

Xtreme Single-Trip Multizone (XSTMZ™) System

EFFICIENTLY AND RELIABLY STIMULATE AND GRAVEL PACK LONG PAY ZONES IN EXTREME CONDITIONS

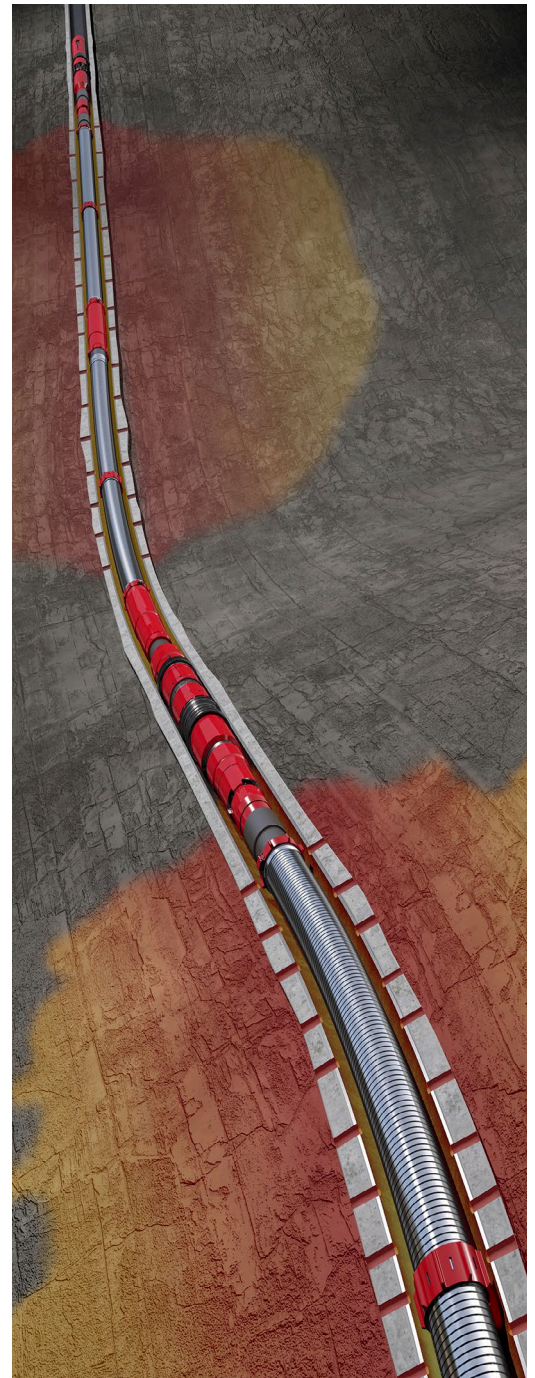
OVERVIEW

In order to meet the evolving requirements of deep and ultra-deep water projects, particularly in the Gulf of Mexico Lower Tertiary, operators need an increasingly robust single-trip multizone system. Halliburton has developed a 15,000 psi Xtreme Single-Trip Multizone (XSTMZ™) system to complete wells in those extreme conditions. With this increased pressure rating compared to the highly successful Enhanced Single-Trip Multizone (ESTMZ™) system, the XSTMZ system can handle higher screenout pressures providing an increased proppant placement capability and making it applicable to deeper wells and those requiring higher pump rates. It also provides the ability to create zonal compartments for better stimulation of long pay zones with high differential pressures between them. To help maximize reservoir production and asset value, the XSTMZ system can be integrated with the SmartWell® 15K system which includes feed-through production packer for zonal isolation and interval control valve (ICV) for zonal control. The use of intelligent completions helps increase production by commingling produced fluids from different reservoir zones, increasing and accelerating production. Selective zonal control enables effective management of water injection, gas and water breakthrough, and individual zone productivity while maximizing ultimate recovery.

