MagTech® casing magnet leaves Shell’s wellbore free from ferrous debris

OPERATOR ACHIEVES THE HIGH ROTATIONAL SPEEDS DESIRED FOR AN EFFICIENT WELLBORE CLEANUP
WESTERN AUSTRALIA

OVERVIEW
Shell’s Prelude gas field, located offshore Western Australia, contains an estimated 2-3 Tcf of recoverable gas. The depths and 80-degree highly deviated sections make it difficult to rotate the drillstring to ensure appropriate coverage of cleaning pills and to hydraulically remove debris from the wellbore. Halliburton offers debris extraction tools with high-capacity retention, high-torque connections, and 360-degree recovery, and was able to help Shell solve its wellbore cleanup challenge.

ChALLENGE
Shell tasked Halliburton with supplying a 10 ¾-in. magnet for their wellbore cleanup operations in the new Prelude development campaign. The tool required high-torque connections to handle the high torques experienced in a deep, horizontal wellbore cleanup application. It was also critical to remove metallic debris from the wellbore before the upper completion was installed to ensure it was done right the first time.

SOLUTION
Halliburton proposed its MagTech® casing magnet from its CleanWell® system of tools. The MagTech casing magnet collects ferrous or non-ferrous materials that have become magnetically charged due to pipe rotation or movement during the displacement process.

The magnet is designed to be run in conjunction with other casing cleaning tools in displacement, drilling, or other intervention applications. It can also be run as a standalone tool for cleanup and fishing operations.

The debris collection area consists of a stainless steel magnet sleeve with 776-in.² of surface collection area. Debris collection is generated by 126 high-energy, extremely strong neodymium bar magnets. This high magnet strength, combined with solid stabilization and enormous surface collection area, provides consistent debris recovery capacity in excess of 50 lb (22.7 kg) per tool, per run.

RESULT
Due to the high-torque capabilities of the MagTech tool, the operator achieved the rotational speeds required for an efficient wellbore cleanup.

» Successfully recovered more than 44 lb (20 kg) of metallic debris in three wells
» Achieved required rotational speeds
RESULT

The Mag Tech casing magnets successfully recovered more than 44 lb (20 kg) of metallic debris in the three wells during the drilling and completion stages. This helped prevent any lost time due to debris-associated issues throughout the upper completion operations.

Shell was able to achieve the rotational speeds required for an efficient wellbore cleanup in a highly deviated well due to the high-torque capabilities of the tool.

Halliburton recovered more debris with the 10 ¾-in. magnet than any previous jobs ran. All Mag Tech casing magnet recoveries from this job were below the maximum recovery amounts, indicating that all debris had been removed from the casing section and that the tools still had additional carrying capacity.