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DANIDA

Environmental Information and Monitoring Programme (EIMP). Air Quality Monitoring Component.

AirQuality Monitoring Sites in Egypt Site Catalogue

Bjarne Sivertsen and Haytham Ahmed



Environmental Information
and Monitoring Programme



Norwegian Institute
for Air Research

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Table of Contents

1	Introduction	3
2	The Programme	4
2.1	Selected Sites	4
2.2	Indicators	4
2.3	Site Characteristics	5
2.4	The Complete Programme	6
3	The Site description	11
	Appendix A The Site Description	13
	Air Quality Monitoring Network - Qulaly Site Report	15
	Air Quality Monitoring Network - El Gomhoryia Site Report	16
	Air Quality Monitoring Network - Abbassyia Site Report	17
	Air Quality Monitoring Network - Nasr City Report	18
	Air Quality Monitoring Network - Maadi Report	19
	Air Quality Monitoring Network - Tabbin Report	20
	Air Quality Monitoring Network - Tabbin south Report	21
	Air Quality Monitoring Network - Abu Zabel Report	23
	Air Quality Monitoring Network - Shoubra Report	24
	Air Quality Monitoring Network - Kaha	26
	Air Quality Monitoring Network - 6th of October Report	27
	Air Quality Monitoring Network - 10th of Ramadan Report	28
	Air Quality Monitoring Network - Suez Report	29
	Air Quality Monitoring Network - Port Said Report	30
	Air Quality Monitoring Network - Ismailia Report	31
	Air Quality Monitoring Network - El Fayum Report	32
	Air Quality Monitoring Network - El Minya Report	33
	Air Quality Monitoring Network - Assyut1 Report	34

Air Quality Monitoring Network - Assyut2 Report _____	35
Air Quality Monitoring Network - Nag Hammadi Report _____	36
Air Quality Monitoring Network - Luxor Report _____	37
Air Quality Monitoring Network - Edfu Report _____	38
Air Quality Monitoring Network - Kom Ombo Report _____	39
Air Quality Monitoring Network - Aswan Report _____	40
Air Quality Monitoring Network - Ras Mohammed Report _____	41
Air Quality Monitoring Network - Abu Quir Report _____	42
Air Quality Monitoring Network - El Max Report _____	43
Air Quality Monitoring Network - IGSR, Alex. University Report __	44
Air Quality Monitoring Network - El Asafra Report _____	45
Air Quality Monitoring Network - Gheat El-Inab Report _____	46
Air Quality Monitoring Network - IGSR, Background Report _____	47
Air Quality Monitoring Network - Damanhur Report _____	48
Air Quality Monitoring Network - Kafr El Zayat Report _____	49
Air Quality Monitoring Network - Tanta Report _____	50
Air Quality Monitoring Network - El Mahalla Report _____	51
Air Quality Monitoring Network - El Mansura Report _____	52
Air Quality Monitoring Network - Domyat Report _____	53
Air Quality Monitoring Network - Kafr El Dawar Report _____	54
Air Quality Monitoring Network - El Nahda Report _____	55
Air Quality Monitoring Network - El Shouhada square Report _____	56

1 Introduction

EIMP is an 8 years programme established by Egyptian Environmental Affairs Agency (EEAA) in co-operation with Danida in order to have a view of the present environment. As part of the EIMP programme a national air pollution monitoring programme consisting of a total 42 measurement sites have been developed and established.

The design of the EIMP Air Quality Monitoring network includes:

- Data collectors; sensors and monitors
- Data transfer systems and data quality assurance/control procedures
- Data bases
- Data distribution systems.

The Center of Environmental Hazard Mitigation (CEHM) at Cairo University and the Institute of Graduate Studies and Research (IGSR) at Alexandria University are operating on behalf of EEAA, a total of 14 sites located in Greater Cairo area, 8 sites in Alexandria area, 7 sites in Delta, 3 sites in Canal area and 10 sites in Upper Egypt and Sinai.

2 The Programme

It is important to bear in mind, when looking to the distribution of sites, that EIMP is concerned only with the air that people breath. Due to this reason most of the sites are located in residential areas or industrial areas surrounded by residential or urban areas.

2.1 Selected Sites

EIMP Air Quality Monitoring Programme is providing information to support and facilitate the assessment of air quality in the selected areas. The information provided by the EIMP Programme will:

- Provide a general description of Air Quality, and its development over time(trend)
- Enable comparison of Air Quality from different areas
- Produce estimates of individual source contributions
- Indicate the exposure of air pollution to the population
- Evaluate levels of pollution compared to national and international limits
- Represent input to future information and assessment of air quality

2.2 Indicators

The selected set of environmental indicators is being used by EIMP Programme as a basis for the design of the Air Quality Monitoring network and for reporting the state of the environment.

Air Quality indicators should:

- Provide a general picture
- Be easy to interpret
- Respond to changes
- Provide international comparisons
- Allow development of trend analyses.

To enable a balanced interpretation of the measured data, the results are being compared to international and national Air Quality Limit values, Standards or guidelines. The guidelines as given by World Health Organization include a selection of basic priority pollutants.

These pollutants represent the main Air Pollution indicators, and include usually:

- Sulphur Dioxide (SO₂)
- Nitrogen Dioxide (NO₂) and/or NO_x (Nitrogen oxides),
- Total Suspended Particulate matter (TSP), or better PM₁₀ (suspended particles with diameter less than 10 micrometer).
- Ozone (O₃)
- Carbon Monoxide (CO)

Not all parameters are being measured by the EIMP/EEAA Programme at all sites. This depends on site specification and typical dominating sources in the specific area. In some sites in Egypt VOC (Volatile Organic Compounds) and Dust Fall are being measured.

2.3 Site Characteristics

The number of sites and area types are presented in the following table.

Area type	Cairo	Alex.	Delta and Canal	Upper Egypt	Sinai	Total
Industrial	3	3	3	2		11
Urban	1	1	3	4		9
Residential	4	2	2	2		10
Street/road	3					3
Regional/backr.	1	1			1	3
Mixed areas	2	1	2	1		6
Total	14	8	10	9	1	42

The design, development, construction and installation of the measurement programme started in 1997 and were completed in July 1999. CEHM is operating 27 Monitoring and Sampling sites in Cairo, Canal area, Upper Egypt and Sinai while 15 sites are being operated by IGSR in Alexandria and Delta. These sites are all part of EIMP/EEAA Air Quality Monitoring Programme.

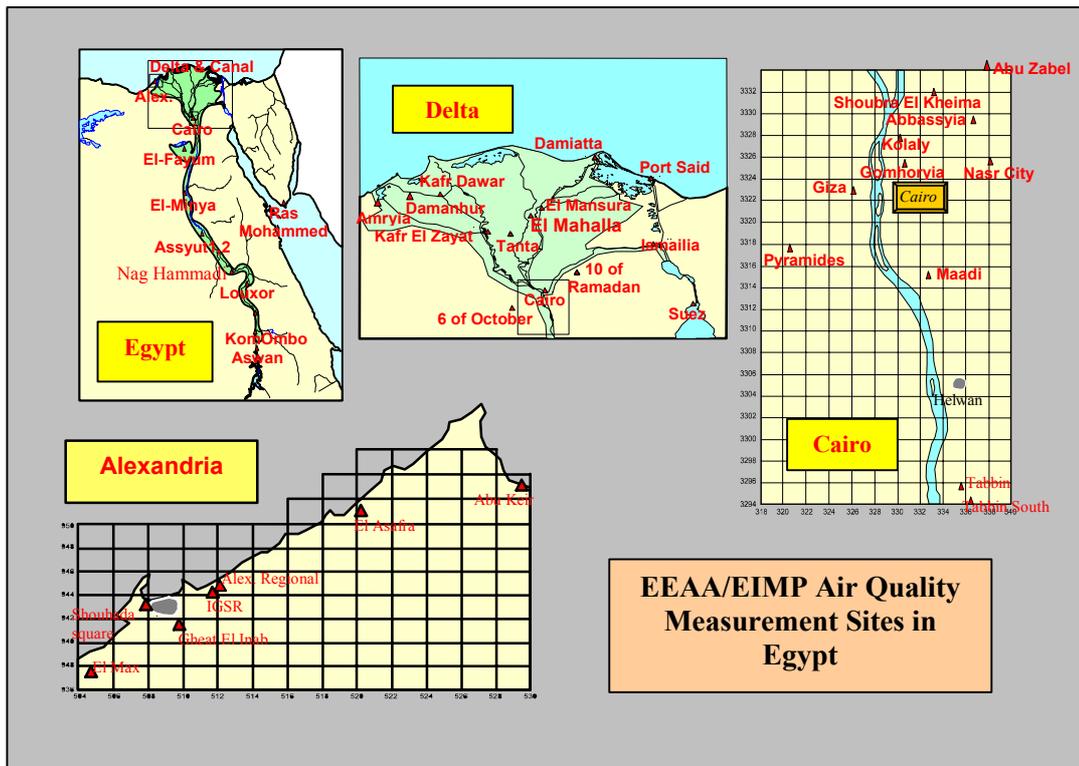


Figure 1: The EEAA/EIMP Air Quality Measurement Sites in Egypt

2.4 The Complete Programme

This chapter describes the different types of Instrument used in the network.

Instrument used

The instrument used in the EIMP Air Quality Monitoring network can be classified to automatic monitors, semiautomatic samplers and samplers.

Monitors

The following Monitors are being used in the EIMP Air Quality Monitoring network.

Pollutants	SO ₂	NO/NO ₂	PM ₁₀	CO	O ₃
Concentration Units	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)
Measurement technique	Pulsed UV-Flourescens	Chemiluminescence	Tapered Filter element oscillating microbalance	Gas Filter correlation (Infrared Absorption)	UV-Photometric Absorption
Instrument type	Thermo Environmental (TEI) M 43 C	Thermo Environmental (TEI) M 42 C	Beta gauge Ambient particulate monitor	TEI M 48 C	TEI M49 C

Sequential Air Samplers

The NILU semi-automatic sequential samplers (FK) type is equipped with 7 filter packs in a series for 24-h average (adjustable) sampling continuously for one week. The sampler has been widely used for daily average SO₂ and NO₂.

SO₂

The sequential sampler for SO₂ collects aerosol and gas in ambient air in a filter pack, which consists of an aerosol pre-filter and an impregnated filter mounted in a filter holder. The flow rate is about 2.5 l/min. The first can be used to analyze soot (Black smoke, BS) concentrations and in some cases sulfate.

NO₂

NO₂ is collected with a flow rate of about 0.5 l/min. Air is drawn through Air intake (inverted funnel) and glass filter impregnated with sodium iodide (NaI) and sodium hydroxide (NaOH). Nitrogen dioxide is absorbed in the filter and the iodide reduces NO₂ to nitrite.

PM₁₀ HiVol Sampler

TEI model 600 PM10 (Thermo Environment)
Flow rate 68 m³/h
US EPA approved

PM₁₀ Airmetrics sampler

The MiniVol Portable Airmetrics sampler is an ambient Air Sampler for particulate matter and non-reactive gases. The EIMP Programme is using it for 24-h average PM₁₀ sampling every six-day through a 7-day programmable timer. The flow rate is about 5 l/min.