Halliburton's vast experience, know-how and lessons learned from our field proven ESTMZ system through the years, and particularly in the Lower Tertiary, give us the advantage and ability to deliver the XSTMZ system. It is designed to deploy and operate with the same reliability and efficiency of the ESTMZ system, plus the power to go beyond the current capabilities with a 50% increase in pressure capacity rated up to 15,000 psi. The XSTMZ system can frac pack multiple zones at higher pump rates and larger proppant volumes with a significant reduction in pipe trips. It also offers lower abandonment pressure making it possible to increase ultimate recovery of reserves for new and existing wells in ultra-deepwater zones. This increase in power provides tremendous economic benefit to the profitability of deeper and more difficult wells while also saving days of rig time.

BENEFITS

- » Improves productivity with more aggressive fracturing designs based on the increased pressure rating
- » Increases ultimate recovery of reserves by driving down abandonment pressure
- » Saves rig time by isolating and treating several intervals within a single trip, without setting packer plugs
- » Optimizes production and improves field management by integrating SmartWell system to remotely control compartments or zones
- » Reduces operational risk through established and proven ESTMZ system procedures
- » Live-annulus monitoring system for improved fracture design and evaluation
- » No over-displacement of stimulation treatment to maximize fracture connectivity due to the reverse-out capability in the event of a screenout



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FEATURES

- » Fully rated 15,000 psi system, qualified as per API-11D1 (packers), API-19AC (accessories), and ISO-17824 (screens)
- » Up to 45 BPM stimulation rate with 3,750,000 lb total amount of high-strength proppant
- » Multi-position crossover tool including the ShurMAC™ reciprocating weight-down positioning tool
- » PetroGuard® Modular screen provides formation isolation with mechanically shifted sleeves
- » Real-Time Visualization Service (RTVS™) software for pre-job planning and real-time monitoring

HOW IT WORKS

The XSTMZ system’s modular screen and packer system provides the ability for a fixed-length service tool to isolate and treat multiple zones within the reservoir on a single workstring trip. By saving multiple days of rig time, as well as reducing risk, the cost savings to the operator is tremendous compared to a conventional stacked-pack completion. The operational sequence is identical to the ESTMZ system with the ability to set all the isolation packers

at the same time and to test and verify that all the packers are set. The service tool system allows for monitoring the annulus pressure in the weight-down position as well as providing reverse positions to ensure all excess slurry is removed from the wellbore in a timely manner.

By delivering a higher differential rated system anticipated by the industry, the XSTMZ system supports two different phases in the life of the well—completion operations, such as frac packing, and production operations resulting from drawdown and depletion pressures.

With reservoir characteristics including low permeability, thick pay sections, high initial reservoir pressures, and deeper wells, these factors indicate why a higher differential rated system is needed. This results in higher differential pressures across the sandface completion at screenout. The XSTMZ system anticipates and meets this need—offering the additional capacity to sustain and increase the rate and effectiveness of the treatment to deliver very productive wells like its predecessor, the ESTMZ system.

Specifications

	ESTMZ™ System	XSTMZ™ System
Casing Size (in.)	9 5/8 (47-53.5 ppf) or equivalent 8.5	9 5/8 (47-53.5 ppf) or equivalent 8.5
Differential Pressure (psi)	10,000	15,000
Bore Size (in.)	4.75	4.75
Maximum Pump Rate (BPM)	45	45
Maximum Proppant Volume (lb)	3,750,000	3,750,000
Screen Type	Wrap-on-pipe or premium mesh	Wrap-on-pipe or premium mesh
Service Tool System	Multi-position with ShurMAC™ collet	Multi-position with ShurMAC collet

Based on erosion characteristics of Carbo Ceramics CARBOHSP® proppant

Proven Technology:

OTC-27222-MS: The Successful Development and Installation of a New Single-Trip Multizone Completion System Developed for the Deepwater Gulf of Mexico Lower Tertiary Formation

OTC-27748-MS: The Qualification Methodology Behind an Integrated Multizone Frac Pack and Intelligent Completion for the Lower Tertiary

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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