

Boron removal from seawater by combined system of seawater reverse osmosis membranes and ion exchange process: a pilot-scale study

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ABSTRACT

One of the problems of seawater reverse osmosis desalination plants is high boron concentration in product water. Accordingly, several post treatment methods have been researched for boron removal. One objective of this study is to evaluate the effect of key operating parameters such as pH, temperature, pressure and feed concentration on boron rejection and in pilot-scale SWRO-IX system. The performance of boron-selective ion exchange resin Amberlite IRA 743 was also evaluated by two resin columns treating SWRO permeate. The experimental results at various operating conditions would help optimize the process operation.

Keywords: Desalination; Seawater; Reverse osmosis (RO); Boron removal, Boron selective resin

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