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Application of dissolved air flotation as pretreatment of seawater desalination

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ABSTRACT

The performance of dissolved air flotation (DAF) was evaluated for pretreatment of seawater desalination in this study. For this purpose, DAF was compared with dual medial filtration (DMF) for its performance of particle removal and organic reduction through pilot-scale experiments. A pilot-scale DAF plant with capacity of 3.2 m^3/h was installed at southern coast of the East Sea and operated for four months (June–September, 2009). According to this study results, the organic reduction performance of DAF was comparable to that of DMF. Both DAF and DMF removed the same organic fraction. However, DAF could not match DMF in particle removal. The association of DAF and DMF could improve the pretreatment performance and better filtrate quality was obtained in terms of particle removal. The association reduced the clogging head loss and initial turbidity breakthrough.

Keywords: Dissolved air flotation; Dual media filtration; Seawater desalination; Pretreatment

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