TSP HiVol sampler

TEI model 610 TSP HiVol (Thermo Env.)
Flow rate 68 m³/h
Glass fiber filter
Concentration of selected elements (Pb, Zn, Cd etc.) may be performed
US EPA approved

Summary of flow rates:

Instrument	Flow rates			
	m ³ /min	m ³ /hour	m ³ /day	m ³ /week
Thermo HiVol TSP/PM ₁₀	1,13	67,8	1627,2	11390,4
Thermo PM ₁₀ monitor	0,0189	1,134	27,216	190,512
NILU FK NO ₂	0,005	0,03	0,72	5,04
NILU FK SO ₂	0,0025	0,15	3,6	25,2
Airmetrics	0,005	0,3	7,2	50,4

Passive samplers

NILU/IVL passive samplers

Sampling time one to four weeks

Analyses in the laboratory by Ion chromatographs

Dust Fall

NILU international standard dust fall collectors

30 days sampling periods

Samples analyzed in laboratory

ISO recommended sampler

Automatic Weather Station (AWS):

In addition to Air Quality monitors also meteorological data are being recorded as the most important parameters for explaining the air quality data. An automatic weather station (AWS) is recording:

- Wind speeds,
- Wind direction,
- Temperatures (preferable at 2 levels)
- Solar radiation
- Relative humidity

EIMP Air Quality Monitoring Programme, Operated Jan. 2001

ID	Station Name	Area Type	Parameters														Starting Date	
			Monitors						Samplers									
			SO ₂	NO _x	PM ₁₀	O ₃	CO	Met	SO ₂	BS	NO _x	PM ₁₀	VOC	TSP	DF	PS		
1	El-Kolaly	Urban Center	1	1	1*										1*			24-May-98
2	El-Gomhoryia	Street Canyon	1	1			1					1						25-Dec-97
3	Abbassyia	Urb./Res.	1		1	1		1									1	22-May-99
4	Nasr City	Residential								1	1	1	1					08-Oct-98
5	El-Maadi	Residential	1	1									1++					10-Dec-98
6	Tabbin	Industrial	1	1	1				1						1			27-Oct-97
7	Tabbin South	Industrial								1	1				1--	1		19-Oct-98
8	Fum El-Khalig	Road side/Urb.	1	1	1		1											07-Nov-98
9	Abu Zabel	Ind./Res.										1				1	1	16-Nov-98
10	Shoubra El Kheima	Industrial	1						1-			1'''	1		1			01-May-98
11	Cairo University	Residential	1	1			1+		1									18-Jul-98
12	Kaha	Regional back		1	1	1			1								2	Oct-2001
13	6 October	Res./Ind.								1	1	1	1					12-Jan-99
14	10 Ramadan	Residential								1	1		1				1	15-Dec-98
15	Suez	Urban	1	1											1	1		03-Feb-99
16	Port Said	Residential											1				2	10-May-99
17	Ismailia	Urb./Res.											1				2	04-Feb-99
18	El Fayum	Urban											1				1	03-Feb-99
19	El-Minya	Res./Ind.											1				1	09-Jul-99
20	Assyut1	Res./Urb.															1	08-Jul-99
21	Assyut2	Res./Urb.	1	1	1				Por.									Jan-2000
22	Nag Hammadi	Ind./Res.										1					1	07-Jul-99
23	Luxor	Urb./Res.								1	1						1	08-Jun-99
24	Edfu	Ind./Res.											1				1	06-Jul-99
25	KomOmbo	Industrial								1	1		1				1	09-Jul-99
26	Aswan	Urb./Res.	1				1		1''								1	23-Jun-99
27	Ras Mohamed	Background					1						1				1	13-Mar-99
28	Abu keir	Industrial											1	1				22-Mar-2000
42	El Shouhada	Traffic	1	1									1					
29	El-Max	Industrial								1	1	1	1				1	15-Nov-98
30	IGSR	Traffic	1	1	1			1										15-Nov-98
31	El Asafra	Residential								1	1		1				1	15-Nov-98
32	Gheat El-Inab	Residential								1	1	1	1				1	15-Nov-98
33	IGSR. Regional	Back.					1		1									15-Nov-98
41	El -Nahda	Industrial											1				1	20-Feb-2000
34	Damanhur	Industrial/Res.											1				2	15-Feb-99
35	Kafr El-Zayat	Industrial/Res.	1	1	1								1				1	20 Aug-99
36	Tanta	Urban								1	1		1				1	15-Jun-99
37	El-Mahalla	Industrial	1		1													17-Jun-99
38	El Mansura	Indus./Res.	1	1					1									15-Apr-99
39	Damiatta	Residential								1	1		1				1	15-May-99
40	Kafr El Dawar	Residential								1	1		1					15-Mar-99

* Starting Date 21-Nov-98
 '' Starting Date 1-Oct-99
 --Starting Date 5-Mar-99

-Starting Date 1-Jul-98
 * Starting Date 25-Jul-99
 ''' Starting Date 5-Apr-99

+ Starting Date 13-Aug-98
 ++ Starting Date 3-Aug-99

The number of instruments operated in each institution is shown in the following table.

Institution	Monitors						Samplers							
	SO ₂	NO _x	PM ₁₀	O ₃	CO	Met.	PM ₁₀	TS P	VOC	SO ₂	NO _x	PA	PS	DF
CEHM	11	8	6	4	3	6	6	5	3	6	3	7	24	15
IGSR	5	4	3	1	1	2	4	-	2	6	3	5	9	15
NIS	1	1	-	1	1	-	-	-	-	-	-	-	-	-

Shelters

EIMP has constructed number of shelters with different dimensions to host various Air Monitoring instruments, data acquisition systems, and sampling equipment. Shelters were constructed using advanced techniques and protected from fine sand and dust.

3 The Site description

A complete description of sites is presented in Appendix A. Each site has an identification no. (AQ1-42). The site locations are given by UTM references.

Appendix A

The Site Description

Air Quality Monitoring Network - Qulaly Site Report

Site Name: Qulaly Square

ID: AQ01

Co-ordinates (UTM): 330.594, 3326.603

Address : El Sherifa St., near Abbdein district.

Building and rooms available: The shelter is placed on 3-m high small building belonging to the local governorate.

Area description : Urban center with dense traffic on the street coming from shoubra and crossing streets into Al Qulaly and to Ramses Station.

Local Sources : The area is expected to be highly polluted from traffic in the main railway station area of Cairo. There are small industries north of the site and the whole Shoubra area is located upwind in prevailing wind direction.

Representativity : Representative for the urban central part of Cairo.

Paramters to be measured: SO₂, NO₂, PM₁₀, TSP, and VOC.

Measurement Equipment : SO₂ and NO₂ by monitors, PM₁₀ by beta gauge monitor, TSP by high volume sampler and VOC by sampler.

Infrastructure:

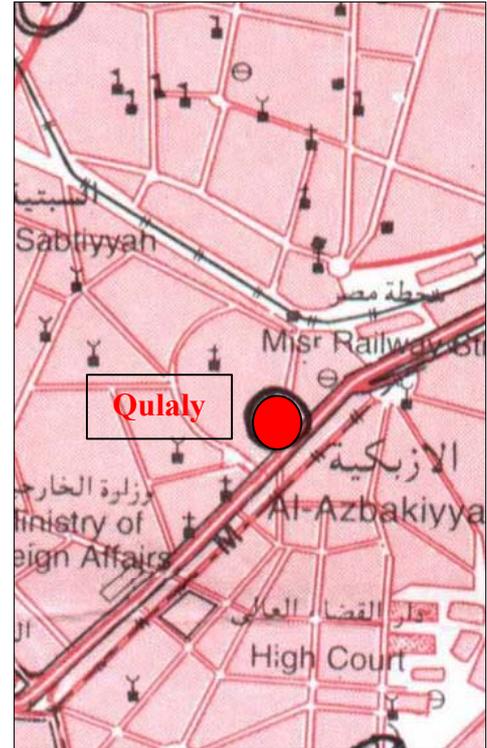
Power :line is connected

Telephone line :Private line is connected

Instrument locations: Monitors inside the shelter and TSP sampler is located beside the shelter.

Air Intake : 4 m above the ground.

Personnel : Mr. Yassin Fathy, Cairo University.



Air Quality Monitoring Network - El Gomhoryia Site Report

Site Name: El Gomhoryia

ID: AQ02

Co-ordinates (UTM): (M36) 641.2, 822.5

Address : El Gomhoryia Street, Attaba, Cairo.

Access/availability: Near Ramses square, heavy traffic, difficult to park in the street.

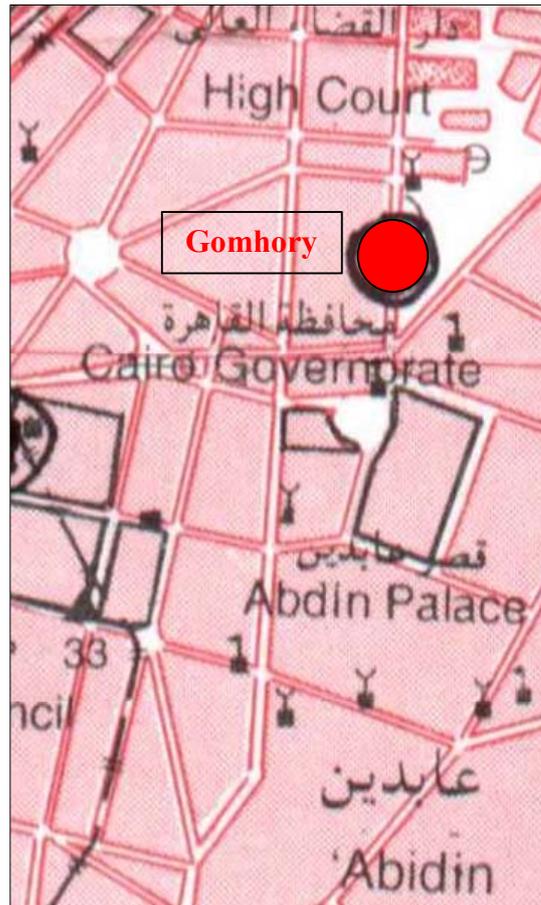
Building and rooms available: Instruments are located in a room in the first floor in a building belongs to Arab contractors company.

Area description : Street canyon in urban area with heavy traffic and high level of activities.

Local Sources : Mainly traffic in the general area and around Ramses square (about 300m from the site). Heavy traffic on Gomhoryia street just under the sampler intake.

Representativity : Representative for street canyons in central Cairo.

Paramters to be measured: SO₂, NO₂, CO, PM₁₀ and VOC.



Measurement Equipment : SO₂, NO₂ and CO by monitors, PM₁₀ by Airmetrics sampler and VOC by sampler.

Infrastructure:

Power : 220v available in the room.

Telephone line : Private line is connected in the room.

Instrument locations : Monitors inside the room, PM₁₀ sampler in the 2nd floor.

Air Intake : 3m from the ground.

Personnel : Dr. Islam Abdou, Arab contractor company.

Air Quality Monitoring Network - Abbassya Site Report

Site Name: El Abbassya

ID: AQ03

Co-ordinates (UTM): (M36) 643.5, 818.1

Address : El Khalipha El Mamoun St., Abbassya, Cairo.

Access/availability: The station is located at one of the buildings of the Meteorological Authority near Abbassya.

Building and rooms available: Instruments are located in a shelter on the top of 3 floors building.

Area description: Regional residential area normally up-wind from Cairo city center, but down-wind from the Shoubra industrial area and Shoubra urban area.

Local Sources : No immediate local sources, but regionally exposed.

Representativity : Representative for regional urban area.

Paramters to be measured: SO₂, NO₂, O₃ and Meteorology.

Measurement Equipment : SO₂ and O₃ by monitors, NO₂ by passive sampler and Met. by Meteorological mast.

Infrastructure:

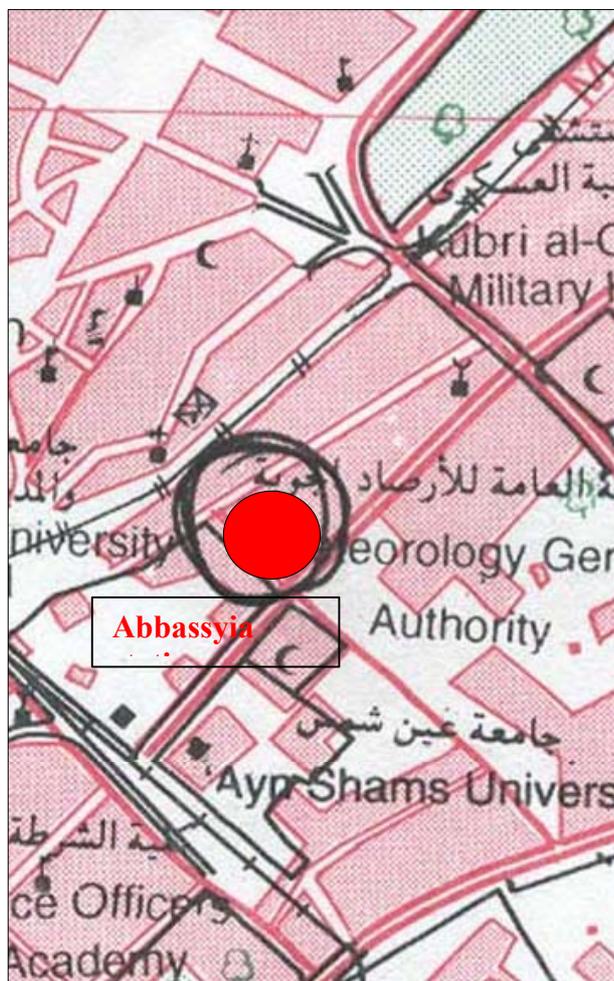
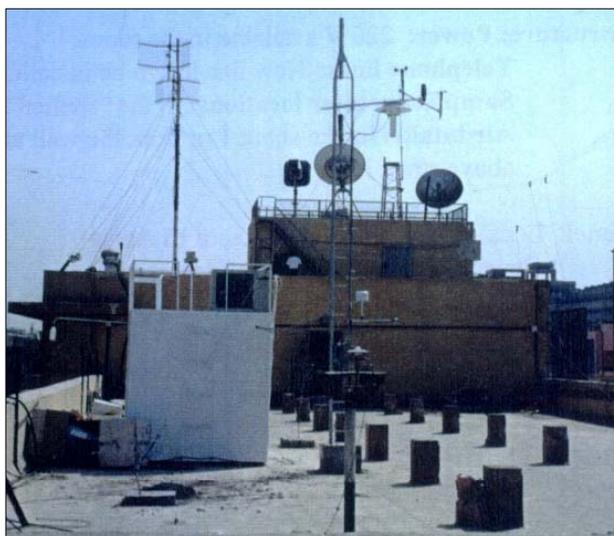
Power : 220v available
In the room.

