Case Study:

MSWP & BVS: Interwell's Single Run Solution to Confirm Tubing Integrity

Date: *October 2021*
Region: *Australia*

Key Capabilities

- *Verify barrier and Well integrity in compromised tubing*
- *Instant data readout at surface to confirm integrity for real time efficient decision-making*
- *Combination of complementary technologies and services to minimise intervention runs*
- *Multidiscipline installation Engineers to reduce on-rig POB and HSE exposure*

Challenge

A multi-national operator in Western Australia was executing a workover which required the confirmation of tubing integrity above the production packer. The lower barrier was tested but could not maintain pressure hold due to poor tubing condition.

As the majority of the tubing would be cut and retrieved, finding good integrity would dictate where the pipe would be cut and where the new completion would be stung into. Potentially, several runs may be required to find and isolate the leak which could be costly in a subsea environment.

Solution

Interwell proposed using an integrated Barrier Verification System (BVS) in combination with a Multi Set Wireline Plug (MSWP), which would allow the isolation of a certain area of tubing, which could be verified live at surface via the wireless gauge readout through eline.

As the leak was substantial, the MSWP was set with the equalising port open and the leak was chased while the port was closed, trapping the required pressure value below the assembly. Once closed, the wireless gauge would monitor the trapped pressure, and once static, the barrier and tubing below could then be verified to have pressure integrity despite the breach above. Opon acceptance, the equalising port of the MSWP was opened to balance the pressure prior to unsetting the assembly whereafter the tubing could then be cut at the depth of verified integrity.

- **Single Trip Solution:** The barrier plug can be deployed, set, tested and equalized multiple times then retrieved in one run.
- **Real-Time Pressure Monitoring:** Provides real-time data to the surface, to ensure that the packer remains intact and that the tubing is in good condition for the next operation.
- **Isolation of Area to be Tested:** Wireless gauge monitors at depth of interest despite poor tubing integrity.
- **Multi-Electronic Setting Tool (MEST):** Offers real-time readouts to monitor the MSWP positions and setting parameters, giving the end user another layer of verification for the plug setting.

The first deployment of the BVS & MSWP combination was highly successful, significantly reducing rig operation time by achieving all planned objectives during one intervention run.

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Value Created

In complex offshore operations, minimising personnel on board and reducing health, safety, and environmental exposure are critical. Interwell's tool specialists delivered multiple services in one go, reducing the need for multiple service providers.

The BVS & MSWP combination was implemented as planned without any additional downtime. The real-time pressure test data helped the end user to confirm the tubing integrity quickly and plan forward for the next operation smoothly and efficiently.