

INTISARI

Kualitas air berperan penting dalam kehidupan sehari-hari manusia. Kondisi kualitas air Sungai Winongo terpengaruh seiring tingginya pertumbuhan penduduk di Kota Yogyakarta. Hal ini berkaitan erat dengan pencemaran limbah domestik dari aktivitas sehari-hari manusia. Penelitian dilakukan melalui pengambilan sampel pada *outfall* air limbah dan badan air sungai. Penelitian ini bertujuan untuk menganalisis karakteristik limbah domestik, kondisi kualitas air berdasarkan baku mutu, serta status mutu air penggal Sungai Winongo Kota Yogyakarta yang diuji untuk air limbah yaitu pH, BOD, COD, TSS, Minyak & Lemak Total, Total Coliform, dan debit air limbah. Adapun parameter yang diuji pada air sungai yaitu DO, BOD, COD, pH, NH₃, NH₃-N, T-P, TSS, TDS, NO₃-N, Total Coliform, Fecal Coliform, Minyak dan Lemak. Kualitas air limbah dari IPAL komunal (IPAL 1, IPAL 2, IPAL 3) dan non-IPAL menunjukkan hasil yang melampaui baku mutu berdasarkan Permen LHK No. P.68/2016, terutama pada parameter BOD, COD, TSS, Amonia, Total Coliform, Minyak & Lemak, serta debit. Kemudian berdasarkan hasil analisis kualitas air sungai, diketahui bahwa Sungai Winongo penggal Kota Yogyakarta juga tidak memenuhi baku mutu air sungai kelas II, sesuai dengan PP No. 22 Tahun 2021. Namun, status mutu air sungai berdasarkan metode IKA-INA berada pada kriteria sedang hingga cukup baik dengan nilai indeks 67,6–72,5, yang dipengaruhi oleh sejumlah faktor tertentu. Kondisi ini juga menunjukkan adanya penurunan kualitas air apabila dibandingkan dengan tahun 2023 dan 2024 pada periode musim penghujan. Beberapa parameter yang melewati baku mutu merupakan parameter yang identik dengan limbah domestik, seperti Amonia, Total Fosfat, Total Coliform, dan Fecal Coliform.

Kata Kunci: IKA-INA, Kualitas Air, Limbah Domestik, Sungai Winongo

ABSTRACT

Water quality is one of the essential factors in supporting human daily life. The water quality condition of the Winongo River has been affected by the rapid population growth in Yogyakarta City. This is closely related to domestic wastewater pollution resulting from daily human activities. The research used the grab sampling method at the wastewater outfalls and the river body. This study aims to analyze the characteristics of domestic wastewater, assess water quality based on quality standards, and determine the water quality status of the Winongo River segment in Yogyakarta City. Parameters tested for domestic wastewater include pH, BOD, COD, TSS, Oil & Grease, Total Coliform, and wastewater discharge. Meanwhile, river water was tested for DO, BOD, COD, pH, NH₃, NH₃-N, Total Phosphate, TSS, TDS, NO₃-N, Total Coliform, Fecal Coliform, and Oil & Grease. The wastewater quality from communal wastewater treatment plants (IPAL 1, IPAL 2, and IPAL 3) and non-IPAL sources exceeded the quality standards set by Ministerial Regulation of Environment and Forestry (Permen LHK) No. P.68/2016, particularly for BOD, COD, TSS, Ammonia, Total Coliform, Oil & Grease, and discharge. Furthermore, based on the river water quality analysis, it was found that the Winongo River segment in Yogyakarta City also failed to meet the Class II river water quality standards, as regulated by Government Regulation No. 22 of 2021. However, the river water quality status based on the IKA-INA method falls within the moderate to fairly good category, with an index value ranging from 67.6 to 72.5, influenced by several contributing factors. This condition also indicates a decline in water quality compared to the 2023 and 2024 rainy season periods.. Several parameters that exceeded the quality standards were those typically associated with domestic wastewater, such as Ammonia, Total Phosphate, Total Coliform, and Fecal Coliform.

Keywords: *Domestic Wastewater, IKA-INA, Water Quality, Winongo River*