

Solution Mining Research Institute; Spring 2007 Technical Conference  
Basel, Switzerland, 29 April -2 May, 2007

## **THE MAIN CAUSES AND PROCESSES OF INSTABILITY AT FIELD II OF OCNELE MARI, ROMANIA**

Florian Zamfirescu, Marius Mocuta, Tiberiu Constantinescu,  
Catalin Nita and Alexandru Danchiv

Bucharest University – Research Department of Environmental  
Geology and Geophysics, Romania

### **Abstract**

In the Ocnele Mari area – Romania the salt exploitation by dissolution has been made since 1954, by different well fields and different methods. The presence of dissolution chambers beneath a populated area, associated with an inadequate exploiting program and monitoring system, brought to the building of several large voids. The presence of these voids, of large dimensions, situated at small depths, and in the particular geological conditions of Field II, generated a series of instability processes, resulting in some collapses among which the most important occurred in: March 1991, September 2001 and July 2004 respectively. Starting with August 2004 the Research Department of Environmental Geology and Geophysics came up with a program of measures, which was finished in December 2005. The main result was the deactivated of the SOCON cavern and consequently the removal of collapse danger of the cavern in Field II.

The purpose of this paper is to present the main causes that generated the instability processes in the Field II as well as their evolution from the beginning of the exploitation.

**Key words:** Salt Exploitation by Dissolution, Diapir, Cavern with Brine under Pressure, Subsidence, Monitoring Systems, Geomechanical Coupled Processes. the Ocnele Mari salt deposit is situated in the Undercarpatian hills of Oltenia, being bounded at East by the Olt river and at the West by Govora river. It crosses the territory of Ocnele Mari town with a population of about 3500 inhabitants.