

Case Study: Wireless Gauge provides accurate real time downhole data for tubing evaluation and barrier verification



Date: March 2020
Region: Asia Pacific – Australia



Key Capabilities

- Wireless transfer of well information
- Provides documentable information on installed barrier and pressure test
- Provides means of isolating and monitoring specific area to source communication
- Real time verification using surface powered equipment
- Single run to set, test, verify, and leak detect
- Reduces time taken to troubleshoot & verify barriers through accurate well data

Challenge

A well in Australia was suspended after an integrity issue was noted in the TRSV Control Line. During long term suspension monitoring the pressure inside the tubing was seen to be slowly increasing, alluding to a leaking deep-set barrier.

Another barrier was set but subsequently it was noted that the tubing pressure increased slowly at the previously noted leak rate.

Solution

Anticipating tubing to annulus communication around the production packer, a plan was made to install a Vo qualified HEX Plug along with a Barrier Verification System (BVS) in the 7" Tubing directly above the packer. The well would be monitored to evaluate if there was an annulus to tubing breach.

Once the HEX was set, the BVS monitored the pressure in real time for 4 hours during which an increase in pressure below the plug was noted confirming fluid U-tubing via the breach. This may have taken a few days to verify the same leak rate at surface due to the very low volume. The BVS was then able to verify that the HEX was successfully isolating as a primary barrier by measuring the pressure trend within void.

To fulfil the required suspension barrier guidelines, the HEX was left downhole prior to workover/abandonment.

Value Created

The use of the BVS not only allowed the HEX to be verified as a barrier but gave valuable, reliable real time data to quickly evaluate the source of the leak accurately. Utilising the small running OD HEX meant the TRSV isolation sleeve could remain in place, reducing operational risk whilst minimising downhole runs.

