

KRYPTOSPHERE LD increases production by over 500 BOPD during recompletion of interval

Post-field trial analysis shows significant production increases in high-stress Colombia well intervals

Near El Morro in Casanare, Colombia

The challenge

Historically, extremely low relative permeability and fluid buildup at the wellhead (condensate banking) have been the primary contributors to restricted production of many wells near El Morro in Casanare, Colombia. While hydraulic fracturing is acknowledged as effectively addressing these and other issues, high in-country costs prompted an operator to identify advanced technologies to enhance well performance and reduce costs, with proppant selection a central focus. In an area where wells are drilled to 16,000 ft TVD (19,000 ft MD), high closure stresses put a premium on exceptionally conductive proppant, and one that likewise can deliver transport capacity and not erode pumping and related equipment.

The solution

After evaluating multiple proppant types and sizes in lab tests to select which one would best meet development objectives, the operator identified the KRYPTOSPHERE® LD ultra-conductive, low-density ceramic proppant as the top candidate for optimizing well performance in two previously completed wells. Along with appreciably higher baseline conductivity than standard intermediate and low-density ceramic proppant, the smooth and uniform shape of KRYPTOSPHERE LD was seen as a viable option for increasing production within specified intervals that were being recompleted.

Well Data

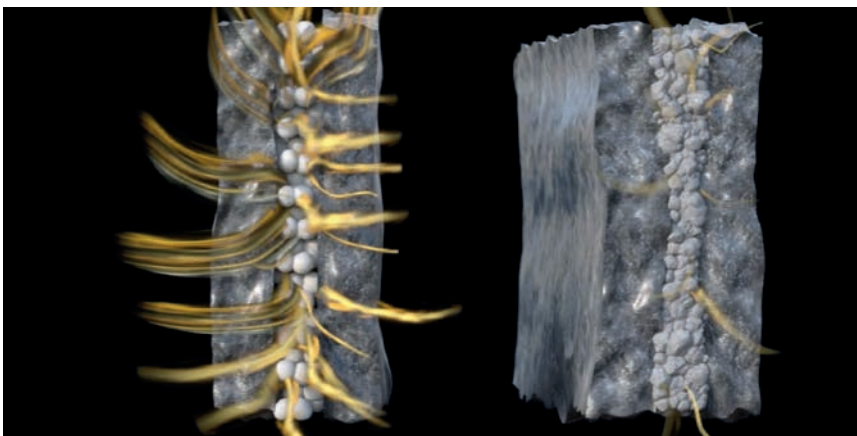
Location: Casanare, Colombia

Operator: Independent

Well type: Vertical condensate well

Formation/Perforation interval: Consolidated sandstone; 16,000 ft TVD

Proppant Type/Size: KRYPTOSPHERE LD ultra-conductive, low-density ceramic proppant; 25-mesh



KRYPTOSPHERE LD delivers higher baseline conductivity in a high stress environment

The application

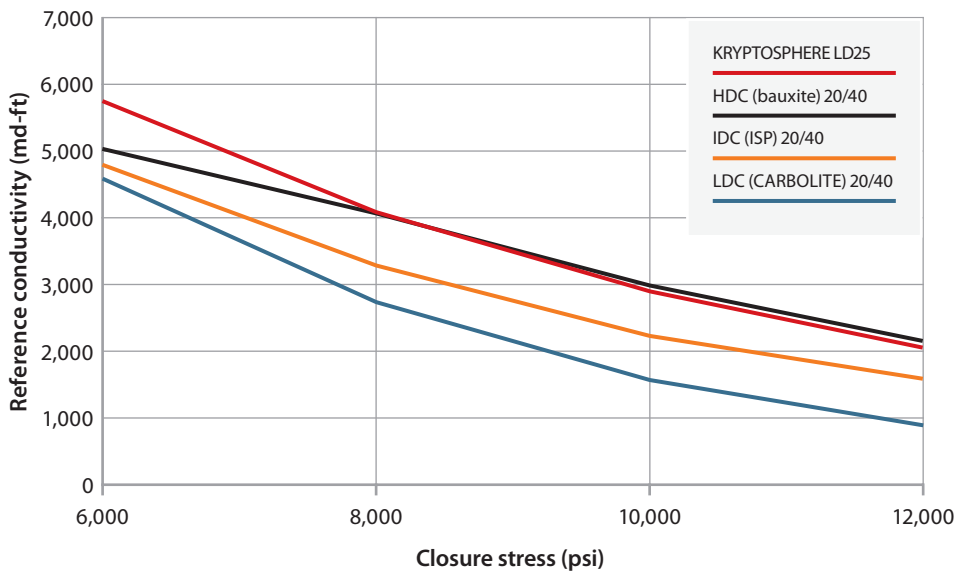
The operator chose two wells in the field to apply this new completion design. The two wells were originally completed with an alternative standard bauxite-based ceramic proppant. These wells were each recompleted in another producing zone with the expectation that these zones would contribute new production to the well. Based on the earlier evaluation, KRYPTOSPHERE LD 25 was used in place of the standard ceramic.

The results

Results of post-frac analysis confirmed KRYPTOSPHERE LD delivered appreciably higher conductivity with a 900 BOPD increase in production in Well 1 attributed to the new interval, and a 500 BOPD increase in production from the new interval in Well 2. A comparative analysis of offset fracture treatments showed these improved production rates and higher transport efficiency without the costs associated with a more abrasive proppant. The intervals continue to hold steady at rates showing minimal decline in production.

	Initial production (BOPD)	Post KRYPTOSPHERE LD production (BOPD)	Production increase (BOPD)
Well 1, Interval A	500	1,400	900
Well 2, Interval B	1,500	2,000	500

Conductivity comparison, 25 mesh vs comparable mesh products



Initial lab tests and modeling conducted by the client showed KRYPTOSPHERE LD technology delivering 40% higher conductivity than the competing intermediate-density ceramic proppant evaluated.

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