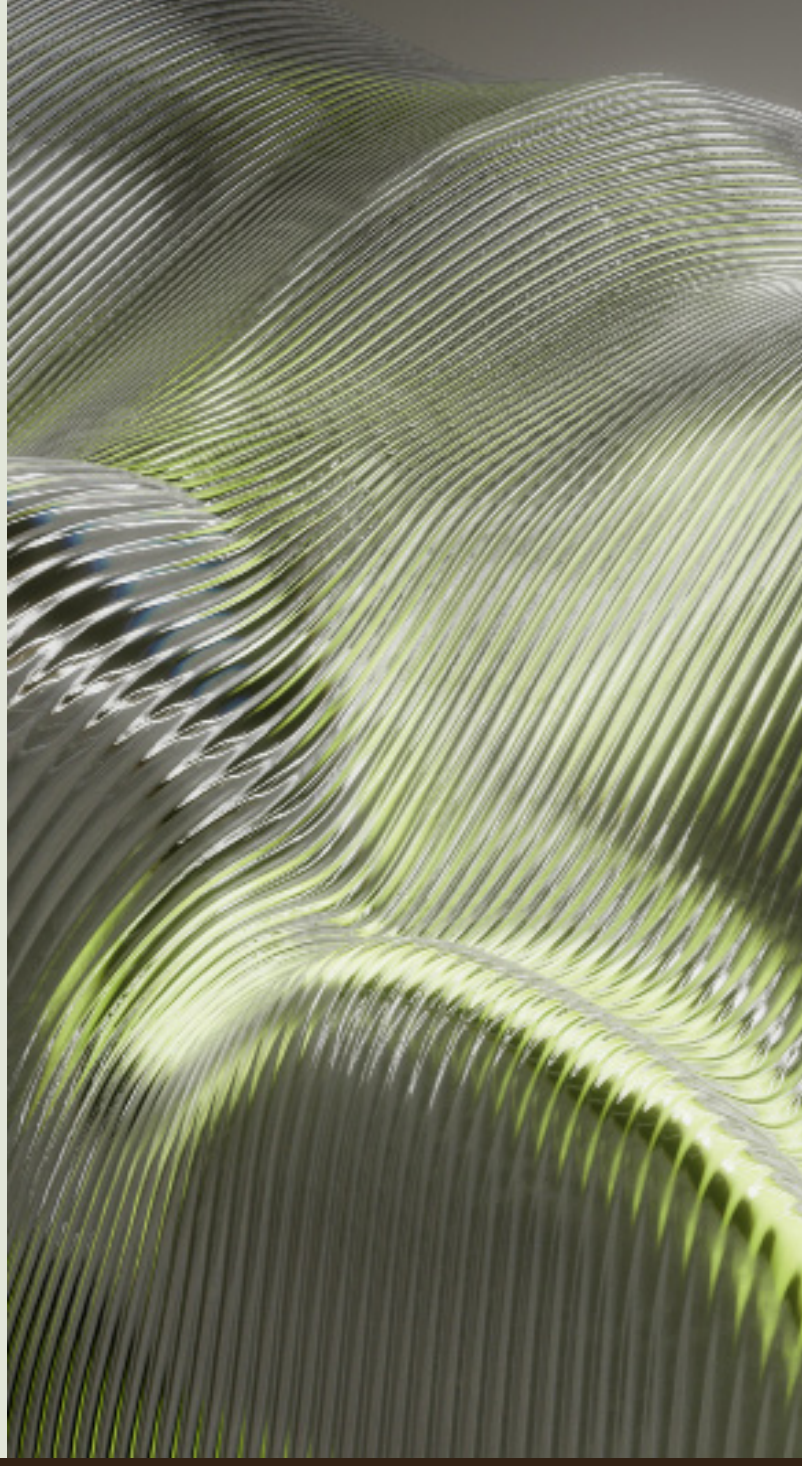
Enhancing Efficiency in P&A: The Impact of Interwell's Integrated Punch & Plug Single Run Solution



Region
Australia

Year
2024

Case study

Interwell

Key Capabilities

- → Combination of complementar technologies and services to minimise intervention runs.
- → Bullheading/removal of hydrocarbons from all Well areas and voids for full completion retrieval by directing fluid path.
- → Several non-pyrotechnic well perforations in a single run within various casing sizes to optimize flow area.
- → Multiple plug setting operations for integrity, flow control, and barrier installation in same run.
- → Multidiscipline installation.
- → Engineers to reduce on-rig POB and HSE exposure.

Challenge

A major operator in Western Australia had a multiple Well subsea plug and abandonment campaign which required the killing and installation of suspension barriers. The operation would involve bullheading fluid through the A annulus, both above and below the production packer to fully remove hydrocarbons ahead of installing a verified barrier ahead of the full upper completion retrieval. The challenge was compounded by the presence of Gas Lift Valves in unknown conditions which required verification. To streamline the process, the customer sought an optimised solution that combined multiple plugging and perforating technologies to significantly reduce intervention time.

Solution

Interwell prepared a solution by integrating the Intelligent Precision Drilling Tool (IPD) to puncture the tubing along with the V0 Multi Set Wireline Plug (MSWP) to enable single run operation. This innovative combination of technologies allows for:

- → Testing of the GLVs utilising the MSWP at required depth with contingency to reset if failed.
- → Drilling multiple large bore holes (x20) with the IPD above and below the production packer.
- → Setting the MSWP above upper holes set to bullhead annulus contents above the production down through tubing to direct and optimise flow accordingly.
- → Resetting of the MSWP below lower holes to direct flow below the production packer bullheading tubing and annulus contents ensuring no residual hydrocarbons are left within the Well.

↑
IPD & MSWP

→ Moving down to lower completion and resetting the MSWP again to be left downhole as a primary barrier / cement base.

To ensure optimal performance, additional wireline accessories were added to the toolstring, and System Integration Tests were conducted with all stakeholders. Compatibility with multiple wireline Tractor providers was also verified.

The deployment of the IPD/MSWP combination saved multiple intervention runs, significantly reducing rig critical path time and exposure whilst achieving all planned objectives in one intervention run.

Value Created

The IPD/MSWP solution was prepared, qualified, and mobilised ahead of the subsea P&A schedule. Interwell's field service engineers, supported by integrated operations in Norway ensured 24-hour coverage, delivering several services in one package, reducing the need for numerous service providers.

Interwell technology enhances intervention run efficiency in complex offshore operations, minimising personnel on board and reducing health, safety, and environmental exposure decreasing potential NPT and LTI across the operational phase.

Through the application of innovative and reliable combined technology, multiple intervention runs were negated which not only reduced downhole risk but saved a considerable amount of rig time (approx. 12-18 hours) to make the solution cost effective whilst completed well objectives as planned.