

Apex 360™ Memory

Case Study - Sub Surface Safety Valve Inspection

DHVI's Apex 360 Memory Camera is an extension of our existing memory platform. Equipped with a hemispherical lens, the Apex 360's advanced software processing and image de-warping creates a full 360-degree side and down facing image of the wellbore. Full pan and tilt control and instantaneous panoramic images make the Apex 360 highly efficient in pinpointing wellbore problems. SSSV and gas lift inspections, tubing corrosion, and sand screen inspections are some common applications where side facing footage helps to reliably diagnose an issue. It can be safely transported via helicopter to offshore installations when used with alkaline battery packs, allowing for the equipment to be quickly mobilized should the need arise.

In this example, the customer had observed an integrity failure within the TRSSSV. Several intervention runs were made to clean and dress the safety valve, however the customer was unable to achieve a satisfactory inflow test. Previous attempts had shown some indication of scale but the results were inconclusive. The Apex 360 camera was deployed on slickline to inspect the TRSSSV and determine the root cause of the failure.

After locking out the safety valve, an initial drift run was performed to allow for safe and accurate deployment of the camera. The camera was deployed and positioned above the TRSSSV, where a series of logging passes were performed slowly through the interval. Detailed video was acquired through the full TRSSSV assembly which began to tell more of the story. It became apparent that there was significant corrosion present throughout in the form of pitting, and in some instances fully penetrated to form holes. The lock out sleeve was confirmed to be fully locked out and the flow tube was down, keeping the flapper valve in the fully open position, but also showed corrosion damage on the bottom shoulder.

The TRSSSV was fully mapped alongside the mechanical drawing. There was no clear indication of scale but extensive corrosion pitting which led to the suspected root cause. Side facing video helped to add perspective by gauging depth of penetration. The positioning of the holes now led to question the extent that the corrosion extended behind the lock out sleeve, flow tube and into other key components within the TRSSSV.

