



/ Expro Excellence DST/TCP

Expro provides TCP Dynamic Underbalance (DUB) and vertical orientation to maximise production



Objectives/background

- Expro was approached by a national oil company to perforate 9 5/8" casing. This required 7" TCP guns
- The customer had low consolidated formation with expected sand production in the direction of a maximum stress of (220 degrees from true north) within the nearly vertical wellbore. To limit the sand production, the customer wanted to shoot 1-180 degree TCP guns perpendicular (90°) to maximum stress to save the expense of gravel packing after perforating
- Also, they wanted to use Dynamic Underbalance (DUB) to properly clean perforations, reduce skin, and maximise production. To prevent perforation tunnel collapse, however, the amount of DUB required was very low (~200 psi). In order to achieve this, the wellbore was slightly overbalanced but the net DUB was negative
- The customer was looking for minimum production of 2500 BD

Competitor solutions were limited to 30° well inclination with $\geq 5^\circ$ accuracy at three times more cost than conventional TCP cost

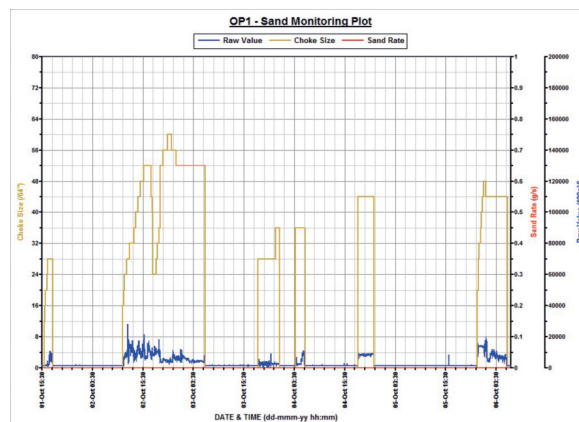
- Modelling using SPOT software proved that a minimum 6 spf at 0-180 degrees were required in order to meet the customer's desired production rates

Value to client

- Expro was able to successfully provide an engineered solution on time and under budget
- Customer's production rates exceeded expectations. Production rate with no sand production has maintained for ~1 year
- DUB guns shot in the required direction with $\pm 0.9^\circ$ error eliminating sand production issues and ensuring cost savings in the region of ~\$600k on competitor offerings
- Expro's surface well test report showed zero sand production during well uploading and production

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- Traditional orienting applications are limited to highly deviated or horizontal wellbores. In vertical wells where the orientation is typically limited to centralisation or decentralisation of perforating guns, a non-conventional engineering solution was required
- Expro proposed a solution utilising a conventional TCP string with 3rd party gyro and UBHO sub - this aligns the top shot with phasing accuracy less than 1° in the given well inclination.



Cost saving



Bespoke solution



Contact

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