

Monitoring and Evaluation of the Reverse Osmosis Reject Wastewater from the Sulaibiya Wastewater Treatment Plant in Kuwait

Authors : Mishari Khajah, Mohd. Elmuntasir Ahmed, Abdullah Al-Matouq, Farah Al-Ajeel, Fatemah Dashti, Ahmed Shishter

Abstract : The overall aim of this study was to monitor and evaluate the effluent quality of a reverse osmosis (RO) reject wastewater from the biggest wastewater treatment plant in the world that is using RO and ultrafiltration membranes in their processes to reclaim water for indirect potable water reuse from municipal wastewaters. The RO reject wastewater or brine included various contaminants that could harm the human health and the environment such as trace organics, organic matters, heavy metals, nutrients and pathogens. Unfortunately, there are no legally binding regulatory guidelines for brine management in Kuwait as many countries around the world. This study monitors and evaluate the RO reject wastewater (brine) generated from the Sulaibiya Wastewater Treatment Plant. Samples were collected and analyzed about 37 parameters for one-year period, twice a month, and compare it to Kuwait Environment Public Authority, KEPA. Results showed that the heavy metals parameters were above KEPA standards, which needs to be treated.

Keywords : domestic wastewater, management, potable water, RO reject wastewater, Sulaibiya wastewater treatment plant

Conference Title : ICW 2023 : International Conference on Wastewater

Conference Location : Bangkok, Thailand

Conference Dates : March 06-07, 2023