Study on thermal desalination effect on the solids' precipitation variation

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\textbf{ABSTRACT}

The topic of this paper is the thermal impact desalination in the fouling and corrosion phenomena as an auxiliary and rejection waters on the environment in the western littoral of Ghazouet site—Tlemcen (Algeria). The methodology we used consists of taking samples from different qualities of water used in the distillation process in multiple effects (MED): auxiliary water, brine water, and undrinkable water production. They have been characterized by physical–chemical analysis such as pH, temperature, conductivity, salinity, dissolved solids (TSD), turbidity, calcic hydrotimetric title, alkalimetric title, and organoleptic parameters. We also carried out a study on the influence of the distillation parameters on calco-carbonic balance and furring solid's precipitations of forming carbonates, hydroxides, and sulfates. The results showed that the rejected brine water in the sea contains a considerable quantity of dissolved chemical bodies in suspension where salinity reached 49 g/l, containing also effluents acid coming from the correcting operations of the auxiliary water. The saturation index of this water determined by different methods that showed the furring and corrosive character of the seawater.

\textit{Keywords:} Thermal desalination; Auxiliary water; Brine water; Scaling and corrosion; Calco-carbonic balance; Solid’s precipitation; Marine environment

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