

SUITABILITY FOR SUSTAINABLE REUSE OF SECONDARY EFFLUENT: A CASE STUDY IN SAUDI ARABIA

Author(s): **Muhammad Saleem, Mohammed Hussein Essa**

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Abstract:

Diminishing groundwater resources and a growing need of water in arid countries like the Kingdom of Saudi Arabia necessitate increased reuse of treated wastewater. Therefore a characterization study was carried out to determine the seasonal variations in the quality of secondary effluent for agricultural purposes produce from the Al-Khobar wastewater treatment plant. All the basic parameters such as chlorides, TSS, TDS, BOD, pH, turbidity, total coliform including metals, nutrients, and oil & grease were studied. A comparison between the treated wastewater quality from the Al-Khobar and other Gulf region WWTPs was also made. Moreover the secondary effluent quality was also compared with the Saudi Presidency of Meteorology and Environment (PME) discharge standards and the Ministry of Agriculture (MA) irrigation standards. Results showed seasonal variations in the effluent quality. Based on the methodology used in the present study suggestions have been given to improve the wastewater quality and application areas in the field of agriculture.

For full paper, contact:

Prof Muhammad Masood Rafi

Editor, NED University Journal of Research

Ph: +92 (21) 99261261-8 Ext: 2413; Fax: +92 (21) 99261255

Email: NED-Journal@neduet.edu.pk

Website: <http://www.neduet.edu.pk/NED-Journal>

