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Study of Booster Chlorination in Intermittent Water Distribution Networks

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Abstract

Allocating sufficiently disinfected drinking water to consumers in intermittent supply of water distribution network is the major concern at present. Chlorination is the best method for disinfection process as this provides residuals which can protect from recontamination of water in network. By adopting booster chlorination, free residual chlorine levels (FRC) at various nodes of network can be maintained within permissible limits, total application of chlorine required for disinfection can be reduced and harmful disinfectant by products can be minimized. In this study, the effect of booster chlorination is analyzed on an index named as uniform chlorine coefficient (UCC) in intermittent supply system of water distribution network. EPANET-Matlab Toolkit is used in order to predict FRC among nodes in water distribution network of intermittent supply. Percentage reduction in total chlorine applied in network by using booster chlorination compared only to source application of chlorine is examined.

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Keywords

Applied Mass Rate of Chlorine; Booster Chlorination; Free Residual Chlorine; Uniform Chlorine Coefficient

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