

Preventing ceramic proppant flowback from carbonate reservoir

Wells equipped with 3M™ Ceramic SSD Protectors

Customer challenge

- ▶ Site was a fracked well, perforate, stimulate, isolate (PSI) completion, with proppant flowback issues.
- ▶ The pup joints set across the stimulated perforations wore out after only two hours.
- ▶ There was a loss of productivity due to the fact that the sliding side door (SSD) could not be set across the perforations for risk of erosion.
- ▶ There was a need for an erosion resistant device to protect SSD integrity.
- ▶ In order to increase the productivity of the well, it was necessary to set the SSD across the perforation.

Why ceramic sand screens?

- ▶ Reduced capital expenditure (CAPEX): no need for frac pack
- ▶ Increased well lifecycle longevity helps lower CAPEX
- ▶ Increased production envelope enables higher production rates
- ▶ Suitable for oil or gas wells expecting high risk of erosion due to high production rates

Results

Three wells were equipped with 3M™ Ceramic SSD Protectors

- ▶ Production rates: up to 6000BBD
- ▶ No erosion on the production string
- ▶ Integrity of the completion was preserved
- ▶ Minimized pressure loss

Customer key decision drivers

- ▶ Economically draw down the entire production from each zone
- ▶ Expected longevity of ceramic sand screens
- ▶ Optimized productivity while meeting local environmental regulation
- ▶ Reduced health, safety, and environment (HSE) risks
- ▶ 3M ceramic SSD protectors offered an economical alternative to other options, including new completion methodologies



Technical references

SPE-176225-MS: Cased Hole Ceramic Screen Cutting Completion Cost for Marginal Reservoir: Application in Tunu Field

OTC-25106-MS: An Innovative Approach of Revival for Damaged Wells in High Erosive Environment Using Ceramic Sand Screens – BG Group

SPE 146721: An Innovative Milestone in Sand Control – Maersk Oil & Gas

SPE 160327: Ceramic Sand Screens for Sand Control in Unconsolidated Reservoirs (with Fines Content) – RAG

SPE 166092-MS: Ceramic Sand Screen: Ceramic Sand Screen - An Innovative Downhole Sand Control Solution for Old and Challenging Cased Holes – BG Group

MOC-Egypt-April 2016: Ceramic Sand Screen Systems - A Unique Downhole Solution for Sand Control

Sand Control with Ceramic Screens in Unconsolidated Reservoirs Demonstrated in the Mature Gaiselberg Oilfield. OIL GAS European Magazine, 2/2012, p. 74-78.

SPE-182278-MS: Sand Control in Corrosive and Erosive Downhole Conditions at High Temperatures – 3M Technical Ceramics

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