ABSTRAK

Rizqi Putri Ayu Perdanawati
TINGKAT EFISIENSI INSTALASI PENGOLAHAN AIR LIMBAH di RSUD dr. SAYIDIMAN KABUPATEN MAGETAN
xv + 93 Halaman + 20 Tabel + 25 Lampiran

Jumlah limbah yang fluktuatif dengan kapasitas IPAL konstan sehingga diperoleh data hasil efluen yang belum memenuhi baku mutu. Berdasarkan dokumen manual book rekanan menunjukan nilai efisiensi yang tinggi namun belum pernah dilakukan pengukuran langsung. Efisiensi pada setiap reaktor belum pernah dikaji. Jika dilihat dari hasil sampling yang belum memenuhi baku mutu tersebut menunjukan bahwa ada beberapa proses yang kurang sesuai. Untuk itu maka peneliti melakukan penelitian tentang analisis Efisiensi Instalasi Pengolahan Air Limbah buangan RSUD dr. Sayidiman Magetan. Penelitian ini bertujuan untuk mengidentifikasi seberapa efisien setiap tahapan dalam proses pengolahan air limbah di RSUD dr. Sayidiman Magetan.

Jenis penelitian deskriptif dengan desain studi kasus. Pengambilan data dilakukan dengan observasi dan pengukuran laboratorium. Populasi semua limbah yang dihasilkan oleh RSUD dr. Sayidiman Magetan dengan sampel limbah pada inlet, outlet reaktor ekualisasi, outlet reaktor biofilter dan outlet post treatment. Data yang didapat dianalisis dengan tabulasi dan rumus efisiensi.

Hasil penghitungan efisiensi Instalasi Pengolahan Air limbah di RSUD dr. Sayidiman Magetan mendapatkan hasil BOD sebesar 65,22; COD sebesar 23,65%; TSS sebesar 53,85%; Amonia sebesar 67,18%; dan Phospat sebesar 75,28%. Dengan demikian IPAL RSUD dr. Sayidiman Magetan kurang efisien dalam menurunkan pencemar COD sedangkan untuk parameter TSS cukup efisien dan efisien dalam menurunkan pencemar BOD, Amonia serta phospat. Dari hasil penelitian tersebut efisiensi yang diperoleh belum maksimal sehingga berdampak terhadap pencemaran badan air. Untuk itu disarankan melakukan pengurasan total, penggantian filter pada reaktor post treatment, menambah aerasi pada reaktor biofilter serta pelatihan untuk operator pengelola Instalasi Pengolahan air Limbah.

Kata Kunci: Efisiensi, IPAL, Parameter Pencemar Kimia

ABSTRACT

Rizqi Putri Ayu Perdanawati
THE EFFICIENCY LEVEL OF WASTEWATER TREATMENT INSTALLATIONS AT RSUD DR. SAYIDIMAN MAGETAN DISTRICT.
xv + 93 Pages + 20 Tables + 25 Appendices

The fluctuating amount of waste with a constant wastewater treatment plant (WWTP) capacity. As a result, the effluent data show that the discharge does not meet the required quality standards. Although the partner's manual book, a high efficiency value is indicated, but no direct measurements have been conducted. The efficiency of each reactor has never been evaluated. The results show that the wastewater quality falls short of standards suggest that some processes are not functioning optimally. Therefore, this research was conducted to analyze the efficiency of the wastewater treatment system at RSUD dr. Sayidiman Magetan. This research seeks to evaluate how efficient each step of the wastewater treatment process is at RSUD dr. Sayidiman Magetan.

This research is a descriptive study using a case study design. Data were collected through observation and laboratory measurements. The population includes all wastewater generated by RSUD dr. Sayidiman Magetan, with samples taken from the inlet, the outlet of the equalization reactor, the outlet of the biofilter reactor, and the outlet of the post-treatment unit. The collected data were analyzed using tabulation and efficiency calculation formulas.

The efficiency calculation of the Wastewater Treatment Plant (WWTP) at RSUD dr. Sayidiman Magetan showed the following results: BOD at 65.22%, COD at 23.65%, TSS at 53.85%, Ammonia at 67.18%, and Phosphate at 75.28%. Therefore, the IPAL at RSUD dr. Sayidiman Magetan is less efficient in reducing COD pollutants, while it is quite efficient in reducing TSS pollutants and efficient in reducing BOD, Ammonia, and Phosphate pollutants. Based on these results, the efficiency achieved is not optimal, which impacts water body pollution. It is recommended to conduct a total sludge removal, replace filters in the post-treatment reactor, add aeration in the biofilter reactor, and provide training for the operators managing the Wastewater Treatment Plant.

Keywords: Efficiency, WWTP, Chemical Pollutant Parameters