Telephone line : Private line is connected in the room.

Instrument locations : Monitors inside the shelter, the mast is just outside the shelter.

Air Intake : 1m from the wall, about 16-m above the street level.

Personnel : Dr. Abd El Raouf Al Asrag, the manager of scientific research department.



Air Quality Monitoring Network - Nasr City Report

Site Name: Nasr City

ID: AQ04

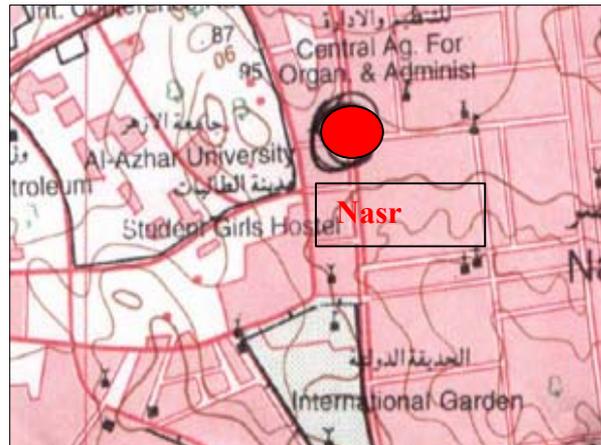
Co-ordinates (UTM): (M36) 646.3, 817.1

Address: El Tayaran St. Nasr City, Cairo.

Access/availability: Easily from El-Tayaran street, the building belongs to Nasr city hospital.

Building and rooms available: The Instruments are located inside a shelter on the top of security room at the entrance of the hospital.

Area description: Roadside to residential area; highly trafficked.



Local Sources : Traffic mainly on El Tayaran street, no industrial sources in the area.

Representativity : The site is Representative for the highly trafficked roads inside Cairo.

Paramters to be measured : SO₂, NO₂, and PM₁₀.

Measurement Equipment : SO₂ and NO₂ by sequential samplers. High volume sampler for PM₁₀.

Infrastructure:

Power : 220v available in the shelter.

Telephone line : Not needed.

Instrument locations : Inside the shelter and on the top of the roof.

Air Intake : Intake about 6m from the ground.

Personnel : Mr. Mahmoud Hanafy, Cairo university.

Air Quality Monitoring Network - Maadi Report

Site name: Maadi, EEAA building

ID: AQ05

Co-ordinates (UTM): (M36) 638.9, 805.7

Address: 30 Misr Helwan St., Maadi, Cairo.

Access/availability: First floor of EEAA building, eastern corner of laboratories.

Building and rooms available: Corner of laboratory.

Area description: Residential

Local Sources : Mainly Traffic and general activities of people.

Representativity: Typical for western Maadi area, near street surrounded by tall trees (slightly more traffic impacted than inside residential Maadi).

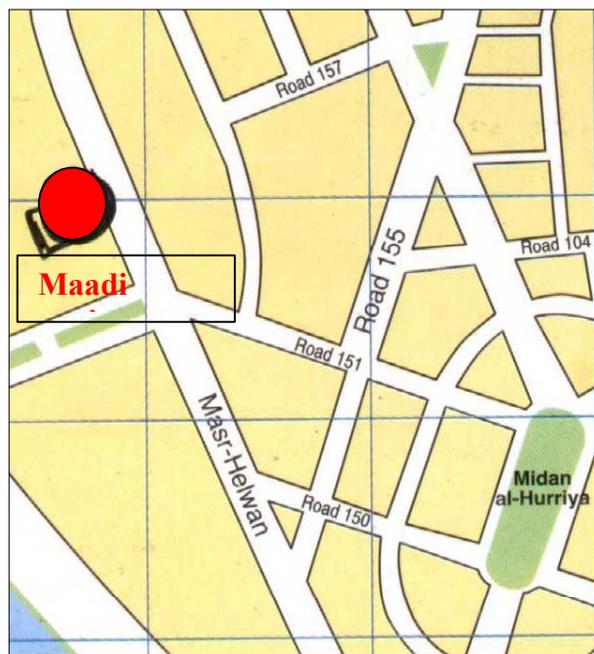
Parameters to be measured : SO₂, NO₂, and PM₁₀.

Measurement Equipment : Monitors for SO₂ and NO₂ , high volume sampler for PM₁₀.

Infrastructure:

Power : available in the Lab.

Telephone line : private line is connected.



Instrument locations : Monitors are located inside the lab. and sampler is on the top of EEAA building.

Air Intake : Intake about 4m from the ground.

Personnel : Dr. Magdi Allam Cairo Branch director.

Air Quality Monitoring Network - Tabbin Report

Site name: Tabbin.

ID: AQ06

Co-ordinates (UTM): (M36) 644.2, 823.5

Address: Tabbin Institute for Metallurgical studies, Tabbin, Cairo.

Access/availability: Easily through the main gate on road south of TIMS. Parking place available outside building.

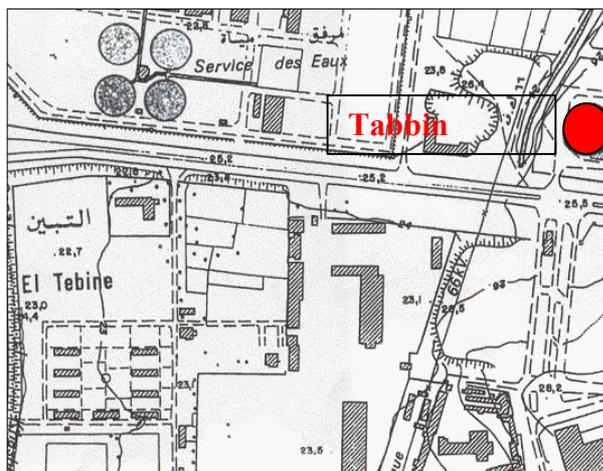
Building and rooms available: Room nicely prepared in the 5th floor of the northern corner of the Energy Conservation building.

Area description: Industrial, polluted from several cement factories and others north of the site, and smelters and chemical industries to the south.

Local Sources : Smelters, steel and iron factories, coke factory within 1 Km to the south, cement factories in the sector north-west to north-east.

Representativity : Very polluted industrial area. Data is showing the impact of industries on the building.

Paramters to be measured : SO₂, NO₂, TSP, PM₁₀ dustfall and meteorology.



Measurement Equipment : Monitors for SO₂ and NO₂ , beta gauge for PM₁₀, high volume sampler for TSP, dustfall collector and automatic weather station on 10-m mast.

Infrastructure:

Power : available in the room.

Telephone line : private line is connected.

Instrument locations: In the room prepared on the 5th floor.

Air Intake : About 12m above the ground

Personnel : Locally at TIMS, Mr. Maher Hafez from CEHM.

Air Quality Monitoring Network - Tabbin south Report

Site name: Tabbin south

ID: AQ07

Co-ordinates (UTM):

Address : Arab Abu Saed school, Arab abu saed area, Tabbin south, Cairo.

Access/availability: Easy to park outside the school and to access the 3rd floor.

Building and rooms available: Shelter is located on the top of the school.



Area description: Residential area impacted by industrial emissions.

Local Sources : Brick factories and cement factories.

Representativity : Mainly industrial area surrounded by randomly distributed buildings.

Parameters to be measured : SO₂, NO₂, VOC, TSP and dustfall.

Measurement equipment:

SO₂ by sequential sampler, NO₂ by passive sampler, VOC by sampler, TSP by high volume sampler and DF by dustfall collector.

Infrastructure:

Power : 220V available in the shelter.

Telephone line : Not needed.

Instrument locations: In the shelter on the top of the school.

Air Intake : About 12m above the ground

Personnel : Mr. Maher Hafez from CEHM.

Air Quality Monitoring Network - Fum El Khalig Report

Site name: Fum El Khalig

ID: AQ08

Co-ordinates (UTM): (M36) 637.358, 812.702

Address : Quasr Al-Ainy St. Fum El Khalig, Cairo.

Access/availability: Inside a park at the corner of Quasr Al-Ainy and Corniche Al-Nil. Parking at the fence.

Building and rooms available: A shelter is placed inside the fence at western entrance (at Corniche).

Area description: Urban center roadside monitoring station with dense traffic on the streets on both sides of the site.

Local Sources : The area is expected to be highly polluted from traffic on two main roads and down wind from the city center of Cairo and down wind from Garden city. The measurements are important to characterize the general pollution level in Cairo.

Representativity : Representative for the urban central part of Cairo and specifically near two main roads.

Paramters to be measured : SO₂, NO₂, CO and PM₁₀.

Measurement equipment:

All Paramters are measured by Monitors.

Infrastructure:

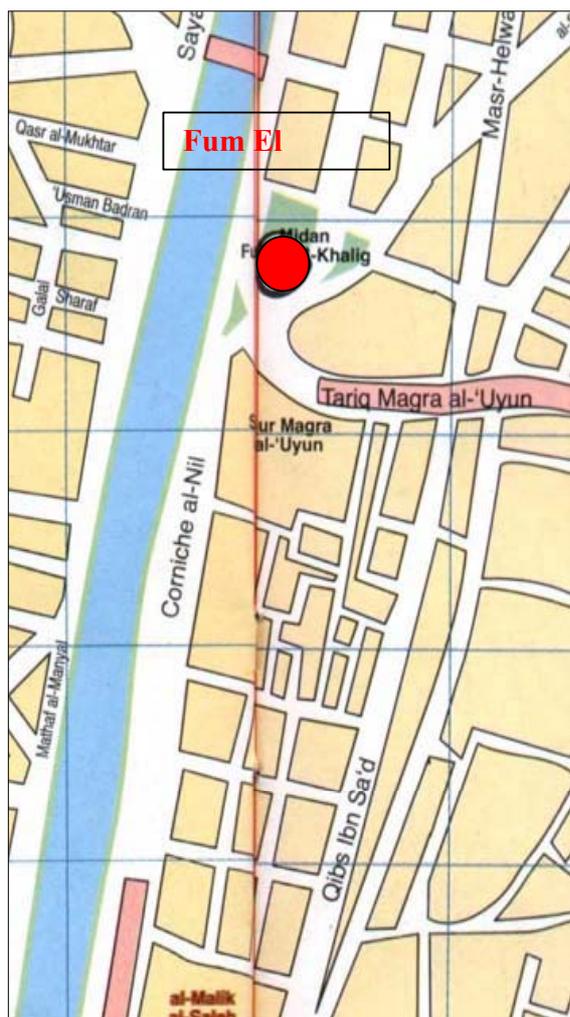
Power : 220V available in the shelter.

Telephone line : private line is connected.

Instrument locations: In the shelter.

Air Intake : About 3m above the ground

Personnel : Mr. Tarek Araby, from CEHM.



Air Quality Monitoring Network - Abu Zabel Report

Site name: Abu Zabel.

ID: AQ09

Co-ordinates (UTM):

Address:

Access/availability	:	on the top of one floor building belongs to governmental company.
Building and rooms available:		small iron box is placed on the top of the roof.
Area description	:	Urban/industrial area.
Local Sources	:	The area is surrounded by small work shops .
Representativity	:	Representative for the urban/industrial areas on the borders of Cairo.
Paramters to be measured	:	SO ₂ , NO ₂ and PM ₁₀ .
Measurement equipment	:	SO ₂ and NO ₂ by passive samplers. PM ₁₀ by Airmetrics low volume sampler.
Infrastructure	:	
Power	:	available in the iron box.
Telephone line	:	Not needed.
Instrument locations	:	on the top of the roof.
Air Intake	:	About 6m above the ground
Personnel	:	Mr. Tarek Araby, from CEHM.

Air Quality Monitoring Network - Shoubra Report

Site name: Shoubra El Kheima

ID: AQ10

Co-ordinates (UTM): (M36) 641.2, 823.5

Address: Ahmed Shalaan school, Ismailia Canal, Shoubra El Kheima.

Access/availability: parking outside, along the north shore of Ismailia Canal, between several smelters.

Building and rooms available: Room in the 4th floor of Ahmed Shalaan school, on the southeast corner of the building.

