SPECTRUMSM Intervention Services

PRECISION, PERFORMANCE, AND OPTIMIZATION THROUGH REAL-TIME SENSING BHA

SPECTRUMSM Real-Time Coiled Tubing Services combines intervention and diagnostic services to help operators monitor and optimize job performance in real-time, resulting in greater efficiency, increased reliability, and higher return on investment.

OVERVIEW

SPECTRUMSM Intervention Services optimizes coiled tubing well intervention by providing critical real-time data from a customizable bottomhole assembly (BHA). Unlike standard coiled tubing jobs where surface-measured parameters, such as pipe weight and circulating pressure, are the only available data, SPECTRUM Intervention Services delivers real-time subsurface insight from where the treatment is being applied, along with data from the surrounding downhole environment.

This modular system can be configured to deliver key measurements (such as pressure inside and outside the tool, temperature, depth from casing collar locator and gamma ray, inclination, tool face, tension/compression and torque), resulting in the ability to maximize a single trip downhole and adapt to near-wellbore conditions in real time to optimize fluids and tool performance. The information is transmitted to surface via telemetry systems, such as fiber optic, with no impact on overall service execution. The data can be used to measure what is going on below the surface, as a detailed snapshot or as a more comprehensive trend over a certain period of time.

APPLICATIONS

» Milling  
» Manipulating mechanical tools  
» Wellbore cleanouts  
» Unloading  
» Fishing  
» Perforating (tubing-conveyed perforating and hydrajetting)  
» Multilateral entries  
» Stimulation accuracy  
» Conformance (water or gas shutoff)

ADVANTAGES

» Help improve reliability and reduce nonproductive time  
» Invisible to coiled tubing operations  
» High flow rate capability  
» Chemical-resistant  
» Real-time decision-making capability

FEATURES

» Fiber-optic, wireless, or electric cable  
» Depth correlation with casing collar locator (CCL)  
» Depth correlation with gamma ray (GR)  
» Internal and external pressure and temperature  
» Tool face and inclination  
» Torque, tension, and compression

RATINGS

» 350°F (175°C)  
» 15,000 psi
HOW IT WORKS

Data transmission from the BHA is established via a selection of wired or wireless telemetry systems. The compact size of the wired telemetry allows all regular operational parameters— including pump rates, tolerance to corrosive fluids, and ball-drop capability— to be maintained with minimum added weight for road transportation or offshore lifting purposes. The BHA includes flow-through tools that accommodate sensors rated to 350°F (175°C) and 15k psi absolute pressure. At surface, the information is processed to allow visualization in the operator’s control house, as well as broadcasting via satellite communication to global users. This capability permits customers, subject matter experts, and decision makers to be simultaneously and immediately alerted to current downhole events and to quickly arrive at informed decisions on the most appropriate course of action.

ADVANTAGES

By using real-time data, SPECTRUM Intervention Services reduces uncertainty during operations and increases reliability by keeping coiled tubing tools and equipment in their optimal operating envelope to avoid failures. For example, depth is accurately controlled with the casing collar locator and gamma ray technology, helping to eliminate doubts on where to perforate or set a packer. Real-time temperature monitoring improves insight of downhole conditions and allows optimization of chemical treatments. The modular system of sensors can be combined and customized to meet the demands of the most complex coiled tubing operations.

Specifications

<table>
<thead>
<tr>
<th>Available sizes</th>
<th>2-1/4 in., 3-3/8 in.</th>
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<tbody>
<tr>
<td>Absolute pressure rating</td>
<td>15,000 psi</td>
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<tr>
<td>Temperature rating</td>
<td>350°F (175°C)</td>
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<tr>
<td>Maximum pump rates (clean fluid)</td>
<td>2.2 bpm, 8.3 bpm</td>
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<tr>
<td>Maximum pump rates (abrasive)</td>
<td>1 bpm, 3.6 bpm</td>
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<tr>
<td>Ball-drop capability</td>
<td>9/16 in., 1 in.</td>
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<tr>
<td>Rating for shock and vibration</td>
<td>Perforating, milling, and fishing</td>
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<tr>
<td>Environmental</td>
<td>Zone II ATEX certified, H₂S/CO₂ and abrasion resistant</td>
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For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com.