

Lomotowski, J., Wiercik, P., Burszta-Adamiak, E. Effect of Iron and Manganese Content on Granulometric Composition of Suspensions in Backwash Effluent from Filters Used for Groundwater Treatment. *Ochrona Srodowiska* 2013, Vol. 35, No. 4, pp. 43–46.

Abstract: Granulometric composition of suspensions contained in filter backwash water affects filter treatment technology selection. The paper describes results of granulometric composition studies on filter backwash water suspensions collected from 46 groundwater treatment plants. An original, modified Avrami equation was proposed to interpret the results of studies on granulometric composition determined by the use of laser diffractometer. The equation enabled identification of mechanism in which suspensions are formed in filter beds applied for groundwater iron and manganese removal process. The research showed that iron and manganese concentration growth in treated groundwater correlated with increase in the percentage of suspended particles with small equivalent diameter and in changeability range of particle equivalent diameters in backwash effluent. At low contents of iron and manganese compounds in treated water polydisperse suspensions were formed, characterized by narrower changeability range of particle equivalent diameters.

Keywords: Iron and manganese removal, backwash water, Avrami equation, granulometric composition.