

MEMBRANE OPERATION ON COLD BRACKISH WATER AND WARM SEAWATER

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Abstract

For production of water intended for human consumption or for industrial purposes, Benelux countries use canal waters which are of brackish type and Gulf countries take water from seawater. In one case, water is low in temperature and low in salts, in the other water is warm and has high salt concentration.

This paper presents and compares results obtained at different locations on these two types of water. It has been demonstrated that, in both cases, Pall organic hollow fibre membranes yield stable, continuous and reproducible filtrate flow whatever the feed water without the need for raw water pre-treatment of any kind such as clarification, pre-filtration or coagulant/flocculent addition.

On both types of water, specific maintenance protocols performed on a daily basis replace the need for full clean-in-place and result in low pressure operation. It also confirms that Pall membranes allow complete removal of total suspended solids and total coliforms, resulting in filtrate turbidity always below 0.1 NTU and a permeate SDI always below 2.5.

Without raw water pre-treatment, studies show that Pall membranes produce low scaling of RO membranes and give very low concentrations of total organic carbon, success key for a simple, cost effective and environmentally friendly full scale plant.