

# INVESTIGATION OF THE INTERIOR AIR QUALITY OF THE LIGHT RAIL TRANSIT TRAINS IN METRO MANILA

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**Abstract:** This study investigated the interior air quality of air-conditioned trains of the Light Rail Transit (LRT) in Metro-Manila. The air contaminants assessed include chemical and biological contaminants and particulate matters (PM<sub>5</sub>). The chemical contaminants considered include carbon dioxide, carbon monoxide, sulfur dioxide, nitrogen oxide and volatile organic compounds such as toluene and benzene. A survey is conducted to determine the sicknesses/illnesses contracted by the passengers, which may due to poor interior air quality. The study recommended some interventions to maintain good interior air quality of the trains.

The concentration of chemical contaminants is measured using colorimetric method while the concentration of particulate matter is measured by gravimetric method using IOM sampler. The measurement of biological contaminants is determined by sedimentation test using a bio-stage compactor.

Preliminary results indicated a high concentration of carbon dioxide during peak time but it was still within the acceptable limit as set by the standard. There was no trace of the other chemical contaminants found in the trains. Generally, the concentration of biological contaminant was within the acceptable level of 1000 cfu/m<sup>3</sup> set by the American Conference of Governmental Industrial Hygienist.

**Key Words:** interior air quality, chemical and biological contaminants, particulate matter