

## **A CASE HISTORY OF SUCCESSFUL TUBULAR CUTS USING A WIRELINE CONVEYED DOWNHOLE ELECTRIC CUTTING TOOL**

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### **Abstract**

This paper describes the methodology and experience of a salt cavern storage operator in selecting and using cutters to cut the 5-1/2 in. dewatering strings from two salt caverns. A description of the unsuccessful cut attempts made using a chemical cutter and the successful attempts made using the downhole electric cutting tool (DECT) are included. The cuts made using the DECT were the first attempted and first successful cuts by the tool in the United States.

When selecting a cutting tool to cut tubing, drill pipe, or other tubulars in wellbores, there are multiple cutters to select from, including tubing conveyed mechanical cutters, wireline conveyed chemical cutters, and wireline conveyed explosive cutters. The wireline cutters, including explosive cutters and chemical cutters, have traditionally been the least expensive cutters to operate. However, both cutters have higher risk than mechanical cutters. Both explosive cutters and chemical cutters present some risk to the personnel handling them on the surface and explosive cutters present a risk to any object outside the tubular being cut, specifically production casing. Mechanical cutters pose no risk to personnel handling them on the surface, they pose no risk to outside casing strings during cuts, and they generally have a success rate comparable to chemical or explosive cutting tools. However, mechanical cutters have historically been more difficult and expensive to run since they were conveyed on tubing strings (snubbing or coiled tubing).

Ideally, the perfect cutter would combine the reliability and low risk of the mechanical cutter with the low cost and ease of operation of wireline conveyed tools – in other words, a wireline conveyed mechanical cutter. The downhole electric cutting tool (DECT) is a wireline conveyed mechanical cutter. This tool was developed in 2003 and has successfully completed 58 cuts in the oil and gas industry. This paper describes the first two successful cuts with the tool made in the United States.

**Key words:** Cavern Testing, Caverns for Gas Storage, Gas Storage, Sonar, Mississippi, Well Design, Drilling, and Completion