ABSTRACT

The purpose of this study was to examine the performance of the system Membrane Bio Reactor (MBR). Researching the performance of membrane bioreactor (MBR) in degrading organic material and separating suspended solid from the wastewater industry, examining the influence of anoxic conditions on the reduction of N content in the wastewater industry. Examining the performance of MBR and SMBR to changes in flux.

Processing uses a biologically active sludge from wastewater treatment aeration tank at the Surabaya Industrial Estate Rungkut (SEER) is done in two stages ie preliminary stage and the main experimental phase. COD concentrations used were 900, 1800, and 2250 mg / L, the concentration of biomass (MLSS) 2000-6000 mg / L. Observations of dissolved oxygen (DO), SV, and the bioassay was also conducted.

In the research note that the COD removal did not occur a significant difference between the membrane and the effluent without the use of membranes. The same is also indicated by the% COD removal, because the use of membranes does not reduce the value of COD but only to reduce the suspended solids. Permeate the total number N is smaller than 0.5 the amount of influent total N or% removal> 50%, then the process of denitrification can be said to be successful. At trial the MBR of the flux 30 L / m². Hours fell to 20.7 L / m². Hours within 15 minutes with the percentage of flux by 70%, compared SMBR of flux 24 L / m² hours down to 5.1 L / m² hours within 30 minutes with the percentage of flux of 21.25%.

Keywords: Membrane Bioreactor (MBR), activated sludge, COD