

Case study: Gulf of Mexico, United States

High-Pressure Debris Filtration Unit captured 68.2 lb of debris in deepwater Gulf of Mexico well

An operator had difficulty completing a deepwater offshore well in the Gulf of Mexico. The project was being completed on a tension leg platform (TLP). During the completion process, the operator noticed frequent downhole debris, including coarse, flaked calcium carbonate (CaCO_3) that had been used as a lost circulation material (LCM), as well as smaller amounts of barium sulfate (BaSO_4), silicon dioxide (SiO_2), and calcium sulfate (CaSO_4). This debris prevented the operator from reaching the bottom of the well.

As a solution, a team at Baker Hughes recommended the **High-Pressure Debris Filtration Unit™ (HPDU)**. The HPDU is the last line of defense from solids entering the wellbore. Used with diatomaceous earth (DE) and cartridge filtration, the system removes small or large solids from pits, valves,

pumps and other equipment before they enter the wellbore. The HPDU connects directly to the rig standpipe downstream of rig tanks and high-pressure pumps. It can operate in 10,000 psi (690 bar) environments. In deepwater operations, an additional filter can be connected to the boost line to remove debris before it enters through the flow path.

After determining that the debris was coming from the well's pits, pumps, and lines, the operator installed the HPDU and connected it to the standpipe manifold. The HPDU ran in five cycles over a period of nearly 30 days.

As a result of using the HPDU, the operator was able to capture 68.2 lb of debris from the wellbore, reach bottom, and successfully complete the well. It was the first time the HPDU was used on a TLP.

Challenges

- Deepwater, challenging well
- Debris and fill from pits, pumps and lines
- Large, coarse CaCO_3 and other particles downhole

Results

- Enabled customer to successfully complete well
- Captured 68.2 lb of debris
- Eliminated CaCO_3 and other particles downhole

