

Optis Technology

COMPLEX FISHING OPERATION ENABLES SUCCESSFUL P&A

EV's real-time camera provides valuable insight and visual data to assist with complex fishing operations

THE IMPACT OF DOWNHOLE FISH

Whether the remnants of a damaged cable or a lost bottom hole assembly, downhole fish can cause significant impact on well productivity and operating time. Conventional fish retrieval methods are based on 'guesstimates', and often result in complicated and time-consuming wireline interventions, or workover - or even abandonment - if unsuccessful.

Downhole fish are a risk to well operation at any point in the well life-cycle, presenting a complex and high-risk challenge for operators to overcome. Whether a dropped object during intervention, or resulting from a failure in downhole hardware, successful, time-efficient fish recovery is essential for restoring productivity and reducing operational cost. In these situations, full understanding of the nature and status of a fish can make the difference between first-time successful recovery, or the workover or abandonment of a well if unsuccessful.

UNEXPECTED SETBACKS

The North Sea operator experienced multiple fish in hole. The well was scheduled to be plugged and abandoned, but with the presence of multiple fish in the hole, the operator faced significant challenges in isolating pressurized reservoirs and proceeding safely with the operation.

Initially, the operator decided to run the Optis R125 camera through a drill-pipe stinger and found the camera to hang up above the area of interest. The hold-up was seen to be a sharp change in well trajectory, suspected to be caused by wellbore deformation (**Fig.1**).



Figure 1: Sharp change in well trajectory, suspected to be caused by wellbore deformation

THE CHALLENGE

An operator in the North Sea experienced multiple fish in hole. The well was scheduled to be plugged and abandoned, but with the presence of multiple fish in the hole, the operator faced significant challenges in isolating pressurized reservoirs and proceeding safely with the operation.

THE SOLUTION

EV's Optis R125® camera was deployed on E-Line with both downview and side view video footage acquired to provide quantitative, real-time evaluation of fish location, orientation and status. The Optis® R125 camera was provided as the ideal option, as it acquires real-time footage at 25 frames per second.

THE RESULTS

Initially, the camera appeared to hang up above the area of interest. The hold-up was seen to be a sharp change in well trajectory, suspected to be caused by wellbore deformation (**Fig.1**). A shortened camera assembly was then run through an overshot to inspect the top of fish (**Fig.2**). The sideview camera footage revealed the top of the tubing against the casing wall, with a broken off cut lip guide deformed around it (**Fig.3**). Downview footage revealed the top of the tubing trapped against the casing wall by the deformed cut lip guide along with some debris (**Fig.4**). With this information, the operator was able to retrieve the multiple fish on the subsequent runs and successfully plug & abandon the well safely.

After adapting the drill-pipe string to include a wireline side entry sub, a shortened camera assembly could be run through an overshoot to inspect the top of fish, whilst circulating clear fluid into the area of interest.

The side view camera video footage revealed the top of the tubing against the casing wall, with broken off cut lip guide deformed around it.

High quality downview footage revealed the top of the tubing, trapped against the casing wall by the deformed cut lip guide along with some debris.

HIGH VALUE SOLUTIONS

With the visual confirmation of fish location and status, the operator was able to successfully retrieve the multiple fish on subsequent runs, and proceed with the plug & abandonment schedule.

The visual information provided by Optis technology eliminates the risks of repeated failed fishing attempts due to unknown conditions, or false assumptions, saving operators valuable time and money.



Figure 2: Downview footage of shortened camera assembly running through an overshoot



Figure 3: Sideview footage of deformed cut lip guide



Figure 4: Downview footage of top of tubing trapped against the casing wall by the deformed cut lip guide along with debris