

# **CEMENT EVALUATION LIMITATIONS IN SOLUTION MINING AND HYDROCARBON STORAGE WELLS**

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## **ABSTRACT**

A variety of acoustic-type cement evaluation tools can be used to evaluate the quality of cement placed outside a string of casing in a solution mining or hydrocarbon storage well for structural support and a barrier to vertical fluid migration. These tools were designed primarily for the oil and gas industry where protection casing sizes typically range between 4½ and 13¾ inches O.D. Tool modifications, with limited availability, have been developed for evaluating cement quality in casing sizes greater than 13¾ inches O.D. Solution mining and hydrocarbon storage wells have protection casing sizes that generally range between 13¾ and 24 inches O.D.

This paper discusses the limitations imposed by large casing sizes on both the acoustic amplitude and the ultrasonic frequency measurements. A summary of all the major factors limiting cement quality measurements has been included as a reference.

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