Cement Bond Log (CBL) Logging Services

Accurate Cement Evaluation In Any Downhole Environment

Halliburton's Cement Bond Log tools reveal the effectiveness of cementing operations.

- Evaluate cement bond to both pipe and formation
- Indicate channels or intervals with only partial bond
- Locate free pipe and top of cement

With more than 75 years of experience, Halliburton has the right tools and the superior on-site capabilities to provide reliable cement bond logs in any downhole environment.

Full Suite of Tools

Halliburton's array of nine different CBL tools produce accurate bond logs in any casing size – from 2 in. to 20 in. – over a wide range of temperatures and pressures.

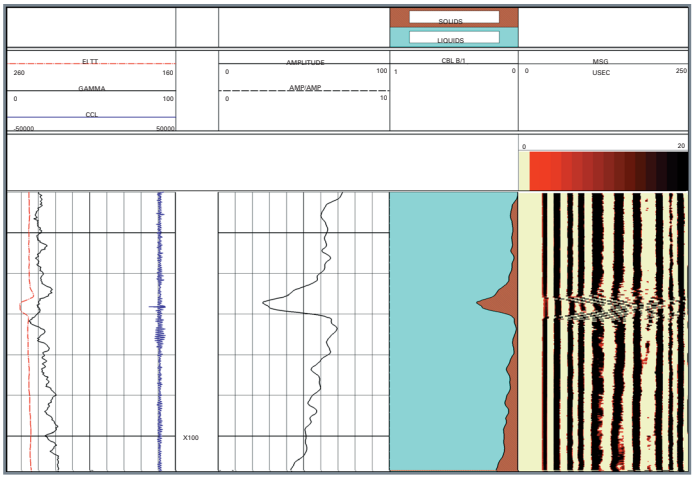
Bond Logs in Hostile and Slimhole Environments

Haliburton's Hostile Full Wave Sonic tool can provide reliable bond data in temperatures up to 500°F and pressures as high as 25,000 psi. And with an OD of just 2.75 inches, the HFWS is also ideal for slimhole applications.

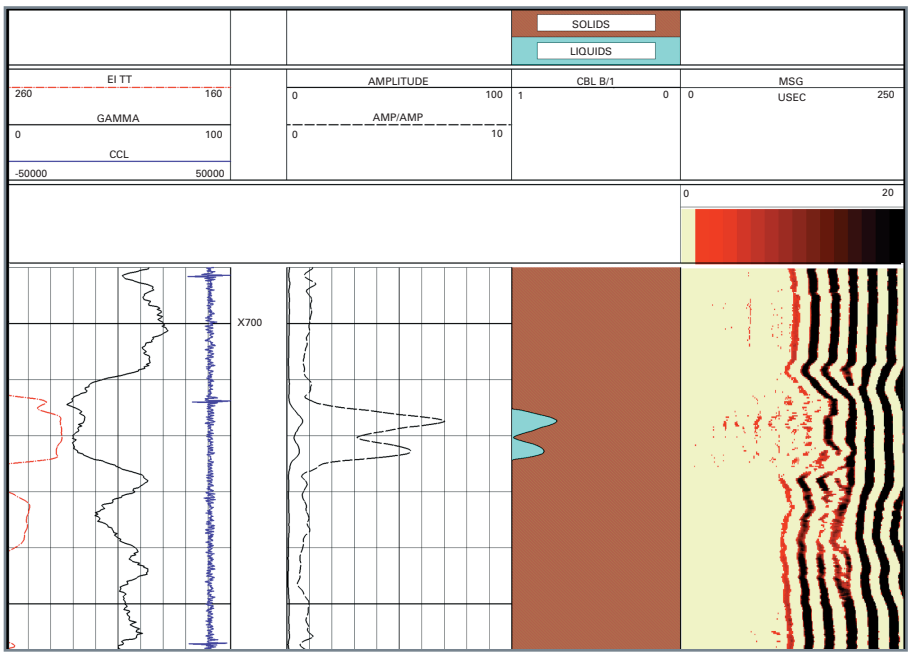
Superior Wellsite Presentations

Real-time results can be presented in a variety of formats to match specific wellsite operations. The wellsite engineer can switch between formats during logging for optimal viewing.

The cement bond logs shown below utilize acoustic data to determine the degree of cement bonding to the pipe and formation. Primary log presentations include pipe amplitude curves in Track 2 and a Micro-Seismogram® (MSG) waveform in Track 4. Amplitude curves are used in the calculation of percent of bond to the pipe while the MSG reveals qualitative information on both the pipe and formation bond.



This cement bond log is across a section containing free pipe. The log exhibits a classic MSG signal of very straight lines with a casing collar pattern near the center of the log. The volumetric map shows approximately 97% liquid while the amplitude curve is reading between 60 and 70 mV, revealing that there is virtually no cement present in this interval.



This cement bond log shows a fully bonded section. Note the low amplitude signals in track 2 (approximately 1 mV) and the absence of pipe signals in Track 4 of the MSG. The volumetric map in Track 3 shows 100% solid material except for a small section in the middle, where it is approximately 70% to 75% bonded. Formation signals in the MSG waveform indicate cement bond to the formation.

Halliburton's suite of CBL tools provide reliable bond logs in casing sizes from 2 in. to 20 in. These are 3 of the tools commonly used.

CBL TOOLS

	Cement Bond Logging Tool (CBT-EA™)	Full Wave Sonic Tool (FWST-A™)	Hostile Full Wave Sonic Tool (HFWS-A™)
Max Temperature	350°F (177°C)	350°F (177°C)	500°F/6hr (260°C/6hr)
Max Pressure	18,500 psi (127,600 kPa)	20,000 psi (137,900 kPa)	25,500 psi (172,400 kPa)
Max OD	3.25 in (83 mm)	3.63 in (92 mm)	2.75 in (70 mm)
Recommended Min Csg/Tbg ID	4 in (102 mm)	4.13 in (105 mm)	3.5 in (89 mm)
Recommended Max Csg/Tbg ID	13.38 in (340 mm)	20 in (508 mm)	12 in (305 mm)
Length	18.04 ft (5.50 m)	20.41 ft (6.22 m)	30.22 ft (9.21 m)
Recommended Logging Speed	30 ft/min (9.1 m/min)	30 ft/min (9.1 m/min)	30 ft/min (9.1 m/min)