

Solution Mining Research Institute Spring 2009 Technical Conference
Krakow, Poland, 27-28 April 2009

GEOLOGICAL AND TECHNICAL INTRODUCTION TO THE WIELICZKA SALT MINE

Katarzyna Poborska-Młynarska

AGH University of Science and Technology, Kraków, Poland

Abstract

The Wieliczka Salt Mine is a unique mining site in continuous operation since the 13th century until the present days. The phenomenon of the mining operations lasting seven hundred years results from geology of the deposit, ancient methods of exploitation and the history of the mine.

Wieliczka deposit is one of several Middle Miocene salt deposits occurring along the Carpathian thrust front. There are two distinguishable parts of the deposit: the lower part consists of salt layers interbedded by clay-anhydrite rocks and it is strongly distorted by folding and over thrusting; the upper one is a mega-breccia with salt blocks. Salt blocks occur at a depth ranges from dozen of meters to 180 m.

In order to mine the rock salt within the salt blocks, some unique methods of exploitation (development, salt-hewing, hoisting) were developed and hundreds of chambers were created. At present nearly 350 historical chambers exist on the upper levels of the mine. The main natural hazards during exploitation were caused by: the water seepage into excavations, caving- in overlying strata and methane occurrence. Thus, techniques of drainage and roof support were invented.

Since the Middle Ages the Wieliczka mine was the royal property administered by managers appointed by Polish kings and became the basis of the economy of the state. The mine development was accompanied by creation and improvement of mining laws and regulations. In 1978 the Wieliczka Salt Mine entered the UNESCO's First List of Cultural and Natural Heritage.

Key words:

History, Poland, Rock Salt and Potash Mining (Shaft), Underground mine/mining

©2022 – Solution Mining Institute

Full Paper is Available in the SMRI Library(www.solutionmining.org)