Area description: Highly industrial, very polluted, several small smelters and various industries.

Local Sources : Lead smelters to the west, north and east of the school, within a few hundred meters.

Representativity : Very polluted industrial area. Data show the impact of industries on the building.

Paramters to be measured : SO₂, NO₂, TSP, PM₁₀ and Met.

Measurement equipment:
SO₂ by monitor, NO₂ by sequential sampler, TSP by high volume sampler, PM₁₀ by Airmetrics low volume sampler and Met. by automatic weather station.

Infrastructure:

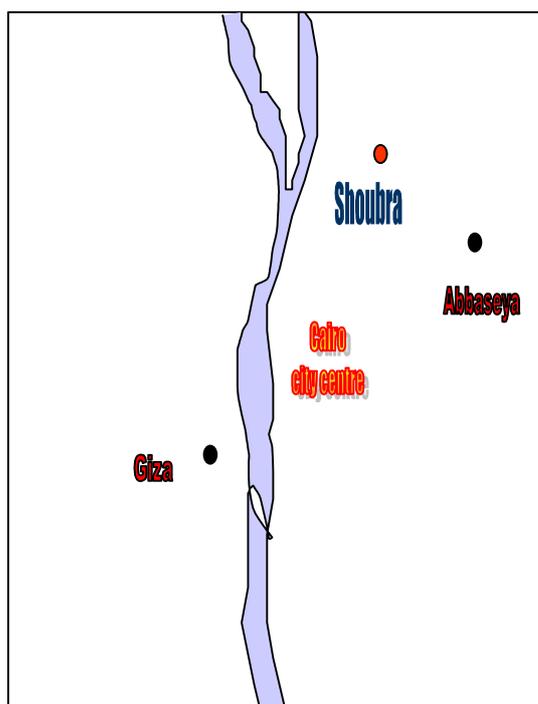
Power : available in the room.

Telephone line : Telephone line is connected.

Instrument locations: inside the room and on the top of the roof.

Air Intake : About 10m above the ground.

Personnel : Mr. Tarek Araby, from CEHM.



Air Quality Monitoring Network Giza Report

Site name: Giza, Cairo University.

ID: AQ11

Co-ordinates (UTM): (M36) 634.9, 814.1

Address: Abd El Salam Aref street, Giza.

Access/availability: Through gate for dormitory from Abd El Salam Aref street. Parking outside dormitory.

Building and rooms available: Room in the 3rd floor of one of the buildings, belongs to the university.

Area description: Residential area surrounded by heavy traffic roads.

Local Sources : Few local sources. Traffic more than 100m away from intake.

Representativity : Representative for one kilometer scale pollution in Giza area generally.

Parameters to be measured : SO₂, NO₂, O₃ and Met.

Measurement equipment:

SO₂, NO₂ and O₃ are measured by monitors. Met. is measured by automatic weather station.

Infrastructure:

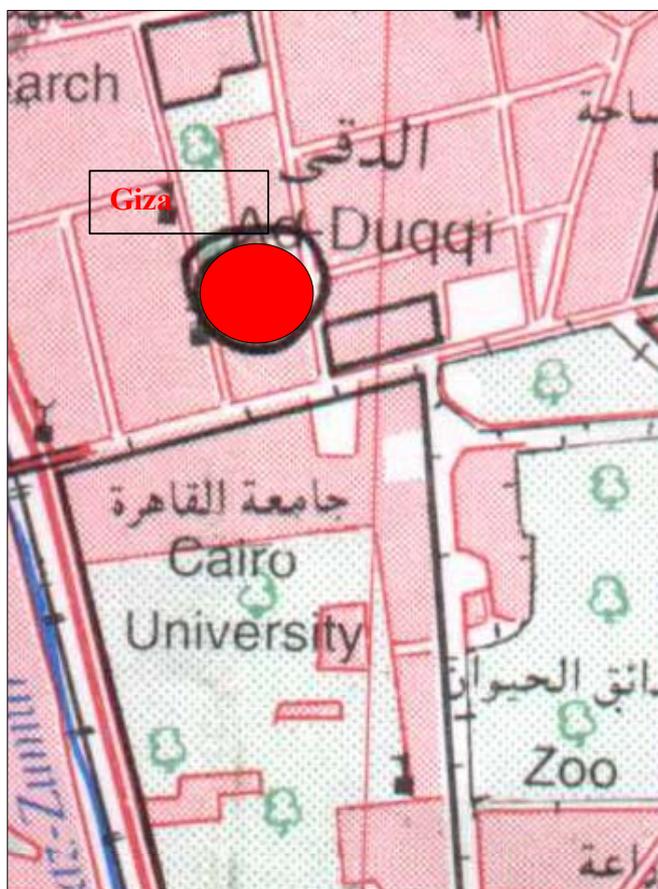
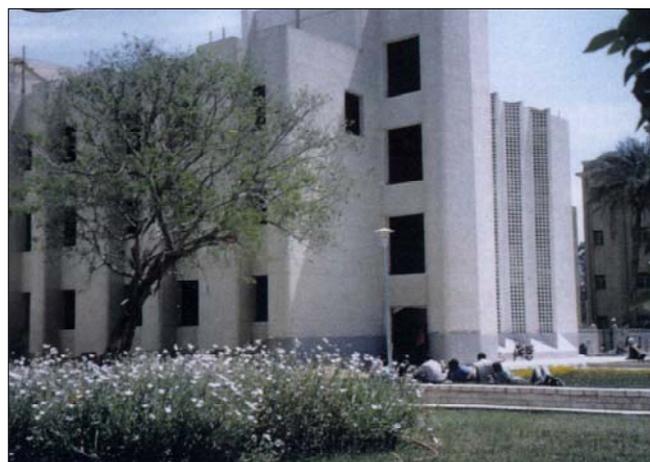
Power : available in the room.

Telephone line : taken from the university.

Instrument locations: in a small room in the 3rd floor.

Air Intake : About 8m above the ground.

Personnel : Mr. Tarek Araby, from CEHM.



Air Quality Monitoring Network - Kaha

Site name: Kaha.

ID: AQ12

Co-ordinates (UTM):

Address: Kaha.

Access/availability: 200 m east of Delta road to Alex.

Building and rooms available: Open area surrounded by big number of buildings.

Area description: Between Delta and Cairo to regional scale pollution.



Local Sources	: Traffic from Delta road and burning of agricultural waste in the Delta.
Representativity	: Representative for residential area north of Cairo.
Paramters to be measured	: NO _x , PM ₁₀ , ozone and meteorology.
Measurement equipment	: Monitors.
Infrastructure:	
Power	: Electricity available on building.
Telephone line	: Telephone line from building
Instrument locations	: On the roof top of 5 storey high flat roof building.
Air intake	: About 12 m above the ground, 2 m above the roof.
Personnel	: Maher and Kamela

Air Quality Monitoring Network - 6th of October Report

Site name: 6th of October.

ID: AQ13

Co-ordinates (UTM): (M36) 637.23, 859.48

Address: 6 district, 6 neighborhood, 6th of October city.

Access/availability: Easily in front of school in 6 October, 6 district, 6 neighborhood at Al Ashar school.

Building and rooms available: Shelter model B is located at the top of the security room at the entrance to the school.

Area description: Residential area in southern part of 6 October city districts about 17000 flats; 50000 people live in this district. In 6 October totally about 150000(per 1997). The area does not seem to be highly polluted.



Local Sources	: Industrial areas are located 1 to 3-Km west and north west of the site. All kinds of small and medium size industries are found. However, very few heavy polluting industries are yet established. Plans are to have these at the northern corner, about 5-km from the site.
Representativity	: residential (low-income) part of the city of 6 October.
Paramters to be measured	: SO ₂ , NO ₂ and PM ₁₀ .
Measurement equipment:	Sequential samplers for SO ₂ , NO ₂ . High volume sampler for PM ₁₀ .
Infrastructure:	
Power	: available.
Telephone line	: Not needed.
Instrument locations:	inside the shelter and on the top of the roof.
Air Intake	: About 4m above the ground.
Personnel	: Head Master of the school: Mr. Hassan Mohammed.

Air Quality Monitoring Network - 10th of Ramadan Report

Site name: 10th of Ramadan.

ID: AQ14

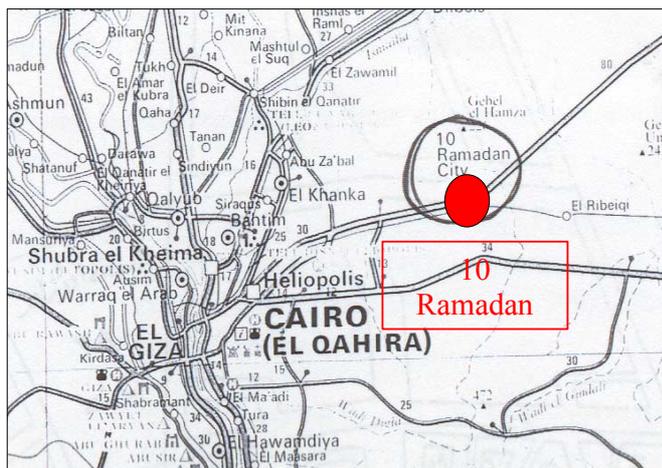
Co-ordinates (UTM):

Address: Salam primary school, from Ahmed Hamdi street, 10th of Ramadan city.

Access/availability: From Ahmed Hamdi street around the buildings to the main entrance on southern side of Salam primary school.

Building and rooms available: Shelter model B is located at the top of the security room at the main entrance .

Area description: Residential area in central part of 10th of Ramadan city (Neighborhood Nr 3 in first stage city).



Local Sources : Some smaller industries 1-km to the north (upwind). Some industries to the west, but the major industries park is located to the south and south east; 2-3 km away. Not expected to be a polluted area.

Representativity : Residential area.

Parameters to be measured : SO₂, NO₂ and PM₁₀ and dustfall.

Measurement equipment:

Sequential samplers for SO₂, NO₂ . High volume sampler for PM₁₀ and dustfall by dustfall collector.

Infrastructure:

Power : available.

Telephone line : Not needed.

Instrument locations: inside the shelter and on the top of the roof.

Air Intake : About 4m above the ground.

Personnel : Head Master of the school: Mr. Mohammed El Saleh.

Air Quality Monitoring Network - Suez Report

Site name: Suez

ID: AQ15

Co-ordinates (UTM):

Address: High transportation office, Suez city center.

Access/availability: Park in street at small building, public transportation office at bus station.

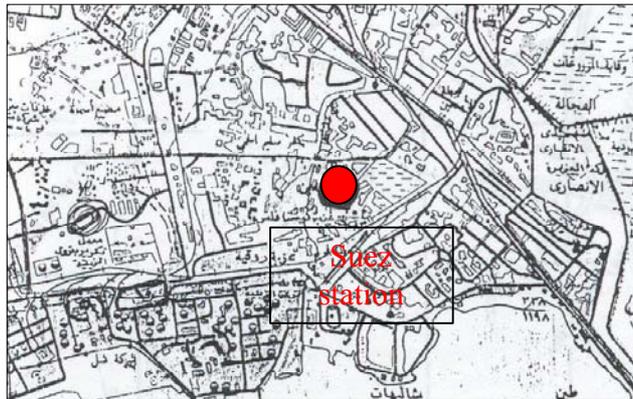
Building and rooms available: Shelter is located at roof of one of the high transportation office owned by the governorate.

Area description: Urban/Residential area with some traffic around the site (Not highly polluted).

Local Sources : Traffic and no of small size industries.

Representativity : Representative for the urban city center of Suez with traffic, various activities, some burning etc.

Paramters to be measured : SO₂, NO₂, TSP and dustfall.



Measurement equipment:

SO₂, NO₂ by monitors. TSP by High volume sampler and dustfall by dustfall collector.

Infrastructure:

Power : 220V available inside the shelter.

Telephone line : Private line has been connected in the station.

Instrument locations: inside the shelter and on the top of the roof.

Air Intake : About 5m above the ground.

Personnel : Eng. Mounir Shehata, Suez governorate, environmental department.

Air Quality Monitoring Network - Port Said Report

Site name: Port Said

ID: AQ16

Co-ordinates (UTM):

Address: El Ghourfa El Tegaryia school beside the market, port Said city.

