Section Milling with WavEdge* Technology Delivers Successful Results in a Challenging Application in the Gulf of Guinea, Republic of Congo

A section was successfully milled in 9⅝ inch casing using a snubbing unit with limited operational capabilities.

CHALLENGE

To optimize production and abandon the lower part of an aged well, the client required a section to be milled as part of the remedial operation. This had to be done with an existing snubbing unit instead of a full rig. A section length of 13 m in a deviated wellbore was required to ensure operational compliance. The BHA tubulars available for this application was smaller than recommended for the type of section milling operation. Fluid losses during the operation also added to the challenges faced.

SOLUTION

WIS recommended running an 8200 series section mill, dressed with WaveEdge* knives to mill the section in a single trip. To optimize the performance, a hydraulic analysis using HART* simulation software for both the cut-out and milling phases with the limited operational parameters available was an essential part of the planning process.

RESULT

- Successfully milled the section in 9⅝ in. casing in one-trip.
- Effectively managed the milling operation with the limited operational parameters available and fluid losses encountered.
- Allowed subsequent abandonment and remedial operations to be completed trouble free.

A Section was Successfully Milled Using a Snubbing Unit

To optimize production on an aged and depleted offshore well, a section had to be milled in 9⅝ inch casing as part of a remedial operation to eliminate cross-flow and abandon the lower part of the well. The most significant challenge in this remedial operation was to mill the window in a deviated well profile using a snubbing unit with limited capabilities in terms of power output. Small 3½ inch tubulars were also used in the section milling bottom hole assembly (BHA) which, placed limitations on the weight applied and torque generated during milling. The selection of WavEdge* technology ensured that the milling performance could be optimized, the section delivered in a single trip, and that the cuttings generated were small and consistent in size to aid in hole cleaning. Using experienced WIS personnel, the section was milled successfully, in accordance with the objectives.

A section milling application with WavEdge technology was used successfully in a remedial application to optimize production in an aged well in the Gulf of Guinea. The success of this application and the value generated was recognized by the customer.*