the 6¾-in. (171.45-mm) SperryDrill® positive displacement motor (PDM) with the At-Bit Inclination (ABI™) sensor to perform the openhole sidetrack and drill the section to the target point. One of the most critical real-time data that is necessary to precisely steer in directional wells is the angle of inclination, especially at the bit. The ABI sensor, which was 16 in. (41 cm) away from the bit, was essential to precisely hit the top of the BHA, as the ABI sensor reduced the inefficiency and uncertainty that can occur when using traditional measurement-while-drilling (MWD) sensors.

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<tr>
<th>CHALLENGE</th>
<th>SOLUTION</th>
<th>RESULT</th>
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<td>Sidetrack the well, drill to TOF, and recover the BHA.</td>
<td>Utilize the 6¼-in. (171.45-mm) PDM with the ABI sensor to perform the openhole sidetrack and drill the section to the target point.</td>
<td>Sperry Drilling successfully sidetracked the well, drilled the 8½-in. (215.9-mm) section, and precisely hit the TOF target.</td>
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CASE STUDY: ABI™ sensor proves to be critical for precision steering

**Directional drilling performance located and hit the target with precision**

With the successful utilization of PDM and ABI technology, the Sperry Drilling team managed to sidetrack the well, drill the 8½-in. (215.9-mm) section, and precisely hit the top of the BHA target. After a few attempts, the operator then proceeded to fish out the BHA, but was not able to do so. However, by using the ABI sensor, the operator still considered the operation a success as the operator realized the importance of optimal directional drilling performance due to the ability and need to precisely locate the top of the BHA target.

The ABI™ sensor successfully hit the BHA target after several third-party failed attempts.