**ABSTRACT**

Health Ministry of Republic of Indonesia

Health Polytechnic of Health Ministry Surabaya

Diploma III Sanitation Program

Final Project, August 2021

Halim Mukti Alwi

**BOD LEVELS REDUCTION IN CAR AND MOTORCYCLE WASHING WASTE WITH SEDIMENTATION, AERATION AND FILTRATION METHODS.**

viii + 64 pages + 9 tables + 6 pictures + 10 attachments

 Wastewater is the residue from a business and or activity in the form of liquid. Of the many motor vehicle washing businesses, there are still many who dispose of their waste water directly into the nearest river or water body. Wastewater disposed of directly can certainly cause pollution, because the wastewater has hazardous substances such as detergent, phosphate, TSS, BOD, COD, oil and fat if the amount exceeds the threshold.

 The purpose of this study was to find the decrease in BOD content in car and motorcycle washing waste using the Sedimentation, Aeration, and Filtration methods.

 This type of experiment is Pre-Experimental with a research design of One Group Pretest-Posttest Design. This experiment is a research design that has not been categorized as a real experiment, because in this design taken a random sample and sufficient control was not carried out on confounding variables that could affect the dependent variable. The sample in this study was 1 sample before treatment and 24 samples after treatment with details of 4 treatments and 6 replication.

 The results of the One Way Anova test showed that there were differences in BOD level reduction in car and motorcycle washing waste using sedimentation, aeration, and filtration methods. The time variations used in the aeration process were 60 minutes, 120 minutes, 180 minutes, and 240 minutes.

 The conclusion obtained is that the average effectiveness of reducing BOD levels is 42,05%. The suggestion of this research is that further researchers can use different filtration media, different aeration variations in time so that they can get maximum results. Or use another wastewater and continue research with different parameters.

Keyword : Car and Motorcycle Wash Waste, BOD, Sedimentation, Aeration, Filtration

Literature : 17 reading materials (2007-2019)