

# Preventing proppant flowback in high velocity environments

## Well preservation using 3M™ Ceramic Sand Screens

### Customer challenge

- ▶ There was a need to procure an easily deployable sand control solution to preserve the integrity and productivity of the well
- ▶ There was a need to limit the top surface investment
- ▶ The wells were stimulated without capability to cope with proppant flowback at the surface
- ▶ High-velocity environment (100 ft/s) with high risk of erosion

### Why ceramic sand screens?

- ▶ CAPEX reduction: there is no need for a frac pack
- ▶ Increased well lifecycle longevity helps lower capital expenditures
- ▶ Increased production envelope enables higher production rates
- ▶ Suitable for oil or gas wells expecting high risk of erosion due to high production rates

### Results

Two wells were equipped with a 3M™ Ceramic Sand Screen System.

- ▶ A wireline was deployed and hung from a packer then set across the upper perforation zone
- ▶ Production rates: Ca. 25 and 35MMSCFD

- ▶ The wells, equipped with ceramic sand screen system, have been on-line since the end of 2014
- ▶ Since the ceramic sand screens were installed, the wells have continued producing with no proppant flowback seen at the surface
- ▶ Future wells will be completed in the same way

### Customer key decision drivers

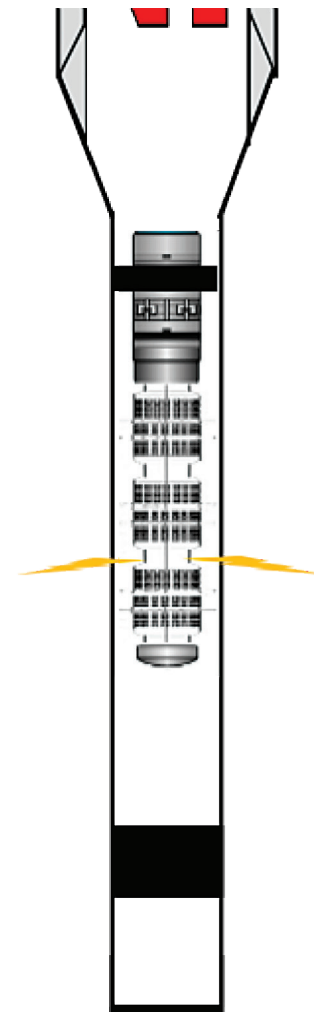
When making a decision regarding 3M™ Ceramic Sand Screens, customers should consider the overall value rather than just the initial cost.

Decision matrix includes:

- ▶ Overall intervention cost
- ▶ Increased longevity potential
- ▶ Optimized production utilizing ceramic properties
- ▶ Simplified logistics and operation

### Economic comparison with other options

- ▶ Stand-alone metallic screen
- ▶ Frac pack
- ▶ Top surface investment (desander)



## 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 Down-Hole 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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