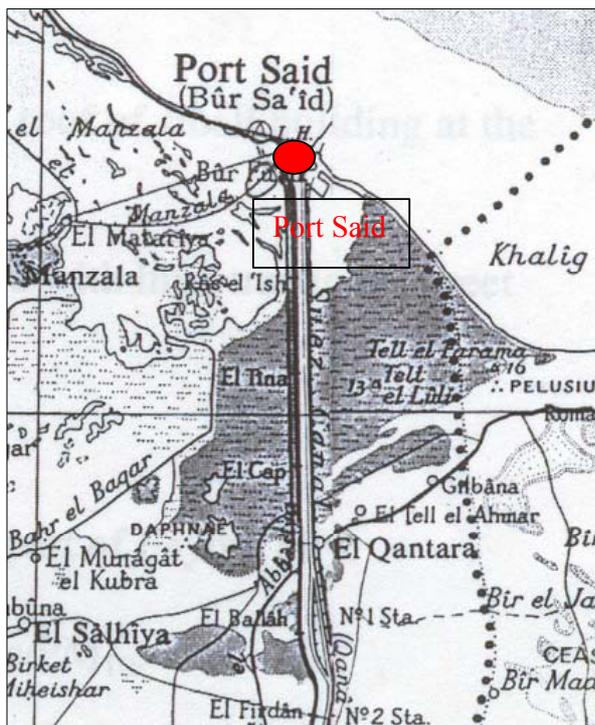
Access/availability: The iron box of Airmetrics is placed on the top of the building, close to the main road from Ismailia to port Said.

Building and rooms available: The iron box is placed on 4 floors buildings.

Area description: Residential area with little traffic from the main road between Ismailia and Port Said.

Local Sources : the area is subjected to the daily activities of the people and to slight traffic emissions.

Representativity : Representative for the residential central part of Port Said.



Parameters to be measured : SO₂, NO₂, PM₁₀.

Measurement equipment:

SO₂, NO₂ by passive samplers, PM₁₀ by Airmetrics samplers.

Infrastructure:

Power : not needed.

Telephone line : not needed.

Instrument locations: The Airmetrics sampler is located on the top of the building, the passive samplers are located on the fence of the school.

Air Intake : 12m above the ground for the PM₁₀ sampler and 2 m for the passive samplers.

Personnel : Mr. Maher Hafez, Cairo university.

Air Quality Monitoring Network - Ismailia Report

Site name: Ismailia
ID: AQ17
Co-ordinates (UTM):
Address: Redda street, city center of Ismailia.

Access/availability: Access from Redda street through offices in city Council building.

Building and rooms available: Located at balcony on city Council building on Redda street in central Ismailia.

Area description: Urban/Residential on street with occasionally heavy traffic.

Local Sources : Traffic and some general urban activities. The site is not expected to be highly polluted.

Representativity : the site is representative for the urban city center of Ismailia.

Paramters to be measured : SO₂, NO₂, PM₁₀.

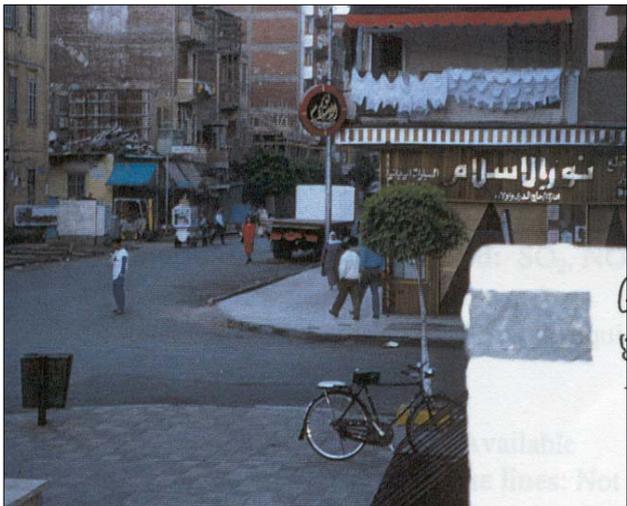
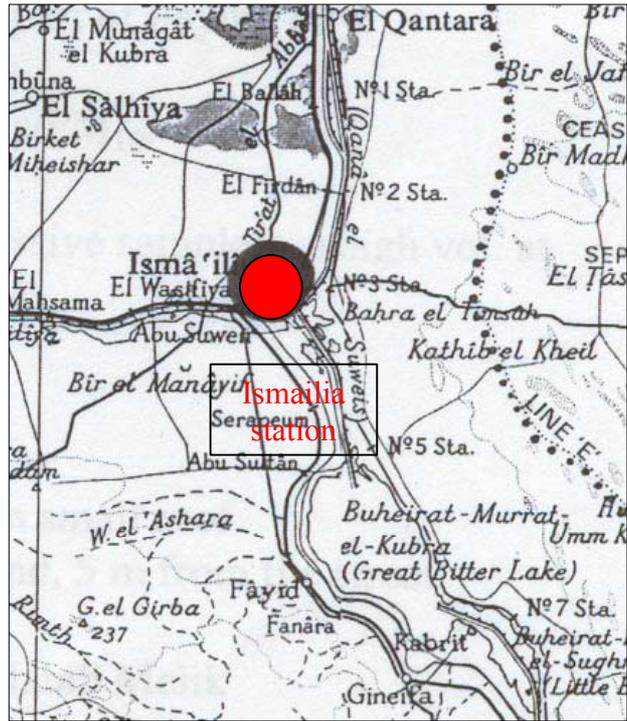
Measurement equipment: SO₂, NO₂ by passive samplers, PM₁₀ by Airmetrics samplers.

Infrastructure:

Power : not needed.

Telephone line : not needed.

Instrument locations: on balcony about 5 m above street level.



Air Intake : Intake about 5m from the ground.

Personnel : General Secr. Hani El Said and Assistant Abdul El Karim.

Air Quality Monitoring Network - El Fayum Report

Site name: El Fayum

ID: AQ18

Co-ordinates (UTM):

Address: Al Taoufik primary school in Horya street.

Access/availability: El Bota district in Horya street, El Fayum city.

Building and rooms available: samplers on the roof of small building at the entrance (meeting room).

Area description: Urban/Residential center with high traffic on street along the canal.

Local Sources : Mainly Traffic and some general urban activities..

Representativity : The site is representative for the central part of El Fayum city.

Paramters to be measured : SO₂, NO₂, DF and PM₁₀.

Measurement equipment:

SO₂, NO₂ by passive samplers, PM₁₀ by Airmetrics samplers and Dust fall by dust fall collector.

Infrastructure:

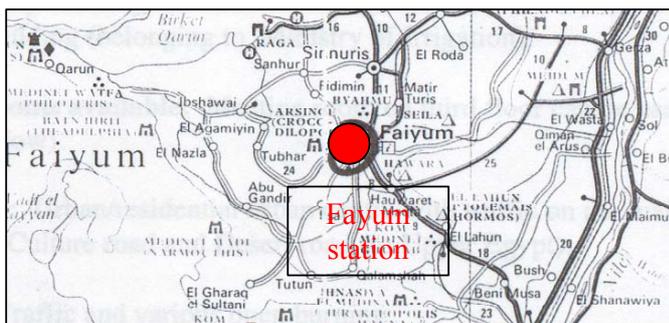
Power : not needed.

Telephone line : not needed.

Instrument locations: on small roof.

Air Intake : 4m above the ground, 5m from the street.

Personnel : Director of the school Mrs. Eugenie Habib Melik.



Air Quality Monitoring Network - Assyut1 Report

Site name: Assyut1

ID: AQ20

Co-ordinates (UTM):

Address: El Sadat area, close to the railway station.

Access/availability: At Gamal Farfhaly Sultan secondary school-100m from the railway station.

Building and rooms available: The instruments are located inside a shelter just inside the fence of the school.

Area description: Urban/Residential center with heavy traffic around the site during the rush hours.

Local Sources : Traffic and local activities (mainly waste burning) and wind blown dust.

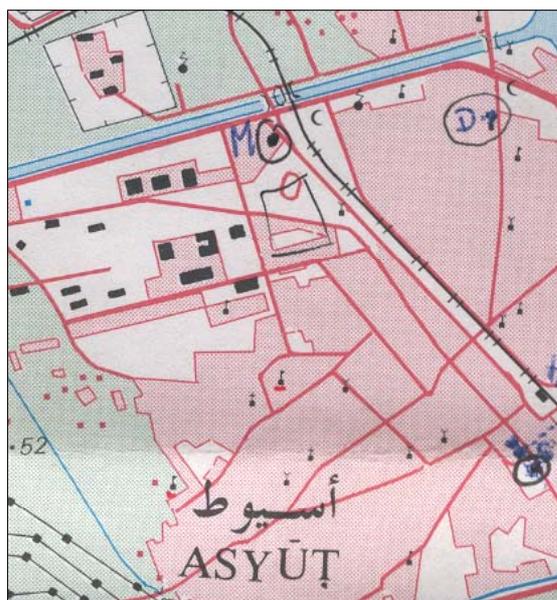
Representativity: The site is representative for the central part of Assyut.

Paramters to be measured: SO₂, NO₂, Met. and PM₁₀.

Measurement equipment: SO₂, NO₂ and PM₁₀ by monitors. Met. by portable weather station.

Air Intake: About 4m above 4m above the ground. The weather station is located on 5 floors building.

Personnel: Mr. Maher Hafez, Cairo university.



Infrastructure:

Power : 220V available in the shelter.

Telephone line : private line is connected.

Instrument locations: Inside the shelter. The weather station is located in El Gamaa primary school, close to the railway track, 1- Km from the railway station.

Air Quality Monitoring Network - Assyut2 Report

Site name: Assyut2

ID: AQ21

Co-ordinates (UTM):

Address: El Gemhoroya st, city center of Assyut.

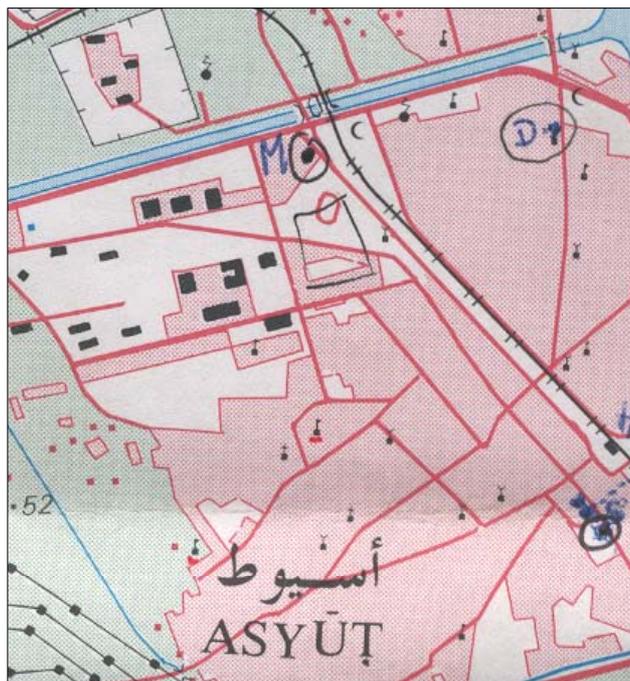
Access/availability: The site is inside El Azhar school in the central part of Assyut.

Building and rooms available: the samplers are located on the roof of the security room.

Area description: Urban/Residential center with random activities around the site.

Local Sources : Traffic on nearby roads and wind blown dust.

Representativity : The site is representative for the central urban area of Assyut.



Parameters to be measured : SO₂, NO₂, DF.

Measurement equipment:

SO₂, NO₂ by passive samplers. DF by dustfall collector.

Infrastructure:

Power : not needed.

Telephone line : not needed.

Instrument locations: On the roof of the security room.

Air Intake : About 3m above the ground.

Personnel : Mrs. Yusria Mohammed Ahmed, headmistress of the school.

Air Quality Monitoring Network - Nag Hammadi Report

Site name: Nag Hammadi

ID: AQ22

Co-ordinates (UTM):

Address: Nag Mousa Allam close to the sugar factory.

Access/availability: Inside Nag Mousa Allam school. 500m from the stacks of the sugar factory.

Building and rooms available: The roof of one floor building is available.

Area description: Industrial/Residential area with near traffic (not highly crowded).

Local Sources : Industrial emissions and traffic on nearby roads.

Representativity : The site is representative for the industrial area of Nag Hammadi.

Parameters to be measured : SO₂, NO₂, PM₁₀ and DF.

