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THE PLANNED FLOODING OF THE SALT-WORKS “TUŠANJ” IN TUZLA, BOSNIA AND HERZEGOVINA

Basic introduction, important to discuss the subject in the title

The salt extraction that was, at the proper time, founded on salt EVAPORIT/stone, is a striking example of the lack of any serious strategy and thinking about its real effects and other phenomena that followed during exploitation and post-exploitation period, which consequences were inherited by the present and managing make-up. The present management should solve them.

The empty spaces, as result of mine activity in a deep, underground salt-works “Tušanj”, with its shafts cutting the watered massif, which is situated under some parts of the city agglomeration, represent high risk danger for stability of urban quarters in the city of Tuzla, for there is latent danger of flooding with damage in underground mine.

Otherwise, in this Miocene evaporit, of modest reserves and quality, two ways of exploitation were developed, and their application in close vicinity is out of the question.

So called uncontrolled exploitation in deep wells from which salt waters of industrial concentration are being pumped, is applied – for a longer period of time - in E-SE deposit location. These waters that were not mineralised at the very beginning infiltrate deposits from free flows, and thus give supplementary feeding to unique crack – karst well. Being in contact with production formation these were mineralised, but finally at the end, crossing the way to the location of salt-wells, are demineralised and, as mentioned above, extracted from deposits using the corresponding in depth set of joined mechanisms. In this way, about 80 mil m³ was pumped out, with approximately 24 mil t of salt, which caused hollows of over 10 mil m³, in chaotic disposition, that is their distribution and arrangement in the space are not studied yet.

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The described way of work resulted in a huge deficit of solid and watered masses in the underground (because of the disproportion in relations: infiltrated – pumped water) and caused severe subsiding and destruction of urban areas, i.e. contents due to tendency of the massif to reaching the balance, that is consolidation. Nevertheless, the intensity of this process is slow.

In the W-NW deposit location, separated in the eastern part with the protective column that has cosmetic meaning, a deep underground mine has been opened with pits (which were in one segment transformed in so called Tübingen's lining) that develop two types of exploitation: the classic chamber – pillar method of dry excavation of salt between: horizon H – 250 m, floor E – 170 m and controlled method of leaching out of salt from the pit, below horizon H – 250 m. Due to heavy natural conditions and lack of technological discipline in development control of these production structures, the control over this process was lost and the part of bearing construction of massif with several layers was destroyed (as follows: chamber – pillar between chambers – roof overburden shelf), and manifested with the breach inside the pit. This very unfavourable destruction is spreading and threatens to endanger certain necessary water hermetic characteristics of such an underground facility. Besides the above-mentioned, movements of massif caused by deficit of solid and liquid masses, which are produced in E-SE deposit, and which reflections of reaching the balance deform the watertight Tübingen's lining at the exit and the ventilation openings and threaten to destroy the same compromising the mine impermeability to water.

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Due to all above-mentioned, and having in mind the fact that the new salt-works "Tetima" develops intensively, as a substitute structure for irrational production based on deposit in Tuzla, it has been decided to approach planned substitution and transfer of exploitation from the existing to the new location.

The reasons for such an orientation may be summarised in several important facts:

1. Salt deposit in Tuzla does not have economic reserves, which would be the base for more rational exploitation, any more.