

## Chennai SWDP: Pre-treatment pilot test

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### ABSTRACT

Chennai Seawater Desalination Plant (SWDP), with a production capacity of 100 MLD with a maximum extended capacity in future of up to 120 MLD, is located at Minjur (Chennai, India) and is being developed under a 25-year DBOOT contract. It will supply drinking water to the city of Chennai which currently experiences poor water quality, water shortages and restrictions. The Chennai SWDP is situated in close proximity to a river creek, an important port and an overpopulated urban area, resulting in a difficult to treat raw water source subject to very high suspended solids values, and a high level of pollutants. The different pilot plant treatment processes (gravity settling, flotation, gravity filtration and pressure filtration) can be connected in series or in parallel. Therefore, this paper describes the pilot plant studies performed to determine the feasibility, efficiency and best operation mode of the pre-treatment process designed for Chennai SWDP at the time of the publication as well as the main conclusions inferred from those studies. By applying the results of these studies to the full-scale design, the performance of the RO membranes will be kept optimal while reducing production and maintenance costs. It can be concluded that this pilot study has been important in developing the Chennai SWDP design, and provided valuable information for the plant start up and its operation later on.

*Keywords:* Pre-treatment; Seawater; Reverse osmosis; Desalination

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