Measurement equipment:

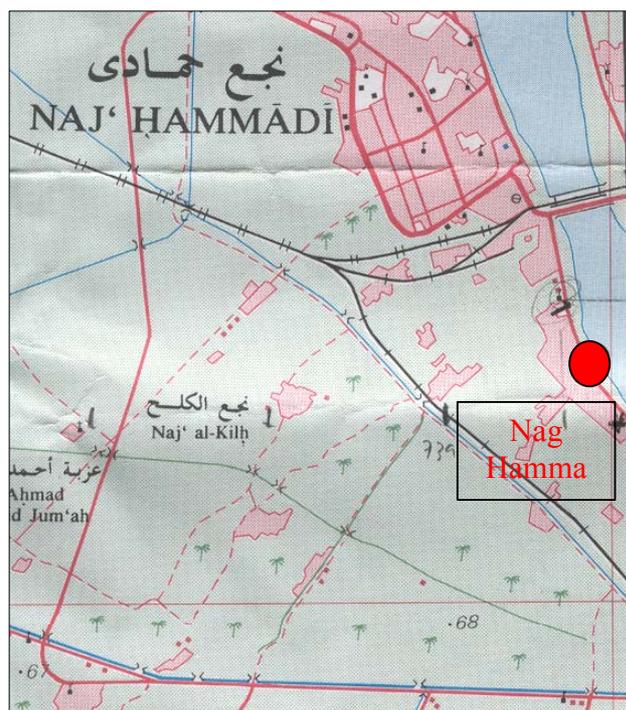
SO₂, NO₂ by passive samplers. PM₁₀ by Airmetrics low vol. Sampler, DF by dustfall collector.

Infrastructure:

Power : not needed.

Telephone line : not needed.

Instrument locations: On the roof of the building.



Air Intake : About 3m above the ground.

Personnel : Mrs. Ahmed Mousa Allam. Teacher in the school

Air Quality Monitoring Network - Luxor Report

Site name: Luxor

ID: AQ23

Co-ordinates (UTM): (M35) 774.8, 334.4

Address: Sedi Mahmoud area, close to the railway station.

Access/availability: Narrow streets in front of environmental departments at Luxor.

Building and rooms available: shelter is placed on the roof of a room belongs to water billing center is available.

Area description: Urban/Residential center.

Local Sources : Traffic and various city center sources (open waste burning).

Representativity : The site is representative for the urban part of Luxor.

Parameters to be measured : SO₂, NO₂ and DF.

Measurement equipment:

SO₂ by sequential sampler, NO₂ by passive samplers. DF by dustfall collector.

Infrastructure:

Power : Private line is connected.

Telephone line : not needed.

Instrument locations: inside the shelter of 1 floor building.

Air Intake : About 5m above the ground.

Personnel : Eng. Laila Arafa, Director of Environmental department, Luxor.



Air Quality Monitoring Network - Edfu Report

Site name: Edfu

ID: AQ24

Co-ordinates (UTM):

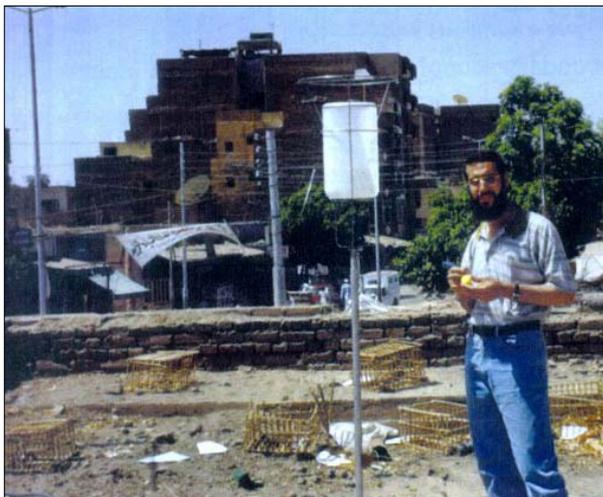
Address: 23rd of July, street, Edfu.

Access/availability: From the temple square (about 100m away).

Building and rooms available: the roof of the emergency building will be used.

Area description: Industrial/Residential area with traffic on the street.

Local Sources : Traffic and occasionally downwind from the iron factory.



Representativity : The site is representative for the central part of Edfu.

Parameters to be measured : SO₂, NO₂, DF and PM₁₀.

Measurement equipment:

SO₂, NO₂ by passive samplers, DF by dustfall collector and PM₁₀ by Airmetrics low vol. sampler.

Infrastructure:

Power : not needed.

Telephone line : not needed.

Instrument locations: On the roof of the first floor.

Air Intake : The roof of the first floor.

Personnel : Mr. Omar Mohamdein, General Manager of the city council.
Fax: 700754
Tel. 700450

Air Quality Monitoring Network - Kom Ombo Report

Site name: Kom Ombo

ID: AQ25

Co-ordinates (UTM):

Address: In the front of the sugar factory, close to the railway track.

Access/availability: Kom Ombo secondary school (about 100m from the main road to Upper Egypt).

Building and rooms available: The shelter is located on the roof of the agriculture activity building of the school.

Area description: Industrial polluted city center close to a main road.

Local Sources : Traffic, various city center sources (open burning). And normally downwind from a large sugar factory (500m to north).

Representativity : representative for the industrial polluted area impacted by local activities of the city.

Parameters to be measured : SO₂, BS (soot), NO₂, DF and PM₁₀.

Measurement equipment:

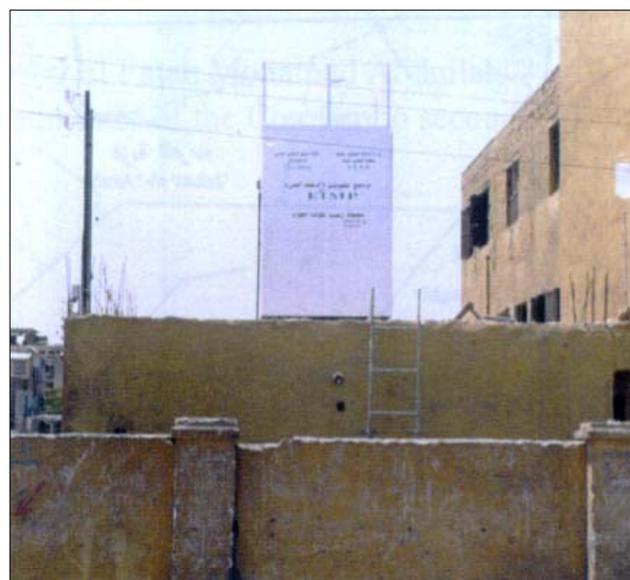
SO₂ by sequential sampler, NO₂ by passive sampler, PM₁₀ by Airmetrics low vol. Sampler. DF by dustfall collector.

Infrastructure:

Power : private line is connected.

Telephone line : not needed.

Instrument locations: in the shelter.



Air Intake : about 4m above the ground.

Personnel : Mr. Abd El Fatah Mohammed, Headmaster of Kom Ombo secondary school.

Air Quality Monitoring Network - Aswan Report

Site name: Aswan

ID: AQ26

Co-ordinates (UTM): 608.7, 156.2

Address: Fertilizer road, close to the railway track.

Access/availability: Industrial training center (about 500m from the railway track towards the fertilizer road).

Building and rooms available: The monitoring station is located in a shelter on the roof of the building.

Area description: Urban/Residential.

Local Sources : Traffic and general activities of people (burning of waste).

Representativity : The site is representative for the randomly built area of Aswan city.

Parameters to be measured : SO₂, O₃, NO₂, Meteorology and DF.

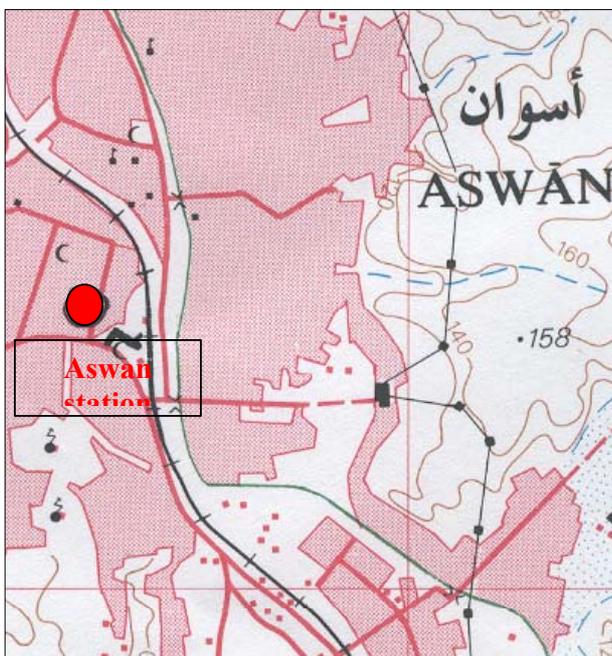
Measurement equipment:

SO₂ and O₃ by monitors, NO₂ by passive sampler, Met. by automatic weather station and DF by dustfall collector.

Infrastructure:

Power : private line is connected.

Telephone line : Private line is connected.



Instrument locations: In the shelter on small building about 5m above the ground.

Air Intake : 5m above ground.

Personnel : Dr. Hussein El Tahtawy, General Manager of the environmental department of Aswan Governorate.

Air Quality Monitoring Network - Ras Mohammed Report

Site name: Ras Mohamed

ID: AQ27

Co-ordinates (UTM):

Address: Ras Mohammed national park

Access/availability: 21km from EEAA office in Sharm El Sheik on the road to Ras Mohammed. Laboratories on left side of the road.

Building and rooms available: One of the laboratories (air-conditioned) in the EEAA laboratory building in Ras Mohammed.

Area description: Typical background area.



Local Sources	:	None, except for a few vehicles on the road 20m away.
Representativity	:	The site is representative for the background area for ozone measurements.
Paramters to be measured	:	O ₃ , PM ₁₀ and DF.
Measurement equipment:		O ₃ by monitor, PM ₁₀ by Airmetrics low vol. Sampler. DF by dustfall collector.
Infrastructure:		
Power	:	taken from the lab.
Telephone line	:	Data is being sent by e-mail.
Instrument locations:		at terrace and at roof.
Air Intake	:	:5m above ground.
Personnel	:	:EEAA contact person, Dr. Omar Hassan

Air Quality Monitoring Network - Abu Quir Report

Site name: Abu Quir

ID: AQ28

Co-ordinates (UTM): (M36) 529.4, 953.1

Address: Air defense college, Abu Quir area.

Access/availability: A shelter is placed on the security room, just inside the fence of the college.

Building and rooms available: The shelter is placed on 3-m high small building belonging to the Air defense college.

Area description: Industrial area with high emissions of ammonia.

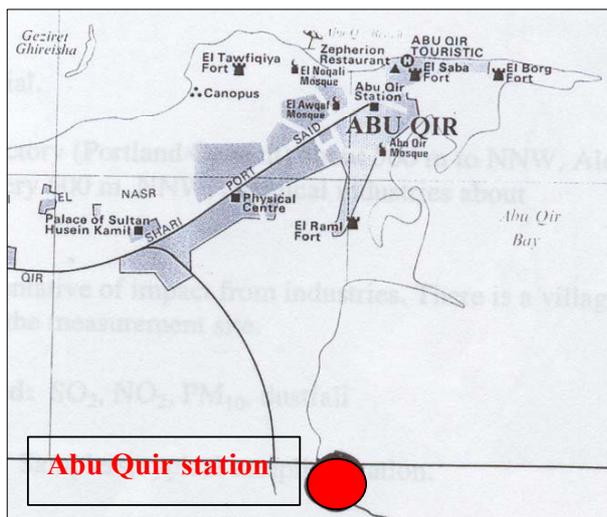
Local Sources : The area is expected to be highly polluted from the industrial area. A big fertilizer factory is very close to the shelter.

Representativity : The site is representative for the industrial area of Alexandria.

Parameters to be measured : NO₂, NH₃.

Measurement equipment:

NO₂ by sequential sampler, NH₃ by automatic instrument for measuring high concentrations.



Infrastructure:

Power : available in the shelter.

Telephone line : not needed.

Instrument locations: Sampler inside the shelter.

Air Intake : 4m above ground.

Personnel : Dr. Sayed Shalaby, IGSR.

Air Quality Monitoring Network - El Max Report

Site name: El Max

ID: AQ29

Co-ordinates (UTM): (M36) 504.8, 937.5

Address: El Max district, close to the cement company.

Access/availability: Very easy, parking outside building along main road.

Building and rooms available: The shelter is placed on 3-m high small building belonging to the Air defense college.

Area description: Industrial area with high emissions of ammonia.

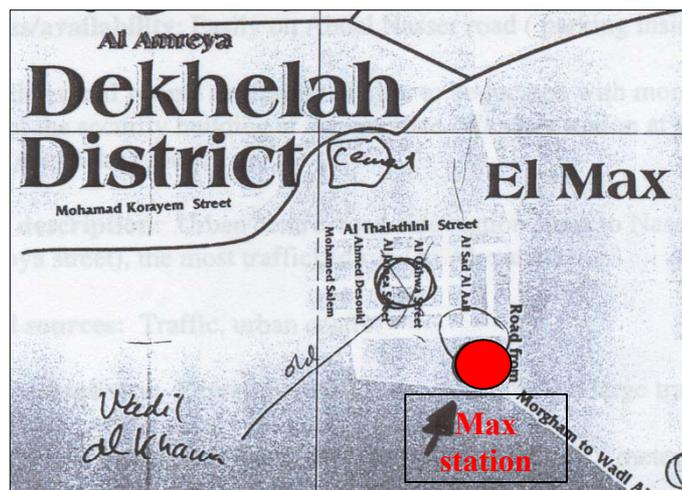
Local Sources : The area is expected to be highly polluted from the industrial area. A big fertilizer factory is very close to the shelter.

