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Sound Engineering, Planning & New Drilling Technology Drills a Salt Cavern Well in Record Time

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**Spring 2005 Conference
17-20 April
Syracuse, New York, USA**

SOUND ENGINEERING, PLANNING AND NEW DRILLING TECHNOLOGY DRILLS A SALT CAVERN WELL IN RECORD TIME

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ABSTRACT

Starks Gas Storage L.L.C., a subsidiary of EnCana Gas Storage, Inc. recently drilled a salt cavern well as part of the Starks Natural Gas Storage Project in Calcasieu Parish, Louisiana. Thorough engineering, detailed planning, and the use of new drilling technology resulted in a cavern well that met safety and operational specifications and was drilled in record time.

The well was drilled for brine production and was specifically located to maximize salt extraction while avoiding close proximity to old sulphur mining wells that might contribute to lost circulation and other problems.

Planning for the well drilling included a through analysis of dome geology and an evaluation of the records for the previously drilled salt cavern wells on the dome. Contingency plans were prepared for minor and major lost circulation during drilling; alternative casing designs and cements were also specified if lost circulation occurred. Finally, special connections were selected for some of the large casings to shorten run time.

In an effort to drill the well safely, efficiently, and as straight as possible, a number of drilling techniques were analyzed. A new, automated, self correcting Vertical Drilling System (VDS) was selected; the first application of this tool to drill a salt cavern well.

This paper describes some of the engineering, planning, and analysis done prior to spudding and summarizes the drilling operation, accomplishments, and lessons learned with the VDS drilling tool.

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