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Laboratory Simulation of the Effect of Ozone and Monochloramine on Biofilms in Drinking Water Mains

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Abstract

Cultivated on cement surfaces to simulate growth on cement mortar lined drinking water mains was investigated in a laboratory biofilm reactor. The biofilms were subsequently exposed to ozone and monochloramine. Inactivation of biofilm bacteria by ozone was found to be a non-linear function of the ozone dose, and the results provided a more rational basis for determining conditions for ozone disinfection of water mains. Results further suggest that monochloramine might be an effective disinfectant for biofilms on pipe walls. Microbiological observations indicated that monochloramine is a non-selective disinfectant compared to ozone.