

# Cost-effective production improvements in erosion-prone environments

## 3M™ Ceramic Sand Screens enable efficient sand control

### Customer challenge

- ▶ Customer had wells in an area where erosion was a common cause of production slowdowns and performance issues
- ▶ A full rework of the well is too expensive in the current oil and gas market, so a cost effective rig-less deployment was pursued
- ▶ Hot spotting was a key concern when the screen was placed across the new perforation zone
- ▶ Required a sand screen to optimize productivity throughout the well design life
- ▶ Highly deviated well was at 85° with Dogleg of 5.8°/100ft, where rig-less deployment was challenging

### Why ceramic sand screens?

- ▶ Increased production envelope enables higher production rates
- ▶ Unlocks wells where sand failure has occurred
- ▶ Rig-less operation places the screens directly across the perforations
- ▶ Simplicity of deployment
- ▶ Proven outstanding erosion resistance

### Results

Two wells equipped with 3M™ Ceramic Sand Screens Systems in 2017:

- ▶ Production rates: 2500BBD compared to 100BBD before ceramic sand screen installation
- ▶ Easy rig-less deployment on E-Line with tractor
- ▶ Screens straddled in 5 runs

### Customer key decision drivers

Decision matrix included:

- ▶ Ease of deployment
- ▶ Longevity of the screen in terms of its erosion resistance and ceramic properties
- ▶ Proven suitability of ceramic sand screens for deployment in highly deviated or horizontal wells
- ▶ Ability to maximize productivity with robust downhole sand control

### Economic comparison with other options includes:

- ▶ Maintaining low production rates through the wellhead for manageable sand production
- ▶ Gravel pack at higher CAPEX
- ▶ Higher accepted workover risk by redeploying previous sand control system in the field



Photos courtesy of Exxon Mobil Corporation and Helix ESG

## Technical references

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

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### 3M Technical Ceramics

Zweigniederlassung der 3M Deutschland GmbH  
Max-Schaidhauf-Str. 25, 87437 Kempten, Germany

Phone +49 (0)831 5618-0  
Web 3M.com/ceramicsandscreens

### 3M Advanced Materials Division

3M Center  
St. Paul, MN 55144 USA

Phone 1-800-367-8905  
Web www.3M.com/advancedmaterials

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