

Summary

The evaluation of cement bonding and zonal isolation is a challenge that the oil and gas industry face as wells are drilled deeper and within more hostile environments. This seminar will cover the use of both sonic and ultrasonic tools to determine the presence or lack of a cement sheath. The quality of the cement sheath is not only important for completion efforts but may also be needed to satisfy regulatory requirements. The cement Basic tool theory, quality control, interpretation of field logs, and methods of evaluating both complex cements and difficult environments will be covered. Both new and well abandonments cement examples will be examined and evaluated.

Learning Outcomes

Participants will learn to:

1. Evaluate and QC of standard cement bond log
2. Evaluate and QC of radial and segmented cement bond log
3. Evaluate and QC of ultrasonic and rotating bond logs
4. Analyze cement evaluation logs to determine TOC and channels
5. Determine complex completions and cements using computer programs or processes
6. Distinguish common pitfalls in cement evaluation

Duration and Training Method

A virtual classroom course divided into 2 webinar sessions

Course Content

1. Tools Covered
 - a. Sonic
 - b. Cement Bond Log
 - c. Radial Bond Log
 - d. Segmented Bond Log
2. Ultrasonic
 - a. Scanning Ultrasonic
 - b. Newest Generation Ultrasonic
3. Standard cement evaluation for the covered tools
 - a. Calibrations
 - b. Quality Control
 - c. Interpretation of field logs
4. Environmental effects on logs responses for the covered tools

- a. Thin cement sheaths
 - b. Third interface echo
 - c. Microannulus
 - d. Borehole shape
 - e. Fast formations
 - f. Cement curing time
5. Advanced cement evaluation
- a. Derivative analysis
 - b. Raw data
 - c. Composite
6. Advanced Waveform Analysis
- a. CBL
 - b. Multiple waveforms
 - c. Radial
 - d. LWD
7. Sophisticated analysis
- a. Well abandonment
 - b. Multistring
 - c. Shale barrier