Abstract

This paper presents a statistical analysis of air quality monitoring in Nairobi city, at three major roads and Industrial Area, a site closer to the main industrial activities. The study was carried out using different gas analyzers and samplers. From the statistical analysis it was found that, there were extremely high values of black carbon which went beyond the upper limit of the instruments (50,000 ŋg/m3) during the day on Ladhis road. Nakumatt Junction site recorded extreme values of Black carbon (14,008 ŋg/m3) in the evening hours, while at Pangani Roundabout site, the diurnal mean value was extreme (14,446.5 ŋg/m3) for the period. None of the four sites exceeded the WHO 24 h limit for both PM10 (50 µg/ m3) and PM2.5 (25 µg/m3). The 24 h mean values of PM10 in the three sites also did not exceed the ambient air quality tolerance Kenyan limit of 100 µg/Nm3 and 150 µg/Nm3 in industrial area. The diurnal mean of SO2 over the four sites was generally low with the highest amount of 1.08 ppb recorded at Pangani Roundabout. This amount is far much below the diurnal WHO and Kenyan limit of 10 ppb and 48 ppb respectively. The global background concentration of carbon monoxide ranges between 0.05-0.12 ppm. The mean 24 h amount of CO in all the sites was above the background concentration, with Pangani Roundabout recording the highest amount of 1.73 ppm. The eight h means for ozone in all the sites were below WHO limit of 51 ppb with the highest amount of 20.2 ppb recorded in industrial area.