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Engineering design of Skikda Seawater Desalination Plant

Tomás Fanjul[a], Almudena Aparicio[a], Vidal Martín[b], Rodrigo Segovia[c], Jorge Salas[c]*

[a]*Skikda SWDP, Geida, Cardenal Marcelo Spínola, nº 42, 2ª planta, 28016 Madrid, Spain*
[b]*Sadyt, Avda. del Patenon, nº 16–18, 28042 Madrid, Spain*
[c]*Befesa Agua, Av. de la Buhaira, 2, 41002 Sevilla, Spain*
Tel. +34 660408988; Fax +34 954939601; email: jorge.salas@befesa.abengoa.com

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ABSTRACT

Skikda Seawater Desalination Plant (SWDP) is located in the northern part of Algeria (Mediterranean Sea) and will have a total production of 100,000 m^3/d. It is being developed under a 25-year DBOOT contract with Algerian Electrical Company (AEC) in a Joint Venture named GEIDA (Befesa–Sadyt) in order to supply water for human consumption to the area. Based on reverse osmosis (RO) technology, the raw water is driven from a seawater open intake to the pre-treatment stage which consists on two filtration steps with sand and anthracite. After cartridge filters as a security barrier prior to the RO process, this is designed with five independent RO lines equipped with pressure exchangers as energy recovery devices. Finally, the post-treatment will be made by means of dolomite filter beds to get the optimal quality conditions. This paper shows the design of a high efficiency SWDP that will significantly increase the water resources of the region.

Keywords: Desalination; Reverse osmosis; Engineering; Seawater; Design

* Corresponding author.

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