

## عنوان مقاله:

(Reuse of Reverse Osmosis Membranes - Case Study: Tajoura Reverse Osmosis Desalination Plant (Technical Note

## محل انتشار:

فصلنامه انرژی و محیط زیست ایران، دوره 10، شماره 4 (سال: 1398)

تعداد صفحات اصل مقاله: 5

## نویسندگان:

Bashir Brika - *Advanced Laboratory of Chemical Analysis, Authority of Natural Science Research and Technology, Tripoli, Libya*

Abdul Aziz Omran - *Water Desalination Research Section, Water Desalination Department, Tajoura Nuclear Research Center (TNRC), Tripoli, Libya*

Naji Greesh - *Advanced Laboratory of Chemical Analysis, Authority of Natural Science Research and Technology, Tripoli, Libya*

Abubaker Abutartour - *Beijing University of Chemical Technology, Beijing, China*

## خلاصه مقاله:

Libya is currently experiencing a major challenge in water supply due to reduction in the groundwater, especially around the coastal region. This problem is likely to create challenges for drinking water supply and the agricultural sector. Environmental desalination technology and wastewater treatments could provide a solution to the problem. In Libya, there are approximately 21 operating desalination plants, with a total capacity of 525,680 m<sup>3</sup>/d. The Tajoura desalination plant is one of the oldest reverse osmosis (RO) desalination plants established on the west coast of Libya. It has been under operation for three decades with no significant attention to these systems. Membranes used in Tajoura plant were not regularly checked or replaced on time. This paper reviews the history of membranes used in Tajoura plant since its installation, specifically storage methods and the number of damaged membranes. Finally, alternative options for reuse of used membranes are proposed. It was found that a couple of reuse options are possible for some membrane elements. Converting the fiberglass of the outer casing into small pieces or powder for other production is highly recommend, while polypropylene spacers provide good opportunities for domestic and agricultural applications.

## کلمات کلیدی:

Desalination Technology, Reverse Osmosis, Membrane Material, Environment

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