

Saleem, M; Bukhari, AA; Al-Malack, MH. 2000. Removal efficiencies of indicator micro-organisms in the Al-Khobar wastewater treatment plant. *ENVIRONMENTAL ENGINEERING SCIENCE* 17 (4):227-232.

Abstract: Increasing population and developmental needs of Saudi Arabia underline the need for an increase in the reuse of treated wastewater. However, treated wastewater contains a large number of pathogens that requires proper treatment before reuse. Little information is available on the treatment efficiency of wastewater treatment plants operating in this region. A 1-year study was conducted at the Al-Khobar wastewater treatment plant to investigate the removal efficiency of five indicator micro-organisms, namely, Standard Plate Count, total coliform, fecal coliform, coliphage, and *Clostridium perfringens*. The raw sewage, secondary effluent, and chlorinated effluent were analyzed weekly for the detection and enumeration of these indicator micro-organisms. High-percent removal of Standard Plate Count, total coliform, and fecal coliform (98 to 99%) was observed after secondary treatment compared to coliphage removal of 83.6% and *Clostridium perfringens* removal of 55.5%, whereas, after chlorination, Standard Plate Count, total coliform, and fecal coliform were removed up to 99.7% compared to coliphage reduction of 52% and *Clostridium perfringens* removal of only 42%, showing a high resistance against chlorination. The insight gained from this study may be applied to other similar treatment plants.