

ABSTRAK

Pertumbuhan penduduk turut memberikan peningkatan aktivitas manusia untuk memenuhi kesejahteraan hidup. Tanpa disadari, peningkatan aktivitas manusia dapat memberikan dampak penurunan kualitas lingkungan. Salah satunya adalah penggunaan kendaraan bermotor. Bus merupakan salah satu fasilitas umum kendaraan bermotor yang masih menjadi pilihan bagi masyarakat. Pembakaran bahan bakar bus menghasilkan partikel tersuspensi total (Total Suspended Particulate) yang mengandung logam berat, salah satunya adalah logam berat seng (Zn) yang dapat berdampak bagi kesehatan manusia. Penelitian ini bertujuan untuk mengetahui konsentrasi logam berat seng (Zn) dalam Total Suspended Particulate (TSP) di Terminal Giwangan dan Jombor, D.I.Yogyakarta, perbandingan konsentrasi antara hari kerja (weekdays) dan akhir pekan (weekend) serta tingkat risiko dari logam berat seng (Zn) dalam Total Suspended Particulate (TSP) di masing-masing terminal. Metode pengambilan sampel Total Suspended Particulate mengacu pada SNI 7119-3:2017 tentang Cara Uji Total Suspended Particulate (TSP) metode gravimetric menggunakan High Volume Air Sample (HVAS) sedangkan pengujian logam berat seng (Zn) mengacu pada SNI 7119-4:2017 tentang Cara Uji Kadar Timbal (Pb) metode destruksi basah menggunakan SSA-Nyala. Berdasarkan hasil perhitungan, konsentrasi Total Suspended Particulate di Terminal Jombor lebih tinggi dibandingkan Terminal Giwangan. Konsentrasi seng (Zn) di Pintu Masuk dan Area Parkir Bus Terminal Giwangan pada hari kerja (weekdays) yaitu sebesar $2,10 \mu\text{g}/\text{m}^3$ dan $2,27 \mu\text{g}/\text{m}^3$ sedangkan pada akhir pekan (weekend) sebesar $2,20 \mu\text{g}/\text{m}^3$ dan $2,01 \mu\text{g}/\text{m}^3$. Sementara itu, konsentrasi logam berat seng (Zn) di Pintu Masuk dan Area Parkir Bus Terminal Jombor pada hari kerja (weekdays) yaitu sebesar $2,14 \mu\text{g}/\text{m}^3$ dan $2,79 \mu\text{g}/\text{m}^3$ sedangkan pada akhir pekan (weekend) sebesar $2,02 \mu\text{g}/\text{m}^3$ dan $2,22 \mu\text{g}/\text{m}^3$. Tingkat risiko yang dihasilkan masih dalam kategori aman, dengan nilai Risk Quotien (RQ) ≤ 1 .

Kata kunci: Seng, Terminal Bus, Tingkat Risiko, Total Suspended Particulate

ABSTRACT

Population growth also elevates human activities to fulfill life's welfare. Unconsciously, human activities can impact on environmental quality such as vehicle emissions. Buses are the public facilities that still be an option for the people. The burning of bus fuel produces Total Suspended Particulate (TSP) which contains heavy metals, such as zinc (Zn). Those heavy metals can affect human health. This study aims to determine the concentration of heavy metals zinc (Zn) in Total Suspended Particulate (TSP) at Giwangan and Jombor Bus Station, D.I.Yogyakarta, Zinc (Zn) concentration comparison between weekdays and weekends at Giwangan and Jombor Bus Station, and also to know the risk assessment of zinc (Zn) in Total Suspended Particulate (TSP) at each bus stations. The sampling method of Total Suspended Particulate refers to SNI 7119-3:2017 using High Volume Air Sampler (HVAS) and the testing of heavy metal zinc (Zn) refers to SNI 7119-4: 2017 using Atomic Absorbion Spectrophotometer (AAS) by wet destruction. The results shows Jombor Bus Station's Total Suspended Particulate concentration is higher than Giwangan Bus Station's. In the other hand, zinc (Zn) concentrations at Entrance and Bus Parking Area of Giwangan Bus Station at weekdays are $2.10 \mu\text{g}/\text{m}^3$ and $2.27 \mu\text{g}/\text{m}^3$ while at weekends are $2.20 \mu\text{g}/\text{m}^3$ and $2.01 \mu\text{g}/\text{m}^3$. Meanwhile, the concentration of zinc (Zn) at the Entrance and Bus Parking Area of Jombor Bus Station on weekdays is $2.14 \mu\text{g}/\text{m}^3$ and $2.79 \mu\text{g}/\text{m}^3$ while on weekends (weekend) is $2, 02 \mu\text{g}/\text{m}^3$ and $2.22 \mu\text{g}/\text{m}^3$. The result of Zinc (Zn) risk assessment shows in the safe category, with a Risk Quotient (RQ) is under the limit of maximum value ($RQ \leq 1$).

Keywords: Bus Stations, Risk Assessment, Total Suspended Particulate, Zinc