

**Ain Shams University
Institute of Environmental Studies and Research
Department of Environmental Basic Science**

**Risk Assessment for Different Air Pollutants of
Talkha Industrial Area**

By

Walid Abdel Karim Ragab Ali

B.Sc. in Chemistry – Faculty of Science
Mansoura University, 1998

A Thesis

Submitted in Partial Fulfillment of the Requirements
For the Master Degree in
Environmental Science

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ABSTRACT

Air pollution represents an environmental problem of public concern due to its negative effect on human health.

Different methods were utilized for sampling and analyzing the different air pollutants (CO, SO₂, NO₂, NH₃, and TSP) at several locations of Mansoura City for the purpose of assessing ambient air quality and studying the impact of different industrial facilities found in Talkha area on various locations at Mansoura City. These locations have been chosen to represent different receptors (residential, traffic, and urban).

Seasonal measurements of ambient air pollutants were recorded from 36 sites spreaded at Mansoura City. Results of measuring these pollutants showed that most sites recorded levels lower than ambient air quality limit (AQL) established by the Egyptian Environmental Law No. 4/1994 except for TSP.

GIS technique (contouring maps) has been used to represent the data which indicated the main hot spot areas of ambient air pollutants. Health records were obtained for a number of patients hospitalized from air pollution related diseases.

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IN THE NAME OF ALLAH THE MERCIFUL THE
COMPASSIONATE REFACE.

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my son **Youssof**, who have been most helpful, patient and
understanding.

Walid Abdel Karim Ragab

List of Abbreviations

Abbreviation	Meaning
ACGIH	American Conference of Governmental Industrial Hygienists
AQIs	Air Quality Indices
AQL	Air Quality Limit
AQM	Air Quality Monitoring
AR	Autoregressive
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
cc	Cubic centimeter
cm	Centimeter
Co.	Company
EEAA	Egyptian Environmental Affairs Agency
EIMP	Environmental Information Monitoring Programme
EPA	Environmental Protection Agency
EPAP	Egyptian Pollution Abatement Project
FDA	Food and Drug Administration
Fig.	Figure
ft³	Cubic feet
GC	Gas Chromatograph
GIS	Geographical Information System
gm	Gram
GPS	Global Positioning System
hr	Hour

IDSC	Information and Decision Support Center
IGSR	Institute of Graduate Studies and Research
kg	Kilogram
km	Kilometer
km²	Kilometer square
LCD	Liquid Crystal Display
LED	Light Emitting Diode
m	Meter
mg	Milligram
min.	Minute
mm	Millimeter
m³	Cubic meter
MSR	Mansoura
NGOs	Non Governmental Organizations
NILU	Norsk institutt for luftforskning (Norwegian Institute for Air Research)
NMHCs	Non Methanic Hydrocarbons
NOx	Nitrogen Oxides
N.D	Not Detected
PC	Personal Computer
PM	Particulate Matter
Ppb	Part per billion
Ppm	Part per million
RBO	Regional Branch Office
rd.	Road
RR	Relative Risk
S	Second
SCEP	Study of Critical Environmental Problems

SO_x	Sulfur Oxides
SPM	Suspended Particulate Meter
st.	Street
T	Ton
TSP	Total Suspended Particulate
U.S	United States
USEPA	United State Environmental Protection Agency
VOCs	Volatile Organic Compounds
WHO	World Health Organization
Yr	year
μ	micron
μg	microgram
μm	micrometer
°C	Degree Celsius
%	Percentage

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