Q-Seal Wellhead Case History

A-Annulus to Atmosphere

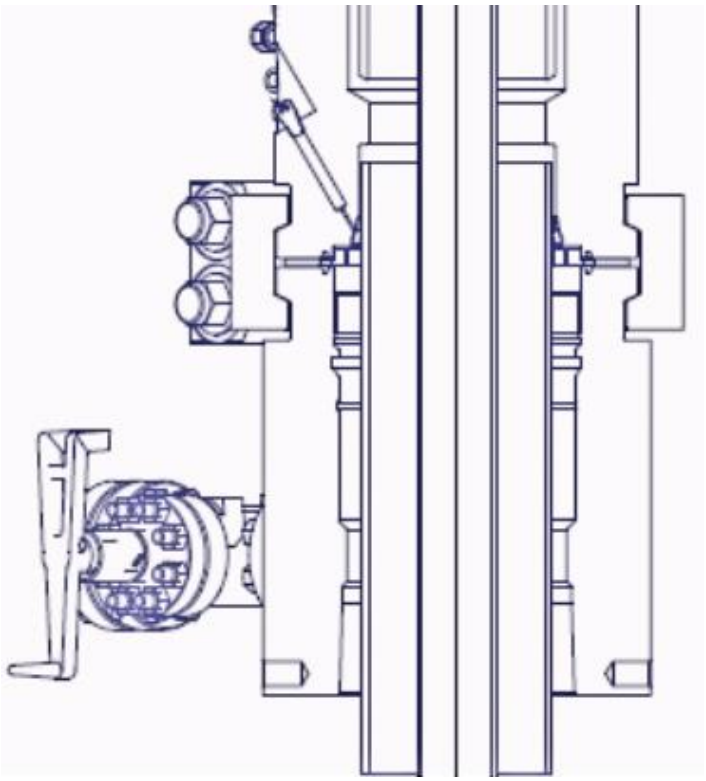
GCC
Gulf Core Concepts

Client	**Major Operator**
Location	**Offshore UAE**
Hanger Seal Type	**10-3/4 FX-RCMS MTM Seals, and spool gasket**

Q-Seal Reinstates Operational Integrity to Wellhead Leaking H_2S Lift-Gas to Atmosphere.

The Challenge

A gas-lifted production well, with 30,000 ppm H_2S lift gas, had developed a leak through the 10-3/8 FX-RCMS Metal To Metal seal assembly, charging the hanger cavity with gas. H_2S was then detected at the spool clamp assembly, indicating that the cavity content was also by-passing the spool gasket and leaking to atmosphere. The well was immediately shut in, isolated from the gas lift manifold, and the A-annulus bled down. A solution was required that would both restore the integrity of the FX-RCMS neck seals, and seal the leaking spool gasket.



The Solution

After detailed reviews and planning with both the operator and the wellhead supplier, a cascading repair procedure was developed to first attempt full and independent repair of all the pressure barriers, with contingencies to put in place a repair hierarchy, should they be required, that would allow safe operation of the well under dispensation.

The Outcome

The FX-RCMS Metal to Metal seal consisted of six independent sealing points, with four above the seal test port, and two below. By applying a staged treatment programme via both the FX-RCMS test port and the main cavity test ports, Q-Seal was able to repair both the upper section of the neck seals, restoring isolation between the A-annulus and the cavity, and also seal the leak at the spool gasket, reinstating a second barrier between the lift-gas and atmosphere. The cavity integrity was confirmed by positive pressure test, and the neck-seal repair by confirming zero pressure build up in the cavity when the A-annulus at full gas lift pressure.

The Impact

The production well, which had been shut-in for nine months, was able to be brought back on to full production, without dispensations.

Repair was completed over two shifts, with minimal equipment footprint, no intervention operation, and no impact to operation of the surrounding wells.