

**MEASUREMENTS AND SOURCES OF PM_{2.5}, PM₁₀, VOLATILE ORGANIC COMPOUNDS,
AND POLYCYCLIC AROMATIC HYDROCARBONS IN GREATER CAIRO**

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Cairo, Egypt is generally classified as one of the world's "megacities", with an estimated population in excess of 20 million people in the greater Cairo/Giza area. It also suffers from high ambient concentrations of atmospheric pollutants. In order to reduce the levels of ambient pollution, the U.S. Agency for International Development (USAID) and the Egyptian Environmental Affairs Agency (EEAA) have supported the Cairo Air Improvement Project (CAIP). As part of the CAIP, a series of intensive ambient monitoring studies were carried out during the periods of February/March and October/November 1999 and June 2002. PM₁₀, PM_{2.5}, polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs) were measured on a 24-hour basis at sites representing background levels, mobile source impacts, industrial impacts, and residential exposure. The results were used to apportion the sources contributing to the observed pollutant levels. Major contributors to PM₁₀ included geological material, mobile source emissions, and open burning. PM_{2.5} tended to be dominated by mobile source emissions, open burning, and secondary species. The major contributors to NMHC at all sites were mobile emissions, lead smelting, and liquefied petroleum gas. This paper describes the results of the PM₁₀, PM_{2.5}, and VOC source attribution study. Results of the CAIP PM₁₀, PM_{2.5}, and lead monitoring program are also discussed. Based on these observations, recommendations to improve air quality are presented.