

**ESTABLISHING QUANTITATIVE BASIS FOR
DESIGN AND OPERATION OF SOLUTION CAVERN FIELD**

Part 1: Effective Use of Well Logging Data

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1.0 INTRODUCTION

A method is sought to develop the quantitative basis for geomechanics design and operation of solution cavern field. In the past such an attempt faced many difficulties due to the lack of reliable means of securing the needed field data. However, through the systematic investigation, well logging technique is found to be a possible solution to overcome the difficulties.

With the full advantage of the well logging techniques, it is now considered realistic to establish the quantitative basis for the cavern field by expanding the current design basis which has been established in dry mining of salt. Such extension is possible by using the finite element program GEO. The program relates the brittle-ductile deterioration of salt and of associated rocks with their porosity increase which can be monitored by the well logging.

First, the initial developments of the quantitative basis for the dry mining in bedded and domal salts are summarized to examine the existing basis in relation to the field application. Then, the problems associated with devising the new logging technique are discussed and are followed by the recommendations.