UltraSlim™ Logging Tools and Deployment System

Halliburton’s UltraSlim™ logging service delivers the same, high-quality data you would expect to get from full-size tools, but with a much smaller 2.35-in. diameter. Every UltraSlim logging tool is fully characterized, which means that you never have to choose between data fidelity and tool size. These tools provide the accuracy of traditional wireline logging but are designed to be deployed through drillpipe. The suite includes array induction, neutron, density, and sonic tools.

The UltraSlim Logging system offers multiple conveyance options. Data can be acquired in real time when run on wireline, or it can be deployed on slickline, coiled tubing, or the end of drillpipe by using our UltraSlim Smart Conveyance. In this conveyance mode, the data is stored in memory to be retrieved on the surface after the logging pass. This system enables the tools to be pumped down through drillpipe, catch the end of the pipe, and then extend beyond it. This eliminates the need to push tools past obstructions that might damage them. The last tool catches on the end of pipe. The well is logged as pipe and the tool string are retrieved to surface. The UltraSlim system has a self-diagnostic mode that runs the tools through tests to ensure the sensors, memory, and mechanical components are operating correctly. After the self-diagnostic is complete, the tool detaches from the wireline, signaling that the logging operation is ready to begin. This capability prevents wasted logging trips with tools that might not be functioning properly, avoiding unnecessary trip time and delays. This also gives the operator confidence that the data collected will be as accurate as possible.

With UltraSlim logging services, you can easily achieve reliable logging in challenging applications with data quality you expect from full-size tools. No other company offers the same portfolio of highly characterized small-diameter tools.

Delivering the same quality logs as conventionally sized tools, our UltraSlim logging tools are available for holes with diameters up to 12.5 in. They are environmentally corrected and fully characterized for:

- Hole Size
- Mud Weight
- Mud Type
- Potassium Content of Mud
- Centered/Eccentered

This log illustrates two passes from two different UltraSlim™ quad-combo tool strings (four passes in all) together with data from a LOGIQ™ quad-combo run. All UltraSlim logging passes were recorded at 45 fpm, while the LOGIQ data were recorded at 30 fpm. The high-fidelity UltraSlim logging data perfectly matches the full-size tool data.

Benefits

- Provides fully characterized logging data from a small tool string
- Provides conveyance options to fit wellbore circumstances
- Provides self-diagnostics to ensure the tool string is operating correctly prior to wireline detachment in memory mode

Applications

High-quality logging in challenging situations such as:

- Bypass cave-ins or well obstructions
- Squeeze through tortuous high-angle wells
- Severe S-curve or doglegs
- Pump down into long horizontals
- Acquire high-quality data in small-diameter wells
Dimensions and Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Temperature</td>
<td>300°F (148.9°C)</td>
</tr>
<tr>
<td>Maximum OD</td>
<td>2.35 in. (5.96 cm)</td>
</tr>
<tr>
<td>Maximum Pressure</td>
<td>14,000 psi (96.52 MPa)</td>
</tr>
<tr>
<td>Minimum Hole</td>
<td>3.125 in. (7.94 cm)</td>
</tr>
</tbody>
</table>

Recommended Maximum Logging speed when running full suite: 60 ft/min (18.3 m/min)

For more information, and to view our video, please visit www.halliburton.com/ultraslim

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