ESTMZ™ Enhanced Single-Trip Multizone FracPac™ System

Overview

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DID YOU KNOW

SAFE DRIVING STARTS AND ENDS WITH CLICKING AND COMPREHENDING.

When it comes to driving, it’s the little things that often make the biggest difference. Like fastening your seatbelt before you take to the highway. According to the U.S. National Highway Traffic Safety Administration, seat belts reduce serious crash-related injuries and deaths by roughly 50%. That’s a huge number for such a simple action.

Another smart but simple thing safe drivers practice is reading comprehension. Not just reading every single highway sign, but understanding and acting on them all. Obeying signs saves time and speeding tickets. It also alerts you to dangers that can easily cost you your life.

At Halliburton, solving customer challenges is second only to keeping everyone safe and healthy. You can find more safety tips at www.halliburton.com/HSE

Driving Safety
What is it?

Halliburton’s Enhanced Single-Trip Multizone (ESTMZ) FracPac™ System is a downhole tool system that allows the stimulation and gravel packing of multiple zones in a single trip of the work string into the well bore.

- Treat and pack multiple zones in one trip
- Isolate zones from each other
- Access zones for treatment
- Open zones for production
Stack-Pack Multizone Completions

- 8 trips
- 3 perforating runs
- 2 cleanout trips
- 3 pickling operations
- Formation exposure to fluids
- Lots of time and $$$$
Halliburton STMZ™ Single-Trip Multizone Sand Control Completion

- Introduced in 1993
- Saves time and trips
- Run in China, Indonesia and Italy
- >300 jobs with >1,000 zones
- 6,000 psi rated – low rate packs
- Two inner strings – space-out seals
Enhancements?

- 10,000 psi pressure rating
- 45 BPM frac pack rating
- 3,750,000 lbs of proppant (cumulative), 16/30 high-strength proppant, 750,000 lbs per zone
- 4.75 inch minimum ID
- Formation isolation
- Easier to run
Time Savings Analysis
12,000’ Well Depth – 3 zones

ESTMZ Installation
- 15-38 Rig Days
- 4 Work String Trips
- $22,800,000 Estimated Rig Costs

Stacked pack
- 21-68 Rig Days
- 8 Work String Trips
- $40,800,000 Estimated Rig Costs

ESTMZ can save
$18,000,000
Time Savings Analysis
25,000’ Well Depth – 3 zones

**ESTMZ Installation**
- 24-65 Rig Days
- 4 Work String Trips
- $39,000,000 Estimated Rig Costs

**Stacked pack**
- 46-144 Rig Days
- 8 Work String Trips
- $86,400,000 Estimated Rig Costs

ESTMZ can save
$47,400,000
Candidate Selection

- 9 5/8” 47 – 53.5 ppf ID casing
- 7” 29 – 32 ppf ID casing
- 8-1/2” open hole - consolidated
- Multiple zones – 2 to 5…various lengths okay
- Similar pressure gradients
- Sand / hydrocarbon influx controlled
- Zone spacing: ~3,200’ max and ≥45’ between zones
Where it Will Work

- Ultra-deepwater environment at depths of 30,000 feet
- Shallow multizone sand control completions
- Domestic United States – Gulf of Mexico
- International environments – Far East
Challenges Addressed

- Improve net recovery from new and old fields by allowing the completion of layered zones and stringers previously bypassed
- Access deep water and deeply buried access by improving the economics of ultra-deepwater and deep reservoirs
ESTMZ™ System

• Treat and pack multiple zones in one trip
• Isolate zones from each other
• Access zones for treatment
• Open zones for production
ESTMZ Installation

- The sump packer is set
- All zones are perforated
- The perforations have been de-burred and the hole clean
- Fluid loss and cross-flow are stopped
- Make-up, test and space-out ESTMZ system
- Run in the hole and sting into the sump packer
- Set the VCH (top) packer
- Set the isolation packers
- Perform work string pickle operation
FracPac Tool Assembly
(Frac Sequence)

• Pressure test the service tool
• Perform treatment on the lower zone
• Reverse-out and test
• Perform treatment on the middle zone
• Reverse-out and test
• Perform treatment on the upper zone
• Reverse-out and test
• Pull out of the hole
ESTMZ™ Production Options

- Production seals
  - Intervention to open production sleeves
- Intermediate completion string
  - Hang from a packer
  - Fluid loss valve
  - Shifters to open sleeves
  - Seal MCSZ closing sleeves
  - Perforated tubing for commingled flow
  - DuraSleeves® sliding sleeve for selective flow
- SmartWell® system with ICV’s
Real Time Visualization Service

RTVS is a multi-faceted program that utilizes a stepped process to aid in completion planning, provide real time monitoring of down-hole tool movement during the completion process, and provide replay capability; for analysis after the completion process.
Who to Contact, Where to get more information

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