STUDY OF RESERVOIR WATER QUALITY BASED ON BOD (BIOLOGICAL OXYGEN DEMAND) AND TSS (TOTAL SUSPENDED SOLIDS) PARAMETERS IN ONE OF THE REGIONS IN EAST JAVA

*Fitriah, Ulandari**

D3 Study Program of Pharmaceutical and Food Analysis, Health Polytechnic, Ministry of Health, Malang
**Email: sintaainulfitriah10@gmail.com*

ABSTRACT

Background: *Water is a basic human need whose quality must be maintained to be safe for consumption. Reservoirs have become one of the sources of raw water, especially in several areas in East Java. However, the quality of reservoir water can decrease due to human activities around it, especially if the BOD and TSS content exceeds the set threshold. Objective: To determine the suitability of the water quality of Reservoir X in East Java as a source of drinking water based on BOD and TSS parameters according to PP No. 22 of 2021.* ***Research Method:*** *Sampling was carried out at three locations (upstream, middle, downstream) with three different depths (0.3 meters, 5 meters, and 10 meters). BOD parameters were analyzed using the five-day biological oxidation method (SNI 6989.72: 2009), while TSS was measured using the gravimetric method (SNI 6989.3: 2019). The results were then compared with the drinking water quality standards for class I.* ***Research Results:*** *The analysis results showed that the TSS values at most points were still below the quality standards (≤ 40 mg/L), except at two points, namely Hulu 2 (68.8 mg/L) and Tengah 3 (43.3 mg/L). Meanwhile, all BOD samples showed values that far exceeded the threshold (≤ 2 mg/L), with a range of 7.13–7.63 mg/L.* ***Conclusion:*** *Based on these results, it can be concluded that the water from Reservoir X is not yet suitable as a source of drinking water without further treatment.*

Keywords: *Water quality, BOD, TSS, Reservoir, Drinking water*