

The filtration and ultrafiltration experiment was applied on the stream water at the Mokrsko gold deposit and the results revealed that most of the elements were in the dissolved form and the 0,45 or 0,1 m filters could be used. During two 24-h field experiments, water samples were collected at 1-h intervals in order to prove the diel changes in the concentration and speciation of several trace elements. The determination of sorption processes at the surface of or within the veneer of biofilm has been determined by collecting natural and artificial priphyton. The results showed regular diel changes of As, Sb and Mo with highest concentrations occurring after the moon and the lowest concentrations in the early morning. The dissolved concentrations of other elements are conservative or their values were closed to their detection limits. The diel cycles are caused by changes in adsorption/desorption equilibria induced by diel cycles of temperature. The samples of biofilm revealed increased concentrations of the elements under the study and their diel variation were significant (approximately 35-96%); however, biofilm-controlled diel cycles of dissolved concentrations have not been proved.