Representativity : The site is representative for the industrial area of Alexandria.

Parameters to be measured : NO₂, NH₃.

Measurement equipment:

NO₂ by sequential sampler, NH₃ by automatic instrument for measuring high concentrations.



Infrastructure:

Power : available in the shelter.

Telephone line : not needed.

Instrument locations: Sampler inside the shelter.

Air Intake: 4m above ground.

Personnel: Dr. Sayed Shalaby, IGSR.

Air Quality Monitoring Network - IGSR, Alex. University Report

Site name: IGSR, Alex. University

ID: AQ30

Co-ordinates (UTM): (M36) 512.2, 944.0

Address: El Horya avenue, Alex. City, close to the beach, only 1.5 Km away from the beach.

Access/availability: Easily on Abd El Nasser road (parking inside the gate).

Building and rooms available: Shelter has been located with monitors on the ground at the entrance.

Area description: Urban center, roadside station close to Nasser Road (Horya street), the most trafficked toad in Alex.

Local Sources : Traffic, urban center.

Representativity : The site is representative for the urban centers and large trafficked road.

Paramters to be measured : SO₂, NO_x, PM₁₀, CO.

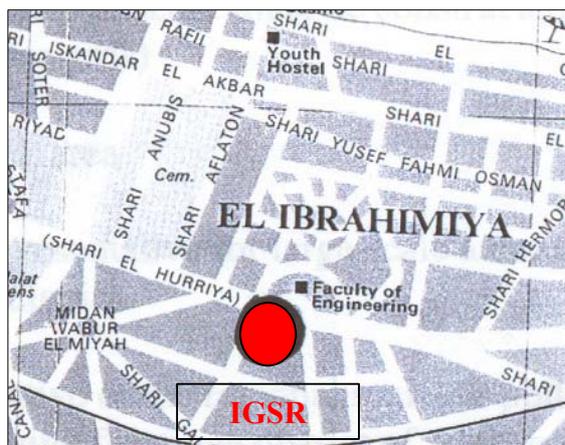
Measurement equipment:

All parameters are being measured by monitors.

Infrastructure:

Power : available in the shelter.

Telephone line : private line has been connected.



Instrument locations: In shelter on the ground at the main entrance.

Air Intake : 3m above ground, 10 m from the road.

Personnel : Dr. Sayed Shalaby, IGSR.

Air Quality Monitoring Network - El Asafra Report

Site name: El Asafra-El Azhar University.

ID: AQ31

Co-ordinates (UTM): (M36) 520.4, 951.1

Address: El Mahaad Al Dini street, El Azafra district Alex.

Access/availability: Along Al Mahaad Al Dini street, low building just inside the gate.

Building and rooms available: A Shelter has been located on the roof of the low building (university of girls).

Area description: mainly residential area.

Local Sources : open are representative for large scale air pollution downwind from Montazah district.

Representativity : The site is representative for regional scale air pollution in a residential area located downwind from old district of Alex.

Paramters to be measured : SO₂, PM₁₀.

Measurement equipment:

SO₂ by sequential sampler, PM₁₀ by Airmetrics sampler.

Infrastructure:

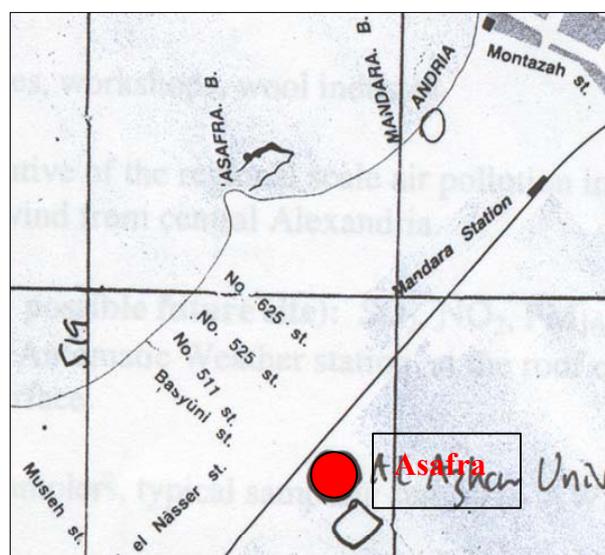
Power : available in the shelter.

Telephone line : not needed.

Instrument locations: In shelter.

Air Intake : 6m above ground.

Personnel :Dr. Sayed Shalaby, IGSR.



Air Quality Monitoring Network - Gheat El-Inab Report

Site name: Gheat El Inab.

ID: AQ32

Co-ordinates (UTM): (M36) 510.7, 941.2

Address: Gheat El Inab general market, Gheat El Inab district.

Access/availability	:	From narrow street crossing Canal El Mahmoudia.
Building and rooms available:		A Shelter has been located on the roof of the fire station.
Area description	:	Residential area.
Local Sources	:	Open air waste burning, general activities of people.
Representativity	:	The site is representative for air pollution in a residential area located downwind from central Alex. With variety of pollution sources.
Paramters to be measured	:	SO ₂ , NO ₂ , PM ₁₀ .
Measurement equipment:		SO ₂ and NO ₂ by sequential samplers, PM ₁₀ by high volume sampler.
Infrastructure:		
Power	:	available in the shelter.
Telephone line	:	not needed.
Instrument locations:		In shelter on top of the fire station.
Air Intake	:	about 5m above ground.
Personnel	:	Dr. Sayed Shalaby, IGSR.

Air Quality Monitoring Network - IGSR, Background Report

Site name: IGSR, Background.

ID: AQ33

Co-ordinates (UTM): (M36) 512.2, 944.0

Address : El Horya avenue, Alex. City, close to the beach, only 1.5 Km away from the beach.

Access/availability: Easily on Abdel Nasser road (parking inside the gate).

Building and rooms available: small shelter is located on the top of IGSR building (7 floors building).

Area description: Regional center.

Local Sources : Some traffic but high above the street, emissions can not affect ozone measurements.

Representativity : Ozone at high level.

Paramters to be measured : Ozone and meteorology.

Measurement equipment:

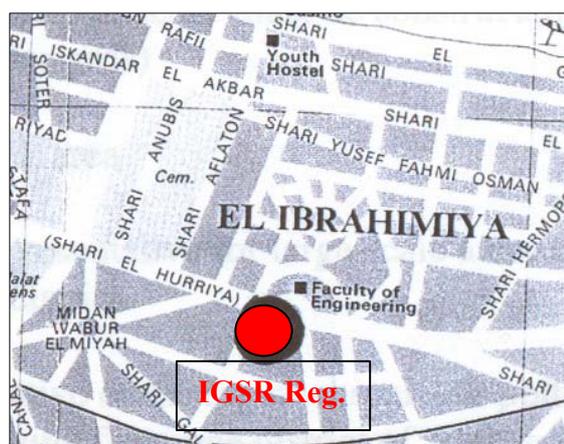
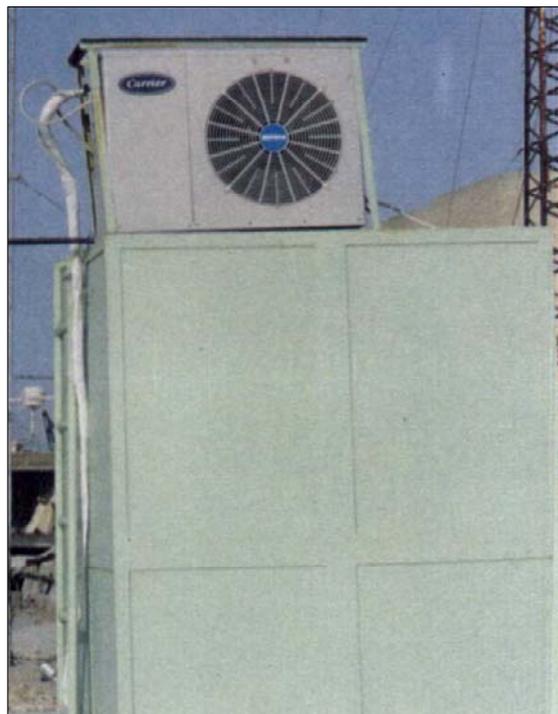
Ozone by monitor and meteorology by automatic weather station.

Infrastructure:

Power : available in the shelter.

Telephone line : private line has been connected in the station.

Instrument locations: In shelter on top of IGSR building (7 floors building).



Air Intake : about 30m above ground.

Personnel :Dr. Sayed Shalaby, IGSR.

Air Quality Monitoring Network - Damanhur Report

Site name: Damanhur.

ID: AQ34

Co-ordinates (UTM): (M36)

Address: Western Delta bus station, Damanhur city.

Access/availability	: Damanhur city center.
Building and rooms available:	the iron box of Airmetrics is located on the top of one floor building.
Area description	: Urban center close to low traffic area.
Local Sources	: The traffic on streets around the building, may be little open waste burning.
Representativity	: the site is representative for the central part of Damanhur.
Paramters to be measured	:SO ₂ , NO ₂ and PM ₁₀ .
Measurement equipment	: SO ₂ , NO ₂ by passive samplers and PM ₁₀ by low volume sampler.
Infrastructure:	
Power	: Not needed.
Telephone line	: Not needed.
Instrument locations	: In an iron box on the top of the building.
Air Intake	: about 4m above ground.
Personnel	: Dr. Sayed Shalaby, IGSR.

Air Quality Monitoring Network - Kafr El Zayat Report

Site name: Kafr El Zayat.

ID: AQ35

Co-ordinates (UTM):

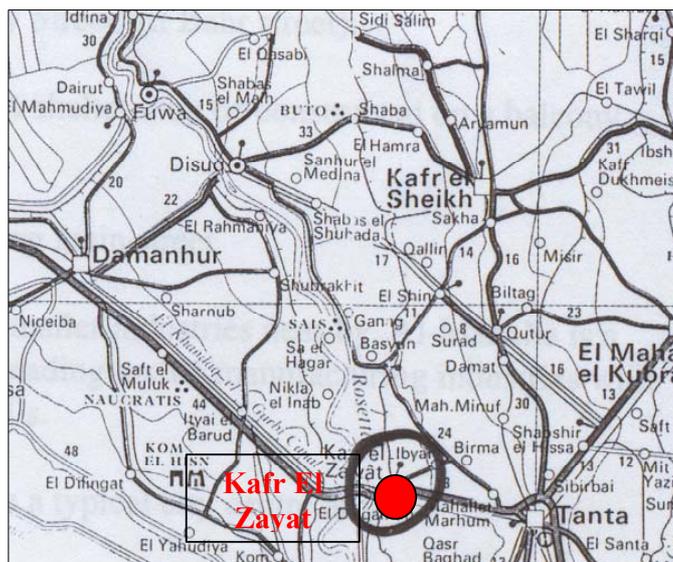
Address: Kafr El Zayat Secondary school.

Access/availability: Easily from the street, possible to park outside.

Building and rooms available: Shelter is located on the roof of the school.

Area description: Residential/Industrial area, highly polluted, can smell chemicals at site.

Local Sources : Several industries upwind from the site (from about 300m). Emissions from pesticides factory, textile industries and chemical industries. More than 50 brick factories with black smoke were counted west of the site.



Representativity : the site is representative for the industrial areas of Delta.

Parameters to be measured :SO₂, NO₂ , PM₁₀ and DF.

Measurement equipment:

SO₂, NO₂ and PM₁₀ by monitors. DF by dust fall collector.

Infrastructure:

Power :Private line has been connected in the shelter.

Telephone line : Private line has been connected in the shelter.

Instrument locations: Inside the shelter.

Air Intake : about 12m above ground.

Personnel :Teacher of Physics interested, Ismail El-Sharkawi.

Air Quality Monitoring Network - Tanta Report

Site name: Tanta.

ID: AQ36

Co-ordinates (UTM):

Address: El Geish street, Tanta city center.

Access/availability: Easily from El Geish street, parking outside the fence of the school.

Building and rooms available:
Shelter on the roof of the security room.

Area description: Typical urban area, Tanta is the capital of Gharbiyah governorate, traffic around the site.

Local Sources : Traffic and small industries, not highly polluted.

Representativity : the site is representative for the urban areas of Tanta.

Parameters to be measured :SO₂, NO₂ , PM₁₀ .

