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MEETING PAPER

FINDING SALT EDGES

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Abstract

Geophysical data to find the edge of the salt body include surface gravity and seismic surveys. Gravity is faster, cheaper and safer. The low density of salt provides the contrast with most surrounding rocks, particularly anhydrite and carbonate caprock. There is a direct correlation between the size of the anomaly and the width of a dome, given its depth.

Seismic surveying utilizes the contrast between the high-velocity of salt and the usually-lower velocity of surrounding rocks. Direct observation of this contrast, by refraction of the seismic waves, often requires a surface line too long for the salt body. Reflections from the contrasting layers is more efficient except where the top of salt has been naturally leached into shallow non-reflective karst or sinkholes.

Considerable savings in processing for overhangs can be obtained by one-sided stacking as compared with full migration before stack.

Attempts to drill the cavern well and then find the salt with a vertical seismic survey, while attractive, lead to practical difficulties. The expensive cavern well cannot be properly designed. Any reduction found from optimistic assumptions leads to performance degradation and the possible loss of a valuable storage site.