

Tartan Successfully Completes Cemented EnerFrac Ball-Drop Systems in the Montney

OBJECTIVE

A multinational producer with horizontal well pads targeting the Montney formation in northeast British Columbia was looking to achieve tighter stage spacing to better exploit the tight dolomitic siltstone. They wanted to run a cemented completion to avoid relying on mechanical packers for stage isolation, and were looking for a more efficient, cost-effective and reliable stimulation operation than what coiled tubing methods allowed due to the target depths.

SOLUTION

The operator chose to run Tartan’s cemented EnerFrac™ single-entry ball-drop system and Cemented Initiation Sub (CIS) technology based on the simplicity and demonstrated reliability of the tools. The CIS is used to reliably initiate stimulation at the toe and both the CIS and EnerFrac sleeves feature BurstPoint™ ports that keep the system internals completely closed during installation and the cementing process. This eliminates the risk of cement invasion into the sleeve mechanism, enabling trouble-free stimulation operations.

The patented EnerFrac hydro-mechanical sleeve is activated by a ball and designed to stimulate individual stages at high rate. Once the EnerFrac sleeve is shifted by an actuation ball, communication with the formation is achieved by increasing liner pressure to fully open the patent-pending BurstPoint ports. This instantaneously releases the energy stored by the hydraulic pressure in the tubing to provide a more penetrating treatment, resulting in a deeper fracture network and increased production.

RESULTS

A 26-stage cemented EnerFrac system was run the Upper Montney well and a 29-stage system was used to target the Lower Montney formation at 175 m deeper. Both systems used 139.7 mm (5.5 in.), 29.76 kg/m (23 lb/ft), P-110 LTC liners. The cemented EnerFrac system design enabled quick and easy installation compared to an open hole completion with packers.

The total proppant pumped per stage was 125 t for the Upper Montney and 110 t for the Lower Montney well (see job summary). The “on-the-fly” ball-drop operation also enabled quick completion of the well stimulation, resulting in increased efficiency and reduced costs. Savings of approximately \$250,000 per well were achieved compared to open hole completions in the same field.

Job Summary		
Formation	Upper Montney	Lower Montney
Stages	26	29
MD m (ft)	3,880 (12,730)	4,070 (13,350)
TVD m (ft)	2,040 (6,690)	2,215 (7,270)
Lateral Length m (ft)	1,820 (5,970)	1,715 (5,625)
Max. Proppant/Stage t (lb)	125 (275,580)	110 (242,500)
Max. Proppant Conc. kg/m ³ (ppg)	370 (3)	255 (2.1)
Avg. Fluid/Stage m ³ (bbl)	1,240 (7,780)	1,320 (8,320)
Max. Frac Rate m ³ /min (bpm)	11 (69)	12 (75)
Max. Frac Pressure MPa (psi)	63 (9,140)	62 (8,990)

ABOUT TARTAN COMPLETIONS

Tartan Completions is a multifaceted energy services company that engineers and manufactures innovative, customized multistage stimulation solutions and provides completions milling services globally. For over 20 years, Tartan has followed the philosophy of engineering our products with simplicity, reliability, flexibility and performance in mind, providing outstanding field service and value to our customers. From design to installation, we continue to meet the high expectations of our customers.

Please contact Tartan Completions for any of your downhole completion system and milling requirements.

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