Measurement equipment:
SO₂, NO₂ by sequential sampler, PM10 by Airmetrics low vol. Sampler.

Infrastructure:

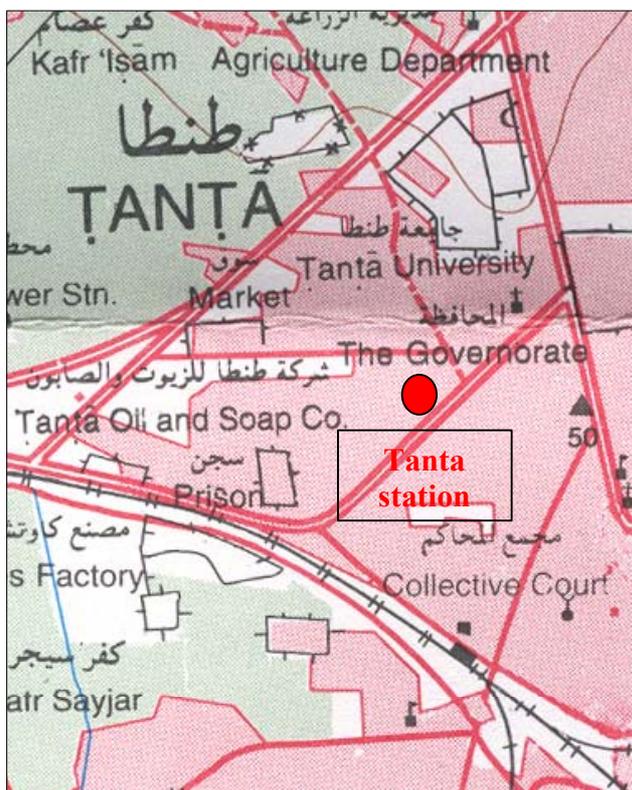
Power :Private line has been connected in the shelter.

Telephone line :Not needed.

Instrument locations: In shelter on the top of the security building.

Air Intake : about 4m above ground.

Personnel :Mr. Ibrahim Abu Eisha. Headmaster of the school.



Air Quality Monitoring Network - El Mahalla Report

Site name: El Mahalla.

ID: AQ37

Co-ordinates (UTM):

Address: Al Takwa we Al Marwa school. The 2nd district, in front of the Stadium.

Access/availability: Easily from El Mahalla stadium.

Building and rooms available:

Shelter is placed on the security room beside the gate of the school.

Area description:
Residential/Industrial.

Local Sources : Textile manufacturing industries with cotton processing and spinning mills.

Representativity : the site is representative for the air pollution in a residential area affected by industrial emissions.

Paramters to be measured :SO₂, NO₂ , PM₁₀ and DF.

Measurement equipment:

SO₂ and PM10 by monitors, NO₂ by passive sampler, DF by dust fall collector.

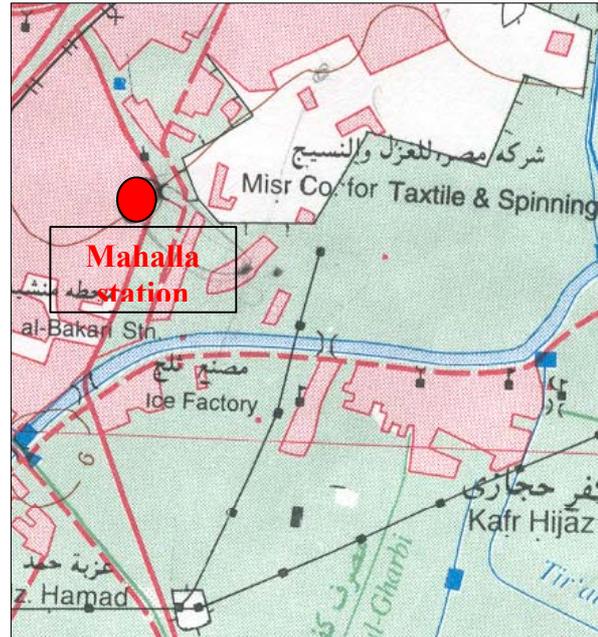
Infrastructure:

Power :available in the shelter.

Telephone line : Private line has been connected.

Instrument locations: In shelter on the top of the security building.

Air Intake : about 4m above ground.



Air Quality Monitoring Network - El Mansura Report

Site name: El Mansura.

ID: AQ38

Co-ordinates (UTM): NH 36-M36 649.7, 926.0

Address: El Dakahlia governorate building.

Access/availability: Along Corniche on eastern side of Nile branch. Governorate building on the Corniche. El Mansura is the capital of Dakahliya governorate, on the Damietta branch of the Nile. It is a commercial center with textile, food and other industries. Population estimated 1991 is 362000.

Building and rooms available:

Shelter on the roof of third floor about 15m above street level.

Area description: Urban, downwind from industrial sources in Talkha.

Local Sources :Some traffic on streets around the building. The site is downwind from power plant, fertilizers and other industrial sources in Talkha on the opposite side of the river Nile. The site is impacted by emissions from industries about 1Km. On northern bank of the river, when the wind is from around NNE. For all other wind directions the site will be moderate polluted, due to its height above the street level.

Representativity :Mainly industrially impacted in an urban area.

Paramters to be measured :SO₂, NO₂ and Met.

Measurement equipment: SO₂ and NO_x by monitors, Met. by automatic weather station.

Infrastructure:

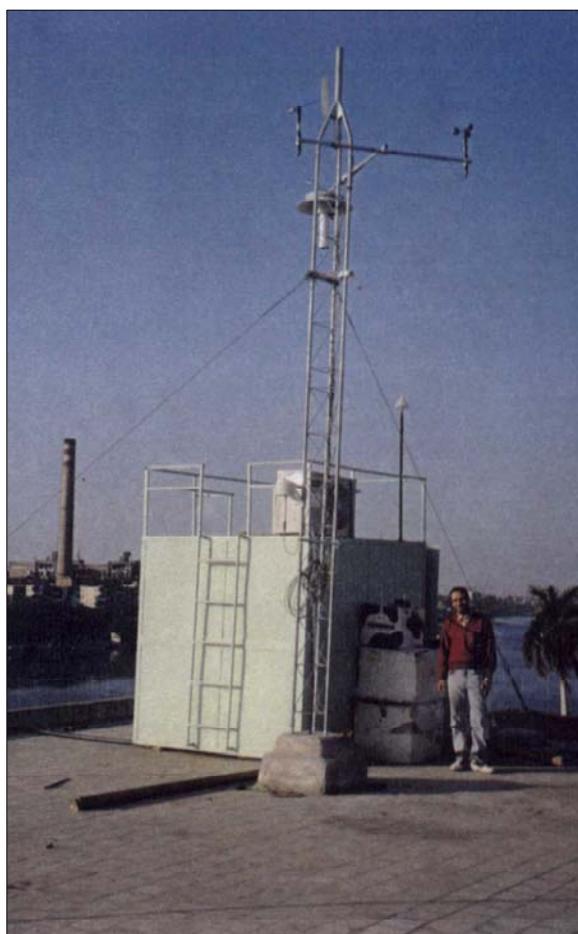
Power :available.

Telephone line : Private line has been connected.

Instrument locations: Inside the shelter and on the top of the roof.

Air Intake : about 12m above ground.

Personnel :Eng. Atef Ahmed El Minyaw, Manager of the environmental department.



Air Quality Monitoring Network - Domyat Report

Site name: Domyat.

ID: AQ39

Co-ordinates (UTM): 682.26, 96734

Address: Ibn Khaldoon school, El glaa st., close to El Kabbas square.

Access/availability: Ibn Khaldoon school located in the middle of the city center (Easy to find from El Kabbas square).

Building and rooms available:

The Shelter is placed on the ground beside the baby garden room.

Area description: Crowded Residential area.

Local Sources : Mainly traffic on streets around the building, man-made distributed dust and local activities around the site.



Representativity : The site is representative for the central part of Domyat.

Parameters to be measured :SO₂, NO₂ , PM₁₀, VOC and DF.

Measurement equipment: SO₂ by sequential sampler, NO₂ by passive sampler, PM₁₀ by high volume sampler, VOC by simple sampler and DF by dust fall collector.

Infrastructure:

Power : available in the shelter.

Telephone line : Not needed.

Instrument locations: Inside the shelter and on the top of it.

Air Intake : about 3m above ground.

Personnel :Chemist Hamed A. Farag, manager of environmental department.

Air Quality Monitoring Network - Kafr El Dawar Report

Site name: Kafr El Dawar.

ID: AQ40

Co-ordinates (UTM): 0226.690, 3443.215

Address: Bus station, close to Corniche street, El Mohagreen area.

Access/availability: Small building (one floor) near Corniche street, east of bridge from Agriculture road.

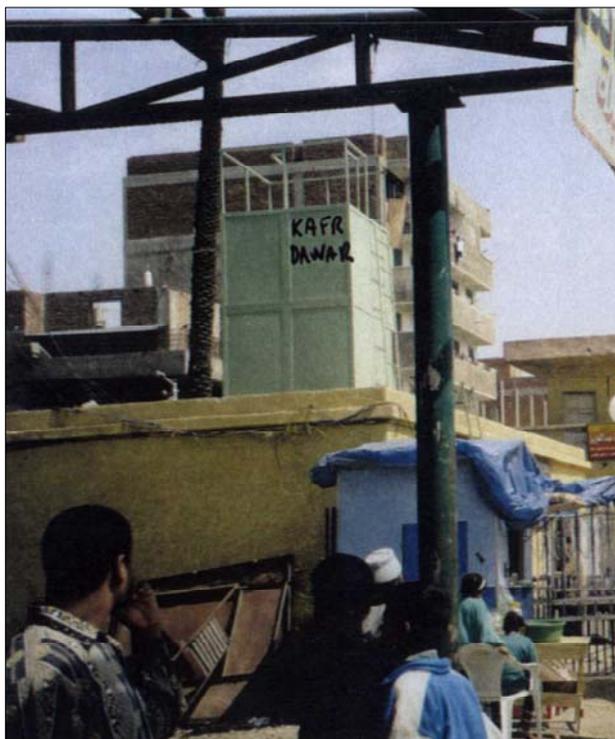
Building and rooms available:

Small shelter placed on the top of one floor building.

Area description: Residential area – highly polluted.

Local Sources : Several industries upwind from the site and some traffic around the site.

Representativity : The site is representative for the central part of Kafr El Dawar.



Parameters to be measured :SO₂, NO₂ , PM₁₀ and DF.

Measurement equipment: SO₂ by sequential sampler, NO₂ by passive sampler, PM₁₀ by low vol. Airmetrics sampler and DF by dust fall collector.

Infrastructure:

Power :220V available in The shelter.

Telephone line : Not needed.

Instrument locations: Inside the shelter.

Air Intake : about 4m above ground.

Personnel : Sayed Shalaby, Alexandria university.

Air Quality Monitoring Network - El Nahda Report

Site name: El Nahda.

ID: AQ41

Co-ordinates (UTM):

Address : El Amryia district, El mestoudaat club, in front of the Carbon black factory.

Access/availability	:	open area in front of Carbon black factory.
Building and rooms available:		Instruments placed on the ground near the fence.
Area description	:	Industrial area polluted occasionally.
Local Sources	:	very big factory with high emissions (occasionally).
Representativity	:	The site is representative for the industrial areas of Alexandria.
Paramters to be measured	:	PM ₁₀ and DF.
Measurement equipment	:	PM ₁₀ by high volume sampler and DF by Dust fall collector.
Infrastructure:		
Power	:	available in the area.
Telephone line	:	Not needed.
Instrument locations	:	close to the fence of the club.
Air Intake	:	about 2m above ground.
Personnel	:	Sayed Shalaby, Alexandria university.

Air Quality Monitoring Network - El Shouhada square Report

Site name: El Shouhada square.

ID: AQ42

Co-ordinates (UTM):

Address : El Shouhada square, Misr station, Alex city center.

Access/availability: At the roof on a low building in front of the main railway station in Alexandria. The roof has to be climbed from a ladder.

Building and rooms available:

Big shelter on the top of the building.

Area description: Urban/traffic, generally highly polluted from traffic.



Local Sources : Mainly traffic in the square and the surrounding streets, local activities in the surrounding area.

Representativity : Typical for city center of Alexandria. Heavy traffic, several diesel buses close to the station.

Parameters to be measured : SO₂, NO_x and PM₁₀ .

Measurement equipment: SO₂ by monitor, NO_x by monitor, low vol. Airmetrics sampler for PM₁₀.

Infrastructure:

Power : 220V available in The shelter.

Telephone line : Private line has been connected.

Instrument locations: inside the shelter.

Air Intake : about 5m above ground.

Personnel : Sayed Shalaby, Alexandria university.

