

عنوان مقاله:

Performance Evaluation of the Extended Aeration Activated Sludge System in the Removal of Physicochemical and Microbial Parameters of Municipal Wastewater: A Case Study of Nowshahr Wastewater Treatment Plant

محل انتشار:

فصلنامه بهداشت محیط و توسعه پایدار، دوره 3، شماره 2 (سال: 1397)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Mohammad Sadegh Nikmanesh - *Health Care Network of Chalus, Deputy of Health, Mazandaran University of Medical Sciences, Mazandaran, Iran*

Hadi Eslami - *Environmental Science and Technology Research Center, Department of Environmental Health Engineering, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

Seyed Mojtaba Momtaz - *Environmental Science and Technology Research Center, Department of Environmental Health Engineering, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

Rahmatollah Biabani - *Health Care Network of Chalus, Deputy of Health, Mazandaran University of Medical Sciences, Mazandaran, Iran*

خلاصه مقاله:

Introduction: Extended aeration activated sludge system has a lower sludge production than other activated sludge processes. Due to its high hydraulic retention time (HRT), the tolerance of this process is higher than the shocks caused by increased organic loading rate. The main objective of this study is to evaluate the performance of the aeration system in removing physicochemical and microbial parameters from the wastewater of Nowshahr, Iran. **Materials and Methods:** This is a descriptive-analytical study that was carried out in the wastewater treatment plant of Nowshahr during 6 months. The parameters BOD₅, COD, TSS, total coliform (TC) and fecal coliform (FC) were measured, and also the MLSS, F/M ratio, SVI, HRT and θ_c were measured in aeration basin. Data were analyzed using the Excel software and SPSS (Pearson correlation test and one-sample t-test), and $P < 0.05$ was considered significance level. **Results:** The average removal efficiency of BOD₅, COD, TSS, TC and FC was 57.7%, 61.4%, 70.8%, 84.6% and 84.3% respectively. The θ_c , HRT, SVI, F/M and MLSS in the aeration basin were obtained, respectively, 5.64 day, 25 h, 48.83 ml/g, 0.28 day⁻¹ and 180 mg/L. In addition, the average output of parameters in the hot months of the year was higher than those in the cold months. **Conclusion:** According to the results, the Nowshahr wastewater treatment plant has the adequate efficiency to produce effluent in accordance with environmental standards for discharge into surface water and consumption in agriculture.

کلمات کلیدی:

.Activated Sludge, Extended Aeration, Wastewater Treatment, Nowshahr City

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/992769>



