CASE STUDY

HALLIBURTON

Gulf of Mexico

PowerMag® premium downhole magnet proves success in deepwater debris recovery

Downhole magnet recovers 50% more debris than competition

CHALLENGE

- Reduce wellbore cleanout operational costs using magnet tools

SOLUTION

- Deploy PowerMag® downhole magnet head-to-head with other magnet tools to compare technology

RESULT

- PowerMag® downhole magnet consistently recovered at least 50% more debris than other tools

Overview

To lower costs related to wellbore cleanout services, a prominent Gulf of Mexico operator sought service providers to supply downhole magnets for a window milling operation. To illustrate its technical advantage in the wellbore cleanout market, Halliburton suggested a head-to-head comparison of the PowerMag® downhole magnet with a competitor's magnet tool in the same bottomhole assembly (BHA).

186 lbs of ferrous debris collected during whipstock run

Challenge

With the constant challenge to reduce operational cost, an operator turned to a local supplier for low-cost wellbore cleanout tools for ferrous debris recovery.

The success of this project is a true example of using the strategic mainstays, listen and respond, and execution by Halliburton, which led to significant time savings for the operator.

Solution

Confident in the capability of the PowerMag downhole magnet, Halliburton urged the operator to run both the competitor's magnet tools and a PowerMag downhole magnet in the same run to demonstrate the technical advantage of the PowerMag magnet. Designed to collect ferrous and non-ferrous material that has become magnetically charged during pipe rotation and other

movements, a PowerMag® magnet is equipped with 20 collection areas armed with neodymium bar magnets and has a recovery capacity that exceeds 250 lb/run. The integral body water coursing provides a large external total flow area, even when the tool is at capacity with debris. The total recessed collection surface area is 2,800-in.^{2} to maximize both flow and surface area, and the tool will not pack off the annulus, even when full. PowerMag downhole magnets are built from an integral drill collar bar stock to provide high-tensile, high-torsion strength and are ideal for applications, such as window milling or wellbore displacement, where large amounts of debris are expected or generated.

Result

The operator performed three dedicated cleaning runs, which contained both the Halliburton PowerMag downhole magnet and a competitor's magnet tools. During all cleanout runs, the competitor's tools were deployed below the PowerMag magnet, which provided the earlier opportunity to collect the available debris. However, during all three runs, the PowerMag magnet collected at least 50% more debris than the competitor's tools.

As demonstrated, PowerMag downhole magnets provide unmatched performance for downhole debris recovery when large amounts of ferrous debris are present in the wellbore.

> The PowerMag® downhole magnet provides unmatched performance for downhole ferrous debris recovery.

Debris recovery summary

RUN	OPERATOR	AVERAGE RECOVERY TOOL (LB)
Whipstock Run	Provider 1	119.4
	PowerMag® magnet	186
Mill Run	Provider 1	119
	PowerMag® magnet	180
Motor Run	Provider 1	48
	Provider 2	45
	PowerMag® magnet	102

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