AERATION STUDY ON REDUCING COD LEVELS OF RIVER WATER USING VARIATIONS AIRFLOW RATE AND TIME (STUDY CASE: CILEMAHABANG RIVER)

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain

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TURNITIN TEST RESULT

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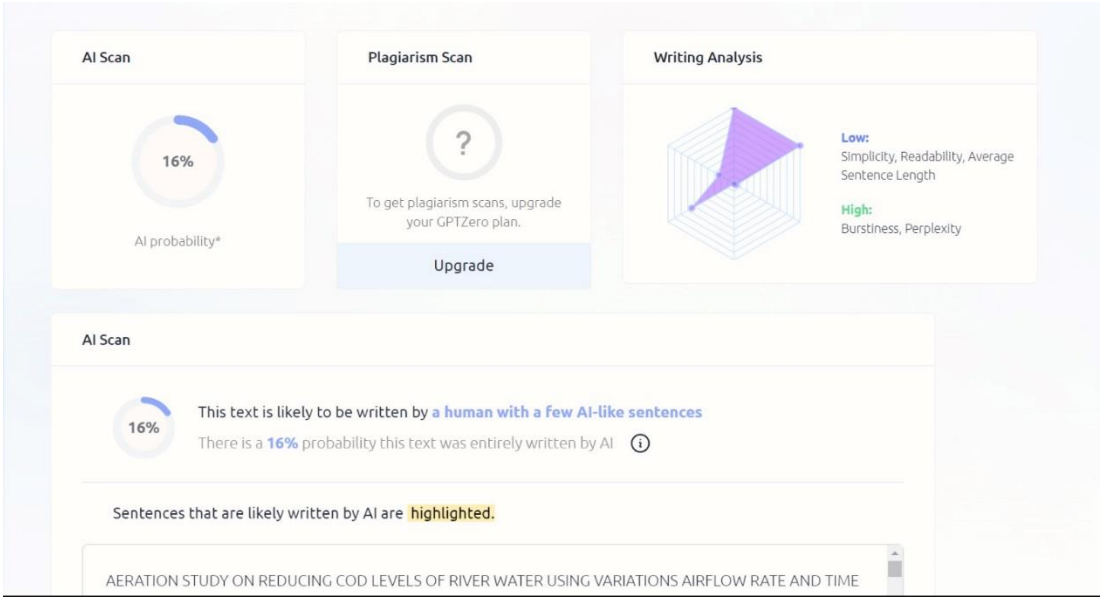

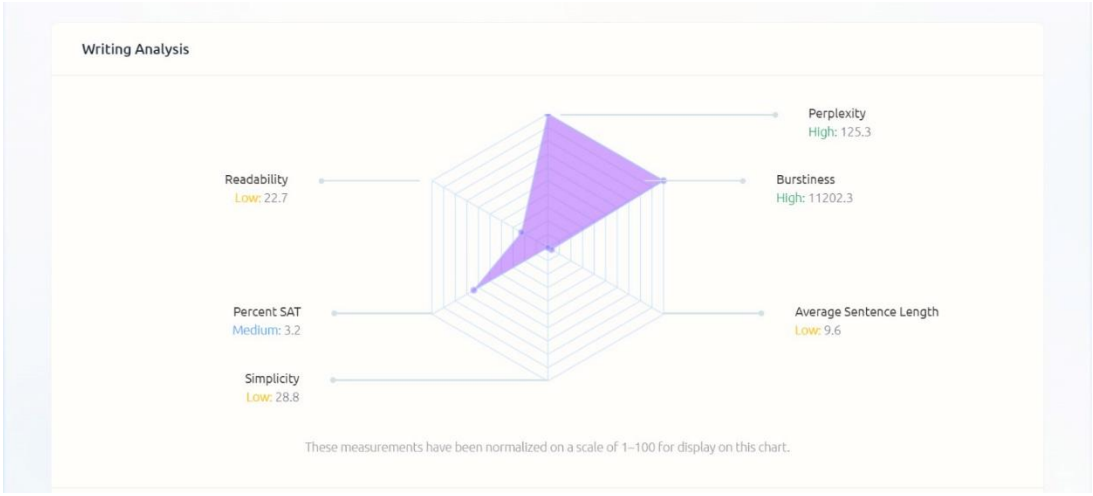

ABSTRACT

The Cilemahabang River has experienced a decrease in water quality caused by human activities such as settlements and especially from industry. Environmental degradation is caused by waste that isn't treated and discharged directly into the river, as well as by the high level of development along the rivers, which also reduces the capacity of the rivers to carry pollution. Increased organic matter in water will have an impact on reducing water quality, resulting in a decrease in dissolved oxygen. A water pollution level test can be carried out to determine the presence of these pollutants, using a COD test to determines the oxygen required by oxidizing agents to oxidize organic matter in water. One way is to use aeration technology, which is a method of adding oxygen to the waste solution to increase the amount of dissolved oxygen so that it can provide oxygen to decomposing microorganisms to reduce the levels of organic matter in the water. The research objective is to determine constant value of the kinetic rate removal reaction. The results showed that for each treatment of aeration and control is effective percent removal in COD. The constant value of the kinetic rate COD removal is 0.0005 hour-^{1} in the regression linear 0.9983 at an airflow rate 4.5 L/min. And for controls in the third sample with removal constant value is 0.0002 hour-^{1} in regression linear 0.9944.

Keywords: Aeration, COD, Cilemahabang river, Kinetic Rate

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TABLE OF CONTENT

LIST OF FIGURES

LIST OF TABLES