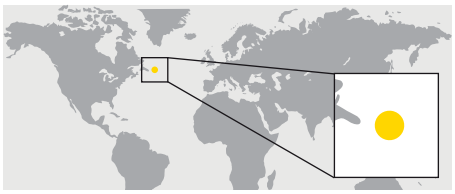
Case study: Tornar® Wellbore Cleaning Technology

Fishing success in the North Atlantic region



Region: North Atlantic (Newfoundland, Canada)
Customer: ExxonMobil
Field: Hibernia South
Well Type: Water Injector

Case benefits
- Reduced BOP downtime and maintenance
- Reduced safety risks and environmental operating risks
- Increased operational efficiency and cost saving to customer

Key capabilities
- Effective BOP and riser cleaning
- Drillpipe connection
- Most powerful magnets in the industry
- Robust design
- Proprietary Tornar flow port technology
- Configuration to suit any BOP requirements

Challenge

While running a subsea completion for a water injection well on the semi-submersible, West Aquarius, sea states increased significantly causing equipment failure downhole requiring the completion to be recovered. A number of control line clamps were damaged while recovering the completion, with some being recovered, tangled between the control line and pipe.

With the completion pulled back to surface, the number of clamps recovered indicated four were still lost downhole. Poor visibility in the well fluid limited downhole camera capabilities to assess the condition of the blowout preventer (BOP) and wellhead, or any possible obstructions present.

Subsequent attempts to land out in the wellhead with the test tool to complete mandatory BOP testing proved unsuccessful, indicating possible debris. Magnets available on location at the time proved ineffective in recovering anything due to poor strength and size.

Solution

The customer contacted Archer to mobilize the 17.45 inch Tornar BOP equipment and personnel to location to assist in fishing operations. The same equipment had been utilized on this location beforehand to ensure the BOP and wellhead were cleaned prior to running the completion. The larger surface area and outer diameter of the BOP magnets providing the greatest coverage for debris extraction above and powerful circulating magnet below was chosen for the greatest chance for success.

Archer

Case study: Tornar® Wellbore Cleaning Technology

A step-by-step method where results could be evaluated before proceeding was chosen. A more aggressive approach could have resulted in increased damage, downtime or loss of well. The robust construction of the Archer Tornar equipment allowed for multiple runs in succession with minimal intervention to clean magnets, thus increasing operational efficiency.

Result

The Tornar BOP system exceeded expectations with its performance in debris recovery. The first run yielded a complete clamp recovered on the bottom of the circulating magnet (fig. 1). Further runs proved to be successful in recovering more metallic debris, including parts of the broken clamps from the BOP stack.

The customer was confident that the BOP stack was free of debris and was able to proceed to function the stack without fear of damage and subsequent testing of BOPs. The circulating magnet was utilized on several additional runs due to its high capacity magnet (up to 1000 kg lifting capacity) and circulating rates (3200-5500 l/min).

Fig 1. Clamp recovered on the circulating magnet.

Archer is a global oil services company with a heritage that stretches back over 40 years. With a strong focus on safety and delivering the highest quality products and services, Archer operates in 40 locations over 19 countries providing drilling services, well integrity & intervention, plug & abandonment and decommissioning to its upstream oil and gas clients. **We are Archer.**

Archer