

Wilmanski, K., Trzebiatowski, M. **Organic Matter Removal from Surface Water by Coagulation and Sorption onto Powdered Active Carbon.** *Ochrona Srodowiska* 2009, Vol. 31, No. 4, pp. 39–42.

Summary: Pilot plant studies were conducted into organic matter removal from the water taken in from Lake Miedwie. In the course of the studies several types of aluminum coagulants (PAX) and different kinds of powdered active carbons of high adsorptive capacity were tested. The results obtained have demonstrated that the highest removal efficiencies are obtained when the processes of coagulation and active carbon adsorption are performed separately. Another finding produced by the study is that the water should be dosed with powdered active carbon after passage through the settling tank and before being sent to the anthracite-sand filter. New operating parameters were determined for filter cycles involving dosage of powdered active carbon. In order to avoid a breakthrough of the filter bed by the active carbon suspensions being added to the water, use was made of filter cycles which involved an approx. 20-hour 'preliminary packing' of the filter bed with solids from the coagulation process after backwash, followed by treating the water with appropriate powdered active carbon doses. Upon optimization of the reagent doses for the coagulation and adsorption processes, the required efficiency of organic matter removal from the lake water was attained. The study has shown that an efficient organic matter removal from surface water by deep coagulation and powdered active carbon adsorption can be achieved at a relatively low cost of the reagents used in the two processes.

Keywords: Surface water, organic matter, water treatment, coagulation, adsorption, powdered active carbon.