

Swiderska-Broz, M., Wolska, M. Efficiency of Contact Coagulation in Removing Biogenic Substances from Water. *Ochrona Srodowiska* 2010, Vol. 32, No. 2, pp. 3–7.

Abstract: An essential prerequisite for preventing the regrowth of microorganisms (specifically bacteria) in the water-pipe network is the biological stability of the water supplied to the distribution system. To achieve this goal, it is necessary to aim at the highest possible removal of inorganic nitrogen compounds, inorganic phosphorus compounds and biodegradable dissolved organic carbon (BDOC) – particularly their fractions assimilable for microorganisms (AOC) – from the water being treated. In this work, contact coagulation was investigated for efficiency in removing biogenic substances from a mixture of groundwater (after aeration) and surface water (after microfiltration). The study produced the following results. Contact coagulation with iron(III) sulfate provided noticeable removal of phosphates, and much lower removal of inorganic nitrogen compounds. At the same time, the lowest removal efficiency was obtained for the biodegradable fraction of organic compounds, and the highest extent of removal for insoluble organic carbon. It has been demonstrated that in the case under analysis the contact coagulation process failed to provide a reduction in biogenic substances to such a value that would guarantee a biological stability of the treated water.

Keywords: Biological stability of water, contact coagulation, organic matter, organic nutrients, inorganic nutrients.