TAQA

Case Study:

Remedial sand control solution outperforms standard screens

Successful deployment within a sliding sleeve in a high-rate gas well regains sand control integrity after Filtrex installation.

Well Data

Location: Offshore Brunei

Well Type: Gas Producer

Installation Date: August 2022

Lower Completion: OHGP (~96m Open Hole) with 40/60 gravel size and 150 micron WWS

Inclination: 65 Degrees

Gas Rate: 7 MMscf/d

Tubing Size: $3^1/_2$"

Background

A major Bruneian operator installed Filtrex in Well A, a high-rate gas well which had been shut in for few months due to high sand production. Well A was drilled and completed with OHGP, 40/60 gravel and 150 micron in November 2015. The well was successfully kicked-off in April 2021, however the production was intermittent at various choke sizes between May and November 2021. Eventually, the well was shut-in in November due to sand production. The well was revisited in March 2022 and sand production was still observed.

The Challenge

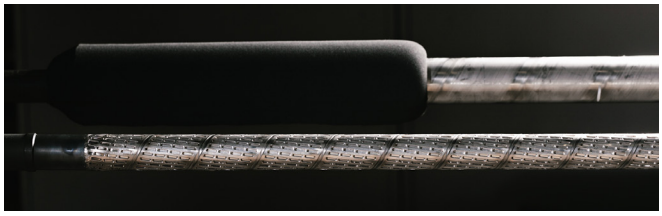
Particle size analysis was performed on the sand produced from Well A which indicated that the gravel pack was potentially compromised as half of the produced sand particles were larger than 58.6 micron. Another suspected root cause of the OHGP failure was hot spotting which was possibly a result of the rich clay content which was prone to plugging the screen opening. The practices employed by the operator to overcome the issues was performing sand clean out and installing a standard thru-tubing sand screen with 60 micron or 115 micron which had a very short lifespan and did not control the produced sand which was still required to be managed on surface. The operator required a more robust and reliable solution that eliminated the requirement to revisit the well multiple times in a short period of time.

TAQA Solution

TAQA introduced Filtrex to the operator which helped them to regain the well successfully. Filtrex is composed of compressible open cell matrix polymer (OCMP) designed to conform with the inside of the wellbore, filling the annular gap preventing any further sand infill.

Prior to the deployment, the operator requested that perform a sand retention test (SRT) with sand sample collected from Well A. The SRT showed an excellent result where 96% of the injected sand was retained by Filtrex and based on the retained permeability calculation the Filtrex managed to recover to 70% of its initial permeability.

A 2.5m Filtrex was selected for this application for the operator to regain the sand control in existing completion. The deployment was performed with a slickline unit setting Filtrex across the Sliding Sleeve (SSD) withstanding high gas production rates.



Project Results

After Filtrex installation, Well A showed no sign of sand production at surface. The well is currently producing at ~7 MMscf/d gas which was beaned up to 5% to date. Further deployments are planned.