

**SOLUTION MINING
RESEARCH INSTITUTE**

1745 Chris Court
Deerfield, Illinois 60015-2079
USA

Telephone: 847-374-0490 Fax: 847-374-0491
E-mail: bdiamond@mcs.com

Meeting Paper



**Verifying Established Initial
Gas Temperature Distribution
in Caverns**

by

**M.Sc. Alf P. Fosse
M.Sc. Lars B. Røvang**

**Statoil, Exploration and Production Technology
P.O. Box 308
N-5501 Haugesund
Norway**

Spring 1998 Meeting
New Orleans, Louisiana, USA
April 19-22, 1998

ABSTRACT

Simulators that predict development of the gas condition in the cavern system during various withdrawal sequences have proved to be useful for analysis of withdrawal processes, planning of gas storage optimisation and design of new storage facilities. The thermal condition of the gas in a cavern and the surrounding rock is virtually unknown previous to a withdrawal. A first step in an analysis therefore involves determination of the initial cavern system condition.

Updated measured cavern gas temperatures are usually not available for normal planning purposes. Therefore an initial gas temperature distribution has been established from historical data together with the undisturbed rock temperature. The distribution has been used as initial gas temperature in analyses of measured wellhead data from Etzel by use of Vectors and has been verified as a good estimate of the initial gas temperature. Calculation of wellhead pressures and temperatures by use of Vectors with this distribution closely agree with the corresponding measured wellhead data.

©2023 – Solution Mining Research Institute
Full Paper is Available in the SMRI
Library(www.solutionmining.org)