Case study: Indonesia

Mono-trip gas lift completion system averaged 20 hours less than dual-trip runs, saved rig time and costs

An operator in Indonesia was using a dual trip completion system in which the completion liner is run and cemented in one trip, while the upper completion is run in a second trip. Seeking a more efficient way to reduce the number of installation trips needed they decided to explore possible solutions. Baker Hughes suggested the **mono-trip gas lift (MTGL) completion system** as an alternative solution. The MTGL system allows the completion liner and tubing string to be run in and cemented in a single trip, increasing efficiency, enabling earlier production, and reducing related installation risks.

The MTGL system consists of technologies specially designed to prolong well economic life through gas lift with the lowest possible installation time and cost. Unlike other single trip systems, specially designed cement-tolerant equipment also allows the production tubing and completion tools to be installed prior to the cementing operation further eliminating risk. The pressure-activation design sequence of various completion equipment is also thoroughly calculated to provide sufficient margin and avoid premature activation. Contingency and/or redundancy plans are also in place to avoid any unwanted scenarios. Because it eliminates a trip, the MTGL system performs with minimal health, safety and environmental (HSE) risks. This means less equipment is needed at the rig site and fewer field personnel are required.

For another customer in Indonesia in 2021, the MTGL system was successfully deployed in 68 wells in two different districts, and easily outperformed conventional dual-trip operations. The completions, which were run and cemented in a single trip, reduced rig time up to 24 hours per well. Based on the data comparison, the average duration of a dual monobore completion was 73 hours. The MTGL system, however, averaged 53 hours for the same operation, saving operating and rig time while also saving associated costs. Substantial savings in carbon footprint were also realized through the reduction of installation hours and the elimination of personnel on board.

Challenges

- Reduce time associated with a dedicated liner and cementing trip
- Drive operational efficiencies to reduce number of trips required

Results

- Performed 68 MTGL installations in two districts
- Saved an average of 20 hours per well when compared to dual trip completions
- Mitigated HSE risks by having fewer field personnel at the rig site
- Reduced CO_2 emissions associated with rig activities and reduced POB
- Saved overall operational costs by an estimated 55%
- Experienced no nonproductive time (NPT)