World Academy of Science, Engineering and Technology
International Journal of Civil and Environmental Engineering
Vol:8, No:03, 2014

Total Dissolved Solids and Total Iron in High Rate Activated Sludge System

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Abstract : Industrial wastewater discharge, which carries high concentrations of dissolved solids and iron, could be treated by high rate activated sludge stage of the multiple-stage sludge treatment plant, a system which is characterized by high treatment efficiency, optimal prices, and small areas compared with conventional activated sludge treatment plants. A pilot plant with an influent industrial discharge flow of 135 L/h was designed following the activated sludge system to simulate between the biological and chemical treatment with the addition of dosages 100, 150, 200 and 250 mg/L alum salt to the aeration tank. The concentrations of total dissolved solids (TDS) and iron (Fe) in industrial discharge flow had an average range of 140000 TDS and 4.5 mg/L iron. The optimization of the chemical-biological process using a dosage of 200 mg/L alum succeeded to improve the removal efficiency of TDS and total iron to 48.15% and 68.11% respectively.

Keywords : wastewater, activated sludge, TDS, total iron
Conference Title : ICCEE 2014 : International Conference on Civil and Environmental Engineering
Conference Location : Miami, United States
Conference Dates : March 10-11, 2014