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Water quality evaluation of small scale desalination plants in the Gaza Strip, Palestine

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ABSTRACT

The Gaza Strip is a highly populated, small area in which the groundwater is the main water source. During the last few decades, groundwater quality has deteriorated to a limit that the municipal tap water became brackish and unsuitable for human consumption in most parts of the Strip. To overcome this serious situation, the reverse osmosis (RO) technology is used to replace the tap water or to improve its quality. Several private Palestinian water investing companies established a small-scale reverse osmosis (RO) desalination plants to cover the shortage of good quality of drinking water in the whole Gaza Strip. The purpose of this paper is to investigate the chemical and bacteriological water qualities of different small scale of (RO) desalination companies in the Gaza Strip. The results of the chemical and bacteriological parameters were compared with the World Health Organization (WHO) standards. It was concluded that all chemical analyses of RO produced water are within the allowable WHO limits. Bacteriological analyses indicate that 25% of the produced water samples exceeded the maximum allowable value of the total coliform bacteria.

Keywords: Gaza Strip; Desalination; Drinking water supply; Water crisis