Environmental Engineering and Management Journal *July 2013, Vol.12, No. 7, 1509-1514*
http://omicron.ch.tuiasi.ro/EEMJ/

"Gheorghe Asachi" Technical University of Iasi, Romania

ESTIMATING AND MODELLING THE SLUDGE EXCESS DISCHARGE IN WASTEWATER TREATMENT PLANTS IN CHINA

Tao Xie, Chengwen Wang*

Tsinghua University, School of Environment, Beijing, P.R. China

Abstract

A rapid increase of wastewater treatment plants (WWTPs) has made the disposal of excess sludge from WWTPs a serious problem. In order to enhance the management of sludge, both development of sludge reduction technologies and sludge evaluation system are of great importance. Based on the survey data from 696 plants in China in 2009, an empirical model was developed to simulate the production and discharge of excess sludge, which considered influent, temperature, Chemical Oxygen Demand (COD), Suspended Solids (SS), and Total Nitrogen (TN). Four basic wastewater treatment processes including A^2O, Oxidation Ditch, SBR and Traditional Activated Sludge Process were selected for the model verification and related parameters and indicators in the model were calculated. The model was applied in a typical plant with process of Oxidation Ditch in South China. Results indicated that it was available for the simulation of the discharge of excess sludge in actual plant, with exception of data in August and September, mainly due to the relatively lower BOD in these two months. Generally, the empirical model established could be applied in the management of excess sludge disposal in WWTPs.

Key words: China, modelling, sludge excess, wastewater treatment plants

Received: November 2012; Revised final: May, 2013; Accepted: June 2013

* Author to whom all correspondence should be addressed: wangcw@tsinghua.edu.cn; Phone: +86 010 62771551; Fax: +86 010 62785467