

KCI Sealant Technology saves the client approximately USD 100 million

One of the Middle East's biggest exploration and production companies has a huge well stock, and an increasing number of these wells are in mature fields which requires frequent well intervention. The combination of ageing wells, harsh desert environment and corrosive well fluids present the operator with a big challenge in terms of maintaining life cycle well integrity. Therefore, there is a need to seek quick, innovative and cost-effective solutions that can increase safety, reduce well integrity deviations and production deferments.

One of the most common well integrity failures experienced in the field relates to annuli communication through the Wellhead Hanger Seals. These failures are typically detected during Planned Maintenance Routines (PMR's) as part of the company's Well Integrity Management Program.

Our game-changing solution

We introduced an innovative leak sealing technology which uses a time activated sealant that is deployed in its liquid phase into the voids of wellhead sealing areas. Once in place, the sealant converts to a resilient, self-bonding and pressure-energized solid material that acts as a static pressure-retaining barrier to re-establish full integrity of the wellhead.

The product is left to cure under pressure which creates a pre-energised isolation. The sealant remains stable from -54°C to +204°C so there is no expansion or shrinkage of the product.

This technology offers a safe, quick and cost-effective solution for onsite Rigless Wellhead Integrity Repairs.

How is this different from previous solutions?

Depending on the type of injection fitting, these leaks had been traditionally addressed by either pumping hard plastic packing type material into the voids which can be unreliable or in most cases, require a costly hoist or rig workover operation to change out the Christmas Tree and/or the applicable Wellhead Spool Piece.

Saving time and money for our client

Our services have been successfully deployed in this region since 2013 and over 1000 jobs have been completed to date with over 99% success rate. Of the very rare failures experienced, the majority have been associated with extremely damaged or missing internal wellhead components which make it almost impossible to fully repair from a rigless aspect – if there is no hanger fitted or it has dropped there is no void or cavity to fill.

To date the service we supplied to this customer has resulted in at least USD 100 million in cost savings on production deferments and associated rig costs on workovers.