

SOLUTION MINING RESEARCH INSTITUTE

812 MURIEL STREET
WOODSTOCK, ILLINOIS 60098
815-338-8579

MEETING
PAPER



Andrzej S. Kunstman, Kazimierz M. Urbańczyk

CHEMKOP, Wybickiego 7, 31-261 Kraków, POLAND

**Computer Simulation of Temperature Distribution
around Well and Cavern during Leaching**

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Introduction

Salt body around a solution-mined cavern loses significant amounts of heat during the leaching process. This results from injecting water of relatively low temperature (as compared with ambient temperature) into the cavern. The range of temperature decrease around the cavern should be known ahead in order to design properly the technological parameters such as gas yield required to withdraw the brine and the duration of the first filling.

The range of temperature decreases while leaching is even more influential during the initial period of gas storage cavern exploitation, thus limiting gas recovery.

The problem of salt body cooling during a leaching process has been studied in the world for years. Quite a few computer models simulating this phenomenon have been developed.

However, these models approach the question in an approximate manner (the same heat exchange mechanism both through the cavern roof and floor as well as through its wall, often no heat exchange through the well casing). The salt body temperature distribution is usually one-dimensional, derived using analytical equations.