Geological Framework



Structural Overview

Geomechanical Requirements

by Stefan Folle

- Structural Impact on Solution Mining
- Geological Tightness Considerations
 - Exploration Techniques

Gas Storage in Salt Caverns - SMRI Fall 2001



Bedded Salt









Domal Salt





Tectonic Structures







Combined Structures





Combined Structures





Requirements on Thicknesses





Undesired Strata of Insolubles





Limitation of Depth





Types of Rock and Geometry









Types of Rock and Geometry









Density Profile



Structural Impact on Solution Mining



Development of Anomalies



Structural Impact on Solution Mining



Structural Influence - Anhydrite





Structural Impact on Solution Mining



Structural Influence - Potassium Seam





Fabric of Salt



gas / fluid "bubbles" in halite matrix





Fabric of Salt



movement of fluids along halite - halite contact

H

... with insolubles



Insolubles

porosity in anhydrite







Insolubles



porosity in seam of high solubility



Gas Storage in Salt Caverns - Geological Framework

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Faults

interpreted faults in cover rock and salt





Faults

... in anhydrite

... at contact of salt / insoluble layer





Karstification



pipe





Karstification

sink holes









Seismics

assessment of salt occurence







Seismics





Oriented Coring



Gas Storage in Salt Caverns - Geological Framework

core scanner



Oriented Coring





Image Logs





Image Logs





EMR - Logging Tool



